DIVISION 1

RULES FOR THE ADMINISTRATION OF THE OREGON SAFE EMPLOYMENT ACT

Subdivision O — Signaling Systems

DIVISION 81

AGRICULTURAL OPERATIONS AND FARMING

Hand-Held Power Driven Tools

Storage, Handling and Use of Cylinders

DIVISION 1

RULES FOR THE ADMINISTRATION OF THE OREGON SAFE EMPLOYMENT ACT

437-001-0001
Model Rules of Procedure

The Model Rules of Procedure, OAR 137-001-0005 through 137-001-0100, in effect on January 1, 2006, as promulgated by the Attorney General of the State of Oregon under the Administrative Procedures Act, are adopted as the rules of procedure for rulemaking actions of the Oregon Occupational Safety and Health Division.

[ED. NOTE: The full text of the Attorney General's Model Rules of Procedure is available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 3-1991, f. & cert. ef. 2-25-91; OSHA 7-1992, f. 7-31-92, cert. ef. 10-1-92; OSHA 2-1994, f. & cert. ef. 5-19-94; OSHA 2-1996, f. & cert. ef. 6-13-96; OSHA 7-1999, f. & cert. ef. 7-15-99; OSHA 11-2000, f. & cert. ef. 12-12-00; OSHA 2-2002, f. & cert. ef. 3-12-02; OSHA 6-2004, f. & cert. ef. 12-30-04; OSHA 1-2006, f. & cert. ef. 2-14-06

437-001-0002
Notice to Interested Persons of Rulemaking

Except when adopting a temporary rule, in accordance with ORS 183.335(5), the Director will give prior notice of the proposed adoption, amendment or repeal of an administrative rule by:

(1) Publishing notice of the proposed action in the Secretary of State's Oregon Bulletin at least 21 days prior to the effective date of the action.

(2) Notifying interested persons and organizations on the Division's notification lists of proposed rulemaking actions under ORS 183.335. The same information is also posted on the OR-OSHA web site at www.orosha.org. The Division will send the notice to those on OR-OSHA's e-mail notification list, and mail paper copies to those on the hard-copy notification list. Both subscription methods are available on the web site listed above or call the Oregon OSHA Resource Center at 503-378-3272.

Stat. Auth.: ORS 654.025(2), 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 9-1991, f. & cert. ef. 4-25-91; OSHA 6-1994, f. & cert. ef. 9-30-94; OSHA 7-1999, f. & cert. ef. 7-15-99; OSHA 7-2006, f. & cert. ef. 9-6-06

General Information

437-001-0005
Authority and Applicability of Rules

(1) These rules are promulgated under the Director's authority contained in ORS 654.025(2) and 656.726(3).

(2) Adoption Procedures: These rules for the Administration of the Oregon Safe Employment Act (OAR 437, division 1) are adopted in accordance with ORS Chapter 183 and the Director's Rules of Practice and Procedure Applicable to Rule Making Functions.

(3) History: Prior "**Rules for the Administration of the Oregon Safe Employment Act**" (OAR chapter 436, division 46, 436-046-0005 through 436-046-0750) were first adopted by WCB Admin. Order 19-1974; filed 6-5-74; **effective 7-1-74**. Amendments were made by:

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 33-1974, f. 9-5-74, ef. 9-26-74; WCB 8-1975, f. 8-5-75, ef. 9-1-75; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 7-1979, f. 8-20-79, ef. 9-1-79; WCD 4-1981, f. 5-22-81, ef. 7-1-81; WCD 6-1982, f. 6-28-82, ef. 8-1-82; WCD 12-1982, f. 6-28-82, ef. 8-1-82; WCD 3-1983, f. 1-31-83, ef. 2-1-83; WCD 9-1983, f. 11-15-83, ef. 11-15-83; WCD 2-1984, f. 3-2-84, ef. 3-15-84; WCD 12-1984, f. 9-20-84, ef. 11-1-84; WCD 9-1986, f. 10-7-86, ef. 12-1-86; APD 6-1987, f. 12-23-87, ef. 1-1-88; APD 5-1988, f. 5-16-88, ef. 5-16-88; APD 7-1988, f. 6-17-88, cert. ef. 7-1-74; OSHA 10-1990(Temp), f. & cert. ef. 5-31-90; OSHA 24-1990, f. & cert. ef. 10-10-90; OSHA 7-1992, f. 7-31-92, cert. ef. 10-1-92

437-001-0010
Purpose and Scope of Rules

(1) These rules provide procedures by which the Division shall implement and enforce the Director's authority and responsibilities under the Act.

(2) The Director adopts OAR chapter 437, division 1, to assure, as far as possible, safe and healthful working conditions for every employee in Oregon, to preserve our human resources and to reduce the substantial burden which is created by occupational injury and disease.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCD 5-1978, f. 6-22-78, ef. 8-15-78; APD 7-1988, f. 6-17-88, ef. 7-1-74; OSHA 10-1990(Temp), f. & cert. ef. 5-31-90; OSHA 24-1990, f. & cert. ef. 10-10-90; OSHA 7-1992, f. 7-31-92, cert. ef. 10-1-92

437-001-0015
Definitions

The following definitions shall apply to OAR 437, unless the context requires otherwise:

(1) Abatement — Action by an employer to comply with a cited violation of the Oregon Safe Employment Act.

(2) Accepted Disabling Claims — Claims accepted for disabling occupational injuries or illnesses only. A disabling injury or illness entitles the worker to compensation for disability or fatality. This type of claim excludes temporary total disability suffered during the first three calendar days after the employee leaves work as a result of the injury unless the worker is an inpatient in a hospital.

(3) Accepted Disabling Claims Rate — The ratio of accepted disabling claims to annual average employment, times 100. Claims and employment figures are based upon the best knowledge of the Department at the time the rate is calculated (ADCR = Number of claims times 100 divided by the number of employees).

(4) Act — The Oregon Safe Employment Act (ORS 654.001 to 654.295, 654.750 to 654.780, and 654.991).

(5) Administrator — The Administrator of the Oregon Occupational Safety and Health Division (OR-OSHA).

(6) Affected employee — An employee who, in the course and scope of employment, may be or may have been exposed to a condition or practice described in a citation, order, application for an extension date or variance.

(7) Agent of the employer — The manager, superintendent, foreperson or other person in charge or control of all or part of the place of employment.

(8) Appeal — A written request for a hearing in which to contest a citation, notice or order issued by the Division. Unless the context otherwise requires, any writing which clearly contests, objects to or seeks relief from a Division citation, notice or order shall be construed as an appeal.

(9) Audiometric Zero — The lowest sound pressure level that the average, young adult with normal hearing can hear.

(10) Board — The Workers' Compensation Board created by ORS 656.712.

(11) Catastrophe — An accident in which two or more employees are fatally injured, or three or more employees are admitted to a hospital or an equivalent medical facility.

(12) Citation — A document issued by the Division pursuant to ORS 654.071 to cite a violation. A citation may include a notice of penalty and a correction order.

(13) Complaint — A written or oral report from an employee, employee representative or other person that an occupational safety or health violation may exist at a place of employment. A complaint may be classified as one of the following:

(a) Imminent danger;

(b) Serious;

(c) Other than serious.

(14) Compliance Officer — A designated Division employee whose responsibility is to conduct inspections or investigations to identify possible violations and hazards and to propose citations, penalties and correction dates, and to assist employers and employees with information to correct violations and hazards.

(15) Comprehensive Consultation — is a consultation to cover the entire establishment and entails a physical hazard assessment evaluation, reviews of records, written programs and the employer's illness and injury prevention plan. Comprehensive consultations include a written report by the provider including findings, recommendations, and the guidance necessary to resolve the problems noted in the report.

(16) Consultant — A designated Division employee whose responsibility is to provide a full range of occupational safety and health assistance including, but not limited to, providing employers, employees and other agency staff with information, advice and recommendations on maintaining safe employment or a place of employment; on correcting violations or hazards; and on applicable occupational safety and health rules, techniques, devices, methods, practices and development of safety and health programs.

(17) Correction order — A written Division order which directs a person to stop a violation within a given period of time. The term also includes a Red Warning Notice issued pursuant to OAR 437-001-0096.

(18) Days Away, Restricted, or Transferred (DART) — The number of lost workday injury and illness cases experienced by 100 full-time workers (DART rate = Number of lost workday cases times 200,000 divided by the number of employee hours worked).

NOTE: Lost Workday cases include both days away from work and days of restricted time.

(19) Decibel (dB) — Unit of measurement of sound level. For purposes of this rule, decibels refer to the combined average of the readings at 2000, 3000, and 4000 Hz on the audiogram.

(20) Department — The Department of Consumer and Business Services.

(21) Director — The Director of the Department of Consumer and Business Services, or the Director's designee.

(22) Division — The Oregon Occupational Safety and Health (OR-OSHA) Division of the Department of Consumer and Business Services.

(23) Emphasis Program — A special program that targets Division activity to industries that, according to national or state data, have a high potential for serious injuries or illnesses.

(24) Employee — Any individual who is currently employed or formerly employed, including a minor whether lawfully or unlawfully employed, who engages to furnish services for a remuneration, financial or otherwise, subject to the direction and control of an employer, and includes salaried, elected and appointed officials of the state, state agencies, counties, cities, school districts and other public corporations, or any individual who is provided with workers' compensation coverage as a subject worker pursuant to ORS Chapter 656, whether by operation of law or by election.

(25) Employee exposure record — A record of monitoring or measuring which contains a qualitative or quantitative information indicative of employee exposures to toxic materials or harmful physical agents. This includes both individual exposure records and general research or statistical studies based on information collected from exposure records.

(26) Employee medical record — A record which contains information concerning the health status of an employee or employees exposed or potentially exposed to toxic materials or harmful physical agents. These records may include, but are not limited to:

(a) The results of medical examinations and tests;

(b) Any opinions or recommendations of a physician or other health professional concerning the health of an employee or employees; and

(c) Any employee medical complaints relating to workplace exposure. Employee medical records include both individual medical records and general research or statistical studies based on information collected from medical records.

(27) Employee representative — A bargaining unit representative, or an individual selected by employees, who serves as their spokesperson.

(28) Employer.

(a) Any person who has one or more employees, or

(b) Any sole proprietor or member of a partnership who elects workers' compensation coverage as a subject worker pursuant to ORS 656.128, or

(c) Any successor or assignee of an employer. For purposes of this definition and ORS 654.005(5)(c), a business or enterprise is considered to be substantially the same entity as the predecessor employer if:

(A) A majority of the current business or enterprise is owned by the former owners or their immediate family members, and

(B) One or more of the following criteria exist for both the current and predecessor business or other enterprise:

(i) Substantially the same type of business or enterprise.

(ii) Similar jobs and working conditions.

(iii) A majority of the machinery, equipment, facility, or methods of operation.

(iv) Similar product or service.

(v) A majority of the same supervisory personnel.

(vi) A majority of the same officers and directors.

NOTE: Not every element need be present to find an employer to be a successor, the facts will be considered together to reach a determination.

(29) Employer representative — An individual selected by the employer, to serve as spokesperson or, in the absence of a selected spokesperson, the person in charge of the place of employment at the time of the inspection.

(30) Environmental Exposure Sampling — Sampling of the workplace environment, performed for a variety of reasons including, identification of contaminants present and their sources, determination of worker exposures and checking the effectiveness of controls.

(31) Establishment — An establishment is a single physical location doing business or offering services or with industrial operations. For activities where employees do not work at a single physical location, such as construction; transportation; communications, electric, gas and sanitary services; and similar operations, the establishment is the main or branch offices, terminals, stations, etc. that either supervise such activities or are the base from which personnel carry out these activities.

(a) One location/multiple establishments. Normally, one business location has only one establishment. Under limited conditions, two or more separate businesses that share a single location are separate establishments. An employer may divide one location into two or more establishments only when:

(A) Each of the establishments represents a distinctly separate business;

(B) Each business is engaged in a different economic activity;

(C) No one industry description in the Standard Industrial Classification Manual (1987) applies to the joint activities of the establishments; and

(D) Separate reports are routinely prepared for each establishment on the number of employees, their wages and salaries, sales or receipts, and other business informa- tion. For example, if an employer operates a construction company at the same location as a lumber yard, each business can be a separate establishment.

(b) Multiple locations/one establishment. Only under certain conditions. An employer may combine two or more physical locations into a single establishment only when:

(A) The employer operates the locations as a single business operation under common management;

(B) The locations are all near each other; and

(C) The employer keeps one set of business records for all the locations, such as records on the number of employees, their wages and salaries, sales or receipts, and other kinds of business information. For example, one manufacturing establishment might include the main

plant, a warehouse a few blocks away, and an administrative services building across the street.

(c) Telecommuting from home. For employees who telecommute from home, the employee's home is not a business establishment, do not keep a separate 300 Log. Link employees who telecommute to one of your establishments under 437-001-0700(15)(c).

(32) Farm operation — Any operation involved in the growing or harvesting of crops or the raising of livestock or poultry.

(33) Filed — A document shall be deemed to have been filed on the date of postmark if mailed or on the date of receipt if transmitted to OR-OSHA, DCBS, or the WCB by other means.

(34) First aid — Any one-time treatment and subsequent observation of minor scratches, cuts, burns, splinters or similar injuries which do not ordinarily require medical care. Such one-time treatment and subsequent observation is considered first aid even though provided by a physician or registered professional personnel.

(35) Fixed place of employment — The entire facility maintained by an employer at one general location, regardless of the size or number of departments or buildings in the facility. For the purpose of determining repeat violations fixed place of employment includes employers or owners engaged in construction activity who will be at a single worksite continuously for more than 24 months.

(36) Hazard — A condition, practice or act which could result in an injury or illness to an employee.

(37) Health Hazard — Health hazards mean carcinogens, lead, silica, toxic metals and fumes, vapors or gases, toxic or highly corrosive liquids or chemicals, chemical sensitizers, pesticides, fungicides, solvents, biological agents and harmful physical stress agents.

(38) Imminent danger — A condition, practice or act which exists in any place of employment and could reasonably be expected to cause death or serious physical harm immediately.

(39) Injury or illness — An injury or illness is an abnormal condition or disorder. Injuries include cases such as, but not limited to, a cut, fracture, sprain, or amputation. Illnesses include both acute and chronic illnesses, such as, but not limited to, a skin disease, respiratory disorder, or poisoning.

Note: Record injuries and illnesses only if they are new, work-related cases that meet one or more of the recording criteria.

(40) Inspection — An official examination of a place of employment by a Compliance Officer to determine if an employer is in compliance with the Act. An inspection may be classified as:

(a) Programmed.

(A) Routine inspection — An inspection of a place of employment which is made based principally on that place of employment's record of workers' compensation claims or Standard Industrial Classification and number of employees;

(i) Emphasis inspection — An inspection made in response to a national or state Emphasis Program.

(B) Periodic inspection — An inspection made because of a time-related factor, including, but not limited to, intermittent or seasonal employment activity;

(C) Area inspection — An inspection made because of a geographic factor;

(D) Random inspection — An inspection scheduled and conducted pursuant to written neutral administrative standards.

(b) Unprogrammed.

(A) Follow-up inspection — An inspection made to determine if a previously cited violation has been corrected or after a request for an extension, a stay of correction time or a variance has been denied;

(B) Complaint inspection — An inspection made in response to a complaint;

(C) Accident investigation — A systematic appraisal of an accident sequence to determine causal factors, corrective actions and preventative measures; and

(D) Referral inspection — An inspection made in response to a referral.

(41) Letter of Corrective Action — A letter stating the corrective action(s) taken by the employer to comply with the violation(s) that were not corrected at the time of the inspection.

(42) Lost workdays — The actual number of days after, but not including, the day of injury or illness during which the employee would have worked, but could not perform all or any part of his/her normal assignment during all or any part of the employee's next regular workday or shift because of the occupational injury or illness.

(43) Lost Workday Cases Incidence Rate (LWDCIR) (Also see DART) — The number of lost workday injury and illness cases experienced by 100 full-time workers (LWDCIR = Number of lost workday cases times 200,000 divided by the number of employee hours worked).

(44) Medical treatment — Treatment administered by a physician or by registered professional personnel under the standing orders of a physician. Medical treatment does not include first aid treatment even though provided by a physician or registered professional personnel, nor does it include treatment ordinarily considered diagnostic or preventative in nature.

(45) North American Industry Classification System (NAICS) — A classification system developed by the Executive Office of the President/Office of Management and Budget, for use in classifying establishments by the type of activity in which they are engaged. Each establishment is assigned an industry code for its major activity. The 2002 edition of the NAICS manual is used for coding.

(46) Owner — Every person having ownership, control or custody of any place of employment or of the construction, repair or maintenance of any place of employment.

(47) Person — One or more individuals, legal representatives, partnerships, joint ventures, associations, corporations (whether or not organized for profit), business trusts, or any organized group of persons, and includes the state, state agencies, counties, municipal corporations, school districts, and other public corporations or subdivisions.

(48) Personal exposure samples — Measurement of contaminants or physical agents to characterize the environment in the breathing or hearing zone of individual workers in order to evaluate their specific work exposures. Personal samplers are placed on the worker to obtain either one continuous sample covering a portion of the workday or consecutive samples covering a stated time period.

(49) Physician or Other Licensed Health Care Professional — A physician or other licensed health care professional is an individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows them to independently perform, or be delegated the responsibility to perform, the activities described by this regulation.

(50) Place of employment — Includes every place, whether fixed or movable, whether indoors or out or underground, and the premises and structures appurtenant thereto, where either temporarily or permanently an employee works or is intended to work and every place where there is carried on any process, operation or activity related, either directly or indirectly, to an employer's industry, trade, business or occupation, including a labor camp provided by an employer for his/her employees or by another person engaged in providing living quarters or shelters for employees, but place of employment does not include any place where the only employment involves nonsubject workers employed in or about a private home. Any corporate farm where the only employment involves the farm's family members, including parents, spouses, sisters, brothers, daughters, sons, daughters-in-law, sons-in-law, nieces, nephews or grandchildren.

(51) Record — Any recorded information regardless of its physical form or character.

(52) Recordable occupational injuries or illnesses — Any occupational injuries or illnesses which result in:

(a) Fatalities, regardless of the time between the injury and death, or the length of the illness;

(b) Lost workday cases, other than fatalities, that prevent the employee from performing his/her normal assignment during any part of the employee's next regular, or any subsequent workday or shift; or

(c) Nonfatal cases, without lost workdays which result in transfer to another job or termination of employment, or require medical treatment (other than first aid), or involve loss of consciousness or restriction of work or motion. This category also includes any diagnosed occupational illnesses which are reported to the employer but are not classified as fatalities or lost workday cases.

(53) Referral — A notification made to the responsible agency of safety or health violations observed by a Division employee, other federal, state or local government representatives, or the media.

(54) Rule — Any agency directive, standard, regulation or statement of general applicability that implements, interprets or prescribes law or policy, or describes the procedures or practice requirements of the agency and is adopted according to the Administrative Procedure

Act. The term includes the amendment or repeal of a prior rule, but does not include, unless a hearing is required by statute, internal management directives, regulations or statements which do not substantially affect the interests of the public.

(55) Scheduling List — An electronic or paper list of places of employment or employers scheduled for inspection. Lists can be in electronic form, paper form or both.

(56) Serious physical harm:

(a) Injuries that could shorten life or significantly reduce physical or mental efficiency by inhibiting, either temporarily or permanently, the normal function of a part of the body. Examples of such injuries are amputations, fractures (both simple and compound) of bones, cuts involving significant bleeding or extensive suturing, disabling burns, concussions, internal injuries, and other cases of comparable severity.

(b) Illnesses that could shorten life or significantly reduce physical or mental efficiency by inhibiting, either temporarily or permanently, the normal function of a part of the body, even though the effects may be cured by halting exposure to the cause or by medical treatment. Examples of such illnesses are cancer, pneumoconiosis, narcosis, or occupational infections (caused by biological agents), and other cases of comparable severity.

(57) Standard Industrial Classification (SIC) — A classification system developed by the Office of Statistical Standards, Executive Office of the President/Office of Management and Budget, for use in classifying establishments by the type of activity in which they are engaged. Each establishment is assigned an industry code for its major activity, which is determined by the value of receipts or revenue for services rendered or products produced, or in some cases by the employment or payroll. The 1987 edition of the SIC manual is used for coding.

(58) Standard Threshold Shift (STS) — A change in hearing threshold relative to the baseline audiogram of an average of 10 dB or more in either ear.

(59) Substantial failure to comply — When an employer engaged in the production of crops intended for human consumption fails to provide acceptable and accessible toilet facilities, handwashing facilities or drinking water, and that failure exposes affected workers to a serious hazard likely to result in an injury or illness.

(60) Suspended penalty — A penalty which is determined but not assessed.

(61) Variance — The written authority given by the Division to an employer permitting the use of a specific alternative means or method to comply with the intent of a rule. Specific types of variances are:

(a) Permanent — A variance that remains in effect until modified or revoked in accordance with OAR 437-001-0430;

(b) Temporary — A variance granted for a stated period of time to permit the employer to achieve compliance with a new rule;

(c) Research — A variance granted for a stated period of time to allow industrial or governmental research designed to demonstrate or validate new and improved safety or health techniques or products; and

(d) Interim order — The temporary authority for an employer to use an alternative means or method by which the employer effectively safeguards the safety and health of employees until final action can be taken on the variance request.

(62) Violation — The breach of a person's duty to comply with an Oregon occupational safety or health statute, regulation, rule, standard or order.

(a) Specific classifications of violations are:

(A) Serious violation — A violation in which there is a substantial probability that death or serious physical harm could result from a condition which exists, or from one or more practices, means, methods, operations or processes which have been adopted or are in use in a place of employment unless the employer did not, and could not with the exercise of reasonable diligence, know of the presence of the violation;

(B) Other than serious violation — A violation which is other than a serious or minimal violation; and

(C) Minimal violation — A violation which does not have a direct or immediate relationship to the safety or health of employees.

(b) Specific types of the above classifications are:

(A) Willful violation — a violation that is committed knowingly by an employer or supervisory employee who, having a free will or choice, intentionally or knowingly disobeys or recklessly disregards the requirements of a statute, regulation, rule, standard or order.

(B) Unabated violation — A violation that has not been fully corrected by the date ordered.

(C) Repeat violation:

(i) An employer's second or subsequent violation of the requirements of the same statute, regulation, rule, standard or order.

(ii) Subsequent violations shall not be considered to be a repeat when more than 36 months have elapsed and the violation has not reoccurred.

(iii) In these rules, Repeat, Repeated and Repeatedly are used as synonyms.

(D) First-instance violation — An employer's first violation of a particular statute, regulation, rule, standard or order.

(E) Egregious — Those conditions which normally constitute a flagrant violation of the OSEAct or OR-OSHA standards or regulations such that each instance of the violation is cited separately.

(c) Combined violation — Multiple violations of the same statute, regulation, rule, standard or order within an establishment which have been combined as one violation to indicate an overall lack of compliance with a safety or health statute, regulation, rule, standard or order.

(d) Grouped violation — Multiple violations of different statutes, regulations, rules, standards or orders, within an establishment which have been combined as one violation:

(A) To indicate an increase in the severity or probability of the violation; or

(B) Recordkeeping and posting requirements involving the same document; or

(C) The violations are so closely related as to constitute a single hazardous condition.

Stat. Auth.: ORS 654.025(2), 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCB 8-1975, f. 8-5-75, ef. 9-1-75; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD , 7-1979, f. 8-20-79, ef. 9-1-79; WCD 4-1981, f. 5-22-81, ef. 7-1-81; WCD 6-1982, f. 6-28-82, ef. 8-1-82; WCD 9-1983, f. & ef. 11-15-83; WCD 2-1984, f. 3-2-84, ef. 3-15-84; WCD 12-1984, f. 9-20-84, ef. 11-1-84; WCD 9-1986, f. 10-7-86, ef. 12-1-86; APD 6-1987, f. 12-23-87, ef. 1-1-88; APD 7-1988, f. 6-17-88, ef. 7-1-74; OSHA 10-1990(Temp), f. & cert. ef. 5-31-90; OSHA 24-1990, F. & cert. ef. 10-10-90; OSHA 7-1992, f. 7-31-92, cert. ef. 10-1-92; OSHA 6-1994, f. & cert. ef. 9-30-94; OSHA 2-1996, f. & cert. ef. 6-13-96; OSHA 5-1998, f. & cert. ef. 10-15-98; OSHA 7-1999, f. & cert. ef. 7-15-99; OSHA 11-1999(Temp), f. & cert. ef. 10-20-99 thru 4-14-00; OSHA 4-2000, f. 4-14-00, cert. ef. 4-15-00; OSHA 11-2001, f. 9-14-01, cert. ef. 1-1-02; OSHA 7-2002, f. & cert. ef. 11-15-02; OSHA 6-2003, f. & cert. ef. 11-26-03; OSHA 7-2006, f. & cert. ef. 9-6-06; OSHA 5-2007(Temp), f. & cert. ef. 9-5-07 thru 2-29-08

437-001-0020
Authority to Administer

(1) The Administrator is hereby granted authority to do whatever is reasonably necessary or incidental to accomplish the purposes of the act and these rules.

(2) The Administrator shall administer the Voluntary Compliance Program separately from the enforcement activities. The Voluntary Compliance Program includes but is not limited to, education, consultations, demonstration programs and research.

(3) The Administrator shall name employees or classifications of employees who shall have authority to carry out the voluntary compliance and enforcement provisions of the Oregon Safe Employment Act.

(4) The official acts of the Administrator in administering and enforcing the Oregon Safe Employment Act, and the acts of those designated by the Administrator, shall be considered the official acts of the Director.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
His.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCB 8-1975, f. 8-5-75, ef. 9-1-75; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; APD 6-1987, f. 12-23-87, ef. 1-1-88; APD 7-1988, f. 6-17-88, ef. 7-1-74

437-001-0025
Liberal Construction

The Act, other rules adopted thereunder, and these rules shall be liberally construed to accomplish the preventative purposes expressed in the Act.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCD 5-1978, f. 6-22-78, ef. 8-15-78; APD 7-1988, f. 6-17-88, ef. 7-1-74

437-001-0030
Use of Gender and Number

For the purpose of these rules, each gender includes the other gender, the singular includes the plural and the plural includes the singular.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCD 5-1978, f. 6-22-78, ef. 8-15-78; APD 7-1988, f. 6-17-88, ef. 7-1-74; OSHA 7-1999, f. & cert. ef. 7-15-99

437-001-0035
Occupational Safety and Health Rules

(1) The Division shall propose occupational safety and health rules for adoption by the Director. Proposed rules shall be:

(a) Reasonable;

(b) Mandatory;

(c) Designed to protect the life, safety and health of employees; and

(d) At least as effective as occupational safety and health rules adopted by the U.S. Department of Labor.

(2) In proposing rules for adoption, the Division may consider recommendations from national standards-setting organizations, the U.S. Department of Labor, National Institute of Occupational Safety and Health (NIOSH), Centers for Disease Control (CDC), employers, employees, employee representatives and the Division's occupational safety and health experience.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCB 8-1975, f. 8-5-75, ef. 9-1-75; WCD 5-1978, f. 6-22-78, ef. 8-15-78; APD 7-1988, f. 6-17-88, ef. 7-1-74; OSHA 7-1999, f. & cert. ef. 7-15-99

437-001-0045
Adoption, Amendment or Repeal of Rules

(1) Rules will be adopted, amended or repealed in accordance with ORS Chapter 183 and the Director's rules of practice and procedure applicable to rule-making functions.

(2) Any person may request the adoption, amendment or repeal of a rule.

(3) A request for adoption, amendment or repeal of a rule shall:

(a) Be in writing, addressed to the Administrator, OR-OSHA Division, Labor and Industries Building, Salem, Oregon 97310;

(b) Identify the rule proposed for adoption, amendment or repeal and include reasons for the change.

(4) Upon receipt of the request the Division shall within 30 days, either deny the request or initiate rule-making proceedings.

(5) If the request to adopt, amend or repeal a rule is denied, the Division shall state its reasons for the denial in writing. A copy shall be mailed to the person making the request and all other persons upon whom a copy of the request was served.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCD 5-1978, f. 6-22-78, ef. 8-15-78; APD 7-1988, f. 6-17-88, ef. 7-1-74

437-001-0047
Voluntary Compliance Program, General

(1) The Division shall provide a coordinated program to encourage voluntary compliance with occupational health and safety laws, rules and codes and to promote more effective workplace health and safety programs.

(2) The program shall be designed to assist employers achieve voluntary compliance and shall be administered to preclude issuance of citations and penalties except when an employer fails to correct serious violations identified.

(3) The program shall include but is not limited to:

(a) Health and safety consultative services;

(b) Worker and employer training and education;

(c) Research projects including: Causes and prevention of industrial accidents and diseases; trends demonstrating the need for licensing, certification, or need or revised rules;

(d) Demonstration projects utilizing new or innovative processes or procedures to assist workers and employers in preventing occupational injury or disease, whatever the cause;

(e) Publication and general distribution of training and accident prevention materials.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 6-1987, f. 12-23-87, ef. 1-1-88; APD 7-1988, f. 6-17-88, ef. 7-1-74

437-001-0050
Enforcement Program, General

The Division shall provide an effective program to enforce statutes, regulations, rules, standards or orders for the protection of life, safety and health of employees. This program shall include, but is not limited to:

(1) The inspection of places of employment;

(2) The investigation of industrial accidents, fatalities or catastrophes;

(3) Issuing citations for violations;

(4) Identifying safety and health hazards which may or may not be violations and bringing them to the attention of employers and employees;

(5) Issuing reasonable correction orders;

(6) Assisting employers and employees in safety and health matters;

(7) Assessing and collecting civil monetary penalties for violations;

(8) Holding informal conferences with employers or employees to discuss citations, penalties or correction orders and other safety and health matters without limiting or extending the employer's appeal rights; and

(9) Granting or denying extensions of the times set by correction orders.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; WCD 6-1982, f. 6-28-82, ef. 8-1-82; APD 6-1987, f. 12-23-87, ef. 1-1-88; APD 7-1988, f. 6-17-88, ef. 7-1-74

437-001-0053
Preserving Physical Evidence at the Scene of an Accident

(1) Employers, their representatives, or others shall not disturb the scene of a fatality or catastrophe other than to conduct the rescue of injured persons or mitigate an imminent danger until authorized by the Administrator (or designee), or directed by a recognized law enforcement agency.

(2) In order to preserve physical evidence at the scene of a fatality or catastrophe, the Administrator is authorized to limit the number of employer representatives or employee representatives accompanying the compliance officer during the documentation of the scene. The employer representative and employee representative must be provided an opportunity to document the scene prior to disturbance or removal of physical evidence.

(3) If an employer, their representative or others disturb the scene of a fatality or catastrophe other than to conduct the rescue of injured person(s) or mitigate an imminent danger before authorized by the Administrator or directed by a recognized law enforcement agency, a minimum penalty of $200 may be assessed.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 7-1992, f. 7-31-92, cert. ef. 10-1-92; OSHA 7-1999, f. & cert. ef. 7-15-99

Inspections

437-001-0055
Priority of Inspections

Inspections shall be prioritized to predominantly focus enforcement activities upon places of employment reasonably believed to be the most unsafe. Inspections should be made according to the following priorities:

(1) Imminent danger — An inspection shall be made as soon as possible after the Division becomes aware of the condition or practice.

(2) Fatality, catastrophe or accident — An investigation may be made as soon as possible after the Division becomes aware of a fatality, catastrophe or accident.

(3) Complaint — An inspection may be initiated when the Division receives a complaint and the nature of the information indicates the complaint's probable validity.

(4) Referral — An inspection may be made if safety or health violations were observed by a Division employee or other federal, state or local governmental representative and the nature of the information indicates the referral's probable validity.

(5) Programmed Inspections — An inspection may be made by following the provisions in OAR 437-001-0057.

(6) Follow-up — An inspection:

(a) Shall be initiated when the employer requests removal of a Red Warning Notice; or

(b) Shall be initiated when a stay of correction or a variance has been denied; or

(c) May be initiated when an extension of time has been denied; or

(d) May be initiated when the Division believes the employer is not in compliance or to monitor progress towards correction of a violation; or

(e) May be initiated when the employer is issued a citation with a correction order for one or more serious violations.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; WCD 6-1982, f. 6-28-82, ef. 8-1-82; APD 6-1987, f. 12-23-87, ef. 1-1-88; APD 7-1988, f. 6-17-88, ef. 7-1-74; OSHA 7-1992, f. 7-31-92, cert. ef. 10-1-92; OSHA 11-1999(Temp), f. & cert. ef. 10-20-99 thru 4-14-00; OSHA 4-2000, f. 4-14-00, cert. ef. 4-15-00

437-001-0057
Scheduling Inspections

The following rules are intended to predominantly focus enforcement activities on the places of employment that the director reasonably believes to be the most unsafe.

(1) The Division will schedule programmed inspections according to a priority system based on neutral administrative standards.

(2) The Division will identify the most hazardous industries and places of employment through information obtained from the Department of Consumer and Business Services claim and employer files, the Bureau of Labor Statistics Occupational Injury and Illness Survey, and knowledge of recognized safety and health hazards associated with certain processes. Health hazards include carcinogens, lead, silica, toxic metals and fumes, vapors or gases, toxic or highly corrosive liquids or chemicals, chemical sensitizers, pesticides, fungicides, solvents, harmful physical stress agents and biological agents.

(3) Scheduling lists will be provided by the Division to its field offices, at least on an annual basis.

(4) Scheduling of Fixed Places of Employment for Safety Inspections.

(a) The following scheduling lists are designed as an electronic scheduling system used by safety enforcement managers to schedule fixed places of employment for each compliance officer. The scheduling lists will be sorted by field office. Employers will be selected and placed on one of four lists based on the following criteria:

(A) List A — Fixed places of employment, excluding agriculture, which have 11 or more employees. The following neutral administrative criteria will be used to place employers on this list: 1) one or more accepted disabling claims in the first 12 of the previous 18 months, and 2) no comprehensive safety inspection within the previous 24 months. The employers on this list will be ranked using SIC, Violation History, Weighted Claims Rate, and Weighted Claims as described in subsection (b) of this section.

(B) List B — Fixed places of employment, excluding agriculture, which have 10 or fewer employees. The following neutral administrative criteria will be used to place employers on this list: 1) one or more accepted disabling claims in the first 12 of the previous 18 months, and 2) no comprehensive safety inspection within the previous 24 months. The employers on this list will be ranked using SIC, Violation History, Weighted Claims Rate, and Weighted Claims as described in subsection (b) of this section.

(C) List C — Agriculture places of employment (SIC 01, 02, 0711, 0721, 0722, 0723, 0761, 0762, 0783, 0811) which have 11 or more employees. The following neutral administrative criteria will be used to place employers on this list: 1) one or more accepted disabling claims in the first 12 of the previous 18 months, and 2) no comprehensive safety inspection within the previous 24 months. The employers on this list will be ranked using SIC, Violation History, Weighted Claims Rate, and Weighted Claims as described in subsection (b) of this section.

(D) List D — Agriculture places of employment (SIC 01, 02, 0711, 0721, 0722, 0723, 0761, 0762, 0783, 0811) which have 10 or fewer employees. The following neutral administrative criteria will be used to place employers on this list: 1) one or more accepted disabling claims in the first 12 of the previous 18 months, and 2) no com- prehensive safety inspection within the previous 24 months. The employers on this list will be ranked using SIC, Violation History, Weighted Claims Rate, and Weighted Claims as described in subsection (b) of this section.

(b) Ranking Factors: The employers on scheduling lists A, B, C and D are ranked using High Hazard SIC, Violation History, Weighted Claims Rate, and Weighted Claims Count. The rankings from each factor are combined to produce a score for each employer, and the employers are ranked by field office based on their score.

(A) High Hazard SIC: The High Hazard SIC ranking comes from the Bureau of Labor and Statistics (BLS) with employers in an industry ranked as number one by BLS receiving a ranking of one and employers in an industry ranked as 200 by BLS receiving a ranking of 200. Employers in a SIC not ranked by BLS receive a rank of 999. For Agriculture lists, all employers will receive the same ranking of 999 since Agriculture SIC's are not ranked by BLS.

(B) Violation History: Employers with a violation history will be assigned points for each violation on citations that have become a final order within the previous 36 months. Willful violations are assigned five points, failure to abate violations four points, repeat violations three points, serious violations two points, and other-than-serious violations one point. Points are added together with the employer having the most points receiving a ranking of one followed by the employer with the next highest points receiving a ranking of two, etc. Employers not inspected within 36 months are given a ranking of zero, which will put them at the top of this category.

(C) Weighted Claims Count: Selected Claims from the first 12 of the previous 18 months are assigned points based on the seriousness of the claim. These points are totaled for each employer. Employers are ranked on the total points with the employer having the most points receiving a rank of one, followed by the second highest weighted claims count receiving a ranking of two, etc.

(D) Weighted Claims Rate: Employers are ranked in this category with the highest weighted claims rate receiving a ranking of one, followed by the second highest weighted claims rate receiving a ranking of two, etc. The weighted claims count described in (C) above is used to determine the claims rate.

NOTE: The selected claims and the points assigned to the selected claims will be identified by the agency in a Program Directive.

(c) The Field Office Managers will provide each Compliance Officer a list of inspections that are assigned in descending order from lists A through D. The Compliance Officer will make a reasonable effort to inspect each employer on that list prior to receiving another list, however failure to inspect all employers on a list will not invalidate subsequent inspections. The Compliance Officer's list will generally be followed in descending order but may be inspected in any order to utilize the Compliance Officer's time efficiently.

(d) No more than one scheduled comprehensive safety inspection will be made at any particular fixed place of employment in any 24-month period unless the place of employment has five or more accepted disabling claims or has processes or operations which vary within the 24-month period.

(5) Scheduling of Construction and Logging Employers for Safety Inspections.

(a) Construction and logging scheduling lists will be used by safety enforcement mana- gers and compliance staff to focus enforcement efforts on employers with the most hazardous places of employment. Employers will be selected and placed on one of two lists based on the following criteria:

(A) Construction List — The following neutral administrative criteria will be used to select and rank employers on this list: Construction employers which have one or more accepted disabling claims in the first 12 of the previous 18 months and are ranked in the top 500 construction employers. The employers on this list will be ranked statewide using Violation History, Weighted Claims Rate, and Weighted Claims Count as described in subsection (b) of this section. The 500 employers with the most points will be placed on a list.

(B) Logging List — The following neutral administrative criteria will be used to select and rank employers on this list: Logging employers which have one or more accepted disabling claims in the first 12 of the previous 18 months and are ranked in the top 50 logging employers. The employers on this list will be ranked statewide using Violation History, Weighted Claims Rate, and Weighted Claims Count

as described in subsection (b) of this section. The 50 employers with the most points will be placed on a list.

(b) Ranking Factors: Construction and logging employers are ranked using Violation History, Weighted Claims Rate, and Weighted Claims Count. The rankings from each factor are combined to produce a score for each employer, and the employers are ranked based on their score. The top 500 construction employers will be on one list and the top 50 logging employers will be on another list:

(A) Violation History: Employers with a violation history will be assigned points for each violation on citations that have become a final order within the previous 36 months. Willful violations are assigned five points, failure to abate violations four points, repeat violations three points, serious violations two points, and other-than-serious violations one point. An average points per citation will be determined with the employer having the most points receiving a ranking of one followed by the employer with the next highest points receiving a ranking of two, etc. Employers not inspected within 36 months are given a ranking of zero, which will put them at the top of this category.

(B) Weighted Claims Count: Selected Claims from the first 12 of the previous 18 months are assigned points based on the seriousness of the claim. These points are totaled for each employer. Employers are ranked on the total points with the employer having the most points receiving a rank of one, followed by the second highest weighted claims count receiving a ranking of two, etc.

(C) Weighted Claims Rate: Employers are ranked in this category with the highest weighted claims rate receiving a ranking of one, followed by the second highest weighted claims rate receiving a ranking of two, etc. The weighted claims count described in (B) above is used to determine the claims rate.

NOTE: The selected claims and the points assigned to the selected claims will be identified by the agency in a Program Directive.

(c) The field office manager will provide selected Compliance Officers the construction and/or logging lists. The Compliance Officers will make a reasonable effort to locate and inspect those employers on the construction and logging lists, however failure to inspect all employers on a list will not invalidate subsequent inspections.

(6) Scheduling of Fixed Places of Employment for Health Inspections.

(a) The health scheduling lists are designed as an electronic scheduling system used by health enforcement managers to schedule fixed site inspections for each compliance officer. The scheduling lists will be sorted by field office. Employers will be selected and placed on one of four lists based on the following criteria:

(A) List E — Fixed places of employment in SIC of 13, 15-51, 598, 72-76, 80, 822, 8731, 8734, 8744, or 922 which have 11 or more employees. The following neutral administrative criteria will be used to place employers on this list: 1) one or more disabling health claims in the previous 36 months, or 2) a health inspection with one or more health violations in the previous 36 months, and 3) no comprehensive health inspection within the previous 24 months.

(B) List F — Fixed places of employment in SIC of 13, 15-51, 598, 72-76, 80, 822, 8731, 8734, 8744, or 922 which have 10 or fewer employees. The following neutral administrative criteria will be used to place employers on this list: 1) one or more disabling health claims in the previous 36 months, or 2) a health inspection with one or more health violations in the previous 36 months, and 3) no comprehensive health inspection within the previous 24 months.

(C) List G — Agriculture places of employment (SIC 01, 02, 0711, 0721, 0722, 0723, 0761, 0762, 0783, 0811) which have 11 or employees. The following neutral admin- istrative criteria will be used to place employers on this list: 1) one or more disabling health claims in the previous 36 months, or 2) a health inspection with one or more health violations in the previous 36 months, and 3) no comprehensive health inspec- tion within the previous 24 months.

(D) List H — Agriculture places of employment (SIC 01, 02, 0711, 0721, 0722, 0723, 0761, 0762, 0783, 0811) which have 10 or fewer employees. The following neutral administrative criteria will be used to place employers on this list: 1) one or more disabling health claims in the previous 36 months, or 2) a health inspection with one or more health violations in the previous 36 months, and 3) no comprehensive health inspection within the previous 24 months.

(b) Ranking Factors: The employers on the scheduling lists are ranked using Location Weighted Claims Count, Location Violation History, Employer Weighted Claims Count, Employer Violation History, SIC Claims Count, SIC Violation History, and High Hazard SIC. The rankings from each factor are combined to produce a score for each employer, and the employers are ranked by field office based on their score.

(A) Location Weighted Claims Count: Selected location health claims from the first 12 of the previous 18 months are assigned points based on the seriousness of the claim, and these points are totaled for each employer. Employers are ranked on the total points with the employer having the most points receiving a rank of one followed by the employer with the next highest points receiving a ranking of two, etc.

(B) Location Violation History: Employers with a location health violation history will be assigned points for each health violation per health inspection at the location that have become a final order within the past 36 months. Willful violations are assigned five points, failure to abate violations four points, repeat violations three points, serious violations two points, and other-than-serious violations one point. Points are added together with the employer having the most points receiving a ranking of one followed by the employer with the next highest points receiving a ranking of two, etc.

(C) Employer Weighted Claims Count: Employer selected health claims from the first 12 of the previous 18 months are assigned points based on the seriousness of the claim, and these points are totaled for each employer. Employers are ranked on the total points with the employer having the most points receiving a rank of one followed by the employer with the next highest points receiving a ranking of two, etc.

(D) Employer Violation History: Employers with a health violation history are assigned points for each health violation received per health inspection that have become a final order within the past 36 months. Willful violations are assigned five points, failure to abate violations four points, repeat violations three points, serious violations two points, and other-than-serious violations one point. Points are added together with the employer with the most points receiving a ranking of one followed by the employer with the next most points receiving a ranking of two, etc.

(E) SIC Claims Count: Employers are ranked in this category by the number of selected claims in their three digit SIC over the previous 36 months and the weight factor assigned to the selected claims with the highest number receiving a ranking of one followed by the second highest receiving a ranking of two, etc.

(F) SIC Violation History (not weighted): Employers are ranked in this category by the number of health violations per number of health inspections in their three digit SIC in the previous 36 months. The three digit SIC with the most violations receives a ranking of one followed by the second most receiving a ranking of two, etc.

(G) High Hazard SIC: The High Hazard SIC ranking comes from the Bureau of Labor and Statistics (BLS) with employers in an industry with the number one ranking by BLS receiving a ranking of one and employers in an industry with a ranking of 200 by BLS receiving a ranking of 200. Employers in a SIC not ranked by BLS receive a rank of 999. For Agriculture lists, all employers receive the same ranking of 999 since Agriculture SIC's are not ranked by BLS.

NOTE: The selected claims and the points assigned to the selected claims will be identified by the agency in a Program Directive.

(c) The Field Office Managers will provide each Compliance Officer a list of inspections that are assigned in descending order from lists E through H. The Compliance Officer will make a reasonable effort to inspect each employer on that list prior to receiving another list, however failure to inspect all employers on a list will not invalidate sub- sequent inspections. The Compliance Officer's list will generally be followed in descen- ding order but may be inspected in any order to utilize the Compliance Officer's time efficiently.

(d) No more than one scheduled comprehensive health inspection will be made at any particular fixed place of employment in any 24-month period unless the place of employ- ment has five or more accepted disabling claims or has processes or operations which vary within the 24-month period.

(7) Scheduling of Nonfixed Places of Employment for Health Inspections — An inspection may be scheduled when from information available to the Division, recognized health hazards known to be associated with certain processes, are reasonably thought to exist at the place of employment, and the Division determines the location of a work-site.

(8) Random Inspections — The Division will conduct random inspections of places of employment that are scheduled and conducted pursuant to written neutral administrative standards. The standards will be issued as Program Directives and changed when the Director believes it necessary to preserve the random nature of the inspections.

(9) Emphasis Inspections — An inspection may be made if the place of employment is included in a National or Local safety or health Emphasis Program. Emphasis programs are established by identifying the most hazardous industries and processes through information obtained from the Department of Consumer and Business Services claim files, the Bureau of Labor Statistics Occupational Injury and Illness Survey, and knowledge of recognized hazards associated with certain processes. Program Directives will be issued to establish and describe emphasis programs and the neutral administrative criteria that will be used to schedule the inspections.

(10) Farm Labor Housing Inspections — Farm labor housing is a National and Local Emphasis program. A list of all known farm housing locations will be sent to field offices annually. Locations may be selected and inspected in any order to make efficient use of available resources. Housing locations not on the list may also be inspected. Farm Labor Housing is not an agricultural operation, therefore the agriculture exemption for employers of 10 or fewer permanent, year-round employees does not apply to farm labor housing inspections.

(11) The Division will make reasonable efforts to notify, in writing, each employer whose place of employment is rated as one of the most unsafe places of employment in the state of the increased likelihood of inspection of the employer's place of employment and of the availability of consultative services.

(a) Notification will be done on an annual basis and sent, by regular mail, to the last known address on record with the Division.

(b) Failure to provide notification to an employer pursuant to this section will not invalidate a subsequent inspection.

(12) Agricultural Employers with 10 or fewer permanent, year-round employees, both full-time and part-time, will be subject to scheduled inspections only if any of the following has occurred:

(a) A valid complaint has been filed pursuant to ORS 654.062, or

(b) Within a 2-year period preceding the proposed inspection date, an accident at the agricultural employer's establishment has resulted in death or an injury or illness result- ing in an overnight hospital admission for medical treatment or more than 3 days of lost work, or

(c) The employer and principal supervisors of the agricultural establishment have not completed annually at least 4 hours of instruction on agricultural safety or health rules and procedures. This instruction must be documented.

(A) The instruction will include any conducted or accepted by OR-OSHA. Instruction related to agricultural safety and health that is offered or approved by any public or private college or university or governmental agency will be deemed to be automati- cally accepted. Documentation of instruction must be maintained by the employer. Such documentation must include the date, provider and duration of the instruction, the subject covered and the signature of the person completing the instruction.

NOTE: Certified Applicator Training Core A and B offered by the Oregon Department of Agriculture, will satisfy a portion of the required training. One hour credit will be allowed annually for this training.

(B) For purposes of these sections, the time period begins to run when the instruction is received, or

(d) Within the preceding 4-year period the agricultural establishment has not had a comprehensive consultation by an individual acting in a public or private consultant capacity. For purposes of this section, the time period begins to run when the con- sultation is received, or

(e) If the consultation was done, the agricultural employer has failed to correct violations noted in the consultation report within 90 days of receipt of the report.

NOTE: For purposes of determining the number of employees, members of the agricultural employer's immediate family are excluded. This includes grandparents, parents, children, step-children, foster children and any blood relative living as a dependent of the core family.

(13) Effective Dates. The effective date for 437-001-0057(4) through (6) is October 1, 2000. The effective date for all other paragraphs in 437-001-0057 is April 15, 2000.

Stat. Auth.: ORS 654.025(2), 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCD 4-1981, f. 5-22-81, ef. 7-1-81; WCD 6-1982, f. 6-28-82, ef. 8-1-82; APD 6-1987, f. 12-23-87, ef. 1-1-88; APD 7-1988, f. 6-17-88, ef. 7-1-74; OSHA 7-1992, f. 7-31-92, cert. ef. 10-1-92; OSHA 10-1995, f. & cert. ef. 11-29-95; OSHA 2-1996, f. & cert. ef. 6-13-96; OSHA 11-1999(Temp), f. & cert. ef. 10-20-99 thru 4-14-00; OSHA 4-2000, f. 4-14-00, cert. ef. 4-15-00; OSHA 7-2006, f. & cert. ef. 9-6-06

437-001-0060
Advance Notice

(1) No person shall give advance notice of an inspection without authority of the Director, subject to penalties as prescribed in ORS 654.991(2).

(2) If the Director approves a request for advance notice of an inspection:

(a) The notice shall not be given more than 24 hours in advance; and

(b) When advance notice is given to the employer, the employer shall, without delay, notify the employee representative of the proposed inspection, or in the absence of an employee representative, immediately post a notice in a sufficient number of locations in the place of employment to reasonably inform employees of the planned inspection. Any employer who fails to notify the employees, through posting, of the proposed inspection shall be assessed a penalty not to exceed $1,000 as prescribed in ORS 654.086(1)(f).

(3) It will not be considered advance notice to advise a federal or state agency of a proposed inspection in order to avoid duplicate inspections or to facilitate enforcement.

(4) Any person who gives advance notice of any safety or health inspection without authority from the director or his designee shall be punished, upon conviction, by being assessed a penalty not to exceed $1,000 or be imprisoned for not more than six months, or both, as prescribed in ORS 654.991(2).

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 19-1974, f. 6-5-7-4, ef. 7-1-74; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; WCD 6-1982, f. 6-28-82, ef. 8-1-82; APD 6-1987, f. 12-23-87, ef. 1-1-88; APD 7-1988, f. 6-17-88, ef. 7-1-74

437-001-0065
Right of Entry

(1) A Compliance Officer has the right to enter and inspect any place of employment during working hours or at other reasonable times, within reasonable limits, and in a reasonable manner.

(2) Right of Entry. A compliance officer is authorized to document an accident scene reported pursuant to OAR 437-001-0700(21) prior to an opening conference when it is likely that the accident scene cannot be preserved and after a reasonable attempt is made to contact an employer or employer representative.

(3) A Compliance Officer shall present his/her credentials to an employer or employer's representative to establish the Compliance Officer's right of entry.

(4) The Compliance Officer shall not sign any form of liability release or agree to waive any rights of the Department.

(5) The Compliance Officer shall have the right to enter and inspect any place of employment accompanied or assisted by outside engineers or specialists who have signed confidentiality agreements, agreeing to protect the inspected parties' trade secrets.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 6-1982, f. 6-28-82, ef. 8-1-82; APD 6-1987, f. 12-23-87, ef. 1-1-88; APD 7-1988, f. 6-17-88, ef. 7-1-74; OSHA 7-1999, f. & cert. ef. 7-15-99; OSHA 7-2002, f. & cert. ef. 11-15-02

437-001-0070
Inspection Warrants

If an OSS/OHS is denied entry, the APD may institute action to obtain an inspection warrant, as provided for in ORS 654.202 to 654.216.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; APD 6-1987, f. 12-23-87, ef. 1-1-88; APD 7-1988, f. 6-17-88, ef. 7-1-74

437-001-0075
Opening Conference

(1) The Compliance Officer shall, if possible, conduct a joint opening conference with the employer or a representative, and a representative of the employees, if any, and shall:

(a) Present credentials as a means of identification;

(b) Explain the purpose, nature and intended scope of the inspection;

(c) Request the records which need to be examined;

(d) Obtain the name of the employer representative, if any, and give that person the opportunity to accompany the Compliance Officer on the inspection;

(e) Explain that employee participation may be accomplished through random interviews;

(f) Determine if there are trade secrets to be protected;

(g) Inform the employer that sampling may be done and photographs may be taken;

(h) Explain that all violations which would normally be assessed a penalty and which are corrected prior to the end of the inspection will result in penalty reductions;

(i) Determine what personal protective equipment is required to have and use such equipment; and

(j) Explain that a closing conference will be held with both the employer or a representative, and a representative of the employees, if any.

(2) Where the Compliance Officer decides it is not practical to hold a joint conference, separate conferences shall be held for the employer or a representative, and a representative of the employees, if any. Notes shall be taken by the Compliance Officer during the separate conferences; these will be available upon request.

(3) Where separate conferences are necessary, the Compliance Officer shall determine if their conduct will delay observation or evaluation of workplace safety or health hazards. In such cases, the conferences shall be brief and, if appropriate, reconvened after the Compliance Officer's inspection of the place of employment.

(4) Where the holding of an opening conference will prevent timely evaluation of the workplace, it may be abbreviated to a simple introduction and identification of the Compliance Officer. The remainder of the opening conference will be covered as soon as possible.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; WCD 6-1982, f. 6-28-82, ef. 8-1-82; APD 6-1987, f. 12-23-87, ef. 1-1-88; APD 7-1988, f. 6-17-88, ef. 7-1-74

437-001-0080
Inspection Without Employer or Employer Representative

(1) An Compliance Officer may make an inspection without an opening or closing conference if the employer or employer representative is absent or declines to participate.

(2) If the employer, employer representative or employee representative is absent from the place of employment, following the inspection the Compliance Officer shall make at least one attempt on each of two different days to advise the employer, employer representative or employee representative concerning the inspection.

(3) No inspection will be made if neither the employer, employer representative, nor employees are present at the place of employment, except when executing an inspection warrant as provided in ORS 654.216(2) or when posting a Red Warning Notice as provided for in ORS 654.082.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCB 8-1974, f. 8-5-75, ef. 9-1-75; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; WCD 6-1982, f. 6-28-82, ef. 8-1-82; APD 6-1987, f. 12-23-87, ef. 1-1-88; APD 7-1988, f. 6-17-88, ef. 7-1-74

437-001-0085
Employee Representation on Inspection Team

(1) An employee representative has the right to accompany an Compliance Officer during an inspection of the place of employment.

(2) If there is no employee representative during an inspection, the Compliance Officer shall interview, if practicable, a reasonable number of employees about safety and health in the place of employment.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; APD 6-1987, f. 12-23-87, ef. 1-1-88; APD 7-1988, f. 6-17-88, ef. 7-1-74

437-001-0090
Inspection Procedures

During an inspection an Compliance Officer is authorized to:

(1) Inspect without unreasonably disrupting operations in a place of employment all required records, conditions, structures, materials and methods for compliance with statutes, regulations, rules, standards and orders, and identify and document hazards;

(2) Photograph or video tape unsafe acts, practices, procedures or physical hazards;

(3) Take environmental and personal exposure samples;

(4) Allow a different employer representative or employee representative to accompany the Compliance Officer during separate phases of the inspection if this will facilitate the inspection;

(5) Resolve all disputes as to who is the representative authorized by the employees to accompany the Compliance Officer on the inspection.

(6) Deny the right to participate to any person whose conduct interferes with a fair and orderly inspection;

(7) Inform the employer representative and employee representative of any apparent violations, and hazards;

(8) Collect, including but not limited to, information for the purpose of classifying any apparent violations as minimal, other than serious, or serious and collect data for the purpose of calculating penalty assessment;

(9) Interview privately a reasonable number of employees about safety and health in the place of employment;

(10) Receive information in confidence from an employee or employee representative; and

(11) Stop the inspection if a situation involving imminent danger is observed, request the employer or the employer representative to advise affected employee and correct the imminent danger, and post a Red Warning Notice according to OAR 436-046-0096, if the employer or the employer representative refuses to protect the employees from the imminent danger.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCB 8-1975, f. 8-5-75, ef. 9-1-75; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; WCD 6-1982, f. 6-28-82, ef. 8-1-82; APD 6-1987, f. 12-23-87, ef. 1-1-88; APD 7-1988, f. 6-17-88, ef. 7-1-74; OSHA 7-1992, f. 7-31-92, cert. ef. 10-1-92

437-001-0096
Red Warning Notice

(1) The Red Warning Notice shall be authorized by either the Director, Administrator, Manager of Enforcement, or Field Office Supervisors. For purposes of this rule, a Camp Closure Notice is a Red Warning Notice.

(2) When action is necessary to preclude or eliminate exposure of employees to a condition which, if such exposure occurred or continued, would constitute a violation of any statute or of any lawful regulation, rule, standard or order, affecting employee safety or health at a place of employment, a Compliance Officer shall obtain permission to post a Red Warning Notice. The notice shall be posted in plain view of any person likely to use the place of employment, machine, device, apparatus or equipment that constitutes the hazard.

(3) Any place of employment, machine, device, apparatus or equipment on which a Red Warning Notice has been posted shall not be operated or used by any person until:

(a) The condition has been made safe and healthful; and

(b) The Red Warning Notice has been removed by the Division; however

(c) Nothing in this section prohibits an employer from using any place of employment, or operating any machine, device, apparatus or equipment, exclusively for the purpose of remedying the violation, pursuant to the instructions on the Red Warning Notice.

(4) No person shall deface or destroy a Red Warning Notice, or remove it without authorization from the Division.

(5) The Red Warning Notice will be removed after:

(a) Notification from the employer that the condition has been corrected; and

(b) A follow-up inspection or other information confirms that the condition has been corrected.

(6) Any person who violates or directs another to violate OAR 437-001-0096(3) or (4) shall be assessed a civil penalty of not less than $100 and not more than $5000 for each such violation.

(7) Any employer who violates or directs an employee to violate OAR 437-001-0096(3), and the violation is determined to be a willful violation, may be assessed a civil penalty of not less than $5,000 and not more than $70,000.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; WCD 6-1982, f. 6-28-82, ef. 8-1-82; APD 6-1987, f. 12-23-87, ef. 1-1-88; APD 7-1988, f. 6-17-88, ef. 7-1-74; OSHA 7-1992, f. 7-31-92, cert. ef. 10-1-92; OSHA 6-2003, f. & cert. ef. 11-26-03

437-001-0099
Closing Conference

(1) The OSS/OHS shall, if practicable, conduct a joint closing conference with the employer or a representative, and a representative of the employees, if any, and shall advise these representatives:

(a) Of any violation(s) as a result of the inspection and of any hazards which at this time may not be a violation;

(b) Of the right to present any pertinent information regarding the violation(s);

(c) That a citation shall be issued for all other than serious or serious violations even if the violations were corrected at the time of the inspection;

(d) That penalties may be imposed for other than serious violations and shall be imposed for serious violations;

(e) That a reasonable time for correction of each alleged violation shall be proposed;

(f) That further correspondence separate from the citation regarding the inspection will be received detailing the nonviolation hazards observed during the inspection;

(g) Of all posting requirements contained in OAR 437-001-0275 and 437-001-0280;

(h) That if the employer fails to correct any violation by the date indicated on the citation, additional penalties may be imposed for each day the violation(s) remains uncorrected (see OAR 437-001-0235);

(i) Of employee protection against discrimination (see OAR 437-001-0295);

(j) Of appeal rights contained in ORS 654.078 and OAR 438-085-0006 to 438-085-0870;

(k) Of rights to an informal conference (see OAR 437-001-0255);

(l) Of extension procedures (see OAR 437-001-0240);

(m) Of consultative services available through the Department and workers' compensation insurance carriers (see OAR 437-001-0450 through 437-001-0465);

(n) Of variance procedures (see OAR 437-001-0400 through 437-001-0435);

(o) Of the possibility of follow-up inspections;

(p) That if any safety or health condition was encountered which was beyond the expertise of the Compliance Officer, that condition will be considered a referral and may be addressed by another representative of the OR-OSHA Division;

(q) Of the availability of return visits by the Compliance Officer to assist the employer in obtaining compliance.

(2) Where the Compliance Officer decides it is not practical to hold a joint conference, separate conferences shall be held for the employer or a representative, and a representative of the employees, if any. Notes shall be taken by the Compliance Officer during the separate conferences; these will be available upon request.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; WCD 6-1982, f. 6-28-82, ef. 8-1-82; APD 6-1987, f. 12-23-87, ef. 1-1-88; APD 7-1988, f. 6-17-88, ef. 7-1-74; OSHA 7-1992, f. 7-31-92, cert. ef. 10-1-92

Violations and Penalties

437-001-0135
Evaluation of Probability to Establish Penalties

(1) The probability of an accident which could result in an injury or illness from a violation shall be determined by the Compliance Officer and shall be expressed as a probability rating.

(2) The factors to be considered in determining a probability rating may include, as applicable:

(a) The number of employees exposed;

(b) The frequency and duration of exposure;

(c) The proximity of employees to the point of danger;

(d) Factors, which require work under stress;

(e) Lack of proper training and supervision or improper workplace design; or

(f) Other factors which may significantly affect the degree of probability of an accident occurring.

(3) The probability rating is:

(a) Low — If the factors considered indicate it would be unlikely that an accident could occur;

(b) Medium — If the factors considered indicate it would be likely that an accident could occur; or

(c) High — If the factors considered indicate it would be very likely that an accident could occur.

(4) The probability rating may be adjusted on the basis of any other relevant facts which would affect the likelihood of injury or illness.

Stat. Auth: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCB 8-1975, f. 8-5-75, ef. 9-1-75; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; WCD 6-1982, f. 6-28-82, ef. 8-1-82; APD 6-1987, f. 12-23-87, ef. 1-1-88; APD 7-1988, f. 6-17-88, ef. 7-1-74; OSHA 16-1990(Temp), f. & cert. ef. 7-26-90; OSHA 25-1990(Temp), f. & cert. ef. 10-31-90

437-001-0140
Evaluation of Severity to Establish Penalties

(1) A severity rating for each violation shall be determined by the Compliance Officer on the basis of the degree of injury or illness which is reasonably predictable. If more than one injury or illness is reasonably predictable, the Compliance Officer will determine the severity based upon the most severe injury or illness. Severity ratings will be selected from the following schedule:

(a) Other than Serious — Conditions that could cause injury or illness to employees but would not include serious physical harm;

(b) Serious Physical Harm; or

(c) Death.

(2) The severity rating may be adjusted on the basis of any other relevant facts which would affect the severity of the possible injury or illness.

Stat. Auth: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCB 8-1975, f. 8-5-75, ef. 9-1-75; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; WCD 6-1982, f. 6-28-82, ef. 8-1-82; APD 6-1987, f. 12-23-87, ef. 1-1-88; APD 7-1988, f. 6-17-88, ef. 7-1-74; OSHA 16-1990(Temp), f. & cert. ef. 7-26-90; OSHA 18-1990(Temp), f. & cert. ef. 8-15-90; OSHA 25-1990(Temp), f. & cert. ef. 10-31-90; OSHA 7-1992, f. 7-31-92, cert. ef. 10-1-92

437-001-0145
Penalty for Other than Serious or Serious Violation

(1) A penalty shall be assessed for any serious violation and may be assessed for any other than serious violation by considering the penalty established by the intersection of the probability rating and severity rating on the penalty schedule (Table 1). In a case where probability and severity are not appropriate considerations, a penalty may be assessed by considering the facts of the violation.

(2) Penalty adjustments may be made based upon the employer's previous calendar years lost workday cases incidence rate, if available, and efforts made during the inspection to correct violations. Penalty adjustments shall not be applied to repeat, willful or failure to correct violations or to any violation which contributed to an injury, illness or death of an employee. Adjustments shall not reduce the penalty to less than the mandatory minimum penalty which has been established by rule or statute. Adjustments are:

(a) A penalty reduction of 35% for each violation for an employer's lost workday cases incidence rate for the previous calendar year, if below the current published statewide average rate for that employer's Standard Industrial Classification. For fixed places of employment the lost workday cases incidence rate is based upon the rate for that place of employment. For non-fixed places the lost workday cases incidence rate is based upon the employer's rate statewide;

(b) A penalty reduction of 30% for each violation, when the employer corrects the violation before the end of the inspection;

(c) A penalty reduction of 10% may be given when the employer employed no more than 50 employees at any time in the previous 12 months, including the day of the inspection.

(3) The adjusted penalty for a serious violation will not be less than $100.

(4) The penalty for combined violations of the same rule shall be calculated by computing the penalty and possible adjustment for each subpart making up the combination and adding these to establish a total penalty for the combination.

(5) The penalty for grouped violations of different rules shall be calculated by determining the probability and severity for the entire group.

Table 1
Penalty Schedule

Severity

Probability	Other Than Serious	Serious Violation: Physical Harm	Death
Low	0	$300	$1,500
Medium		$500	$2,500
High	$300	$1,250	$5,000

(6) The Administrator may assess a penalty of up to $7,000 for any serious or other than serious violation after considering the facts.

Stat. Auth: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCB 8-1975, f. 8-5-75, ef. 9-1-75; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; WCD 6-1982, f. 6-28-82, ef. 8-1-82; WCD 12-1982, f. 9-20-84, ef. 11-1-84; APD 6-1987, f. 12-23-87, ef. 1-1-88; APD 5-1988, f. 5-16-88, ef. 5-16-88; APD 7-1988, f. 6-17-88, ef. 7-1-74; OSHA 7-1992, f. 7-31-92, cert. ef. 10-1-92; OSHA 7-1995, f. & cert. ef. 7-5-95

437-001-0155
Determination of Penalty — Failure to Correct

(1) A citation shall be issued for an employer's nonabatement of a violation.

(2) Penalties of not more than $7,000 per day for failure to correct a violation:

(a) May be assessed for each work day, or part of a day, that the violation results in continued exposure after the ordered correction date;

(b) Shall be determined by considering the probability and severity of the original violation, the efforts of the employer to correct the violation, and factors which delayed the employer in correcting the violation; and

(c) If failure to correct the violation results from the employer's lack of diligence, the penalty shall not less than $50 for other than serious violations, and not less than $250 for serious violations, for each day or part of a day, during which the violation remains uncorrected.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCB 8-1975, f. 8-5-75, ef. 9-1-75; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; WCD 6-1982, f. 6-28-82, ef. 8-1-82; APD 6-1987, f. 12-23-87, ef. 1-1-88; APD 7-1988, f. 6-17-88, ef. 7-1-74; OSHA 7-1992, f. 7-31-92, cert. ef. 10-1-92

437-001-0160
Penalty Criteria — Repeat Violation

Penalties may be assessed for repeat violations as follows:

(1) A violation of any statute, regulation, rule, standard or order shall be cited as repeated when, upon reinspection, another violation of the previously cited statute, regulation, rule, standard or order is found.

(2) Where a violation of a previously cited statute, regulation, rule, standard or order is present and that first violation has been appealed but not yet become final by operation of law:

(a) The second violation shall be cited as a repeated violation; and

(b) Such citation shall state that the prior violation has been appealed and the repeat classification of the current violation will be rescinded if the prior violation does not become final by order of law.

(3) For purposes of considering whether a violation is a repeat violation at fixed places of employment, "high serious" and "death" rated violations will be issued as repeat violations at all of an employer's places of employment in the state. Repeat violations for all other violation types will be limited to the cited place of employment.

(4) For employers at non-fixed places of employment, repeat violations shall be based on prior violations occurring anywhere within the state.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCD 5-1978. f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; WCD 6-1982, f. 6-28-82, ef. 8-1-82; APD 7-1988, f. 6-17-88, ef. 7-1-74; APD 7-1989(Temp), f. & ef. 5-1-89; APD 10-1989, f. & cert. ef. 7-7-89; OSHA 7-1992, f. 7-31-92, cert. ef. 10-1-92; OSHA 6-1994, f. & cert. ef. 9-30-94

437-001-0165
Determination of Penalty — Repeat Violation

(1) The penalty for a repeat violation shall be computed by multiplying the penalty for the current violation by the following factors:

(a) 1st repeat — x 2;

(b) 2nd repeat — x 5;

(c) 3rd repeat — x 10;

(d) 4th repeat — Discretion of Administrator.

(2) The total penalty for a repeat violation shall be not less than $200 nor more than $70,000.

(3) For a repeated other than serious violation that otherwise would have no initial penalty, a penalty of $200 shall be assessed for the first repeated violation, $500 if the violation has been cited twice before, and $1,000 for a third repeat.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 9-1-76; WCB 33-1974, f. 9-5-74, ef. 9-26-74; WCB 8-1975, f. 8-5-75, ef. 9-1-75; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; WCD 6-1982, f. 6-28-82, ef. 8-1-82; APD 7-1988, f. 6-17-88, ef. 7-1-74; APD 7-1989(Temp), f. & cert. ef. 5-1-89; APD 10-1989, f. & cert. ef. 7-7-89; OSHA 7-1992, f. 7-31-92, cert. ef. 10-1-92

437-001-0170
Determination of Penalty — Failure to Report an Occupational Fatality, Catastrophe, or Accident

If an employer fails to report an occupational fatality, catastrophe, or accident as provided in OAR 437-001-0700(21), a penalty of not less than $250, nor more than $7,000, shall be assessed.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCD 4-1981, f. 5-22-81, ef. 7-1-81; APD 6-1987, f. 12-23-87, ef. 1-1-88; APD 7-1988, f. 6-17-88, ef. 7-1-74; OSHA 7-1992, f. 7-31-92, cert. ef. 10-1-92; OSHA 7-2002, f. & cert. ef. 11-15-02

437-001-0171
Determination of Penalty — Failure to Register a Farm Labor Camp/Facility

If an operator, employer or contractor fails to register a Farm Labor Camp or facility with Oregon OSHA as required in Division 4/J, 437-004-1120(5)(b), a penalty of not less than $250 nor more than $7,000, shall be assessed.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 315.164, 658.750, 658.755, 658.780, 658.785, 658.805, 658.810 & 658.825
Hist.: OSHA 9-1995, f. & cert. ef. 11-29-95; OSHA 6-2003, f. & cert. ef. 11-26-03

437-001-0175
Determination of Penalty — Willful or Egregious Violation

For a willful violation, the Administrator, after considering the facts of the violation, may assess a penalty of not less than $5,000 nor more than $70,000. For egregious violations, the Administrator may assess a separate penalty for each instance of a violation.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 8-1985, f. 8-5-75, ef. 9-1-75; WCD 5-1978, f. 6-22-78, ef. 8-15-78; APD 7-1988, f. 6-17-88, ef. 7-1-74; OSHA 7-1992, f. 7-31-92, cert. ef. 10-1-92

437-001-0176
Determination of Penalty — Failure to Notify Employees of Advance Notice

The Administrator, after considering the related facts, may assess a penalty not to exceed $1,000 for each violation of the employer's failure to give notification by posting to employees of advanced notice.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCD 6-1982, f. 6-28-82, ef. 8-1-82; APD 7-1988, f. 6-17-88, ef. 7-1-74

437-001-0180
Determination of Penalty — Relating to Red Warning Notice

The Administrator, after considering the related facts, shall assess a penalty of not less than $100 and not more than $5,000 for each violation of the restrictions imposed by a Red Warning Notice (see OAR 437-001-0096(3) or (4)).

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCD 5-1978, f. 6-22-78, ef. 8-15-78; APD 6-1987, f. 12-23-87, ef. 1-1-88; APD 7-1988, f. 6-17-88, ef. 7-1-74

437-001-0201
Determination of Penalty — Relating to Field Sanitation

The Administrator shall assess a civil penalty of not less than $250 and not more than $2,500 to employers of workers who are engaged in field activities for the growing and harvesting of food crops intended for human consumption, who substantially fail to comply with OAR 437-004-0110 in division 4, Agriculture.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCD 9-1986, f. 10-7-86, ef. 12-1-86; APD 6-1987, f. 12-23-87, ef. 1-1-88; APD 7-1988, f. 6-17-88, ef. 7-1-74; OSHA 7-1999, f. & cert. ef. 7-15-99

437-001-0203
Determination of Penalty — Relating to Violations Which Have No Probability and Severity

(1) Safety and Health Protection on the Job Poster. If the employer has not displayed the poster, a minimum penalty of $100 may be assessed.

(2) Annual Summary — If an employer fails to post the summary portion of the **OSHA 300 Form** no later than February 1 of the year following the year covered by the records and keep it posted until April 30 in accordance with 437-001-0700(17)(d)(A), a minimum penalty of $200 may be assessed.

(3) Citation — If an employer fails to post the citation after receipt, a minimum penalty of $200 may be assessed.

(4) OSHA 300 and **DCBS 801 Forms** — If the employer does not maintain the Log and Summary of Occupational Injuries and Illnesses, OSHA 300 Form, and the Supplementary Record, DCBS Form 801 or equivalent, a minimum penalty of $100 may be assessed for each OSHA form not maintained.

(5) Access to Records — If the employer fails upon request to provide records for inspection and copying by any authorized representative of OR-OSHA or by any employee, former employee, or authorized representative of employees, a minimum penalty of $100 may be assessed for each form not made available.

(6) Flush Toilets/Warm Water Hand Washing Facilities — If an employer fails to provide flush toilets or warm water hand washing facilities on a construction site according to OAR 437-003-0020 in 437, division 3, Construction, a penalty of not less than $200, nor more than $2,500, shall be assessed.

(7) Safety Committees — If an employer fails to establish a safety committee as required by OAR 437-001-0765 in 437, division 1, General Provisions, a minimum penalty of $100 shall be assessed.

[ED. NOTE: Forms referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.086
Hist.: APD 6-1987, f. 12-23-87, ef. 1-1-88; APD 7-1988, f. 6-17-88, ef. 7-1-74; OSHA 7-1992, f. 7-31-92, cert. ef. 10-1-92; OSHA 10-1995, f. & cert. ef. 11-29-95; OSHA 11-2001, f. 9-14-01, cert. ef. 1-1-02; OSHA 6-2003, f. & cert. ef. 11-26-03

Citations and Correction

437-001-0205
Citation and Notice of Penalty

(1) If the Division concludes from the review of an inspection report that a rule or order was violated, a citation will be issued to the employer which shall:

(a) State the name of the employer, place of employment, and date of inspection. If the violation occurred on other than the inspection date, the date of the violation will be included;

(b) Describe factually the nature and location of the violation;

(c) State the type of violation, if other than general;

(d) Identify the rule or order violated;

(e) Fix a time for the correction of each violation not corrected at the time of inspection;

(f) State the penalty for each violation;

(g) Identify which, if any, penalties are suspended;

(h) State the total dollar amount of assessed penalties;

(i) Inform the employer of the right to appeal the citation, the civil penalty or the period of time fixed for correction of the violation to the Board;

(j) Inform affected employees of their right to appeal the time fixed for correction of the violation; and

(k) Notify the employer that the citation becomes a final order if an appeal is not filed within 20 days of receipt of the citation by the employer.

(2) The citation shall be served on the employer by certified mail or in person.

(3) Each employee representative shall be sent a copy of all citations and notices of penalties issued.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCB 8-1975, f. 8-5-75, ef. 9-1-75; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; WCD 6-1982, f. 6-28-82, ef. 8-1-82; APD 6-1987, f. 12-23-87, ef. 1-1-88; APD 7-1988, f. 6-17-88, ef. 7-1-74

437-001-0215
Employer Response to Citation and Notice of Penalty

(1) After receipt of a citation, the employer shall:

(a) Promptly post the citation for employees' information for three days or until the violation is corrected, whichever occurs last;

(b) Assure that any amendments or withdrawals to a citation are posted with the original citation for three days or until the violation is corrected, whichever occurs last;

(c) Correct each violation by the date ordered; and

(d) If no appeal is filed, remit any penalty by the 21st calendar day following receipt of the citation.

(2) The above requirements shall not limit an employer's appeal rights.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCB 8-1975, f. 8-5-75, ef. 9-1-75; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; APD 7-1988, f. 6-17-88, ef. 7-1-74

437-001-0220
Payment of Penalties

(1) All civil penalties become due and owing after the citation becomes a final order.

(2) If payment is not received within ten (10) days after the order becomes final, it may be docketed as a judgment as provided by ORS 654.086(3).

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCB 8-1975, f. 8-5-75, ef. 9-1-75; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; APD 7-1988, f. 6-17-88, ef. 7-1-74

437-001-0225
Penalty for Falsification

(1) An employer who knowingly makes any false statement, representation or certification regarding the correction of a violation shall be assessed a civil penalty of not less than $100 and not more than $2,500.

(2) An employer who knowingly makes any false statement, representation or certification regarding the correction of a violation, and that violation is found to have caused or materially contributed to the death of any employee, shall be penalized according to the provisions of ORS 654.991(3). In such cases, the Administrator shall contact the appropriate local district attorney for assistance and possible prosecution.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCB 8-1975, f. 8-5-75, ef. 9-1-75; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; WCD 6-1982, f. 6-28-82, ef. 8-1-82; APD 7-1988, f. 6-17-88, ef. 7-1-74

437-001-0230
Correction of Violation

(1) The employer shall correct any violation the employer has been ordered to correct except when:

(a) A general violation has been appealed;

(b) A stay of the correction date has been ordered by the Hearings Division on an appealed serious violation;

(c) An extension has been granted in accordance with OAR 437-001-0240.

(2) If the violation is corrected at the time of inspection, the correction shall be noted in the Compliance Officer's inspection report and used as the basis of possible penalty reduction. However, such correction shall not provide immunity from the issuance of a citation for the violation.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295

Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCD 4-1981, f. 5-22-81, ef. 7-1-81; WCD 6-1982, f. 6-28-82, ef. 8-1-82; APD 6-1987, f. 12-23-87, ef. 1-1-88; APD 7-1988, f. 6-17-88, ef. 7-1-74

437-001-0231
Abatement Verification

(1) When an employer receives a citation for a violation of the Oregon Safe Employment Act, the employer must notify the appropriate OR-OSHA field office of the corrective action taken to comply with each cited violation by Letter of Corrective Action. Such notification must occur within 10 calendar days after the last abatement date on the citation.

(2) When the compliance officer notes that violations are complied with at the time of the inspection, abatement verification for those violations is not required.

(3) The employer's verification that abatement is complete must include, for each cited violation, the date and method of abatement and a statement that affected employees and their representatives have been informed of the abatement.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001-654.295
Hist.: OSHA 7-1999, f. & cert. ef. 7-15-99

437-001-0235
Failure to Correct Violation

If a subsequent inspection reveals that a violation was not corrected, or was only partially corrected, by its correction date, a notice shall be issued to the employer which:

(1) Gives the date and number of the citation which first alleged the violation;

(2) Identifies the uncorrected violation and the date by which it was ordered to be corrected;

(3) Advises the employer of the non-abatement days accumulated to the date of notice;

(4) Advises the employer that daily penalties shall continue to accumulate until the violation is corrected; and

(5) Notifies the employer to advise the indicated field office immediately upon correction of the violation.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001-654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; APD 7-1988, f. 6-17-88, ef. 7-1-74; OSHA 7-1999, f. & cert. ef. 7-15-99

437-001-0240
Extension of Correction Date — Application

(1) An employer may apply for an extension of the date for correction a violation.

(2) An application for extension of the correction date shall be in writing to the OR-OSHA Division, 350 Winter St. NE, Salem, Oregon 97310, or received by any office of the Department.

(3) The application for extension must include:

(a) The name and address of the employer;

(b) The location of the place of employment;

(c) The citation number;

(d) The item number of the violation for which the extension is sought;

(e) The reason for the request;

(f) Facts which show that the employer has made an effort to correct the violation by the date set for correction, but was unable to do so because of factors beyond the employer's control;

(g) All available interim steps being taken to safeguard employees against the cited hazard during the requested extended correction period;

(h) The date by which the employer proposes to complete the correction; and

(i) A statement that a copy of the request for extension has been posted as required by OAR 437-001-0275(2)(d) and (h) or for at least ten (10) days, whichever is longer, and, if appropriate, served on the authorized representative of affected employees, and certification of the date upon which posting or service was made;

(j) Any employee who feels a posted request for an extension is unjust may contact the Administrator for a review of the matter.

(4) The application shall be postmarked or received by the Department no later than the correction date of the violation for which the extension is requested. For good cause, the Administrator may approve exceptions to this rule.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001-654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; WCD 6-1982, f. 6-28-82, ef. 8-1-82; APD 7-1988, f. 6-17-88, ef. 7-1-74

437-001-0245
Extension of Correction Date — Decision

(1) A request for extension of the correction date shall be granted or denied on the basis of information in the application, information from employees and any other relevant information.

(2) If the request for extension is granted, a notice of extension of correction date shall be sent to the employer. The notice shall:

(a) Include notice of the right of affected employees or their representative to appeal the extension; and

(b) Be posted for employee's information until the violation is corrected.

(3) If the request for extension is denied, the Administrator shall, with reasonable promptness, inform the employer in writing of the reasons for such denial, and of the employees' and employer's rights to appeal the Administrator's decision.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001-654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; WCD 6-1982, f. 6-28-82, ef. 8-1-82; APD 7-1988, f. 6-17-88, ef. 7-1-74

437-001-0250
Extension of Correction Date — Revocation

The Administrator may, for good cause, revoke an extension of correction date.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001-654.295
Hist.: WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; APD 7-1988, f. 6-17-88, ef. 7-1-74

437-001-0251
Extension of Correction Date — Hearing on the Application

Affected employees or the employee representative shall be given the opportunity to request a hearing on an application for an extension of the correction date:

(1) Requests for hearings shall be made in the following manner:

(a) The request shall be made within ten (10) days of posting the application;

(b) A request shall be made to the Administrator and shall contain:

(A) A concise statement of facts showing how the employee(s) would be affected by the extension of correction date;

(B) A statement opposing the extension of the correction date and a concise summary of the evidence supporting the opposition; and

(C) Any views or arguments on any issue of fact or law presented.

(2) Notice of hearing shall be given by the Administrator to affected persons and shall contain:

(a) Time, place and nature of hearing;

(b) Legal authority under which the hearing will be held; and

(c) The issues to be discussed.

(3) The hearing shall be conducted by the Administrator in a manner which will allow all affected persons to submit information on the application.

(4) At any hearing conducted to determine the merits of an extension request, the person requesting the extension of compliance time shall have the burden of proof regarding the request.

(5) The Administrator shall evaluate all information submitted at the hearing and make a determination on the merits of the application.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001-654.295
Hist.: WCD 6-1982, f. 6-28-82, ef. 8-1-82; WCD 3-1983, f. 1-31-83, ef. 2-1-83; APD 7-1988, f. 6-17-88, ef. 7-1-74

Informal Conferences

437-001-0255
Informal Conference

(1) The Administrator shall provide an opportunity for the employer and employees to discuss informally with the Division any

matter affecting occupational safety and health in the place of employment.

(2) An informal conference may be used to:

(a) Clarify statements of observed violations;

(b) Discuss safety and health requirements;

(c) Discuss abatement dates;

(d) Explain the penalty system;

(e) Improve employer/employee understanding of the Oregon Safe Employment Act;

(f) Correct errors;

(g) Narrow issues; or

(h) Negotiate a settlement agreement to resolve disputed citations. Notwithstanding any other rule in this division, proposed civil penalties may be reduced as part of a settlement agreement resolving disputed claims.

(3) An informal conference concerning a citation shall not extend the 20 days allowed for filing an appeal with the Board.

(4) In those cases where an informal conference concerns a citation, the Division shall contact the employer and require them to notify the employees or their representatives of the opportunity to attend the informal conference.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001-654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; APD 7-1988, f. 6-17-88, ef. 7-1-74; OSHA 7-1992, f. 7-31-92, cert. ef. 10-1-92; OSHA 7-1999, f. & cert. ef. 7-15-99

437-001-0260
Request for Informal Conference

A request for an informal conference:

(1) May be requested by either the employer or employee;

(2) Need not be in any particular form;

(3) Shall be addressed to the Administrator; and

(4) Shall clearly state the subject to be discussed.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001-654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCD 5-1978, f. 6-22-78, ef. 8-15-78; APD 7-1988, f. 6-17-88, ef. 7-1-74

437-001-0265
Amendment, Reissue or Withdrawal of Citation

(1) When the Division identifies an error or errors in the citation, the Administrator may, for good cause, amend, reissue or withdraw a citation provided:

(a) Such action will not reduce the occupational safety and health protection of affected employees;

(b) No appeal has been filed with the Board to contest the citation;

(c) The time for filing an appeal has not expired; and

(d) The employee representative, if any, has been notified of the proposed amendment.

(2) The employer receiving an amendment or withdrawal shall post the document as required by OAR 437-001-0275(2).

(3) An amendment or withdrawal of an appealed citation or order shall be made in accordance with the Board's rules (OAR 438) for contested cases. The administrator shall notify the employee representative of any proposed settlement or withdrawal made according to OAR 438.

(4) Any withdrawal, or amendment of an appealed citation that reduces the penalty or extends the correction times of an alleged serious or willful violation shall not be made without written approval of the Director.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCB 8-1975, f. 8-5-75, ef. 9-1-75; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; APD 7-1988, f. 6-17-88, ef. 7-1-74; OSHA 6-2003, f. & cert. ef. 11-26-03

437-001-0270
Discretion To Prevent a Manifest Injustice

(1) To prevent a manifest injustice, the Administrator, at the Administrator's own discretion or upon request from the Division or an adversely affected person, may vacate or amend a Division citation, notice or order.

(2) If the Administrator proposes to vacate or amend a Division citation, notice or order, an opportunity to be heard will be given to persons, including affected employees, whose rights may be affected.

(3) All requests for reconsideration based on a manifest injustice shall contain a statement indicating the following:

(a) The request has been posted as required by OAR 437-001-0275(2);

(b) The request has been served on the authorized representative of affected employees, if appropriate;

(c) The date the request was posted or service was made; and

(d) All affected employees have been advised of their right to comment.

(4) No decision shall be made on a manifest injustice request until 10 days after the date of posting or service.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist. WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 6-1982, f. 6-28-82, ef. 8-1-82; WCD 3-1983, f. 1-31-83, ef. 2-1-82; APD 7-1988, f. 6-17-88, ef. 7-1-74; OSHA 7-1992, f. 7-31-92, cert. ef. 10-1-92; OSHA 6-2003, f. & cert. ef. 11-26-03; OSHA 7-2006, f. & cert. ef. 9-6-06

Posting

437-001-0275
Posting Requirements

(1) Where OAR 437, division 1, requires an employer to inform affected employees by posting, copies of the unedited notice or other document shall be posted promptly upon receipt in one or more places where it will readily be observable by affected employees (for example, a location where employees report each day or at a location from which the employees operate to carry out their activities).

(2) The following documents shall be posted as specified:

(a) The Safety and Health Protection on the Job poster shall be posted permanently;

(b) A copy of any citation received by the employer shall be posted for three days or until the violation(s) is corrected, whichever occurs last;

(c) A copy of any amendment or withdrawal of a citation shall be posted with the original citation for three days or until the violation(s) is corrected, whichever occurs last;

(d) A copy of any notice of extension of correction date shall be posted until the violation(s) is corrected;

(e) A copy of any settlement shall be posted for ten days or until all violations have been corrected, whichever occurs last;

(f) A copy of any Notice of Hearing issued by the Hearings Division shall be posted until the hearing date;

(g) A copy of the variance application shall be posted until a final variance order is issued and posted;

(h) A copy of any variance order shall be posted for 20 days;

(i) A copy of any interim order relating to a variance shall be posted as long as it is in effect;

(j) A copy of any request for extension of correction date shall be posted until the Administrator informs the employer the extension has been granted or denied;

(k) A copy of a request for reconsideration of a citation, notice or order under the manifest injustice provision of OAR 437-001-0270 shall be posted along with the citation until the request has been granted or denied; and

(l) A copy of any feasibility determination relating to engineering controls shall be posted for 20 days for review by employees.

(m) A Field Sanitation Notice (available from the Department of Consumer and Business Services, OR-OSHA Division) shall be posted permanently by affected employers engaged in the production of food crops intended for human consumption. (See OAR chapter 437, division 4, Agriculture, OAR 437-004-0110(8)).

(n) An informational notice of the farm worker camp registration provided by the Department.

(3) If the employer fails to comply with the requirements of OAR 437-001-0275(2), the Administrator may assess a civil penalty of not more than $1,000 for each violation.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 315.164, 654.086, 658.750, 658.755, 658.780, 658.785, 658.805, 658.810 & 658.825
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCB 8-1975, f. 8-5-75, ef. 9-1-75; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; WCD 6-1982, f. 6-28-82, ef. 8-1-82; WCD 3-1983, f. 1-31-83, ef. 2-1-82; WCD 9-19986, f. 10-7-86, ef. 12-1-86; APD 5-1988, f. & ef. 5-16-88; APD 7-1988, f. 6-17-88, ef. 7-1-74; OSHA 9-1995, f. & cert. ef. 11-29-95; OSHA 10-1995, f. & cert. ef. 11-29-95; OSHA 7-1999, f. & cert. ef. 7-15-99

437-001-0280
Posting on Selected Multi-Employer Jobsites

At a multi-employer jobsite, the owner or the owner's designated prime contractor may be directed to post a notice in a conspicuous manner in a sufficient number of locations throughout the jobsite to reasonably inform the Compliance Officer and the affected employees of the following:

(1) The name and usual jobsite location of each employer and employer representative, on each work shift, who is designated to accompany the Compliance Officer during a safety or health inspection of the jobsite; and

(2) The employee's right to report a hazard to the employer's designated representative.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001-654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCB 8-1975, f. 8-5-75, ef. 9-1-75; WCD 5-1978, f. 6-22-78, ef. 8-15-78; APD 6-1987, f. 12-23-87, ef. 1-1-88; APD 7-1988, f. 6-17-88, ef. 7-1-74

Complaints

437-001-0285
Form and Content of a Complaint

Any person may complain to the Administrator of possible violations of any statute or of any lawful regulation, rule, standard or order affecting employee safety or health at a place of employment. A complaint, whether oral or written, should specify:

(1) The name of the employer;

(2) The location of the place of employment;

(3) Where the condition or practice occurs in the place of employment;

(4) The nature and frequency of the hazard;

(5) The number of employees affected by the condition or practice;

(6) The way in which the complaint is affected by the condition or practice; and

(7) Whether the complainant desires the complainant's name and address to be kept confidential.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001-654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; APD 7-1988, f. 6-17-88, ef. 7-1-74

437-001-0290
Division Action on Complaints

(1) At the complainant's request, in writing, their identity shall be kept in confidence. Any employee of the Department who fails to maintain that confidence is subject to disciplinary action.

(2) Complaint inspections shall be scheduled as provided for in OAR 437-001-0055(3).

(3) Any person making a complaint to the Division shall receive written notice of the Division's action if the complainant's address is provided.

(4) Any complainant who feels that the complaint was not adequately investigated by the Division may contact the Administrator for a review of the matter.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001-654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; APD 7-1988, f. 6-17-88, ef. 7-1-74

437-001-0295
Discrimination Complaint

(1) An employee or prospective employee may file a complaint as provided in ORS 654.062(5) if the employee believes discrimination has occurred because:

(a) The employee opposed a practice forbidden by, or engaged in a practice provided for, in the Oregon Safe Employment Act; or

(b) The employee refused in good faith to be subjected to imminent danger provided the employer refused to correct the hazard or it was not possible to notify the employer of the danger and the employee has notified the OR-OSHA Division or other appropriate agency, of the hazard, unless excused on the basis of insufficient time or opportunity as stated in OAR 839-006-0020, Bureau of Labor and Industries rules.

(2) The complaint shall be filed with the Commissioner of the Bureau of Labor and Industries, 800 NE Oregon Street, Portland, Oregon 97232, within 30 days after the employee had reasonable cause to believe discrimination occurred.

(3) The complaint may also be filed in any Circuit Court of the State of Oregon, or the U.S. Department of Labor, 3056 Federal Office Building, Seattle, Washington 98174.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001-654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCB 8-1975, f. 8-5-75, ef. 9-1-75; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; APD 6-1987, f. 12-23-87, ef. 1-1-88; APD 7-1988, f. 6-17-88, ef. 7-1-74; OSHA 7-2002, f. & cert. ef. 11-15-02

Variances

437-001-0400
Application for a Variance

(1) Any employer may apply for a variance from any rule which specifically affects working conditions. This application may be submitted:

(a) On a form provided by the Division; or

(b) In any written form that includes all information required by section (2) and (3) of this rule.

(2) An application for a variance must contain:

(a) The name and address of the employer;

(b) The address and location of the place of employment;

(c) The rule, identified by number, from which the variance is sought;

(d) The type of variance desired (see OAR 437-001-0015(52));

(e) The means by which employees will be protected from the hazard until final action is taken on the variance request;

(f) A description of the means proposed to be used to provide employment which is as safe and healthful as that obtained by compliance with the rule;

(g) Certification that all affected employees have been informed of the application and of their right to comment on it by:

(A) Giving a copy of the variance application to the authorized employee representative;

(B) Posting a statement giving a summary of the application and specifying where a copy may be examined, at the place or places where notices to employees are normally posted (or in lieu of such summary, the posting of the application itself); and

(C) By other appropriate means:

(h) A description of how employees have been informed of the application and of their right to comment on it to the Administrator, OR-OSHA Division, 350 Winter St. NE, Salem, Oregon, before it becomes a final order;

(i) A statement of whether the employer has previously filed application for a similar variance with any state or federal agency.

(3) If the employer is applying for a research variance, the application shall contain the following additional information:

(a) The purpose and contribution of the intended research;

(b) A discussion of the research methods;

(c) The research schedule, including the projected completion date;

(d) A description of the hazards to which employees may be exposed and the steps to be taken to protect the employees' safety and health;

(e) Biographical information to indicate the competence of the research staff;

(f) Assurances that the project shall be funded adequately; and

(g) Assurances that the Division shall be given a copy of the research report prepared under the variance. However, no trade secret, patented or patentable material or data need be submitted by the employer.

(4) If the employer is applying for a temporary variance, the application shall contain the following additional information:

(a) A statement of facts why the applicant is unable to comply with the rule by the effective date which is supported by representations from qualified persons having firsthand knowledge of the facts represented, and include data on:

(A) Unavailability of professional or technical personnel; or

(B) Unavailability of materials and equipment needed; or

(C) Inability to complete the construction or alteration of facilities by the effective date.

(b) An effective program including a timetable for complying with the rule; and

(c) The specific steps taken to protect employees against the hazard.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001-654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCB 8-1975, f. 8-5-75, ef. 9-1-75; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; WCD 6-1982, f. 6-28-82, ef. 8-1-82; APD 7-1988, f. 6-17-88, ef. 7-1-74

437-001-0405
Interim Order Relating to a Variance

(1) An employer applying for a variance may request an interim order to be effective until final action is taken on the variance application. The request for an interim order:

(a) May be included in the variance application;

(b) Shall include all information required by OAR 437-001-0400(2); and

(c) Must state the reasons why the interim order should be granted.

(2) The Administrator shall decide whether to issue an interim order on the basis of information provided in the application.

(3) If an interim order is granted, it shall be sent to the employer. The employer shall inform affected employees by posting a copy of the interim order for as long as the order is in effect.

(4) If an interim order is granted, the action shall be published in the manner required by OAR 437-001-0410(1).

(5) If the interim order is denied, the employer shall be given prompt written notice of, and the reasons for, the denial.

(6) An interim order or a written denial shall include notice of the employer's and employees' appeal rights as contained in ORS 654.056 and OAR 438-085-0006 through 438-085-0870.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001-654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; WCD 6-1982, f. 6-28-82, ef. 8-1-82; APD 7-1988, f. 6-17-88, ef. 7-1-74

437-001-0410
Administrative Action on Variance Application

(1) After a variance request is determined to be complete and procedurally adequate, as provided in OAR 437-001-0400, the Division shall publish the request for one day in at least one daily newspaper with general circulation throughout Oregon. The notice shall include:

(a) The name of the applicant;

(b) The rule, also identified by number, from which the variance is sought;

(c) A brief description of the variance request;

(d) Notice of opportunity for public comment and hearing;

(e) Information on how interested persons may learn of the Division's decision on the variance application; and

(f) The address of the Division office from which further information may be obtained.

(2) The Division may conduct an on-site review of the equipment or processes involved in the requested variance.

(3) A variance, if granted, shall have no retroactive effect. It shall not be the basis for amending or withdrawing a citation.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001-654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCB 33-1974, f. 9-5-74, ef. 9-26-74; WCB 8-1975, f. 8-5-75, ef. 9-1-75; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; APD 7-1988, f. 6-17-88, ef. 7-1-74

437-001-0411
Hearings for Variance Applications

Affected employers or employees shall be given the opportunity to request a hearing on an application:

(1) Request for hearings must be made in the following manner:

(a) The request must be made within 20 days of publication of the application;

(b) A request must be made to the Administrator and must contain:

(A) A concise statement of facts showing how the employer or employee would be affected by the relief applied for;

(B) A statement opposing any or all portions of the application, and a concise summary of the evidence supporting each item opposed; and

(C) Any views or arguments on any issue of fact or law presented.

(2) Notice of hearing shall be given by the Administrator to affected persons and shall contain:

(a) Time, place and nature of hearing;

(b) Legal authority under which the hearing will be held; and

(c) The issues to be discussed.

(3) The hearing shall be conducted by the Administrator in a manner which will allow all affected persons to submit information on the application.

(4) The Administrator shall evaluate all information submitted at the hearing and make a determination in the merits of the application.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001-654.295
Hist.: WCD 67-1982, f. 6-28-82, ef. 8-1-82; APD 7-1988, f. 6-17-88, ef. 7-1-74

437-001-0415
Criteria for Variance Approval

(1) An application for a permanent variance shall be granted only if the applicant demonstrates, and the Division determines which includes the consideration of employee or the public comments, that the conditions, practices, operations or processes proposed to be used by the applicant shall provide employment which is as safe and healthful as that obtained by compliance with the rule.

(2) An application for a temporary variance shall be granted only if the applicant demonstrates, and the Division determines which includes the consideration of employee or the public comments, that the applicant is unable to comply with a new rule by its effective date, that the applicant has an effective program for complying with the rule by the agreed upon timetable and that all available steps are being taken in the interim to safeguard employees against the hazard covered by the rule.

(3) An application for a research variance shall be granted only if the applicant demonstrates, and the Division determines which includes the consideration of employee or public comments, that the conditions, practices, operations or processes used shall adequately safeguard employees against the hazards covered by the rule, while demonstrating or validating new or improved safety or health techniques or products.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001-654.295
Hist.: WCD (Safety) 5-1978, f. 6-22-78, cert. ef. 8-15-78; WCD (Safety) 4-1981, f. 5-22-81, cert. ef. 7-1-81; WCD (Safety) 6-1982, f. 6-28-82, cert. ef. 8-1-82; APD 7-1988, f. 6-17-88, cert. ef. 7-1-74

437-001-0420
Decision on Variance Request

(1) If a variance is granted, an order of variance shall be issued. The order shall:

(a) State the name of the employer to whom the variance is granted;

(b) Identify the place of employment at which the variance is applicable;

(c) State the type of variance granted;

(d) State the specific rule to which the variance applies;

(e) Describe the alternative methods or safeguards to be used by the employer while the variance is in effect;

(f) Advise that the employer may be cited for any violation of the conditions established by the variance;

(g) Inform affected employees of their right to appeal the variance decision; and

(h) Inform affected persons that if no appeal is filed within 20 days of receipt of the order, the variance approval becomes a final order of the Director and subject to review only as specified in OAR 437-001-0430.

(2) If a variance is denied, a notice of denial shall be issued. The notice shall:

(a) Give the reasons for the denial;

(b) Notify the employer and employees of their appeal rights;

(c) Inform affected persons that if no appeal is filed within 20 days of receipt of the notice, the variance denial becomes a final decision without affecting the employer's right to submit another application; and

(d) Advise the employer that a compliance inspection shall be made within 30 days.

(3) A copy of any variance order or denial must be posted for 20 days.

(4) A variance that has been denied, or that has expired, shall be followed by a compliance inspection within 30 days.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001-654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCB 8-1975, f. 8-5-75, ef. 9-1-75; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; APD 7-1988, f. 6-17-88, ef. 7-1-74

437-001-0425
Employer's Duty to Meet Variance Terms

(1) A variance is not effective until the employer has complied with its terms and requirements.

(2) An employer may be cited for violating the terms of a variance. (See ORS 654.022)

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001-654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCB 8-1975, f. 8-5-75, ef. 9-1-75; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; APD 7-1988, f. 6-17-88, ef. 7-1-74

437-001-0430
Modification or Revocation of a Variance

(1) A variance may be modified or revoked after it has been in effect six months or longer upon:

(a) Request from the employer, an affected employee or an employee representative which may be in writing, the request shall contain:

(A) The name and address of the applicant;

(B) A description of the relief which is sought;

(C) A statement setting forth with particularity the grounds for relief;

(D) If the applicant is an employer, a certification that the applicant has informed affected employees of the application by:

(i) Giving a copy thereof to their authorized representative;

(ii) Posting at the place or places where notices to employees are normally posted, a statement giving a summary of the application and specifying where a copy of the full application may be examined (or, in lieu of the summary, posting the application itself); and

(iii) Other appropriate means.

(E) If the applicant is an affected employee, a certification that a copy of the application has been furnished to the employer; and

(F) Any request for a hearing, as provided for in these rules.

(b) Notification and confirmation that the alternative methods or safeguards required by the variance are not fully complied with; or

(c) A Division review.

(2) The Division shall publish the proposed modification or revocation for one day in at least one daily newspaper with general circulation throughout Oregon. Exception: A revocation based on a company being out of business or no longer needed does not need to be published. The notice shall include:

(a) The name of applicant;

(b) The rule, also identified by number, from which the variance had been granted;

(c) A brief description of the variance and why relief is sought;

(d) Notice of opportunity for public comment and hearing and that a request for hearing shall be made within 20 days of publication;

(e) Information on how interested persons may learn of the Division's decision on the variance; and

(f) The address of the Division office from which further information may be obtained.

(3) The Division may conduct an on-site review of the equipment or processes involved in the proposed, revoked or modified variance.

(4) The employer and affected employees shall be advised in writing of modification or revocation of the variance. The modification or revocation order shall state:

(a) The name and address of the employer;

(b) The address and location of the place of employment involved;

(c) The rule, identified by number, from which the variance was granted;

(d) The type of variance issued;

(e) The reasons for modification or revocation of the variance; and

(f) The employer's and affected employees appeal rights.

(5) Any request for a hearing shall be made within 20 days of publication and shall include a short and plain statement of:

(a) How the proposed modification or revocation would affect the requesting party; and

(b) What the requesting party would seek to show on the subjects or issues involved.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCB 8-1975, f. 8-5-75, ef. 9-1-75; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; WCD 6-1982, f. 6-28-82, ef. 8-1-82; APD 7-1988, f. 6-17-88, ef. 7-1-74; OSHA 6-2003, f. & cert. ef. 11-26-03

437-001-0435
Effect of a Variance Granted by the U.S. Secretary of Labor

(1) If an employer requesting a variance from an Oregon rule submits proof that a variance from an equivalent federal rule has been granted by the U.S. Secretary of Labor, the federal variance shall be accepted in lieu of the information required by OAR 437-001-0400, Application for a Variance.

(2) If an employer is cited for violating an Oregon rule equivalent to a federal rule for which a variance has been granted by the U.S. Secretary of Labor, and all conditions of that variance are being met, the Administrator shall consider the federal variance as a possible defense against the citation.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001-654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCD 5-1978, f. 6-22-78, ef. 8-15-78; APD 7-1988, f. 6-17-88, ef. 7-1-74

Consultative Services for Public and Private Sector Employers

437-001-0450
Voluntary Compliance Consultative Services

(1) The Administrator shall provide consultative services to assist employers in preventing occupational injury and disease, whatever the cause.

(2) Consultative services may include providing technical information, but shall not intrude into the business of engineering firms or professional consultants.

(3) When federal funds are utilized to conduct consultative services, the provisions contained in **29 CFR 1908, Consultation Agreement**, shall apply.

[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001-654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCB 8-1974, f. 8-5-75, ef. 9-1-75; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; APD 6-1987, f. 12-23-87, ef. 1-1-88; APD 7-1988, f. 6-17-88, ef. n7-1-74; OSHA 1-1991(Temp), f. & cert. ef. 1-28-91; OSHA 5-1991, f. & cert. ef. 3-18-91

437-001-0455
Application for Consultative Services

Employers may make a verbal or written request for consultative services. A request must:

(1) Be made by an employer to a representative of the Division;

(2) Identify the employer and the location where the consultation is desired; and

(3) Define the specific problem or hazard, or other reason for the request.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001-654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; APD 7-1988, f. 6-17-88, ef. 7-1-74

437-001-0460
Consultation

When a consultant responds to a request for a consultative service, the employer shall be advised:

(1) Of the purpose of the visit;

(2) Of the Administrative Rules and Standard Operating Procedures pertaining to consultative services; and

(3) That the consultation need not be limited to the specific problems or hazards contained in the request for consultative service, but may also include, at the request of the employer, assistance in developing a plan to correct hazardous conditions, and other services including but not limited to:

(a) Health and safety program assessments;

(b) Training on specific health and safety issues; and

(c) Other assistance designed to promote more effective workplace health and safety programs.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001-654.295
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 4-1981, f. 5-22-81, ef. 7-1-81; APD 6-1987, f. 12-23-87, ef. 1-1-88; APD 7-1988, f. 6-17-88, ef. n7-1-74; OSHA 1-1991(Temp), f. & cert. ef. 1-28-91; OSHA 5-1991, f. & cert. ef. 3-18-91

Recordkeeping and Reporting

437-001-0700
Recordkeeping and Reporting

(1) Purpose. This rule requires employers to record and report work-related fatalities, injuries and illnesses.

Note: Recording or reporting a work-related injury, illness, or fatality does not assign fault to anybody, does not prove the violation of an OSHA rule, nor establish the employee's eligibility for workers' compensation or other benefits.

(2) Scope. This standard covers all employers covered by the Oregon Safe Employment Act. However, most employers do not have to keep OR-OSHA injury and illness records unless the Director informs them in writing that they must keep records. For example, employers with 10 or fewer employees and business establishments in certain industry classifications are partially exempt from keeping OR-OSHA injury and illness records.

(3) Partial Exemptions.

(a) If your company never had more than ten (10) employees during the last calendar year, you do not need to keep OR-OSHA injury and illness records unless the Director informs you in writing that you must keep records. However, all employers covered by the Oregon Safe Employment Act must report to OR-OSHA any workplace fatality, the hospitalization of three or more employees, or overnight hospitalizations. (See (21) below)

(b) The partial exemption for size is based on the number of employees in the entire company.

(c) If your company had more than ten (10) employees at any time during the last calendar year, you must keep OR-OSHA injury and illness records unless your business is in a specific low hazard retail, service, finance, insurance or real estate industry in Table 1. If so, you do not need to keep OR-OSHA injury and illness records unless the government asks you to keep the records under 437-001-0700(23).

(d) If one or more of your company's establishments are classified in a nonexempt industry, you must keep OR-OSHA injury and illness records for all of such establish- ments unless your company is partially exempted because of size under 437-001-0700(3)(a). If a company has several business establishments engaged in different classes of business activities, some of the company's establishments may be required to keep records, while others may be exempt.

(4) Alternate or Duplicate Records. If you create records to comply with another government agency's injury and illness recordkeeping requirements, those records meet OR-OSHA's recordkeeping requirements if OR-OSHA accepts the other agency's records under a memorandum of understanding with that agency, or if the other agency's records contain the same information as this standard requires you to record. Contact your nearest OR-OSHA office for help in determining if your records meet OR-OSHA's requirements.

(5) Recording Criteria and Forms. This describes the work-related injuries and illnesses that an employer must enter on the OR-OSHA records and explains the OR-OSHA forms that employers must use to record work-related fatalities, injuries, and illnesses. Each employer required to keep records of fatalities, injuries, and illnesses must record each fatality, injury and illness that:

(a) Is work-related; and

(b) Is a new case; and

(c) Meets one or more of the general recording criteria of OAR 437-001-0700(8) or the application to specific cases of OAR 437-001-0700(9) through (13). The decision tree for recording work-related injuries and illnesses below shows the steps involved in making this determination.

(6) Work-Related. An injury or illness is work-related if an event or exposure in the work environment either caused or contributed to the resulting condition or significantly aggravated a pre-existing injury or illness. You presume work-relatedness for injuries and illnesses resulting from events or exposures occurring in the work environment, unless an exception in Table 3 specifically applies.

(a) If you are notified that a former employee has had a work related injury or illness, record the date of the incident on the appropriate OSHA 300 log for the date of the injury. If the date is not known use the last day of employment.

NOTE: OR-OSHA defines the work environment as the establishment and other locations where one or more employees work or are present as a condition of their employment. The work environment includes not only physical locations, but also the equipment or materials used by the employee during the course of their work. Injuries occurring during travel are work-related if the employee was engaged in work activities in the interest of the employer and it is not one of the exceptions in Table 4. If it is not obvious where the precipitating event occurred you must evaluate the employee's work duties and environment to decide whether events or exposures in the work environment either caused or contributed to the condition or significantly aggravated a pre-existing condition.

(b) A pre-existing injury or illness is significantly aggravated when an event or exposure in the work environment results in any of the following:

(A) Death, provided that the pre-existing injury or illness would likely not have resulted in death but for the occupational event or exposure.

(B) Loss of consciousness, provided that the pre-existing injury or illness would likely not have resulted in loss of consciousness but for the occupational event or exposure.

(C) One or more days away from work, or days of restricted work, or days of job transfer that otherwise would not have occurred but for the occupational event or exposure.

(D) Medical treatment in a case where no medical treatment was needed for the injury or illness before the workplace event or exposure, or a change in medical treatment was necessitated by the workplace event or exposure.

(c) Work at home. Injuries and illnesses that occur while an employee works at home, including work in a home office, is work-related if the injury or illness relates directly to the work rather than to the general home environment or setting.

(7) New Cases. An injury or illness is a "new case" if:

(a) The employee has no previous recorded injury or illness of the same type that affects the same part of the body, or

(b) The employee previously had a recorded injury or illness of the same type that affected the same part of the body but recovered completely (all signs and symptoms disappeared) from the previous injury or illness and an event or exposure in the work environment caused the signs or symptoms to reappear.

(c) For occupational illnesses where the signs or symptoms may recur or continue in the absence of a workplace exposure, record the case only once. Examples include occupational cancer, asbestosis, byssinosis and silicosis.

NOTE: You are not required to seek the advice of a physician or other licensed health care professional. If you do seek such advice, you must follow their recommendation about whether the case is a new case or a recurrence.

(8) General Recording Criteria. An injury or illness meets the general recording criteria, and is recordable, if it results in any of the following: death, days away from work, restricted work or transfer to another job, medical treatment beyond first aid, or loss of consciousness. You must record a case if it involves a significant injury or illness diagnosed by a physician or other licensed health care professional, even if it does not result in death, days away from work, restricted work or job transfer, medical treatment beyond first aid, or loss of consciousness.

NOTE: OR-OSHA believes that most significant injuries and illnesses will result in one of the events listed below. However, there are some significant injuries, such as a punctured eardrum or a fractured toe or rib, for which neither medical treatment nor work restrictions may be recommended. In addition, there are some significant progressive diseases, such as byssinosis, silicosis, and some types of cancer, for which medical treatment or work restrictions may not be recommended at the time of diagnosis but are likely to be recommended as the disease progresses. Cancer, chronic irreversible diseases, fractured or cracked bones, and punctured eardrums are generally considered significant injuries and illnesses, and must be recorded at the initial diagnosis even if medical treatment or work restrictions are not recommended, or are postponed, in a particular case.

(a) You must record an injury or illness that results in death by entering a check mark on the OSHA 300 Log in the space for cases resulting in death. You must also report any work-related fatality to OR-OSHA within 8 hours.

(b) When an injury or illness involves one or more days away from work, you must record the injury or illness on the OSHA 300 Log with a check mark in the space for cases involving days away and an entry of the number of calendar days away from work in the number of days column. If the employee is out for an extended period of time,

you must enter an estimate of the days that the employee will be away, and update the day count when the actual number of days is known.

(A) Begin counting days away on the day after the injury occurred or the illness began.

(B) End the count of days away from work on the date the physician or other licensed health care professional recommends that the employee return to work. This applies regardless of whether the employee returns earlier or later than recommended. If there is no recommendation from the physician or licensed health care professional, enter the actual number of days the employee is off work.

(C) You must count the number of calendar days the employee was unable to work as a result of the injury or illness, regardless of whether or not the employee was scheduled to work on those day(s). Include weekend days, holidays, vacation days or other days off in the total number of days recorded if the employee would not have been able to work on those days because of a work-related injury or illness.

(D) You may stop tracking of the number of calendar days away from work once the total reaches 180 days away from work and/or days of job transfer or restriction. Entering 180 in the total days away column is adequate.

(E) If the employee leaves your company for a reason unrelated to the injury or illness, such as retirement, a plant closing, or to take another job, you may stop counting days away from work or days of restriction/job transfer. If the employee leaves your company because of the injury or illness, you must estimate the total number of days away or days of restriction/job transfer and enter the day count on the 300 Log.

(F) You must enter the number of calendar days away for the injury or illness on the OSHA 300 Log that you prepare for the year in which the incident occurred. If the time off extends into a new year, estimate the number of days for that year and add that amount to the days from the year of occurrence. Do not split the days between years and enter amounts on the logs for two different years. Use this number to calculate the total for the annual summary, and then update the initial log entry later when the day count is known or reaches the 180-day cap.

(c) When an injury or illness involves restricted work or job transfer but does not involve death or days away from work, you must record the injury or illness on the OSHA 300 Log by placing a check mark in the space for job transfer or restriction and an entry of the number of restricted or transferred days in the restricted workdays column.

(A) Restricted work occurs when, as the result of a work-related injury or illness:

(i) You keep the employee from performing one or more of the routine functions of their job, or from working the full day that they would otherwise work; or

(ii) A physician or other licensed health care professional recommends that the employee not perform one or more of the routine functions of their job, or not work the full workday that they would otherwise work.

NOTE: For recordkeeping purposes, an employee's routine functions are those work activities the employee regularly performs at least once per week.

(iii) A recommended work restriction is recordable only if it affects one or more of the employee's routine job functions. To determine whether this is the case, you must evaluate the restriction in light of the routine functions of the injured or ill employee's job.

(iv) A partial day of work is recorded as a day of job transfer or restriction for recordkeeping purposes, except for the day on which the injury occurred or the illness began.

(v) Record job transfer and restricted work cases in the same box on the OSHA 300 Log.

(vi) You count days of job transfer or restriction in the same way you count days away from work. The only difference is that, if you permanently assign the injured or ill employee to a job modified or permanently changed to eliminate the routine functions the employee was restricted from performing, you may stop the day count when the modification or change is permanent. You must count at least 1-day of restricted work or job transfer for such cases.

(d) If a work-related injury or illness results in medical treatment beyond first aid, you must record it on the OSHA 300 Log. If the employee received medical treatment but remained at work without transfer or restriction and the injury or illness did not involve death, one or more days away from work, one or more days of restricted work, or one or more days of job transfer, you enter a check mark in the box for other recordable cases.

NOTE: You must record the case even if the injured or ill employee does not follow the physician or other licensed health care professional's recommendation.

(A) "Medical treatment" is the management and care of a patient to combat disease or disorder. For this rule, medical treatment does not include:

(i) Visits to a physician or other licensed health care professional solely for observation or counseling;

(ii) The conduct of diagnostic procedures, such as x-rays and blood tests, including the administration of prescription medications solely for diagnostic purposes (e.g., eye drops to dilate pupils); or

(iii) "First aid" as in (B) below.

(B) First Aid is:

(e) You must record a work-related injury or illness if the worker becomes unconscious, regardless of the length of time they remain unconscious.

(f) Work-related cases involving cancer, chronic irreversible disease, a fractured or cracked bone, or a punctured eardrum must always be recorded under the general criteria at the time of occurrence.

(9) Needlestick and Sharps Injury Recording Criteria.

(a) When an injury is diagnosed later as an infectious bloodborne disease, you must update the classification on the 300 log to reflect the new status or classification.

(b) You must record all work-related needlestick injuries and cuts from sharp objects contaminated with another person's blood or other potentially infectious material (as defined by OAR 437-002-1910.1030). You must enter the case on the OSHA 300 Log as an injury. To protect the employee's privacy, do not enter the employee's name on the OSHA 300 Log (see the requirements for privacy cases in OAR 437-001-0700(14)(a) through (14)(i).

NOTE: If you have an exposure incident that is not a needlestick, you must still record it if it results in death, days away from work, restricted work or transfer to another job, medical treatment beyond first aid, loss of consciousness, or diagnosis of a significant injury or illness.

(10) Medical Removal Recording Criteria. If another OR-OSHA standard requires the medical removal of an employee, you must record the case on the OSHA 300 Log.

(a) You must enter each medical removal case on the OSHA 300 Log as either a case involving days away from work or a case involving restricted work activity, depending on how you decide to comply with the medical removal requirement. If the medical removal is the result of a chemical exposure, you must enter the case on the OSHA 300 Log by checking the "poisoning" column.

(b) If the case involves voluntary medical removal before reaching the medical removal levels required by an OR-OSHA standard, do not record the case on the OSHA 300 Log.

(11) Occupational Hearing Loss Recording Criteria.

(a) Hearing loss must be recorded on the OSHA 300 Log by checking the hearing loss column when:

(A) An annual audiogram reveals a Standard Threshold Shift (STS) in either or both ears; and

(B) The hearing level in the same ear is 25 dB above audiometric zero.

Note: For the ease of the reader the definitions for STS and audiometric zero are provided here.

Standard Threshold Shift (STS) — A change in hearing threshold relative to the baseline audiogram of an average of 10 dB or more in either ear. Audiometric Zero — The lowest sound pressure level that the average, young adult with normal hearing can hear.

(b) In determining whether an STS has occurred, you may correct for the age of the employee. Use the appropriate table in Appendix A to determine the age adjustment. If the STS is 10 dB or more after the age correction, it still meets the criteria for record- ability.

(c) If you retest the employee's hearing within 30 days of the first test, and the retest does not confirm the recordable STS, you are not required to record the hearing loss case on the OSHA 300 Log. If the retest confirms the recordable STS, you must record the hearing loss case within 7 calendar days of the retest. If subsequent audiometric testing performed under the testing requirements of the noise standard (OAR 437-002-1910.95) indicates that an STS is not persistent, you may erase, delete, or line-out the recorded entry.

(d) If a physician or other licensed health care professional determines that the hearing loss is not work-related or has not been signif-

icantly aggravated by occupational noise exposure, the case is not work-related. Do not record it on the OSHA 300 Log.

(12) Tuberculosis Reporting Criteria. If any of your employees has an occupational exposure to anyone with a known case of active tuberculosis (TB), and that employee subsequently develops a tuberculosis infection, as evidenced by a positive skin test or diagnosis by a physician or other licensed health care professional, you must record the case on the OSHA 300 Log by checking the "respiratory condition" column.

(a) Do not record a pre-employment positive skin test because the exposure was not in your workplace.

(b) Line out or erase a recorded case if you prove that:

(A) The worker lives in a household with a person diagnosed with active TB;

(B) The Public Health Department identifies the worker as a contact of an individual with a case of active TB unrelated to the workplace; or

(C) A medical investigation shows that the employee's infection was caused by exposure to TB away from work, or proves that the case was not related to the workplace TB exposure.

(13) Removed.

(14) Forms. You must use OSHA 300, 300-A, and DCBS Form 801 or equivalent forms, for recordable injuries and illnesses. The OSHA 300 form is the Log of Work-Related Injuries and Illnesses, the 300-A is the Summary of Work-Related Injuries and Illnesses, and the DCBS Form 801 or equivalent is the Worker's and Employer's Report of Occupational Injury or Disease.

(a) Even if your are exempt from recordkeeping, you must have at each establishment, a copy of DCBS Form 801 or equivalent for each occupational injury or illness that may result in a compensable claim.

(b) You must enter information about your business at the top of the OSHA 300 Log, enter a one or two line description for each recordable injury or illness, and summarize this information on the OSHA 300-A at the end of the year.

(c) You must complete a DCBS Form 801 or equivalent form, for each recordable injury or illness entered on the OSHA 300 Log.

(d) You must enter each recordable injury or illness on the OSHA 300 Log and DCBS Form 801 or equivalent within 7 calendar days of receiving information that a recordable injury or illness has occurred.

(e) An equivalent form is one that has the same information, is as readable and under- standable, and is completed using the same instructions as the OSHA form it replaces. Many employers use an insurance form instead of the DCBS Form 801, or supplement an insurance form by adding any additional information required by OSHA.

(f) Use a computer to keep your records if it can produce equivalent forms when needed.

(g) If you have a "privacy concern case," do not enter the employee's name on the OSHA 300 Log. Instead, enter "privacy case" in the space normally used for the employee's name. This will protect the privacy of the injured or ill employee when another employee, a former employee, or an authorized employee representative has access to the OSHA 300 Log. You must keep a separate, confidential list of the case numbers and employee names for your privacy concern cases so you can update the cases and provide the information to the government if asked to do so.

(h) The following injuries or illnesses are privacy concern cases:

(A) An injury or illness to an intimate body part or the reproductive system;

(B) An injury or illness resulting from a sexual assault;

(C) Mental illnesses;

(D) HIV infection, hepatitis, or tuberculosis;

(E) Needlestick injuries and cuts from sharp objects contaminated with another person's blood or other potentially infectious material; and

(F) Other illnesses, if the employee voluntarily requests that his or her name not be entered on the log.

NOTE: This is a complete list of all injuries and illnesses that are privacy concern cases.

(i) If you reasonably believe that information describing the privacy concern case may be personally identifiable even though the employee's name is omitted, use discretion in describing the injury or illness on both the OSHA 300 and DCBS 801 Forms. You must enter enough information to identify the cause of the incident and the general severity of the injury or illness, but you do not need to include details of an intimate or private nature. For example, describe a sexual assault case as "injury from assault," or an injury to a reproductive organ could be described as "lower abdominal injury."

(j) If you voluntarily disclose the forms to persons other than government representatives, employees, former employees or authorized representatives, you must remove or hide the employees' names and other personally identifying information, except for the following cases:

(A) To an auditor or consultant hired by the employer to evaluate the safety and health program;

(B) To the extent necessary for processing a claim for workers' compensation or other insurance benefits; or

(C) To a public health authority or law enforcement agency for uses and disclosures for which consent, an authorization, or opportunity to agree or object is not required under Department of Health and Human Services Standards for Privacy of Individually Identifiable Health Information, 45 CFR.164.512.

(15) Multiple Business Establishments. You must keep a separate OSHA 300 Log for each establishment that you expect to operate for 1-year or longer.

(a) You may keep one OSHA 300 Log that covers all of your short-term establishments. You may also include the short-term establishments' recordable injuries and illnesses on an OSHA 300 Log that covers short-term establishments for individual company divi- sions or geographic regions.

(b) You may keep the records for an establishment at your headquarters or other central location if you can:

(A) Transmit information about the injuries and illnesses from the establishment to the central location within 7 calendar days of receiving information that a recordable injury or illness has occurred; and

(B) Produce and send the records from the central location to the establishment within the time frames required by OAR 437-001-0700(20) and 437-001-0700(22) when you are required to provide records to a government representative, employees, former employees or employee representatives.

(c) You must link each employee with one of your establishments, for recordkeeping purposes. You must record the injury and illness on the OSHA 300 Log of the injured or ill employee's establishment, or on an OSHA 300 Log that covers that employee's short-term establishment.

(d) If the injury or illness occurs at one of your establishments, you must record the injury or illness on the OSHA 300 Log of the establishment where the injury or illness occurred. If the employee is injured or becomes ill and is not at one of your establish- ments, you must record the case on the OSHA 300 Log at the establishment where the employee normally works.

(16) Covered Employees. You must record on the OSHA 300 Log the recordable injuries and illnesses of all employees on your payroll, whether they are labor, executive, hourly, salary, part-time, seasonal, or migrant workers. You also must record the recordable injuries and illnesses that occur to employees who are not on your payroll if you supervise these employees on a day-to-day basis. If your business is organized as a sole proprietorship or partnership, the owner or partners are not considered employees for recordkeeping purposes.

(a) Record the injuries and illnesses to workers from temporary help agencies or employee leasing services only if you supervise these employees on a day-to-day basis.

(b) If a contractor's employee is under the day-to-day supervision of the contractor, the contractor is responsible for recording the injury or illness. If you supervise the contrac- tor employee's work on a day-to-day basis, you must record the injury or illness.

(c) You and the temporary help service, employee leasing service, personnel supply service, or contractor should coordinate your efforts to make sure that each injury and illness is recorded only once: either on your OSHA 300 Log (if you provide day-to-day supervision) or on the other employer's OSHA 300 Log (if that company provides day-to-day supervision).

(17) Annual Summary and Posting Requirements. At the end of each calendar year, you must:

(a) Review the OSHA 300 Log to verify that the entries are complete and accurate, and correct any problems;

(b) Use the OSHA 300A or equivalent form to create an annual summary of injuries and illnesses from the OSHA 300 Log;

(c) Certify that one of the following examined the OSHA 300 log and believe, based on knowledge of the process by which the information was recorded, that it is correct and complete.

(A) The highest ranking manager at the location where the log is compiled.

(B) If there is no management at the compiling location, any manager with jurisdiction over that location.

(d) You must post a copy of the annual summary in each establishment in a conspicuous place or places where notices to employees are customarily posted. You must ensure that the posted annual summary is not altered, defaced or covered by other material.

(e) You must post the summary no later than February 1 of the year following the year covered by the records and keep it posted until April 30.

(18) Paperwork Retention and Updating. You must save the OSHA 300 Log, the privacy case list (if any), the annual summary, and the DCBS Form 801 or equivalent forms for 5 years following the end of the calendar year that they cover. During the storage period, you must update your stored OSHA 300 Logs to include newly discovered recordable injuries or illnesses and to show any changes that have occurred in the classification of previously recorded injuries and illnesses. If the description or outcome of a case changes, you must remove or line out the original entry and enter the new information.

NOTE: For more information on retention of medical and exposure records, see OAR 437-002-1910.1020.

(19) Change of Business Ownership. If your business changes ownership, you must record and report work-related injuries and illnesses only for the time you owned the establishment. You must transfer the records to the new owner. The new owner must save all records of the establishment kept by the prior owner, but need not update or correct the records of the prior owner.

(20) Employee Involvement. You must involve your employees and their representatives in the recordkeeping system.

(a) Inform each employee of how they are to report an injury or illness to you.

(b) Provide limited access to your injury and illness records for your employees and their representatives.

(c) Your employees, former employees, their personal representatives, and their authorized collective bargaining representatives have the right to access the OSHA injury and illness records, with some limitations, as below.

(d) A personal representative is anybody designated in writing by the employee or former employee. It also is the legal representative of a deceased or legally incapacitated employee.

(e) When an employee, former employee, personal representative, or authorized employee representative asks for copies of your current or stored OSHA 300 Log(s) for an establishment the employee or former employee has worked in, you must give the requester a copy of the relevant OSHA 300 Log(s) by the end of the next business day.

(A) You must leave the names on the 300 Log. However, to protect the privacy of injured and ill employees, do not record the employee's name on the OSHA 300 Log for certain "privacy concern cases."

(d) When an employee, former employee, or personal representative asks for a copy of the DCBS Form 801 or equivalent describing an injury or illness to that employee or former employee, you must give the requester a copy of the DCBS Form 801 or equiva- lent containing that information by the end of the next business day.

(e) When an authorized employee representative asks for copies of the DCBS Form 801 or equivalent for an establishment where the agent represents employees under a collective bargaining agreement, you must give copies of those forms to the authorized employee representative within 7 calendar days. You are only required to give the authorized employee representative information from the releasable part of the DCBS Form 801 or equivalent section titled "Tell us about the case" or a similar section. You must remove all other information from the copy of the DCBS Form 801 or equivalent form that you give to the authorized employee representative.

(f) You may not charge for these copies the first time. However, if one of the designated persons asks for additional copies, you may assess a reasonable charge for retrieving and copying the records.

(21) Reporting Fatalities and Hospitalizations to Oregon OSHA. You must report the following to Oregon OSHA at 1-800-922-2689 or 503-378-3272 within the given time limits:

(a) Fatalities 8 hours after occurrence or employer knowledge You must report a fatality caused by a heart attack at work. You must report a fatality resulting from motor vehicle accidents that happen during the employees work shift. The local OR-OSHA field office safety or health manager will decide whether to investigate the incident, depending on the circumstances of the heart attack or motor vehicle accident. Report a fatality only if it occurs within 30 days of the accident.

(b) Catastrophe 8 hours after occurrence or employer knowledge For the ease of the reader the Definition for Catastrophe is – An accident in which two or more employees are fatally injured, or three or more employees are admitted to a hospital or an equivalent medical facility.

(c) Overnight Hospitalization 24 hours after occurrence or employer knowledge of one or more employees. Overnight hospitalization is for medical treatment only. Hospitalization for observation is not reportable, nor is emergency room treatment. You must report injuries related to a heart attack or motor vehicle accident as well as other work related injuries. Report overnight hospitalizations to the nearest Oregon OSHA field office (Portland, Salem, Bend, Eugene or Medford).

NOTE: Oregon OSHA Field Office locations, telephone and Fax numbers are:

(d) Effective date. The effective date for reporting of a fatality resulting from motor vehicle accidents that happen during the employees work shift is January 1, 2007.

(22) Providing Records to Government Representatives. When an authorized government representative asks for the records you keep in compliance with this standard, you must provide copies of the records within 4 business hours.

(a) Authorized government representatives are:

(A) A representative of the Oregon Department of Consumer and Business Services.

(B) A representative of the Secretary of Labor conducting an inspection or investigation under the Act.

(C) A representative of the Secretary of Health and Human Services (including the National Institute for Occupational Safety and Health — NIOSH) conducting an investigation under Section 20(b) of the Act.

(23) Requests from the Bureau of Labor Statistics or DCBS. If you receive a Survey of Occupational Injuries and Illnesses Form from the Bureau of Labor Statistics (BLS), or a BLS designee, or a request for data from the Oregon Department of Consumer and Business Services, you must promptly complete the form and return it following the instructions on the survey form.

(24) Prohibition against discrimination. Oregon Revised Statute 654.062(5) prohibits discrimination against an employee for reporting a work-related fatality, injury or illness. It also protects the employee who files a safety and health complaint, asks for access to this rule, records, or otherwise exercises any rights afforded by law or rule.

[ED. NOTE: Forms & Tables referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(4)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCD 7-1979, f. 8-20-79, ef. 9-1-79; WCD 4-1981, f. 5-22-81, ef. 7-1-81; APD 7-1988, f. 6-17-88, ef. 7-1-74; OSHA 11-2001, f. 9-14-01, cert. ef. 1-1-02; OSHA 2-2002, f. & cert. ef. 3-12-02; OSHA 7-2002, f. & cert. ef. 11-15-02; OSHA 6-2003, f. & cert. ef. 11-26-03; OSHA 7-2006, f. & cert. ef. 9-6-06

437-001-0740

Falsification or Failure to Keep and Post Records or Make Reports

OSHA will cite employers who fail to keep the records, post the summaries or make the reports required by OAR 437-001-0700 (except 437-001-0700(21) which is addressed in 437-001-0170). Citations will be 'other than serious' and carry a penalty of at least $100 but not more than $1000 for each violation.

NOTE: ORS 654.991(3) provides that anybody who knowingly makes a false statement, representation or certification in any application, record, report, plan or other document filed or required by ORS 654.001 to 654.295, will, on conviction, be fined not more than $10,000 or be imprisoned for not more than six months, or both. Also, ORS 654.086(1)(e) provides for civil penalties for falsification of a document.

Stat. Auth.: ORS 654.025(2) & 656.726(3)

Stats. Implemented: ORS 654.120(2) & 654.120(5)

Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; WCD 5-1978, f. 6-22-78, ef. 8-15-78; WCD 6-1982, f. 6-28-82, ef. 8-1-82; APD 6-1987, f. 12-23-87, ef. 1-1-88; APD 7-1988, f. 6-17-88, ef. 7-1-74; OSHA 6-1994, f. & cert. ef. 9-30-94; OSHA 11-2001, f. 9-14-01, cert. ef. 1-1-02; OSHA 7-2002, f. & cert. ef. 11-15-02

437-001-0742
Recordkeeping Variances and Exceptions

In order to achieve a uniform national system for the recordkeeping and reporting of occupational injuries and illnesses, the State of Oregon and the U.S. Department of Labor have agreed that as applied to employers, defined in subsections 3(5) of the **Occupational Safety and Health Act of 1970** (Public Law 91-596, 81 STAT 1950), the state will not grant any variances or exceptions to the recordkeeping and reporting regulations of this part without prior approval of the U.S. Bureau of Labor Statistics.

[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.120(2) & 654.120(5)
Hist.: WCB 19-1974, f. 6-5-74, ef. 7-1-74; APD 7-1988, f. 6-17-88, ef. 7-1-74; OSHA 11-2001, f. 9-14-01, cert. ef. 1-1-02

437-001-0760
Rules for All Workplaces

(1) Employer's Responsibilities:

(a) The employer shall see that workers are properly instructed and supervised in the safe operation of any machinery, tools, equipment, process, or practice which they are authorized to use or apply. This rule shall not be construed to require a supervisor on every part of an operation nor to prohibit workers from working alone;

(b) The employer shall take all reasonable means to require employees:

(A) To work and act in a safe and healthful manner;

(B) To conduct their work in compliance with all applicable safety and health rules;

(C) To use all means and methods, including but not limited to, ladders, scaffolds, guardrails, machine guards, safety belts and lifelines, that are necessary to safely accomplish all work where employees are exposed to a hazard; and

(D) Not to remove, displace, damage, destroy or carry off any safety device, guard, notice or warning provided for use in any employment or place of employment while such use is required by applicable safety and health rules.

(c) Every employer shall be responsible for providing the health hazard control measures necessary to protect the employees' health from harmful of hazardous conditions and for maintaining such control measures in good working order and in use;

(d) Every employer shall inform the employees regarding the known health hazards to which they are exposed, the measures which have been taken for the prevention and control of such hazards, and the proper methods for utilizing such control measures.

(2) Employee's Responsibilities:

(a) Employees shall conduct their work in compliance with the safety rules contained in this code;

(b) All injuries shall be reported immediately to the person in charge or other responsible representative of the employer;

(c) It is the duty of all workers to make full use of safeguards provided for their protection. It shall be a worker's responsibility to abide by and perform the following requirements:

(A) A worker shall not operate a machine unless guard or method of guarding is in good condition, working order, in place, and operative;

(B) A worker shall stop the machine or moving parts and properly tag-out or lock-out the starting control before oiling, adjusting, or repairing, except when such machine is provided with means of oiling or adjusting that will prevent possibility of hazardous contact with moving parts;

(C) A worker shall not remove guards or render methods of guarding inoperative except for the purpose of adjustment, oiling, repair, or the setting up of a new job;

(D) Workers shall report to their supervisor any guard or method of guarding that is not properly adjusted or not accomplishing its intended function;

(E) Workers shall not use their hands or any portion of their bodies to reach between moving parts or to remove jams, hangups, etc. (Use hook, stick, tong, jig or other accessory.);

(F) Worker shall not work under objects being supported that could accidentally fall (such as loads supported by jacks, the raised body of a dump truck, etc.) until such objects are properly blocked or shored;

(G) Workers shall not use defective tools or equipment. No tool or piece of equipment should be used for any purpose for which it is not suited, and none should be abused by straining beyond its safe working load.

(d) Workers shall not remove, deface, or destroy any warning, danger sign, or barricade, or interfere with any other form of accident prevention device or practice provided which they are using, or which is being used by any other worker;

(e) Workers must not work underneath or over others exposed to a hazard thereby without first notifying them and seeing that proper safeguards or precautions have been taken;

(f) Workers shall not work in unprotected, exposed, hazardous areas under floor openings;

(g) Long or unwieldy articles shall not be carried or moved unless adequate means of guarding or guiding are provided to prevent injury;

(h) Hazardous conditions or practices observed at any time shall be reported as soon as practicable to the person in charge or some other responsible representative of the employer;

(i) Workers observed working in a manner which might cause immediate injury to either themselves or other workers shall be warned of the danger;

(j) Before leaving a job, workers shall correct, or arrange to give warning of, any condition which might result in injury to others unfamiliar with existing conditions.

(3) Investigations of Injuries:

(a) Each employer shall investigate or cause to be investigated every lost time injury that workers suffer in connection with their employment to determine the means that should be taken to prevent recurrence. The employer shall promptly install any safeguard or take any corrective measure indicated or found advisable;

(b) At the request of authorized Department representatives, it shall be the duty of employers, their superintendents, supervisors and employees to furnish all pertinent evidence and names of known witnesses to an accident and to give general assistance in producing complete information which might be used in preventing a recurrence of such accident. At the request of the Department, persons having direct authority shall preserve and mark for identification, materials, tools or equipment necessary to the proper investigation of an accident;

(c) Any supervisors or persons in charge of work are held to be the agents of the employer in the discharge of their authorized duties, and are at all times responsible for:

(A) The execution in a safe manner of the work under their supervision; and

(B) The safe conduct of their crew while under their supervision;

(C) The safety of all workers under their supervision.

(4) Intoxicating Liquor and Drugs. The use of intoxicating liquor on the job is strictly prohibited. Anyone whose ability to work safely is impaired by alcohol, drugs, or medication shall not be allowed on the job while in that condition.

(5) Horseplay. There must be no horseplay, scuffling, practical jokes, or any other activity of similar nature.

(6) Extraordinary Hazards. When conditions arise that cause unusual or extraordinary hazards to workers, additional means and precautions shall be taken to protect workers or to control hazardous exposure. If the operation cannot be made reasonably safe, regular work shall be discontinued while such abnormal conditions exist, or until adequate safety of workers is ensured.

(7) Inspections:

(a) All places of employment shall be inspected by a qualified person or persons as often as the type of operation or the character of the equipment requires. Defective equipment or unsafe conditions found by these inspections shall be replaced or repaired or remedied promptly;

(b) Wherever required in this safety code, a written and dated report, signed by the person or persons making the inspection, shall be kept.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 1-1967, f. 1-12-67, ef. 1-15-67; WCB 3-1997, f. 10-6-75, cert. ef. 11-1-75; WCD 11-1976, f. & ef. 5-5-76; WCB 15-1976, f. 7-6-76, cert. ef. 8-1-76; WCD 10-1982, f. & ef. 7-30-82; OSHA 6-1994, f. & cert. ef. 9-30-94, Renumbered from 437-040-0020,

437-040-0025, 437-040-0030, 437-040-0035, 437-040-0040, 437-040-0050, 437-040-0055 & 437-137-0010(1) & (2)

437-001-0765
Rules for Workplace Safety Committees

(1) Purpose. The purpose of a safety committee is to bring workers and management together in a nonadversarial, cooperative effort to promote safety and health in each workplace. A safety committee assists the employer and makes recommendations for change.

(2) General.

(a) Every public or private employer of 11 or more employees shall establish and administer a safety committee.

(b) Every public or private employer of 10 or fewer employees shall establish and administer a safety committee if the employer:

(A) Has a Days Away, Restricted, or Transferred (DART) rate, in the top 10 percent of all rates for the employers in the same industry; or

(B) The employer is not an agricultural employer and the workers' compensation premium classification assigned to the greatest portion of the payroll for the employer has a premium rate in the top 25 percent of premium rates for all classes as approved by the Director pursuant to ORS 737.320(3).

(c) In making the determination of employment levels under sections (a) and (b) of this rule, the employer shall count all permanent, contract, temporary, and/or seasonal workers under the employer's direction and control, and shall base the number on peak employment.

(d) Temporary services employers and labor contractors shall establish safety committees based upon the total number of workers over which the employer or contractor exercises direction and control.

(e) Employers who hire only seasonal workers shall meet the intent of these rules by holding crew safety meetings prior to the commencement of work at each job site. Such meetings shall promote discussions of safety and health issues. All workers shall be informed of their rights to report workplace hazards, and shall be encouraged to make such reports during the meetings.

(f) Employers in the logging industry may meet the intent of these rules by complying with OAR 437, Division 7, Forest Activities.

(3) Locations.

(a) Safety committees shall be established at each of the employer's primary places of employment. For the purpose of these rules, a primary place of employment shall mean a major economic unit at a single geographic location, comprised of a building, group of buildings, and all surrounding facilities (Examples of primary places of employment would include a pulp or lumber mill, a manufacturing plant, a hospital complex, bank, a farm/ranch, a school district, or a state agency.) As a primary place of employment the location would have both management and workers present, would have control over a portion of a budget, and would have the ability to take action on the majority of the recommendations made by a safety committee.

(b) An employer's auxiliary, mobile, or satellite locations, such as would be found in construction operations, trucking, branch or field offices, sales operations, or highly mobile activities, may be combined into a single, centralized committee. This centralized committee shall represent the safety and health concerns of all the locations.

(c) In addition to locating safety committees at each primary place of employment, an employer with work locations which include fire service activities shall establish a Fire Service Safety Committee as required by OAR 437-002-0182(7) in 437, division 2/L, Oregon Rules for Fire Fighters.

(4) Innovation. Upon application, the division may approve safety committees which are innovative or differ in form or function, when such committees meet the intent of these rules.

(5) Safety Committee Formation and Membership.

(a) The safety committees required by OAR 437-001-0765(2) shall:

(A) Be composed of an equal number of employer and employee representatives. Employee representatives shall be volunteers or shall be elected by their peers unless there is a provision in their collective bargaining agreement that addresses the selection of employee representatives. When agreed upon by workers and management, the number of employees on the committee may be greater than the number of employer representatives. Seasonal workers shall not be counted for the purpose of determining the number of members who will serve on the committee.

(B) Consist of:

(i) No fewer than 2 members for each employer with 20 or less employees, or

(ii) No fewer than 4 members for each employer with more than 20 employees.

(C) Have a chairperson elected by the committee members.

(b) Employee representatives attending safety committee meetings required by OAR 437-001-0765(2) or participating in safety committee instruction or training required by OAR 437-001-0765(7) shall be compensated by the employer at the regular hourly wage.

(c) Employee representatives shall serve a continuous term of at least 1-year. Length of membership shall be alternated or staggered so that at least one experienced member is always serving on the committee.

(d) Reasonable efforts shall be made to ensure that committee members are representive of the major work activities of the firm.

(6) Safety Committee Duties and Functions.

(a) Management commitment to workplace health and safety.

(A) The committee shall develop a written agenda for conducting safety committee meetings. The agenda shall prescribe the order in which committee business will be addressed during the meeting.

(B) The safety committee shall hold regular meetings at least once a month except months when quarterly workplace safety inspections are made. This does not exclude other months from safety committee meetings if more frequent safety inspections are conducted.

(C) Quarterly safety committee meetings may be substituted for monthly meetings where the committee's sole area of responsibility involves low hazard work environments such as offices.

(D) Small farms of five or fewer full time employees may substitute quarterly meetings for monthly meetings during the farms' off season. The off season shall mean that period of time when only routine farm upkeep is being done.

(b) Written records.

(A) Minutes shall be made of each meeting which the employer shall review and maintain for 3 years for inspection by the Division. Copies of minutes shall be posted or made available for all employees and shall be sent to each committee member.

(B) All reports, evaluations, and recommendations of the safety committee shall be made a part of the minutes of the safety committee meeting.

(C) A reasonable time limit shall be established for the employer to respond in writing to all safety committee recommendations.

(c) Employee involvement.

(A) The committee shall establish a system to allow the members to obtain safety-related suggestions, reports of hazards, or other information directly from all persons involved in the operations of the workplace. The information obtained shall be reviewed at the next safety committee meeting, and shall be recorded in the minutes for review and necessary action by the employer.

(d) Hazard assessment and control.

(A) The safety committee shall assist the employer in evaluating the employer's accident and illness prevention program, and shall make written recommendations to improve the program where applicable. Additionally, the safety committee shall:

(i) Establish procedures for workplace inspections by the safety committee inspection team to locate and identify safety and health hazards;

(ii) Conduct workplace inspections at least quarterly; and

(iii) Recommend to the employer how to eliminate hazards and unsafe work practices in the workplace;

(B) The inspection team shall include employer and employee representatives and shall document in writing the location and identity of the hazards and make recom- mendations to the employer regarding correction of the hazards.

(C) Quarterly inspections of satellite locations shall be conducted by the committee team or by a person designated at the location.

(D) Mobile work sites or locations and activities which do not lend themselves to a quarterly schedule shall be inspected by a designated person as often as Oregon occupational safety and health rules require and/or the committee determines is necessary.

(E) The person designated to carry out inspection activities at the locations identified in sections (C) and (D) of this rule shall be selected by the employer and shall receive training in hazard identification in the workplace.

(e) Safety and health planning. The safety committee shall establish procedures for the review of all safety and health inspection reports made by the committee. Based on the results of the review, the committee shall make recommendations for improvement of the employer's accident and illness prevention program.

(f) Accountability. The safety committee shall evaluate the employer's accountability system and make recommendations to implement supervisor and employee account- ability for safety and health.

(g) Accident investigation. The safety committee shall establish procedures for investigating all safety-related incidents including injury accidents, illnesses and deaths. This rule shall not be construed to require the committee to conduct the investigations.

(7) Safety and Health Training and Instruction.

(a) The following items shall be discussed with all safety committee members:

(A) Safety committee purpose and operation;

(B) OAR 437-001-0760 through 437-001-0765 and their application; and

(C) Methods of conducting safety committee meetings.

(b) Committee members shall have ready access to applicable Oregon Occupational Safety and Health Codes which apply to the particular establishment and verbal instructions regarding their use.

(c) All safety committee members shall receive training based upon the type of business activity. At a minimum, members shall receive training regarding:

(A) Hazard identification in the workplace; and

(B) Principles regarding effective accident and incident investigations.

(8) Effective Date. The effective date for OAR 437-001-0765 is March 1, 1991.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.176
Hist.: WCD 10-1982, f. & ef. 7-30-82; OSHA 12-1990(Temp), f. & cert. ef. 6-18-90; OSHA 28-1990, f. 12-18-90, cert. ef. 3-1-91; OSHA 6-1994, f. & cert. ef. 9-30-94, Renumbered from 437-040-0044, 437-040-0045, 437-040-0046, 437-040-0047, 437-040-0048 & 437-040-0049; OSHA 10-1995, f. & cert. ef. 11-29-95; OSHA 8-2001, f. & cert. ef. 7-13-01; OSHA 6-2003, f. & cert. ef. 11-26-03; OSHA 7-2006, f. & cert. ef. 9-6-06

Occupational Safety and Health Grant Program

437-001-0800
Application Procedures

(1) The Division may solicit applications for Occupational Safety and Health Grants to develop innovative, proactive occupational safety and health training, educational programs or materials.

(2) Any labor consortium, employer consortium, educational institution that is affiliated with a labor organization or employer group, or other nonprofit entity, may apply for an Occupational Safety and Health Grant as provided in ORS 654.189 and 654.191, and in accordance with OAR 437-001-0800 through 437-001-0810.

(3) An applicant for a grant shall submit the grant application during the period of time specified in the application procedure. An application shall be in writing on the application forms and procedures provided by the Division and shall contain at a minimum:

(a) The name, address and telephone number of each applicant;

(b) The name address and telephone number of the project director;

(c) The amount of the request;

(d) An impact statement including the type and number of employees or employers targeted; the problem to be addressed, and the impact the project will have on occupational safety and health in Oregon;

(e) A description of the manner in which the grant will be used, including:

(A) Anticipated financial expenditures;

(B) A developmental plan that states goals and how they will be accomplished;

(C) Proposed completion date;

(D) Proposed in-kind services;

(E) Targeted audience; and

(F) Intended measurement of results; and

(f) Any other information included in the application forms and procedures.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 3-1989, f. & cert. ef. 12-1-89

437-001-0805
Application Review

(1) The Division shall review all applications and request any additional information needed to assure applications are relevant and complete.

(2) After an application is determined to be complete and in compliance with the intended goals of the program by the Division, it shall be forwarded to the Safe Employment Education and Training Advisory Committee (SEETAC) for review and possible recommendation for grant approval.

(3) In reviewing grant applications for possible recommendations for approval to the Director, the committee shall consider at least the following elements:

(a) The amount of available funds in the Occupational Safety and Health Grant account;

(b) The impact statement details;

(c) The innovativeness of the grant request;

(d) The feasibility of the developmental plan;

(e) The amount of in-kind services;

(f) The stability of other funding sources; and

(g) The administrative costs and/or responsibilities imposed on the Division in connection with the grant project.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 3-1989, f. & cert. ef. 12-1-89

437-001-0810
Grant Awards

(1) The Division shall notify applicants, in writing, of the approval or disapproval of the grant request.

(2) The applicant shall execute documents required by the Division for evidence of the type and amount of grant given, performance criteria and reporting requirements, and any other terms and conditions agreed to in connection with the awarding of a grant.

(3) Grant recipients shall make available to the Division all records and materials necessary to monitor the grant award.

(4) If the terms and conditions under which the grant was approved are not met, the Division may, upon written notice, take one or more of the following actions:

(a) Immediately revoke approval of the use of Occupational Safety and Health Grant funds; or

(b) Require repayment of all or a portion of any funds advanced; or

(c) Any other appropriate legal action necessary.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 3-1989, f. & cert. ef. 12-1-89

437-001-0830
Authority for Rules

The Director has adopted OAR 437-001-0830 through 437-001-0895 under authority of ORS 656.622(9) and 656.726(3).

Stat. Auth.: ORS 656.622(9) & 656.622
Stats. Implemented: ORS 656.622
Hist.: OSHA 7-1999, f. & cert. ef. 7-15-99

437-001-0835
Purpose of Rules

These rules explain what assistance is available from the Worksite Redesign Program, who is qualified and how to receive assistance. The department may solicit applications for worksite redesign grants and product grants in order to prevent the recurrence of on-the-job injuries and illnesses.

Stat. Auth.: ORS 656.622(9) & 656.622
Stats. Implemented: ORS 656.622
Hist.: OSHA 7-1999, f. & cert. ef. 7-15-99

437-001-0840
Applicability of Rules

These rules apply to all requests for Worksite Redesign Program assistance received by the department on or after the effective date of these rules. Worksite Redesign Program assistance shall only be provided in Oregon.

Stat. Auth.: ORS 656.622(9) & 656.622
Stats. Implemented: ORS 656.622
Hist.: OSHA 7-1999, f. & cert. ef. 7-15-99

437-001-0845
Definitions

(1) "Applicant" means the employer, employer group, employee group, educational association or educational institution which applies for a grant. An employer group or employee group may be created for the sole purpose of applying for and administering a worksite redesign grant.

(2) "Committee" means the Application Review Committee. Committee members are appointed by the director. The Committee recommends approval or disapproval of worksite redesign grants to the director.

(3) "Employer" means an Oregon employer within the meaning of the Workers' Compensation Law.

(4) "Fund" means the Workers' Benefit Fund.

(5) "Grant Agreement" means the contract between the department and the grantee following department approval of the application for a worksite redesign grant.

(6) "Grant product" means the workplace solution developed from an approved grant agreement to minimize workplace hazards.

(7) "OR-OSHA" means the OREGON OCCUPATIONAL SAFETY AND HEALTH DIVISION.

(8) "Product grant" means the amount of funding awarded an employer for the purchase of a grant product.

(9) "Worksite redesign grant" means a grant for the purpose of performing research and analysis of a workplace problem, and/or development of a solution to a workplace problem in order to prevent or reduce the incidence of on-the-job injuries and illnesses.

Stat. Auth.: ORS 656.622(9) & 656.622
Stats. Implemented: ORS 656.622
Hist.: OSHA 7-1999, f. & cert. ef. 7-15-99

437-001-0850
Administration of Rules

(1) All payments under the Worksite Redesign Program are subject to the availability of funds. The director has final authority to approve/disapprove requests for assistance and to determine how the funds will be disbursed.

(2) In addition to approving worksite redesign grants, the director may use the Fund for educational activities to provide information about and encourage application for grants for prevention or reduction of on-the-job injuries and illnesses.

(3) Pursuant to ORS 656.622, decisions by the director regarding Worksite Redesign Program assistance may not be reviewed by any court or other administrative body.

(4) The following conditions apply to all ideas, concepts, know-how, techniques, processes, methods, inventions, discoveries, developments, innovations and improvements conceived or made by a grantee, a grantee's employees or a grantee's contractors resulting from work under a worksite redesign grant:

(a) Public use of a new product design. All inventions and copyrightable works arising from work conducted under a worksite redesign grant will be dedicated to the public domain without any limitation on their use by the public. Neither DCBS, nor the grant recipient nor the grantee's contractors will hold trade secrets as a result of work conducted under a worksite redesign grant.

(b) The grantee and its contractors will abandon any and all ideas, concepts, know-how, techniques, processes, methods, inventions, discoveries, developments, innovations and improvements ("inventions") conceived or made by the grantee, the grantee's employees, or the grantee's contractors, whether alone or with others, resulting from work under the grant. The grantee will disclose all such inventions to the department promptly and will provide all assistance reasonably requested by the department to document the abandonment of such Inventions and/or dedication of such Inventions to the public domain. There will be no restriction on the manufacture, use or sale of such inventions by the public.

(c) Published works produced by grantee must bear an acknowledgment of support through the use of the following comparable statement: "This material has been made possible by a grant from the Oregon Department of Consumer and Business Services."

Stat. Auth.: ORS 656.622(9) & 656.622
Stats. Implemented: ORS 656.622
Hist.: OSHA 7-1999, f. & cert. ef. 7-15-99

437-001-0855
Assistance Available under the Worksite Redesign Program

Assistance from the Fund will be in the form of grants. Grants will partially fund research and analysis of workplace problems, and/or development of solutions to workplace problems, and /or purchase of grant products. If readily available solutions to the problems have been identified by the applicant or are known to DCBS, the project will not be approved. However, if during the research phase of a funded project a previously unknown solution is found, the grant agreement may be amended to permit purchase and evaluation of the new-found solution.

Stat. Auth.: ORS 656.622(9) & 656.622
Stats. Implemented: ORS 656.622
Hist.: OSHA 7-1999, f. & cert. ef. 7-15-99

437-001-0860
Eligibility for Worksite Redesign Assistance

(1) As part of the application, the applicant must have documentation of the workplace problem such as accepted compensable claims, incident reports, OSHA 200 log entries, hazard evaluations, or statistical reports of injuries and illnesses for the industry and/or occupation for which the applicant seeks an ergonomic solution.

(2) An applicant must identify an employer as the research site and/or the recipient of the prototype design or grant product. That designated employer and those employers who apply for a product grant must meet the following eligibility conditions:

(a) The employer has and maintains Oregon workers' compensation insurance coverage as required by law;

(b) Business operations are ongoing and have continued for the three-year period prior to the date the applicant submits the application to the department;

(c) The employer demonstrates financial stability and solvency by providing for the three-year period prior to the date the applicant submits the application one of the following: a letter of evaluation by an independent certified public accounting firm; a letter of credit; tax records; audited profit and loss statements and balance sheets; or audited annual reports. For product grants of less than $10,000, the department may permit an employer to certify financial stability;

(d) The employer has no bankruptcy or receivership action and no judgments for non-payment of wages/debts within the one-year period prior to the date the department receives the application;

(e) At the time the applicant submits the application, the employer has no outstanding OR-OSHA citations at any of the employer's locations or sites with unabated/uncorrected safety or health hazards associated with the equipment or process that is the subject of the application; and

(f) The employer provides information about the employer's early-return-to-work program.

(3) Reasons for ending Worksite Redesign Program eligibility which apply to all applicants as defined in OAR 437-001-0845 include:

(a) Misrepresentation or omission of information by the applicant to obtain assistance;

(b) Failure of the applicant to provide requested information or to cooperate in the Worksite Redesign Program grant review process or in the development or implementation of an approved grant;

(c) The applicant is precluded from receiving Worksite Redesign Program assistance in accordance with OAR 437-001-0890.

(4) Reasons for ending Worksite Redesign Program eligibility which apply to employer applicants, employers designated in the grant application as the research site and/or the recipient of the prototype design and employers who are grant product recipients include:

(a) The employer does not maintain Oregon workers' compensation insurance coverage as required by law;

(b) The employer, after requesting Worksite Redesign Program assistance, becomes subject to bankruptcy or receivership action or incurs judgment for non-payment of wages/debts; or,

(c) The employer, after requesting Worksite Redesign Program assistance, is issued a citation by OR-OSHA resulting from a fatality investigation, accident investigation, a complaint investigation, or a referral from another agency, which is related to or associated with, the subject of the worksite redesign grant. The department will hold in abeyance any requests for Worksite Redesign Program assistance until the OR-OSHA enforcement action is resolved.

(5) An employer who enters into negotiation for sale or merger of business after requesting Worksite Redesign Program assistance

must provide the department documentation of their ongoing commitment and ability to undertake and complete the activities as described in its grant application. The department will review the material provided by the employer and will determine the appropriateness and feasibility of proceeding with the grant request process.

Stat. Auth.: ORS 656.622(9) & 656.622
Stats. Implemented: ORS 656.622
Hist.: OSHA 7-1999, f. & cert. ef. 7-15-99

437-001-0865
Procedure to Use the Worksite Redesign Program

(1) An applicant must submit a complete, written application in the form and format prescribed by the director.

(2) The department may provide education and consultation to potential applicants, applicants and grantees.

Stat. Auth.: ORS 656.622(9) & 656.622
Stats. Implemented: ORS 656.622
Hist.: OSHA 7-1999, f. & cert. ef. 7-15-99

437-001-0870
Application Review

(1) Upon receipt of an application, the department may authorize consultation services provided by consultants under contract.

(2) The department will review applications and prepare staff reports for Committee review.

(3) After department review, the worksite redesign grant application and corresponding staff report will be forwarded to the Committee for review.

(4) In reviewing worksite redesign grant applications, the Committee will consider the following elements:

(a) Program eligibility criteria;

(b) Funding limitations established by the director;

(c) The funding priorities established by the department;

(d) The quality review criteria established by the department;

(e) The staff report provided by the department;

(f) Feasibility and appropriateness to recommend approval for an employer who is negotiating sale or merger; and

(g) Appropriateness to recommend approval for a grant which may result in a reduction in the employer's labor force.

(5) Following completion of a worksite redesign grant, the department may solicit applications for a product grant.

Stat. Auth.: ORS 656.622(9) & 656.622
Stats. Implemented: ORS 656.622
Hist.: OSHA 7-1999, f. & cert. ef. 7-15-99

437-001-0875
Grant Awards

(1) The department or its designee will notify applicants, in writing, of the approval or disapproval of the grant request.

(2) The applicant must provide reports and documentation relating to the grant and the terms and conditions agreed to in connection with the grant.

(3) Grant recipients must make available to the department all records and materials necessary to monitor a grant.

(4) Upon approval of the worksite redesign grant application, the department will authorize funding, to include disbursement intervals, in accordance with the conditions agreed upon in the approved grant agreement.

(5) Upon approval of the product grant application, the department will authorize funding for the product.

Stat. Auth.: ORS 656.622(9) & 656.622
Stats. Implemented: ORS 656.622
Hist.: OSHA 7-1999, f. & cert. ef. 7-15-99

437-001-0880
Program Evaluation

(1) The director or designee will conduct studies to evaluate the Worksite Redesign Program's success in precluding on-the-job injuries. Findings of such studies will be presented to the Management/Labor Advisory Committee.

(2) Grantees may be required to conduct studies to evaluate the success of the worksite redesign at their establishment. The studies will be conducted in a manner agreed upon with the department.

Stat. Auth.: ORS 656.622(9) & 656.622
Stats. Implemented: ORS 656.622
Hist.: OSHA 7-1999, f. & cert. ef. 7-15-99

437-001-0885
Audits

(1) Applicants selected for funding are subject to periodic program and fiscal audits.

(2) The grantee must maintain case files, notices, records, reports, receipts and canceled checks or payment verification documenting use of any and all Worksite Redesign Program funds as well as funds the grantee commits to an approved Worksite Redesign Program grant project. These records must be maintained for a period of 6 years after the last grant disbursement.

(3) The department reserves the right to visit the worksite to determine compliance with the Worksite Redesign Program agreement.

Stat. Auth.: ORS 656.622(9) & 656.622
Stats. Implemented: ORS 656.622
Hist.: OSHA 7-1999, f. & cert. ef. 7-15-99

437-001-0890
Sanctions

If the director finds any violation of OAR 437-001-0850, 437-001-0860, 437-001-0875, 437-001-0885, or if the terms and conditions under which the agreement was approved are not met, the director may take one or more of the following actions:

(1) Immediately revoke approval of the use of the Worksite Redesign Program funds;

(2) Require repayment of all or a portion of any funds disbursed;

(3) Prohibit the employer, employer group, employee group, educational association, or educational institution from receiving additional grants for a period of up to 3 years; and

(4) Use any other legal action necessary.

Stat. Auth.: ORS 656.622(9) & 656.622
Stats. Implemented: ORS 656.622
Hist.: OSHA 7-1999, f. & cert. ef. 7-15-99

437-001-0895
Issuance/Service of Sanction Orders

(1) When a sanction is invoked as provided by OAR 437-001-0890, the Division shall serve an order on the party, with a notice of the rights provided under ORS 654.078.

(2) An order will be served upon the grantee or their registered agent by certified mail or in person.

Stat. Auth.: ORS 656.622(9) & 656.622
Stats. Implemented: ORS 656.622
Hist.: OSHA 7-1999, f. & cert. ef. 7-15-99

Rules for the Administration of Loss Prevention Activities by Insurers/Self-Insured Employers

General

437-001-1005
Authority and Applicability of Rules

(1) OAR 437-001-1005 through 437-001-1065 are promulgated under the Director's authority contained in ORS 654.097.

(2) The Director of the Department of Insurance and Finance delegates the Administrator of the Accident Prevention Division the authority to enforce these rules.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 21-1988, f. & cert. ef. 12-27-88; OSHA 7-1992, f. & cert. ef. 7-31-92

437-001-1010
Purpose and Scope

(1) Nothing in these rules is intended to impose a duty upon the insurer or to transfer from the employer to the insurer responsibility set forth in ORS 654.001 to 654.991, or to impose liability other than these rules upon the insurer for failure to identify any unsafe conditions or occupational health and safety hazard.

(2) The purpose of these rules is to promote workplace health and safety by:

(a) Establishing insurer and self-insured employer loss prevention services designed to advise employers on regulations, laws, means and methods for improving health and safety at their places of employment; and

(b) Providing for the evaluation of insurers' and self-insured employers' loss prevention activities by the OR-OSHA Division to ensure compliance with the law and these rules.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 21-1988, f. & cert. ef. 12-27-88; OSHA 7-1999, f. & cert. ef. 7-15-99

437-001-1015
Definitions

(1) Establishment: A single physical location where business is conducted or where services or industrial operations are performed. Where distinctly separate activities are performed at a single physical location, each activity shall be treated as a separate establishment.

(2) Insured employer: An employer insured with a workers' compensation carrier.

(3) Insurer: The State Accident Insurance Fund (SAIF) Corporation or any insurance company authorized or regulated under ORS Chapter 731 to issue workers' compensation guaranty contracts in Oregon.

(4) Loss prevention effort: An ongoing effort by the self-insured employer to integrate health and safety into the workplace in such a manner that occupational injuries and illnesses are reduced.

(5) Loss prevention plan: A plan developed by the employer with the assistance of the insurer with the primary emphasis on reduction of workplace injuries and illnesses.

(6) Loss prevention services: Services designed to advise and assist employers in the identification, evaluation, and control of existing and potential causes of accidents and occupational health and safety problems.

(7) Loss prevention services program: A program intended to promote occupational health and safety, and to help eliminate and control work hazards to employees.

(8) Self-insured employer: An employer certified under ORS 656.430 as meeting the qualifications of a self-insured employer set out by ORS 656.407.

(9) Substantial failure to comply: The failure by an insurer or self-insured employer to respond or make available timely on-site services; failure to respond or make available in a timely manner specialized consultative services or:

(a) If an insurer fails to identify and advise of in a timely manner reasonably discoverable serious or life-threatening hazards within the scope of the services requested or provided or:

(b) If a self-insured employer fails to identify and control in a timely manner reasonably discoverable serious of life-threatening hazards within the scope of the services requested or provided.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 21-1988, f. & cert. ef. 12-27-88; Administrative Correction 8-5-97; OSHA 7-1999, f. & cert. ef. 7-15-99

437-001-1020
General Requirements

(1) The insurer or self-insured employer shall, within 60 days after the effective date of these rules, submit to the Administrator the following information:

(a) The name of the insurer or self-insured employer;

(b) The insurer's or self-insured employer's Oregon business address where records are kept; and

(c) The name or title, business address, and telephone number of the representative who will act as liaison with the Division in all matters pertaining to loss prevention services.

(2) After the first 60 days these rules are in effect, each new insurer shall comply with OAR 437-001-1020(1) at the time of application for the authority to issue guaranty contracts in Oregon.

(3) After the first 60 days these rules are in effect, each self-insured employer shall submit the information required in OAR 437-001-1020(1) at the time the employer submits its application to the Compliance Section of the Workers' Compensation Division for self-insurance.

(4) Each insurer or self-insured employer shall notify the Division, in writing, of any change in the information in OAR 437-001-1020(1)(a) through (c) within 30 days of that change.

(5) When requested by the Division, each insurer and self-insured employer shall make available with reasonable promptness copies of loss prevention, loss control and related records.

(6) The duty of compliance with OAR 437-001-1005 through 437-001-1065 is that of the insurer or self-insured employer regardless whether the insurer or self-insured employer contracts for assistance for the required services.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 21-1988, f. & cert. ef. 12-27-88; OSHA 8-1991, f. 4-25-91, cert. ef. 5-1-91; Administrative Correction 8-5-97; OSHA 7-1999, f. & cert. ef. 7-15-99

Insurers' Programs

437-001-1025
Notification of Services

(1) When an insurer writes a workers' compensation policy for an employer, and annually thereafter, the insurer shall inform the employer at the employer's Oregon main office of the loss prevention services that are available. The information shall include at least the following:

(a) A description of all loss prevention services that the insurer is required to offer, and other loss prevention services the insurer provides;

(b) A description of the availability of and process for obtaining loss prevention services;

(c) An offer, by the insurer, of an on-site evaluation of the loss prevention service needs of the insured;

(d) An explanation of the employer's responsibility to provide a safe and healthful workplace as required by the Oregon Safe Employment Act (ORS 654.001 to 654.295 and 654.991); and

(e) A statement of the employer's right to make a complaint to the OR-OSHA Division if an insurer fails to respond to a request from one of its insured employers for loss prevention services or otherwise fails to provide services as offered or required.

(2) An insurer shall provide the material described in section (1) of this rule and instructions that the employer distribute this material to each of the employer's fixed places of employment in Oregon.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 21-1988, f. & cert. ef. 12-27-88; OSHA 7-1999, f. & cert. ef. 7-15-99

437-001-1030
Requests for Services

(1) Any request by an insured employer regarding an imminent danger hazard shall be responded to with loss prevention services as soon as possible by the insurer.

(2) Any other requests regarding alleged hazards other than imminent danger shall be responded to with loss prevention services as soon as practicable, but not longer than 30 days following the date of the request.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 21-1988, f. & cert. ef. 12-27-88; OSHA 7-1999, f. & cert. ef. 7-15-99

437-001-1035
Loss Prevention Services

(1) Each insurer shall make occupational health and safety loss prevention services available to all its insured employers and shall provide certain other services as required by this rule.

(2) At a minimum, loss prevention services and personnel providing the services must meet the needs of the particular place of employment, special industry, or process, and shall include at least the following:

(a) Evaluation of the employer's loss prevention needs;

(b) Assistance in evaluating records that may be pertinent to the firm's illness and injury experience;

(c) An explanation to the employer of the Oregon Safe Employment Act and rules that apply to the particular place of employment;

(d) Provision of partial or complete on-site health and safety surveys, which identify all reasonably discoverable occupational safety and health hazards within the scope of the survey scheduled;

(e) Assistance with industrial hygiene and safety evaluations to detect physical and chemical hazards of the workplace, and implementation of engineering or administrative controls;

(f) Assistance with evaluating, obtaining, and maintaining personal protective equipment;

(g) Evaluation of work practices, workplace design, and assistance with job site modifications;

(h) Assistance in evaluating and improving an employer's safety management practices;

(i) Assistance in identifying health and safety training needs and available resources; and

(j) An offer to provide follow-up services.

(3) Loss prevention services shall include a written report with a plan of action.

(4) If, when providing loss prevention services, a condition of imminent danger is observed (see OAR 437-001-0015(34)), the insurer shall advise the employer of the hazard and the need to immediately correct it.

(5) All insurers shall maintain records of all loss prevention services provided at the locations designated by the insurer for Division personnel's review and must be maintained for not less than three years following the date the service was provided.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 21-1988, f. & cert. ef. 12-27-88; OSHA 7-1999, f. & cert. ef. 7-15-99

437-001-1040
Required Loss Prevention Services

(1) An insurer shall offer to assist in developing a loss prevention plan with each of its employers with a claims frequency or severity greater than its average employer in the same industry. The plan shall promote self-sufficiency on the part of the employer to reduce injuries and illnesses, and shall include a means to identify and control all reasonably discoverable occupational health and safety hazards.

(2) The assistance shall include the following:

(a) Employer notification of the available services.

(b) Perform a workplace hazard survey.

(c) Review of injury records and documentation of activities designed to lead to the reduction of workplace injuries and illnesses.

(d) Assist the employer in developing a written loss prevention plan that is based upon the results of the hazard survey and review of injury records. The plan must at a minimum address the following loss prevention principles:

(A) Management commitment to health and safety;

(B) An accountability system for employer and employees;

(C) Training practices and follow-up;

(D) A system for hazard assessment and control;

(E) A system for investigating all recordable occupational injuries and illnesses that includes written findings and corrective action;

(F) A system for evaluating, obtaining, and maintaining personal protective equipment;

(G) Evaluation of workplace design, work practices and assistance with job site modifications; and

(H) Employee involvement in the health and safety effort.

(e) Tailor the plan to meet the needs of the employer for reduction of injuries and illnesses while promoting self-sufficiency on the part of the employer.

(3) The insurer's obligation to assist shall end if the employer declines the services offered by the carrier.

(4) The Division may evaluate the insurers' targeted loss prevention services program randomly, however no more frequently than every three years.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 21-1988, f. & cert. ef. 12-27-88; OSHA 10-1990(Temp), f. & cert. ef. 5-31-90; OSHA 24-1990, f. & cert. ef. 10-10-90; OSHA 7-1992, f. 7-31-92, cert. ef. 10-1-92; OSHA 7-1999, f. & cert. ef. 7-15-99

Self-Insured and Group Self-Insured Employers' Programs

437-001-1050
Self-Insured and Group Self-Insured Employer Loss Prevention Assistance

(1) A self-insured employer and each self-insured group shall make available to each of its workplace or group locations occupational safety and health loss prevention assistance.

(2) A self-insured employer or group shall acknowledge all requests for services which do not involve alleged hazards from any of its locations within 30 days by schedule a date to begin providing services.

(3) Any request from locations of the self-insured employer or group regarding imminent danger an alleged hazard shall be responded to as soon as possible with loss prevention services.

(4) All other requests regarding alleged hazards other than imminent danger shall be responded to with loss prevention services as soon as practicable, but not longer than 30 days following the date of the request.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 21-1988, f. & cert. ef. 12-27-88; OSHA 8-1991, f. 4-25-91, cert. ef. 5-1-91

437-001-1055
Self-Insured and Group Self-Insured Employer Loss Prevention Programs

Each self-insured employer and each member of a group self-insured program shall establish and implement a written occupational health and safety loss prevention program for each establishment. As a minimum requirement, the program shall:

(1) Provide for a loss prevention effort within the normal functions of the business for prevention or reduction of health and safety injuries and illnesses; and

(2) Inform its managers and workplace locations of the availability and the process for requesting loss prevention assistance.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 21-1988, f. & cert. ef. 12-27-88; OSHA 8-1991, f. 4-25-91, cert. ef. 5-1-91

437-001-1060
Self-Insured and Group Self-Insured Employer Loss Prevention Effort

Each self-insured employer and each member of a group self-insured program shall implement a loss prevention effort for each of it locations, which identifies and controls all reasonably discoverable occupational safety and health hazards and items not in compliance with the federal or the division's occupational safety and health laws, rules and standards. The self-insured group shall assist each member of the group in developing and implementing the loss prevention effort. This loss prevention effort shall include at least the following:

(1) Management commitment to health and safety;

(2) An accountability system for employer and employees;

(3) Training practices and follow-up;

(4) A system for hazard assessment and control;

(5) A system for investigating all recordable occupational injuries and illnesses that includes corrective action and written findings;

(6) A system for evaluating, obtaining, and maintaining personal protective equipment;

(7) On-site routine industrial hygiene and safety evaluations to detect physical and chemical hazards of the workplace, and the implementation of engineering or administrative controls;

(8) Evaluation of workplace design, layout and operation, and assistance with job site modifications utilizing an ergonomic approach;

(9) Employee involvement in the health and safety effort; and

(10) An annual evaluation of the employer's loss prevention activities based on the location's current needs.

(11) The group shall maintain records which document the assistance provided to each member of the group.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 21-1988, f. & cert. ef. 12-27-88; OSHA 8-1991, f. 4-25-91, cert. ef. 5-1-91

Assessment of Civil Penalties

437-001-1065
Penalty Provisions for Insurers

(1) For insurers who fail to comply with the law and the requirements of OAR 437-001-1005 through 437-001-1065, the Administrator:

(a) Shall assess a civil penalty in accordance with ORS 654.086(i); and

(b) May send a notice to an insurer, in accordance with ORS 656.447, of the Director's intent to request the Administrator of the Insurance Division to suspend or revoke the insurer's certificate of authority.

(2) For self-insured employers who fail to comply with the law and the requirements of OAR 437-001-1005 through 437-001-1065, the Administrator shall assess a civil penalty in accordance with ORS 654.086(i).

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 21-1988, f. & cert. ef. 12-27-88; OSHA 7-1992, f. 7-31-92, cert. ef. 10-1-92

APPENDIX A
(See OAR 437-001-1040(2)(a))

Mandatory Loss Prevention Plan Worksheet

This worksheet is provided to analyze the employer's loss prevention needs, and shall be completed jointly by the insurer and the employer. The information is for use by the employer in developing a comprehensive, written loss prevention plan to assist in lowering the employer's occupational injury and illness rate. The insurer is required to assist the employer in developing a loss prevention plan. A copy of this worksheet, including the results from the hazard assessment survey(s) completed by the insurer, must be provided to the employer.

NOTE: Insurers may use alternate worksheets to document the development of employer loss prevention plans, if they have been approved in advance by the Department of Consumer and Business Services.

Please attach any additional information if space provided is inadequate.

Date
Employer
Insurer
Name of Employer Representative
Name of Insurer Representative

1. Did the employer agree to develop a loss prevention plan? Yes/No? If not, how is this confirmed by the insurer?
2. Is management committed to occupational safety and health? How is this communicated to employees and supervisors?
3. Explain in detail how supervisors and employees are held accountable for occupational safety and health.
4. How are training programs and practices developed? How are training needs determined? What recordkeeping system is used to determine which employees have had training? What follow-up measures will be used to determine if training is effective?
5. Explain the employer's system for hazard assessment and control. Who is in charge of this system? How will the employer document the system's implementation and use?
6. Describe the employer's system for investigating accidents. Who investigates the accidents and analyzes results? How are findings communicated and to whom?
7. What personal protective equipment do employees need? Describe the employer's system for evaluating, obtaining and maintaining all personal equipment. Who keeps what types of records on maintenance of personal protective equipment?
8. Explain and provide specifics on evaluation of the employer's workplace design, layout, and operation from an ergonomic approach. What assistance will the insurer provide to the employer for job site modifications from an ergonomic approach?
9. How is employee involvement in the occupational safety and health effort demonstrated? How is the opportunity for involvement communicated to employees? If meetings are held, how often? What is the scope of the meetings and who attends them? Who takes the minutes of the meetings? How are meeting results communicated?
10. A hazard assessment survey must be conducted. (See ORS 656.451(3): "Such services shall include the conduct of workplace surveys to identify health and safety problems)." What are the specific findings of this survey? How will hazards identified or suspected be addressed in tailoring the plan to meet specific needs of the employer? How will hazards be corrected?
11. After completing this analysis of the employer's loss prevention management plan, who will be responsible for writing the plan: the insurer, the employer, or both? In what time frame will this plan be written?
12. The insurer must assist the employer in implementing the loss prevention plan. Has the employer requested such assistance? If so, when will the insurer meet again with the employer to assist in this ongoing effort?

This form is provided as a service to workers' compensation insurers by the Department of Consumer and Business Services, Oregon Occupational Safety and Health Division (OR-OSHA). Photocopying is permitted.

APPENDIX B

Instructions for Computing Lost Workday Case Incident Rates (LWDCIR) for an Individual Firm

Incidence rates for an individual establishment or firm may be calculated by employers by using the same formula used to calculate industry-wide incidence rates from the annual Occupational Injury and Illness Survey. An employer may then compare her/his own work injury and illness experience to the overall experience in her/his industry in Oregon or the nation.

The formula requires: (a) the number of lost workday cases, and (b) the number of hours actually worked by all employees during the reference period. To produce an overall incidence rate:

(a) Determine the number of lost workday cases by adding the totals for columns 2 and 9 of the Occupational Injuries and Illnesses Log (OSHA No. 200).

(b) Total the number of hours actually worked during the year by all employees from payroll or other time records. The hours worked figure should not include any non-work time even though paid, such as vacations, sick leave, holidays, etc. (If actual hours worked are not available for employees paid on commission, salary, by the mile, etc., hours worked may be estimated on the basis of scheduled hours or 8 hours per workday.) The formula for computing the incidence rate is as follows:

(a) Number of lost workday cases x 200,000 = lost workday employee hours worked.

(b) Case Incidence Rate: This rate represents the number of lost workday cases occurring per 200,000 hours of work exposure or 100 full-time equivalent workers. The same base is used in computing the occupational injury and illness rates for Oregon and for the nation.

DIVISION 2

GENERAL OCCUPATIONAL SAFETY AND HEALTH RULES

NOTE: In Oregon, the ANSI Standard may be viewed at the OR-OSHA Resource Center located at 350 Winter St NE, Salem OR 97310.

General

437-002-0005
Adoption by Reference

In addition to, and not in lieu of, any other safety and health codes contained in OAR Chapter 437, the Department adopts by reference the following Federal rules as printed in the Code of Federal Regulations, 29 CFR 1910, revised as of 7/1/98, and any subsequent amendments published in the Federal Register as listed below:

(1) 29 CFR 1910.1, Purpose and scope; published 6/27/74, Federal Register, vol. 39, no. 125, p. 23503.

(2) 29 CFR 1910.2, Definitions; published 6/27/74, Federal Register, vol. 39, no. 125, p. 23503.

(3) 29 CFR 1910.3, Petitions for the issuance, amendment, or repeal of a standard; published 6/27/74, Federal Register, vol. 39, no. 125, p. 23503.

(4) 29 CFR 1910.4, Amendments to this part; published 6/27/74, Federal Register, vol. 39, no. 125, p. 23503.

(5) 29 CFR 1910.5, Applicability of standards; published 6/27/74, Federal Register, vol. 39, no. 125, pp. 23503–23504; amended 6/30/93, FR vol. 58, no. 124, p. 35308.

(6) 29 CFR 1910.6, Incorporation by reference; published 6/27/74, Federal Register, vol. 39, no. 125, p. 23504; amended 2/10/84, FR vol. 49, no. 29, p. 5321; 3/7/96, FR vol. 61, no. 46, p. 9230; 3/23/99, FR vol. 64, no. 55, p. 13908; 9/13/05, FR vol. 70, no. 176, p. 53925; 2/14/07, FR vol. 72, no. 30, p. 7136.

(7) 29 CFR 1910.7, Definition and requirements for a Nationally Recognized Testing Laboratory; published 4/12/88, Federal Register, vol. 53, no. 70, pp. 12120–12125; and amended 5/11/88, FR vol. 53, no. 91, p. 16838.

These standards are on file at the Oregon Occupational Safety and Health Division, Oregon Department of Consumer and Business Services, and the United States Government Printing Office.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 17-1988, f. & ef. 11-10-88; OSHA 4-1997, f. & cert. ef. 4-2-97; OSHA 8-1999, f. & cert. ef. 8-6-99; OSHA 4-2005, f. & cert. ef 12-14-05; OSHA 4-2007, f. & cert. ef. 8-15-07

Oregon Amendments

437-002-0006
General Oregon Definitions

For the purposes of administration of the Oregon Safe Employment Act, the following terms mean:

(1) "Act" means the Oregon Safe Employment Act, ORS Chapter 654.

(2) "Agency" means the Occupational Safety and Health Division, Department of Insurance and Finance.

(3) "Assistant Secretary" means the Administrator of the Occupational Safety and Health Division or designated representative.

(4) "Assistant Secretary of Labor for Occupational Safety and Health" means the Administrator of the Occupational Safety and Health Division or designated representative.

(5) "Office of the Solicitor of Labor" means Legal Counsel for the Occupational Safety and Health Division.

(6) "Occupational Safety and Health Administration" or "OSHA" means the Oregon Occupational Safety and Health Division, Department of Consumer and Business Services.

(7) "Standards" mean any occupational safety and health standard which has been adopted and promulgated by a nationally-recognized standards-producing organization, the federal government, or the State of Oregon and shall have the same meaning as, and include, the term "code(s)" and "rule(s)."

(8) "Administrative Rules" means OAR chapter 437, division 001, Rules for the Administration of the Oregon Safe Employment Act, and ORS Chapter 183.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 17-1988, f. & ef. 11-10-88

437-002-0007
Testing and Certification

By adopting these rules, the Department does not establish a testing and certification program separate from the federal OSHA Testing and Certification Program. The Department will accept as valid for compliance with its rules, the Testing and Certifications of Laboratories issued by federal OSHA.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 17-1988, f. & ef. 11-10-88

Adoption and Extension of Established Federal Standards

437-002-0010
Adoption by Reference

In addition to, and not in lieu of, any other safety and health codes contained in OAR chapter 437, the Department adopts by reference the following federal rules as printed in the **Code of Federal Regulations, 29 CFR 1910**, revised as of 7/1/98, and any subsequent amendments published in the **Federal Register** as listed below:

(1) **29 CFR 1910.11** Scope and Purpose, published 6/27/74, **Federal Register**, vol. 39, no. 125, p. 28504.

(2) **29 CFR 1910.12** Construction work, published 6/27/74, **Federal Register**, vol. 39, no. 125, p. 28504.

NOTE: 29 CFR 1910.13 Ship repairing, and **1910.14** Shipbuilding, were removed 6/30/93, **Federal Register**, vol. 58, no. 124, p. 35308.

(3) **29 CFR 1910.15** Shipyard Employment, published 6/27/74, **Federal Register**, vol. 39, no. 125, p. 28505; amended 6/30/93, **FR** vol. 58, no. 124, p. 35308.

(4) **29 CFR 1910.16** Longshoring, published 6/27/74, **Federal Register**, vol. 39, no. 125, p. 28505; amended 7/5/83, **FR** vol. 48, pg. 30908; 12/1/98, **FR** vol. 63, no. 230, p. 66270.

(5) **29 CFR 1910.17** Effective dates, published 6/27/74, **Federal Register**, vol. 39, no. 125, p. 28505; 3/7/96, **FR** vol. 61, no. 46, p. 9235.

(6) **29 CFR 1910.18** Changes in established federal standards, published 6/27/74, **Federal Register**, vol. 39, no. 125, p. 28505.

(7) **29 CFR 1910.19** Special provisions for air contaminants, published 6/30/78, **Federal Register**, vol. 43, p. 28473; amended 10/3/78, **FR** vol. 43, p. 45809; 11/14/78, **FR** vol. 43, p. 53007; 1/26/79, **FR** vol. 44, p. 5447; 6/19/81, **FR** vol. 46, p. 25796; 12/13/85, **FR** vol. 50, p. 51173; 6/20/86, **FR** vol. 51, p. 22733; 10/17/86, **FR** vol. 51, p. 37004; 9/11/87, **FR** vol. 52, p. 34562; 12/4/87, **FR** vol. 52, p. 46291; 8/10/92, **FR** vol. 57, no. 154, pp. 35666-35681; 9/14/92, **FR** vol. 57, no. 178, pp. 42388-42453; 8/10/94, **FR** vol. 59, no. 153, p. 41057; 11/4/96, **FR** vol. 61, no. 214, p. 56831; 1/10/97, **FR** vol. 62, no. 7, p. 1600.

NOTE: These standards are available at the Oregon Occupational Safety and Health Division, Oregon Department of Consumer and Business Services, and the **United States Government Printing Office**.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 16-1988, f. & ef. 11-10-88; OSHA 1-1993, f. & cert. ef. 1-22-93; OSHA 4-1995, f. & cert. ef. 3-29-95; OSHA 4-1997, f. & cert. ef. 4-2-97; OSHA 6-1997, f. & cert. ef. 5-2-97; OSHA 9-1997, f. & cert. ef. 12-31-97; OSHA 6-1999, f. & cert. ef. 5-26-99

Access to Employee Exposure and Medical Records

437-002-0015
Adoption by Reference

In addition to, and not in lieu of, any other safety and health codes contained in OAR chapter 437, the Department adopts by reference the following federal rules as printed in the **Code of Federal Regulations, 29 CFR 1910**, revised as of 7/1/96, and any subsequent amendments published in the **Federal Register** as listed below: **29 CFR 1910.20** Access to Employee Exposure and Medical Records has been redesignated to **29 CFR 1910.1020**.

[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 3-1989, f. & ef. 3-1-89; OSHA 4-1997, f. & cert. ef. 4-2-97

Walking-Working Surfaces

437-002-0020
Adoption by Reference

In addition to and not in lieu of any other safety and health codes contained in OAR chapter 437, the Department adopts by reference the following rules as printed in the Code of Federal Regulations, 29 CFR 1910, revised as of 7/1/98, and any subsequent amendments published in the Federal Register as listed below:

(1) 29 CFR 1910.21 Definitions, published 6/27/74, Federal Register, vol. 39, no. 125, pp. 23505-23508.

(2) 29 CFR 1910.22 General Requirements, published 6/27/74, FR vol. 39, no. 125, p. 23508.

(3) 29 CFR 1910.23 Guarding Floor and Wall Openings and Holes, published 6/27/74, FR vol. 39, no. 125, pp. 23508-23510; amended 10/24/78, FR vol. 43, p. 49744; amended 2/10/84, FR vol. 49, p. 5321.

(4) 29 CFR 1910.24 Fixed Industrial Stairs, published 6/27/74, FR vol. 39, no. 125, pp. 23510-23511; amended 10/24/78, FR vol. 43, p. 49744; amended 2/10/84, FR vol. 49, p. 5321.

(5) 29 CFR 1910.25 Portable Wood Ladders, REPEALED. In Oregon, OAR 437-002-0026 applies.

(6) 29 CFR 1910.26 Portable Metal Ladders, REPEALED. In Oregon, OAR 437-002-0026 applies.

(7) 29 CFR 1910.27 Fixed Ladders, REPEALED. In Oregon, OAR 437-002-0027 applies.

(8) 29 CFR 1910.28 Safety Requirements for Scaffolding, published 6/27/74, FR vol. 39, no. 125, pp. 23522-23529; amended 10/24/78, FR vol. 43, p. 49746; amended 2/10/84, FR vol. 49, p. 5321; amended 4/12/88, FR vol. 53, p. 12121.

(9) 29 CFR 1910.29 Manually Propelled Mobile Ladder Stands and Scaffolds (Towers), published 6/27/74, FR vol. 39, no. 125, pp. 23529-23530.

(10) 29 CFR 1910.30 Other Working Surfaces, published 6/27/74, FR vol. 39, no. 125, p. 23530; amended 2/10/84, FR vol. 49, p. 5322; 3/7/96, FR vol. 61, no. 46, p. 9235.

(11) 29 CFR 1910.31 Source of Standards, published 6/27/74, FR vol. 39, no. 125, p. 23530; 3/7/96, FR vol. 61, no. 46, p. 9235.

(12) 29 CFR 1910.32 Standards Organizations, published 6/27/74, FR vol. 39, no. 125, p. 23530; 3/7/96, FR vol. 61, no. 46, p. 9235.

NOTE: These rules are on file with Oregon Occupational Safety and Health Division, Department of Consumer and Business Services and the United States Government Printing Office.

[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 4-1990, f. & cert. ef. 1-23-90; OSHA 4-1997, f. & cert. ef. 4-2-97; OSHA 10-1999, f. & cert. ef. 9-10-99

437-002-0022
Additional Oregon General Requirements

(1) Barriers.

(a) Protective barriers or suitable guards shall be erected when covers over openings are removed or excavations made in places accessible to vehicular or pedestrian traffic. Warning lights or flares shall be displayed if work is being done at night. These protective measures shall be maintained until permanent or adequate covers or barricades are in place or the hazard removed.

(b) A watchperson shall be stationed where temporary conditions do not permit safeguarding of employees through the use of warning signs, lights, protective barriers, or covers.

(2) Plant Arrangement.

(a) Provisions for safety (such as adequate work and storage space for the full needs of raw, in-process, and finished materials, and for machinery, equipment and operations) shall be included in plant design, layout, and operation.

(b) A vertical clearance of not less than 6-1/2 feet shall be provided over work areas. Where it is otherwise impractical to secure adequate head room, overhead obstructions may be padded or may be indicated by means of contrasting paint, telltales, or similar means, if such means will furnish adequate protection.

(c) Work platforms provided shall be of sufficient width to provide a safe working space.

(3) Aisles, Passageways, Walkways, Inclines.

(a) Aisles, passageways, and walkways shall be of adequate width for their intended or actual use, and in no event shall they be less than 22 inches wide. Passageways which are elevated more than 4 feet above the ground or floor level shall be provided with standard railings.

(b) Walkways or passageways equipped with standard handrails shall be provided for oilers and other workers who are regularly required to go to elevated or other hazardous locations. Whenever space will permit, they shall be not less than 22 inches wide.

(A) Fixed inclined walkways shall be not less than 22 inches wide, equipped with handrails on each open side, inclined at no greater angle than 24 degrees, and they shall be securely fastened at the top and bottom.

(B) Moveable inclined walkways which extend to floats or floating equipment (except to vessels under Federal jurisdiction) shall be not less than 20 inches wide, and shall be secured at the upper end only with clear space provided for the lower end to adjust automatically with the heights of water.

(d) An adequate anti-slip surface shall be applied to inclined walkways whenever the gradient so warrants. Adequate cleats secured at uniform intervals not to exceed 18 inches, and extending the full width of the walkway when practical, may be used for this purpose.

(e) Inclines extending from floor to floor which are used instead of stairways shall have standard railings in accordance with the requirements for stairways.

(f) Aisles, passageways, walkways, and inclines shall be kept in good repair and shall be free of holes, unevenness, loose boards, protruding nails, or any other unnecessary obstructions or debris.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1990, f. & cert. ef. 1-23-90; OSHA 6-1994, f. & cert. ef. 9-30-94; Renumbered from 437-002-0022

437-002-0026
Portable Ladders

(1) Definitions. Portable ladder terms mean:

(a) Check. A lengthwise separation of the wood, most of which occurs across the rings of annual growth.

(b) Compression failure. A deformation (buckling) of the fibers due to excessive compression along the grain.

(c) Decay. Disintegration of wood substance due to action of wood-destroying fungi. It is also known as dote and rot.

(d) Extension ladder. A non self-supporting portable ladder of adjustable length. It has two or more sections that adjust to varied lengths.

(e) Extension trestle ladder. An adjustable, self-supporting portable ladder made of a trestle ladder base and a vertical extension section.

(f) Ladder. A device with steps, rungs or cleats between rails, for people to climb up or down.

(g) Low density wood. Exceptionally light in weight and usually deficient in strength for the species.

(h) Platform ladder. A fixed length, self-supporting portable ladder with a platform at the highest permissible standing level.

(i) Platform. A landing surface for working or standing.

(j) Reinforced Plastic. A plastic made stronger than its base by the addition of high strength fillers, usually fibers, fabrics or mats.

(k) Section.

(A) Bottom or base section. The lowest section of a non self-supporting portable ladder.

(B) Middle or intermediate section. The section(s) between the top (fly) and bottom (base) sections of a non self-supporting portable ladder.

(C) Top or fly section. The uppermost section of a non self-supporting portable ladder.

(l) Sectional ladder. A non-self-supporting, fixed length, portable ladder, with two or more sections of ladder that may combine to work as a single ladder. Its size is the length of the assembled sections.

(m) Shake. A separation along the grain, most of which occurs between the rings of annual growth.

(n) Single Section Ladder. A fixed length, non self-supporting portable ladder made of one section.

(o) Stepladder. A fixed length, self-supporting portable ladder with a hinged back.

(p) Top Cap. The very top part of a stepladder.

(q) Top Step. The first step below the top cap of a stepladder. If the ladder has no top cap, the top step is the first one below the top of the rails.

(r) Trestle ladder. A fixed length, self-supporting portable ladder made of two sections and hinged at the top. It can be climbed by two people at once, one per side.

(s) Wane. Bark, or the lack of wood from any cause, on the corner of a piece.

(t) Wood irregularities. Natural characteristics in or on wood that may lower its durability, strength, or utility.

(u) Working Load Rating. The maximum load authorized by the manufacturer for the ladder.

(2) Application: This standard covers the selection, use and care of portable ladders used in agriculture. It does not cover orchard ladders, special ladders, combination step and extension ladders, aisle way step ladders, and shelf ladders.

(3) Ladder selection:

(a) Portable reinforced plastic (fiberglass) ladders must comply with American National Standard A14.5-1992. Wood ladders must comply with American National Standard A14.1-1994. Metal ladders must comply with American National Standard A14.2-1990.

(b) Unaltered and properly maintained ladders that meet the ANSI standard in effect at the time of their manufacture comply with this standard as do ladders that comply with newer versions of the particular ANSI standard.

(4) Condition of wood ladders: There must be no sharp edges or splinters on wood parts. Visual inspection must show no check, shake, wane, compression failures, decay, or other wood irregularities. Ladders may not be made of low-density wood.

(5) General requirements — all ladders:

(a) Step spacing must be uniform and not more than 12 inches. Steps must be parallel and level when the ladder is in the normal use position.

(b) All joints, attachments and working parts of ladders must be tight and not worn to a point that causes a hazard. Do not use ladders with damaged or bent parts.

(c) Replace frayed or badly worn rope.

(d) Safety feet and other auxiliary equipment must in good condition.

(e) Inspect ladders and remove from use any with defects. Ladders awaiting repair must be tagged "Dangerous, Do Not Use."

(f) There can be no dents, breaks or bends in the side rails or rungs.

(g) Do not make ladders by fastening cleats across a single rail.

(h) Portable ladders must have nonslip bases.

(6) General requirements — Portable stepladders:

(a) The minimum width between side rails at the top, inside to inside, must be not less than 11 inches. From top to bottom, the side rails must spread at least 1 inch for each foot of length of the stepladder.

(b) The bottoms of the four rails must have insulating nonslip material.

(c) There must be a metal spreader or locking device strong enough to hold the ladder open. The spreader must have no sharp points or edges. For Type III ladders, the pail shelf and spreader can be one unit (a shelf-lock ladder).

(7) Use — All ladders: Use ladders only for purposes approved or recommended by the manufacturer.

(a) Do not load ladders beyond their working load rating.

(b) Do not use ladders in front of doors that open toward the ladder without blocking, locking or guarding the door.

(c) Do not use ladders placed on boxes, barrels, or other unstable bases to obtain additional height.

(d) Do not use ladders with broken or missing steps, rungs, or cleats, broken side rails, or other faulty parts.

(e) Do not splice sections of short ladders together to make a long one.

(f) When used, metal reinforcers must be on the underside of rails of portable rung ladders.

(g) A ladder for access to a roof must extend at least 3 feet above the top support point, at the eave, gutter, or roofline.

(h) Secure ladders as necessary when used on surfaces that may allow slipping or movement. Use one of the following methods:

(A) Non-slip bases on the ladder feet; or

(B) Steel points or safety shoes on the ladder feet, designed for the type of surface the ladder is on; or

(C) Nail the ladder to the floor, or set it against secured blocks or chocks.

NOTE: Non-slip bases are not a substitute for care in safely placing, lashing, or holding a ladder on oily, metal, concrete, or slippery surfaces.

(i) Use portable ladders only on a surface that gives stable, level footing.

(j) The climber must face the ladder and have free use of both hands when climbing up or down.

(k) Do not step or jump between erected ladders.

(l) There must be only one person at a time on a ladder unless its labeling specifically allows use by more than one person.

(m) Do not use ladders as planks or bridges between walking surfaces or in other horizontal applications.

(n) Do not use ladders to gain additional height from elevated surfaces like scaffolds, truck beds, vehicle bodies, tractor scoops or boom truck buckets.

(o) When working on or near electric circuits or energized lines, comply with OAR 437-002-1910.333(c).

(p) Unless the ladder has a single support attachment, the tops of both rails must contact an adequate support surface.

(q) Do not use ladders for any purpose not intended by the manufacturer nor as a brace, skid, guy or anchor point.

(8) Use of specific types of ladders.

(a) Portable stepladders. Do not use stepladders more than 20 feet long.

(A) Do not climb on the back section of the ladder unless it has steps meant for climbing. Do not stand on the top step or top cap of stepladders.

(B) There must be only one person at a time on the ladder.

(C) Do not use stepladders in freestanding positions when not fully opened. Do not use them as supports for working platforms or scaffolding planks.

(b) Portable rung ladders.

(A) Single ladder.

(i) Do not use single ladders more than 30 feet long.

(ii) Place these ladders at an angle shown in Figure 1. [Figure not included. See ED. NOTE.]

(iii) The tops must be tied down or secured if there is a possibility of sliding or movement.

(iv) Single ladders are acceptable as fixed ladders only when they comply with 437-002-0027.

(B) Two-section ladder.

(i) Do not use two-section extension ladders more than 60 feet long. All ladders of this type must have two sections, one to fit within the side rails of the other, and arranged so that the upper section will raise and lower.

(ii) Set up and use extension ladders so that the top section or fly is resting on the bottom section or base. Rung locks must be in the proper position.

(iii) Place these ladders at an angle shown in Figure 1.

(iv) The tops must be tied down or secured if there is a possibility of sliding or movement.

(v) On two-section extension ladders the minimum overlap for the two sections in use must be as follows: [Table not included. See ED. NOTE.]

(C) Sectional ladder.

(i) Do not use assembled combinations of sectional ladders longer than lengths allowed in this subdivision.

(ii) Place these ladders at an angle shown in Figure 1.

(iii) The tops must be tied down or secured if there is a possibility of sliding or movement.

(iv) Do not use three section extension ladders longer than 72 feet.

(D) Trestle and extension trestle ladder. Do not use trestle ladders, or extension sections or base sections of extension trestle ladders more than 20 feet long.

[ED. NOTE: Figures and Tables referenced are available from the agency.]

[Publications: Publications referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(3)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 10-1999, f. & cert. ef. 9-10-99

437-002-0027

Fixed Ladders

(1) Definitions. Fixed ladder terms mean:

(a) Cage. A guard sometimes referred to as a basket guard that is an enclosure fastened to the side rails of a fixed ladder or to a structure to encircle the climbing space of the ladder.

(b) Cleats. Ladder crosspieces of rectangular cross-section placed on edge on which a person may step when climbing up or down.

(c) Fastenings. A device to attach a ladder to a structure, building, or equipment.

(d) Fixed ladder. A ladder permanently attached to a structure, building, or equipment.

(e) Grab bars. Individual handholds adjacent to or as an extension above ladders to provide access beyond the limits of the ladder.

(f) Individual-rung ladder. A fixed ladder with each rung individually attached to a structure, building, or equipment.

(g) Ladder. A device with steps, rungs or cleats between rails, for people to climb up or down.

(h) Ladder safety device. Any device, other than a cage or well, designed to eliminate or reduce the possibility of accidental falls, that may use life belts, friction brakes, and sliding attachments.

(i) Pitch. The included angle between the horizontal and the ladder, measured on the opposite side of the ladder from the climbing side.

(j) Rail ladder. A fixed ladder with side rails joined at regular intervals by rungs or cleats and fastened in full length or in sections to a building, structure, or equipment.

(k) Rungs. Ladder crosspieces of circular or oval cross-section on which a person may step when climbing up or down.

(l) Side-step ladder. One from which a person getting off at the top must step sideways to reach the landing.

(m) Steps. The flat crosspieces of a ladder on which a person may step when climbing up or down.

(n) Through ladder. A ladder from which a person getting off at the top must step through side rails to reach the landing.

(o) Well. A permanent complete enclosure around a fixed ladder, that is attached to the walls of the well. Proper clearances for a well will give the climber the same protection as a cage.

(2) Design requirements: Design considerations. All ladders, appurtenances, and fastenings must meet these load requirements:

(a) The minimum design live load must be a single concentrated load of 200 pounds.

(b) Design consideration must include the number and position of additional concentrated live load units of 200 pounds each as determined from anticipated use.

(c) Consider the live loads caused by persons on the ladder to be concentrated at such points as will cause the maximum stress in the structural member being under evaluation.

(d) Use the weight of the ladder and attachments together with the live load when designing rails and fastenings.

(e) All wood parts of fixed ladders must meet the requirements of OAR 437-002-0027(3).

(f) For fixed ladders with wood side rails and wood rungs or cleats, used at an angle between 75º and 90º, and intended for use by no more than one person per section, single ladders in OAR 437-002-0026(8)(b)(A) are acceptable.

(3) Specific features.

(a) Rungs and cleats.

(A) All rungs must have a minimum diameter of 3/4 inch for metal ladders, except as in paragraph OAR 437-002-0027(3)(g) and a minimum diameter of 1-1/8 inches for wood ladders.

(B) The distance between rungs, cleats, and steps must be uniform and not more than 12 inches.

(C) The minimum clear length of rungs or cleats must be 16 inches.

(D) Rungs, cleats, and steps must not have splinters, sharp edges, burrs, or projections.

(E) The rungs of an individual rung ladder must not allow the climber's foot to slide off the end. Figure 2 shows a suggested design. [Figure not included. See ED. NOTE.]

(b) Side rails. Side rails that might be used as a climbing aid must be of such cross sections as to afford adequate gripping surface without sharp edges, splinters, or burrs.

(c) Fastenings. Fastenings must be an integral part of fixed ladder design.

(d) Splices. All splices must meet design requirements noted in (2)(a) above. All splices and connections must have smooth transition with original members and no sharp or extensive projections.

(e) Electrolytic action. Protect dissimilar metals from electrolytic action when they are joined.

(f) Welding. All welding must be according to the "Code for Welding in Building Construction" (AWSD1.0-1966).

(g) Protection from deterioration. Paint or treat metal ladders and attachments to resist corrosion and rusting when necessary. Ladders with individual metal rungs imbedded in concrete, that serve as access to pits and to other areas under floors, must have rungs with a minimum diameter of 1 inch or paint or treatment to resist corrosion and rusting.

(4) Clearance.

(a) Climbing side. On fixed ladders, the perpendicular distance from the centerline of the rungs to the nearest permanent object on the climbing side of the ladder must be 36 inches for a pitch of 76º, and 30 inches for a pitch of 90º (fig. 3), with minimum clearances for intermediate pitches varying between these two limits in proportion to the slope, except as in (4)(c) and (e) below.

(b) Ladders without cages or wells. There must be a clear width of at least 15 inches each way from the centerline of the ladder in the climbing space, except when cages or wells are necessary.

(c) Ladders with cages or baskets. Subparagraphs (4)(a) and (b) above do not cover ladders with a cage or basket. They must conform to (5)(a)(E). Subparagraph (4)(a) above does not cover fixed ladders in smooth-walled wells. They must conform to (5)(a)(F).

(d) Clearance in back of ladder. The distance from the centerline of rungs, cleats, or steps to the nearest permanent object in back of the ladder must be not less than 7 inches, except that when there are unavoidable obstructions, there must be minimum clearances shown in Figure 4. [Figure not included. See ED. NOTE.]

(e) Clearance in back of grab bar. The distance from the centerline of the grab bar to the nearest permanent object in back of the grab bars must be not less than 4 inches. Grab bars must not protrude on the climbing side beyond the rungs of the ladder that they serve.

(f) Step-across distance. The step-across distance from the nearest edge of the ladder to the nearest edge of equipment or structure must be not more than 12 inches, or less than 2 inches (Figure 5). [Figure not included. See ED. NOTE.]

(g) Hatch cover. Counterweighted hatch covers must open a minimum of 60º from the horizontal. The distance from the centerline of rungs or cleats to the edge of the hatch opening on the climbing side must be not less than 24 inches for offset wells or 30 inches for straight wells. There must be no protruding potential hazards within 24 inches of the centerline of rungs or cleats; any such hazards within 30 inches of the centerline of the rungs or cleats must have deflector plates at an angle of 60º from the horizontal as shown in figure 6. The relationship of a fixed ladder to an acceptable counterweighted hatch cover is shown in Figure 7. [Figure not included. See ED. NOTE.]

(5) Special requirements.

(a) Cages, Wells and Ladder Climbing Safety systems.

(A) Cages, wells or ladder climbing safety systems must be on all ladders where the length of climb is more than 24 feet but not more than 50 feet or the top of the ladder is more than 24 feet above the ground or nearest lower landing surface.

NOTE: Design specifications for cages and wells are in Figures 8, 9 and 10.

(B) Ladders with a length of climb more than 50 feet must have a cage, well or climbing safety system and must meet one of the following two requirements:

(i) When using a cage or well the ladder must be in sections, horizontally offset, with rest platforms at least every 50 feet.

(ii) When using a ladder climbing safety system the ladder must have rest platforms at least every 150 feet (except chimneys).

(C) Cages must extend at least 42 inches above the top of the landing, unless there is other acceptable protection.

(D) Cages must extend down the ladder to a point not less than 7 feet nor more than 8 feet above the base of the ladder. The bottom must flare not less than 4 inches or the portion of the cage opposite the ladder must extend to the base.

(E) Cages must not extend less than 27 nor more than 28 inches from the centerline of the rungs of the ladder. Cages must not be less than 27 inches in width. The inside must be clear of projections. Vertical bars must be at a maximum spacing of 40 degrees around the circumference of the cage; this will give a maximum spacing of approximately 9 inches, center to center.

(F) Ladder wells must have a clear width of at least 15 inches measured each way from the centerline of the ladder. Smooth-walled wells must be a minimum of 27 inches from the centerline of rungs to the well wall on the climbing side of the ladder. Where other obstructions on the climbing side of the ladder exist, there must be a minimum of 30 inches from the centerline of the rungs.

(b) Landing platforms.

(A) Where a person has to step a distance more than 12 inches from the center line of the rung of a ladder to the nearest edge of a structure or equipment, there must be a landing platform. The minimum step-across distance is 2 inches.

(B) All landings must have standard railings and toeboards, that give safe access to the ladder. Platforms must be not less than 24 inches wide and 30 inches long.

(C) One rung of any section of ladder must be at the level of the landing laterally served by the ladder. Where access to the landing is through the ladder, the spacing from the landing platform to the first rung below the landing must be the same as the rung spacing on the ladder.

(c) Ladder extensions. The side rails of through or side step ladder extensions must extend 3 feet above parapets and landings. For through ladder extensions, omit the rungs from the extension. There must be not less than 18 nor more than 24 inches clearance between rails. For side step or offset fixed ladder sections, at landings, the side rails and rungs must extend to the next regular rung beyond or above the 3-foot minimum (Figure 11). [Figure not included. See ED. NOTE.]

(d) Grab bars. Space grab bars by a continuation of the rung spacing when they are horizontal. Vertical grab bars must have the same spacing as the ladder side rails. Grab bar diameters must be the equivalent of the round rung diameters.

(6) Pitch.

(a) Preferred pitch. The preferred pitch of fixed ladders is between 75º and 90º with the horizontal (Figure 12). [Figure not included. See ED. NOTE.]

(b) Substandard pitch. Fixed ladders are substandard if they are between 60º and 75º with the horizontal. Substandard fixed ladders are allowed only where necessary to meet conditions of installation.

(c) Scope of coverage in this section. This section covers only fixed ladders between 60º and 90º with the horizontal.

(d) Pitch more than 90º. No ladder may be more than 90º with the horizontal.

(7) Maintenance. All ladders must be in safe condition. Inspect ladders at intervals determined by use and exposure.

[ED. NOTE: Figures referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 10-1999, f. & cert. ef. 9-10-99

437-002-0028
Guardrails and Toeboards

Guardrails and toeboards shall be installed on all open sides and ends of platforms more than 10 feet above the ground or floor.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1990, f. & cert. ef. 1-23-90

437-002-0030
Floors

The following Oregon-initiated rule relates to 29 CFR 1910.30, **Other Working Surfaces**:

(1) Floors, floor supports, and required appurtenances shall be well maintained and kept in good repair. Defects should be remedied as soon as observed. Unless repaired immediately, hazardous floor openings and holes shall be fenced off or otherwise suitably guarded, and shall remain fenced off or guarded until properly repaired.

(2) Floors subject to slipping hazards due to conditions or processes of an operation or materials to which they will be exposed shall be of material and/or design which will effectively control slippery conditions.

[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)

Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1990, f. & cert. ef. 1-23-90; OSHA 6-1994, f. & cert. ef. 9-30-94

437-002-0031
Provisions for Window Cleaners

(1) Every window so constructed that a worker must stand on the outside sill or ledge to clean the window and having a sill more than ten feet above the ground or adjoining surface, shall have a sill at least six inches wide with a slope not greater than one to six, and shall have a securely fastened at each side of the window, at a height not less than 42 inches or more than 51 inches, a safety anchorage to which may be fastened a window cleaner's safety belt. Such anchorage shall be of a metal having a corrosion resistance of 60 percent as compared to copper. The anchor shall be machined from bar stock or forged and heat-treated, and shall be capable of supporting a pull of 6,000 pounds without fracture applied in the direction which the anchor must withstand in service should a person fall.

(2) Anchor clearance shall be not less than one inch at either side and not less than five inches above or below the anchor.

(3) All anchors and anchor fastenings shall be provided with means to prevent them from turning, backing off or becoming loose.

(4) Anchor fittings having a single threaded section which is merely screwed into reinforcing plates are prohibited.

(5) Following are acceptable methods of installing anchors in various types of construction. Other methods excepting those specifically prohibited, may be permitted, provided that they furnish at least the equivalent strength and safety:

(a) In wood construction, two through bolts of not less than 3/8 inch diameter shall pass through the entire window frame or mullion to secure each anchor, securely fastened by a washer and nut, the ends of bolts upset to prevent the nuts from loosening or being removed. The use of lag screws is specifically prohibited;

(b)(A) In hollow metal frame construction, the anchor shall be attached by two 3/8 inch diameter bolts which shall pass through the face of the frame and through a 3/8 inch thick steel back-up plate, 3/4 inch wide extending from five inches above the upper bolt to two inches below th lower one. Bolts shall be secured by means of nuts and lock washers or equivalent means. If impractical to provide nuts and lock washers, the reinforcing plate may be tapped to receive the 3/8 inch bolts, which must pass completely through the plate and be secured with lock washers. If the threaded bolt is an integral part of the anchor, it shall be at least 1/2 inch in diameter and be secured by a nut and lock washer or equivalent means. All screws or bolts used shall have the threads terminate far enough from the head to prevent weakening due to undercutting;

(B) In either solid or hollow aluminum frames, the reinforcing plate and bolts shall be heavily coated with a bituminous paint, and a plastic gasket shall be placed between the anchor and the aluminum metal as a means of preventing electrolytic action between unlike metals; or another acceptable means which will prevent such action may be used.

(c) In solid metal frame construction, anchors shall be attached by two 3/8 inch diameter bolts passed through the frame and secured by nuts and washers on the inside, ends of bolts upset. When this method cannot be used, it will be permissible to drill and tap the metal frame to a depth of at least 3/8 inch and install the anchor with at least two 3/8 inch screws, which shall have the threads terminate far enough from the head to prevent weakening due to undercutting. If the threaded bolt is an integral part of the anchor, it shall be at least 1/2 inch in diameter and be secured by a nut and lock washer, or equivalent means;

(d) In masonry construction, the anchor shall be either a single bolt at least 1/2 inch in diameter, or two 3/8 inch diameter bolts. Such bolt or bolts shall have a head on the inner end and shall be imbedded not less than eight inches in solid masonry, or extend through the wall or mullion and be secured by a nut and lock washer or equivalent means. The use of masonry anchors consisting of flat metal embedded in mortar joints between brick or concrete blocks or stone is prohibited in new or existing buildings.

(6) Where sills are less than six inches wide, auxiliary or portable sills or other means providing equivalent safety may be permitted.

(7) Window cleaners' anchorages shall be inspected regularly and any defects found shall be remedied before workers are permitted to use them.

(8) For buildings constructed, remodeled or renovated on or after the adoption date of this rule the provisions of ANSI/ASME A39.1-1987 shall apply.

[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1990, f. & cert. ef. 1-23-90

437-002-0032
Ramps and Runways

(1) Ramps and runways shall be substantially constructed, and shall be maintained in safe condition.

(2) Ramps and runways for vehicles shall have adequate width and evenness for safe operation of equipment and they shall be provided with timber guards of not less than nominal six-inch by six-inch material set on nominal three inch blocks, or the equivalent, placed parallel to and secured to the sides of the ramp or runway.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1990, f. & cert. ef. 1-23-90

437-002-0033
Piers and Wharves

(1) Open sides of piers and wharves, more than four feet above ground or water level, shall be provided with a shear or guard timber (bull rail) of not less than six-inch by six-inch wood material set on nominal three-inch blocking, or material of equal strength and of minimum height securely attached. Except for areas where vessels' mooring lines are handled, the open sides not used for loading or unloading purposes shall be provided with standard handrails in addition to shear timbers.

(2) Ladders or other means of access reaching from low water mark to the dock floor shall be provided for each 400 feet or portion thereof of the water side of all wharves and piers. Where portable ladders are used, a secure method of fastening them shall be provided.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1990, f. & cert. ef. 1-23-90

Means of Egress

437-002-0040
Adoption by Reference

In addition to and not in lieu of any other safety and health codes contained in OAR chapter 437, the Department adopts by reference the following rules as printed in the Code of Federal Regulations, 29 CFR 1910, revised as of 7/1/99, and any subsequent amendments published in the Federal Register as listed below:

(1) 29 CFR 1910.35 Definitions, REPEALED. In Oregon, OAR 437-002-0041 applies.

(2) 29 CFR 1910.36 General Requirements, REPEALED. In Oregon, OAR 437-002-0041 applies.

(3) 29 CFR 1910.37 Means of Egress — General, REPEALED. In Oregon, OAR 437-002-0041 applies.

(4) 29 CFR 1910.38 Employee Emergency Plans and Fire Prevention Plans, REPEALED. In Oregon, OAR 437-002-0042 and 437-002-0043 apply.

These rules are on file with Oregon Occupational Safety and Health Division, Department of Consumer and Business Services and the United States Government Printing Office.

[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 4-1990, f. & cert. ef. 1-23-90; OSHA 4-1997, f. & cert. ef. 4-2-97; OSHA 8-2000, f. & cert. ef. 10-10-00

437-002-0041
Exits and Exit Routes

(1) Application: This subpart does not apply to mobile workplaces, like vehicles or vessels.

(2) Definitions:

(a) Exit. The part of the exit route, that is a way out of the workplace (like a door, stairwell or vestibule).

(b) Exit Route. A continuous, unobstructed path from anywhere in a work area to the exit.

(3) General:

(a) There must be permanent, unobstructed exit routes to get out of work areas safely during emergencies.

(b) There must be two or more exit routes depending on the size and layout of the work area and the number of people involved. A single exit route is acceptable only if all workers can get out through it safely during an emergency. Locate multiple exit routes apart from each other.

(4) Design:

(a) An exit must have enough openings to permit access to, or exit from, occupied areas. An interior opening into an exit must have a self-closing fire door that remains closed. Each fire door, its frame, and its hardware must be listed or approved by a nationally recognized testing laboratory.

Note to paragraph(a): 29 CFR 1910.155(c)(3)(iv)(A) defines "listed," 29 CFR 1910.7 defines a "nationally recognized testing laboratory," and 29 CFR 1910.155 (c)(3) defines "approved."

(b) Walls or partitions that separate an exit from other areas must have at least a 1-hour fire resistance rating if the exit connects three stories or less. Materials that separate an exit must have at least a 2-hour fire resistance rating if the exit connects four stories or more.

(c) Exits must open from the inside without keys, tools or special knowledge. Devices that lock only from the outside are acceptable. There must be nothing on an exit door that could hinder its use during an emergency.

NOTE: You may lock or block an exit door from the inside in a mental, penal, or correctional institution, if supervisory personnel are continuously on duty and a plan exists to remove occupants during an emergency.

(d) An exit must lead directly outside or to a street, walkway, refuge area, or to an open space with access to the outside.

(e) Exit stairs that continue beyond the floor of exit discharge must have doors, partitions, or other effective means at the floor of exit discharge to assure that the direction of exit travel is clear to employees.

(f) Use only a side-hinged exit door to connect any room to an exit route. The door must swing out if the room can hold more than 50 persons or has highly flammable or explosive materials in it.

(g) Each exit route must be able to handle the maximum-permitted occupant load for each floor served by it. The capacity of a path to the exit must not decrease as people move toward the exit.

(h) The exit route must be at least 6 feet, 8 inches high at all points.

(i) An exit route must be at least 28 inches wide at all points between handrails and wider if needed to handle the occupant load.

(j) Objects that project into the exit route must not reduce the minimum height and width of the exit route.

(k) Repair or replace damaged or altered fire retardant coatings to keep their original retardant effectiveness.

(5) Access:

(a) There must be unobstructed access to exit routes.

(b) Exit routes must not pass through or into lockable rooms or dead ends.

(c) Exit routes must be mostly level or have stairs or ramps.

(6) Outside and refuge areas:

(a) The street, walkway, refuge area, or open space to which an exit leads must be large enough to accommodate all building occupants likely to use that exit.

(b) A refuge area must be:

(A) A space along an exit route protected from the effects of fire either by separation from other spaces within the building or by its location; or

(B) A floor with at least two spaces separated by smoke-resistant partitions, in a building where each floor is protected by an automatic sprinkler system. Automatic sprinkler systems must comply with 29 CFR 1910.159.

(7) Outside Exit Routes:

(a) Outdoor exit routes must meet the requirements for indoor exit routes and these additional requirements:

(A) The exit route must have guardrails to protect unenclosed sides elevated above a lower surface;

(B) There must be a cover if accumulation of snow or ice is likely;

(C) The exit route must be reasonably straight, smooth, solid, substantially level; and

(D) The exit route must have no dead ends longer than 20 feet.

(8) Condition of Exit Routes and Exits:

(a) Exit routes must minimize danger to employees during emergencies.

(b) Exit routes must be free of highly flammable furnishings and decorations.

(c) An exit route must not require employees to travel toward materials that burn very quickly, emit poisonous fumes, or are explosive, unless those materials are effectively shielded from the exit route.

(d) Exit routes must have adequate lighting.

(e) Each exit must be clearly visible and must have a distinctive sign reading "Exit." Install additional directional signs to exits where necessary.

(f) Exit doors must have no signs or decorations that obscure their visibility.

(g) The line-of-sight to an exit sign must be clear.

(h) If workers could mistake a "non-exit" for an exit, mark the non-exit, "Not an Exit" or mark it to indicate its real use.

(i) There must be enough reliable light on or from exit signs to allow them to be effective during emergencies.

(j) All safeguards to protect employees during an emergency (e.g., sprinkler systems, alarm systems, fire doors, exit lighting) must work properly.

(9) Exits During Construction and Repair:

(a) Employees must not occupy an area under construction until an adequate number of exit routes that comply with these rules are available.

(b) Employees must not occupy an area during repair or alteration unless all exits and existing fire protection remain as effective as before the work. Alternate fire protection must provide an equivalent level of safety.

(c) Flammable or explosive materials used during construction or repair must not expose employees to hazards not otherwise present or impede emergency escape.

(10) Alarm System. There must be an operable employee alarm system with a distinctive signal to warn employees of fire or other emergencies, unless employees can see or smell a fire or other hazard so that it would provide adequate warning to them. The employee alarm system must comply with the requirements of 29 CFR 1910.165.

(11) Special Circumstances — Counterweights and Cold Storage Facilities.

(a) There must be an enclosure or guard around counterweights that are near enough to passageways or work areas to cause a hazard. The guard or enclosure need only be sufficient to protect workers from contact with the counterweight when it moves.

(b) The doors on walk-in refrigerators, coolers and freezers must have latches or closer devices that open from the inside without a key or special knowledge or effort.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 8-2000, f. & cert. ef. 10-10-00; OSHA 12-2001, f. & cert. ef. 10-26-01

437-002-0042
Emergency Action Plan

(1) Development of An Emergency Action Plan.

(a) When another Oregon OSHA standard requires an employer to develop an emergency action plan, the plan must comply with this section and cover each part of the workplace.

(b) The plan must be in writing, in the work area and available to employees on request, except that an employer with 10 or fewer employees in a workplace may use a verbal plan.

(2) Minimum Elements of An Emergency Action Plan. An emergency action plan must include:

(a) Procedures for emergency evacuation, including type of evacuation and exit route assignments;

(b) Procedures to account for all employees after evacuation;

(c) Procedures for reporting a fire or other emergency;

(d) Procedures to follow for emergency operation or shut down of critical equipment before evacuation;

(e) Procedures to follow for rescue and medical duties; and

(f) Names or job titles of employees to contact for more information about the duties of employees under the plan.

(3) Employee Alarm System. There must be a properly working employee alarm system. The alarm system must use a distinctive signal for each purpose and comply with 29 CFR 1910.165.

(4) Training. An employer must designate employees to assist in the safe emergency evacuation of other employees. These designated employees must receive training in emergency evacuation procedures.

(5) Employee Review. An employer must review the emergency action plan with each employee covered by it:

(a) When the plan is new or the employee is new to the job;

(b) When the employee's responsibilities under the plan change; and

(c) When the plan changes.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 8-2000, f. & cert. ef. 10-10-00; OSHA 12-2001, f. & cert. ef. 10-26-01

437-002-0043
Fire Prevention Plan

(1) Development of A Fire Prevention Plan.

(a) When another Oregon OSHA standard requires an employer to develop a fire prevention plan, the plan must comply with this section and cover each part of the workplace.

(b) The plan must be in writing, in the work area and available to employees on request; except that an employer with 10 or fewer employees in a workplace may use a verbal plan.

(2) Minimum Elements of A Fire Prevention Plan. A fire prevention plan must include:

(a) A list of all major fire hazards, including proper handling and storage procedures for hazardous materials, potential ignition sources and their control, and the type of fire protection equipment necessary to control each major hazard;

(b) Procedures to control accumulations of flammable and combustible waste materials;

(c) Procedures for regular maintenance of safeguards on heat producing equipment to prevent accidental ignition of combustible materials;

(d) Names or job titles of employees responsible for maintaining equipment to prevent or control sources of ignition or fires; and,

(e) Names or job titles of those responsible for control of fuel source hazards.

(3) Employee Information. The employer must:

(a) Inform employees of the fire hazards in their work area; and

(b) Review with each employee, when first assigned to a job, those parts of the fire prevention plan necessary for self-protection.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 8-2000, f. & cert. ef. 10-10-00; OSHA 12-2001, f. & cert. ef. 10-26-01

437-002-0047
Working Near Overhead High Voltage Lines and Equipment

(1) Definitions.

(a) Insulating Barrier or Guard. A structure, installation, barrier, or guard (such as a wall, fence, pole, shield, or something similar) that stops movement and prevents all possible contact with the lines or equipment. Its design, material composition, and installation prevents possible conduction of electricity up to the maximum voltage of the system.

(b) Restricted Space.

(A) For lines rated more than 600 V to 50 kV, restricted space extends 10 feet in all directions from the surface of the line or equipment.

(B) For lines rated over 50 kV, restricted space extends 10 feet plus 0.4 inch for each 1 kV over 50 kV, or twice the length of the insulator (but never less than 10 feet) in all directions from the surface of the line or equipment.

(C) For equipment or structures in transit, on level surfaces, restricted space extends 4 feet in all directions from lines or equipment rated 50 kV or less, 10 feet in all directions for lines or equipment rated over 50 kV, and 16 feet in all directions for lines or equipment rated over 345 kV up to and including 750 kV.

(c) Proper Notification. The person(s) responsible for the (planned) activity must notify the owner/operator of the line or equipment, at their business office, at least 2 business days prior to the anticipated beginning of work (business days are Monday through Friday, excluding federal and state holidays). The notification must include: (1) the proposed date to start activity within restricted space; (2) the location of the planned activity; (3) a description of the planned activity; and (4) name and contact information of the contact person.

(2) General requirement. Do not enter, perform any function or activity (such as handling, erecting, operating, transporting, or storing any tools, equipment or materials, moving a building or structure) within the restricted space surrounding an overhead high voltage line or equipment unless:

(a) Proper notification is provided; and

(A) The line and/or equipment is de-energized and visibly grounded by the owner of the high voltage system or their authorized agent; or

(B) Accidental contact is effectively prevented by use of insulating barriers or guards. Barriers or guards must:

(i) Be erected or installed by the owner of the high voltage system or their authorized agent;

(ii) Not be attached to, or be part of the lines, equipment, or machinery;

NOTE: Overhead line covers are only for visual reference, and their use does not allow entry into restricted space. If used, they must be installed by the owner of the high voltage system or their authorized agent.

(iii) Prevent all possible contact with the lines or equipment; and

(iv) Insulate against the system's maximum voltage; or

(b) You are the owner, an authorized employee, or authorized (in writing) agent of the overhead high voltage system: or

(c) Insulated lines (not tree wire) and equipment (designed and engineered to allow only incidental contact) are erected or installed by the owner of the high voltage system or their authorized agent.

NOTE: Nothing in this standard shifts the responsibility for safe and healthy working conditions from the person(s) responsible for the activity to the owner of the lines or their agent.

NOTE: Nothing in this standard mandates that the owner of the lines or equipment, or their authorized agent must agree to de-energize, move, barricade, guard, or insulate lines or equipment, or take other action to allow entry into restricted space.

(3) Do not move, reposition, or reduce restricted space in any direction by applying stress or force to a line, equipment, or supporting structure.

(4) Operation of machinery or equipment.

(a) Do not enter restricted space when using insulating links or proximity warning devices on equipment.

(b) Post a warning sign on each piece of equipment which is capable of vertical, lateral, or swinging motion, such as a crane, derrick, power shovel, drilling rig, or pile driver.

(A) The sign must be made of durable material.

(B) It must be in clear view of the operator.

(C) The message must be legible to the operator when at the controls.

(D) The message must be understood by the operator.

(E) The message must clearly convey that it is "Unlawful to operate the piece of equipment within 10 feet of high voltage lines".

(c) Use an observer to provide audible warning (able to be clearly heard over surrounding noise) when it becomes difficult for an operator to identify restricted space by using visual means. The observer's only task is to watch the clearance and warn the operator if it appears that restricted space will be breached.

(d) Restrict, barricade, or otherwise make it impossible for a machine or piece of equipment to reach into restricted space if it is reasonable to anticipate that the operator's attention may be focused on the work process rather than the location of an overhead high voltage line or equipment (such as during excavating, or other fast-paced, repetitive work).

(5) Railway and commuter systems.

(a) Standard rail equipment used to transport freight and/or passengers, and relief trains or other equipment used in emergencies, may enter restricted space surrounding high voltage lines or equipment.

(b) Qualified employees, authorized and supervised by a person familiar with the hazards of the railway high voltage system, may perform normal repair or construction work within restricted space prior to compliance with the clearance and safeguard requirements in sections (1) through (4).

Stat. Auth.: ORS 654.025(2) & 656.726(4).
Stats. Implemented: ORS 654.001 - 654.295.
Hist.: OSHA 4-2007, f. & cert. ef. 8-15-07

Powered Platforms, Manlifts, and Vehicle-Mounted Work Platforms

437-002-0060
Adoption by Reference

In addition to and not in lieu of any other safety and health codes contained in OAR Chapter 437, the Department adopts by reference the following rules as printed in the Code of Federal Regulations, 29

CFR 1910, revised as of 7/1/96, and any subsequent amendments published in the Federal Register as listed below:

(1) 29 CFR 1910.66 Powered Platforms for Building Maintenance, published 6/27/74, Federal Register, vol. 39, no. 125, pp. 23533-23537; amended 10/24/78, FR vol. 43, p. 49746; amended 2/10/84, FR vol. 49, p. 5322; amended 7/28/89, FR vol. 54. no. 144, pp. 31456-31477; 3/7/96, FR vol. 61, no. 46, p. 9235; 2/14/07, FR vol. 72, no. 30, p. 7136.

(2) 29 CFR 1910.67 Vehicle-Mounted Elevating and Rotating Work Platforms, published 6/27/74, FR vol. 39, no. 125, p. 23537; amended 3/26/75, FR vol. 40, p. 13439; amended 8/6/90, FR vol. 55, no. 151, pp. 32016-32020; 3/7/96, FR vol. 61, no. 46, p. 9235.

(3) 29 CFR 1910.68 Manlifts, published 6/27/74, FR vol. 39, no. 125, pp. 23537-23540; amended 10/24/78, FR vol. 43, p. 49746; amended 9/29/86, FR vol. 51, p. 34560; 3/7/96, FR vol. 61, no. 46, p. 9235.

These rules are on file with Oregon Occupational Safety and Health Division, Department of Consumer and Business Services and the United States Government Printing Office.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 4-1990, f. & cert. ef. 1-23-90; OSHA 4-1997, f. & cert. ef. 4-2-97; OSHA 4-2007, f. & cert. ef. 8-15-07

Vehicle-Mounted Elevating and Rotating Work Platforms

437-002-0067
Extensible and Articulating Boom Platforms

Clearly visible flashing warning lights shall be operating on all vehicles when using aerial equipment exposed to traffic.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1990, f. & cert. ef. 1-23-90

Proximity to Overhead High Voltage Lines and Equipment

(These Regulations do not Apply to Underground Installations)

437-002-0069
General

No employer shall require or permit any employed to enter or to perform any function in proximity to high-voltage lines, unless danger from accidental contact with said high-voltage lines has been effectively guarded against.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1990, f. & cert. ef. 1-23-90

437-002-0071
Clearance or Safeguards Required

(1) The operation, erection, or transportation of any tools, equipment, or any part thereof capable of movement; the handling, transportation, or storage of any materials; or the moving of any building, near high-voltage lines, is prohibited, if at any time it is possible to bring such object within ten feet of high-voltage lines.

(2) For equipment in transit, on smooth surfaces, the clearance shall be a minimum of four feet for voltages less than 50 kV, ten feet for voltages over 50 kV, up to and including 345 kV, and 16 feet for voltages up to and including 750 kV.

(3) A person shall be designated to observe clearance and give timely warning for all operations where it is difficult for the operator to maintain the desired clearance by visual means.

(4) The ten-feet requirement shall not be reduced by movement due to any strains impressed upon the structures supporting the high-voltage line and upon any equipment, fixtures, or attachments thereon.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1990, f. & cert. ef. 1-23-90

437-002-0073
Warning Signs Required

The employer shall post and maintain in plain view of the operator on each crane, derrick, power shovel, drilling rig, hay loader, hay stacker, pile driver, or similar apparatus, any part of which is capable of vertical, lateral, or swinging motion, a durable warning sign legible at 12 feet reading "Unlawful to operate this equipment within 10 feet of high-voltage lines."

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1990, f. & cert. ef. 1-23-90

437-002-0075
Notification to Power Company and Responsibility for Safeguards

(1) When any operations are to be performed, tools or materials handled, equipment is to be moved or operated within ten feet of any high-voltage time, the person or persons responsible for the work to be done shall promptly notify the operator of the high-voltage line of the work to be performed, and shall be responsible for the completion of the safety measures as required before proceeding with any work which would impair the aforesaid clearance.

(2) This section when applied to railway systems, shall be construed as permitting operation of standard rail equipment, which is normally used in the transportation of freight and/or passengers, and the operation of relief trains, or other equipment in emergencies, at a distance of less than ten feet from any high-voltage conductor; but shall be construed as prohibiting normal repair or construction operations at a distance of less than ten feet from any high-voltage conductor by other than properly qualified and authorized persons or employees under the direct supervision of any authorized person who is familiar with the hazards involved, until the safety provisions of the foregoing sections have been complied with.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1990, f. & cert. ef. 1-23-90

Occupational Health and Environmental Control

437-002-0080
Adoption by Reference

In addition to and not in lieu of any other safety and health codes contained in OAR chapter 437, the Department adopts by reference the following federal rules as printed in the Code of Federal Regulations, 29 CFR 1910, revised as of 7/1/02, and any subsequent amendments published in the Federal Register as listed below:

(1) 29 CFR 1910.94 Ventilation, published 6/27/74, Federal Register, vol. 39, p. 23502; amended 5/28/75, FR vol. 40, p. 24522; 6/9/75, FR vol. 40, p. 24522; 10/24/78, FR vol. 43, p. 49746; 2/10/84, FR vol. 49, p. 5322; 8/6/90, FR vol. 55, no. 151, p. 32015; 6/30/93, FR vol. 58, no. 124, p. 35308; 3/7/96, FR vol. 61, no. 46, p. 9236; 1/8/98, FR vol. 63, no. 5, p. 1269; 3/23/99, FR vol. 64, no. 55, p. 13909; amended with AO 3-2003, removed (c), and Oregon note added, f. and ef. 4/21/03.

(2) 29 CFR 1910.95 Occupational Noise Exposure, published 6/27/74, Federal Register, vol. 30, p. 23502; amended 1/16/81, FR vol. 46, p. 4161; 12/29/81, FR vol. 46, p. 62845; 3/8/83, FR vol. 48, p. 9776; 6/28/83, FR vol. 48, p. 29687; 6/7/89, FR vol. 54, p. 24333; 3/7/96, FR vol. 61, no. 46, p. 9236; 4/3/06, FR vol. 71, no. 63, p. 16669.

NOTE: 29 CFR 1910.96 Ionizing radiation, has been redesignated to 29 CFR 1910.1096.

(3) 29 CFR 1910.97 Nonionizing radiation, published 6/27/74, Federal Register, vol. 39, p. 23502; 3/7/96, FR vol. 61, no. 46, p. 9236.

(4) 29 CFR 1910.98 Effective dates, published 6/27/74, Federal Register, vol. 39, p. 23502.

(5) 29 CFR 1910.99 Sources of standards, published 6/27/74, Federal Register, vol. 39, p. 23502; amended 5/28/75, FR vol. 40, p. 23073; 6/11/82, FR vol. 47, p. 25323; 3/7/96, FR vol. 61, no. 46, p. 9236.

(6) 29 CFR 1910.100 Standards organization, published 6/27/74, Federal Register, vol. 39, p. 23502; amended 4/18/75, FR vol. 40, p. 18426; 6/30/93, FR vol. 58, no. 124, p. 35309; 3/7/96, FR vol. 61, no. 46, p. 9236.

NOTE: These standards are on file with the Occupational Safety and Health Division, Oregon Department of Consumer and Business Services, and the **United States Government Printing Office**.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 2-1992, f. 2-6-92, cert. ef. 5-1-92; OSHA 4-1993, f. 4-1-93, cert. ef. 5-1-93; OSHA 4-1997, f. & cert. ef. 4-2-97; OSHA 3-1998, f. & cert. ef. 7-7-98; OSHA 8-1999, f. & cert. ef. 8-6-99; OSHA 3-2003, f. & cert. ef. 4-21-03; OSHA 4-2006, f. & cert. ef. 7-24-06

Ventilation

437-002-0081
Oregon Ventilation Regulations

In addition to, and not in lieu of 29 CFR 1910.94, the following rules pertaining to ventilation apply in Oregon:

(1) Definitions:

(a) "Administrative Control" means the reduction of employee exposure to physical or chemical agents by control of the time of exposure to some period less than eight hours in length;

(b) "Harmful" or "Hazardous" as applied to the health effects of dusts, fumes, vapors, mists, gases, or any environmental condition, means any mechanical, infectious, toxic, or other action which is likely to produce medically determined injury or disease of exposed workers;

(c) "Health Hazard Control Measure" means the equipment or working arrangements designed to prevent the exposure of employees to harmful or hazardous situations. Such control measures may include, but are not limited to:

(A) Ventilation systems;

(B) Energy absorption system;

(C) Personal protective equipment;

(D) Air contaminant monitoring; and

(E) Human biological monitoring.

(d) "Local Exhaust System" means a system of hoods, booths, or enclosures designed to remove contaminants at points of generation or release into the atmosphere connected by means of piping to airflow or suction producing equipment;

(e) "Occupational Health Hazard" means those materials, processes, and atmospheric contaminants or energy concentrations which during normal or abnormal working conditions are likely to result in injury or illness to the unprotected employee;

(f) "Ventilation, Dilution" means ventilation provided to dilute the concentration of atmospheric contaminants in the atmosphere in all or part of the place of employment;

(g) "Ventilation, General" means the provision of fresh air at the place of employment;

(h) "Ventilation, Local Exhaust" means that the type of ventilation in which suction is applied at the point of generation or release of atmospheric contaminants;

(i) "Ventilation, Natural" means ventilation designed to depend wholly upon relative air density, and includes the use of openable doors, windows, and other building apertures.

(2) Recirculation. No air from any local exhaust system shall be recirculated, unless:

(a) The inert dust contained therein has a Permissible Exposure Limit (PEL) equal to or greater than ten milligrams per cubic meter as listed in Tables Z-1, Z-2, or Z-3 in OAR chapter 437, division 2, subdivision Z, 1910, OAR 437-002-0382, Oregon Rules for Air Contaminants. The inert dust concentration in such recirculated air shall not exceed five milligrams per cubic meter; or

(b) The contaminant contained therein has a Permissible Exposure Limit (PEL) equal to or greater than 100 parts per million as listed in Tables Z-1, Z-2, or Z-3 or OAR chapter 437, division 2, subdivision Z, OAR 437-002-0382, Oregon Rules for Air Contaminants. The contaminant concentration in such recirculated air shall not exceed 25 percent of its PEL; or

(c) The concentrations of contaminants in recirculated air do not exceed 25 percent of unity as calculated by the formula given in Division 2, Subdivision Z, OAR 437-002-0382(4)(b), Oregon Rules for Air Contaminants.

(3) Make-Up Air. Outside air equal in amount to the air removed by local exhaust systems shall be provided to replace air removed by an exhaust ventilation system.

(4) Air Contamination from Exhaust System. The discharge from any exhaust system shall be such that no air contamination therefrom will enter any window, door, or other opening of any work area in quantities sufficient to create a harmful or hazardous work atmosphere.

(5) Use of Salamanders and Fuel-Burning Heating Devices. Salamanders and other fuel-burning heating devices shall not be used in enclosed or inadequately ventilated spaces in which workers are employed unless such heating device is provided with a proper pipe, chimney, or enclosure to carry hazardous gases to the outside atmosphere.

(6) Local Exhaust Ventilation. The capacity of a local exhaust system shall be calculated on the basis of all hoods, booths, and enclosures connected to the system being open, except where the system is so interlocked that only a portion of it can be operated at a given time, in which case the capacity shall be calculated on the basis that all the hoods in the group requiring the greatest volume rate of exhaust are open.

(7) Exhausting More Than One Substance. Two or more operations involving more than one substance shall not be connected to the same exhaust system when a combination of the substances removed may constitute a fire hazard, or otherwise dangerous mixture.

(8) Exhausting Materials with Flammable Properties. Those processes or operations which require local exhaust ventilation and generate materials with flammable properties shall be protected from sources of ignition.

(9) Removal of Collected Materials. Collected materials shall be removed when necessary so as to maintain effective operation of the local exhaust system at all times.

(10) Disposal of Collected Materials. Collected materials shall be disposed of in a manner which will not result in a hazard.

(11) Requirements for Reduction of Air Contaminant Concentrations. A local exhaust system shall be in operation until all contaminants are reduced to concentrations at or below the Threshold Limit Values when any person is at risk.

NOTE: 1910.94(a)(6) was NOT adopted by OR-OSHA. In Oregon, OAR 437-002-0081(12) (which references a more current ANSI standard) applies.)

(12) Air supply and air compressors. The air for abrasive-blasting respirators shall be free of harmful quantities of dusts, mists, or noxious gases, and shall meet the requirements for air purity set forth in ANSI Z9.2-1979, Fundamentals Governing the Design and Operation of Local Exhaust Systems. The air from the regular compressed air line of the plant may be used for the abrasive-blasting respirator if:

(a) A trap and carbon filter are installed and regularly maintained to remove oil, water, scale, and odor;

(b) A pressure reducing diaphragm or valve is installed to reduce the pressure down to requirements of the particular type of abrasive-blasting respirator; and

(c) An automatic control is provided to either sound an alarm or shut down the compressor in case of overheating.

NOTE: Oregon did not adopt 1910.94(a)(6), which references an outdated ANSI standard. Instead, the following Oregon-initiated rule applies. This rule is identical, except that the current ANSI standard is referenced.

(13) Blasting Nozzles. In addition to and not in lieu of the provisions of 1910.94(a)(7), blasting nozzles shall be equipped with a deadman switch or other effective means to prevent hose and nozzle from whipping. A support shall be provided on which the nozzle may be mounted when not in use.

[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 2-1992, f. 2-6-92, cert. ef. 5-1-92

NOTE:
1910.95(g)(3) was NOT adopted by OR-OSHA because in Oregon, only CAOH-certified technicians, audiologists, otolaryngologist or physicians may perform audiometric examinations. In Oregon, OAR 437-002-0095 applies:

437-002-0095
Audiometric Testing in Oregon

Audiometric tests shall be performed by a licensed or certified audiologist, otolaryngologist, or other physician, or by a technician who is certified by the Council of Accreditation in Occupational Hearing Conservation. A technician who performs audiometric tests must be responsible to an audiologist, otolaryngologist or physician.

NOTES:
-1- Technicians currently certified by OR-OSHA may continue to use their Oregon certificates until they expire, or until July 1, 1996, whichever occurs first.
-2- In Oregon, free on-site assistance may be obtained from the Consultative Section, Oregon Occupational Safety and Health Division (OR-OSHA), Department of Consumer and Business Services, 350 Winter St NE, Salem, OR 97310. Telephone (503) 378-3272.
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1993, f. 4-1-93, cert. ef. 5-1-93

NOTES:
-1- The following Oregon-initiated rule, OAR 437-002-0098, relates to 29 CFR 1910.96, Ionizing Radiation.
-2- The provisions of OAR 437-002-0080(3) and 437-002-0098 will be enforced by the Department of Human Resources, Health Division, under an Interagency Agreement with the Department of Insurance and Finance, Occupational Safety and Health Division (OR-OSHA). Copies are available from OR-OSHA and the Health Division.

437-002-0098
Additional Applicability

In addition to, and not in lieu of **1910.1096**, the rules and regulations specified in ORS 453.605 to 453.745, Control of Radiation, administered by the Department of Human Resources, Oregon Health

Division, shall apply to all employees working with or near ionizing radiation sources.

NOTE: §1910.1096, Ionizing Radiation, is enforced in Oregon by the Department of Human Resources, Health Division, under an Interagency Agreement with the Department of Consumer and Business Services, OR-OSHA Division. Oregon-initiated Rule 437-002-0098 also applies and is enforced by the Health Division. Copies are available from OR-OSHA and the Health Division.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 2-1992, f. 2-6-92, cert. ef. 5-1-92; OSHA 6-1994, f. & cert. ef. 9-30-94; OSHA 4-1997, f. & cert. ef. 4-2-97

Hazardous Materials

437-002-0100
Adoption by Reference

In addition to and not in lieu of any other safety and health codes contained in OAR chapter 437, the Department adopts by reference the following federal rules as printed in the Code of Federal Regulations, 29 CFR 1910, revised as of 7/1/02, and any subsequent amendments published in the Federal Register as listed below:

(1) 29 CFR 1910.101 Compressed gases (General requirements), published 6/27/74, Federal Register, vol. 39, p. 23502; 3/7/96, FR vol. 61, no. 46, p. 9236.

(2) 29 CFR 1910.102 Acetylene, published 6/27/74, Federal Register, vol. 39, p. 23502; 3/7/96, FR vol. 61, no. 46, p. 9236.

(3) 29 CFR 1910.103 Hydrogen, published 6/27/74, Federal Register, vol. 39, p. 23502; amended 10/24/78, FR vol. 43, p. 49746; 4/12/88, FR vol. 53, p. 12121; 8/6/90, FR vol. 55, no. 151, p. 32015; 6/30/93, FR vol. 58, no. 124, p. 35309; 3/7/96, FR vol. 61, no. 46, p. 9236.

(4) 29 CFR 1910.104 Oxygen, published 6/27/74, Federal Register, vol. 39, p. 23502; amended 10/24/78, FR vol. 43, p. 49746; 3/7/96, FR vol. 61, no. 46, p. 9237.

(5) 29 CFR 1910.105 Nitrous oxide, published 6/27/74, Federal Register, vol. 39, p. 23502; 3/7/96, FR vol. 61, no. 46, p. 9237.

(6) 29 CFR 1910.106 Flammable and combustible liquids, published 6/27/74, Federal Register, vol. 39, p. 23502; amended 1/27/75, FR vol. 40, p. 3982; 6/2/75, FR vol. 40, p. 23743; 10/24/78, FR vol. 43, p. 49746; 11/7/78, FR vol. 43, p. 51759; 9/7/82, FR vol. 47, p. 39164; 9/12/86, FR vol. 51, p. 34560; 4/12/88, FR vol. 53, p. 12121; 8/6/90, FR vol. 55, no. 151, p. 32015; 3/7/96, FR vol. 61, no. 46, p. 9237; 9/13/05, FR vol. 70, no. 176, p. 53925.

(7) 29 CFR 1910.107 Spray finishing using flammable and combustible materials, published 6/27/74, Federal Register, vol. 39, p. 23502; amended 9/12/80, FR vol. 45, p. 60704; 2/10/84, FR vol. 49, p. 5322; 4/12/88, FR vol. 53, p. 12121; 3/7/96, FR vol. 61, no. 46, p. 9237; amended with AO 3-2003, removed 1910.107, and Oregon note added, f. and ef. 4/21/03.

(8) 29 CFR 1910.108 Reserved. Published 3/23/99, Federal Register, vol. 64, no. 55, p. 13909.

(9) 29 CFR 1910.109 Explosives and blasting agents, published 6/27/74, Federal Register, vol. 39, p. 23502; amended 10/24/78, FR vol. 43, p. 49747; 9/12/80, FR vol. 45, p. 60704; 4/12/88, FR vol. 53, p. 12122; 2/24/92, FR vol. 57, no. 36, p. 6403; 3/29/93, FR vol. 58, no. 58, p. 16496; 6/30/93, FR vol. 58, no. 124, p. 35309; 3/7/96, FR vol. 61, no. 46, p. 9237; 6/18/98, FR vol. 63, no. 117, p. 33466.

(10) 29 CFR 1910.110 Storage and handling of liquefied petroleum gases, published 6/27/74, Federal Register, vol. 39, p. 23502; amended 10/24/78, FR vol. 43, p. 49747; 2/10/84, FR vol. 49, p. 5322; 4/12/88, FR vol. 53, p. 12122; 6/20/90, FR vol. 55, p. 25094; 8/6/90, FR vol. 55, no. 151, p. 32015; 3/19/93, FR vol. 58, no. 52, p. 15089; 6/30/93, FR vol. 58, no. 124, p. 35309; 3/7/96, FR vol. 61, no. 46, p. 9237; 6/18/98, FR vol. 63, no. 117, p. 33466.

(11) 29 CFR 1910.111 Storage and handling of anhydrous ammonia, published 6/27/74, Federal Register, vol. 39, p. 23502; amended 10/24/78, FR vol. 43, p. 49748; 2/10/84, FR vol. 49, p. 5322; 4/12/88, FR vol. 53, p. 12122; 3/7/96, FR vol. 61, no. 46, p. 9238; 1/8/98, FR vol. 63, no. 5, p. 1269; 6/18/98, FR vol. 63, no. 117, p. 33466; amended with AO 12-2001, Oregon note added, f. and ef. 10/26/01.

(12) Reserved for 29 CFR 1910.112 (Reserved)

(13) Reserved for 29 CFR 1910.113 (Reserved)

(14) 29 CFR 1910.114 Removed. Published 3/7/96, Federal Register, vol. 61, no. 46, p. 9238.

(15) 29 CFR 1910.115 Removed. Published 3/7/96, Federal Register, vol. 61, no. 46, p. 9238.

(16) 29 CFR 1910.116 Removed. Published 3/7/96, Federal Register, vol. 61, no. 46, p. 9238.

(17) 29 CFR 1910.119 Process safety management of highly hazardous chemicals, published 2/24/92, Federal Register, vol. 57, no. 36, pp. 6403-6417; amended 3/4/92, FR vol. 57, no. 43, p. 7847; 6/1/92, FR vol. 57, no. 105, pp. 23060-1. (NOTE: Excepted rules adopted by reference by OR-OSHA by Admin. Order 6-1994 on 9/30/94.) Amended 3/7/96, FR vol. 61, no. 46, p. 9238; amended with AO 12-2001, Oregon note added, f. and ef. 10/26/01.

(18) 29 CFR 1910.120 Hazardous waste operations and emergency response, Interim Final Rules, published 12/19/86, Federal Register, vol. 51, no. 244, pp. 45663-45675; and amended 5/5/87, FR vol. 52, no. 85, pp. 16241-16243. Final Rules were published 3/6/89, FR vol. 54, no. 42, pp. 9294-9335; amended 4/13/90, FR vol. 55, no. 72, pp. 14072-14075; 4/18/91, FR vol. 56, no. 75, pp. 15832-15833; amended 8/22/94, FR vol. 59, no. 161, pp. 43270-43275; 3/7/96, FR vol. 61, no. 46, p. 9238; amended with AO 12-2001, Oregon note added, f. and ef. 10/26/01; 4/3/06, FR vol. 71, no. 63, p. 16669.

(19) 29 CFR 1910.121 Reserved. Published 3/23/99, Federal Register, vol. 64, no. 55, p. 13909.

(20) 29 CFR 1910.122 Table of contents, published 3/23/99, Federal Register, vol. 64, no. 55, p. 13909.

(21) 29 CFR 1910.123 Dipping and coating operations: Coverage and definitions, published 3/23/99, Federal Register, vol. 64, no. 55, p. 13909.

(22) 29 CFR 1910.124 General requirements for dipping and coating operations, published 3/23/99, Federal Register, vol. 64, no. 55, p. 13909; amended with AO 4-2002, repeal (g)(2), and Oregon note added, f. and ef. 5/30/02.

(23) 29 CFR 1910.125 Additional requirements for dipping and coating operations that use flammable or combustible liquids, published 3/23/99, Federal Register, vol. 64, no. 55, p. 13910.

(24) 29 CFR 1910.126 Additional requirements for special dipping and coating applications, published 3/23/99, Federal Register, vol. 64, no. 55, p. 13911.

NOTE: These standards are on file with the Oregon Occupational Safety and Health Division, Oregon Department of Consumer and Business Services, and the **United States Government Printing Office**.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 19-1988, f. & ef. 11-17-88; APD 12-1989, f. & ef. 7-14-89; OSHA 22-1990, f. 9-28-90, cert. ef. 10-1-90; OSHA 3-1992, f. & cert. ef. 2-6-92; OSHA 3-1993, f. & cert. ef. 2-23-93; OSHA 6-1994, f. & cert. ef. 9-30-94; OSHA 3-1995, f. & cert. ef. 2-22-95; OSHA 4-1997, f. & cert. ef. 4-2-97; OSHA 3-1998, f. & cert. ef. 7-7-98; OSHA 2-1999, f. & cert. ef. 4-30-99; OSHA 8-1999, f. & cert. ef. 8-6-99; OSHA 12-2001, f. & cert. ef. 10-26-01; OSHA 4-2002, f. & cert. ef. 5-30-02; OSHA 3-2003, f. & cert. ef. 4-21-03; OSHA 4-2004, f. & cert. ef. 9-15-04; OSHA 4-2005, f. & cert. ef 12-14-05; OSHA 4-2006, f. & cert. ef. 7-24-06

Spray Finishing Using Flammable or Combustible Materials

Oregon Initiated Rules

437-002-0101
Oregon Start-Up Dates

29 CFR 1910.120, **Hazardous Waste Operations and Emergency Response — Final Rules**, is effective on July 14, 1990.

[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 19-1988, f. & ef. 11-17-88; APD 12-1989, f. & ef. 7-14-89

437-002-0107
Spray Finishing

(1) Scope. This section applies to finishing materials when applied as a spray by any means in a continuous or intermittent process. This section also covers the application of powders by powder spray guns, electrostatic powder spray guns, fluidized beds, or electrostatic fluidized beds. This section also applies to any sprayed material that produces combustible deposits or residue. This section does not apply to outdoor spray application of buildings, tanks, or other similar structures, nor to small portable spraying apparatus not used repeatedly in the same location.

(2) Definitions

(a) Aerated solid powders — Any powdered material used as a coating material fluidized within a container by passing air uniformly

from below. It is common practice to fluidize such materials to form a fluidized powder bed and then dip the part to be coated into the bed in a manner similar to that used in liquid dipping. Such beds are also used as sources for powder spray operations.

(b) Approved — Approved and listed by a nationally recognized testing laboratory. Refer to §1910.7 for definition of nationally recognized testing laboratory.

(c) Electrostatic fluidized bed — A chamber holding powder coating material that is aerated from below to form an air-supported, expanded cloud of the powder. The powder is electrically charged with a charge opposite to that of the object or material being coated.

(d) Fluidized bed — A chamber holding powder coating material that is aerated from below to form an air-supported, expanded cloud of the powder. The object or material being coated is preheated, then immersed into the cloud.

(e) Infrequent and of short duration — Spray finishing that is:

(A) Less than nine square feet surface area per job, and

(B) Uses less than one gallon of material in one day, and

(C) Intermittent spraying where enough time elapses between spraying episodes to dilute the concentration of vapors essentially to zero before spraying is resumed

(f) Listed — See "approved."

(g) Non-combustible materials — Materials that have a fire resistance rating of at least one hour.

(h) Overspray — Any sprayed material that is not deposited on the intended object.

(i) Spray area — Any area in which potentially dangerous quantities of flammable vapors or mists, or combustible residues, dusts, or deposits are present due to the operation of spraying processes.

(j) Spray booth — A power-ventilated structure provided to enclose or accommodate a spraying operation to confine and limit the escape of spray, vapor, and residue, and to safely conduct or direct them to an exhaust system.

(k) Spray room — A room designed to accommodate a spraying operation. For the purposes of this rule, the term "spray booth" includes spray rooms except where specifically noted.

(3) Rules for All Spray Finishing Operations.

(a) Conduct spray finishing in a spray booth provided with local exhaust ventilation except:

(A) When spraying is infrequent and of short duration; or

(B) When spraying is a single "air brush"; or

(C) The object to be sprayed is of such weight or proportion as to render it impracticable to move it into a spray booth; or

(D) When only noncombustible or Class IIIB combustible liquids are used for spraying. This exception for Class IIIB combustible liquids only applies when the liquid is not heated for use to within 30% F (16.7% C) of the flashpoint; or

(E) When spray painting is conducted out-of-doors. For the purposes of this rule, out-of-doors means an area away from the main building and completely open at all times on at least two sides.

(b) Spray finishing outside of a booth, as permitted by OAR 437-002-0107(3)(a)(A), (C), and (D) above, must be done only in a spray area that meets the following requirements:

(A) All light switches, fans, receptacles, overhead lights and all other sources of ignition within 20 horizontal feet and 10 vertical feet of the overspray area must be inoperative or consist of Class I, Group D, explosion-proof types as specified in the National Electrical Code, NFPA 33-2000 and ANSI C2-2002.

(B) All building construction including floors, walls, ceilings, beams, etc., within 20 horizontal feet and 10 vertical feet of the overspray area must consist of or be protected by non-combustible materials.

(C) Protect all areas within 20 feet of the overspray area with automatic sprinklers. Where automatic sprinklers are not available, use other automatic extinguishing equipment. Alternatives may be used only when authorized in writing by the local fire authority.

(D) Aisles leading to exits from the spray finishing area must remain clear at all times.

(E) Provide the spray finishing area with at least 6 air changes per hour of airflow.

(F) Follow the requirements of paragraphs (3)(c) through (3)(e).

(c) Do not allow employees not engaged in spray finishing operations within 20 feet of the spraying and overspray area.

(d) Employees engaged in spray finishing operations must be provided with and wear respiratory protection unless exhaust ventilation is provided and reduces employee exposure to any material in the finish or its solvent to below the limits established in OAR 437-002-0382, Oregon Rules for Air Contaminants. Follow all of the requirements of OAR 437-002-1910.134, Respiratory Protection.

(e) Combustible Materials.

(A) Do not store combustible material or allow combustible material to accumulate in the spraying and overspray area unless specifically authorized in writing by the local fire authority.

(B) Give the spraying and overspray area daily housekeeping and maintenance while in use and keep it free of any accumulations between uses. Use only non-sparking tools for cleaning purposes.

(C) Combustible materials, such as paper, may be used to cover floors and walls in the spray and overspray area, but must be removed at the end of each workshift. The employer may use longer intervals only when the local fire authority has provided written approval to do so.

(f) Spray booths.

(A) Construction:

(i) Construct spray booths of substantially supported steel, concrete, or masonry.

(ii) When the booth is only used for intermittent or low volume spraying, other substantial non-combustible material may be used.

(iii) Design spray booths to sweep air currents toward the exhaust outlet.

(iv) Construct spray booths with materials that have a fire resistance rating of at least one hour. All adjacent construction must have a fire resistance rating of at least one hour or as otherwise required by the Oregon Building Codes Division.

(B) The interior surfaces of spray booths must be smooth and continuous without edges, designed to prevent residue pocketing, and designed to ease cleaning and washing.

(C) When the floor surface of a spray booth and operators' working area is combustible, it must be covered with a non-combustible material designed to prevent pocketing of residues and ease cleaning and washing.

(D) A spray booth should be equipped with:

(i) A water washing system designed to minimize dusts or residues entering exhaust ducts and to permit the recovery of overspray finishing material; or

(ii) Distribution or baffle plates to promote an even flow of air through the booth or cause the deposit of overspray before it enters the exhaust duct; or

(iii) Overspray dry filters to minimize dusts or residues entering exhaust ducts.

(E) Where dry powders are sprayed, arrange the powder collection systems in the exhaust to capture oversprayed material.

(F) When distribution or baffle plates are used, they must be of non-combustible material and readily removable or accessible on both sides for cleaning. Such plates will not be located in exhaust ducts.

(G) When using conventional dry type spray booths with overspray dry filters or filter rolls:

(i) Inspect filter rolls to ensure proper replacement of filter media.

(ii) Immediately remove all discarded filter pads and filter rolls to a safe area away from the spray finishing operation. Alternatively, place them in a water-filled metal container and dispose of them at the close of the day's operation unless they remain completely submerged.

(iii) Do not use filters or filter rolls when spraying a material known to be highly susceptible to spontaneous heating and ignition.

(iv) Clean filters or filter rolls must be non-combustible or authorized by the local fire authority.

(v) Do not use filters and filter rolls alternately for different types of coating materials, where the combination of materials may be conducive to spontaneous ignition.

(H) Spray booths with an open frontal area larger than 9 square feet must have a metal deflector or curtain at least 4-1/2 inches deep installed at the upper outer edge of the booth over the opening.

(I) Where conveyors are used to carry work into or out of spray booths, the openings must be as small as practical.

(J) Separate each spray booth from all other non-spray finishing operations by at least 3 feet, a wall, or a partition. This requirement does not apply to spray rooms.

(K) All portions of the spray booth must be readily accessible for cleaning.

(L)(i) The exterior of the spray booth must have a clear space of at least 3 feet on all sides. Do not store any materials within this clear space. All construction within 3 feet of all sides of the spray booth must be noncombustible. This requirement does not apply to spray rooms.

(ii) Exception: This requirement does not prohibit locating a spray booth closer than 3 feet to an exterior wall or roof assembly, provided that the wall or roof is constructed of a non-combustible material and the booth can be cleaned and maintained.

(M) When spraying areas are illuminated through glass panels or other transparent materials, use only fixed lighting units as a source of illumination.

(i) Seal panels to effectively isolate the spraying area from the area in which the lighting unit is located.

(ii) Use only non-combustible material constructed or protected so that breakage will be unlikely. Arrange panels so that normal accumulations of residue on the exposed surface of the panel will not be raised to a dangerous temperature by radiation or conduction from the source of illumination.

(N) Protect all spaces within the spray booth with automatic sprinklers acceptable to the local fire authority.

(i) Sprinkler heads must provide water distribution throughout the entire booth.

(ii) When filters are used, automatic sprinklers must be on both the downstream and upstream sides of the filters.

(iii) Keep sprinkler heads as free of overspray deposits as possible. Clean them daily if necessary. When sprinkler heads are covered to protect them from overspray, the material and method used must be authorized by the local fire authority.

(iv) When automatic sprinklers are infeasible or not practical, other means of fire protection must be provided and authorized in writing by the local fire authority.

(g) Electrical and other sources of ignition.

(A) Do not allow open flame or spark producing equipment within 20 feet of the spray area, unless separated by a partition.

(B) Do not place space-heating appliances, steampipes, or hot surfaces in a spraying area where deposits of combustible residues may readily accumulate.

(C) Ensure all electrical wiring and equipment conforms to the provisions of this paragraph and OAR 437, division 2, subdivision S.

(D) Do not put any electrical equipment in the spray or overspray area unless it is specifically approved for those locations. All wiring must be in rigid conduit or in boxes or fittings that do not contain taps, splices, or terminal connections.

(E) Electrical wiring and equipment not subject to deposits of combustible residues but located in a spraying area must be explosion-proof, approved for Class I, Group D locations, and conform to the provisions of OAR 437, division 2, subdivision S, for Class I, Division 1, Hazardous Locations. Electrical wiring, motors, and other equipment outside of but within 20 feet of any spraying area, and not separated by partitions, must not produce sparks under normal operating conditions and must conform to the provisions of OAR 437, division 2, subdivision S for Class I, division 2 Hazardous Locations.

(F) Electric lamps outside of any spraying area but within 20 feet, and not separated by a partition, will be totally enclosed to prevent the falling of hot particles and will be protected from physical damage by appropriate guards or by location.

(G) Do not use portable electric lamps in any spraying area during spraying operations. If portable electric lamps are used during cleaning or repairing operations, use only the type approved for hazardous Class I locations.

(H) Electrically ground all metal parts of spray booths and exhaust ducts. Electrically ground piping systems that convey flammable or combustible liquids or aerated solids.

(h) Ventilation.

(A) Provide all spraying areas with mechanical ventilation adequate to remove flammable vapors, mists, or powders to a safe location and confine and control combustible residues so that life is not endangered. Keep mechanical ventilation in operation at all times while spraying operations are being conducted and for a sufficient time afterwards to exhaust vapors from drying material and residue.

(B) Interlock the spraying equipment with the ventilation system so that spraying operations cannot be conducted unless the ventilation system is operating.

(C) Air velocity throughout the spray booth must be sufficient to keep airborne contaminants below 25% of their lower explosive limit (LEL).

(i) Open-faced booths must maintain at least an average of 100 feet per minute (fpm) of airflow across the open face of the booth.

(ii) Enclosed booths must maintain at least an average of 100 fpm of airflow of cross-sectional area at the operators' position

(iii) Any deviation from the above must be authorized in writing by the local fire authority.

(iv) Install a visible gauge, audible alarm, or pressure activated device on each spray booth to indicate or ensure that the required air velocity is maintained.

(D) Provide each spray booth with an independent exhaust duct system that discharges to the exterior of the building. A common exhaust system may be used for multiple spray booths only when identical materials are sprayed and the combined frontal area of those booths is no more than 18 square feet.

(E) When more than one fan serves one booth, interconnect all fans so that one fan cannot operate without all fans being operated.

(F) The fan-rotating element must be non-ferrous or non-sparking or the casing must consist of or be lined with such material.

(i) Maintain ample clearance between the fan-rotating element and the fan casing to avoid a fire by friction. Prevent contact between moving parts and the duct or fan housing by making allowance for ordinary expansion and loading.

(ii) Mount fan blades on a shaft sufficiently heavy to maintain perfect alignment even when the blades of the fan are heavily loaded.

(iii) All bearings must be of the self-lubricating type, or lubricated from the outside duct.

(G) Place electric motors driving exhaust fans outside booths or ducts. See also paragraph (3)(g) of this section.

(H) When belts and pulleys are inside the duct or booth, they must be thoroughly enclosed.

(I) Construct exhaust ducts of substantially supported steel. Exhaust ducts without dampers are preferred; however, if dampers are installed, they must be fully opened when the ventilating system is in operation.

(i) Protect exhaust ducts against mechanical damage and maintain a clearance of at least 18 inches from unprotected combustible construction or other combustible material.

(ii) If combustible construction is provided with the following protection applied to all surfaces within 18 inches of the exhaust duct, clearances may be reduced to the distances indicated:

(I) 28-gage sheet metal on 1/4 -inch insulating millboard — 12 inches.

(II) 28-gage sheet metal on 1/8-inch insulating millboard spaced out 1 inch on non-combustible spacers — 9 inches.

(III) 22-gage sheet metal on 1-inch rockwool batts reinforced with wire mesh or the equivalent — 3 inches.

(J) The terminal discharge point must be at least 6 feet from any combustible exterior wall or roof. The discharge point must not discharge in the direction of any combustible construction or unprotected opening in any non-combustible exterior wall within 30 feet.

(K) Keep air exhaust from spray operations away from makeup air or other ventilation intakes. Do not recirculate air exhausted from spray operations.

(L) Supply clean fresh air, free of contamination from adjacent industrial exhaust systems, chimneys, stacks, or vents, to a spray booth in quantities equal to the volume of air exhausted through the spray booth.

(M) Provide exhaust ducts with an ample number of access doors when necessary to facilitate cleaning.

(N) Provide air intake openings to rooms containing spray finishing operations adequate for the efficient operation of exhaust fans and placed to minimize the creation of dead air pockets.

(O) Dry freshly sprayed articles only in spaces provided with adequate ventilation to prevent the formation of explosive vapors. Drying spaces without adequate ventilation will be considered a spraying area. See also paragraph (6) of this section.

(4) Rules for Spray Finishing with Flammable and Combustible Liquids

(a) These rules apply to spray finishing with Class I flammable liquids, Class II combustible liquids, and Class IIIA combustible liquids. These rules only apply to Class IIIB combustible liquids when they are heated for use to within 30% F (16.7% C) of their flashpoint.

(b) Flammable and combustible liquids — storage and handling.

(A) Store flammable or combustible liquids in compliance with the requirements of OAR 437-002-1910.106.

(B) Keep only the minimum quantity of flammable or combustible liquids required for operations in the vicinity of spraying operations and do not exceed a supply for one day or one shift. Bulk storage of portable containers of flammable or combustible liquids must be in a separate, constructed building detached from other important buildings or cut off in a standard manner.

(C) Use only the original closed containers, approved portable tanks, approved safety cans, or a properly arranged system of piping for bringing flammable or combustible liquids into the spray area. Do not use open or glass containers.

(D) Use approved pumps to withdraw flammable and combustible liquids from containers with a capacity of 61 gallons or more except as provided in paragraph (4)(b)(F) of this section.

(E) Withdraw and fill containers with flammable or combustible liquids only in a suitable mixing room or in a spraying area when the ventilating system is in operation. Take adequate precautions to protect against spilling liquids and sources of ignition.

(F) Containers must conform to the following requirements:

(i) Use only closed containers to supply spray nozzles. Use metal covers to close containers that are not closed.

(ii) Use metal supports or wire cables to support containers that are not resting on floors.

(iii) When spray nozzles are supplied by gravity flow, do not use containers that exceed 10 gallons capacity.

(iv) Do not use air pressure in the original shipping containers to supply spray nozzles.

(G) Containers under air pressure supplying spray nozzles must also conform to the following requirements

(i) Use only limited capacity containers that only hold enough material for one day's operation.

(ii) Use only containers that are designed and approved for such use.

(iii) Provide containers with a visible pressure gauge.

(iv) Containers must be provided with a relief valve set to operate in conformance with the requirements of the Oregon Building Codes Division OAR 918-225, "Boilers and Pressure Vessels."

(H) Pipes and hoses.

(i) All containers or piping with an attached hose or flexible connection must have a shutoff valve at the connection. Keep such valves shut when not spraying.

(ii) When a pump is used to deliver the liquid used in a spray application process, use only piping, tubing, hoses, and accessories that are designed to withstand the maximum working pressure of the pump. Alternatively, provide automatic means to limit the discharge pressure of the pump to a level within the design working pressure of the piping, tubing, hoses, and accessories.

(iii) Inspect all pressure hose and couplings at regular intervals appropriate to this service. Test the hose and couplings with the hose extended using the "inservice maximum operating pressures." Repair or discard any hose showing material deteriorations, signs of leakage, or weakness in its' carcass or at the couplings.

(iv) Piping systems conveying flammable or combustible liquids must be of steel or other material having comparable properties of resistance to heat and physical damage. Properly bond and ground piping systems.

(I) Use approved and listed electrically powered spray liquid heaters. Do not put heaters in spray booths or any other location subject to the accumulation of deposits or combustible residue.

(J) If flammable or combustible liquids are supplied to spray nozzles by positive displacement pumps, use an approved relief valve on the pump discharge line that discharges to a pump suction or a safe detached location, or use a device provided to stop the prime mover if the discharge pressure exceeds the safe operating pressure of the system.

(K) Whenever flammable or combustible liquids are transferred from one container to another, effectively bond and ground both containers to prevent discharge sparks of static electricity.

(c) Install an adequate supply of suitable portable fire extinguishers near all spraying areas.

(d) Operations and maintenance.

(A) Immediately remove and dispose residue scrapings and debris contaminated with residue from the premises. Deposit all rags or waste impregnated with finishing material in tightly-closing metal waste cans immediately after use. Properly dispose of the contents of waste cans at least once daily or at the end of each shift.

(B) Do not leave clothing worn during spray finishing on the premises overnight unless kept in metal lockers.

(C) Only use solvents for cleaning operations with flashpoints at or above the flashpoints of material normally used. Cleaning operations must be done inside a spray booth with the ventilation system on, or an area authorized in writing by the local fire authority.

(D) Do not alternately use spray booths for different types of coating materials when the materials are incompatible with each other, unless all deposits of the first used material are removed from the booth and exhaust ducts prior to spraying with the second material.

(e) Mixing.

(A) Mix materials only in a mixing room, a spray area that meets the requirements of (3)(b), or in a spray booth. When a spray area or spray booth is used for mixing, the ventilation system must be on.

(B) Construct mixing rooms of substantially supported steel, concrete, or masonry. Use only non-combustible materials to construct mixing rooms.

(C) Design mixing rooms so that any spills remain inside the room.

(D) Provide at least 150 cubic feet per minute (CFM) of airflow in each mixing room. When the flooring of the mixing room is greater than 150 square feet, provide at least 1 CFM per square foot of flooring. The ventilation system for each mixing room must be on and operational at all times.

(E) Follow all of the provisions of paragraph (3)(g).

(F) Protect all spaces within the mixing room with automatic sprinklers acceptable to the local fire authority. Where automatic sprinklers are not available, use other automatic extinguishing equipment. Alternatives may be used only when authorized in writing by the local fire authority.

(5) Rules for Electrostatic Spray Finishing:

(a) Fixed electrostatic apparatus.

(A) Use only approved electrostatic apparatus and devices in connection with coating operations.

(B) Transformers, power packs, control apparatus, and all other electrical portions of the equipment, with the exception of high-voltage grids, electrodes, and electrostatic atomizing heads and their connections, must be located outside of the spraying area, or must otherwise conform to the requirements of paragraph (3) of this section.

(C) Adequately support electrodes and electrostatic atomizing heads in permanent locations and effectively insulate them from the ground. Electrodes and electrostatic atomizing heads which are permanently attached to their bases, supports, or reciprocators are considered to comply with this section. Use only non-porous and non-combustible insulators.

(D) Properly insulate and protect high-voltage leads to electrodes from mechanical injury or exposure to destructive chemicals. Effectively and permanently support electrostatic atomizing heads on suitable insulators and effectively guard against accidental contact or grounding. Provide an automatic means for grounding the electrode system when it is electrically de-energized for any reason. Keep all insulators clean and dry.

(E) Maintain a safe distance between goods being painted and electrodes or electrostatic atomizing heads or conductors of at least twice the sparking distance. Conspicuously post a sign indicating this safe distance near the assembly.

(F) Support goods being painted using this process on conveyors. Arrange the conveyors to maintain safe distances between the goods and the electrodes or electrostatic atomizing heads at all times. Any irregularly shaped or other goods subject to possible swinging or movement must be rigidly supported to prevent swinging or movement which would reduce the clearance to less than that specified in paragraph (5)(a)(E) of this section.

(G) Equip electrostatic apparatus with automatic controls that immediately disconnect the power supply to the high voltage transformer and signals the operator when:

(i) Any failure occurs in the ventilation equipment.

(ii) The conveyor carrying goods through the high voltage field stops.

(iii) Occurrence of a ground or of an imminent ground at any point on the high voltage system.

(iv) The safe distance required by (5)(a)(E) is not maintained.

(H) Place adequate booths, fencing, railings, or guards around the equipment to assure, either by their location or character or both, that a safe isolation of the process is maintained from plant storage or personnel. Construct such railings, fencing, and guards of conducting material that is adequately grounded.

(b) Electrostatic hand spraying equipment.

(A) This paragraph applies to any equipment that uses electrostatically charged elements for the atomization and/or, precipitation of materials for coatings on articles, or for other similar purposes in which the atomizing device is hand held and manipulated during the spraying operation.

(B) Use only approved electrostatic hand spray apparatus and devices in connection with coating operations. The high voltage circuits must be designed so it does not produce a spark of sufficient intensity to ignite any vapor-air mixtures or result in appreciable shock hazard upon coming in contact with a grounded object under all normal operating conditions. The electrostatically charged exposed elements of the handgun must be capable of being energized only by a switch which also controls the coating material supply.

(C) Locate transformers, powerpacks, control apparatus, and all other electrical portions of the equipment outside of the spraying area. This requirement does not apply to the handgun itself and its connections to the power supply.

(D) Electrically connect the handle of the spraying gun to ground by a metallic connection. Ensure that the operator in normal operating position is in intimate electrical contact with the grounded handle.

(E) Adequately ground all electrically conductive objects in the spraying area. This requirement applies to paint containers, wash cans, and any other objects or devices in the area. Prominently and permanently install a warning on the equipment regarding the necessity for this grounding feature.

(F) Maintain metallic contact between objects being painted or coated and the conveyor or other grounded support. Regularly clean hooks to ensure this contact.

(G) Areas of contact must be sharp points or knife edges where possible.

(H) Conceal points of support of the object from random spray where feasible.

(I) When objects being sprayed are supported from a conveyor, the point of attachment to the conveyor must not collect spray material during normal operation.

(J) Interlock the electrical equipment with the ventilation of the spraying area so that the equipment cannot be operated unless the ventilation fans are on.

(6) Drying, Curing, or Fusion Apparatus:

(a) Drying, curing, or fusion equipment:

(A) Equipment manufactured or modified on or before June 1, 2003, must comply with the provisions of the Standard for ovens and furnaces, NFPA No. 86A-1969 where applicable.

(B) Equipment manufactured or modified after June 1, 2003, must comply with the provisions of the Standard for Ovens and Furnaces, NFPA No. 86-1999 where applicable.

(b) Do not use a spray area for drying when such drying can increase the surface temperature of the spray area.

(c) Except as specifically provided in paragraph (6)(e) of this section, do not install an open flame heating system for drying, curing, or fusion in a spray area.

(d) Drying, curing, or fusion units may be installed adjacent to spray areas only when equipped with an interlocked ventilating system arranged to:

(A) Thoroughly ventilate the drying space before the heating system can be started;

(B) Maintain a safe atmosphere at any source of ignition;

(C) Automatically shut down the heating system in the event of failure of the ventilating system.

(e) Automobile refinishing spray booths or enclosures, otherwise installed and meeting the requirements of this section, may alternately be used for drying with portable electrical infrared drying apparatus that meets the following:

(A) Keep the interior (especially floors) of spray enclosures free of overspray deposits.

(B) Keep the apparatus out of the spray and overspray area while spray finishing is in progress.

(C) Equip the spraying apparatus, the drying apparatus, and the ventilating system of the spray enclosure with suitable interlocks arranged so:

(i) The spraying apparatus cannot be operated while the drying apparatus is inside the spray enclosure.

(ii) The spray enclosure is purged of spray vapors for at least 3 minutes before the drying apparatus is energized.

(iii) The ventilating system maintains a safe atmosphere within the enclosure during the drying process, and the drying apparatus will automatically shut off in the event of failure of the ventilating system.

(D) All electrical wiring and equipment of the drying apparatus must meet the applicable sections of OAR 437, division 2, subdivision S. Only equipment of a type approved for Class I, Division 2 hazardous locations will be located within 18 inches of floor level. All metallic parts of the drying apparatus will be properly electrically bonded and grounded.

(E) Place a warning sign on the drying apparatus indicating that ventilation must be maintained during the drying period and that spraying must not be conducted in the vicinity where spray will deposit on apparatus.

(7) Powder Coating.

(a) Ventilation.

(A) Ensure that exhaust ventilation is sufficient to maintain the atmosphere below the lowest explosive limits for the materials being applied. Ensure that all non-deposited air-suspended powders are safely removed via exhaust ducts to the powder recovery cyclone or receptacle.

(B) Do not release powders to the outside atmosphere.

(b) Operation and maintenance.

(A) Keep all areas free of the accumulation of powder coating dusts, particularly horizontal surfaces as ledges, beams, pipes, hoods, booths, and floors.

(B) Clean surfaces in a manner to avoid scattering dust to other places or creating dust clouds.

(C) Conspicuously post "No Smoking" signs in large letters on contrasting color background at all powder coating areas and powder storage rooms.

(c) Electrostatic fluidized beds.

(A) Use only approved electrostatic fluidized beds and associated equipment.

(B) Ensure that the maximum surface temperature of this equipment in the coating area does not exceed 150° F.

(C) Use only high voltage circuits that will not produce a spark of sufficient intensity to ignite any powder-air mixtures.

(D) Use circuits designed to eliminate shock hazards upon coming in contact with a grounded object under normal operating conditions.

(E) Locate transformers, powerpacks, control apparatus, and all other electrical portions of the equipment outside of the powder coasting area, with the exception of the charging electrodes and their connections to the power supply.

(F) Adequately ground all electrically conductive objects within the charging influence of the electrodes. The powder coating equipment must carry a prominent, permanently installed warning regarding the necessity for grounding these objects.

(G) Objects being coated will be maintained in contact with the conveyor or other support in order to ensure proper grounding. Regularly clean hangers to ensure effective contact and areas of contact will be sharp points or knife edges where possible.

(H) Interlock the electrical equipment with the ventilation system so the equipment cannot be operated unless the ventilation fans are in operation.

NOTES:

-1- Oregon did not adopt the following in 1910.109, Explosives and Blasting Agents:

(a) Tables H-21 and H-22, and their respective Notes; and

(b) The Definition of "magazine" in 1910.109(a)(6).

In Oregon, OAR 437-002-0109, Table OR-H-21 and OR-H-22, and their respective Notes, apply. Also, the definition of "magazine" in Note 5 of OR-H-21 applies.

-2- The following Oregon-initiated rules relate to 29 CFR 1910.109, Explosives and Blasting Agents.
[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 2-1992, f. 2-6-92, cert. ef. 5-1-92; OSHA 3-2003, f. & cert. ef. 4-21-03

437-002-0109
Explosives and Blasting Agents

(1) Blasting and Use of Explosives:

(a) Smoking, firearms, matches, open flame lamps, fires and flame or spark producing devices shall be prohibited in any explosive magazine or within a radius of 100 feet thereof, and with 100 feet of where explosives are being handled, transported, or used;

(b) All blasts shall be fired electronically with an electric blasting machine or properly designed electric power sources, except as provided in sections of this rule;

(c) All explosives shall be accounted for at all times. Explosives not being used shall be kept in a locked magazine, unavailable to persons not authorized to handle them. The employer shall maintain an inventory and use records of all explosives. Appropriate authorities shall be notified of any loss, theft, or unauthorized entry into a magazine;

(d) The preparation of primers shall be done in a safe place, well away from fire, possible sparks, magazines or powder boxes. Where practical to do so, primers should be prepared at the point of use and immediately placed in the bore hole.

(2) Recordkeeping and Loading:

(a) The blaster shall keep an accurate, up-to-date records of explosives, blasting agents, and blasting supplies used in a blast and shall keep an accurate running inventory of all explosives and blasting agents stored on the operations;

(b) No explosives or blasting agents shall be left unattended at the blast site. No loaded holes shall be left unattended or unprotected. All loaded holes shall be fired before leaving the blast site.

(3) Electric Firing. Flashlight batteries shall not be used when firing a circuit of electric blasting caps. The electric current delivered to the charge shall meet the manufacturer's recommended level.

(4) Locks. Each door shall be equipped with two mortise locks; with two padlocks fastened in separate hasps and staples; with a combination or mortise lock and padlock; with a mortise lock that requires two keys to open; or a three-point lock. Locks shall be five-tumbler proof. All padlocks shall be protected with 1/4-inch steel caps constructed so as to prevent sawing or lever action on the locks or hasps.

(5) Cap Boxes. Storage facilities for blasting caps in quantities of 100 or less shall have sides, bottoms, and covers constructed of No. 12-gauge metal and lined with a nonsparking material. Hinges and hasps shall be attached thereto by welding. A single five-tumbler proof lock shall be sufficient for locking purposes.

NOTES:
-1- Use the American Table of Distances for Storage of Explosive Materials to determine safe distances from inhabited dwellings, highways, passenger railways, and between explosive materials magazines.
-2- Use the appendix, Separation Distances of Ammonium Nitrate and Blasting Agents from Explosives or Blasting Agents, to determine non-propagating distances to ammonium nitrate fuel oil (ANFO) blasting agents and to ammonium nitrate.
-3- Use the greater of the distances shown in the American Table of Distances and in the Table of Recommended Separation Distances to determine the required separation between a magazine for storage of explosives and a magazine for storage of blasting agents.

(6)(a) Table of Distances. The provisions contained in Table 21 are in lieu of the provisions contained in 29 CFR 1910.109, Table H-21, American Table of Distances for Storage of Explosives. Related Notes are printed following the table for clarity in using Table OR-H-21;

(b) Table of Recommended Separation Distances. The provisions contained in Table 22 are in lieu of the provisions contained in 29 CFR 1910.109, Table H-22, Table of Recommended Separation Distances of Ammonium Nitrate and Blasting Agents from Explosives or Blasting Agents. Related notes are printed following the table for clarity in using Table OR-H-22.

[Publications: Publications referenced are available from the agency.]
[ED. NOTE: Tables referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 2-1992, f. 2-6-92, cert. ef. 5-1-92

437-002-0118
Reinforced Plastics Manufacturing

(1) Applicability. If a specific type of equipment, process or practice is *not* limited to the reinforced plastics industry, the provisions contained in other divisions of OAR chapter 437, Oregon Occupational Safety and Health Code, shall apply.

(2) Scope:

(a) These rules shall apply to reinforced plastics manufacturing operations, in their shop buildings (not field work) involving the use of polyester, vinylester, and other similar products in which styrene monomer is a reactive monomer for the resin. This division applies to chopper gun, gelcoating, hand laminating and casting operations utilizing resin and organic peroxide catalyst;

(b) This division does *not* apply to:

(A) Application of flammable organic materials such as acetone, methyl ethyl ketone (MEK), either alone or mixed as flammable or combustible paints or diluents;

(B) Operations, involving polyurethane finishes or foams utilizing isocyanate catalysts;

(C) Operations involving epoxy resin compounds utilizing amine hardeners; or

(D) Cleaning of chopper guns, lines, and associated equipment in which acetone, MEK, or other flammable or combustible organic solvents are sprayed into the open air as part of the cleaning process.

(3) Definitions. The following definitions shall apply to this rule:

(a) "Chopper Gun" A device that feeds fiberglass rovings through a chopper and ejects them into a stream of resin and organic peroxide catalyst onto a mold surface. The resin and organic peroxide catalyst are combined and ejected from the chopper gun by either one of two systems:

(A) One nozzle ejects resin while another nozzle ejects organic peroxide catalyst towards the mold surface; or

(B) The resin and organic peroxide catalyst are fed into a single chopper gun mixing chamber ahead of the nozzle.

NOTE: By either method, the resin mixture precoats the strands of glass and the merged product is directed onto a mold surface by the operator.

(b) "Combustible" Any substance having a flashpoint at or above 100°F (37.8°C). Combustible substances shall be divided into two classes:

(A) Class II — Substances with flashpoints at or above 100°F (37.8°C) and below 140°F (60°C) except any mixture having components with flashpoints of 200°F (93.3°C) or higher, the volume of which make up 99 percent or more of the total volume of the mixture;

(B) Class III — Substances with flashpoints at or above 140°F (60°C).

(c) "Flammable" Any substance having a flashpoint below 100°F (37.8°C). Flammable liquids shall be known as Class I liquids;

(d) "Flashpoint" The minimum temperature at which a liquid gives off vapor within a test vessel in sufficient concentration to form an ignitable mixture shall be determined as follows:

(A) For a liquid which has a viscosity of less than 45 Saybolt Universal Seconds (SUS) at 100°F (37.8°C), does not contain suspended solids, and does not have a tendency to form a surface film while under test, the procedure specified in the standard method of test for flashpoint by tag closed tester (ASTM D-56-70) shall be used;

(B) For a liquid which has a viscosity of 45 SUS or more at 100°F (37.8°C), or contains suspended solids, or has a tendency to form a surface film while under test, the standard method of test for flashpoint by Pensky-Marlens Closed Tester (ASTM D-93-71) shall be used, except that the methods specified in Note 1 to Section 1.1 of ASTM D-93-71 may be used for the respective materials specified in the Note;

(C) For a liquid that is a mixture of compounds that have a different volatilities and flashpoints, its flashpoint shall be determined by using the procedure specified in subsection (4)(a) or (b) of this definition on the liquid in the form it is shipped. If the flashpoint, as determined by this test, is 100°F (37.8°C) or higher, an additional flashpoint determination shall be run on a sample of the liquid evaporated to 90 percent of its original volume and the lower value of the two tests shall be considered the flashpoint of the material;

(D) Organic peroxide catalysts are excluded from any of the flashpoint determination methods specified in this section.

(e) "Gelcoating" A chopper gun pressure pot or similar device is used to apply the resin and organic peroxide catalyst mixture to a mold surface without glass fibers;

(f) "Hand Laminating" Resin is mixed with organic peroxide catalyst and applied by hand with a brush, squeegee, or roller with fiberglass reinforcements;

(g) "Hazard" A substance, process, practice or condition which could result in an injury or illness to an employee;

(h) "Resin" A mixture of true esters dissolved in a polymerizable monomer (styrene);

(i) "Threshold-Limit Value Short Term Exposure Limit (TLV-STEL)" The maximum concentration to which workers continuously without suffering from irrigation, chronic or irreversible tissue change, or narcosis of sufficient degree to increase accident proneness, impair self-rescue, or materially reduce work efficiency, provided that no more than four excursions per day are permitted, with at least 60 minutes between exposure periods, and provided that the daily TLV-TWA also is not exceeded. The STEL should be considered a maximum allowable concentration, or ceiling, not to be exceeded at any time during the 15-minute excursion period.

(4) Permissible Exposure Limits:

(a) An employee's exposure to any material listed in Table 1, in any eight-hour work shift of a 40-hour work week, shall not exceed the eight-hour time-weighted average limit for that material in the table;

(b) An employee's exposure to a material listed in Table 1 shall not exceed, at any time during an eight-hour shift, the TLV-STEL level given for the material in the table, except for a time period, and up to a concentration not exceeding the maximum duration and concentration allowed in the column under "Acceptable Maximum Peak";

(c) Employee exposure to other airborne contaminants shall be in accordance with OAR chapter 437, division 2, Subdivision Z, 1910.1000, Air Contaminants, and/or other applicable regulations.

NOTE: In the Oregon Rules for Reinforced Plastics Manufacturing, Table OR-118-1, Permissible Exposure Limits, in OAR 437-002-0118(4), has been revised to reflect the current limits in OAR 437-002-0382, Oregon Rules for Air Contaminants, which were adopted on 11/15/93 in lieu of 1910.1000, Air Contaminants.

(5) Methods of Compliance:

(a) To achieve compliance with section (4) of this rule, Permissible Exposure Limits, administrative or engineering controls must first be determined and implemented whenever feasible;

(b) When such controls are not feasible to achieve full compliance, protective measures as prescribed in OAR chapter 437, division 129, Personal Protective Equipment, Apparel, and Respirators shall be used to keep the exposure of employees to airborne contaminants within the limits prescribed in this rule.

(6) Employee Information and Training. A training program shall be established and all affected employees shall be trained regarding the safe handling of materials used in the industry which shall include instruction in storage, handling large and small quantities, cleanup and disposal of spills, first aid for spills, equipment training, potential health and safety hazards, personal hygiene, personal protective measures, and the labelling system.

(7) Personal Protective Equipment:

(a) Safety glasses shall be worn at all times by personnel working in the manufacturing area of reinforced plastics plants;

(b) Face shields and safety glasses shall be worn when opening and filling pressurized catalyst injection equipment;

(c) An eyewash fountain shall be provided no more than 25 feet or 15 seconds of actual travel from a work area where MEK peroxide is being mixed or transferred:

(A) The criteria of 25 feet shall apply if the employee is working alone;

(B) The criteria of 15 seconds shall apply if other employees are close enough under normal working conditions to provide assistance and a formal training program which includes emergency first aid procedures for eye protection has been implemented.

(d) Clothing saturated or impregnated with flammable liquids, corrosive or toxic substances, irritants, or oxidizing agents, that present a health hazard to employees shall be removed and disposed of, or properly cleaned before reuse; however, clothing coated with cured resin may be worn.

(8) Warning Signs and Labels:

(a) The hazardous chemical or material identification labels shall be placed on all containers of hazardous chemicals. Labels are not required on small containers of hazardous chemicals which are scheduled for use and disposal within one workshift. Keys explaining the labelling system shall be prominently posted in the workplace. Employees shall be trained in reading the labels;

(b) Where extreme occupational health hazards are known to exist in the workplace, the employer shall provide warning signs or other equally effective means of calling attention to such hazards at the location where the hazards exist.

(9) Housekeeping:

(a) Housekeeping shall be sufficient to keep accumulations of combustible residues to a minimum as practical;

(b) All combustible and flammable residues shall be placed in covered noncombustible containers;

(c) To prevent excessive permanent buildup of overspray and overchop, the use of paper, polyethylene film, building or roofing paper or other similar sheet material shall be permitted on side walls and floors of choppergun and gelcoat areas:

(A) When the accumulated depth of overchop and/or gelcoat has reached an average thickness of two inches in the overspray area, it shall be disposed of after at least four hours curing;

(B) A single day's accumulation of more than an average of two inches shall be permitted provided it is disposed of before operations are resumed the next day.

(d) Excess catalyzed resin inside a building shall be disposed of in open-topped containers provided with bar screens, large mesh wire screens, or other means, to support individual containers across its top through which surplus catalyzed resin can be poured and upon which empty containers that once held catalyzed resin can be placed to cure. The open-topped containers shall contain water at least two inches deep in which the resin shall be poured and permitted to cure in a safe fashion. Containers can be used until filled with setup resin and disposed of along with other nontoxic waste.

(10) Hygiene Facilities and Practices. If acetone is used directly on the skin to clean hands, barrier or a therapeutic cream must be made available to the employee. Gloves shall be provided should any employee wish additional protection.

(11) Storage and Handling of Flammable and Combustible Materials:

(a) The storage and handling of acetone and other Class I and II liquids for cleanup and gun flushing shall be subject to the following requirements:

(A) Class I and II solvents shall be kept in containers that are covered during storage;

(B) Areas within the shop where acetone or other Class I solvents are transferred into containers less than five gallons each shall be considered Class I, Division I areas for a five-foot radius around the point of transfer, and Class, Division 2, for an additional five feet outside of the area; and

(C) "Dirty" acetone in small individual cleanup containers of less than five gallons each may be handled by pouring into a large container suitable for disposal or recycling which shall be kept covered.

(b) The following subsections shall apply to chopper gun or gelcoating areas:

(A) Areas where flammable and combustible liquids are used, shall be protected by automatic sprinklers or equivalent extinguishing systems. If a special extinguishing system including, but not limited to, those employing foam, carbon dioxide, or dry chemical, is provided, approved equipment shall be used and installed in an approved manner;

(B) Exhaust fans mounted four feet or less, as measured from the invert (bottom) of the duct above the floor, shall have nonsparking fan blades, and

(i) A motor mounted external to the air stream in a non-explosive atmosphere. The fan shall be driven by an interconnecting belt;

(ii) Those fans having air suction ducts four feet or less above the floor shall comply with subsection (2)(b) of this rule.

(C) Exhaust fans mounted more than four feet above the floor shall have nonsparking fan blades;

(D) All other electrical equipment in chopper gun or gelcoating operations must conform to the requirements of National Fire Protection Association (NFPS) 33-1989.

(c) Aceton and other Class I liquids shall be transferred only through a closed piping system from a safety can be means of a device drawing through the top of from a container or portable tank by gravity through an approved self-closing valve. The nozzle and container shall be electrically interconnected;

(d) Acetone shall be kept in covered containers when not in use;

(e) Special input and exhaust ventilation shall be provided where employees must be inside or under the item being fabricated (e.g., inside a pipe or boat hull or under a large fabricated shape) to keep air concentrations of hazardous and/or flammable or combustible materials at or below 25 percent of the lower explosive limit and employee exposure at or below the permissible exposure limit;

(f) Areas where flammable and combustible materials are handled shall either be posted with "No Smoking" signs, or smoking shall be prohibited throughout plant, manufacturing and storage areas;

(g) Storage and handling of flammable and combustible materials not addressed in these rules shall meet the requirements of OAR chapter 437, division 2, Subdivision H, 1910.106, Flammable and Combustible Liquids.

(12) Storage and Handling of Organic Peroxide Catalysts:

(a) Organic peroxide catalysts shall be isolated and stored in their original containers in a cool place under 100°F (37.8°C), away from other combustible or flammable materials and ignition sources;

(b) Organic peroxide catalyst containers shall be covered or kept closed at all times;

(c) Organic peroxide catalysts shall be brought into the area of use in no more than two consecutive days' supply;

(d) Larger than eight-pound containers or organic peroxide catalyst shall not be permitted outside designated catalyst storage areas, except for hand layup operations or for filling the catalyst reservoir of chopper gun and gelcoat equipment;

(e) When organic peroxide catalyst is being poured into the catalyst reservoir of chopper gun and gelcoat equipment, the catalyst container shall be equipped with a special curved pouring spout or other device which directs the catalyst into the reservoir without splashing:

(A) A supply of water of not less than one gallon shall be permanently installed on the chopper gun or gelcoat apparatus to wet down any catalyst spills which may occur due to overfilling. Catalyst spills shall be absorbed in accordance with the manufacturer's recommendations;

(B) Immediately after filling the chopper gun or gelcoat apparatus with catalyst, the empty or partially filled catalyst container shall be removed immediately before commencement of any other operation.

(13) Fire Protection. Areas where flammable and combustible materials are handled shall either be posted with "No Smoking" signs, or smoking shall be prohibited throughout plant, manufacturing and storage areas.

(14) Ventilation:

(a) Special input and exhaust ventilation shall be provided where employees must be inside or under the item being fabricated (e.g., inside a pipe or boat hull or under a large fabricated shape) to keep air concentrations of hazardous and/or flammable or combustible materials at or below 25 percent of the lower explosive limit and employee exposure at or below the permissible exposure limit;

(b) During cleanup and gun flushing with acetone or other Class I and II liquids, sufficient ventilation shall be provided to maintain air concentrations below 25 percent of the lower explosive limit (LEL) and employee exposure at or below the permissible exposure limit;

(c) Where acetone and Class I solvents are used in physical operations (e.g., mixing) there shall be a minimum ventilation rate of one cubic foot per minute per square foot or floor area in the immediate work area.

[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 2-1992, f. 2-6-92, cert. ef. 5-1-92; OSHA 6-1994, f. & cert. ef. 9-30-94

437-002-0119
Oregon Effective Dates

(1) Information pertaining to the equipment in the process shall include material and energy balances for processes built after November 24, 1992.

(2) The employer shall perform an initial process hazard analysis (hazard evaluation) on processes covered by this standard. The process hazard analysis shall be appropriate to the complexity of the process and shall identify, evaluate, and control the hazards involved in the process. Employers shall determine and document the priority order for conducting process hazard analyses based on a rationale which includes such considerations as extent of the process hazards, number of potentially affected employees, age of the process, and operating history of the process. The process hazard analysis shall be conducted as soon as possible, but not later than the following schedule:

(a) No less than 25 percent of the initial process hazards analyses shall be completed by November 24, 1994;

(b) No less than 50 percent of the initial process hazards analyses shall be completed by November 24, 1995;

(c) No less than 75 percent of the initial process hazards analyses shall be completed by November 24, 1996;

(d) All initial process hazard analyses shall be completed by November 24, 1997;

(e) Process hazards analyses completed after November 24, 1987, which meet the requirements of this paragraph are acceptable as initial process hazards analyses. These process hazard analyses shall be updated and revalidated, based on their completion date.

(3) In lieu of initial training for these employees already involved in operating a process on November 24, 1992, an employer may certify in writing that the employee has the required knowledge, skills, and abilities to safely carry out the duties and responsibilities as specified in the operating procedures.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 8-1992, f. 8-13-92, cert. ef. 11-24-92; OSHA 3-1993, f. & cert. ef. 2-23-93; OSHA 6-1994, f. & cert. ef. 9-30-94

Personal Protective Equipment

437-002-0120
Adoption by Reference

In addition to and not in lieu of any other health and safety codes contained in OAR chapter 437, the Department adopts by reference the following federal rules as printed in the **Code of Federal Regulations**, **29 CFR 1910**, revised as of 7/1/03, and any subsequent amendments published in the Federal Register and listed below:

(1) 29 CFR 1910.132 General requirements, published 6/27/74, Federal Register, vol. 39, p. 23502; amended 6/30/93, FR vol. 58, no. 124, p. 35306; 4/6/94, FR vol. 59, no. 66, p. 16360; amended with AO 12-2001, Oregon note added, f. and ef. 10/26/01.

(2) 29 CFR 1910.133 Eye and face protection, published 6/27/74, Federal Register, vol. 39, p. 23502; 4/6/94, FR vol. 59, no. 66, p. 16360; 3/7/96, FR vol. 61, no. 46, p. 9236; 5/2/96, FR vol. 61, p. 19547.

(3) 29 CFR 1910.134 Respiratory protection, published 1/8/98, Federal Register, vol. 63, no. 5, p. 1270; 4/23/98, FR vol. 63, no. 78, p. 20098; 8/4/04, FR vol. 69, p. 46986; 4/3/06, FR vol. 71, no. 63, p. 16669; 8/24/06, FR vol. 71, no. 164, p. 50122.

(4) 29 CFR 1910.135 Occupational head protection, published 4/6/94, Federal Register, vol. 59, no. 66, p. 16362; 3/7/96, FR vol. 61, no. 46, p. 9238; 5/2/96, FR vol.61, p. 19547.

(5) 29 CFR 1910.136 Occupational foot protection, published 4/6/94, Federal Register, vol. 59, no. 66, p. 16362; 3/7/96, FR vol. 61, no. 46, p. 9238; 5/2/96, FR vol. 61, p. 19547; 5/9/96; FR vol. 61, p. 21228.

(6) 29 CFR 1910.137 Electrical protective equipment, published 6/27/74, Federal Register, vol. 39, p. 23502; amended 1/31/94, FR vol. 59, no. 20, pp. 4435-7.

(7) 29 CFR 1910.138 Hand Protection, published 4/6/94, Federal Register, vol. 59, no. 66, p. 16362.

(8) 29 CFR 1910.139 Respiratory protection for M. tuberculosis, published 6/27/74, Federal Register, vol. 39, p. 23502; amended 10/24/78, FR vol. 43, p. 49748; 2/10/84, FR vol. 49, p. 5322; 4/30/84, FR vol. 49, p. 18295; 6/30/93, FR vol. 58, no. 124, p. 35309; 1/8/98, FR vol. 63, no. 5, p. 1270. Removed, 12/3/03, FR vol. 68, p. 75776-75780 (OR-OSHA Admin. Order 1-2004, f. 3/26/04, ef. 7/1/04).

(9) Appendices. **Appendix A** — References for further information (nonmandatory). **Appendix B** — Nonmandatory compliance guidelines for hazard assessment and personal protective equipment selection.

NOTE: These standards are available from the Oregon Occupational Safety and Health Division (OR-OSHA), Department of Consumer and Business Services; and the **United States Government Printing Office**.

[ED. NOTE: Appendices referenced are available from the agency.]
[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 9-1993, f. 7-29-93, cert. ef. 9-15-93; OSHA 3-1994, f. & cert. ef. 8-1-94; OSHA 3-1997, f. & cert. ef. 3-28-97; OSHA 4-1997, f. & cert. ef. 4-2-97; OSHA 3-1998, f. & cert. ef. 7-7-98; OSHA 12-2001, f. & cert. ef. 10-26-01; OSHA 1-2004, f.

3-26-04, cert. ef. 7-1-04; OHSA 5-2004, f. & cert. ef. 11-19-04; OSHA 4-2006, f. & cert. ef. 7-24-06; OSHA 10-2006, f. & cert. ef. 11-30-06

Oregon Initiated Rules for Personal Protective Equipment

437-002-0123
Additional Oregon General Requirements for Protective Equipment

NOTE: Protective equipment includes shields, barriers, restraints, and equipment for protection of any part of the body.

(1) Appropriate high temperature protective clothing shall be worn by workers who are exposed to possible contact with molten metals.

(2) Where the need for their use is indicated, protective covering, ointments, gloves, or other effective protection shall be provided for and used by persons exposed to materials which are hazardous to the skin.

(3) Personal protective equipment shall be worn and used in a manner which will make full use of its protective properties.

(4) Each employer shall maintain a regular system of inspection and maintenance of personal protective equipment furnished to workers.

(5) Workers shall check their equipment at the beginning of each shift.

(6) Rings, wristwatches, earrings, bracelets, and other jewelry which might contact power driven machinery or electric circuitry, shall not be worn.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 9-1993, f. 7-29-93, cert. ef. 9-15-93; OSHA 5-1994, f. & cert. ef. 9-30-94

437-002-0125
Oregon Rules for Fall Protection

(1) All employees shall be protected from fall hazards when working on unguarded surfaces more than ten feet above a lower level or at any height above dangerous equipment.

NOTE: These provisions do not apply when the work is of limited duration and limited exposure, and the hazards involved in rigging and installing the safety devices equal or exceed the hazards involved in the actual activities, such as the activities of grain weight-samplers on railroad gondola-hopper cars, or railcar inspectors when testing or inspecting car tops.

(2) Lifelines, body belts/harnesses and lanyards shall be used only for employee safeguarding.

(3) Any lifeline, body belt-harness or lanyard actually subjected to in-service loading, as distinguished from static load testing, shall be immediately removed from service and shall not be used again for employee safeguarding.

(4) The point of attachment for lifelines shall be capable of supporting a minimum dead weight of 5,000 pounds.

(5) Personal fall arrest systems shall be rigged so that an employee can neither free fall more than six feet, nor contact any lower level.

(6) Personal fall restraint systems shall be rigged so that an employee cannot free fall more than two feet.

(7) Lifelines used on rock-scaling operations, or in areas where the lifeline may be subjected to cutting or abrasion, shall be a minimum of 7/8-inch wire core manila rope. For all other lifeline applications, a minimum of 5/8-inch manila or equivalent with a minimum breaking strength of 5,000 pounds shall be used.

(8) All body belts/harnesses and lanyard hardware shall be drop forged or pressed steel, cadmium plated in accordance with type 1, Class B plating specified in Federal Specification QQ-P-416. Surface shall be smooth and free of sharp edges.

(9) All body belts/harnesses and lanyard hardware, except rivets, shall be capable of withstanding a tensile loading of 4,000 pounds without cracking, breaking, or taking a permanent deformation.

(10) Body belts/harnesses and lanyards shall be a minimum of 1/2-inch nylon or equivalent, with a maximum length to provide for a fall of no greater than six feet. The rope shall have a nominal breaking strength of 5,000 pounds.

(11) All lifelines, lanyards, and body belts/harnesses shall be periodically inspected by the supervisor in charge. Employees shall inspect their body belts/harnesses and lifelines daily. Any defective body belts/harnesses or lifelines shall be discarded or repaired before use.

NOTE: Additional requirements for use of body belts/harness systems are contained in other divisions of the Oregon Occupational Safety and Health Code and the American National Standard A10.14-1991, Requirements for Safety Belts, Harnesses, Lanyards and Lifelines for Construction and Demolition Use.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 9-1974, f. 3-19-74, ef. 4-15-74; WCB 12-1976, f. & ef. 5-20-76; WCB 20-1976, f. 7-6-76, ef. 9-15-76; APD 11-1988(Temp), f. & ef. 7-12-88; APD 1-1989, f. & ef. 1-3-89; OSHA 9-1993, f. 7-29-93, cert. ef. 9-15-93

437-002-0127
Oregon Rules for Work Clothing

(1) Clothing shall be worn which is appropriate to the work performed and conditions encountered.

(2) Loose sleeves, ties, lapels, cuffs, or other loose clothing shall not be worn near moving machinery.

NOTE: Application of this rule is not intended to negate requirements for guarding power-driven machines.

(3) Clothing saturated or impregnated with flammable liquids, corrosive or toxic substances, irritants, or oxidizing agents shall be removed immediately and not worn again until properly cleaned.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 9-1993, f. 7-29-93, cert. ef. 9-15-93

437-002-0128
High Visibility Garments.

Employees exposed to hazards caused by on-highway type moving vehicles in construction zones and street/highway traffic must wear highly visible upper body garments. The colors must contrast with other colors in the area sufficiently to make the worker stand out. Colors equivalent to strong red, strong orange, strong yellow, strong yellow-green or fluorescent versions of these colors are acceptable. During hours of darkness, the garments must also have reflective material visible from all sides for 1000 feet.

NOTE: High visibility garments for flaggers must meet the requirements in OAR 437-002-0223(23)(c).

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 10-2000, f. 11-7-00, cert. ef. 4-1-01

437-002-0130
Additional Oregon Rules for Eye and Face Protection

Lasers. Employees whose occupation or assignment requires exposure to laser beams shall be furnished laser safety goggles as required by Occupational Health Regulations which will protect for the specific wavelength of the laser and be of optical density adequate for the energy involved.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 9-1993, f. 7-29-93, cert. ef. 9-15-93; OSHA 5-1994, f. & cert. ef. 9-30-94

437-002-0135
Oregon Rules for Head Protection

Employees who are exposed to power-driven machinery or to sources of ignition shall wear caps or other head covering which completely covers the hair.

NOTE: Application of this rule is not intended to negate requirements for guarding power-driven machinery.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 9-1993, f. 7-29-93, cert. ef. 9-15-93; OSHA 5-1994, f. & cert. ef. 9-30-94

437-002-0136
Additional Oregon Rules for Hand Protection

Gloves shall not be worn by persons whose hands are exposed to moving parts in which they could be caught.

NOTE: Application of this rule is not intended to negate requirements for guarding power-driven machinery.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-1994, f. & cert. ef. 9-30-94

437-002-0137
Oregon Rules for Foot Protection

(1) Special types or designs of shoes or foot guards are required where conditions exist that make their use necessary for the safety of workers.

(2) Leggings or high boots of leather, rubber, or other suitable material shall be worn by persons exposed to hot substances or dangerous chemical spills.

(3) Employees using chain saws must wear chaps or leg protectors that cover the leg from the upper thigh to mid-calf. The protector must be material designed to resist cuts from the chain saw. Employers must provide this protection at no cost to the employee.

NOTE to 437-002-0137(3): Employees working in the tree and shrub services industry must follow rules on this subject in Subdivision 2/R instead of the above.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 9-1993, f. 7-29-93, cert. ef. 9-15-93; OSHA 5-1994, f. & cert. ef. 9-30-94; OSHA 12-2001, f. & cert. ef. 10-26-01

437-002-0138
Additional Oregon Rule for Electrical Protective Equipment

Tests of Rubber Gloves and Sleeves. Rubber gloves and sleeves shall be electrically tested at least once every 3 months after they are checked out for use, and complete records shall be kept of all such tests and date of issue. Rubber gloves and sleeves not checked out for use within 6 months shall be re-tested before being issued.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 3-1994, f. & cert. ef. 8-1-94

437-002-0139
Working Underway on Water.

(1) Scope and Application: This rule applies to all employees not covered by division 3, Construction; division 4, Agriculture or division 6, Forest Practices.

(2) Definitions:

(a) Boat — means every description of water craft used or capable of being used as a means of transportation on the water, but does not include aircraft built to land on the water.

EXAMPLE: A partial list includes: boats, rafts, barges, pontoons, dredges and floating logs.

(b) Serviceable condition — means the flotation device is able to perform the function that the manufacturer intended.

(c) Underway — means when a boat is not at anchor, or moored, or made fast to the shore, or aground.

(3)(a) Workers in boats that are underway must wear a Coast Guard approved or equivalent, wearable personal flotation device (PFD).

EXCEPTION: Workers, below deck or in enclosed parts of boats, like cabins and pilot houses need not wear the PFD but must have it at hand.

(b) The PFD must be the right size for the wearer and must be in serviceable condition according to the manufacturer's requirements and recommendations.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 9-1993, f. 7-29-93, cert. ef. 9-15-93; OSHA 1-2001, f. 1-18-01, cert. ef. 3-1-01

General Environmental Controls

437-002-0140
Adoption by Reference

In addition to and not in lieu of any other safety and health codes contained in OAR chapter 437, the Department adopts by reference the following federal rules as printed in the **Code of Federal Regulations**, **29 CFR 1910**, revised as of 7/1/98, and any subsequent amendments published in the Federal Register as listed below:

(1) **29 CFR 1910.141** Sanitation, published 6/27/74, **Federal Register**, vol. 39, p. 23502; amended 4/28/75, **FR** vol. 40, p. 18446; 5/28/75, **FR** vol. 40, p. 23073; 10/24/78, **FR** vol. 43, p. 49748; 6/18/98, **FR** vol. 63, no. 117, p. 33467.

(2) Reserved for **29 CFR 1910.142** Temporary labor camps.

(3) **29 CFR 1910.143** Non-water carriage disposal systems (Reserved).

(4) **29 CFR 1910.144** Safety color code for marking physical hazards, published 6/27/74, **Federal Register**, vol. 39, p. 23502; amended 10/24/78, **FR** vol. 43, p. 49749; 2/10/84, **FR** vol. 49, p. 5322; 3/7/96, **FR** vol. 61, no. 46, p. 9239.

(5) **29 CFR 1910.145** Specifications for accident prevention signs and tags, published 6/27/74, **Federal Register**, vol. 39, p. 23502; amended 10/24/78; **FR** vol. 43, p. 49749; 11/7/78, **FR** vol. 43, p. 51759; 2/10/84, **FR** vol. 49, p. 5322; 9/19/86, **FR** vol. 51, p. 33260; 3/7/96, **FR** vol. 61, no. 46, p. 9239.

(6) **29 CFR 1910.146** Permit-required confined spaces, published 1/14/93, **Federal Register**, vol. 58, no. 9, pp 4549-4563; corrections published 6/29/93, **FR** vol. 58, no. 123, p. 34844; amended 5/19/94, **FR** vol. 59, no. 96, pp. 26411-26116; 12/1/98, **FR** vol. 63, no. 230, p. 66038; 1/4/99, **FR** vol. 64, no. 1, p.204.

(7) **29 CFR 1910.147** The control of hazardous energy, (lockout/tagout); published 9/1/89, **Federal Register**, vol. 54, no. 169. pp. 36687-36696; amended (extension of effective date) 11/6/89, **FR** vol. 54, no. 213, p. 46610; amended 9/20/90, **FR** vol. 55, no. 183, pp. 38685-38687; amended with AO 12-2001, add (f)(3), f. and ef. 10/26/01.

(8) **29 CFR 1910.148** Removed. Published 3/7/96, **Federal Register**, vol. 61, no. 46, p. 9239.

(9) **29 CFR 1910.149** Removed. Published 3/7/96, **Federal Register**, vol. 61, no. 46, p. 9239.

(10) **29 CFR 1910.150** Removed. Published 3/7/96, **Federal Register**, vol. 61, no. 46, p. 9239.

NOTE: These federal standards are on file with the Oregon Occupational Safety and Health Division, Department of Consumer and Business Services and the **United States Government Printing Office.**

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 2-1990, f. 1-19-90, cert. ef. 3-1-90; OSHA 4-1991, f. 2-25-91, cert. ef. 3-15-91; OSHA 13-1992, f. 12-7-92, cert. ef. 2-1-93; OSHA 8-1993, f. & cert. ef. 7-1-93; OSHA 5-1994, f. & cert. ef. 9-30-94; OSHA 4-1997, f. & cert. ef. 4-2-97; OSHA 2-1999, f. & cert. ef. 4-30-99; OSHA 5-1999, f. & cert. ef. 5-26-99; OSHA 12-2001, f. & cert. ef. 10-26-01

437-002-0141
Additional Oregon Sanitation Requirements

(1) Definitions:

(a) "Potable Water" means water meeting the bacteriological and chemical quality requirements prescribed in OAR chapter 333, division 61, Public Water Systems, of the Oregon State Health Division;

(b) "Sanitary" means free from agents injurious to health.

(2) Expectoration. Expectorating upon the walls, floors, workplaces, or stairs of any establishment is prohibited.

(3) Disposal of Waste Materials.

(a) Scrap, waste material, or debris shall not be permitted to accumulate in work areas in a manner that will constitute a hazard or contribute to a hazardous condition in a place of employment. It shall be removed as required for the safety of workers.

(b) Flammable waste, such as oily rags, shall be removed to a safe place, or be placed in containers designed or suitable for such use.

(c) Where the operation of machines or equipment creates waste materials hazardous to workers, such machines or equipment shall be equipped with suitable collecting or removal systems, except that where the refuse is too heavy, bulky, or otherwise unsuitable to be handled by such means, provision for the temporary safe storage and regular removal of the refuse shall be made.

NOTE: Water supply systems design and construction standards are contained in the Oregon Health Division rules, OAR chapter 333, division 61, Public Water Systems.

(4) Toilet Facilities. Toilet facilities at permanent worksites must be reasonably accessible.

(5) Washing Facilities. Handwashing facilities shall be provided in work areas where the employees are exposed to hazardous materials which will have a deleterious effect on or be absorbed through the skin if the contamination is not removed.

NOTE: OR-OSHA did not adopt 1910.141(d)(3)(ii). In Oregon, OAR 437-002-0141(6) applies:

(6) Shower Facilities. One shower shall be provided for each five employees of each sex, or numerical fraction thereof, who are required to shower during the same shift.

(7) Ventilation/Smoking.

(a) Exhaust or natural ventilation in eating facilities shall be sufficient to prevent the excessive build-up of cigarette smoke, or other atmospheric contaminants.

(b) Where employees work in an enclosed space, exhaust or natural ventilation shall be sufficient to prevent the build-up of cigarette smoke or other atmospheric contaminants.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 13-1992, f. 12-7-92, cert. ef. 2-1-93; OSHA 6-1994, f. & cert. ef. 9-30-94

NOTE: In lieu of 1910.142, Temporary Labor Camps, the following Oregon-initiated rules have been adopted. OAR 437, division 147, Labor Camps, was redesignated as part of Division 2/J, and renumbered as OAR 437-002-0142.

437-002-0142
Labor Camps

(1) Application.

(a) These rules apply to any labor housing and related facilities defined in Rule 437-002-0142(4).

(b) These rules apply to any type of labor housing and related facilities together with the tract of land, established, or to be established, operated or maintained for housing workers with or without families whether or not fees are paid or collected.

(c) These rules apply but are not limited to, railroad work trains, logging camps, construction camps, and similar housing. They do not apply to housing covered by Division 4, Agriculture.

(d) These rules apply to tents, frame construction housing, and manufactured structures, and prefabricated structures defined in Oregon Revised Statutes. Manufactured dwellings must comply with specifications for construction of sleeping places, unless they comply with ORS 446.155 to 446.185 and OAR 918-500-0020(2), that have the requirements and specifications for sanitation and safety design for manufactured dwellings.

(e) These rules apply to housing given to, rented, leased to or otherwise provided to employees for use while employed and provided either by the employer, a representative of the employer or a housing operator.

(f) These rules, unless otherwise stated, apply to all occupants of the labor housing and facilities.

(g) These rules apply to all labor housing sites owned, operated, or allowed to operate on property under the jurisdiction of any state or municipal authority.

(h) Violations relating to the occupants' personal housekeeping practices for issues in paragraphs (8), (9), (10), (11), (12), (13), (16), and (18) relate to the personal housekeeping practices of the occupants will not result in citations to the employer.

(2) Exemptions.

(a) Housing including tents, vehicles, manufactured and prefabricated structures owned or provided by employees for their own use are not subject to these rules. When the employee provides their own housing, the housing operator is responsible for the provision and maintenance of all other services in this standard.

(b) These rules do not apply to accommodations subject to licensing as manufactured dwelling parks, organizational camps, traveler's accommodations or recreation parks.

(c) Manufactured structures being moved regularly from place to place because of the work are exempt from these rules except when at parks or camps meant for parking mobile vehicles.

(3) Scope. These rules apply to any labor housing and related facilities defined in (4) below used in relationship to employment.

(4) Definitions:

(a) "Clean" means the absence of soil or dirt or removal of soil or dirt by washing, sweeping, clearing away, or any method appropriate to the material at hand.

(b) "Division" means the Oregon Occupational Safety and Health (OR-OSHA) Division of the Department of Consumer and Business Services.

(c) "Facility" means a living area, drinking water installation, toilet installation, sewage disposal installation, food handling installation, or other installation required for compliance with the labor housing and related facility rules.

(d) "Garbage" means food wastes, food packaging materials or any refuse that has been in contact with food stuffs.

(e) "Housing site" is a place where there are living areas.

(f) "Labor housing and related facilities" — any place, or area of land where there are living areas, manufactured or prefabricated structures or other housing provided by an employer or by another person.

(g) "Local public health administrator" means the administrator defined in ORS 431.418 for the county or district where there is labor housing and related facilities.

(h) "Living area" is any room, structure, shelter, tent, manufactured structure, vehicle or other place housing one or more persons.

(i) "Manufactured structure" is:

(A) "Recreational vehicle" (includes park trailers) — a vehicle with or without motive power, designed for human temporary occupancy during recreational, seasonal or emergency use. Gross floor area is not more than 400 square feet when set up.

(B) "Manufactured dwelling" — a residential trailer, for movement on the highway, that has sleeping, cooking and plumbing facilities. Constructed before January 1, 1962. Or, a mobile home, constructed for movement on the highway, that has sleeping, cooking and plumbing facilities. Constructed between January 1, 1962 and June 15, 1976 and met the requirements of Oregon mobile home law in effect at the time of construction.

(C) "Manufactured home" — a structure built for movement on the highway that has sleeping, cooking and plumbing facilities and is used as a residence. Built to comply with federal manufactured housing standards and regulations in effect at the time of construction. These homes were built on or after June 15, 1976.

(D) More information on these definitions is in ORS 446.003(26).

(j) "Operator" means any person or company that operates labor housing and/or related facilities.

(k) "Potable water" is water meeting the bacteriological and other requirements of the Oregon Health Division.

(l) "Prefabricated structure" means a building or subassembly which has been in whole or substantial part manufactured or assembled using closed construction at an off-site location to be wholly or partially assembled on-site; but does not include a manufactured structure. Prefabricated structures are manufactured in accordance with the Oregon state building code and rules adopted by the Building Codes Division in OAR 918-674.

(m) "Privy" is the same as outhouse or pit toilet but is not the same as portable toilets.

(n) "Recyclable material" means containers that are returnable for refund of a deposit.

(o) "Refuse" includes waste materials such as paper, metal, discarded items, as well as debris and litter and trash.

(p) "Sanitary" means free from agents that may be injurious to health.

(q) "Sewage" means the water-carried human and animal wastes, including kitchen, bath, and laundry wastes from residences, buildings, industrial establishments, or other places, together with such groundwater infiltration, surface waters, or industrial wastes as may be present.

(r) "Single isolated dwelling" means one dwelling unit, apart from those of the owners/ operators of an agricultural establishment.

(s) "Toilet room" is a room in or on the premises of any labor housing, with toilet facilities for use by employees and occupants of that housing.

(5) Site requirements.

(a) The grounds of labor housing and related facilities must be substantially free from waste water, sewage, garbage, recyclable material, refuse or noxious plants such as poison oak and poison ivy.

(b) During housing occupancy, grass, weeds, and brush must be cut back at least 30 feet from buildings.

(c) All housing site land must have adequate drainage. The site must not be subject to periodic flooding when occupied.

(d) Adequately dispose of the waste water and food waste under outside water hydrants.

(e) Prevent or control the breeding of mosquitos, flies, and rodents in the immediate housing area and in the barns, pens, feed yards, or similar livestock or poultry areas within 200 feet of any labor housing and related facilities owned or under lawful control or supervision of the operator.

(f) The operator of labor housing is responsible for the maintenance and operation of the housing and its facilities.

(g) Store all toxic materials such as pesticides, fertilizers, paints and solvents in a safe place.

(h) Do not leave empty pesticide containers such as drums, bags, cans, or bottles in the housing area.

(i) Do not allow poultry or livestock in the housing area during occupancy.

(j) Provide electricity to all housing units in labor housing and related facilities.

(k) All electrical wiring and lighting fixtures must comply with the Oregon state building code in effect at the time of construction or remodeling. Extension cords must have circuit breaker or fuse protection either as part of the set or the building wiring.

(l) Facilities built or remodeled before December 15, 1989, must have a ceiling or wall-type electric light fixture in working order and

at least one wall-type electrical outlet in every living area. Facilities built or remodeled after that date must comply with the code in effect at the time of construction or remodeling.

(m) Provide a ceiling or wall-type electric light in toilet rooms, lavatories, shower or bathing rooms, laundry rooms, hallways, stairways, the common eating area or other hazardous dark areas.

(n) Light privies either directly or indirectly from an outside light source.

(o) Provide enough light in corridors and walkways to allow safe travel at night.

(6) Water Supply.

(a) All domestic water furnished at labor housing and related facilities must conform to the standards of the Oregon Health Division.

(b) Have a bacteriological analysis done on the water before occupancy and as often as needed to assure a potable water supply, except when the water comes from a community water system.

(c) Provide enough potable water in the labor housing area for drinking, hand washing, bathing and domestic use. An ample supply is at least 35 gallons of water per day per occupant. Water for drinking and domestic use must be within 100 feet of each living area.

(d) Arrange, construct and if necessary, periodically disinfect the water distribution facilities to satisfactorily protect the water from contamination. Install all new plumbing in labor housing and related facilities to comply with the Oregon state building code.

(e) Do not use cups, dippers or other utensils for common drinking purposes.

(f) Drinking fountains must be angle-jet type with adequate water pressure.

(g) Post as, "Unsafe for drinking," non-potable water that is accessible to occupants.

(h) Portable water containers with spigots and tight fitting lids are acceptable for providing and storing drinking water in the housing.

(A) These containers must be made of impervious non-toxic materials that protect the water from contamination.

(B) Wash and sanitize them at least every seven days.

(i) Do not use containers such as barrels, pails or tanks that require dipping or pouring to get the water.

(j) Do not allow cross connection between a system furnishing water for drinking purposes and a non-potable supply.

(7) Laundry, Hand washing, Toilet, and Bathing Facilities — General.

(a) Provide an adequate supply of hot and cold water under pressure for all common use hand washing, bathing, and laundry facilities.

(b) In installations with flush toilets, lavatory, bathing, or laundry facilities, the floor and walls must be of readily cleanable finish and impervious to moisture.

(c) Separate central bathing or toilet facilities used for both sexes in the same building by a solid, non-absorbent wall extending from the floor to the ceiling.

(d) All individual or common use laundry, toilet facilities, portable toilets, privies, hand washing, and bathing facilities must be clean, sanitary and operating properly.

NOTE: See 437-002-0142(5)(l) for lighting requirements.

(8) Bathing facilities.

(a) Provide floor drains in all showers to remove waste water. Slope floors so they drain and do not use slippery materials for flooring.

(b) Provide at least one shower head with hot and cold water under pressure for every 15 occupants or fraction thereof of each sex. A plumbed-in bathtub will substitute for a shower head. You may provide only one shower when housing a total of 9 or fewer persons of both sexes. Unisex showers are acceptable in the same ratios if they have positive means to assure user privacy.

(c) Mark bathing facilities for each sex with "women" and "men" in English and in the native language of employees expected to occupy the housing or with easily understood pictures or symbols.

(9) Hand washing facilities.

(a) Provide at least one hand washing basin with hot and cold water under pressure for every 15 occupants or fraction thereof. Locate them either adjacent to all toilet facilities or adjacent to the sleeping places. Each 24 linear inches of "trough" type sink with individual faucets counts as one basin.

(b) Do not use a single common towel. If you provide paper towels, there must be a container for their disposal.

(10) Laundry facilities.

(a) When public laundry and drying facilities are not available within five miles, the housing must have readily accessible laundry and drying facilities.

(b) Laundry facilities in the housing area must have trays or tubs, plumbed with hot and cold water in the ratio of 1 for each 25 occupants.

(c) Mechanical washers are optional in the ratio of 1 to 50 occupants with one laundry tray per 100 occupants.

(d) Provide clothes lines or drying facilities to serve the needs of the occupants. Mechanical clothes dryers may be in the ratio of 1 per 50 occupants instead of clothes drying lines.

(11) Toilet facilities.

(a) Locate toilet facilities in labor housing and related facilities within 200 feet from the living area that they serve.

(b) Locate toilets, chemical toilets, or urinals in rooms built for that purpose.

(c) Maintain a usable, unobstructed path or walkway free of weeds, debris, holes or standing water from each living area to the central toilet facilities.

(d) Provide at least one toilet for every 15 occupants or fraction thereof for each sex in the labor housing. You may provide one toilet when housing a total of 9 or fewer persons of both sexes.

(A) If urinals are in the toilet facility and where three or more toilets are required for men, one urinal substitutes for one toilet (24 inches of trough-type urinal equals one urinal), to a maximum of one-third of the total required toilets.

(B) Existing urinals must be non-absorbent, non-corrosive materials that have a smooth and cleanable finish. Urinals installed after the effective date of this standard must meet the Oregon state building code.

(e) Mark toilet facilities for each sex with "women" and "men" in English and in the native language of employees expected to occupy the housing or with easily understood pictures or symbols.

(f) Ventilate all labor housing toilet rooms according to the Oregon state building code.

(g) Install privacy partitions between each individual toilet or toilet seat in multiple toilet facilities. The partitions may be less than the height of the room walls.

(A) The top of the partition must be not less than 6 feet from the floor and the bottom of the partition not more than 1 foot from the floor. The width of the partition must extend at least 1 1/2 feet beyond the front of the toilet seat.

(B) Provide a door or curtain so the toilet compartment is private.

(h) Provide common use toilet facilities with toilet paper and holders or dispensers. Also provide disposal containers with lids.

NOTE: This rule does not apply to units occupied by a single family and that have their own bathrooms.

(12) Portable toilets, Chemical Toilets and Privies.

(a) The location and construction of privies must conform to Department of Environmental Quality standards.

(b) Privies must be between 50 and 200 feet from any living area or any facility where food is prepared or served.

(c) Portable toilets and privies must have adequate lighting either direct or indirect from an outside source.

(13) Sewage Disposal and Plumbing.

(a) Connect the sewer lines from the labor housing and related facilities to a community sewer system, a septic tank with subsurface disposal of the effluent, pit type privies or other sanitary means conforming to Department of Environmental Quality standards.

(b) Install all plumbing in labor housing and related facilities to comply with Department of Environmental Quality standards and the Oregon state building code.

(14) Garbage and Refuse Disposal outside of buildings.

NOTE: Recyclable material is not garbage or refuse referred to in this section (15).

(a) Store all refuse and garbage in water-tight containers that keep flies and rodents out.

(b) Keep refuse and garbage containers clean and in good repair.

(c) Provide at least one 30-gallon or larger container per 15 occupants. Containers must be accessible to all occupants and never outside of the housing site.

(d) Empty common garbage and refuse containers at least once a week or when full.

(e) Keep all refuse and garbage containers covered and the garbage storage area clean to control flies and rodents.

(f) Do not burn any food, garbage or wet refuse.

(g) Dispose of garbage and refuse according to DEQ standards that govern the disposal of garbage, refuse as and other solid wastes.

(15) Living Areas.

(a) Keep all living areas, safe and in good repair structurally and stable on their foundations. They must provide shelter for the occupants against the elements and protect the occupants from ground and surface water as well as rodents and insects.

(b) The walls and roof must be tight and solid. Floors must be rigid and durable, with a smooth and cleanable finish in good repair. If tents are living areas, they must have wood, asphalt or concrete floors that are smooth and of tight construction.

(c) Living areas occupied during October through May must have heating equipment capable of keeping a temperature of at least 68ºF. Equipment must comply with state fire, building and electrical regulations.

(d) Solid fuel or gas fired heaters must meet the following:

(A) Install and vent any stoves or other sources of heat that use combustible fuel to prevent fire hazards and dangerous concentration of gases.

(i) Portable heaters must be electric.

(ii) Solid or liquid fuel heaters or stoves installed on or before December 15, 1989, must sit on a concrete slab, insulated metal sheet or other fire resistant material when used in a room with wood or other combustible flooring. Extend it at least 18 inches beyond the perimeter of the base of the stove.

(iii) Solid or liquid fuel heaters or stoves must meet the manufacturer's specifications and the Oregon state building code.

(B) Install fire resistant material on any wall or ceiling within 18 inches of a solid or liquid fuel stove or a stove pipe. Provide a vented metal collar around the stovepipe, or vent passing through a wall, ceiling, floor or roof or combustible material.

(C) Heating systems with automatic controls must cut off the fuel supply on failure or interruption of the flame or ignition, or when they exceed a pre-determined safe temperature or pressure.

(D) All gas appliances and gas piping must comply with the Oregon state building code in effect at the time of installation and the manufacturer's instructions.

(E) Do not locate stoves, portable heaters or combustion heaters so they block escape from a sleeping place.

(e) Provide screens of at least 16 mesh on the doors and windows of the living areas when flies or mosquitos are present. All screen doors must be tight fitting, in good repair, and self closing.

(f) If tents are living areas, the tent body and screens must be in good repair. Effective October 1, 2000, tents must be flame resistant material or treated with flame retardant. The tents must have adequate screens to effectively keep out flies and mosquitos. Do not use tents for housing between the months of October through May.

(g) Provide beds, bunks or cots for each occupant and suitable storage facilities, such as wall cabinets or shelves, for each occupant or family unit. Effective October 1, 2000, the camp operator must provide a mattress or pad for each bed or bunk. The beds or bunk must keep the mattress or pad at least 6 inches off the floor.

(A) If you provide foam pads, they must be thicker than two inches.

(B) Do not provide uncovered foam pads.

(h) Mattresses or pads furnished by the camp operator must be clean, in good repair and free from insects and parasites.

(A) Fumigate mattresses or pads, used uncovered, or treat with an effective insecticide before each season's occupancy. If you provide covers, clean them before each season's occupancy.

(B) Store mattresses or pads in a clean, dry place.

(i) Space the beds, bunks or cots so that there is enough room to allow for rapid and safe exiting during an emergency.

NOTE: Nothing in this standard prohibits "banking" elevated floors with earth or other suitable material around the outside walls in areas subject to extreme low temperatures.

(j) Each room without double bunk beds must have at least 50 square feet of floor space per employee and at least one half of the floor area must have a minimum ceiling height of 7 feet, with the following exceptions:

(A) If employees are members of the same nuclear family (defined as a mother and father, their combined children and grandparents), provide space as follows:

(i) Full space for the first employee over twelve.

(ii) 3/4 space for each additional occupant over twelve, whether or not they are an employee.

(iii) 1/2 space for children under twelve, whether or not they are an employee.

(B) In rooms where workers cook, live, and sleep provide at least 60 square feet of floor space per occupant. Where the same nuclear family is living apply the adjustments from (A) above.

(C) In housing and related facilities built after August 1, 1975 where workers cook, live, and sleep provide at least 100 square feet per occupant. Where the same nuclear family is living apply the adjustments from (A) above.

(k) In rooms used for sleeping only, where there are double bunk beds, provide 40 square feet per occupant. Do not use triple bunks. **Table 1**. [Table not included. See ED. NOTE.]

(l) Provide separate private sleeping areas for each sex and for each family.

(m) Provide a window or skylight that opens directly to the outside, except where there is mechanical or other ventilation, for each habitable room. Windows that meet the requirements of fire exits are also acceptable for ventilation.

(n) Before occupancy clean all living areas and eliminate any rodents, insects, and animal parasites.

(16) Fire Protection.

(a) All fires must be in equipment designed for that use. Do not allow open fires within 25 feet of structures.

(b) Effective October 1, 2000, each season, at the time of initial occupancy, each living area must have a working approved smoke detector.

NOTE: The camp operator is not responsible for daily maintenance of the detector nor the actions of occupants that defeat its function.

(c) Provide fire extinguishing equipment in a readily accessible place, not more than 50 feet from each housing unit. The equipment must provide protection equal to a 2A:10BC rated extinguisher.

NOTE: Hoses are acceptable substitutes for extinguishers only if the water supply is constant and reliable. Hoses must be immediately available for firefighting use.

(d) All living areas with more than one room, built before December 15, 1989, with one door, except tents, vehicles, and trailer houses owned by the occupants, must have, in addition to a door, a window in each sleeping room that can be an exit in case of fire.

(A) This window must have an openable space at least 24 inches by 24 inches, nominal.

(B) The lowest portion of the opening must be less than 48 inches above the floor.

(C) This window must open directly to the outdoors and be readily openable by the occupants from inside without breaking the glass.

(D) This window must be in a room other than the room with the outside door. Label the window as an emergency exit.

(e) Living areas built on or after December 15, 1989, must meet the requirements for emergency exits in applicable rules of the Oregon Building Codes Division including the following: Required emergency exit windows in sleeping rooms must have a clear net opening of at least 5.7 square feet, minimum vertical opening of 22 inches and minimum horizontal opening of 20 inches.

NOTE: Construct and maintain all living areas in labor housing and related facilities to comply with other applicable local and state laws and regulations in effect at the time of construction or remodel.

(f) A second story must have at least two exits when the occupant load is 10 or more. Comply with the Oregon state building code.

(g) Occupants on floors above the second story and in basements must have access to at least two separate exits from the floor or basement as required by the Uniform Building Code.

(17) Cooking, Eating, and Dining Facilities: Central cooking or food preparation facilities must have the following and each living area with an area for use as a kitchen and eating area must have the following:

(a) A gas or electric refrigerator, capable of keeping food at or below 45ºF.

(b) A stove or hot plate large enough to serve the intended number of occupants. If a gas or electric hotplate or wood stove is within

18 inches of a wall, that wall must be made of or finished with smooth cleanable, non-absorbent, grease resistant and fire resistant material.

NOTE: Labeled and listed appliances are exempt from the 18" requirement when installed according to their listing.

(c) There must be no liquid petroleum gas (LPG like propane) tanks in use inside any occupied building. Outside tanks must connect to appliances with lines approved for that purpose.

(d) Food storage shelves, food preparation areas, food contact surfaces and floors in food preparation and serving areas must be made of or finished with smooth, non-absorbent, cleanable material; and

(e) A table and chairs or equivalent seating and eating arrangements to accommodate the number of occupants living in the sleeping place.

(f) The refrigerator and stove or hot plate must always be in working condition. Clean the facilities before each occupancy.

(18) First Aid: OAR 437-002-0161, Medical and First Aid, applies to all labor housing and related facilities. This rule includes requirements for first aid supplies an emergency medical plan and a plan of communication.

NOTE: Division 2/K requires all employees about the first aid requirements and emergency medical plans. If employees' native language is other than English, this must be taken into account in meeting this requirement.

(19) Access to ORS and OAR. Those wishing access to any of the Oregon Revised Statutes (ORS) or Oregon Administrative Rules (OAR) referenced here, may contact the OR-OSHA Central Office or nearest Field Office.

(20) Closure and alternative housing.

(a) The operator of agricultural labor housing must provide replacement lodging without charge to the occupants if a government agency with the authority to enforce building, health or safety standards declares the housing or facilities to be uninhabitable and orders them vacated.

(b) The operator must provide replacement lodging for seven consecutive days from the time the housing was closed or until the closing agency allows the original housing to re-open, whichever is shorter.

(c) Replacement lodging must meet or exceed the health and safety standards of Oregon OSHA. OR-OSHA must approve the location of the replacement housing before employees are sent to it.

(d) Operators must arrange for replacement lodging not later than the end of the day the original housing closes or another date designated by the closing agency.

(e) Post the address of the replacement housing:

(A) Not later than the end of the day the original housing closes.

(B) In a place convenient to affected workers.

(C) In all languages spoken by the occupants.

(f) The posting in (e) above must state that the replacement housing is free to occupants of the closed housing.

(g) The operator must give Oregon OSHA a list of names of the occupants and the location of the replacement housing, for each.

(h) When the cause of the closure is beyond the control of the agricultural labor housing operator, sections (a), (b), (c), (d), (e), and (g) above do not apply. To determine whether the cause of closure was beyond the control of the operator, Oregon OSHA will consider these circumstances, including but not limited to:

(A) Whether the cause of the closure is a natural disaster;

(B) Whether the circumstances leading to the closure were known or should have been known to the operator;

(C) Whether operator diligence could have avoided the circumstances leading to the closure.

(i) Agricultural labor housing occupants entitled to temporary replacement housing under this rule must accept or reject that housing when the original housing closes. These rules do not obligate operators to reimburse displaced occupants for housing they obtain without the operator's knowledge or consent. The operator is responsible for replacement lodging only for as many people as occupied the original closed housing. When an occupant rejects the replacement housing, the operator has no obligation to reimburse that occupant for other replacement housing.

(j) Oregon OSHA may issue a citation and assess a monetary penalty for violation of these rules as in ORS 654.071 and 654.086.

[ED. NOTE: Tables referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(3).

Stats. Implemented: ORS 315.164, 658.750, 658.755, 658.780, 658.785, 658.805, 658.810 & 658.825

Hist.: OSHA 13-1992, f. 12-7-92, cert. ef. 2-1-93; OSHA 9-1995, f. & cert. ef. 11-29-95; OSHA 5-2000, f. 5-18-00, cert. ef. 6-1-00

NOTE: The following Oregon-initiated rule relates to 29 CFR 1910.147(c)(5).

437-002-0144
Additional Oregon Rules for General Environmental Controls

(1) Illumination.

(a) Adequate general and local lighting shall be provided for rooms, building and work areas during the time of use.

(b) Factors upon which the adequacy and effectiveness of illumination shall be judged, include the following:

(A) The quantity of light as specified in American National Standard ANSI All.1-1965, "American Standard Practice for Industrial Lighting."

(B) The quality of light in terms of freedom from glare, and correct direction, diffusion and distribution.

(C) Freedom from shadows and extreme contrasts.

(c) All skylights, side windows, lamps and other accessories which are necessary for illumination shall be kept clean, and in working order.

(2) Temperature Provisions. Where processes create harmful or hazardous temperature and humidity conditions, measures shall be taken to control the conditions or to control the effect on the employee.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 6-1994, f. & cert. ef. 9-30-94

437-002-0145
Additional Oregon Rules for Accident Prevention and Tags

Warning Devices. Warning signs, danger signs, warning flags, warning lights, or similar devices shall be conspicuously posted at all locations where existing conditions not otherwise adequately guarded warrant their use.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 6-1994, f. & cert. ef. 9-30-94

The Control of Hazardous Energy (Lockout/Tagout)

NOTE: This exemption of construction, agriculture and maritime employment was not adopted in Oregon. Lockout/ tagout rules continues to apply to all Oregon employers.)

NOTE: The following Oregon-initiated rule relates to 29 CFR 1910.147(c)(5):

437-002-0154
Individual Locks

In addition to and not instead of the definition of "lockout device" in this section, the user must have the only key to each lock(s) or only the user may have the combination to each lock.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 2-1990, f. 1-19-90, cert. ef. 3-1-90; OSHA 12-2001, f. & cert. ef. 10-26-01

Medical and First Aid

437-002-0161
Medical Services and First Aid

(1) Definitions.

(a) "Emergency medical service" is the provision of care by a medically trained person, whether this service is provided by a hospital, clinic, ambulance, disaster car, or rescue vehicle.

(b) "In proximity" is defined as that which is available nearby to ensure prompt treatment in the event of need.

(c) "Qualified first aid person" means a person with evidence to show valid (current) first aid training by the American Red Cross or equivalent.

(2) First Aid Supplies.

(a) The employer shall provide first aid supplies based upon the intended use and types of injuries that could occur at the place of employment. The first aid supplies shall be available in close proximity to all employees. Either bulk pack or unit pack supplies are acceptable.

(b) First aid supplies must be stored in containers adequate to protect the contents from damage, deterioration, or contamination. The container shall be clearly marked, available when needed and must not be locked, but may be sealed.

(c) The employer shall ensure that the first aid supplies are available for each shift.

NOTE: Supplies such as gloves and a mouth barrier device are considered personal protective equipment, and are regulated by 1910.132 in Division 2/I, Personal Protective Equipment.

NOTE: The Safety Code for Motor Vehicle Transportation of Workers (Rule 735-120-000) adopted by the Motor Vehicles Division of the Department of Transportation contains requirements for the first aid kit which is required when school buses are used to transport workers. In addition, the Public Utilities Commission has adopted Federal Motor Carrier Safety Regulations which apply to for-hire buses.

(3) Personnel:

(a) The employer shall ensure the ready availability of emergency medical services for the treatment of all injured employees.

(b) Where emergency medical services are not in proximity to the place of employment, a qualified first aid person shall be available.

NOTE: More specific requirements for first aid training are found in: 1910.94, Ventilation, in Division 2/G; OAR 437-002-0118, Reinforced Plastics, in Division 2/H; 1910.120, Hazardous Waste Operations and Emergency Response, in Division 2/H; 1910.252 in Division 2/Q, Welding, Cutting and Brazing; OAR 437-002-0304, Ornamental Tree & Shrub Services, in Division 2/R; 1910.268, Telecommunications, in Division 2/R; Division 2/T, Commercial Diving Operations.

(4) Emergency Medical Plan.

(a) An emergency medical plan to ensure the rapid provision of medical services to employees with major illnesses and injuries shall be developed. In such cases, the employer shall determine that the service will be available in an emergency.

(b) If a physician or an ambulance with Emergency Medical Technicians is readily accessible to the place of employment, then the minimum emergency medical plan must contain the emergency telephone number of the ambulance service. The emergency telephone number shall be posted conspicuously at the place of employment.

(c) Employers in areas with a designated 911 telephone number may utilize the 911 service in lieu of posting the specific ambulance telephone number.

(d) If the place of employment is not in proximity to emergency medical services, then the employer shall have, in addition to the information required in 437-002-0161(4)(a), a definite plan of action to be followed in the event of serious injury to an employee. The plan of action shall consist of the arrangements for:

(A) Communication. Two-way radio, telephone, or provision for emergency communication to contact the emergency medical services.

(B) Transportation. Availability of transportation to a point where an ambulance can be met or to the nearest suitable medical facility. Vehicles provided for this purpose shall be available at all times, shall have right-of-way over all vehicles or equipment under the control of the employer, and shall be equipped so that due consideration can be given to the proper care and comfort of the injured employee.

(C) Qualified medical personnel at destination.

(D) All employees shall be knowledgeable concerning the qualified first aid person(s), the first aid requirements, and emergency medical plan.

(5) Emergency Eyewash and Shower Facilities.

(a) Where employees handle substances that could injure them by getting into their eyes or onto their bodies, provide them with an eyewash, or shower, or both based on the hazard.

(A) Emergency eyewash and showers must meet the following:

(i) Locate it so that exposed employees can reach it and begin treatment in 10 seconds or less. The path must be unobstructed and cannot require the opening of doors or passage through obstacles unless other employees are always present to help the exposed employee.

(ii) Water must flow for at least 15 minutes.

(iii) Install the equipment according to the manufacturer's instructions.

(iv) The eyewash must have valves that stay open without the use of the hands. The shower must not be subject to unauthorized shut-off.

(v) Follow the system manufacturer's criteria for water pressure, flow rate and testing to assure proper operation of the system.

(vi) Emergency shower and eyewash facilities must be clean, sanitary and operating correctly.

(vii) In self-contained systems, do not use solutions or products past their expiration date.

NOTE: If the employer can demonstrate, with the support of a physician board certified in ophthalmology, toxicology or occupational medicine, that an alternative eyewash solution is adequate for their specific hazard, OR-OSHA will accept that solution. An example would be a buffered isotonic solution preserved with a suitable antibacterial agent, that may be less irritating when used in a 15-minute flush.

(b) If the product label, MSDS or other information about the expected contaminant gives treatment instructions different from those required in this section, follow the most protective of those instructions.

(c) If the contaminant manufacturer requires specific decontaminants or procedures, you must provide them in addition to the eyewash or shower. The employer must assure this treatment is available.

(d) If eyewash facilities or showers can freeze, take protective measures to prevent freezing.

[ED. NOTE: Appendices referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 757.726(4)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: WCB 13-1979, f. & ef. 7-7-75; WCB 4-1975, f. 10-6-75, ef. 11-1-75; WCB 4-1976, f. 4-5-76, ef. 4-15-76; OSHA 2-1993, f. & cert. ef. 2-3-93; OSHA 1-2000, f. & cert. ef. 1-28-00; OSHA 1-2005, f. & cert. ef. 4-12-05

Fire Protection

437-002-0180
Adoption by Reference

In addition to and not in lieu of any other health and safety codes contained in OAR chapter 437, the Department adopts by reference the following federal rules as printed in the Code of Federal Regulations, 29 CFR 1910, revised as of 7/1/98, and any subsequent amendments published in the Federal Register as listed below:

(1) 29 CFR 1910.155 Scope, application and definitions applicable to this subpart, published 9/12/80, Federal Register, vol. 45, p. 60704; amended 4/12/88, FR vol. 53, p. 12122.

(2) 29 CFR 1910.156 Fire brigades, published 9/12/80, FR vol. 45, p. 60706; amended 5/1/81, FR vol. 46, p. 24557; 4/30/84, FR vol. 49, p. 18295; 3/7/96, FR vol. 61, no. 46, p. 9239; 1/8/98, FR vol. 63, no. 5, p. 1284; 6/18/98, FR vol. 63, no. 117, p. 33467.

(3) 29 CFR 1910.157 Portable fire extinguishers, published 9/12/80, FR vol. 45, p. 60708; amended 5/1/81, FR vol. 46, p. 24557; 9/29/86, FR vol. 51, p. 34560; 3/7/96, FR vol. 61, no. 46, p. 9239; amended with AO 12-2001, Oregon note added, f. and ef. 10/26/01; REPEALED with OR-OSHA Admin. Order 7-2007, f. and ef. 11/8/07.

(4) 29 CFR 1910.158 Standpipe and hose systems, published 9/12/80, FR vol. 45, p. 60710; 3/7/96, FR vol. 61, no. 46, p. 9239.

(5) 29 CFR 1910.159 Automatic sprinkler systems, published 9/12/80, FR vol. 45, p. 60710; amended 5/1/81, FR vol. 46, p. 24557.

(6) 29 CFR 1910.160 Fixed extinguishing systems, general, published 9/12/80, FR vol. 45, p. 60711; amended with AO 12-2001, Oregon note added, f. and ef. 10/26/01.

(7) 29 CFR 1910.161 Fixed extinguishing systems, dry chemical, published 9/12/80, FR vol. 45, p. 60712.

(8) 29 CFR 1910.162 Fixed extinguishing systems, gaseous agent, published 9/12/80, FR vol. 45, p. 60712; amended 5/1/81, FR vol. 46, p. 24557.

(9) 29 CFR 1910.163 Fixed extinguishing systems, water spray and foam, published 9/12/80, FR vol. 45, p. 60712.

(10) 29 CFR 1910.164 Fire detection systems, published 9/12/80, FR vol. 45, p. 60713; amended with AO 12-2001, Oregon note added, f. and ef. 10/26/01.

(11) 29 CFR 1910.165 Employee alarm systems, published 9/12/80, FR vol. 45, p. 60713.

(12) Appendix A to Subpart L — Fire protection, published 9/12/80, FR vol. 45, p. 60715; amended 5/1/81, FR vol. 46, p. 24557.

(13) Appendix B to Subpart L — National consensus standards, published 9/12/80, FR vol. 45, p. 60715; amended 6/30/93, FR vol. 58, no. 124, p. 35309.

(14) Appendix C to Subpart L — Fire protection references for further information, published 9/12/80, FR vol. 45, p. 60715; amended 6/30/93, FR vol. 58, no. 124, p. 35309.

(15) Appendix D to Subpart L — Availability of publications incorporated by reference in Section 1910.156, Fire Brigades, published 9/12/80, FR vol. 45, p. 60715; amended 6/30/93, FR vol. 58, no. 124, p. 35309; 3/7/96, FR vol. 61, no. 46, p. 9239.

(16) Appendix E to Subpart L — Test methods for protective clothing, published 9/12/80, FR vol. 45, p. 60715; amended 5/1/81, FR vol. 46, p. 24557.

NOTE: These standards are available from the Oregon Occupational Safety and Health Division (OR-OSHA), Department of Consumer and Business Services, and the **United States Government Printing Office**.

Stat. Auth.: ORS 654.025(2), 656.726(4)

Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 14-1993, f. 8-37-93, cert. ef. 11-1-93; OSHA 4-1997, f. & cert. ef. 4-2-97; OSHA 3-1998, f. & cert. ef. 7-7-98; OSHA 2-1999, f. & cert. ef. 4-30-99; OSHA 12-2001, f. & cert. ef. 10-26-01; OSHA 7-2007, f. & cert. ef. 11-8-07

437-002-0182
Oregon Rules for Fire Fighters

(1) Scope and Application.

(a) These rules shall apply to any and all activities, operations and equipment of employers and employees involved in providing fire protection services, and other emergency first response and related activities, which are subject to the provisions of the Oregon Safe Employment Act. These rules shall not apply to the following exempted fire fighting activities:

(A) Aircraft fire fighting and rescue;

(B) Forest and uncultivated, wildland fire fighting;

(C) Private industry fire brigades.

(D) Marine Fire Fighting and rescue.

EXCEPTION: When a public fire department elects to participate in one or more of the exempted fire fighting activities, that fire department shall comply with all of the provisions of OAR 437-002-0182.

(b) The provisions of OAR 437-002-0182 shall be supplemented by the provisions of other applicable safety and health rules of OR-OSHA.

(2) Definitions.

(a) Aerial device: An aerial ladder, elevating platform, aerial ladder platform, or water tower that is designed to position personnel, handle materials, provide egress and discharge water.

(b) Afterflame: The time a test specimen continues to flame after the flame source has been removed.

(c) ANSI: American National Standards Institute.

(d) Apparatus: A mobile piece of fire fighting equipment such as pumper, water tender, etc.

(e) Drill tower: A structure which may or may not be attached to the station and which is principally used for nonclassroom training of the fire fighters in fire service techniques, and which is over two stories in height.

(f) Emergency incident: Any situation to which the fire department responds to deliver emergency services, including rescue, fire suppression, medical treatment, and other forms of hazard control and mitigation.

(g) Emergency scene: The site where the suppression of a fire or the emergency exists.

(h) Fire chief: An employer representative responsible for managing the fire department's operation.

(i) Fire fighter:

(A) A person involved in performing fire department duties and responsibilities, which include fire suppression.

(B) A fire fighter may be a career or volunteer member of a fire department and may occupy any position or rank within the fire department.

(j) Fire retardant: A material to reduce, stop or prevent flame spread.

(k) Fire training: Training received by fire fighters to maintain proficiency in the performance of their assigned duties.

(l) Flame-resistance: The property of materials, or combinations of component materials, to retard ignition and restrict the spread of flame.

(m) Hazardous material incident: The accidental release of hazardous materials from their containers.

(n) Helmet: A head protective device consisting of a rigid shell, energy absorption system, and chin strap intended to be worn to provide protection for the head or portions thereof, against impact, flying or falling objects, electric shock, penetration, heat and flame.

(o) Hose tower: A vertical structure where hose is hung to dry.

(p) IFSTA: International Fire Service Training Association.

(q) Lifeline: Length of rope to which employees are secured when in extremely hazardous areas.

(r) Live fire training: Any fire set within a structure, tank, pipe, pan, etc., under controlled conditions to facilitate the training of fire fighters under actual fire conditions.

(s) MSHA: Mine Safety and Health Administration.

(t) NFPA: National Fire Protection Association.

(u) Nondestructive testing: A test to determine the characteristics or properties of a material or substance that does not involve its destruction or deterioration.

(v) Private Industry Fire Brigades: A group of employees within an industry who are required to fight interior structural fires at their place of employment.

(w) Protective clothing: The clothing or equipment worn to protect the head, body and extremities from chemical, physical and health hazards.

(x) Quick disconnect valve: A device which starts the flow of air by insertion of the hose which leads from the facepiece into the regulator of self-contained breathing apparatus, and stops the flow of air by disconnection of the hose from the regulator.

(y) Rescue saw (Cutoff saw): A powered saw with a large circular cutting blade covered in part by a movable guard used to cut metal, wood, or concrete enclosures.

(z) Respirators:

(A) Atmosphere-supplying respirators: May be self-contained in which a cylinder of air or oxygen or an oxygen generating chemical provides the necessary oxygen for breathing, or a hose-type respirator in which the air is supplied from an external source.

(B) Air-purifying respirators: Contain chemical cartridges and/or filters to remove the contaminant prior to breathing.

(C) Positive Pressure demand respirators (Positive pressure respirators): Types of respirators which constantly and automatically maintain a positive pressure in the mask by the introduction of air when a spring-loaded valve senses that the positive pressure has been lowered because of inhalation or the leakage of air from the mask.

(aa) Responding: The act of answering an emergency call or other alarm.

(bb) Scabbard: A guard which will prevent accidental injury and which covers the blade and pick of an axe or other sharp instrument when worn by the fire fighter.

(cc) SCBA: A self-contained breathing apparatus designed to provide the wearer with a supply of respirable air carried in and/or generated by the breathing apparatus. This apparatus requires no intake of air or oxygen from the outside atmosphere, and can be designed to be a demand or pressure demand type respirator.

(dd) Station (Fire station): Structure in which fire service apparatus and/or personnel are housed.

(ee) Tailboard: Standing space at rear of an engine or pumper apparatus where fire fighters ride.

(ff) Training: The process of making proficient through instruction and hands-on practice in the operation of equipment, including respiratory protection equipment, that is expected to be used and in the performance of assigned duties.

(gg) Warning light: A flashing or rotating light.

(3) Organizational statement. The employer shall prepare and maintain a statement or written policy which includes basic organizational structure and functions of the organization, in addition to the type, amount, and frequency of training to be provided to fire fighters. This statement shall be made available for inspection by the Administrator and by employees or their designated representatives.

(4) Personnel.

(a) The employer shall review and evaluate the physical capability of each employee annually to determine their ability to perform duties which may be assigned. The review and evaluation shall be accomplished through physical examination, stress testing or satisfactory performance demonstrated during the performance of their assigned duties.

(b) The employer shall not permit an employee with known medical condition which would significantly impair their ability to engage in fire suppression activities at the emergency scene unless a physician's certificate of the employees' fitness to participate in such activities is provided. This shall not limit the employer's ability to assign personnel to support activities (versus fire suppression activities).

(5) Employer's Responsibility.

(a) Each employer shall comply with the provisions of this division to protect the life, safety, and health of employees.

(b) It shall be the responsibility of the employer to establish and supervise:

(A) A safe and healthful working environment, as it applies to nonemergency conditions or to emergency conditions at the scene after

the incident has been terminated, as determined by the officer in charge; and

(B) Programs for training employees in the fundamentals of accident prevention.

(C) A safe and healthful working environment, as it applies to live fire training exercises.

(c) The employer shall maintain all equipment in a safe condition.

(d) The employer shall see that employees who participate in exempted fire fighting activities listed in OAR 437-002-0182(1) are properly trained, protected, clothed and equipped for the known hazards of that particular emergency operation.

NOTE: The following note refers to the Respiratory Protection Standard, 1910.134(g)(3) and (4), Procedures for Interior Structural Fire Fighting ("two-in/two-out rule") adopted in Oregon July 7, 1998.

NOTE: If, upon arriving at the scene, members find an imminent life threatening situation where immediate action may prevent the loss of life or serious injury, the requirements for personnel in the outside standby mode may be suspended, when notification is given by radio to incoming companies that they must provide necessary support and backup upon their arrival.

(6) Employee's Responsibility.

(a) Each fire fighter shall comply with the provisions of OAR 437-002-0182 which are applicable to his/her own actions and conduct in the course of his/her employment.

(b) Fire fighters shall notify the appropriate employer and/or safety committee representative of unsafe practices and of unsafe conditions of equipment apparatus or workplaces.

(c) All fire fighters, at regularly scheduled times, shall attend required training and/or orientation programs designed to increase their competency in occupational safety and health.

(d) Fire fighters and other employees shall apply the principles of accident prevention in their work. They shall use all required safety devices and protective equipment.

(e) Each fire fighter shall take proper care of his/her protective equipment.

(f) Fire fighters who are expected to perform fire fighting operations shall notify their employer when health conditions arise or are discovered that will limit their capability of performing those duties.

(7) Safety Committee.

(a) A fire department safety committee shall be established and administered by public or private employers in accordance with the requirements of OAR 437-001-0765 in division 1, General Administrative Rules.

(b) When applicable, the representation on the safety committee shall include both career and volunteer fire fighters.

(8) Incident Management. An incident management system that meets the requirements of NFPA standard 1561, on Fire Department Incident Management, shall be established with written standard operating procedures, applying to all members involved in emergency operations. All members involved in emergency operations shall be familiar with the system.

(9) Accountability.

(a) The fire department shall establish written standard operating procedures for a personnel accountability system in accordance with Section 2-6, 1995 of NFPA 1561, standard on Fire Department Incident Management System, by January 1, 1999, that provides for the tracking and inventory of all members operating at an emergency incident.

(b) It shall be the responsibility of all members operating at an emergency incident to actively participate in the personnel accountability system.

(10) Fire Fighting Training and Education.

(a) The employer or employer representative shall establish and implement a policy for the delivery of education and training designed to develop and maintain an appropriate level of knowledge, skill, and ability throughout the fire fighting classifications (ranks). Such education and training shall be provided to fire fighters before they perform assigned duties on a continuing basis.

(b) Before fire fighters participate in structural fire fighting activities, or in live fire training in a structure, they shall meet the training levels prescribed by the Department of Public Safety Standards and Training's (DPSST) 'Entry-level Firefighter' or have equivalent training.

(c) When live fire training occurs, it must be conducted under the direction of the fire department training officer, or employer authorized representative. All live fire training must be conducted following the requirements of Appendix C of this standard.

(d) During live fire training, fire fighters shall wear the protective equipment normally required for that type of fire fighting.

(e) When rope rescue training occurs, it shall be conducted under the direction of the fire department training officer or department-designated authority in accordance with the equipment manufacturers' recommendations. The training officer shall keep records of the manufacturers' training requirements, and shall comply with all such requirements.

(f) All fire hoses used by fire departments for training and fire combat shall meet the service testing requirements noted in Chapter 5 of NFPA 1962, 1993 edition.

(g) The employer shall provide training for the purpose, proper selection, fitting, use, and limitations of personal protective equipment.

(h) The employer shall assure that each employee is informed of the procedure of reporting unsafe work conditions or equipment.

(11) General Requirements for Protective Clothing.

(a) The employer shall provide to employees all required protective clothing, except that an employee at the employee's option may supply protective clothing. The employer shall provide the protective clothing at no cost to employees. The protective clothing must meet the requirements in OAR 437-002-0182(11) through (16), whether supplied by the employer or employee.

(b) The employer shall assure that new protective clothing intended for structural fire fighting which is ordered, used or purchased after the effective date of this division, meets the requirements contained in OAR 437-002-0182(11) through (16). The employer shall assure that fire fighters wear this clothing when performing structural fire fighting.

(c) In situations other than structural fire fighting, the employer shall ensure that protective clothing appropriate for the known hazards of that particular emergency operation is worn.

(d) Protective clothing currently in use which does not meet the requirements of OAR 437-002-0182(11) through (16) may continue to be used until October 1, 1998, if it was designed for fire fighting purposes and meets the manufacturer's original specifications and maintains the protective capabilities for which it was designed.

(e) The employer shall assure that appropriate protective clothing protects the head, body, and extremities and consists of at least the following components: foot and leg protection, hand protection, body protection, and eye, face and head protection.

(12) Body Protection.

(a) Body protection shall be as follows to ensure full body protection for the wearer.

(b) Coats and trousers used by structural fire fighters shall be at least equivalent to the National Fire Protection Association (NFPA) standard, No. 1971, 1991 edition, entitled "Protective Clothing for Structural Fire Fighting." (See also Appendix A.)

(13) Head Protection.

(a) Head protection shall consist of a protective head device, ear protection, flaps and chin strap which meet the requirements of NFPA Standard 1971-2000, Protective Ensemble for Structural Fire Fighting.

(b) Use, care, alterations and maintenance instructions for protective headgear shall be supplied for each helmet.

(c) Care, maintenance, and alteration of helmets shall conform to the manufacturer's recommendations.

(d) During structural fire fighting helmet accessories designed to provide or maintain protection from health and safety hazards shall be worn in the manufacturer's recommended position. (See also Appendix A.)

(e) A flame-resistant protective hood which will not adversely affect the seal of a respirator facepiece and meeting the requirements of NFPA Standard 1971, 1996 edition, after January 1, 1999 shall be worn during interior structural fire fighting operations to protect the sides of the face and hair.

(14) Hand Protection.

(a) Hand protection for fire fighting activities shall consist of protective gloves or glove system which will provide protection against cut, puncture, and heat penetration. Gloves or glove system shall meet the requirements of NFPA Standard 1973, 1988 edition, titled "Gloves for Structural Fire Fighting."

(15) Foot and Leg Protection.

(a) Foot and leg protection shall meet the requirements of OAR 437-002-0182(15)(a)(A) and (B) and may be achieved by either of the following methods:

(A) Fully extended boots which provide protection for the legs; or

(B) Protective shoes or boots worn in combination with protective trousers that meet the requirements of OAR 437-002-0182(12).

(b) Protective footwear shall meet the requirements of NAPA Standard 1974, 1992 edition, titled "Protective Footwear for Structural Fire Fighting."

(c) Fire fighters' boots may be resoled but must meet the requirements of this rule.

(16) Eye and Face Protection. Eye and face protection worn by fire fighters at the fire ground shall comply with the following regulations:

(a) General requirements. Face protection shall be required where there is a reasonable probability of injury that can be prevented by such protection, when such face protection does not protect the eyes from foreign objects additional eye protection shall be provided.

(b) When self-contained respiratory equipment is being utilized by fire fighters, additional eye and face protection will not be required. Employers shall make conveniently available a type of protection suitable for the work to be performed, and employees shall use such protectors. Protectors shall meet the following minimum requirements.

(A) They shall provide adequate protection against the particular hazards for which they are designed.

(B) They shall be reasonably comfortable when worn under the designated conditions.

(C) They shall be durable.

(D) They shall be capable of being disinfected.

(E) They shall be easily cleanable.

(F) Protectors that can be worn over corrective lenses shall be available for those who need them, and should be kept clean and in good repair.

(c) Face shields.

(A) Face shields shall accommodate any of the following styles;

(i) Clear transparent.

(ii) Colored transparent.

(B) Disinfection. When a person is assigned protective equipment, it is recommended that this equipment be cleaned and disinfected regularly.

(C) Face shields must be an integral part of the fire helmet and may be installed in a fixed position or hinged allowing adjustment of the shields.

(D) In the event breathing apparatus is being used which incorporates a face mask, the face mask will be considered an acceptable face shield.

(d) Goggles, flexible, or cushioned fitting. Goggles shall consist of a wholly flexible frame, forming a lens holder or a rigid frame with integral lens or lenses, having a separate, cushioned fitting surface on the full periphery of the facial contact area.

(A) Materials used shall be chemical-resistant, nontoxic, nonirritating and slow-burning.

(B) There shall be a positive means of support on the face, such as an adjustable headband of suitable material or other appropriate means of support to retain the frame comfortably and snugly in front of the eyes.

(e) Design, construction, testing, and use of devices for eye and face protection shall be in accordance with ANSI Z87.1, Occupational Eye and Face Protection (1979).

NOTE: Fire fighters shall be protected from the effects of noise exposures which exceed the noise levels deemed to be safe as provided in OAR 437, Division 2/G, 1910.95, Occupational Noise Exposure.

(17) Requirements for Respiratory Protection. See OAR 437, division 2/I, 1910.134, Respiratory Protection.

(18) Criteria for Approved Self-Contained Breathing Apparatus.

(a) Approved self-contained compressed air breathing apparatus may be used with approved cylinders from other approved self-contained compressed air breathing apparatus provided that such cylinders are of the same capacity and pressure rating. All compressed air cylinders used with self-contained breathing apparatus shall meet DOT and NIOSH criteria.

(b) Self-contained breathing apparatus shall be provided with an indicator which automatically sounds an audible alarm when the remaining air supply of the apparatus is reduced to within a range of 20 to 25 percent of its rated service time.

(19) (Reserved).

(20) Personal Alert Safety System (PASS). Each member involved in rescue, fire suppression, or other hazardous duties after January 1, 2000, shall be provided with and shall use a PASS device in the hazardous area when self-contained breathing apparatus is in use. PASS devices shall meet the requirements of NFPA 1982, Standard on Personal Alert Safety Systems for Fire Fighters. Each PASS device shall be tested at least monthly and shall be maintained in accordance with the manufacturer's instructions.

(21) (Reserved).

(22) (Reserved).

(23) (Reserved).

(24) Breathing Air Compressors and Cylinders. In addition to the requirements contained in 1910.134(i), air samples shall be taken every 6 months from the compressor and analyzed by the employer or an independent laboratory for Grade D breathing air. Air samples shall also be tested when the system is installed or repaired. Analysis shall be conducted according to ANSI/CGA Standard G7.1-1989 edition, Commodity Specification for Air.

(25) Identification of Hazardous Material Locations.

(a) A means shall be provided for identifying nonresidential premises where hazardous materials are stored, as defined in the Uniform Fire Code, 1991 edition, as amended by the State of Oregon, effective July 15, 1992, under Articles 4 and 80, and in quantities as set forth in the hazardous material permit required by Article 4 of the Uniform Fire Code.

(b) Hazardous chemicals required to be identified by this section are those defined in Article 9, Section 9.110, and Article 80, Section 80.101 of the Uniform Fire Code.

(26) Hazardous Material Response Plan.

(a) Fire department that expects to or plans to respond to hazardous material incidents shall develop a written response plan.

(b) The written response plan must contain the policies and procedures on:

(A) Pre-emergency planning and coordination with outside parties,

(B) Personnel roles, lines of authority, training, and communication,

(C) Emergency recognition and prevention,

(D) Safe distances;

(E) Scene security and control;

(F) Evacuation procedures;

(G) Decontamination;

(H) Emergency medical treatment and first aid;

(I) Personnel withdrawal procedures;

(J) Critique of response and follow-up;

(K) Personal protective equipment and emergency equipment and response procedures.

(c) The incident commander shall be responsible for:

(A) Identification of the hazardous substance and condition;

(B) Implementing emergency operations;

(C) Ensuring personal protective equipment is worn;

(D) Limit access to hot zone to those with a specific mission assignment;

(E) Implementing decontamination procedures;

(F) Designating a safety officer;

(G) Using appropriately trained personnel;

(H) On scene medical surveillance for emergency responders.

(27) Fire Apparatus Area.

(a) Walkways around apparatus shall be kept free of obstructions.

(b) The station's apparatus floors shall be so far as practical kept free of grease, oil, and tripping hazards.

(c) No Class I or II flammable liquids shall be used for cleaning purposes to remove grease or dirt from apparatus.

(d) Exhaust gases from diesel or gasoline apparatus within buildings shall be maintained within the limits of OAR 437, division 2/Z, OAR 437-002-0382, Oregon Air Contaminant Rules.

(28) Design and Construction of Fire Apparatus.

(a) All fire apparatus with the exception of specialized apparatus shall conform to OAR 437, division 2/N, Oregon Rules for Commercial and Industrial Vehicles, OAR 437-002-0223.

(b) Employers who have purchased used fire apparatus or used military equipment prior to the effective date of this division shall not be required to bring them under a more stringent code than the one in force at the time the apparatus was manufactured. The exception to this rule would be seat belts and communication systems between the tailboard and driver compartment as required by OAR 437-002-0182(29) (Automotive Fire Apparatus Equipment) and roll bars on all open top off-road vehicles as required by OAR 437-002-0182(28)(f).

(c) Fire fighters' vehicle tailboards shall not project outboard of the vehicle sides or fenders and shall be designed to provide safe footing.

(d) Exhaust systems shall be installed and maintained in proper condition and shall be so designed as to minimize the exposure of the fire fighter to the exhaust gases.

(e) The loaded gross weight and empty height of the vehicle shall be posted in the vehicle such that it can be clearly read by the driver.

(f) Roll bars shall be in place on all open top off-road vehicles for rollover protection.

(29) Automotive Fire Apparatus Equipment.

(a) All equipment on a vehicle shall be adequately secured when the vehicle is in motion.

(b) Workers being transported by fire department vehicles shall ride only in designated secure positions. Safety restraints shall be provided for fire fighters riding the tailboard. (See also OAR 437, division 2/N, Oregon Rules for Commercial and Industrial Vehicles, OAR 437-002-0223.)

(c) Vehicles with obstructed view to the rear of the vehicle when backing, shall be equipped with:

(A) An automatic back-up alarm which shall be sounded immediately on backing; or

(B) A fire fighter, who is visible in the driver's left-side mirror, shall stand to the rear of the truck to guide the driver while backing.

(d) Fire fighting vehicles shall be brought to a full stop before workers disembark.

(e) If workers are required to ride the tailboard, an electrical signal system or voice communication system shall be installed between the tailboard and the driver's compartment. A code of signals shall be used for controlling the movement of the vehicle.

(f) When traffic flow is inhibited or encroachment of the traffic lane occurs, vehicles equipped with emergency warning lights shall be used to control traffic at emergency scenes. The use of traffic cones, fire department personnel, police, or other traffic control measures shall be used as soon as practical.

(30) Automotive Apparatus Maintenance and Repair. Each employer shall establish written records and procedures whereby apparatus has:

(a) A scheduled monthly maintenance check; or

(b) A maintenance check each time the apparatus is returned to the station following an emergency response, a drill, or any type of test drive.

(31) Tires. Tires which are excessively worn, cracked, deteriorated or damaged in any way shall not be used. All tires shall have a minimum tread depth of 2/32-inch.

(32) Aerial Devices.

(a) Aerial devices used for fire fighting shall be inspected and tested by a person competent in performing such tests and inspections in accordance with the recommendations of NFPA Standard 1914, 1991 edition, at least annually.

(b) Where defects are found in critical components of an aerial device, the repairs shall be tested and certified in accordance with NFPA Standard 1914, 1991 edition, by a registered professional engineer or manufacturer of the apparatus or an American Welding Society (AWS) Certified Welding Inspector. A permanent record of such tests and repairs shall be maintained for each unit.

(33) Hose Drying Towers.

(a) Floor openings on hose tower platforms shall be equipped with a guardrail meeting the requirements of OAR 437, division 2/D, 1910.23, Guarding Floor and Wall Openings and Holes.

(b) The toeboard requirements for elevated work platforms in hose drying towers shall not apply unless hand tools or objects other than hoses are carried onto the platforms.

(c) The requirements for ladders shall meet the requirements of OAR 437, division 2/D, 437-002-0027, Fixed Ladders.

(d) Ropes used to hoist hose in the hose towers shall have a breaking strength to safe load strength (rated working load) ratio of 3 to 1.

(34) Drill Towers. Permanent fixed ladders on the outside of drill towers and drill buildings are exempt from the requirements of offset platform landings and ladder cage guards.

(35) Testing, Maintenance and Inspection of Fire Service Equipment. The employer shall maintain and inspect fire service equipment at least annually and perform any tests recommended by the manufacturers at the date of manufacture, or the recommendations of NFPA or IFSTA.

[ED. NOTE: Appendices referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(4)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 10-1993, f. 7-29-93, cert. ef. 9-15-93; OSHA 4-1997, f. & cert. ef. 4-2-97; OSHA 2-2000, f. & cert. ef. 1-28-00; OSHA 12-2001, f. & cert. ef. 10-26-01; OSHA 3-2005, f. & cert. ef. 6-10-05

437-002-0187
Portable Fire Extinguishers

This rule applies to the location, use and maintenance of portable fire extinguishers. This rule does not apply to vehicles.

NOTE: The Oregon Office of State Fire Marshal and your local fire marshal have rules that apply to portable fire extinguishers.

These exemptions do not apply if another Oregon OSHA standard requires you to provide portable fire extinguishers.

EXEMPTIONS:

You are exempt from these rules if:

Your portable fire extinguishers are not accessible to employees.

AND

You have a written fire safety policy that requires the immediate and total evacuation of employees in the event of fire. (NOTE: This fire safety policy is not the same as your emergency action plan and fire prevention plan.)

AND

You have an emergency action plan and fire prevention plan that conform to OAR 437-002-0042 and 437-002-0043.

PARTIAL EXEMPTION:

If extinguishers are present and accessible but you do not intend them for use by employees and you have an emergency action plan and fire prevention plan that meet OAR 437-002-0042 and 437-002-0043, then only paragraphs 2, 3, and 4 apply.

See Non Mandatory Appendix A – Summary of exemptions and rule requirements for 437-002-0187.

(1) If you provide extinguishers, you must:

(a) Never provide or allow the use of extinguishers with dangerous or banned agents like carbon tetrachloride or chlorobromomethane.

(b) Never provide or allow the use of soda-acid foam, loaded stream, anti-freeze and water (inverting type) extinguishers.

NOTE: Paragraph (c) below does not apply to extinguishers for use outside buildings.

EXEMPTION: You are exempt from the maximum travel distance requirements in Table 1 of this rule if you have an emergency action plan that complies with OAR 437-002-0042, designates which employees are the only ones authorized to use the available fire extinguishers, and requires all other employees to evacuate.

(c) Provide and place the correct type and size fire extinguisher according to Table 1. [Table not included. See ED. NOTE.]

(A) Mount extinguishers in a manner appropriate for their type and location. Do not allow extinguishers to sit on the floor, shelves or furniture.

(B) Identify extinguisher locations with signs appropriate for their location or with other marking unique to fire extinguishers.

(C) Never block access to extinguishers.

(2) Do a monthly visual check of each extinguisher or hose system.

(a) Be sure the extinguishers have a full charge and no defects that would prevent effective use.

(b) Remove and replace any extinguisher that is not fully operable.

(c) Repair defective hose systems immediately.

(3) Follow the manufacturer's instructions for maintenance and inspection or paragraphs (4) and (5), whichever is appropriate for your extinguisher.

(4) Do a full annual maintenance check on each extinguisher.

NOTE: A maintenance check includes inspecting and/or testing external and internal parts, checking the quantity and quality of the contents and assuring operational capability. A qualified person must do the maintenance check.

(a) Use only persons deemed qualified by the Oregon Office of State Fire Marshal or local fire authorities to do maintenance checks. Contact them for details.

(b) Keep a record of the maintenance check until a new check record replaces it. The record must be available to OR-OSHA on request.

(c) Provide replacement extinguishers or some method of coverage for the effected area while extinguishers are out of service for the maintenance check.

(5) Assure a hydrostatic test of each extinguisher at intervals in Table 2 or when the extinguisher shows corrosion or physical damage.

(a) Use only a qualified person to do hydrostatic testing. [Table not included. See ED. NOTE.]

(b) Keep a record of the hydrostatic test until replaced by a new record or the extinguisher is no longer in use. The record must have at least the date of test, test pressure, serial number of the extinguisher (or other unique identifier), person or company doing the test.

(c) Every six years, empty and do applicable maintenance on stored pressure extinguishers that require a 12-year hydrostatic test.

(A) The six-year requirement begins again after recharging or hydrostatic testing.

(6) Train employees in the safe use of extinguishers and/or standpipe hoses when you require or allow their use. Training must be at first hiring and then annually and must include:

(a) The general methods and tactics of using an extinguisher.

(b) The hazards of using an extinguisher on early stage fires.

(c) Hazards associated with using standpipe hoses. [Appendix not included. See ED. NOTE.]

[ED. NOTE: Tables referenced are available from the agency.]

[ED. NOTE: Appendix referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2), 656.726(4).

Stat. Implemented: ORS 654.001 - 654.295.

Hist.: OSHA 7-2007, f. & cert. ef. 11-8-07

Oregon-Initiated Rules

437-002-0210

Additional Oregon Rules for Compressed Air and Compressed Gas Equipment

(1) Air and Gas Compressors — General:

(a) Workers shall not use compressed gases to clean clothing which is being worn nor shall it be intentionally directed at any other person;

NOTE: Use of compressed air for cleaning work and work areas is also prohibited except under special conditions. See OAR chapter 437, division 2/P, Hand and Portable Powered Tools and Other Hand-Held Equipment.

(b) Hose connections shall be securely made and maintained in safe working condition. Effective means shall be used to prevent hose from whipping.

(2) Piping Systems:

(a) All piping systems and their component parts which are installed to carry air, steam, or other material at more than atmospheric pressure shall be of adequate design and strength to safely withstand pressures to be placed upon them without the resulting stresses exceeding the allowable stress for the material used in their construction. The allowable stresses to be used shall be determined by referring to recognized standards for materials and design as developed by the American National Standards Institute;

(b) The only non-metallic pipe acceptable for pressure line service with gaseous substances is that which is recommended and listed by its manufacturer as designed for compressed air or gas service. PVC pipe can only be used for compressed air if it is buried or encased;

(c) All compressed air or gas piping systems which use plastic pipe must be "project specific"; that is, designed by a competent person to specifications suited for a particular application or project. Design and operational specifications and information must be kept with the system for as long as it is in use;

(d) Only a competent person(s) may install any compressed air or gas piping system described in subsections (b) and (c) of this section.

(3) High Temperature Piping:

(a) All steam and other high temperature pipe lines within seven feet of the floor or work platform or passageway shall be covered with non-combustible insulating material or otherwise protected against accidental contact with persons;

(b) Steam hose connections shall be securely made and maintained in safe working condition. Effective means shall be used to prevent hose from whipping.

Stat. Auth.: ORS 654.025(2) & 656.726(3)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 10-1993, f. 7-29-93, cert. ef. 9-15-93

Materials Handling and Storage

437-002-0220

Adoption by Reference

In addition to, and not in lieu of, any other safety and health codes contained in OAR chapter 437, the Department adopts by reference the following federal rules as printed in the Code of Federal Regulations, 29 CFR 1910, revised as of 7/1/03, and any subsequent amendments published in the Federal Register as listed below:

(1) 29 CFR 1910.176 Handling materials — general, published 6/27/74, Federal Register, vol. 39, p. 23052; amended 10/24/78, FR vol. 43, p. 49749.

(2) 29 CFR 1910.177 Servicing of multi-piece and single piece rim wheels; published 1/29/80, Federal Register, vol. 45, no. 20, pp. 6713-6716; amended 2/3/84, FR vol. 49, no. 24, pp. 4350-5352; amended 9/8/88, FR vol. 53, no. 174, pg. 34737; amended 3/7/96, FR vol. 61, no. 46, p. 9239; amended by AO 12-2001, reference change in Appendix B, f. and ef. 10/26/01.

(3) 29 CFR 1910.178 Powered industrial trucks, published 6/27/74, Federal Register, vol. 39, p. 23052; amended 5/28/75, FR vol. 40, p. 23073; 10/24/78, FR vol. 43, p. 49749; 2/10/84, FR vol. 49, p. 5322; 4/12/88, FR vol. 53, p. 12122; 8/6/90, FR vol. 55, p. 32015; 3/7/96, FR vol. 61, no. 46, p. 9239; 12/1/98, FR vol. 63, no. 230, p. 66270; amended by AO 12-2001, Oregon note added, f. and ef. 10/26/01; 6/2/03. FR vol. 68, no. 105, pg. 32637; 4/3/06, FR vol. 71, no. 63, p. 16669.

(4) 29 CFR 1910.179 Overhead and gantry cranes, published 10/18/72, Federal Register, vol. 37, p. 22102; amended 6/1/73, FR vol. 38, p. 14373; 10/24/78, FR vol. 43, p. 49750; 2/10/84, FR vol. 49, p. 5323; 9/29/86, FR vol. 51, p. 34561; 4/12/88, FR vol. 53, p. 12122; 8/6/90, FR vol. 55, p. 32015; 3/7/96, FR vol. 61, no. 46, p. 9239.

(5) 29 CFR 1910.180 Crawler, locomotive and truck cranes, published 4/27/74, Federal Register, vol. 39, p. 23502; amended 2/10/84, FR vol. 49, p. 5323; 9/29/86, FR vol. 51, p. 35561; 4/12/88, FR vol. 53, p. 12122; 8/6/90, FR vol. 55, p. 32015; 3/7/96, FR vol. 61, no. 46, p. 9239.

(6) 29 CFR 1910.181 Derricks, published 10/18/72, Federal Register, vol. 37, p. 22120; amended 6/1/73, FR vol. 38, p. 14373; 10/24/78, FR vol. 43, p. 49750; 2/10/84, FR vol. 49, p. 5323; 9/29/86, FR vol. 51, p. 34561; 4/12/88, FR vol. 53, p. 12122; 8/6/90, FR vol. 55, p. 32015; 3/7/96, FR vol. 61, no. 46, p. 9240.

(7) 29 CFR 1910.182 Removed. Published 3/7/96, Federal Register, vol. 61, no. 46, p. 9240.

(8) 29 CFR 1910.183 Helicopters, published 6/27/75, Federal Register, vol. 40, p. 27369; amended 7/28/75, FR vol. 40, p. 31598; 3/30/76, FR vol. 41, p. 13353; 6/18/98, FR vol. 63, no. 117, p. 33467.

(9) 29 CFR 1910.184 Slings, published 6/27/75, Federal Register, vol. 40, p. 27369; amended 7/28/75, FR vol. 40, p. 31598; 3/30/76, FR vol. 41, p. 13353; 6/30/93, FR vol. 58, no. 124, p. 35309; 3/7/96, FR vol. 61, no. 46, p. 9240.

(10) 29 CFR 1910.189 Removed. Published 3/7/96, Federal Register, vol. 61, no. 46, p. 9240.

(11) 29 CFR 1910.190 Removed. Published 3/7/96, Federal Register, vol. 61, no. 46, p. 9240.

NOTE: These rules are on file at the Oregon Occupational Safety and Health Division, Department of Consumer and Business Services, and the United States Government Printing Office.

Stat. Auth.: ORS 654.025(2) & 656.726(4)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 13-1993, f. 8-20-93, cert. ef. 11-1-93; OSHA 4-1997, f. & cert. ef. 4-2-97; OSHA 2-1999, f. & cert. ef. 4-30-99; OSHA 6-1999, f. & cert. ef. 5-26-99; OSHA 12-2001, f. & cert. ef. 10-26-01; OSHA 7-2003, f. & cert. ef. 12-5-03; OSHA 4-2006, f. & cert. ef. 7-24-06

Oregon Initiated Rules

437-002-0221

Additional Oregon Rules for Handling Materials

(1) Definitions:

(a) "Aerial Cableways" An aerial cableway is a cable-supported system in which the material-handling carrier is not detached from the operating span and the travel is wholly within the span. A cableway transports a load for short distances, in a single carrier traveling back and forth on a single cable, or on multiple parallel cables, a hoisting

operation being combined with the transfer of the load; the operation is intermittent;

(b) "Aerial Tramways" An aerial tramway is a cable-supported system in which the travel of the materials handling carriers is continuous or reversible over the supports of one or more spans. On continuous tramways, a series of loaded carriers travel in one direction. On reversible tramways, one carrier travels back and forth on a cable. Bi-cable tramways have a fixed track cable, along which the carriers are hauled by a traction rope. Twin-cable tramways are similar, except that carriers run on a pair of track cables. Mono-cable tramways have a single running rope to support and move the carriers.

(2) General:

(a) Permanent aisles and passageways shall be appropriately marked;

(b) Pile foundations shall be designed and arranged to support maximum loads without sinking, sagging, or permitting piles to tip;

(c) Containers of toxic, flammable, radioactive, or irritating substances shall be properly labeled and stored as specified in other sections of the Oregon Occupational Safety and Health Code;

(d) Aisles and passageways shall be kept clear to provide for the free and safe movement of material handling equipment and employees.

(3) Disposal of Material:

(a) Scrap, waste material, and rubbish shall be removed at reasonable intervals from the immediate work are as the work progresses. Materials shall not be permitted to accumulate in such volume as to impede safe access to the work area;

(b) All solvent waste, oily rags, and flammable liquids shall be kept in fire resistant covered containers.

(4) Storage — Location:

(a) Stored material shall not obstruct lights, sprinklers, and other fire extinguishing equipment, aisles, exits, or electrical switch panels;

(b) Temporarily stored material that creates a hazard shall be marked by highly visible warning signs;

(c) In conditions of reduced visibility, reflectorized signs shall be used on temporarily stored material which creates a hazard. If conditions make reflectorized signs ineffective, the sign shall be lighted or other effective warning shall be used;

(d) Materials which could cause hazardous reactions shall be kept segregated in storage and marked with appropriate warning signs.

(5) Stacks and Piles. All material stacks and piles shall be placed on level and solid supports and shall be stable and self-supporting.

(6) Bricks and Blocks:

(a) Brick stacks shall not be more than seven feet in height. When a loose brick stack reaches a height of four feet, it shall be cross-tied and tapered back two inches in every foot of height above the four-foot level;

(b) When masonry blocks are stacked higher than six feet, the stack shall be cross-tied and tapered back one-half block per tier above the six-foot level.

(7) Lumber:

NOTE: OAR chapter 437, division 2/R, Special Industries, 1910.265, Sawmills, contains requirements for unitizing, stacking, and transporting lumber and wood products at manufacturing facilities and mills.

(a) Used lumber shall have all nails removed before stacking;

(b) Lumber stacks shall be made of units whose height is no more than 1-1/2 feet higher than the base;

(c) Manual handling of lumber from stacks shall not be done from atop stacks more than one unit in height.

(8) Bagged Materials:

(a) Bagged materials shall be stacked by stepping back the layers and crosskeying the bags at least every ten bags high;

NOTE: This requirement does not apply where pallets effectively stabilize the stack of bagged materials.

(b) When bags are removed from a pile, the stability of the pile shall be maintained.

(9) Loose Material — Sand, Gravel, Crushed Rock, Sawdust, Etc. Undercutting of stock piles is prohibited; materials in such piles shall be kept as near as is practical to the angle or repose and present no hazard to employees.

(10) Corrugated and Flat Iron — Steel:

(a) Corrugated and flat iron shall be stacked in stable piles;

(b) Racks capable of supporting the imposed loads without deformation shall be used for storing steel plate on edge and shall provide positive protection against the danger to personnel from toppling or sliding plates.

(11) Pipe and Bar Stock:

(a) In removing pipe and bar stock from unsecured piles, workers shall not approach the side of the pile but shall remove it from the ends of the pile;

(b) Pipe or bar stock extending into passageways shall be clearly marked or padded.

(12) Drums, Rolls, Cylindrical Objects:

(a) Barrels, drums, large pipe, rolls of paper, and other cylindrical objects piled on their sides shall have the bottom row securely blocked. If separators are used between rows of the pile, blocks shall be secured at each end of the separators;

(b) Spacing strips shall be placed between bundles;

(c) Structural steel, poles, pipe, bar stock and other cylindrical materials, unless racked, shall be stacked and blocked to prevent spreading, tilting, or rolling.

(13) Equipment Design and Construction:

(a) All equipment, structures, and appurtenances used for handling or storing materials shall be designed, constructed and maintained in accordance with sound engineering practices and the specifications and recommendations of the manufacturer. They shall be of sufficient strength to support the loads acting on them in addition to their own dead loads. Allowances shall be made for wind, impact, erection and any special loadings that may occur. No combination of these loadings shall be permitted to cause a stress in any member that exceeds the allowable stress for the material of that member;

(b) Safe load capacities recommended by the manufacturers of equipment shall not be exceeded;

(c) Workers shall not remain or work under or near elevated loads and units of materials being moved unless they are provided with adequate protection;

(d) Loads suspended in slings or supported by hoists, jacks, or other devices, shall be blocked or cribbed before workers are permitted to work underneath;

(e) Materials shall not be dropped or thrown from an elevation where this procedure might endanger other workers;

NOTE: In such cases, materials should be lowered by means of proper riggings, slings, conveyors, chutes, or other safe means.

(f) Tag lines or guide ropes shall be provided and used whenever manual guidance is required to control swinging loads;

(g) Structures and devices used for loading and unloading performed units, loads, pallet boards, or trays shall be of construction and material to maintain safe support for the loads being handled on them;

(h) Pallet boards, and trays shall be loaded in a manner that will ensure stability of loads.

(14) Conveyors, General. Conveyors shall meet the applicable requirements for design, construction, inspection, testing, maintenance and operation as prescribed in ANSI B20.1-1957, Safety Code for Conveyors, Cableways, and Related Equipment.

(15) Controls of Conveyors:

(a) Means for stopping the motor or engine shall be provided at the operator's station;

(b) If the operator's station is remote from the power source, provisions for stopping the motor or engine shall be provided at the motor or engine location and at the operator's station;

(c) Conveyor systems shall be equipped with an audible warning signal to be sounded immediately before starting up the conveyor;

NOTE: This requirement does not apply to portable single unit conveyors where other warning methods are effective.

(d) Emergency stop devices shall be arranged so that the conveyor cannot be started again until the actuator has been reset to running or "on" position;

NOTE: Automatic electrical or mechanical stopping devices should be provided on a conveyor where the equipment into which it feeds has been stopped or has been blocked so that it cannot receive additional materials.

(e) Where overload conditions would create a hazard to workers, overload protection shall be provided.

(16) Backstops, Brakes on Conveyors. Inclined conveyors, where reversing or running away presents a hazard to workers, shall be provided with anti-runaway, backstop devices, or suitable guards.

(17) Loading, Transfer and Discharge Points of Conveyors:

(a) Means to guard workers from injury by moving material shall be provided at a conveyor loading, transfer and discharge points;

(b) The area around all loading and unloading points shall be kept clear of obstructions.

(18) Conveyor Guards:

(a) Screw conveyors shall be guarded to prevent employee contact with turning flights;

(b) Where a conveyor passes over work area, aisles and thoroughfares, suitable guards shall be provided to prevent material from falling from the conveyor;

(c) Return sections of conveyors higher than seven feet and located over or near passageways and work areas, shall be supported by roller or guards;

(d) Conveyor troughs in which moving sections of a conveyor operate shall be of ample dimensions and strength to carry broken conveyor parts;

(e) Conveyor drive mechanisms and power driven parts shall be guarded in accordance with the requirements in OAR chapter 437, division 2/O, Machine Guarding;

(f) Input conveyors for chippers, burners, furnaces, or other dangerous machines shall be fully guarded to prevent workers from falling to the conveyor. Where a part of the guard must be omitted to permit a worker to feet the conveyor, he or she shall be provided with and shall wear a life belt tied off to an effective lifeline;

(g) Conveyor crossovers, aisles, and passageways shall be conspicuously marked by suitable signs;

(h) Workers shall not cross over conveyors except where suitable bridges or walkways are provided.

(19) Portable Conveyors:

(a) Portable conveyors shall be stable at all operating ranges and shall be provided with adequate devices to prevent unintended movement;

(b) Portable conveyors, when powered electrically, shall be grounded as required in OAR chapter 437, division 2/S, Electrical. Where exposed to outside weather conditions, wiring, switches, and electrical connections shall be moisture and dust proof.

(20) Riding Conveyors Prohibited. Workers shall not be permitted to ride on any conveyor not especially designed for this purpose.

(21) Ramps, Skids, Rollways:

(a) Adequate means for slowing material being put down chutes, slides, or inclines shall be provided whenever excessive speed might create a hazard to workers;

(b) Where the person putting material down a chute, ramp, skid, or rollway does not have a clear view of a lower landing on which workers are employed, an adequate horn, bell or other warning device which is automatic in operation shall be provided and maintained in good condition at all times;

(c) The underside of all chutes, ramps, skids, rollways or landings shall be fenced off and marked with appropriate warning signs unless provided with other adequate means of protecting workers from falling material.

NOTE: Definitions for Aerial Cableways and Tramways are contained in OAR 437-002-0221(1).

(22) Cableway Carriage and Fall Rope Carriers:

(a) Cableway carriage and fall rope carriers shall be so constructed that no adjustments are required while cableway is in operation and that adjustments, when made, may be locked. Fall rope carriers are used to prevent the weight of the hauling rope itself causing sufficient tension to overhaul the load carrier or fall block. On spans of 600 feet or more, where the carriage works to the center of the span or beyond, slack carriers shall be provided to support the operating ropes. A button line or equivalent device shall be provided to space the carriers at approximate intervals along the span;

(b) Carriages shall have approved mesh guards for the operating sheaves and hand grips throughout the full length of the carriage. Footwalk and toeboards, for ready access to maintenance riggers and for inspection of the operating ropes, sheaves, beckets, and structural parts of the carriage;

(c) Sheaves carrying operating ropes should be as recommended by the rope manufacturer. In no case shall the pitch diameter of sheaves be less than 42 times rope diameter for 6 x 7 rope, 30 times rope diameter for 6 x 19 rope, 18 times rope diameter for 6 x 37 rope, and 21 times rope diameter for 8 x 19 rope. The sheaves shall have "V" grooves and the radius of the groove shall be 55 percent of the rope diameter.

(23) Operating Ropes. Operating ropes shall be of wire rope construction suitable for the requirements of the cableway. End fastenings shall develop at least 89 percent of the ultimate strength of the rope. Rope ends shall be arranged for complete and easy inspection.

(24) Track Cable Systems. If the design requires that track cables be carried over saddles, care must be taken to see that the saddle radius, rope lubrication and inspection provisions conform to rope manufacturer's recommendations. Track cable connections shall be properly applied sockets using only pure zinc. Clamped ends develop only about 75 percent of the strength of the rope and therefore are not recommended. Supporting members carrying track cable tensions shall be forged steel or rolled steel carrying stress in the direction of rolling. These members shall be arranged so that loads are carried concentrically and so that no eccentric load can be applied to them or to the track cable connections by virtue of failure or non-operation of any joint baring in the track system.

(25) Backstay. Backstay carrying track cable tensions shall be designed to support the entire load disregarding any load carrying help from side guys.

(26) Side Guys. Side guys shall be so proportioned that no more than two are regarded as acting at the same time, unless equipped with an equalizing bar, sheave, or other approved device not subject to freezing temperatures. If a hydraulic or pneumatic equalizing device is used, provisions must be made to avoid or counteract the effect of loss of fluid in the system.

(27) Anchorages:

(a) Anchorages for track cable tensions shall be proportioned so that they are stable under the ultimate strength of the track cable or backstays. Steel rods, preferably embedded in concrete or block asphalt, should be used for the portion of the backstay where the anchorage tension is carried through earth. Wire rope guys shall never be used in contact with earth. Double the ultimate strength of the backstay shall be provided, together with anticorrosion protection in the form of grease, tar, etc.;

(b) Supporting structures, fixed towers, movable towers, etc., shall be designed to withstand full known loads plus allowance for impact with due regard for the nature of the structural elements, type of structure, and the manner of application and release of loads. Ladders, platforms and handholds shall be supplied to facilitate the inspection of towers, cableways parts attached to them, and the changing of lines and other maintenance work around them.

(28) Operation and Maintenance of Cableway:

(a) The cableway supervisor and operator shall be charged with the responsibility for allowing only authorized and properly qualified parties around the cableway rig;

(b) Inspection of the complete rig (track cables, carriage, operating ropes, structures, hoisting engine, electrical apparatus, and other operating parts) shall be made by the supervising safety engineer or other designated qualified person each day if the rig is operating 24 hour a day or at such other intervals as justified by lesser operating schedules for the rig.

NOTE: These inspections, at the discretion of the supervisor, may be made while the rig is in operation.

(c) During the required safety inspection, special attention shall be paid to:

(A) Operating ropes at the becket ends, overwraps on the drum or hoist and sheave points if pickups are made at the same point repeatedly;

(B) Track cable for broken wires near sockets and in the span under the pickup or unloading point and for broken wires and worn or faulty track cable socket bearings;

(C) Slack carriers for loose or broken parts, and to see that the carrier rollers turn freely and are well oiled;

(D) Electrical system, especially for faulty connection where the current might possibly go to ground through the earth rope, traveling towers, tracks, wheels, journals and tower moving apparatus.

(d) Operating ropes shall be re-becketed on a regular program. Re-becketing after 30 or more operating shifts is suggested. At least four rope lay lengths shall be cut off each time. Operating ropes shall be repaired or replaced in accordance with the recommendations of the wire rope manufacturer;

(e) The recommendations of the wire rope manufacturer shall be followed in re-socketing track cables in replacing regular strand, locked coil or other armored construction track cable;

(f) Hoist brakes and frictions shall be maintained in good condition at all times. Hoisting engine shall be located so that the operating ropes have the proper fleet angle to the nearest sheave which shall be oriented to lead to the center of the drum in the hoist. The hoist operator should be located so that he or she can see the hoist and working area of the cableway;

(g) Hook tenders serving the cableway will be permitted to "ride the hook" if the ground does not permit other access. Proper foot stands and hand holds shall be provided for two persons on the hook, fall block, safety belts and lifelines used; otherwise a manskip must be used. Signals for the operation of the rig may be given to a signalperson or to the operator. Inexperienced hook tenders shall not ride the hook alone until they have had a period of 30 working shifts with an experienced cableway hook tender;

(h) Loads carried by cableways shall be secured by safety hooks, or shackles, in such a manner that they cannot shift or slip while suspended by the cableway. Load hooks shall be provided with safety shields to keep the load slings on the hook. Slings must be used in pairs so that the load will not untwist the lay of a single rope;

(i) If the cableway is not in use for a 24-hour period or more, an inspection of the hoist shall be made before the cableway is started;

(j) For use in controlling cableway operations, appropriate telephone or other signal system shall be provided;

(k) Suitable lighting shall be provided at critical points for night operation and repairs.

(29) Aerial Tramway Truck Cables and Hauling Ropes:

(a) Track cables and hauling ropes shall be of appropriate, construction and adequate capacity for the life, type and nature of the installation;

(b) Tail ropes shall be provided to avoid jerky operation and possible derailment;

(c) Suitable adjustment should be provided to maintain the original design relation of hauling rope and tail rope tensions. The vertical component of rope tensions should always be such that the rope never tends to lift out of the support sheaves;

(d) Carriage hauling rope grips shall be designed to supply the necessary pulling components without damage to the rope due to slippage or excessive grip pressures. Hauling rope down pull on carriers must be kept to a minimum to prevent damage to rope and to avoid damaging the bucket hangers.

(30) Aerial Tramway Drives:

(a) Tramway drives shall be equipped with a brake on the same shaft as the drive sheave. The brake system shall be adequate for stopping and holding the load at any point. The brake shall not be used for absorbing power developed by overhauling load during normal operation. Such developed power should be dissipated electrically, hydraulically or pneumatically. The main drive brake shall be applied automatically if electric power fails;

(b) The driving sheave control shall be such that reduction of velocity is automatic as the bucket(s) approaches the terminal station.

(31) Wire Rope Sockets on Aerial Tramways. Wire rope connections shall be properly applied sockets using only pure zinc or connections which provide 100 percent of the strength of the rope.

(32) Aerial Tramway Tower Saddles. Tower saddles for track cables shall have ample radii to minimize bending stress and thus prolong the life of the cables. Stationary curved saddles of long radius may be employed where the cable breakover angle exceeds that possible with a rocking saddle. The radius of the saddle shall be large enough to reduce the bearing pressure to a value which will permit the cable to slide in the saddle groove. All saddles must be lubricated at regular intervals.

(33) Aerial Tramway Supporting Structure. Supporting structures shall be designed to withstand the full known loads plus allowances for impact with due regard for the nature of the structural elements, the type of structure, and the manner of application and release of loads. Ladders, platforms and handholds shall be provided as necessary to facilitate the inspection of the structures and tramway parts.

(34) Aerial Tramway Crossing Guards. Crossing guards shall be provided where the tramways cross highway, railways, or other passageways. These guards shall be of adequate construction for the type of material being handled on the tramway.

(35) Aerial Tramway Operation and Maintenance:

(a) The tramway supervisor shall be charged with the responsibility for allowing only authorized and properly qualified parties around the tramway rig;

(b) Inspection of the complete rig, track cables, buckets, structures, drives, electrical apparatus, and other operating parts shall be made at regular intervals. Only the tramway supervisor and personnel designated by him or her shall be allowed to "ride" the buckets and then only in performance of a specific duty such as inspection of track cables;

(c) Grips on continuous tramways shall be inspected and adjusted at periodic intervals. Worn parts shall be replaced promptly;

(d) Lubrication of track cables, hauling rope bearings, rails and guides shall be performed at regular intervals.

NOTE: The lubrication of the hauling rope should preferably be continuous by means of a controlled drop feed from an oil reservoir at one or both ends of the line. This lubrication should not occur as the rope enters the driving sheave, but rather as the rope leaves the drive sheave and passes over a support sheave.

(e) Where counterweighted spans are used, the counterweight shall hang free when the cable is fully loaded. The deflection of anchored spans shall be adjusted by take-up means provided to keep the cable tension within the proper limits.

(36) Aerial Tramway Traffic Control System:

(a) There shall be at least three control systems, as the operation of an aerial tramway is dangerous without alternate communication systems.

NOTE: Recommended Communications Systems:
(1) A bell signal code and push button stations for warning of stop, start, slow speed, high speed, and reverse. Portable linesman sets should be provided for tapping along the line;
(2) An all metallic aerial wire circuit telephone with instruments at certain points along the line in addition to the terminal sets;
(3) A second telephone circuit which may be grounded if desired.

(b) Condensers for static elimination and lightning arrestors should be installed to protect instruments;

(c) Protection should be provided against short-circuiting of the telephone and bell circuits by water running down the line supports and diverting current to the towers and station steel;

(d) Suitable lighting shall be provided at critical points along the line for night operation and repairs;

(e) When vehicles are drawn up an incline by means of a cable, the cable shall be in alignment with the central line between the vehicle tread and the hoisting drum. A substantial bumper shall be installed at the foot of the incline, or if the vehicle travels beyond this point, at the end of its runway. Workers shall not ride on the vehicle nor remain in a position behind the vehicle when it is in motion.

(37) Material Hoists — General Requirements:

(a) All material hoist towers shall be designed, built, and tested under the direction of a licensed professional engineer;

(b) The employer shall comply with the manufacturer's specifications and limitations applicable to the operation of all hoists and elevators. Where manufacturer's specifications are not available, the limitations assigned to the equipment shall be based on the determinations of a professional engineer competent in the field;

(c) Platforms of ample size and strength with standard railings shall be built at each level where persons work. See requirement in OAR chapter 437, division 2/D, Walking-Working Surfaces;

(d) Standard railings shall be placed on the open sides of runways connecting the tower to the structure with a gate provided at all openings into the tower;

(e) Rated load capacities, recommended operating speeds, and special hazard warnings or instructions shall be posted on cars and platforms;

(f) Hoisting ropes shall be installed in accordance with the wire rope manufacturer's recommendations;

(g) Wire rope shall be removed from service when any of the following conditions exist:

(A) In hoisting ropes, six randomly distributed broken wires in one rope lay or three broken wires in one strand in one rope lay;

(B) Abrasion, scrubbing, flattening, or peening, causing loss of more than one-third of the original diameter of the outside wires;

(C) Evidence of any heat damage or any damage caused by contact with electrical wires;

(D) Reduction from nominal diameter of more than 3/64 inch for diameters up to and including 3/4 inch; 1/16 inch for diameters 7/8 to 1-1/8 inch; and 3/32 inch for diameters 1-1/4 to 1-1/2 inches.

(h) All welding on critically stressed members of hoisting devices shall be performed within the current standards of the American Welding Society and the welding performed by welders qualified to perform high quality welding;

(i) The installation of live booms on hoists is prohibited;

(j) Operating rules shall be established and posted at the operator's station of the hoist. Such rules including signal system and allowable speed for various loads shall be enforced. Rules and notices shall be posted on the car frame or crossheads in a conspicuous location, including the statement "No Riders Allowed";

(k) Hoisting machines, except those equipped with automotive controls, shall be operated by regularly assigned, trained operators;

(l) No person shall be allowed to ride on material hoists except for the purposes of inspection and maintenance. Such rides shall be made without material aboard except that necessary for the purpose of inspection and/or maintenance;

(m) All entrances of the hoistways shall be protected by substantial gates which shall guard the full width of the landing entrance. All hoistway entrance gates shall be painted with diagonal contrasting colors, such as black and yellow stripes;

(n) Gates shall be of not less than 2- by 4-inch wood or the equivalent, located no less than two feet from the hoistway line. Gates shall be no less than 42 inches high;

(o) Gates protecting the entrances to hoistways shall be equipped with a latching device;

(p) Overhead protective covering of 2-inch planking, 3/4-inch plywood, or other solid material of equivalent strength shall be provided on the top of every material hoist cage or platform;

(q) The operator's station of a hoisting machine shall be provided with overhead protection equivalent to tight planking not less than two inches thick. The support for the overhead protection shall be of equal or greater strength;

(r) When using a hoist for long material, the material shall be securely fastened to the hoist so that no part of the load can fall or project beyond the sides of the hoist;

(s) Blocking, tie-downs, or other effective means to secure loads or materials, when necessary, shall be provided at all hoist platforms;

(t) Hoist towers may be used with or without an enclosure on all sides. However, whichever alternative is chosen, the following applicable conditions shall be met:

(A) When a hoist tower is enclosed, it shall be enclosed on all sides for its entire height with a screen enclosure of 1/2-inch mesh, No. 18 U.S. gauge wire or equivalent, except for landing access;

(B) When a hoist tower is not enclosed, the hoist platform or car shall be totally enclosed (caged) on all sides for the full height between the floor and the overhead protective covering with 1/2-inch mesh of No. 14 U.S. gauge wire or equivalent. The hoist platform enclosure shall include the required gates for loading and unloading. A six-foot high enclosure shall be provided on the unused sides of the hoist tower at ground level.

(u) Car arresting devices shall be installed to function in case of rope failure.

(38) Automotive Hoists:

(a) Whenever automotive hoists are elevated with a load to a position which presents a hazard to employees, the lift shall be supported by a safety device capable of preventing descent should the lift fail in any manner;

(b) Lifts will be operated in accordance with the manufacturer's recommendations and those of ANSI B153.1-1990;

(c) Vehicles will be placed on lifts in accordance with manufacturers recommendations and in a manner to assure stability.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 7-1974, f. 3-19-74, ef. 4-15-74; WCB 30-1974, f. 7-5-74, ef. 9-1-74; WCB 23-1976, f. 9-8-76, ef. 11-15-76; WCB 3-1977, f. 3-18-77, ef. 6-1-77; WCD 4-1979, f. 5-21-79, ef. 7-15-79; APD 12-1988, f. & ef. 7-22-88; OSHA 13-1993, f. 8-20-93, cert. ef. 11-1-93; OSHA 1-1996, f. & cert. ef. 2-16-96

437-002-0223
Oregon Rules for Commercial and Industrial Vehicles

(1) Application. Roll-over protective structures (ROPS) shall be provided, installed and maintained on industrial vehicles which were manufactured after July 1, 1969. ROPS requirements apply to the following types of industrial vehicles and equipment: Rubber-tired self-propelled scrapers; front-end loaders and dozers; skid-steer equipment; wheel-type industrial tractors; crawler tractors; crawler-type loaders; and motor graders, with or without attachments, that are used in industrial work. This requirement does not apply to sideboom pipe laying tractors, or other vehicles whose structure prevents overturn, or to tractors used only in farming operations.

(2) ROPS — General Requirements.

(a) Roll-over protective structures and their supporting attachments to industrial vehicles shall be capable of supporting twice the weight of the vehicle, applied at the point of impact.

(b) The design objective for roll-over protective structures on industrial vehicles shall be to minimize the likelihood of a complete vehicle overturn, and to minimize the possibility of the operator being crushed.

(c) A vertical clearance of at least 52 inches between the work deck and the ROPS canopy is required for ingress and egress.

(d) ROPS which have been removed for any reason, shall be remounted with equal quality, or better, bolts or welding as required for the original mounting.

(3) Defects.

(a) Defects in ROPS shall be repaired by equal quality or better materials and welding as required for the original structure.

(b) Minimum performance criteria for roll-over protective structures for designated vehicles are contained in the following Society of Automotive Engineers (SAE) standards:

(A) Prime movers, for scrapers, water wagons, bottom dump wagons, side dump wagons, rear dump wagons, towed fifth wheel attachments. (SAE J320, September 1972)

(B) Wheeled front-end loaders and wheeled dozers. (SAE J394a, September 1972)

(C) Track-type tractors and front-end loaders. (SAE J395a, September 1972)

(D) Motor graders. (SAE J396a, September 1972)

(E) Wheel-type agricultural and industrial tractors. (SAE J167, 1971)

(F) Falling object protective structures (FOPS). (SAE J231, May 1971)

(4) Identification of ROPS. Each ROPS shall have the following information permanently affixed to the structure:

(a) Manufacturer or fabricator's name and address;

(b) ROPS model number, if any; and

(c) Machine make, model, or series number that the structure is designed to fit.

(5) Approved Structures. Any machine in use, equipped with roll-over protective structures, shall be deemed in compliance with OAR 437-002-0223(37) through (41) if it meets the roll-over protective structure requirements of the U. S. Army Corps of Engineers, or the Bureau of Reclamation of the U. S. Department of the Interior, in effect on April 5, 1972. The requirements in effect are:

(a) U. S. Army Corps of Engineers: General Safety Requirements, EM-385-1-1 (March 1967).

(b) Bureau of Reclamation, U. S. Department of the Interior: Safety and Health Regulations for Construction, Part II (September 1971).

(6) Roadways.

(a) Roadways shall be of sufficient width and evenness to ensure the safe operation of equipment.

(b) Sufficient turnouts shall be provided and a safe side clearance shall be maintained along roads and runways.

(c) Low clearance areas under conveyors which could present a hazard to mobile equipment operations shall be identified by a suitable means, such as signs, contrasting colors, or flags.

(d) Broken planking, deep holes, large rocks, logs or other dangerous surface defects shall be corrected before any equipment is used thereon.

(e) Obstructions to clear view at intersections or on sharp curves shall be removed or all reasonable precautions taken to relieve the hazards of these conditions.

(f) An ample supply of nonskid materials, such as coarse sand or finely crushed rock, shall be available and used on slippery surfaces.

(g) Road grades shall not be too steep for safe operation of vehicles which operate over them and shall not exceed 20 percent in any case unless an auxiliary means of lowering vehicles is provided or unless vehicles are specifically designed and approved for operation on grades in excess of 20 percent.

(7) Access Roadways, Grades.

(a) No employer shall move, or cause to be moved, vehicles upon any access roadway or grade unless the access roadway or grade is constructed and maintained to accommodate safely the movement of the equipment and vehicles involved.

(b) Every emergency access ramp and berm used by an employer shall be constructed to restrain and control runaway vehicles.

(c) Elevated bridges, runways or ramps and loading docks shall be constructed to safely support at least four times the weight of any load to which it may be subjected. Ramps shall be covered with a material which will minimize the danger of skidding.

(d) The maximum inclination of a ramp used for wheeled equipment shall not exceed 20 percent from horizontal.

(e) Elevated bridges, ramps or runways used for the travel of wheeled equipment shall have exposed sides guarded with a substantial bull rail or sheer rail of sufficient height to prevent wheeled equipment from going over the rail.

[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 30-1974, f. 7-5-74, ef. 9-1-74; WCB 23-1976, f. 9-8-76, ef. 11-15-76; WCB 3-1977, f. 3-18-77, ef. 6-1-77; WCD 7-1980, f. 6-20-80, ef. 7-1-80; WCD 15-1984, f. 10-25-84, ef. 11-1-84; WCD 3-1985, f. 2-22-85, ef. 3-1-85; APD 4-1988, f. & ef. 3-14-88; APD 2-1989, f. 3-1-89, ef. 3-1-89; OSHA 4-1990, f. & cert. ef. 1-23-90; OSHA 13-1993, f. 8-29-93, cert. ef. 11-1-93; OSHA 1-1996, f. & cert. ef. 2-16-96; OSHA 6-2000, f. & cert. ef. 6-26-00; OSHA 12-2001, f. & cert. ef. 10-26-01; OSHA 2-2003, f. & cert. ef. 1-30-03; OSHA 6-2007, f. & cert. ef. 9-26-07

437-002-0227
Additional Oregon Rules for Powered Industrial Trucks

(1) Overhead Guards.

(a) Where a rider type lift truck operator is exposed to hoisted objects that might fall, or stacked objects that might be dislodged and fall, the truck shall be equipped with an overhead guard. The guard shall be of sufficient strength to support impact load tests as specified in Table OR-N-1: [Table not included. See ED. NOTE.]

(b) Impact load tests shall be conducted with the guard in place on a vehicle for which it is designed or on a simulated mounting. Running gear need not be in place. The load shall be dropped in free fall from an appropriate height so that the impact is centered approximately above the driver's position. Test loads shall have a length equal to or greater than the width of the guard, and shall strike the canopy at right angles to the vehicle frame.

(c) Guards of a design which has been so tested shall be identified by a metal tag permanently attached to the canopy in a position where it may be easily read from the ground. This tag shall be permanently and clearly marked with the impact test load, expressed in foot-pounds to which guards of the same design have been tested.

Note: Guards required by OAR 437-002-0227(1)(a) through (c), or by the rules following, are not intended to withstand the impact of a capacity load falling from any height.

(d) Guards which are not of a design which has been tested in accordance with OAR 437-002-0227(1)(a) through (c) of this rule, may be constructed of material as specified in Table OR-N-2 or material of equivalent strength: [Table not included. See ED. NOTE.]

(e) The construction of canopy guards are built in compliance with OAR 437-002-0227(1)(d) shall be based on the strength of four upright members. Guards constructed with less than four upright members shall be of equivalent strength.

(A) Canopy type overhead guard frames shall be braced to overhead members on each side of the frame to provide structural rigidity both longitudinally and transversely.

(B) All guard mountings or attaching brackets shall be constructed and secured to the vehicle in a manner to provide adequate support to the upright members of the canopy type overhead guard.

(C) Cantilever overhead guards shall be of equivalent strength.

(f) Guards shall be constructed in a manner that does not interfere with good visibility, but openings in the top shall not exceed 6 inches in one of the two dimensions, width or length. Guards shall be large enough to extend over the operator under all normal circumstances of operation, including forward tilt.

(A) Provisions shall be made so that failure of the mast-tilting mechanism will not allow the overhead guard to cause injury to the operator.

(B) Lift trucks operated by seated operators shall have not less than 39 inches of clear vertical space between the operator's seat when depressed and the underside of the guard. Lift trucks operated by standing operators shall have not less than 74 inches of clear vertical space between the platform and the underside of the guard.

Note: Where overall height of truck with forks in lowered position is limited by head room conditions and there is insufficient space for vertical clearance or for the operator to assume a normal driving position, normal overhead guard heights may be reduced, or the overhead guard may be omitted. The height and stability of stacks of piled material, the weight of individual units handled, and the operating space available shall be such as will provide reasonable safety for the operator if it is necessary to remove the overhead guard.

(2) Load Back Rest. Lift trucks which handle small objects or unbanded units shall be equipped with a vertical load back rest.

(a) It shall have height, width, strength, sufficient to prevent the load or any part of it from falling toward the operator.

(b) It shall be constructed in a manner that does not interfere with good visibility.

(c) Size of openings shall not exceed 6 inches in one dimension.

(3) Shear Point Guards. Shear points on forklift loaders and similar type vehicles shall be guarded as necessary to protect operators from hazardous exposure.

(4) Personnel Platforms. Whenever a lift truck is used for lifting personnel without controls at the platform, the following precautions shall be taken for the protection of personnel being elevated:

(a) A work platform equipped with standard guardrails or equivalent means, and firmly secured to the lifting carriage or forks, shall be used.

(b) The hydraulic system shall be so designed that the lift mechanism will not drop faster than 135 feet per minute in the event of a failure in any part of the system.

(c) An operator shall attend the lift equipment while workers are on the platform.

(d) The operator shall be in the normal operating position while raising or lowering the platform.

(e) The vehicle shall not travel from point to point with the work platform elevated at a height greater than 4 feet while workers are on the platform. When necessary at heights greater than 4 feet, inching may be permitted provided it is done at a very slow speed.

(f) If workers on the platform can contact the lift chains or other dangerous pinch or shear points on the mast or carriage, the platform must have a screen or guard that prevents contact.

(5) Equipment and attachments.

(a) Do not allow spinner knobs on vehicles without power steering. Spinner knobs must be on the inside of the steering wheel.

(b) All vehicles must have a working horn that can be heard above surrounding area noise.

NOTE: Paragraph (c) does not apply when the vehicle backs up with an observer or when the operator verifies that there is nobody behind the vehicle or when nobody may enter the danger area without the operator's knowledge.

(c) Vehicles with an obstructed view to the rear must have a backup alarm that can be heard over the surrounding noise. If surrounding noise prevents this or if there are so many vehicles using backup alarms that they cannot be distinguished from each other, flashing or strobe lights are acceptable.

(d) Vehicle brakes must be effective when the vehicle is fully loaded.

[ED. NOTE: Tables referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 13-1993, f. 8-20-93, cert. ef. 11-1-93; OSHA 6-1999, f. & cert. ef. 5-26-99; OSHA 6-2007, f. & cert. ef. 9-26-07

Oregon Initiated Rules for Cranes

437-002-0228
Oregon General Requirements for Cranes

(1) General Requirements:

(a) The user shall comply with the manufacturer's specifications and limitations applicable to the operation of any and all cranes and derricks;

(b) Where manufacturer's specifications are not available, the limitations assigned to the equipment shall be based on the determinations of a qualified engineer competent in this field and such determinations will be appropriately documented and recorded;

(c) Attachments used with cranes shall not exceed the capacity, rating, or scope recommended by the manufacturer;

(d) No modifications or additions which affect the capacity or safe operation of the equipment shall be made without the manufacturer's written approval. Cranes may be modified and rerated provided

such modifications and the supporting structure are checked thoroughly for the new rated load by a qualified engineer or the equipment manufacturer;

(e) If such modifications or changes are made, the capacity, operation, and maintenance instruction plates, tags, or decals, shall be changed accordingly. In no case shall the original safety factor of the equipment be reduced. Only the manufacturer or other competent shop with suitable equipment and with personnel trained for the work shall be permitted to perform welding or other repair work on cranes or derricks;

(f) Rated load capacities, and recommended operating speeds, special hazard warnings, or instruction, shall be conspicuously posted on all equipment;

(g) Instructional or warning signs shall be visible to the operator while he or she is at his or her control station;

(h) The employer shall designate a competent person who shall inspect all machinery and equipment prior to each use, and during use, to make sure it is in safe operating condition;

(i) Any deficiencies shall be repaired, or defective parts replaced, before continued use;

(j) A thorough, annual inspection of all cranes shall be made by a competent person, or a government or private agency;

(k) The employer shall maintain a record of the dates and results of inspections for each hoisting machine and piece of equipment;

(l) An unimpaired horizontal clearance of not less than three feet shall be maintained between the rotating superstructure of any crane and any adjacent object or surface. If this clearance cannot be maintained, barricades shall be installed to isolate the hazardous area;

(m) All windows in cabs shall be of safety glass, or its equivalent, that introduces no visible distortion that will interfere with the safe operation of the machine;

(n) Cranes which operate at night shall have their load hooks and working areas adequately lighted;

(o) Sufficient light shall be provided in the operator's cage or cab to enable the operator to see clearly enough to perform his or her work;

(p) An accessible fire extinguisher of 10 BC rating, or higher, shall be available at all operator stations or cabs of equipment;

(q) Belts, gears, and other reciprocating, rotating, or moving parts or equipment shall be guarded as required in OAR chapter 437, division 2/O, Machinery and Machine Guarding.

(2) Crane operator training requirements:

(a) The employer shall establish written procedures for the safe operation of all cranes and derricks;

(b) The employer shall see that employees who operate cranes or derricks are properly trained, have sufficient practical experience, and follow operating procedures for the safe operation of the crane or derrick;

(c) The level of training and experience received by the employee to meet OAR 437-002-0228(2)(b) above shall be recorded in writing;

(d) The employer shall maintain all written records of crane or derrick operators' training and experience, and shall make such records available for review by the Oregon Occupational Safety and Health Division (OR-OSHA) upon request.

(3) Overhead Wires — Operating Near Electric Power Lines. A warning sign, legible at 12 feet, shall be posted and maintained in plain view of the operators of each crane, derrick, or power-shovel. The sign shall read, "UNLAWFUL TO OPERATE THIS EQUIPMENT WITHIN TEN FEET OF HIGH-VOLTAGE LINES."

NOTE: For operation near overhead electric lines see Division 2/S, Electrical, 1910.333(c)(3).

(4) Signals. Class "D" citizens band radio frequencies shall not be used for signalling crane operators.

(5) Hoisting Equipment and Tackle. Blocks, Sheaves, and Drums:

(a) Blocks, sheaves and drums and all parts thereof shall not be used for heavier strains or greater speeds than that for which they have been designed and constructed;

(b) Sheave and drum diameters shall be as recommended by the wire rope manufacturer for the size rope being used;

(c) All pins, including bearing and yoke pins, of all blocks shall be secured against accidental displacement;

(d) Shaves supporting boom lines shall not be carried on overhung sheave pins unless equipped with substantial guards passing around the sheave pin and securely held from dislodgment from the pin;

(e) All blocks shall be fitted with line guards or shall be designed and set in a manner that prevents fouling;

(f) Where the slacking of cable around sheaves and idlers would result in injury to workers, line guards shall be provided;

(g) Working line blocks shall be kept in proper alignment;

(h) Snatch (gate) blocks shall be closed and hooked before being used.

(6) Drums. Ends of lines attached to drums shall be securely fastened by means of clamps, socketing, or other means furnishing equivalent strength. Not less than two wraps of line shall be maintained on drums.

(7) Chains:

(a) End fastenings shall be capable of sustaining loads up to the breaking strength of the hoisting chain with which they are used;

(b) Hoisting chains shall be repaired or removed from such service when the increase in length (stretch) of the measured section exceeds five percent; or when a link is bent, twisted, or otherwise damaged, or when raised scarfs or defective welds appear;

(c) Knots shall not be tied in chain in order to shorten its length.

(8) Hooks. When necessary to prevent lifting attachments from inadvertently lifting out of the hook, a safety type hook or other device or means shall be used.

(9) Wire Rope:

(a) Wire rope and replacement wire rope shall be of the same size, same or better grade, and same construction as originally furnished by the equipment manufacturer or contemplated in the design, unless otherwise recommended by the equipment or the wire rope manufacturer;

(b) Wire rope with an independent wire-rope center or other heat-resisting center shall be used as hoisting rope whenever exposed to excessive temperatures such as ingot-pouring, ladle cranes, and similar operations;

(c) Running wire ropes shall be guarded if within seven feet of the floor or platform;

(d) Care shall be taken to prevent friction of ropes with other objects which will cause chafing or breaking of wires;

(e) Wire rope shall be taken out of service when any of the following conditions exist:

(A) In running ropes, six randomly distributed broken wire in one lay or three broken wires in one strand in one lay;

(B) Wear of one-third the original diameter of outside individual wires. Kinking, crushing, bird caging, or any other damage resulting in distortion of the rope structure;

(C) Evidence of any heat damage from any cause;

(D) Reductions from nominal diameter of more than 1/64-inch for diameters up to and including 5/16-inch, 1/32-inch for diameters 3/8-inch to and including 1/2-inch, 3/64-inch for diameters 9/16-inch to and including 3/4-inch, 1/16-inch for diameters 7/8 to 1-1/8 inches inclusive, 3/32-inch for diameters 1-1/4 to 1-1/2 inches inclusive;

(E) In standing ropes, more than two broken wires in one lay in sections beyond end connections or more than one broken wire at an end connection;

(F) Corroded, damaged, or improperly applied end connections.

(f) Wire rope safety factors shall be in accordance with American National Standards Institute B30.5-1989 or SAE-J959-1966, Lifting Crane, Wire-Rope Strength Factors.

NOTE: The margin of line to be used in making a long splice shall be indicated in the following table. The full length of the splice will be twice the length "to be unraveled."

Rope Diameter	To Be Unraveled	Rope Diameter	To Be Unraveled
1/4 inch	6 feet	1-1/4 inches	25 feet
1/2 inch	8 feet	1-1/2 inches	30 feet
3/4 inch	15 feet	1-3/4 inches	35 feet
1 inch	20 feet	2 inches	40 feet

(g) All cable shall be kept lubricated as conditions of use require;

(h) When U-bolt wire rope clips are used for form eyes, the following table shall be used to determine the number and spacing of clips:

NUMBER AND SPACING OF U-BOLT WIRE CLIPS

Improved Plow Steel Rope Diameter Inches	Number of Clips: Drop Forged	Number of Clips: Minimum Other Material	Spacing (Inches)
1/2	3	4	3

5/8	3	4	3-3/4
3/4	4	5	4-1/2
7/8	4	5	5-1/4
1	5	6	6
1-1/8	6	6	6-3/4
1-1/4	6	7	7-1/2
1-3/8	7	7	8-1/4
1-1/2	7	8	9

(i) When used for eye splices, the U-bolt shall be applied so that the "U" section is in contact with the dead end of the rope;

(j) The use of cable clips or clamps may be accepted only when used in locations where they are readily accessible and subjected to frequent inspection. Clips and clamps when used shall be of the correct size and shall be properly applied. Allowance shall be made for the reduced strength of the line;

(k) The use of cable clips or clamps for joining lines is prohibited, except where used for transferring of slack lines from one place to another.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 11-1974, f. 3-20-74, ef. 4-15-74; WCB 1-1977, f. & ef. 1-4-77; WCB 7-1977, f. 5-20-77, ef. 6-15-77; OSHA 1-1989, f. 10-12-89, ef. 8-1-90; OSHA 13-1993, f. 8-20-93, cert. ef. 11-1-93

437-002-0229
Additional Oregon Rules for Overhead and Gantry Cranes

(1) Definitions:

(a) "Authorized Person." An Authorized Person is one appointed or credentialled by a duly constituted administrative or regulatory authority;

(b) "Competent Person." A Competent Person is one who by knowledge, training and experience has demonstrated the ability to solve problems and perform functions relating to the subject matter and work;

(c) "Reach (of a cantilever gantry or bridge crane)." The maximum horizontal distance at which the hook may be operated outside the runway measured at right angles to the runway from the center of the hook or load to the center of the runway rail nearest the hook or load;

(d) "Reach (of a crane or derrick fitted with a boom)." The maximum horizontal distance the hook can be extended from the center of rotation (or if rotation is not possible) from the foot of the boom.

(2) Overhead and Gantry Cranes.

(a) Only competent personnel shall be permitted to operate a crane covered by OAR 437, division 2/N, 1910.179.

(b) Cages of bridge cranes which are not provided with a walkway the full length of the craneway or other safe means of egress shall be provided with a knotted rope, rope ladder or equally effective means to enable the operator to reach the ground in an emergency.

(c) A fire extinguisher with a minimum rating of 10BC, or equivalent, shall be maintained in the cab.

(d) Rated Load Test. Prior to initial use all new, extensively repaired and altered cranes shall be tested by or under the direction of a competent person, confirming the load rating of the crane.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 11-1974, f. 3-20-74, ef. 4-15-74; OSHA 13-1993, f. 8-20-93, ef. 11-1-93

437-002-0230
Additional Oregon Rule for Crawler, Locomotive and Truck Cranes

(1) Definitions:

(a) An "Authorized Person" is one appointed or credentialed by a duly constituted administrative or regulatory authority;

(b) A "Competent Person" is one who by knowledge, training and experience has successfully demonstrated the ability to solve problems and perform functions relating to the subject matter and work.

(2) Load Ratings:

(a) A radius or boom angle indicator shall be provided where it is clearly visible to the operator in his or her normal operating position on cranes equipped with a movable working boom;

(b) A limiting device shall be installed and maintained to prevent the hook or other end fittings from contacting the upper sheaves.

(3) Booms. When sections of booms are added or removed, the full number of bolts or pins of the material and size recommended by the manufacturer, or bolts or pins furnishing equivalent strength, shall be used to secure the sections together.

(4) Hydraulic Cranes. Mobile hydraulic cranes shall be constructed, maintained, and used in accordance with the standard in PCSA Standard No. 2-1968, Mobile Hydraulic Crane Standards, published by the Power Crane and Shovel Association, Milwaukee, Wisconsin.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 11-1974, f. 3-20-74, ef. 4-15-74; OSHA 13-1993, f. 8-20-93, cert. ef. 11-1-93

437-002-0232
Additional Oregon Rule for Derricks

Rated Load Marking. A radius indicator or boom angle indicator, compatible with the load rating chart, shall be provided where it is clearly visible to the operator in his or her normal operating position on all derricks equipped with a movable working boom.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 11-1974, f. 3-20-74, ef. 4-15-74; OSHA 13-1993, f. 8-20-93, cert. ef. 11-1-93

437-002-0233
Oregon Rules for Hammerhead Cranes

(1) Definition. "Hammerhead Crane" — Lifting machine consisting of a tower (mast) with an upperstructure that rotates and includes a load jib (boom) with trolley extending horizontally and a counterweight jib extending in the opposite direction, neither of which is arranged for luffing. The trolley on the load jib traverses the length of the jib and contains the sheaves and accessory parts that comprise the upper load block. The lower load block is suspended from the trolley.

(2) Hammerhead Cranes — General:

(a) Adequate clearance shall be maintained between moving and rotating structures of the crane and fixed objects to allow the passage of employees without harm;

(b) Employees required to perform duties on the horizontal boom of hammerhead tower cranes shall be protected against falling by guardrails or by safety belts and lanyards attached to lifelines in conformance with OAR chapter 437, division 2/I, Personal Protective Equipment;

(c) Buffers shall be provided at both ends of travel of the trolley;

(d) Cranes mounted on rail tracks shall be equipped with limit switches limiting the travel of the crane on the track and stops or buffers at each end of the tracks. Cranes with self-contained power plants shall be equipped with warning devices, and stops or buffers at each end of the track;

(e) All hammerhead cranes in use shall meet the applicable requirements for design, construction, installation, testing, maintenance, inspection, and operation as prescribed by the manufacturer and to ensure compliance with the rules in this division;

(f) The employer shall provide a wind velocity device which will give a visible or audible alarm to the crane operator at a predetermined wind velocity; and

(g) The employer shall ensure that:

(A) The wind velocity device is compatible with the manufacturer's crane specifications; and

(B) The crane operators are fully instructed regarding the maximum permissible wind speeds during operation; and

(C) The load chart contains the wind velocity operating limits.

(3) Mobile Cranes Mounted on Barges:

(a) When a mobile crane is mounted on a barge, the rated load of the crane shall not exceed the original capacity specified by the manufacturer;

(b) A load rating chart, with clearly legible letters and figures, shall be provided with each crane, and securely fixed at a location easily visible to the operator;

(c) When load ratings are reduced to stay within the limits for list of the barge with a crane mounted on it, a new load rating chart shall be provided;

(d) Mobile cranes on barges shall be positively secured.

(4) Permanently Mounted Floating Cranes and Derricks:

(a) When cranes and derricks are permanently installed on a barge, the capacity and limitations of use shall be based on competent design criteria;

(b) A load rating chart with clearly legible letters and figures shall be provided and securely fixed at a location easily visible to the operator;

(c) Floating cranes and floating derricks in use shall meet the applicable requirements for design, construction, installation, testing, maintenance, and operation as prescribed by the manufacturer.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 11-1974, f. 3-20-74, ef. 4-15-74; WCD 3-1981, f. 4-20-81, ef. 6-1-81; OSHA 13-1993, f. 8-20-93, cert. ef. 11-1-93

437-002-0235
Additional Oregon Rule for Slings

Chain Slings. When lifting with chain slings, use only alloy steel chain. Do not use proof coil or high test carbon steel. The only exception is for plating or dip work where the chemicals make alloy steel chain unsafe or otherwise unsuitable. In those cases, use chain appropriate for the work.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 11-1974, f. 3-20-74, ef. 4-15-74; WCB 16-1976, f. 7-6-76, ef. 8-1-76; WCB 1-1978, f. 2-16-78, ef. 3-15-78; WCD 8-1979, f. 10-19-79, ef. 2-1-80; OSHA 13-1993, f. 8-20-93, cert. ef. 11-1-93; OSHA 12-2001, f. & cert. ef. 10-26-01

Machinery and Machine Guarding

437-002-0240
Adoption by Reference

In addition to and not in lieu of any other health and safety codes contained in OAR chapter 437, the Department adopts by reference the following federal rules as printed in the Code of Federal Regulations, 29 CFR 1910, revised as of 7/1/03, and any subsequent amendments published in the Federal Register as listed below:

(1) 29 CFR 1910.211 Definitions; published 6/27/74, Federal Register, vol. 39, pp. 23709–23712; amended 12/3/74, FR vol. 39, pp. 41846–41848; 3/14/88, FR vol. 53, p. 8353.

(2) 29 CFR 1910.212 General requirements for all machines; published 6/27/74, Federal Register, vol. 39, p. 23712; amended 10/24/78, FR vol. 43, p. 49750.

(3) 29 CFR 1910.213 Woodworking machines; published 6/27/74, Federal Register, vol. 39, pp. 23712–23716; amended 10/24/78, FR vol. 43, p. 49750; 2/10/84., FR vol. 49, p. 5323.

(4) Reserved for 29 CFR 1910.214 Cooperage machinery.

(5) 29 CFR 1910.215 Abrasive wheel machinery; published 6/27/74, Federal Register, vol. 39, pp. 23717–23723; amended 10/24/78, FR vol. 43, p. 49750; 2/10/84, FR vol. 49, p. 5323; 3/7/96, FR vol. 49, p. 5323; 3/7/96, FR vol. 61, no. 46, p. 9240.

(6) 29 CFR 1910.216 Mills and calendars in the rubber and plastics industries; published 6/27/74, Federal Register, vol. 39, p. 23723; amended 2/10/84, FR vol. 49, p. 5323; 3/7/96, FR vol. 61, no. 46, p. 9240.

(7) 29 CFR 1910.217 Mechanical power presses; published 6/27/74, Federal Register, vol. 39, pp. 23723–23727; amended 12/23/74, FR vol. 39, p. 41846; 1/27/75, FR vol. 40, p. 3982; 10/24/78, FR vol. 43, p. 49750; 2/8/80, FR vol. 45, p. 8594; 4/30/84, FR vol. 49, p. 18295; 9/29/86, FR vol. 51, p. 34561; 3/14/88, FR vol. 53, pp. 8353–8365; 3/7/96, FR vol. 61, no. 46, p. 9240; amended 6/8/04, FR vol. 69, p. 31880–31882.

(8) 29 CFR 1910.218 Forging machines; published 6/27/74, Federal Register, vol. 39, pp. 23727–23728; amended 2/10/84, FR vol. 49, p. 5323; 9/29/86, FR vol. 51, p. 34561; 3/7/96, FR vol. 61, no.46, p. 9240.

(9) 29 CFR 1910.219 Mechanical power-transmission apparatus; published 6/27/74, Federal Register, vol. 39, pp. 23728–23732; amended 10/24/78, FR vol. 43, p. 49750; 11/7/78, FR vol. 43, p. 51760; 2/10/84, FR vol. 49, p. 5323; 3/7/96, FR vol.61, no.46, p. 9240; amended 6/8/04, FR vol. 69, p. 31880–31882.

NOTE: These standards are available from the Oregon Occupational Safety and Health Division (OR-OSHA), Department of Consumer and Business Services; and the United States Government Printing Office.
[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 22-1988, f. 12-30-88, ef. 1-1-89; OSHA 4-1997, f. & cert. ef. 4-2-97; OSHA 4-2004, f. & cert. ef. 9-15-04

437-002-0242
Oregon Rules for Machinery and Machine Guarding

(1) Definition of Gate or Movable Barrier:

(a) Type A gate or movable barrier — Protects the operator by enclosing the point-of-operation before a press stroke can be initiated, and maintaining this closed condition until the motion of the slide has ceased;

(b) Type B gate or movable barrier — Protects the operator by enclosing the point-of-operation before a press stroke can be initiated, so as to prevent an operation from reaching into the point-of-operation prior to die closure or prior to cessation of slide motion during the downward stroke.

(2) Reciprocating Shear Lines. Platform hoists, scissor lifts, and other reciprocating mechanisms shall be guarded or arranged so that there are no exposed shear lines.

(3) Saw Guard. Where it is possible to walk behind the saw, the saw shall be completely guarded when in its rest position.

(4) Radial Saws. Radial saws shall be equipped with upper and lower guards as follows:

(a) By device or devices, including jigs, work holders, guides, stops or other engineering controls which provide protection equal to that of the device described in 1910.213(h)(1);

(b) A stop shall be provided to prevent the leading edge of the saw from passing the front edge of the table or roll case, or the table widened to obtain equal results.

(5) Use of Gloves:

(a) If gloves are used in conjunction with a pull-out device, the gloves shall be worn outside the operator's hand attachments;

(b) If gloves are used in conjunction with a holdout or restraint device, the gloves shall be worn outside the operator's hand attachments.

(6) Effective Dates:

(a) Effective dates for amendments to 1910.211 and 1910.217 printed in the **Federal Register**, Vol. 53, No. 49, p. 8352–8365 on March 14, 1988, are 90 days after adoption of these rules; except Appendix C of 1910.217 becomes effective 30 days after the final adoption of these rules;

(b) All other rules are effective upon date of adoption.

[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 22-1988, f. 12-30-88, ef. 1-1-89; OSHA 2-1990, f. 1-19-90, cert. ef. 3-1-90; OSHA 5-1990, f. & cert. ef. 2-9-90; OSHA 6-1994, f. & cert. ef. 9-30-94, (1) Renumbered to 437-002-0256

437-002-0256
Oregon Rules for Refuse Collection and Compaction Equipment

(1) Definitions as used in OAR 437-002-0256(2), the following terms shall have the meaning prescribed herein unless the context clearly requires otherwise:

(a) Access covers — A cover preventing access to the interior of the compactor except for service or maintenance.

(b) Automatic cycling control — A device that initiates the operation of the compactor on demand when solid waste is loaded and continued to cycle until signaled to stop.

(c) Charging chamber — The loading area of a compactor that holds the solid waste prior to compaction.

(d) Charging hopper — An enclosure mounted to the compactor charging chamber that directs the flow of solid waste into the charging chamber.

(e) Chute — The structural enclosure connected either to the charging hopper or the charging chamber (when there is no charging hopper) which guides solid waste into the charging chamber.

(f) Collection vehicle — An engine-powered cab and chassis upon which mobile equipment is mounted or towed for the receiving, transporting, and unloading of solid waste, or for the receiving, transporting, and unloading of containers.

(g) Compaction equipment (compactor) — A stationary or self-contained powered machine which remains stationary when in operation with operating controls designed to compact solid waste.

(A) Stationary — A self-contained stationary compactor/container designed to compact refuse.

(B) Self-contained — A compacting machine which remains stationary during operation, and is designed to compact refuse into an integral container. The entire unit may be moved for placement and unloading refuse.

(h) Compactor container locking mechanism — The system that couples or secures the containers to the compactor frame.

(i) Compactor frame — The structural assembly of a compactor to which the charging chamber and ram components are secured.

(j) Container — A receptacle that receives and holds solid waste.

(k) Container lifting/dumping mechanism — Devices used for the purpose of unloading solid waste containers.

(l) Control panel — The panel that contains the controls for operating the compactor. It can be mounted on the compactor frame or located remotely at the control station or both.

(m) Cycles.

(A) Automatic cycle — Operation of the compactor in a preprogrammed manner without constant operator control.

(B) Interrupter cycle — Stopping the operation of a compactor before the completion of the specified cycle.

(C) Manual cycle — Operation of the mechanism under direct handson control of the operator.

(D) Multiple cycle — Operation of the compactor to perform more than one single cycle operation.

(E) Single cycle — Operation of compactor to perform one complete cycle.

(n) Dock ramp — The platform providing access for loading the charging chamber or charging hopper.

(o) Employee — Any individual, including a minor, whether lawfully or unlawfully employed, who engages to furnish his services for a remuneration, financial, or otherwise, subject to the director and control of an employer, and includes salaried, elected, and appointed officials of the state, state agencies, counties, cities, school districts, and other public corporations, and any individual who is provided with workers' compensation coverage as a subject worker pursuant to ORS Chapter 656, whether by operation of law or by election.

(p) Employer — Any person who has one or more employees, or any sole proprietor or member of a partnership who elects workers' compensation coverage as a subject worker pursuant to ORS 656.128.

(q) Guard — A barrier which may include gates and/or door(s) designed to protect the employee(s) from hazards.

(r) Interlock — An electrical, mechanical, or key-locked device that prevents an undesired sequence of operations.

(s) Loading door — A door that permits the loading of solid waste into a chute, charging hopper, charging chamber, or all of the above.

(t) Maintenance personnel — Employees who care for, inspect, clean, and/or maintain compaction equipment.

(u) Modification — Any change of the original equipment which alters the equipment and/or components so that the compactor functions differently from the original design, specifications, and/or use.

(v) Operator — An employee who operates the equipment in normal use (other than in the course of servicing or repair).

(w) Pinch point — Any point where it is possible to be caught between moving parts, or between moving and stationary parts, of a piece of equipment.

(x) Point-of-Operation — Point-of-operation is the area of the compactor where compaction occurs.

(y) Ram — The powered component of a compactor that moves the solid waste.

(z) Safety gate — A movable guard.

(aa) Solid waste — All putrescible and non-putrescible wastes, including but not limited to garbage, rubbish, refuse, ashes, and waste paper. The term does not include:

(A) Hazardous wastes as defined in ORS 459.410. Hazardous wastes do not include radioactive material or the radioactively contaminated containers and receptacles used in the transportation, storage, use or application thereof. Hazardous wastes do not include all of the following which are not declassified by the Commission (Commission means the Environmental Quality Commission as defined in ORS 459.005 and 410) pursuant to ORS 459.430(3):

(i) Discarded, useless or unwanted materials or residues resulting from any substance or combination of substances intended for the purpose of defoliating plants or for the preventing, destroying, repelling or mitigating of insects, fungi, weeds, rodents, or predatory animals, including but not limited to defoliants, desiccants, fungicides, herbicides, insecticides, nematocides, and rodenticides.

(ii) Residues resulting from any process of industry, manufacturing, trade or business or government, or from the development or recovery of any natural resources, if such residues are classified as hazardous by order of the Commission (Commission means the Environmental Quality Commission as defined in ORS 459.005 and 410) must find that such residue, because of its quantity, concentration, or physical, chemical or infectious characteristics may:

(I) Cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness; or

(II) Pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.

(iii) Discarded, useless or unwanted containers and receptacles used in the transportation, storage, use or application of the substances described in the above definitions (aa)(A)(i) and (ii).

(B) Materials used for fertilizer or for other productive purposes or which are salvageable such as materials used on land in the agricultural operations and the growing or harvesting of crops and the raising of fowls or animals.

(bb) Working surface — The treading surface (ground, floor, dock ramp, platform) on which the operator stands while loading solid waste into the chute, charging hopper, charging chamber, or all of the above.

(2) Refuse Collection and Compaction Equipment.

(a) OAR 437-002-0256(2) contains safety requirements for the identification, installation, modification, maintenance, operation of fixed-in-place (stationary) compactors, and the access only for collection vehicle, used in places of employment subject to ORS 654.001 to 654.170, the Oregon Safe Employment Act. These rules do not apply to compactors attached to mobile collection vehicles.

(b) These requirements apply to both stationary and self-contained compactor/container equipment used to compact solid waste, at a place of employment.

(c) These requirements apply to both new and existing compactors and collection equipment, except that compactors installed at places of employment prior to the date of enactment of these rules need comply only to OAR 437-002-0256(2)(e)–(i) of 437-002-0256(2)(a)–(k).

(d) General Requirements.

(A) Installation. Compactor equipment shall be installed in accordance with applicable rules, and the manufacturers installation requirements.

(B) Identification. Equipment shall have permanent identification with the manufacturer's name and either the date of manufacture or a code traceable to the date of manufacture.

(C) Access for collection vehicles. The employer where the compactor is located shall provide a safe means for the collection vehicle to have access in order to load and/or dump the container.

(D) Compactor work area.

(i) The compactor shall have a work area around it for safe operation, maintenance, servicing and cleaning procedures.

(ii) All surrounding working areas shall be reasonably free from obstructions and accumulations of waste matter, grease, oil, and water.

(E) Repairing. All mechanical malfunctions or breakdowns affecting safe operation of the compactor equipment shall be repaired before operating the compactor.

(e) Modifications and Additions. When modifications and/or additions are made which affect the capacity of the compactor or the primary function is changed, the employer shall:

(A) Obtain prior written approval of the manufacturer or follow plans and specifications prepared by a licensed engineer;

(B) Change the operation, and maintenance instruction plates, tags, or decals; and

(C) Modify the instruction manual as needed to include the new safety precautions.

(f) Periodic Inspections.

(A) The employer shall establish and follow a program of at least annual compactor inspections to ensure moving parts, structure, auxiliary equipment, and safeguards are in safe operating condition and adjustment. Compliance with the manufacturer's inspection and maintenance program shall meet the intent of this rule.

(B) Commencing with the effective date of the these rules, records required in section (1) above shall be retained for at least two years following each inspection by the employer.

(g) Training and Instruction. The employer shall:

(A) Provide operating instructions for the use, cleaning, care and maintenance of compactors;

(B) Train and instruct each employee on the safe methods of operating and/or maintaining compactors before assigning employees to operate the equipment; and

(C) Provide adequate supervision, to assure correct operating procedures are being followed;

(h) Compactor Damage or Malfunction. Within a reasonable time but in no event later than one work shift after damage to, or malfunction of, compactor equipment occurs, the operator shall report such damage or malfunction of, compactor equipment occurs, the operator shall report such damage or malfunction to the employer or other responsible authority.

(i) Compaction Equipment Safeguards.

(A) The operator shall use all applicable safety features on the equipment.

(B) Access covers. Access covers shall be interlocked or secured by devices removable by hand tools only.

(C) Sustained manual pressure controls. Except when equipped with an automatic cycling control, compacting equipment shall be operated only by sustained manual pressure actuating controls located in such a way that the operator can not reach the point of operation.

(D) Automatic cycling controls. The employer shall ensure that compactors equipped with automatic cycling controls shall be used only in locations where the charging chamber is not accessible while the compactor is cycling automatically.

(E) Point-of-operation guard. A point-of-operation guard or other protective means shall prevent employees from having any part of their body in the point-of-operation during the compactor cycles. The guard:

(i) May have safety gates or doors;

(ii) Shall not create a pinch point;

(iii) Shall be interlocked in such a manner that the compactor cannot be operated if the guard or loading door is removed or opened;

(iv) Shall protect the employee from other hazards such as flying glass.

(F) Lockout. Except during maintenance testing by authorized personnel, the employer shall provide and use locks which will prevent the inadvertent application of energy or motion to equipment being repaired, serviced, or adjusted and follow the lock out procedures, as specified in 1910.147, for the repair, adjustment, servicing, cleaning, and lubricating of compaction equipment.

(G) Actuating controls. Prior to operation, the operator shall be certain that all individuals are clear of the point-of-operation and pinch-point area.

(H) Compactor, container locking mechanism. The locking mechanism shall be compatible with both the compactor and the container.

(I) Hauler key lock. During the time a container which can not be seen by the compactor operator is removed from the compactor, a key locking system shall be provided for use by the hauler to prevent the compactor from operating. The key lock shall not be overridden by any other mechanism.

(j) Container Lifting/Dumping Mechanisms.

(A) If the compactor is equipped with a container lifting/dumping mechanism, installation shall be in accordance with the manufacturer's instruction.

(B) Lifting/dumping mechanism controls shall be in clear view and outside the area of operation of the lifting/dumping mechanism and container.

(C) Prior to starting the dumping mechanism, the area of operation around the mechanism and container shall be clear of individuals and remain clear during all phases of the dumping operation.

(k) Operating Controls.

(A) Highly visible labels for the function of each control shall be provided.

(B) The design and location of all operating controls shall minimize the likelihood of unintentional activation (starting).

(C) Electric "stop" and emergency "stop" controls shall be red, distinguishable from all other controls by size and color, and shall not be recessed.

(D) A key locking system shall be provided on all compactors for the prevention of unauthorized operation.

(E) Emergency stop control. Emergency stop control shall be provided; and

(i) Be red and distinguishable from all other controls, and NOT be recessed; and

(ii) Be readily accessible to the operator and located within three feet of the point of operation; or

(iii) If chute-fed within three feet of the loading door.

(F) Ram emergency stop controls shall be provided:

(i) In case of an emergency, to stop the movement of the ram at any point; and

(ii) Emergency ram stop control(s) shall be properly identified, operate with constant pressure, control and depict direction of ram travel.

(l) Electrical Systems. Electrical systems furnished as part of the compactor, or for the installation thereof, shall be in accordance with the manufacturer's instructions, OAR 437, division 2/S, Electrical, and the National Electric Code as adopted and amended by the Oregon Building Codes Agency.

(m) Safety Markings and Signs.

(A) Safety markings. All safety markings shall be color coded in compliance with OAR 437, division 2/J, Accident Prevention Signs, Symbols, and Tags, for marking physical hazards.

(B) The location and markings of warning signs shall be as follows:

(i) A sign on each chute-fed charging hopper loading door stating, DANGER — DO NOT ENTER.

(ii) A sign on/or adjacent to the loading door(s) of any compactor equipped with an automatic sensing device stating, CAUTION — THIS COMPACTOR STARTS AUTOMATICALLY.

(iii) A sign on each control panel and power unit (motor) stating, DANGER — HIGH VOLTAGE.

(iv) A sign on each access cover stating, CAUTION — DO NOT REMOVE ACCESS COVER EXCEPT FOR SERVICING. TURN CONTROL PANEL KEY SWITCH TO OFF POSITION AND REMOVE KEY.

(v) A sign on each side of the safety gates which prevents access to the charging hopper from a walk-on ramp stating, CAUTION — GATE MUST BE CLOSED BEFORE OPERATING COMPACTOR.

(vi) A sign on each charging hopper access door stating CAUTION — BEFORE OPENING DOOR, TURN CONTROL PANEL KEY SWITCH TO OFF POSITION, REMOVE KEY, AND BLOCK OFF TRASH CHUTE.

(vii) Clearly visible signs at all charging hopper access areas stating, DANGER — DO NOT ENTER.

(viii) A sign on each outside face of the charging hopper stating, DANGER — DO NOT ENTER.

(ix) On compactors where there is not a charging hopper, above the charging chamber stating, DANGER — DO NOT ENTER. This sign shall be visible from both sides.

(x) On any container lifting/dumping mechanisms a sign at the dumper controls stating, CAUTION — BEFORE OPERATING DUMPER, CLEAR DUMPING AREA OF ALL INDIVIDUALS.

(xi) On any container lifting/dumping mechanisms, a sign in clear view of the container lifting/dumping mechanisms stating, DANGER — STAY CLEAR OF DUMPER AND DUMPING AREA.

(xii) Clearly visible sign at the hauler key lock stating, COMPACTOR UNIT MUST BE SWITCHED OFF PRIOR TO REMOVAL OF THE CONTAINER.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 22-1988, f. 12-30-88, cert. ef. 1-1-89; OSHA 6-1994, f. & cert. ef. 9-30-94, Renumbered from 437-002-0242(1)

Hand and Portable Powered Tools and Other Hand-Held Equipment

437-002-0260
Adoption by Reference

In addition to, and not in lieu of, any other safety and health codes contained in OAR chapter 437, the Department adopts by reference the following federal rules as printed in the Code of Federal Regulations, 29 CFR 1910, revised as of 7/1/96, and any subsequent amendments published in the Federal Register as listed below:

(1) 29 CFR 1910.241 Definitions, published 6/27/74, Federal Register, vol. 39, p. 23502; amended 10/24/78, FR vol. 43, p. 49750.

(2) 29 CFR 1910.242 Hand and portable powered tools and equipment, general, published 6/27/74, Federal Register, vol. 39, p. 23502.

(3) 29 CFR 1910.243 Guarding of portable powered tools, published 6/27/74, Federal Register, vol. 39, p. 23502; amended 10/24/78, FR vol. 43, p. 49750; 2/10/84, FR vol. 49, p. 5323; 2/1/85, FR vol. 50, p. 4649; 3/7/96, FR vol. 61, no. 46, p. 9240; 9/13/05, FR vol. 70, no. 176, p. 53925.

(4) 29 CFR 1910.244 Other portable tools and equipment, published 6/27/74, Federal Register, vol. 39, p. 23502; amended 2/10/84, FR vol. 49, p. 5323.

These rules are available at the Oregon Occupational Safety and Health Division, Oregon Department of Consumer and Business Services, and the United States Government Printing Office.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 10-1993, f. 7-29-93, cert. ef. 9-15-93; OSHA 4-1997, f. & cert. ef. 4-2-97; OSHA 4-2005, f. & cert. ef 12-14-05

Additional Oregon Rules for Powered Hand Tools and Hand-Held Equipment

437-002-0262
Additional Definitions in Oregon

(1) "Angle Control" A safety feature designed to prevent a tool from operating when tilted beyond a predetermined angle.

(2) "Cased Power Load" A power load with the propellant contained in a closed case.

(3) "Caseless Power Load" A power load with the propellant in solid form not requiring containment.

(4) "Direct-Acting Tool" A tool in which the expanding gas of the power load acts directly on the fastener to be driven.

(5) "Fixture" A special shield which provides equivalent protection where the standard shield cannot be used.

(6) "Head" That portion of a fastener which extends above work surface after being properly driven.

(7) "Indirect-Acting Tool" A tool in which the expanding gas of the power load acts directly on a captive piston which in turn drives the fastener.

(8) "Misfire" A condition in which the powder load fails to ignite after the tool has been operated.

(9) "Powder-Actuated Fastening System" A method comprising the use of a powder-actuated tool, a power load, and a fastener.

(10) "Powder-Actuated Tool," also known as "Tool" A tool that utilizes the expanding gases from a power load to drive a fastener.

(11) "Test Velocity" A series of deliberately free-flighted fasteners whose velocities are measured 6-1/2 feet from the muzzle end of the tool using accepted ballistic test methods.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 1-1974, f. 1-16-74, ef. 2-15-74; WCD 23-1984, f. 12-28-84, ef. 1-1-85; OSHA 10-1993, f. 7-29-93, cert. ef. 9-15-93

437-002-0264
Additional General Requirements for Hand Tools

(1) Defective tools shall be removed from service.

(2) When not in use, tools shall be placed where they will not create a hazard.

(3) Flexible cords with damaged insulation or defective parts shall not be used.

(4) Handles of all tools shall be smooth, without sharp edges or splinters, and shall be firmly attached to the tool. Wooden handles of tools shall be of firm straight grained stock.

(5) Heads of shock tools (such as hammers, sledges, and cold chisels) shall be dressed or ground as they begin to mushroom or crack. When such tools show a tendency to chip, they shall be immediately removed from service.

(6) The cutting edges of tools shall be maintained in a uniformly sharp condition to eliminate the additional hazard resulting from the erratic resistance of the dulled edges.

(7) Heavy leather holsters, guards, or equivalent protection shall be used for sharp-edged or sharp-pointed tools carried on the worker's person.

(8) Workers who use sharp-edged cutting tools shall use appropriate protective equipment such as gloves, aprons, and leg guards to protect against accidental cuts.

(9) Hand tools provided for use in explosive or flammable atmospheres shall be of the spark-resisting type.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA WCB 12-1974, f. 4-1-74, ef. 4-30-74; 10-1993, f. 7-29-93, cert. ef. 9-15-93; OSHA 1-1996, f. & cert. ef. 2-16-96

437-002-0266
Additional Oregon Rules for Guarding Portable Powered Tools

(1) Lower Guard. In addition to the provisions in 1910.243(a)(1)(i), the lower guard shall be equipped with a lug or lever, remote from the blade teeth, that will permit the operator to safely shift the guard for starting unusual cuts.

(2) Power Chain Saws:

(a) In addition to the provisions of 1910.243(a) (2)(i), all power chain saws shall meet all applicable requirements of the ANSI B175.1-1985, Safety Code for Power Chain Saws;

(b) Power saws shall be inspected daily when in use and kept in good repair at all times. Saws with cracked or loose handle bars or defective vital parts shall not be used;

(c) Power chain saw engines shall be stopped while being fueled;

(d) Power chain saws shall have an operable chain brake if originally designed and equipped with a chain brake;

(e) Chain brakes, and other manufacturer's safety features shall remain operational at all times.

(3) Pneumatic-Powered Tools:

(a) A shut-off valve shall be installed at the manifold or permanent pipe outlet of the compressed air supply;

(b) Workers shall not couple or uncouple hose without first shutting off the compressed air supply except when using couplers which are equipped with check valves which automatically shut off the compressed air supply;

(c) Workers shall remain in the clear when turning on air supply at a valve;

(d) Driving pistons in pneumatic tools shall be constructed so that they cannot fly out of the tool;

(e) Pneumatic fastener-driving tools and other power-driven fastener tools, except as allowed in subsection (f) of this section, shall be equipped with a safety device to prevent ejection of nails or staples when the tool is not in firm contact with the work;

(f) Power-driven fastener-driving tools may be used without the safety device only when using staples with a diameter of .0475 inch (18 gauge A.W.G.) or less and the tool operator and all workers within 15 feet are wearing suitable eye protection;

(g) The provisions of subsection (f) of this section do not apply to office stapling machines;

(h) Oxygen or combustible gases shall not be used to drive pneumatic tools;

(i) The exhaust from pneumatic power tools shall be deflected away from the operator.

(4) Internal Combustion Engine-Driven Tools:

(a) Internal combustion engine-driven tools shall be equipped with a positive on and off ignition switch that will remain in either position;

(b) Internal combustion engine-driven tools shall be equipped with effective means to control power except those which are designed to operate at constant speed. Throttle controls shall return the engine to idling speed when released;

(c) Internal combustion engine-driven tools shall be equipped with a self-rewinding starting device, or be designed to furnish equivalent safety;

(d) Exhaust ports on internal combustion engine-driven tools shall be equipped with mufflers and shall be constructed and maintained to deflect exhaust fumes away from the operator when the tool is being used in its normal starting position;

(e) Internal combustion engine-driven tools shall be stopped while being fueled;

(f) Sling-carried tools which are powered by attached portable internal combustion engines shall be capable of quick removal;

(g) The fuel system of sling-carried tools shall be inspected before each use, and any defect shall be repaired immediately.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 1-1974, f. 1-16-74, ef. 2-15-74; WCD 23-1984, f. 12-28-84, ef. 1-1-85; OSHA 10-1993, f. 7-29-93, cert. ef. 9-15-93

437-002-0268
Oregon Rules for Hand-Powered Equipment

(1) Hand Powered Equipment:

(a) Each hand-powered hoist shall be equipped with an effective brake of equivalent and in addition shall be equipped with a ratchet and pawl of sufficient strength to hold the maximum load in any position;

(b) Means shall be provided to prevent hand crank handles from working loose from the drive shaft.

(2) Wheelbarrows, Hand Trucks, Dollies, Pallet Jacks:

(a) Wheelbarrows, hand trucks, floor trucks, dollies, and pallet jacks shall be selected for the specific work to be done and shall not be loaded beyond safe capacity. Bodies and frames shall be made of metal or strong wood and rigidly constructed and braced to withstand severe handling and the loads to be carried;

(b) Wheelbarrows, hand trucks, floor trucks, dollies, and pallet jacks shall be kept in good repair at all times;

(c) Wheelbarrows, hand trucks, floor trucks, dollies, and pallet jacks when not in use, must be properly stored and shall not be left in such a position that they can tip, fall or roll.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 1-1974, f. 1-16-74, ef, 2-15-74; WCB 7-1974, f. 3-19-74, ef. 4-15-74; OSHA 10-1993, f. 7-29-93, cert. ef. 9-15-93

Welding, Cutting and Brazing

437-002-0280
Adoption by Reference

In addition to, and not in lieu of, any other safety and health codes contained in OAR chapter 437, the Department adopts by reference the following Federal rules as printed in the Code of Federal Regulations, 29 CFR 1910, revised as of 7/1/97, and any subsequent amendments published in the Federal Register as listed below:

(1) 29 CFR 1910.251 Definitions, published 6/27/74, Federal Register, vol. 39, p. 23502; amended 4/12/88, FR vol. 53, p. 12122; amended 4/11/90, FR vol. 55, no. 70, p. 13696; 3/7/96, FR vol. 61, no. 46, p. 9240.

(2) 29 CFR 1910.252 General Requirements, published 6/27/74, Federal Register, vol. 39, p. 23502; amended 5/28/75, FR vol. 40, p. 23073; 10/24/78, FR vol. 43, p. 49750; 2/10/84, FR vol. 49, p. 5323; 9/29/86, FR vol. 51, p. 34562; 4/11/90, FR vol. 55, no. 70, pp. 13696–13701; 3/7/96, FR vol. 61, no. 46, p. 9240; 1/8/98, FR vol. 63, no. 5, p. 1284.

(3) 29 CFR 1910.253 Oxygen-Fuel Gas Welding and Cutting, published 4/11/90, Federal Register, vol. 55, no. 70, pp. 13701–13709; 3/7/96, FR vol. 61, no. 46, p. 9241.

(4) 29 CFR 1910.254 Arc Welding and Cutting, published 6/27/74, Federal Register, vol. 39, p. 23502; amended 4/28/75, FR vol. 40, p. 18426; 4/11/90, FR vol. 55, no. 70, pp. 13709–13710; 3/7/96, FR vol. 61, no. 46, p. 9241; 9/13/05, FR vol. 70, no. 176, p. 53925.

(5) 29 CFR 1910.255 Resistance Welding, published 4/11/90, Federal Register, vol. 55, no. 70, pp. 13710–13711.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 232-1990, f. 9-28-90, cert. ef. 12-1-90; OSHA 4-1997, f. & cert. ef. 4-2-97; OSHA 3-1998, f. & cert. ef. 7-7-98; OSHA 4-2005, f. & cert. ef 12-14-05

Oregon-Initiated Rules

437-002-0282
Job Planning and Layout

(1) Before operations are started, portable equipment shall be securely blocked to prevent accidental movement.

(2) Tanks, boilers, drums and similar containers shall be equipped with ladders for the welders and other workers whenever conditions require their use for safe access and egress.

(3) No welding equipment shall be allowed on elevated structures unless such structure is designed and built to support all loads imposed on the structure.

(4) Work areas shall be designed, laid-out and operated in a manner to prevent welding hose and cable from creating a tripping hazard.

(5) When welding or cutting is being performed in any confined space, the gas cylinders and/or welding machines shall be left on the outside.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 232-1990, f. 9-28-90, cert. ef. 12-1-90

437-002-0283
Eye Protection and Protective Clothing

(1) Easily ignited, highly flammable clothing, such as is made from synthetic materials, shall not be worn.

(2) Flash goggles with side shields (Shade No. 2, Style Nos. 2 or 3) shall be worn under the welding helmet or hand shield.

(3) The skin shall be covered completely, by a double layer of clothing or equivalent, to prevent burns or other damage by ultraviolet light.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 232-1990, f. 9-28-90, cert. ef. 12-1-90

437-002-0284
Specifications for Protectors

(1) Where the "lift front" welder's helmet is used, there shall be a stationary safety glass on the inside of the frame next to the eyes to protect welder against flying particles when the front is lifted. Where lens containers will not permit use of such safety glass, safety goggles shall be worn.

(2) Where the "lift front" helmet with three glasses is not used, or the flat type helmet is used, the welders shall wear other spectacle-type safety goggles in addition to the filter lens and cover glass.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 232-1990, f. 9-28-90, cert. ef. 12-1-90

437-002-0285
Special Precautions

Before welding or cutting on walls, floors or ceilings, an inspection shall be made to see that no combustible material is present on the hidden side.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 232-1990, f. 9-28-90, cert. ef. 12-1-90

437-002-0286
Preservative Coatings

(1) Before welding, cutting or heating is commenced on any surface covered by a preservative coating whose flammability is not known, a test shall be made by a competent person to determine its flammability.

(2) Precautions shall be taken to prevent ignition of highly flammable hardened preservative coatings. When coatings are determined to be highly flammable, they shall be stripped from the area to be heated to prevent ignition.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 232-1990, f. 9-28-90, cert. ef. 12-1-90

437-002-0287
Toxic Preservative Coatings

(1) In enclosed spaces, all surfaces covered with toxic preservative shall be stripped of all toxic coatings for a distance of at least four inches from the area of heat application, or the employees shall be protected by a respirator against hazards from breathing toxic vapors in accordance with occupational health regulations.

(2) The preservative coatings shall be removed a sufficient distance from the area to be heated to ensure that the temperature of the unstripped metal will not be appreciably raised. Artificial cooling of the metal surrounding the heated area may be used to limit the size of the area required to be cleaned.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 232-1990, f. 9-28-90, cert. ef. 12-1-90

437-002-0288
Health Protection and Ventilation — General

(1) When welding or cutting operations are being performed on the following materials (Table 1), the protective measures indicated are required unless atmospheric samples taken in e welder's breathing zone indicate that the concentration does not exceed the Threshold Limit Value (TLV) specified in the Oregon Occupational Safety and Health rules.

(2) Nearby workers shall be afforded equivalent, effective, protection from these dangerous fumes.

[ED. NOTE: Tables referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(3)

Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 232-1990, f. 9-28-90, cert. ef. 12-1-90; OSHA 6-1994, f. & cert. ef. 9-30-94

437-002-0289
Precautionary Labels

Brazing (welding) filler metals containing zinc in significant amounts shall carry the following notice on tags, boxes or other containers:

WARNING
Contains Zinc
Poisonous Fumes May be Formed on Heating Do not breathe fumes. Use only with adequate ventilation such as fume collectors, exhaust ventilators or air-supplied respirators. If chest pain, cough or fever develops after use, call physician immediately.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 232-1990, f. 9-28-90, cert. ef. 12-1-90

437-002-0290
Blowpipes/Torches

(1) Approved backflow or flashback preventers shall be installed between the blowpipe or torch and the hoses.

(2) Torches shall be ignited using only friction lighters, stationary pilot flames or other recognized sources of ignition. The use of matches and other hand held open flames is prohibited.

(3) When welding or cutting is stopped for an extended period of time, for example, during the lunch break, overnight or longer:

(a) The oxygen and fuel-gas cylinder or manifold valves shall be closed;

(b) Torch valves shall be opened momentarily to release all gas pressure from the hoses and then closed;

(c) The regulator pressure adjusting screws shall be released; and

(d) When the welding or cutting has stopped for a few minutes, the closure of torch valves only is allowed.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 232-1990, f. 9-28-90, cert. ef. 12-1-90

437-002-0291
Oxygen-Fuel Gas — General

(1) Acetylene gas shall not be allowed to contact unalloyed copper except in a blowpipe or torch.

(2) Oxygen is prohibited for use in pneumatic tools, in oil preheating burners, to start internal-combustion engines, to blow out pipelines, to "dust" clothing or work, to create pressure, or for ventilation.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 232-1990, f. 9-28-90, cert. ef. 12-1-90

437-002-0292
Oxygen-Fuel Gas — Operating Procedures

(1) After connecting welding or cutting apparatus to oxygen and fuel-gas cylinders, or when starting to reuse the apparatus after an interval of a half hour or more, each gas shall be allowed to flow through its respective hose separately for a few seconds to purge the hose of any mixture of gases.

(2) Operators shall follow the procedure outlined by the manufacturer of the apparatus as they deal with the sequence of operations in lighting, adjusting, and extinguishing blowpipe flames and connecting the apparatus to the sources of gas supply.

(3) Operators shall never put down a torch unless the oxygen and fuel-gas have been completely shut off at the torch.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 232-1990, f. 9-28-90, cert. ef. 12-1-90

437-002-0293
Cylinder Storage

(1) Unless connected to a manifold, oxygen from a cylinder shall not be used without first attaching an oxygen regulator to the cylinder valve.

(2) Before connecting the regulator to the cylinder valve, the valve shall be opened 1/4 of a turn and closed immediately.

(3) A suitable cylinder truck, chain or steadying device shall be used to keep cylinders from being knocked over while in use.

(4) Cylinders shall be securely lashed in place when necessary to prevent them from falling.

(5) Signs shall be conspicuously posted in such fuel-gas storage areas reading, "DANGER — No Smoking, Matches or Open Lights," or equivalent wording.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 232-1990, f. 9-28-90, cert. ef. 12-1-90

437-002-0294
Pressure-Reducing Regulators

(1) Pressure-adjusting screws on regulators shall always be fully released before the regulator is attached to a cylinder and the cylinder valve opened.

(2) Pressure-reducing regulators shall be kept in good repair. Cracked, broken or otherwise defective parts (including gauge glasses) shall be replaced.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 232-1990, f. 9-28-90, cert. ef. 12-1-90

437-002-0295
Hoses

Hoses shall be protected from damage by physical hazards, hot objects or kinking. Damaged hoses shall not be repaired with tape.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 232-1990, f. 9-28-90, cert. ef. 12-1-90

437-002-0296
Hose Connections

Connections for the oxygen hose shall be of sufficiently different dimension or pattern from that for fuel-gas to prevent intermixing in making connections, or hose connections shall be marked for identification to avoid interchange of fuel-gas and oxygen hoses.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 232-1990, f. 9-28-90, cert. ef. 12-1-90

NOTE: §1910.252(a)(3)(i) was not adopted by the Department. In Oregon 437-002-0297 applies:

437-002-0297
Welding or Cutting Containers

(1) No welding, torch or abrasive cutting, or other hot work shall be performed on drums, barrels, tanks or other containers until they have been cleaned so thoroughly as to make absolutely certain that there are no flammable materials present or any substances such as greases, tars, acids, surface coatings or other materials which when subjected to heat, might produce flammable or toxic vapors. Any pipe lines or connections to the drum or vessel shall be disconnected or blanked.

(2) In order to meet the "absolutely certain" test required in section (1) of this rule, appropriate testing equipment shall be used prior to and frequently during the welding, torch or abrasive cutting or other hot work operation to insure that the container is free and remains free of flammable or toxic vapors.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 232-1990, f. 9-28-90, cert. ef. 12-1-90

NOTE: §1910.252(c)(4)(iii) was not adopted by the Department. In Oregon OAR 437-002-0298 applies:

437-002-0298
Self-Contained Units

In areas immediately hazardous to life, self-contained breathing equipment shall be used. The breathing equipment shall be approved by the Mine Safety and Health Administration and the National Institute for Occupational Safety and Health.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 232-1990, f. 9-28-90, cert. ef. 12-1-90

Special Industries

437-002-0300
Adoption by Reference

In addition to and not in lieu of any other health and safety codes contained in OAR chapter 437, the Department adopts by reference the following federal rules as printed in the Code of Federal Regulations, 29 CFR 1910, revised as of 7/1/99, and any subsequent amendments published in the Federal Register as listed below:

(1) Reserved for 29 CFR 1910.261 Pulp, Paper, and Paperboard Mills.

(2) 29 CFR 1910.262 Textiles, published 6/27/74, Federal Register, vol. 39, p. 23502; amended 5/28/75, FR vol. 40, p. 23073; 2/10/84, FR vol. 49, p. 5324; 3/7/96, FR vol. 61, no. 46, p. 9241; 6/18/98, FR vol. 63, no. 117, p. 33467.

(3) 29 CFR 1910.263 Bakery Equipment, published 6/27/74, Federal Register, vol. 39, p. 23502; amended 10/24/78, FR vol. 43, p. 49765; 11/7/78, FR vol. 43, p. 51760; 3/7/96, FR vol. 61, no. 46, p. 9241.

(4) 29 CFR 1910.264 Laundry Machinery and Operations, published 6/27/74, Federal Register, vol. 39, p. 23502; amended 10/24/78, FR vol. 43, p. 49765; 11/7/78, FR vol. 43, p. 51760.

(5) 29 CFR 1910.265 Sawmills, published 6/27/74, Federal Register, vol. 39, p. 23502; amended 5/28/75, FR vol. 40, p. 23073; 10/24/78, FR vol. 43, p. 49751; 11/7/78, FR vol. 43, p. 51760; 4/12/88, FR vol. 53, p. 12123; 8/6/90, FR vol. 55, p. 32015; 3/7/96, FR vol. 61, no. 46, p. 9241; 6/18/98, FR vol. 63, no. 117, p. 33467; 9/13/05, FR vol. 70, no. 176, p. 53925.

(6) Reserved for 29 CFR 1910.266 Pulpwood Logging.

NOTE: In Oregon, Pulpwood Logging rules are Oregon-initiated rules provided in division 6, Forest Activities.

(7) Reserved for 29 CFR 1910.267 Agricultural Operations.

(8) 29 CFR 1910.268 Telecommunications, published 3/26/75, Federal Register, vol. 40, p. 13441; amended 10/24/78, FR vol. 43, p. 49751; 4/6/82, FR vol. 47, p. 14706; 9/28/87, FR vol. 52, p. 36387; 6/7/89, FR vol. 54, p. 24334; 3/7/96, FR vol. 61, no. 46, p. 9242; 6/18/98, FR vol. 63, no. 117, p. 33467.

(9) 29 CFR 1910.269 Electric power generation, transmission and distribution, published 1/31/94, Federal Register, vol. 59, no. 20, pp. 4435–4476; amended 6/30/94, FR vol. 59, no. 125, pp. 33658–33664; amended 4/6/01, OR-OSHA Admin. Order 5-2001.

(10) 29 CFR 1910.272 Grain Handling Facilities, and Appendices A, B and C, published 12/31/87, Federal Register, vol. 52, no. 251, p. 49625; amended 5/18/88, FR vol. 53, no. 96, p. 17695; 6/7/84, FR vol. 54, p. 24334; 6/20/90, FR vol. 55, no. 119, p. 25093; 3/8/96, FR vol. 61, p. 9577; 3/7/96, FR vol. 61, no. 46, p. 9242.

(11) 29 CFR 1910.274 Removed. Published 3/7/96, Federal Register, vol. 61, no. 46, p. 9242.

(12) 29 CFR 1910.275 Removed. Published 3/7/96, Federal Register, vol. 61, no. 46, p. 9242.

NOTE: These standards are available from the Oregon Occupational Safety and Health Division (OR-OSHA), Department of Consumer and Business Services; and the United States Government Printing Office.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 10-1988, f. & ef. 7-7-88; OSHA 23-1990, f. 9-28-90, ef. 12-1-90; OSHA 27-1990, f. 12-12-90, ef. 2-1-91; OSHA 14-1991, f. 10-10-91, cert. ef. 11-1-91; OSHA 7-1993, f. 6-8-93, cert. ef. 8-1-93; OSHA 11-1993, f. 8-4-93, cert. ef. 10-1-93; OSHA 3-1994, f. & cert. ef. 8-1-94; OSHA 6-1995, f. 4-18-95, cert. ef. 6-1-95; OSHA 3-1996, f. & cert. ef. 7-22-96; OSHA 4-1997, f. & cert. ef. 4-2-97; OSHA 3-1998, f. & cert. ef. 7-7-98; OSHA 2-1999, f. & cert. ef. 4-30-99; OSHA 3-1999, f. & cert. ef. 4-30-99; OSHA 5-2001, f. & cert. ef. 4-6-01; OSHA 4-2004, f. & cert. ef. 9-15-04; OSHA 4-2005, f. & cert. ef 12-14-05

Oregon Rules for Tree and Shrub Services

437-002-0301
Scope and Application

(1) These rules set minimum safety requirements for tree and shrub trimming, pruning, bracing, removal, and surgery. These rules shall apply to all tree and shrub services.

(2) These rules do not apply to agricultural crops or crop services, or to tree trimming operations within 10 feet of any high voltage (600v) power lines or equipment. Tree trimming operations around power lines are covered under 1910.269 in Division 2/R.

(3) If a specific type of equipment, process or practice is not limited to the tree and shrub service industry, the provisions contained in other divisions of OAR 437, Oregon Occupational Safety and Health Code, shall apply.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 27-1990, f. 12-12-90, cert. ef. 2-1-91; OSHA 3-1994, f. & cert. ef. 8-1-94; OSHA 1-1996, f. & cert. ef. 2-16-96

437-002-0302
Definitions

"Qualified Tree Worker" — A worker who through related training and on-the-job experience is familiar with the techniques and hazards of tree pruning, trimming, repairing, or removal, and the equipment used in such operations.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 27-1990, f. 12-12-90, cert. ef. 2-1-91; OSHA 1-1996, f. & cert. ef. 2-16-96

437-002-0303
Training and Work Planning

Employers shall instruct their employees in the proper use of all equipment provided for them and shall require that safe working practices be observed. A job safety briefing with all crew members shall be held and all work procedures and assignments shall be worked out carefully before any tree job is begun.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 27-1990, f. 12-12-90, cert. ef. 2-1-91; OSHA 1-1996, f. & cert. ef. 2-16-96

437-002-0304
First Aid Requirements

(1) First aid care and supplies shall be provided as required by OAR 437-002-0161, in Division 2/K, Medical Services and First Aid;

(2) Personnel shall be able to render cardio-pulmonary resuscitation (CPR); and

(3) Be trained in tree top rescue.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 27-1990, f. 12-12-90, cert. ef. 2-1-91

437-002-0305
Traffic Control

Effective means for control of pedestrian and vehicular traffic shall be instituted on every jobsite on or adjacent to a highway, street or railway. Traffic controls shall conform to the American National Standards Institute (ANSI) D6.1e-1989, Manual on Uniform Traffic Control Devices for Streets and Highways.

[Publications: Publications referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 27-1990, f. 12-12-90, cert. ef. 2-1-91

437-002-0306
Electrical Hazards

(1) General:

(a) The employer shall ensure that a close inspection is made by the employee and by the foreman or supervisor in charge before climbing, entering or working around any tree, to determine whether an electrical power conductor passes through the tree, or passes within reaching distance of an employee working in the tree. If any of these conditions exist either directly or indirectly, an electrical hazard shall be considered to exist unless the system operator/owner has caused the hazard to be removed by deenergizing the lines, or installing protective equipment;

(2) Unqualified persons. When an unqualified person is working near overhead lines, the location shall be such that the person and the longest conductive object he or she may contact cannot come closer to any unguarded, energized overhead line than the following distances:

(a) For voltages to ground 50kV or below — 10 ft. (305 cm);

(b) For voltages to ground over 50kV — 10 ft. (305 cm) plus 4 in. (10 cm) for every 10kV over 50kV.

(3) Electrical Safety-Related Work Practices. The employer shall assure that 29 CFR 1910.331 through 1910.335, Electrical Safety-Related Work Practices, in Division 2/S, are complied with for all electrical hazards, EXCEPT as provided for in 29 CFR 1910.331(c).

(4) Notification to Power Company. The power company shall be notified when working within ten (10) feet of a power line or when a tree may fall within ten (10) feet of a power line.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 27-1990, f. 12-12-90, cert. ef. 2-1-91; OSHA 1-1996, f. & cert. ef. 2-16-96

437-002-0307
Personal Protective Equipment

(1) Personal protective equipment shall be provided and used as required by OAR 437, division 2/I, Personal Protective Equipment.

(2) Safety belts or tree-trimming saddle belts shall conform to ANSI A10.14-1975, Requirements for Safety Belts, Harnesses, Lanyards, Lifelines, and Drop Lines for Construction and Industrial Use. Safety belts, tree trimming saddles, or a saddle formed by a double bowline shall be worn to protect workers when working aloft.

(3) Saddle belts or safety belts used for climbing operations shall have forged support rings. Snaps used in climbing ropes or in safety straps, for attachment to the forged support ring, shall be of a self-closing safety type. Forged support rings shall be designed so that the snaps will not become disengaged (roll off) accidentally.

(4) Saddle belts or safety belts shall not be spliced or weakened by punching extra holes in them.

(5) All employees using chain saws shall wear flexible ballistic nylon pads or other equivalent protection sewn or otherwise fastened to the trousers, which will protect the legs from the thigh to below the knee.

(6) Eye or face protection shall be provided and used where chips, sawdust or flying particles present a hazard.

(7) When operating chain saws or other noisy equipment, employees must wear hearing protection that complies with Subdivision 2/G, Occupational Noise Exposure.

(a) The employer must provide hearing protection at no cost to employees and must allow them to choose from a variety of suitable devices.

(b) The employer must train the employees in the proper use and care of the hearing protection.

(c) The employer must assure that the workers use the hearing protection properly and that it fits correctly.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 27-1990, f. 12-12-90, cert. ef. 2-1-91; OSHA 1-1996, f. & cert. ef. 2-16-96; OSHA 12-2001, f. & cert. ef. 10-26-01

437-002-0308
Portable Power Tools

(1) Electric tools. All portable electric hand tools shall:

(a) Be equipped with three-wire cord having the ground wire permanently connected to the tool frame and means for grounding the other end; or

(b) Be of the double insulated type and permanently labeled as "Double Insulated";

(c) Extension cords shall be maintained in safe condition. Exposed metal sockets shall not be used;

(d) Tool operators shall:

(A) Use electric hand tools in accordance with the manufacturer's instructions;

(B) Prevent cords from becoming entangled, damaged, or cut by blades and bits;

(C) Avoid laying extension cord in water;

(D) Support an electrical tool and its power supply cord by a line, independent of the worker when the tool is used aloft.

(2) Gasoline-Driven Power Saws:

(a) Power saws shall not be used when employees are supported by a single climbing belt or rope;

(b) When working aloft using power saws, employees shall be supported by their climbing belt or rope and by a safety line to a crotch in the tree higher than the climber's waistline. The safety line shall be secured to a separate point on the climber's body belt and kept snug at all times;

(c) The manufacturer's operating and safety instructions shall be followed unless modified by this rule;

(d) Power saws weighing more than 15 pounds (service weight) used in trees shall be supported by a separate line, except when used from an aerial-lift device;

(e) Where there are no lateral branches on which to crotch a separate line for power saws weighing over 15 pounds, a false crotch shall be used. A false crotch is one that can hold power-saw lines without slipping or coming untied;

(f) The operator shall have secure footing when starting the saw. Power saws weighing less than 15 pounds (service weight) may be drop started. Drop starting of saws over 15 pounds is permitted outside of the basket of an aerial lift only after ensuring that the area below the aerial lift is clear of personnel;

(g) The engine shall be started and operated only when all other workers are clear of the saw;

(h) The engine shall be stopped when power saws are being carried. The saw need not be stopped between cuts during consecutive felling, bucking, or limbing or cutting operations on reasonably level ground. The chain shall not be turning and the operator's hand shall be off the throttle lever while moving between work locations. Single person saws shall be carried by the worker on his/her side with the guide bar of the saw pointed to the rear;

(i) The engine shall be stopped for all cleaning, refueling, adjustments, and repairs to the motor;

(j) The saw muffler shall be maintained in good condition;

(k) The saw shall be clean of sawdust and flammable material;

(l) Power chain saws shall be equipped with an automatic throttle control which will return the engine to idling speed upon release of the throttle. "Idling" is when the chain is not moving while the engine is running;

(m) Power saws shall meet all applicable requirements of ANSI B175.1-1985, Safety Requirements for Gasoline-Powered Chain Saws.

(3) Backpack power units:

(a) The manufacturer's operating safety instructions shall be followed unless modified by these rules;

(b) No one except the operator shall be within ten feet of the cutting head of a brush saw;

(c) The power unit shall be equipped with a quick shutoff switch readily accessible to the operator;

(d) The operator shall observe the position of all personnel while the unit is running;

(e) The engine shall be stopped for all cleaning, refueling, adjustments, and repair to the saw or motor where practical, except where manufacturer's procedures require otherwise.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 27-1990, f. 12-12-90, cert. ef. 2-1-91

437-002-0309
Hand Tools

(1) General:

(a) The correct tool shall be selected for the job;

(b) Tools that have been made unsafe by damager or defect shall not be used;

(c) When climbing a tree, workers shall not carry tools in their hands other than tools that are used to assist them in climbing;

(d) Workers shall maintain a safe working distance from other workers when using hand tools;

(e) Tools shall be properly stored or placed in plain sight out of the immediate work area when not in use;

(f) Workers shall not throw or drop tools from trees unless warning has been given and the ground area is clear, and the act of dropping will not endanger personnel.

(2) Pruners and hand saws:

(a) Pole pruners, pole saws, and other similar tools shall be equipped with wood or nonmetallic poles. Actuating cord shall be of nonconducting material;

(b) When inserting a blade in a bow-saw frame, workers shall keep their hands and fingers in the clear when the tension lever snaps into or against the saw frame. When removing a bow-saw blade from the frame, the operator shall stay clear of the blade.

(3) Chopping tools — Axes, brush hooks, machetes, and others:

(a) Chopping tools that have loose or cracked heads or splintered handles shall not be used;

(b) Chopping tools shall never be used while working aloft;

(c) Chopping tools shall be swung away from the feet, legs, and body, using the minimum power practical for control;

(d) Chopping tools shall not be driven as wedges or used to drive metal wedges.

(4) Injector tools for applying herbicides:

(a) The bit of injector tools shall be covered with a shield when not in use;

(b) Injectors shall be laid flat on the ground when not in use;

(c) The injector shall not be carried on the shoulders but shall be carried by the loop handle on the downhill side, with the bit properly shielded and facing to the rear.

(5) Grub hoes, mattocks and picks:

(a) The blade eye shall be tight-fitting and wedged so that it cannot slide down the handle;

(b) When swinging grub hoes, mattocks, and picks, the worker shall have a secure grip and firm footing.

(6) Cant hooks, cant dogs, longs, and carrying bars:

(a) Hooks shall be firmly set before applying pressure;

(b) Tools with cracked, splintered, or weakened handles shall not be used;

(c) Workers shall be warned and shall be in the clear before logs are moved;

(d) The points of hooks shall be at least two inches long and kept sharp;

(e) Workers shall stand to the rear and uphill when rolling logs.

(7) Wedges, chisels, and gouges:

(a) Wedges, chisels, and gouges shall be inspected for cracks and flaws before use;

(b) Wedges and chisels shall be properly pointed and tempered. Tools with mushroomed heads shall not be used;

(c) Only wood, plastic, or soft-metal wedges shall be used with power saws;

(d) Wood-handled chisels shall be protected with a ferrule on the striking end.

(8) Hammers, mauls, and sledges. Wood, rubber or high-impact plastic mauls, sledges, or hammers shall be used when striking wood-handled chisels or gouges.

(9) Ropes:

(a) Climbing ropes shall be used when working aloft in trees. Climbing ropes shall have a minimum diameter or 1/2-inch and be a three- or four-strand first-grade manila with a nominal breaking strength of 2,385 pounds or its equivalent in strength and durability. Synthetic rope shall have a maximum elasticity of not more than seven percent;

(b) Rope made unsafe by damage or defect, or for any other reason, shall not be used;

(c) Rope shall be stored away from all cutting edges and sharp tools. Corrosive chemicals, gas, and oil shall be kept away from rope;

(d) Climbing ropes and safety lines shall not be used to lower limbs or other parts of trees or to raise or lower equipment;

(e) When stored, rope shall be coiled and piled, or suspended, so that air can circulate through the coils;

(f) Rope ends shall be secured to prevent unraveling;

(g) Climbing and safety rope shall not be spliced to effect repair;

(h) Safety snaps shall be rotated from one end of the rope to the other, as needed, and the worn end cut off;

(i) A handline shall be used for raising or lowering tools and limbs.

(10) Tackle blocks and pulleys. Tackle blocks and pulleys shall be inspected immediately before use and shall be condemned if defective, in accordance with procedures given in ANSI/ASME B30.9-1984, B30.9a-1985, and B30.9b-1987, Safety Standard for Slings.

(11) Ladders:

(a) When using portable ladders to climb trees, the ladder shall be tied to the tree or supported by another worker. When working from a ladder during cutting operations, the ladder shall be securely tied or braced, and the worker tied in as required by OAR 437-002-0310(1)(a);

(b) Ladders, platforms, and aerial devices, including insulated aerial devices, shall not be placed in a position where they could contact an electrical conductor. Reliance shall not be placed on their dielectric capabilities;

(c) Ladders made of metal or other conductive material shall not be used where an electrical hazard exists. Only approved wood ladders constructed in accordance with ANSI A14.1-1982, Safety Requirements for Portable Wood Ladders, or nonconductive ladders made of synthetic material equal to or exceeding the strength of approved wood ladders, shall be used;

(d) Metal ladders used where no electrical hazard exists shall conform to ANSI A14.2-1982, Safety Requirements for Portable Metal Ladders;

(e) All ladders shall be inspected daily before use. Unsafe ladders shall not be used;

(f) The attaching of cleats, metal points, and safety feet; lashing; or other effective means of securing the ladder shall be used if there is danger of its slipping;

(g) Ladders shall be supported while in storage so they will not sag. Except when on mobile equipment, ladders shall be stored under suitable cover, protected from the weather, and kept in a dry location away from excessive heat;

(h) Ladders shall not be used as bridges or inclined planes to load or handle logs or other material.

(12) Climbing spurs. Climbing spurs shall be of the tree-climbing type and have gaffs suitable for the tree being climbed.

[Publications: Publications referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(3)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 27-1990, f. 12-12-90, cert. ef. 2-1-91; OSHA 1-1996, f. & cert. ef. 2-16-96

437-002-0310
Work Procedures

(1) Climbing.

(a) A tree worker shall be tied in with an approved type of climbing rope and safety saddle when working 10 feet above the ground. The climbing rope shall always be used even when working from a ladder or scaffold and the employee is 10 feet or more above the adjacent ground line. A safety strap or rope with snaps may be used for additional protection.

(b) Limbs shall be inspected, while climbing, before applying weight. The climber shall not trust the capability of a dead branch to support his/her weight. Dead branches shall be broken off on the way up, if possible. Hands and feet shall be placed on separate limbs, if possible.

(c) The climbing rope shall be passed around the trunk of the tree as high as possible using branches with a wide crotch to prevent any binding of the safety rope. The crotch selected for tying in shall be over the work area as much as possible, but located in such a way that a slip or fall would swing the worker away from any electrical conductor. The rope shall also be passed around the main leader or an upright branch, using the limb as a stop. Feet, hands, and ropes shall be kept out of tight V-shaped crotches.

(d) The location of all electrical conductors shall be noted in relation to work procedures. The worker shall climb on the side of the tree that is away from electrical conductors, if possible.

(e) A figure-eight knot shall be tied in the end of the rope, particularly in the case of high trees. This will prevent pulling the rope accidentally through the taut line-hitch and possible serious injury from a fall.

(f) The climbing line shall be crotched as soon as practical after the worker is aloft, and a taut line-hitch tied and checked.

(g) The worker shall be completely secured with the climbing line before starting operations.

(h) The worker shall remain tied in until the work is completed and the worker has returned to the ground. If it is necessary to recrotch the rope in the tree, the worker shall retie the rope or use the safety strap before releasing the previous tie.

(2) Pruning and Trimming.

(a) Pole pruners and pole saws shall be hung securely in a vertical position to prevent dislodging. Pole pruners or pole saws shall not be hung on utility wires or cables, or left in the tree overnight. Pole saws shall be hung so that the sharp edge is away from the worker.

(b) A scabbard or sheath shall be hooked to the belt or safety saddle to carry the handsaw when not in use.

(c) Warnings, when necessary, shall be given by the worker in the tree before a limb is dropped.

(d) A separate line shall be attached to limbs which cannot be dropped or are too heavy to be controlled by hand. The line shall be held by workers on the ground end of the rope. Use of the same crotch for both safety rope and work rope shall be avoided.

(e) Cut branches shall not be left in trees overnight.

(f) A climbing rope shall never be left in a tree overnight. A service line shall be put up for overnight or longer.

(g) The climber shall inspect the rope for cuts or abrasions before starting work. If any cuts or serious abrasions are found, the rope shall be discarded, used for some other purpose, or the defective section cut off.

(h) During all tree working operations aloft, there shall be a second worker in the vicinity. This shall not apply to utility workers engaged in tree trimming incidental to their normal occupation, or to one-man service crews.

(3) Cabling.

(a) In cabling operations, branches which are to be cabled shall be brought together to the proper distanced by means of a block and tackle, a hand winch, a rope, or a rope with a come-along.

(b) Not more than two persons shall be in the tree working at opposite ends during cabling installation.

(c) When releasing the block and tackle, workers in trees shall be off to one side in case the lag hooks pull out under strain.

(d) Ground workers shall not stand under the tree when cable is being installed.

(e) Tools used for cabling, bark tracing, cavity work, etc., shall be carried in a bag or belt designed to hold tools, not put in the pocket or stuck in the top of a boot.

(4) Topping.

(a) Workers doing topping shall make sure the trees are able to stand the strain of a topping procedure. If not, some other means of lowering the branches shall be provided, such as a tree crane.

(b) If large limbs are lowered in sections, the worker in the tree shall be above the limb being lowered.

(c) Guidelines, handlines, or tag lines shall be used when conditions warrant their use.

(5) Felling.

(a) Before beginning any felling operation, a safety plan shall be developed which shall consider:

(A) The tree and the surrounding area for anything that may create a hazard when the tree falls;

(B) The shape of the tree;

(C) The lean of the tree;

(D) Wind force and direction;

(E) Decayed or other weak spots; and

(F) The location of other persons or structures.

(b) The work area shall be cleared to permit safe working conditions, and an escape route shall be planned before any cutting is started.

(c) Each tree worker shall be instructed as to exactly what is to be done during the felling operation. All workers not directly involved shall be at least two tree lengths away from the tree being felled.

(d) A notch and backcut shall be used in felling trees over 5 inches diameter breast high. No tree shall be felled by "ripping" or "slicing" cuts.

(e) The depth or penetration of the notch shall be approximately one-third the diameter of the tree.

(f) The opening or height of the notch shall be approximately 2-1/2 inches for each foot in diameter of the tree.

(g) The backcut shall be made higher than the point or apex of the notch to prevent kickback.

(h) Just before the tree is ready to fall, an audible warning shall be given to those in the area.

(i) If there is danger that the tree being felled may fall the wrong way or damage property; wedges, block and tackle, rope, or wire cable (except where an electrical hazard exists) shall be used. All limbs shall be removed from trees to a height and width sufficient to allow the tree to fall clear of any wires and other objects in the vicinity.

(j) Special precautions in roping rotten or split trees shall be taken to prevent the tree from falling in an unexpected direction even though the cut is made on the proper side.

(k) The faller shall retreat to a safe location when a tree is committed to fall.

(6) Chipper equipment and operation.

(a) Enclose chipper rotating components in a housing capable of retaining broken chipper knives or foreign material.

(b) Chipper feed chutes and side members must be designed to prevent operator contact with rotating blades during normal operation.

(c) Chippers without a mechanical infeed system must have:

(A) An infeed hopper that measures at least 85 inches from the blades or knives to ground level at the centerline of the hopper.

(B) A flexible antikickback device in the feed hopper. This device must protect the operator and other persons in the area from flying chips and debris.

(C) A shut-off switch within convenient reach of the worker feeding the chipper.

(d) Chippers with a mechanical infeed system must have a quick stop reversing device on the infeed. The quick stop reversing device control lever must be across the top and along each side of the hopper, as close to the feed end of the hopper as practicable within easy reach of the operator.

(e) Employees in the immediate area of an operating chipper must wear personal protective equipment as required by Subdivision I of this Division.

(f) Workers feeding chippers must not wear loose clothing, gauntlet-type gloves, rings or watches.

(g) Prevent accidental restart of equipment shut down for adjustment or repair as required by Division 2/J, 1910.147, Lockout/Tagout.

(h) Guard exposed adjacent blades when replacing chipper blades.

(i) Close and secure all access panels before operating the chipper.

(j) The chipper operator must have a coworker in the immediate vicinity when feeding chipper.

(k) Do not feed foreign objects into chipper.

(l) Feed chippers from the side of the centerline. The operator must immediately turn away from the feed table as brush is drawn into the rotor. Feed chippers from curbside whenever practical.

(m) Feed and discharge chutes must be in place to prevent contact with rotating blades during chipper operation.

(n) Chipper operators must be familiar with the manufacturer's operating instructions, maintenance and safe work practices.

(o) When trailer chippers are detached from trucks they must be chocked or otherwise secured.

(p) Before towing chipper, cross safety chains under the tongue of the chipper and attach them to the towing vehicle.

(7) Limbing and bucking.

(a) The tree worker shall work on the side opposite the side on which the limb is being cut.

(b) The tree worker shall stand on the uphill side of the work.

(c) Branches bent under tension shall be considered hazardous.

(d) The tree worker shall block the log to prevent rolling, when necessary.

(e) When bucking up trunks of trees, wedges shall be used as necessary to prevent binding of the guide bar or chain.

(8) Storm work and emergency conditions.

(a) Since storm work and emergency conditions create special hazards, only authorized representatives of the electric utility system operator/owner may perform tree work in these situations where energized electrical power conductors are involved.

(b) When an emergency condition develops due to tree operations, work shall be suspended and the system operator/owner shall be notified immediately.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 27-1990, f. 12-12-90, cert. ef. 2-1-91; OSHA 5-2001, f. & cert. ef. 4-6-01

437-002-0311
Mobile Equipment

(1) All vehicles shall comply with OAR 437-002-0223 in division 2/N, Material Handling and Storage.

(2) All aerial lifts shall comply with Division 2/F, 1910.67, Vehicle-Mounted Elevating and Rotating Work Platforms.

(3) When an aerial lift device contacts an electrical conductor, the truck supporting the aerial lift device shall be considered as energized.

(4) Sprayers and related equipment:

(a) Working and walking surfaces of all sprayers and related equipment shall be covered with slip-resistant material;

(b) Equipment on which workers stand and spray while the vehicle is in motion shall be equipped with guardrailing around the working area. The guardrailings shall be constructed in accordance with OAR 437-002-1910.23(e), Railing, Toeboards, and Cover Specifications in Division 2/D.

(5) Stump cutters:

(a) Stump cutters shall be equipped with enclosures or guards that effectively protect the operator;

(b) The operator and workers in the immediate area shall wear eye protection.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 27-1990, f. 12-12-90, cert. ef. 2-1-91

437-002-0312
Oregon Rules for Pulp, Paper and Paperboard Mills

(1) General Requirements.

(a) Application. This section applies to establishments where pulp, paper, and paperboard are manufactured or converted. This section does not apply to logging and the transportation of logs to pulp, paper, and paperboard mills.

(b) Standards incorporated by reference. Standards covering issues of occupational safety and health which have general application without regard to any specific industry are incorporated by reference in sections (2) through (14) of this rule and in subsections (c) and (d) of this rule and made applicable under this rule. Such standards shall be construed according to the rules set forth in §1910.5, Applicability of Standards, in Subdivision A.

(c) General incorporation of standards. Establishments subject to this section shall comply with the following standards of the American National Standards Institute:

(A) Safety Requirements for Floor and Wall Openings, Railings, and Toeboards, A10.18-1983.

(B) Scheme for the Identification of Piping Systems, A13.1-1981 (R1993).

(C) Safety Code for Portable Wood Ladders, A14.1-1990.

(D) Safety Code for Portable Metal Ladders, A14.2-1990.

(E) Safety Code for Fixed Ladders, A14.3-1990.

(F) Safety Code for Cranes, Derricks, and Hoists, B30.2-1990.

(G) Overhead and Gantry Cranes, B30.17-1992.

(H) Crawler, Locomotive, and Truck Cranes, B30.8-1993.

(I) Safety Code for Woodworking Machinery, ANSI O1.1-1992.

(J) Method of Measurement of Real-Ear Protection of Hearing Protectors — Physical Attenuation of Ear Muffs, ANSI S3.19-1974 (R1990).

(K) Practice for Occupational and Educational Eye and Face Protection, ANSI Z87.1-1989.

(L) Requirements for Sanitation in Places of Employment, ANSI Z4.1-1986.

(M) Fundamentals Governing the Design and Operation of Local Exhaust Systems, Z9.2-1979 (R 1991).

(N) Practices for Respiratory Protection, ANSI Z88.2-1992.

(O) Safety Requirements for Industrial Head Protection, ANSI Z89.1-1986.

(P) Safety Color Code, ANSI Z535.1-1991.

(Q) Practice for the Inspection of Elevators (Inspector's Manual), ANSI/ASME A17.2-1988.

(R) Safety Code for Elevators, Dumbwaiters, and Moving Walks, ANSI/ASME A17.1-1990.

(S) Safety Code for Mechanical Power-Transmission Apparatus, ANSI/ASME B15.1-1992.

(T) Safety Code for Conveyors, Cableways, and Related Equipment, ANSI/ASME B20.1-1993.

(U) Power Piping, ANSI/ASME B31.1-1992.

(V) Safety Code for Powered Industrial Trucks, ANSI/ASME B56.1.

(W) Practice for Industrial Lighting, ANSI/IES RP-990.

(X) Installation of Blower and Exhaust Systems for Dust, Stock, and Vapor Removal or Conveying, ANSI/NFPA 91-1992.

(Y) Fire Department Self-Contained Breathing Apparatus Program, ANSI/NFPA 1404-1989.

(Z) Safety Code for Ventilation and Operation of Open-Surface Tanks, ANSI/UL 641-1985.

(d) Other standards. The following standards shall be considered standards under this section:

(A) ASME Boiler and Pressure Vessel Code, Section VIII, Unfired Pressure Vessels 1992, including addenda.

(B) Building Exits Code for Life Safety from Fire, NFPA 101-1991.

(C) NFPA Code for Prevention of Sulfur Fires and Explosions, NFPA 655-1993.

(D) Safety in the Transportation, Storage, Handling and Use of Explosives, IME Pamphlet No. 17, March 1987, Institute of Makers of Explosives.

(2) Employee Training.

(a) Employees shall not be permitted to operate any machine or equipment until they have received proper training and are familiar with safe operating procedures.

(b) Employees shall be trained in proper lifting or moving techniques and methods. Mechanical devices should be used or employees should ask for assistance in lifting or moving heavy objects.

(c) In each area where hazardous substances may be encountered, personnel shall be trained to cope with emergencies arising from breaks, ruptures, or spills which would create a hazardous condition.

(d) Any faulty equipment or hazardous condition shall be promptly reported to the person in charge.

(e) When an employee is assigned to work alone in a remote or isolated area, a system shall be instituted whereby such employee reports to someone or a designated person shall check on his or her safety. The procedure shall designate the method of contact and the frequency. All persons will be trained on the procedures.

(3) Safe Practices.

(a) Guards. All driving mechanisms, power transmission apparatus, and prime movers shall be constructed, guarded, and used in conformity with Subdivision O, Machinery and Machine Guarding.

(b) Inspection of controls and safety devices. Brakes, back stops, antirunaway devices, overload releases, and other safety devices shall be inspected and tested frequently to insure that all are operative and maintained in good repair.

(c) Personal protective clothing and equipment. Personal protective clothing and equipment shall be provided and worn in accordance with Subdivision I, Personal Protective Equipment. Respiratory protection must conform to the requirements of §1910.134 of Subdivision I.

(d) Floors and platforms. Floors, platforms, and work surfaces shall be guarded and maintained in accordance with §1910.23, in Subdivision D, Walking-Working Surfaces.

(e) Lockouts. Lockout/tagout shall be in accordance with the requirements of §1910.147, in Subdivision J, with the exception that:

(A) There will be no tagouts allowed in lieu of lockout for that which can be locked out. Tags are provided for identification and information purposes only.

(B) Persons engaged in repair, inspection, maintenance, or clean-up shall lockout the affected equipment, retain possession of the keys to the locks, and personally remove the lock and tag upon completion of the work.

(C) Group lockout. (See Appendices A and B.)

(i) When servicing and/or maintenance is performed by a crew, craft, department or other group, they shall utilize a procedure which affords the employees a level of protection equivalent to that provided by the implementation of a personal lockout device.

(ii) Group lockout devices shall be used in accordance with the procedures required by §1910.147(c)(4) including, but not necessarily limited to, the following specific requirements.

(I) Primary responsibility is vested in an authorized employee for a set number of employees working under the protection of a group lockout device (such as an operations lock);

(II) Provision for the authorized employee to ascertain the exposure status of individual group members with regard to the lockout of the machine or equipment; and

(III) When more than one crew, craft, department, etc. is involved, assignment or overall job-associated lockout control responsibility to an authorized employee designated to coordinate affected work forces and ensure continuity of protection; and

(IV) Each authorized employee shall affix a personal lockout device to the group lockout device, group lockbox, or comparable mechanism when he or she begins work, and shall remove those devices when he or she stops working on the machine or equipment being serviced or maintained; and

(V) Any person involved in the lockout process shall have the right to place their own lock at each lockout location where group lockout procedures have been allowed.

(f) Confined space entry. Confined space entry shall be in accordance with §1910.146, Permit-Required Confined Spaces, in Subdivision J.

(g) Industrial power trucks.

(A) All industrial power trucks and operations shall conform to §1910.178, Powered Industrial Trucks, Subdivision N, Material Handling and Storage. All forklift trucks shall be provided with overhead guards. Design requirements shall provide protection for the liquid petroleum gas tank. All guards shall be designed in compliance with §1910.178, Powered Industrial Trucks, in Subdivision N.

(B) Mirrors or other methods to ensure visibility shall be installed at blind corners or intersections which will allow operators to observe oncoming traffic.

(C) Every power truck operated from an end platform or standing position shall be equipped with a platform extending beyond the operator's position, strong enough to withstand a compression load equal to the weight of the loaded vehicle applied along the longitudinal axis of the truck with the outermost projection of the platform against the flat vertical surface.

(D) Pushing of vehicles or rail cars with the forks or clamps of a lift truck is prohibited.

(h) Emergency lighting.

(A) Emergency lighting shall be provided wherever it is necessary for employees to remain at their machines or stations to shut down equipment in case of power failure. Emergency lighting shall be provided at stairways and passageways or aisleways used by employees for emergency exit in case of power failure. Emergency lighting shall be provided in all plant first aid and medical facilities.

(B) Emergency lighting shall be maintained in accordance with the manufacturer or engineering specifications, and shall be checked at least every 30 days for defects.

(i) Electrical equipment. All electrical installations and electrical utilization equipment shall comply with the National Electrical Code requirements and the provisions of Subdivision S, Electrical.

(4) Handling and Storage of Pulpwood and Pulp Chips.

(a) Handling pulpwood with forklift trucks. Where large forklift trucks, or lift trucks with clam-jaws, are used in the yard, the operator's enclosed cab shall be provided with an escape hatch, whenever the hydraulic arm blocks escape through the side doors.

(b) Handling pulpwood with cranes or stackers.

(A) Where locomotive cranes are used for loading or unloading pulpwood, the pulpwood shall be piled so as to allow a clearance of not less than 24 inches between the pile and the end of the cab of any locomotive crane in use, when the cab is turned in any working position.

(B) The minimum distance of the pulpwood pile from the centerline of a standard-gage track shall be maintained at not less than 8-1/2 feet.

(C) Logs shall be piled in an orderly and stable manner, with no projection into walkways or roadways.

(D) Rail cars shall not be spotted on tracks adjacent to the locomotive cranes unless a 24-inch clearance is maintained, as required in section (4)(b)(A) of this rule.

(E) The handling and storage of other materials shall conform to sections (4)(b)(A) and (B) of this rule with respect to clearance.

(F) Equipment and practices shall conform to American National Standards B30.2-1990 and B30.2.0-1967.

(G) Personal protective equipment for such uses as foot, head, and eye protection shall be required for workers on a job basis.

(H) No person shall be permitted to walk beneath a suspended load, bucket, or hook.

(c) Pulpwood storage and handling.

(A) Unauthorized vehicles and unauthorized foot traffic shall not be allowed in any active sorting, storing, loading, or unloading areas.

(B) Unloading lines shall be so arranged that it is not necessary for the workers to attach them on the pond or dump side of the load.

(C) Jackets or vests of fluorescent or other high visibility material shall be worn by persons working on dry land log storage.

(D) Wire rope doglines used for towing or rafting shall not be used when:

(i) They acquire jaggers to the extent that they present a hazard to the workers handling them; or

(ii) When they are weakened to the extent that they are hazardous.

(E) Boom sticks shall be capable of safely supporting the weight imposed upon them.

(F) Stiff booms shall be made by fastening not less than two boom sticks together. The width of the stiff boom shall be not less than 36 inches measured from outside to outside of the outer logs. The boom sticks shall be fastened together with not less than 4-inch by 6-inch cross ties or cable lashing properly recessed into notches in the boom sticks and secured.

(G) Pike poles shall be kept in good repair. Conductive pike poles shall not be used where it is possible that they may come in contact with electrical conductors.

(H) All log dumps shall be periodically cleared of bark and other debris.

(I) When cutting bands on bundled logs, workers shall position themselves in a safe location. Double-bitted axes shall not be used for cutting bands. Caution shall be used to prevent being struck by ends of bands being cut and, if needed, personal protective equipment shall be worn.

(J) Storing or sorting on water, or any boom work other than boom boat operations, shall require a minimum of two persons.

(d) Handling pulpwood from ships.

(A) Ladders and gangplanks with railings to boat docks shall meet the requirements of American National Standards A10.18-1983, A14.1-1990, A14.2-1990, and A14.3-1990, and shall be securely fastened in place.

(B) The hatch tender shall be required to signal the hoisting engineer to move the load only after the employees working in the hold are in the clear.

(C) The air in the ship's hold, tanks, or closed vessels shall be tested for oxygen deficiency and for toxic, explosive and combustible gases and vapors.

(e) Handling pulpwood from flatcars and all other rail cars.

(A) Railroad flatcars for the conveyance of pulpwood loaded parallel to the length of the car shall be equipped with safety-stake pockets.

(B) Where pulpwood is loaded crosswise on a flatcar sufficient stakes of sizes not smaller than 4 by 4 inches shall be used to prevent the load from shifting.

(C) When it is necessary to cut stakes, those on the unloading side should be partially cut through first, and then the binder wires cut on the opposite side. Wire cutters equipped with long extension handles shall be used. No person shall be permitted along the dumping side of the car after the stakes have been cut.

(D) When steel straps without stakes are used, the steel straps shall be cut from a safe area to prevent employees from being struck by the falling logs.

(E) Flatcars and all other cars shall be chocked during unloading. Where equipment is not provided with hand brakes, rail clamping chocks shall be used.

(F) A derail shall be used to prevent movement of other rail equipment into cars where persons are working.

(f) Handling pulpwood from trucks.

(A) Cutting of stakes and binder wires shall be done in accordance with section (4)(e)(C) of this rule.

(B) Where binder chain and steel stakes are used, the binder chains shall be released and the stakes tripped from the opposite side of the load spillage.

(C) Where binder chains and crane slings are used, the crane slings shall be attached and taut before the binder chains are released. The hooker shall see that the helper is clear before signaling for the movement of the load.

(D) The truck driver shall leave the truck cab and be in the clear, in a designated area, and shall be in clear view of the unloading equipment operator while the unloader is approaching the loaded truck.

(E) The truck driver shall remain outside the cab and clear of the load while logs are being unloaded except that, after a complete load is lifted as a unit and held stationary, the driver may enter the cab and drive forward from under the suspended load.

(F) Log unloaders shall not be moved about the premises with loads raised higher than absolutely necessary.

(g) Handling pulp chips from rail cars.

(A) All cars shall be securely fastened in place and all employees in the clear before dumping is started.

(B) Personal protective equipment for such uses as foot, head, and eye protection shall be provided, and employees shall wear the equipment when working in the woodyard. Ear protection shall be provided when the noise level may be harmful.

(C) When a rollover-type unloading device is used for removing chips from cars, the cars shall be properly secured in place, and all employees shall be in the clear before dumping operation is started.

(h) Handling pulp chips and hog fuel from trucks and trailers.

(A) All trucks and trailers shall be secure and all employees in the clear before dumping is started.

(B) Personal protective equipment necessary to protect workers from hazards shall be provided and worn.

(C) Elevating platform-type or cable-lift type unloading devices shall have adequate back bumper stops.

(D) Side rails or other positive means to prevent the truck and/or trailer from falling shall be used while unloading the single trailer units.

(E) All persons shall be clear of all hoisting or elevating mechanisms before dumping commences.

(F) No person shall remain in any truck while the truck is being elevated.

(G) A safe area and suitable device shall be provided for the chip tester to use while taking chip samples.

(H) Rolled chip nets shall not be positioned where they cover the ladders on rail cars or trucks.

(I) Chip and hog fuel storage.

(i) When mobile equipment is used on top of hog fuel or chip piles, a roll-over protection system shall be installed on the equipment. If the cab is of the enclosed type, windshield wipers shall be installed.

(ii) Hog fuel bins shall be provided with standard railed platform or walkways near the top or other equally effective means shall be provided for use by employees engaged in dislodging hog fuel.

(iii) Extreme care shall be taken to prevent chips or hog fuel from creating an overhang or bridging.

(iv) Employees shall be prohibited from working under overhangs or bridges.

(J) Chip and sawdust bins. Steam or compressed-air lances, or other facilities, shall be used for breaking down the arches caused by jamming in chip lofts. No worker shall be permitted to enter a bin unless done in accordance with §1910.146, Permit-Required Confined Spaces, in subdivision J.

(i) Crane operations.

(A) Crane boom and load capacities as specified by the manufacturer shall be posted in the cab of the crane in accordance with §1910.180, Crawler, Locomotive and Truck Cranes, in subdivision N, Material Handling and Storage.

(B) A safety device such as a heavy chain or cable at least equal in strength to the lifting cables shall be fastened to the boom and to the frame of the boom crane (if it is other than locomotive) at the base. Alternatively, a telescoping safety device shall be fastened to the boom and to the cab frame, so as to prevent the boom from snapping back over the cab in the event of lifting cable breakage.

(C) A crane shall not be operated where any part thereof may come within 10 feet of overhead powerlines (or other overhead obstructions) unless the powerlines have been de-energerized, or clearances are maintained as specified in §1910.303, General Requirements, in subdivision S, Electrical.

(D) Standard signals for the operation of cranes shall be established for all movements of the crane, in accordance with American National Standards B30.2-1990 and B30.8-1988.

(E) Only one member of the crew shall be authorized to give signals to the crane operator.

(F) All cranes shall be equipped with a suitable warning device such as a horn or whistle.

(G) A sheave guard shall be provided beneath the head sheave of the boom.

(H) Grapples, tongs, and buckets shall not be left suspended when not in use.

(j) Traffic warning signs or signals.

(A) A flagger shall direct the movement of cranes or locomotives being moved across railroad tracks or roads, and at any points where the vision of the operator is restricted. The flagger must always remain in sight of the operator when the crane or locomotive is in motion. The blue flag policy shall be used to mark stationary cars day and night. This policy shall include marking the track in advance of the spotted cars (flag for daytime, light for darkness).

(B) After cars are spotted for loading or unloading, warning flags or signs shall be placed in the center of the track at least 50 feet away from the cars and a derail set to protect workers in or on the car.

(k) Rail car operations and railroad warning devices.

(A) On a dead end spur, a blue signal may be displayed adjacent to the switch opening while cars are being loaded or unloaded. When such warning devices are displayed, the equipment shall not be coupled to or moved.

(B) Equipment which would obscure the blue signal shall not be placed on the track.

(C) Each maintenance crew shall display and remove its own set of blue signals.

(D) A flashing warning light or other device shall be installed near any opening which leads to a passageway crossing railroad tracks adjacent to the building. Such light or device shall be activated prior to any switching or movement of railroad equipment to warn workers of the dangerous condition in the area.

(E) Workers shall not crawl under or pass between coupled rail cars to cross tracks.

(F) An audible whistle, horn, or bell shall be sounded by the locomotive engineer to give adequate warning prior to switching across any road crossing.

(G) When switching railroad equipment in congested areas or across roadways or walkways, "flying switches" shall be prohibited.

(H) All freight car doors shall be inspected before workers open or close them. A safe method shall be used to open or close the door.

(l) Illumination. Artificial illumination shall be provided when loading or unloading is performed after dark, in accordance with American National Standard ANSI/IES-RP-1990, Practice for Industrial Lighting.

(m) Bridge or dock plates.

(A) The construction and use of bridge or dock plates shall conform to requirements of §1910.30(a), Walking-Working Surfaces, in subdivision D.

(B) The sides of bridge or dock plates shall have an upturn or lip of at least 4 inches covering the area between the edge of the loading dock and edge of car or truck floor whenever the distance exceeds 18 inches to prevent wheeled equipment from running off the sides.

(C) Bridge or dock plates shall have at least 6 inches bearing surface on the loading dock.

(D) Bridge or dock plates intended to be moved by mechanized equipment shall be designed for this purpose or attachments for safe handling shall be used.

(n) Hand tools. Handles of wood hooks shall be locked to the shank to prevent them from rotating.

(o) Removal of pulpwood.

(A) The ends of a woodpile shall be properly sloped and crosstiered into the pile. Upright poles shall not be used at the ends of woodpiles. To knock down wood from the woodpile, mechanical equipment shall be used to permit employees to keep in the clear of loosened wood.

(B) If dynamite is used to loosen the pile, only authorized personnel shall be permitted to handle and discharge the explosive. An electric detonator is preferable for firing; if a fuse is used, it shall be an approved safety fuse with a burning rate of not less than 120 seconds per yard and a minimum length of 3 feet, in accordance with "Safety in the Transportation, Storage, Handling and Use of Explosives," IME Pamphlet No. 17, March 1987.

(p) Log hauls, slips and carriages.

(A) Controls shall be arranged to operate from a position where the operator will at all times be in the clear of logs, machinery, lines, and rigging.

(B) Controls shall be marked to indicate their function.

(C) An effective method of disengaging the head rig saws from the power unit shall be installed on all head rigs where the power unit is not directly controlled by the sawyer. The saws shall be disengaged from the source of power which shall be locked out before repairs or changes are made.

(D) When needed for protection of personnel, an automatic stop or interlocking device shall be installed on log hauls or slips.

(E) A barricade or other positive stop of adequate strength shall be provided to protect the sawyer from rolling logs.

(F) A guard shall be provided to prevent logs from rolling off the log deck into the well.

(G) The sawyer shall be safeguarded either by his or her location or by use of substantial screens or approved safety glass.

(H) A substantial stop or bumper shall be installed at each end of the carriage run.

(I) Canting gear or other equipment shall not be allowed to hang over the log deck in such a manner as to endanger employees.

(J) Canting gear controls shall be marked to indicate their function.

(K) The sawyer shall be primarily responsible for the safety of the carriage crew and offbearers. He or she shall exercise due care in the operation of the carriage and log turning devices.

(L) A control device shall be provided so that the sawyer may stop the head rig section of the mill without leaving his or her stand.

(M) The feed control lever of friction or belt-driven carriage feed works shall be designed to operate away from the saws or carriage track.

(N) Feed works and log turning control levers shall be so arranged that they may be secured when not in use and shall be adequately guarded against accidental activation.

(O) Carriages upon which persons are required to work shall be solidly decked over and the employees properly protected.

(P) Substantial sweeps shall be installed in front of each carriage wheel. Such sweeps shall extend to within 1/4 inch of the rails.

(Q) Where power-operated log turners are used, carriage knees shall be provided with goosenecks or other substantial means of protecting the carriage crew.

(q) Belt conveyors.

(A) The sides of the conveyor shall be constructed so that the pulpwood will not fall off.

(B) Where conveyors cross passageways or roadways, a horizontal platform shall be provided under the conveyor extending out from the sides of the conveyor a distance equal to 1-1/2 times the length of the wood handled. The platform shall extend the width of the road plus 2 feet on each side and shall be kept free of wood and rubbish. The edges of the platform shall be provided with toeboards or other protection to prevent wood from falling, in accordance with American National Standard A10.18-1983.

(C) All conveyors for pulpwood shall have the in-running nips between chain and sprockets guarded; also, turning drums shall be guarded.

(D) Every belt conveyor shall have an emergency stop cable extending the length of the conveyor so that it may be stopped from any location along the line, or conveniently located stop buttons within 10 feet of each work station, in accordance with American National Standard ANSI/ASME B20.1-1993.

(r) Signs. Where conveyors cross walkways or roadways in the yards, signs reading "Danger — Overhead Conveyor" or an equivalent warning shall be erected, in accordance with American National Standard for Safety Color Code, ANSI Z535.1-1991.

(5) Handling and Storage of Raw Materials Other Than Pulpwood or Pulp Chips.

(a) Personal protective equipment.

(A) Whenever possible, all dust, fumes, and gases incident to handling materials shall be controlled at the source, in accordance with OAR 437-002-0382, Oregon Rules for Air Contaminants, in subdivision Z. Where control at the source is not possible, respirators with goggles or protective masks shall be provided, and employees shall wear them when handling alum, clay, soda ash, lime, bleach powder, sulfur, chlorine, and similar materials, and when opening rag bales.

(B) When handling liquid acid or alkali, workers shall be provided with approved eye and face protection and protective clothing, in accordance with subdivision I, Personal Protective Equipment.

(b) Clearance.

(A) When materials are being piled inside a building and upon platforms, an aisle clearance at least 3 feet greater than the widest truck in use shall be provided.

(B) Baled paper and rags stored inside a building shall not be piled closer than 18 inches to walls, partitions, or sprinkler heads.

(c) Piling and unpiling pulp.

(A) Piles of wet lap pulp (unless palletized) shall be stepped back one-half the width of the sheet for each 8 feet of pile height. Sheets of pulp shall be interlapped to make the pile secure. Pulp shall not be piled over pipelines to jeopardize pipes, or so as to cause overloading of floors, or to within 18 inches below sprinkler heads.

(B) Piles of pulp shall not be undermined when being unpiled.

(C) Floor capacities shall be clearly marked on all floors.

(d) Chocking rolls.

(A) Where rolls are pyramided two or more high, chocks shall be installed between each roll on the floor and at every row. Where pulp and paper rolls are stored on smooth floors in processing areas, rubber chocks with wooden core shall be used.

(B) When rolls are decked two or more high, the bottom rolls shall be chocked on each side to prevent shifting in either direction.

(6) Preparing Pulpwood.

(a) Gang and slasher saws. A guard shall be provided in front of all gang and slasher saws to protect workers from wood thrown by saws. A guard shall be placed over tail sprockets.

(b) Slasher tables. Saws shall be stopped and power switches shall be locked out and tagged whenever it is necessary for any person to be on the slasher table.

(c) Slasher drive belts, pulleys, and shafts. All belts, pulleys, and shafts shall be guarded in accordance with American National Standard ANSI/ASME B15.1-1992.

(d) Runway to the jack ladder. The runway from the pond or unloading dock to the table shall be protected with standard handrails and toeboards. Inclined portions shall have cleats or equivalent nonslip surfacing, in accordance with subdivision D, Walking-Working Surfaces. Protective equipment shall be provided for persons working over water.

(e) Guards below table. Where not protected by the frame of the machine, the underside of the slasher saws shall be enclosed with guards.

(f) Conveyors. The requirements of section (4)(q) of this rule shall apply.

(g) Circular saws (not slasher saws). Saws shall be provided with standard guards, in accordance with American National Standard ANSI O1.1-1992.

(h) Fixed chain saws, circular cut-off saws, drag and swing saws.

(A) Saws shall be so arranged that they will not project into any passageway when in an idle or working position. When existing conditions do not leave clear passage the saws shall be fenced off in order to make it impossible for anyone to walk into them.

(B) Drag saws and fixed chain saws shall be equipped with a device that will safely lock them in an "UP" position.

(C) All persons shall be in the clear before starting operations of a drag, chain, or swing saw.

(D) Log decks shall be equipped with a device to hold the material stable while being cut.

(i) Barker feed. Each barker shall be equipped with a feed and turnover device which will make it unnecessary for the operator to hold a bolt or log by hand during the barking operation. Eye, ear, and head protection shall be provided for the operator, in accordance with section (3)(c) of this rule.

(j) Guards. A guard shall be installed around barkers to confine flying particles, in accordance with ANSI/ASME B15.1-1992.

(k) Stops. All control devices shall be locked out and tagged when knives are being changed.

(l) Speed governor. Water wheels, when directly connected to barker disks or grinders, shall be provided with speed governors, if operated with gate wide open.

(m) Continuous barking drums.

(A) When platforms or floors allow access to the sides of the drums, a standard railing shall be constructed around the drums. When two or more drums are arranged side by side, proper walkways with standard handrails shall be provided between each set, in accordance with section (3)(d) of this rule.

(B) Sprockets and chains, gears, and trunnions shall have standard guards, in accordance with section (3)(a) of this rule.

(C) Whenever it becomes necessary for a worker to go within a drum, the driving mechanism shall be locked and tagged, at the main disconnect switch, in accordance with section (3)(e) of this rule.

(D) This subsection (m) also applies to barking drums employed in the yard.

(n) Intermittent barking drums. In addition to motor switch, clutch, belt shifter, or other power disconnecting device, intermittent barking drums shall be equipped with a device which may be locked to prevent the drum from moving while it is being emptied or filled.

(o) Hydraulic barkers.

(A) Hydraulic barkers shall be enclosed with strong baffles at the inlet and the outlet. The operator shall be protected by at least five-ply laminated glass.

(B) The high pressure hoses of hydraulic barkers shall be secured in such a manner that the hose connection ends will be restrained if a hose connection fails.

(p) Splitter block. The block upon or against which the wood is rested shall have a corrugated surface or other means provided that the wood will not slip. Wood to be split, and also the splitting block, shall be free of ice, snow, or chips. The operator shall be provided with eye and foot protection. A clear and unobstructed view shall be maintained between equipment and workers around the block and the workers' help area.

(q) Power control. Power for the operation of the splitter shall be controlled by a clutch or equivalent device.

(r) Knot cleaners. The operators of knot cleaners of the woodpecker type shall wear eye protection equipment.

(s) Chipper spout. The feed system to the chipper spout shall be arranged in such a way that the operator does not stand in a direct line with the chipper spout. All chipper spouts shall be enclosed to a height of at least 42 inches from the floor or operator's platform. When other protection is not sufficient, the operator shall be protected from falling into the chipper by the use of a safety belt and lanyard. Ear protection equipment shall be worn by the operator and others in the immediate area if there is any possibility that the noise level may be harmful (see §1910.95, Occupational Noise Exposure, in subdivision G).

(t) Feeding material/clearing jams in machines. Appropriate safety belts and lanyards and face protection shall be used by employees who manually feed material or clear jams in machines unless other provisions are made which will protect the employees.

(u) Carriers for knives. Carriers shall be provided and used for transportation of knives.

(7) Rag and Old Paper Preparation.

(a) Ripping and trimming tools.

(A) Hand knives and scissors shall have blunt points, shall be fastened to the table with chain or thong, and shall not be carried on the person but placed safely in racks or sheaths when not in use.

(B) Hand knives and sharpening steels shall be provided with guards at the junction of the handle and the blade. Utility knives with blade exposure of 2-1/2 inches or less are exempted from this requirement.

(b) Shredders, cutters, and dusters.

(A) Rotating heads or cylinders shall be completely enclosed except for an opening at the feed side sufficient to permit only the entry of stock. The enclosure shall extend over the top of the feed rolls. It shall be constructed either of solid material or with mesh or openings not exceeding 1/2-inch and substantial enough to contain flying particles and prevent accidental contact with moving parts. The enclosure shall be bolted or locked into place.

(B) A smooth-pivoted idler roll resting on the stock or feed table shall be provided in front of feed rolls except when arrangements prevent the operator from standing closer than 36 inches to any part of the feed rolls.

(C) Any manually fed cutter, shredder, or duster shall be provided with an idler roll as per section (7)(b)(B) of this rule or the operator shall use special hand-feeding tools.

(D) Hoods of cutters, shredders, and dusters shall have exhaust ventilation, in accordance with §1910.94, Ventilation, in subdivision G.

(c) Blowers.

(A) Blowers used for transporting rags shall be provided with feed hoppers having outer edges located not less than 48 inches from the fan.

(B) The arrangement of the blower discharge outlets and work areas shall be such as to prevent material from falling on workers.

(d) Conveyors. Conveyors and conveyor drive belts and pulleys shall be fully enclosed or, if open and within 7 feet of the floor, shall be constructed and guarded in accordance with section (4)(q) of this rule, and subdivision N, Material Handling and Storage.

(e) Guarding requirements.

(A) Traveling sections of conveyors and other equipment with wheels which run on rails or guides shall be guarded by sweep guards, installed in front of the traveling wheels in all areas where workers may be exposed to contact. Sweep guards shall have not greater than 1/4 inch clearance above the rail or guide.

(B) When using mechanical equipment to elevate the front end of the chip containers for dumping into a hopper, the shear area between the floor and the elevated section shall be safeguarded.

(f) Dust. Measures for the control of dust shall be provided, in accordance with American National Standard ANSI/NFPA 91-1992 and subdivision I, Personal Protective Equipment.

(g) Rag cookers.

(A) When cleaning, inspection, or other work requires that persons enter rag cookers, all steam and water valves, or other control devices, shall be locked and tagged in the closed or "off" position. Blank flanging of pipelines is acceptable in place of closed and locked valves.

(B) When cleaning, inspection, or other work requires that persons must enter the cooker, one person shall be stationed outside in a position to observe and assist in case of emergency, in accordance with section (3)(f) of this rule.

(C) Rag cookers shall be provided with safety valves in accordance with the ASME Boiler and Pressure Vessel Code, Section VIII, Unfired Pressure Vessels — 1992.

(8) Chemical Processes of Making Pulp.

(a) Industrial kiln guns and ammunition. Management shall develop written instructions, including safety procedures, for storing and operating industrial kiln guns and ammunition. All persons working with this equipment shall be instructed in these procedures and shall follow them.

(b) Sulfur burners.

(A) Sulfur-burner houses shall be safely and adequately ventilated, and every precaution shall be taken to guard against dust explosion hazards and fires, in accordance with American National Standard Z9.2-1979 (R1991), and NFPA 655-1993.

(B) Nonsparking tools and equipment shall be used in handling dry sulfur.

(C) Sulfur storage bins shall be kept free of sulfur dust accumulation, in accordance with American National Standard ANSI Z9.2-1979 (R1991).

(D) Electric equipment shall be of the explosion-proof type, in accordance with the requirements of subdivision S, Electrical.

(E) Sulfur-melting equipment shall not be located in the burner room.

(c) Protection for employees (acid plants).

(A) Gas masks, fitted with canisters containing absorbents for the particular acids, gases, or mists involved, shall be provided for employees of the acid department.

(B) Supplied air respirators shall be strategically located for emergency and rescue use.

(C) During inspection, repairs, or maintenance of acid towers, the worker shall be provided with eye protection, a supplied air respirator, a safety belt, and an attached lifeline. The line shall be extended to an attendant stationed outside the tower opening.

(d) Acid tower structure. Outside elevators shall be inspected daily during winter months when ice materially affects safety. Elevators, runways, stairs, etc., for the acid tower shall be inspected monthly for defects that may occur because of exposure to acid or corrosive gases.

(e) Tanks (acid). Entering acid tanks shall be in accordance with §1910.146, Permit-Required Confined Spaces, in subdivision J.

(f) Clothing. Where lime slaking takes place, employees shall be provided with rubber boots, rubber gloves, protective aprons, and eye protection. A deluge shower and eye fountain shall be provided to flush the skin and eyes to counteract lime or acid burns.

(g) Lead burning. When lead burning is being done within tanks, fresh air shall be forced into the tanks so that fresh air will reach the face of the worker first and the direction of the current will never be from the source of the fumes toward the face of the workers. Supplied air respirators (constant-flow type) shall be provided.

NOTE: For specifics refer to Subdivision Q, Welding, Cutting and Brazing; and §1910.1025, Lead, in Subdivision Z.

(h) Hoops for acid storage tanks. Hoops of tanks shall be made of rods rather than flat strips and shall be safely maintained by scheduled inspections.

(i) Quicklime stoppages. Water shall not be used to unplug quicklime stops or plugs in pipes or confined spaces.

(j) Digester building exits. At least one unobstructed exit at each end of the room shall be provided on each floor of a digester building.

(k) Digester building escape respirators. Escape respirators shall be available for escape purposes only. These respirators shall meet the requirements of §1910.134 in subdivision I, including the requirement to be inspected at frequent intervals, not to exceed one month.

(l) Elevators.

(A) Elevators shall be constructed in accordance with American National Standard A17.1-1990.

(B) Elevators shall be equipped with escape respirators for the maximum number of passengers.

(C) Elevators shall be equipped with an alarm system to advise of failure.

(m) Blowoff valves and piping.

(A) The blowoff valve of a digester shall be arranged so as to be operated from another room, remote from safety valves.

(B) All fasteners used to secure digester piping shall conform to ANSI/ASME B31.1-1992.

(C) Digester blow valves shall be pinned or locked in closed position throughout the entire cooking period. This rule applies only to manually operated valves in batch digestors.

(n) Blow lines.

(A) When blow lines from more than one digester lead into one pipe, the cock or valve of the blow line from the tank being inspected or repaired shall be locked and tagged out, or the line shall be disconnected and blocked off.

(B) Test holes in piping systems. Test holes in blow lines of piping systems shall not be covered with insulation or other materials.

(o) Inspection and repair of tanks. All piping leading to tanks shall be blanked off or valved and locked in accordance with §1910.147, Lockout/Tagout, in subdivision J.

(p) Blow pits and blow tanks.

(A) Blow-pit openings shall be preferably on the side of the pit instead of on top. When located on top, openings shall be as small as possible and shall be provided with railings, in accordance with subdivision D, Walking-Working Surfaces.

(B) Entrance into blow pits must be done in accordance with §1910.146, subdivision J.

(C) A signaling device shall be installed in the digester and blow-pit rooms and chip bins to be operated as a warning before and while digesters are being blown.

(D) Blow-pit hoops shall be maintained in a safe condition.

(q) Blowing batch digester.

(A) Blowoff valves shall be opened slowly.

(B) After the digester has started to be blown, the blowoff valve shall be left open, and the hand plate shall not be removed until the digester cook signals the blowpit person that the blow is completed. Whenever it becomes necessary to remove the hand plate to clear stock, operators shall wear eye protection equipment and protective clothing to guard against burns from hot stock.

(C) Means shall be provided whereby the digester cook shall signal the person in the chip bin before starting to load the digester.

(r) Inspecting and repairing digester.

(A) Valves controlling lines leading into a digester shall be locked out and tagged in accordance with §1910.147, Lockout/Tagout, in subdivision J.

(B) Sources of energy associated with a digester shall be isolated in accordance with §1910.147, Lockout/Tagout, in subdivision J.

(C) Entry into the digester shall be in accordance with §1910.146, Permit-Required Confined Spaces, in subdivision J.

(D) The concentration of lead in the air shall not exceed the limits specified in §1910.1025, Lead, subdivision Z.

(E) All employees entering digesters for inspection or repair work shall be provided with protective headgear.

(F) Eye protection and dust respirators shall be provided to workers while the old brick lining is being removed, in accordance with subdivision I, Personal Protective Equipment.

(G) Sanitary facilities shall be provided as specified in §1910.141, Sanitation, in subdivision J.

(s) Pressure tanks-accumulators (acid).

(A) Safety regulations governing inspection and repairing of pressure tanks-accumulators (acid) shall be the same as those specified in section (8)(t) of this rule.

(B) The pressure tanks-accumulators shall be inspected twice annually and more frequently if required by the manufacturer or engineer's recommendations. (Refer to Boiler and Pressure Vessel Safety Laws of the State Building Codes Division, Department of Consumer and Business Services.)

(t) Pressure vessels (safety devices).

(A) Each unfired pressure vessel shall have a pressure relieving device or devices installed and operated in accordance with ASME Boiler and Pressure Vessel Code, Section VIII (Unfired Pressure Vessels — 1992). In the case of batch digesters with safety pressure relieving devices installed directly to the pressure vessel, means shall be devised to verify regularly that the safety devices have not become plugged or corroded to the point of being inoperative.

(B) All safety devices shall conform to Paragraph U-2 in the ASME Boiler and Pressure Vessel Code, Section VIII, Unfired Pressure Vessels — 1992.

(u) Miscellaneous. Insofar as the processes of the sulfate and soda operations are similar to those of the sulfite processes, sections (8)(a) through (t) of this rule shall apply.

(A) Quick operating showers, bubblers, etc., shall be available for emergency use in case of caustic soda burns.

(B) Rotary tenders, smelter operators, and those cleaning smelt spouts shall be provided with eye protection equipment (fitted with lenses that filter out the harmful rays emanating from the light source) when actively engaged in their duties, in accordance with §1910.132, in subdivision I.

(C) Piping, valves and fittings between the digester, blowpit, and blow tanks shall be in accordance with ANSI/ASME B31.1-1992. These shall be inspected at least semi-annually to determine the degree of deterioration and repaired or replaced when necessary, in accordance with American National Standards ANSI/ASME B31.1-1992.

(v) Welding. Welding on blow tanks, accumulator tanks, or any other vessels where turpentine vapor or other combustible vapor could gather shall be done only after the vessel has been completely purged of fumes. Fresh air shall be supplied workers inside of vessels.

NOTE: See Subdivision Q, Welding, Cutting and Brazing, for additional welding requirements.

(w) Turpentine systems and storage tanks. Nonsparking tools and ground hose shall be used when pumping out the tank. The tank shall be surrounded by a berm or moat.

(x) Recovery furnace area.

(A) An audible warning system shall be installed in kraft and soda base sulfite recovery furnace areas and shall be activated whenever an emergency exists.

(B) All personnel working in recovery furnace areas shall be instructed on procedures to be followed when emergency warning systems are activated.

(C) Emergency warning systems in the recovery furnace areas shall be kept in proper working condition and shall be tested or checked weekly.

(D) Workers shall stand to the side while opening a furnace or boiler firebox door.

(E) Smelt-dissolving tanks shall be covered and the cover kept closed, except when samples are being taken.

(F) Smelt tanks shall be provided with vent stacks and explosion doors, in accordance with American National Standard ANSI/UL 641-1985.

(G) An emergency shutdown procedure as currently recommended by the boiler manufacturer shall be implemented and used when an emergency shutdown is required. Both normal and emergency shutdown procedures shall be posted.

(H) Recovery furnaces and power boilers are to be constructed, maintained, and serviced as required by the State Building Codes Division of the Department of Consumer and Business Services.

(I) Open pipes shall not be used as punch bars if the use would create a hazard.

(J) Furnace room. Exhaust ventilation shall be provided where niter cake is fed into a rotary furnace and shall be so designed and maintained as to keep the concentration of hydrogen sulfide gas below the limits listed in OAR 437-002-0382, Oregon Rules for Air Contaminants, in subdivision Z.

(9) Bleaching.

(a) Bleaching containers. Bleaching containers, such as cells, towers (bleaching engines), etc., except the Bellmer type, shall be completely covered on the top, with the exception of one small opening large enough to allow filling but too small to admit a person. Platforms leading from one engine to another shall have standard

guardrails, in accordance with subdivision D, Walking-Working Surfaces.

(b) Bleach plant alarm system. An audible alarm system shall be installed and it shall be activated whenever a serious leak or break develops in the bleach plant area which creates a health or fire hazard.

(c) Bleach mixing rooms.

(A) Areas where dry bleach powder is mixed shall be provided with adequate exhaust ventilation, located at the floor level, in accordance with ANSI/UL 641-1985.

(B) Respiratory protection shall be provided for emergency use, in accordance with American National Standards ANSI/NFPA 1404-1989, and Z88.2-1980. Respiratory protection must conform to the requirements of §1910.134 of subdivision I.

(C) For emergency and rescue work, self-contained air masks or supplied air equipment shall be provided in accordance with American National Standards Z88.2-1980. Respiratory protection must conform to the requirements of §1910.134 of subdivision I.

(d) Liquid chlorine.

(A) Tanks of liquid chlorine shall be stored in an adequately ventilated unoccupied room, where their possible leakage cannot affect workers.

(B) Gas masks capable of absorbing chlorine shall be supplied, conveniently placed, and regularly inspected, and workers who may be exposed to chlorine gas shall be instructed in their use.

(C) For emergency and rescue work, independent self-contained breathing apparatus or supplied air equipment shall be provided.

(D) At least two exits, remote from each other, shall be provided for all rooms in which chlorine is stored.

(E) Spur tracks upon which tank cars containing chlorine and caustic are spotted and connected to pipelines shall be protected by means of a derail in front of the cars.

(F) All chlorine, caustic, and acid lines shall be marked for positive identification, in accordance with American National Standard A13.1-1981 (R 1985).

(e) Handling chlorine dioxide.

(A) Chlorine dioxide generating and storage facilities shall be placed in areas which are adequately ventilated and are easily kept clean of wood, paper, pulp, etc., to avoid contamination which might cause a reaction. This can be accomplished by placing these facilities in a separate room or in a designated outside space.

(B) Safety showers and/or jump tanks and eyewash fountains shall be provided for persons working around sodium chlorate and the other hazardous chemicals involved in this process.

(C) Water hoses for flushing spills shall be adequate in size and located where needed.

(D) The generating area shall have signs in accordance with subdivision J, General Environmental Controls, warning of the hazard and restricting entrance to authorized personnel only.

(E) Facilities handling sodium chlorate and chlorine dioxide shall be declared "No Smoking" areas and shall have signs posted accordingly.

(F) All equipment involved in the chlorine dioxide process where pressure may be generated shall be provided with adequate pressure relief devices.

(G) Respiratory protective equipment approved for use in exposures to chlorine and chlorine dioxide gases shall be provided.

(H) Management shall be responsible for developing written instructions including safety procedures for operating and maintaining the generator and associated equipment. All personnel working on this equipment shall be thoroughly trained in these procedures and shall follow them.

(I) Only authorized personnel shall be allowed in close proximity to the chlorine dioxide generating equipment.

(J) When reasonably possible, the sample station should be located on the outside of the generating room. Goggles must be worn when taking samples.

(K) Welding or burning shall not be performed on the generator system while it is operating. Immediately before maintenance can be performed on the inside of any of this equipment, it shall be thoroughly flushed with water and purged of hazardous gases.

(L) Chlorine and chlorine dioxide gas shall be carried away from the work place and breathing area by an exhaust system. The gas shall be rendered neutral or harmless before being discharged into the atmosphere. The requirements of American National Standard Z9.2-1979 (R1991) shall apply to this subdivision.

(f) Handling sodium chlorate.

(A) Workers handling and working with sodium chlorate shall be thoroughly trained in precautions to be used in handling and special work habits.

(B) Workers exposed to direct contact with sodium chlorate shall wear appropriate personal protective equipment.

(C) Facilities for storage and handling of sodium chlorate shall be constructed so as to eliminate possible contact of dry or evaporated sodium chlorate with wood or other material which could cause a fire or explosion.

(D) Chlorine gas shall be carried away from the work place and breathing area by an exhaust system. The gas shall be rendered neutral or harmless before being discharged into the atmosphere. The requirements of American National Standard Z9.2-1979 (R1991) shall apply to this subdivision.

(E) Sodium chlorate facilities shall be constructed with a minimum of packing glands, stuffing boxes, etc.

(g) Bagged or drummed chemicals. Bagged or drummed chemicals require efficient handling to prevent damage and spillage. Certain oxidizing chemicals used in bleaching pulp and also in some sanitizing work require added precautions for safety in storage and handling. In storage, these chemicals shall be isolated from combustible materials and other chemicals with which they will react such as acids. They shall also be kept dry, clean and uncontaminated.

(10) Mechanical Pulp Process.

(a) Pulp grinders.

(A) Water wheels directly connected to pulp grinders shall be provided with speed governors limiting the peripheral speed of the grinder to that recommended by the manufacturer.

(B) Doors of pocket grinders shall be arranged so as to keep them from closing accidentally.

(b) Butting saws. Hood guards shall be provided on butting saws, in accordance with American National Standard ANSI O1.1-1992.

(c) Floors and platforms. The requirements of section (3)(d) of this rule shall apply.

(d) Personal protection. Persons exposed to falling material shall wear eye, head, foot, and shin protection equipment, in accordance with subdivision I, Personal Protective Equipment.

(11) Stock Preparation.

(a) Pulp shredders.

(A) Cutting heads shall be completely enclosed except for an opening at the feed side sufficient to permit only entry of stock. The enclosure shall be bolted or locked in place. The enclosure shall be of solid material or with mesh or other openings not exceeding 1/2-inch.

(B) Either a slanting feed table with its outer edge not less than 36 inches from the cutting head or an automatic feeding device shall be provided.

(C) Repairs for cleaning of blockage shall be done only when the shredder is shutdown and control devices locked.

(D) All power-driven mechanisms shall be guarded in accordance with section (3)(a) of this rule.

(b) Pulp conveyors. Pulp conveyors and conveyor drive belts and pulleys shall be fully enclosed, or if open and within 7 feet of the floor, shall be constructed and guarded in accordance with subdivision N, Material Handling and Storage, and subdivision O, Machinery and Machine Guarding.

(c) Floors, steps, and platforms. The requirements of section (3)(d) of this rule shall apply.

(d) Beaters.

(A) Beater rolls shall be provided with covers.

(B) Guardrails 42 inches high shall be provided around beaters where tub tops are less than 42 inches from the floor, in accordance with section (3)(d) of this rule and subdivision D, Walking-Working Surfaces.

(C) When cleaning, inspecting, or other work requires that persons enter the beaters, all control devices shall be locked and tagged out, in accordance with §1910.147, Lockout, in subdivision J.

(D) When beaters are fed from the floor above, the chute opening, if less than 42 inches from the floor, shall be provided with a complete rail or other enclosure. Openings for manual feeding shall be sufficient only for entry of stock and shall be provided with at least two

permanently secured crossrails, in accordance with subdivision D, Walking-Working Surfaces.

(E) Floors around beaters shall be provided with sufficient drainage to remove wastes.

(e) Pulpers.

(A) All pulpers having the top or any other opening of the vessel less than 42 inches from the floor or work platform shall have such openings guarded by railed or other enclosures. For manual charging, openings shall be sufficient only to permit the entry of stock and shall be provided with at least two permanently secured crossrails, in accordance with §1910.23, Guarding Floor and Wall Openings and Holes, in subdivision D.

(B) When cleaning, inspecting or other work requires persons to enter the pulpers it shall be in accordance with §1910.146, Permit-Required Confined Spaces, in Subdivision J. All power mechanisms shall be guarded as required in subdivision O, Machinery and Machine Guarding.

(C) Cleaning or inspecting pulpers or other work, including work above the pulper in a dangerous position, shall be in accordance with §1910.147, Lockout, in subdivision J.

(D) All power mechanisms shall be guarded in accordance with Subdivision O, Machinery and Machine Guarding.

(f) Pulping devices. Emergency stop controls shall be provided at the feed point when pulping devices are fed manually from the floor above.

(g) Guillotine-type roll splitters. Rolls shall be centered and in a horizontal position directly below the guillotine-type blade while being split. No part of the body shall be under the guillotine-type blade.

(h) Stock chests and tanks.

(A) All control devices shall be locked when persons enter stock chests, in accordance with §1910.147, Lockout/Tagout, in subdivision J.

(B) All power mechanisms shall be guarded in accordance with subdivision O, Machinery and Machine Guarding.

(C) When cleaning, inspecting, or other work requires that persons enter stock chests, they shall be provided with a low-voltage extension light.

(12) Machine Room.

(a) Controls and safety devices.

(A) Electrically or manually operated power disconnecting devices for all power-operated equipment shall be provided within easy reach of the operator while in his or her normal operating position. If necessary for safety of the operation, the machine shall be so equipped that retarding or braking action can be applied at the time of or after the source of power is deactivated.

(B) Pulp and paper machines shall be equipped with stopping devices. The devices shall be located where they can be used readily to stop the machines or sections of the machine. Power disconnect devices and retarding or braking controls provided for in section (12)(a)(A) of this rule are required for the safe operation of a pulp and paper machine.

(C) Brakes, back stops, antirunaway devices, overload releases, and other safety devices shall be inspected and tested frequently to insure that all are operative and maintained in good repair.

(D) An audible alarm shall be sounded prior to starting up any section of a pulp or paper machine. Sufficient time shall be allowed between activation of the alarm system and start-up of the equipment to allow any persons to clear the hazardous area.

(E) In starting up a dryer section, dryers shall be preheated and steam for heating the drums shall be introduced slowly, while the drums are revolving.

(F) Employees shall not attempt to remove a broken carrier rope from a dryer while the section is running at operating speed.

(G) Employees shall not feed a stack with any hand-held device which is capable of going through the nip.

(H) Employees shall stop dryer to remove a wrap except in cases where it can be safely removed by using air or other safe means.

(I) Special protective gloves shall be provided and shall be worn by employees when filing or handling sharp-edged doctor blades.

(J) Employees shall not place their hands between the sharp edge of an unloaded doctor blade and the roll while cleaning the doctor blade.

(K) The crane operator shall ascertain that reels are properly seated at winder stand or at reel arms before he or she disengages the hooks.

(L) Shaftless winders shall be provided with a barrier guard of sufficient strength and size to confine the rolls in the event they become dislodged while running.

(M) Employees shall keep clear of hazardous areas around the lowerator, especially all lowerator openings in a floor and where roll is being discharged.

(N) If a powered roll ejector is used it should be interlocked to prevent accidental actuation until the receiving platform or roll lowering table is in position to receive the roll.

(O) Provision shall be made to hold the rider roll when in a raised position unless counterbalancing eliminates the hazard.

(b) Drives.

(A) All drives, pulleys, couplings, and shafts on equipment requiring service while operating shall have standard guards in accordance with section (3)(a) of this rule.

(B) All drives shall be provided with lockout devices at the power switch which interrupts the flow of current to the unit.

(C) All ends of rotating shafts including dryer drum shafts shall be completely guarded.

(D) All accessible disengaged doctor blades should be covered.

(E) All exposed shafts shall be guarded. Crossovers shall be provided.

(F) Oil cups and grease fittings shall be placed in a safe area remote from nip and heat hazards.

(c) Protective equipment. Face shields, aprons and rubber gloves shall be provided for workers handling acids in accordance with sections (3)(c) and (5)(a) of this rule.

(d) Walkways. Steps and footwalks along the fourdrinier and press section shall have nonslip surfacing and be complete with standard handrails, when practical, in accordance with §1910.23, in subdivision D, Walking-Working Surfaces.

(e) Steps. Steps of uniform rise and tread with nonslip surfaces shall be provided at each press in accordance with subdivision D, Walking-Working Surfaces.

(f) Plank walkways. A removable plank shall be provided along each press, with standard guardrails installed. The planks shall have nonslip surfaces in accordance with subdivision D, Walking-Working Surfaces.

(g) Dryer lubrication. If a gear bearing must be oiled while the machine is in operation, an automatic oiling device to protect the oiler shall be provided, or oil cups and grease fittings shall be placed along the walkways out of reach of hot pipes and dryer gears.

(h) Levers. All levers carrying weights shall be constructed so that weights will not slip or fall off.

(i) First dryer. Either a permanent guardrail or apron guard or both shall be installed in front of the first dryer in each section in accordance with subdivision O, Machinery and Machine Guarding.

(j) Steam and hot-water pipes. All exposed steam and hot-water pipes within 7 feet of the floor or working platform or within 15 inches measured horizontally from stairways, ramps, or fixed ladders shall be covered with an insulating material, or guarded in such manner as to prevent contact.

(k) Dryer gears. Dryer gears shall be guarded except where the oilers' walkway is removed out of reach of the gears' nips and spokes and hot pipes in accordance with subdivision O, Machinery and Machine Guarding.

(l) Broke hole.

(A) A guardrail shall be provided at broke holes in accordance with subdivision D, Walking-Working Surfaces.

(B) Where pulpers are located directly below the broke hole on a paper machine and where the broke hole opening is large enough to permit a worker to fall through, any employee pushing broke down the hole shall wear a safety belt and lanyard. The lanyard shall be fastened in such a manner that it is impossible for the person to fall into the pulper.

(C) An alarm bell or a flashing light shall be actuated before dropping material through the broke hole.

(m) Feeder belt. A feeder belt or other effective device shall be provided for starting paper through the calender stack.

(n) Steps. Steps or ladders of uniform rise and tread with nonslip surfaces shall be provided at each calender stack. Handrails and hand

grips shall be provided at each calender stack in accordance with Subdivision D, Walking-Working Surfaces.

(o) Grounding. All calender stacks and spreader bars shall be grounded in accordance with Subdivision S, Electrical, as protection against shock induced by static electricity.

(p) Sole plates. All exposed sole plates between dryers, calenders, reels, and rewinders shall have a nonskid surface.

(q) Nip points. The hazard of the nip points on all calender rolls shall be eliminated or minimized by means of an effective barrier device, or by feeding the paper into the rolls by means of a rope carrier, air jets, or hand feeding devices.

(r) Scrapers. Alloy steel scrapers with pullthrough blades approximately 3 by 5 inches in size shall be used to remove "scabs" from calender rolls.

(s) Illumination. Permanent lighting shall be installed in all areas where employees are required to make machine adjustments and sheet transfers in accordance with American National Standard ANSI/IES RP-1990.

(t) Control panels. All control panel handles and buttons shall be protected from accidental contact.

(u) Lifting reels.

(A) The reels shall stop rotating before being lifted from bearings.

(B) All lifting equipment (clamps, cables, and slings) shall be maintained in a safe condition and inspected regularly.

(C) Reel shafts with square block ends shall be guarded.

(v) Feeder belts. Feeder belts, carrier ropes, air carriage, or other equally effective means shall be provided for starting paper into the nip or drum-type reels.

(w) In-running nip.

(A) Where the nipping points of all drum winders and rewinders is on the operator's side, it shall be guarded by barrier guards interlocked with the drive mechanism.

(B) A zero speed switch or locking device shall be installed to prevent the guard from being raised, lowered, or removed while the roll is turning.

(x) Core collars. Set screws for securing core collars to winding and unwinding shafts shall not protrude above the face of the collar. All edges of the collar with which an operator's hand comes in contact shall be beveled to remove all sharp corners.

(y) Slitter knives. Slitter knives shall be guarded so as to prevent accidental contact. Carriers shall be provided and used for transportation of slitter knives.

(z) Winder shaft. The winder shall have a guide rail to align the shaft for easy entrance into the opened rewind shaft bearing housings.

(aa) Handling rolls, winders and core shafts. Mechanical handling equipment shall be provided for handling rolls, winder shafts, and core shafts that are too heavy for safe manual handling based on the NIOSH Work Practice Guide for Manual Lifting — 1981.

(bb) Winder area. A nonskid surface shall be provided in front of the winder to prevent accidental slipping.

(cc) Radiation. Special standards regarding the use of radiation equipment shall be posted and followed as required by §1910.1096, Ionizing Radiation, in Subdivision Z.

(13) Finishing Room.

(a) Cleaning rolls. Rolls shall be cleaned only on the outrunning side.

(b) Emergency stops. Electrically or manually operated quick power disconnecting devices, interlocked with braking action, shall be provided on all operating sides of the machine within easy reach of all employees. These devices shall be tested by making use of them when stopping the machine.

(c) Core collars. The requirements of section (12)(x) of this rule, and the requirements in Subdivision O, Machinery and Machine Guarding, shall apply.

(d) Elevators. These shall be in accordance with American National Standard ANSI/ASME A17.1-1990.

(e) Control panels. The requirements of section (12)(t) of this rule shall apply.

(f) Guillotine-type cutters.

(A) Each guillotine-type cutter shall be equipped with a control which requires the operator and helper, if any, to use both hands to engage the clutch when operated from within reach of blade.

(B) Each guillotine-type cutter shall be equipped with a nonrepeat device.

(C) Carriers shall be provided and used for transportation of guillotine-type cutter knives.

(g) Rotary cutter.

(A) On single-knife machines a guard shall be provided at a point of contact to the knife.

(B) On duplex cutters the protection required for single-knife machines shall be provided for the first knife, and a hood shall be provided for the second knife.

(C) Safe access shall be provided to the knives of a rotary cutter by means of catwalks with nonslip surfaces, railings, and toeboards in accordance with Subdivision D, Walking-Working Surfaces.

(D) A guard shall be provided for the spreader or squeeze roll at the nip side on sheet cutters.

(E) Electrically or manually operated quick power disconnecting devices with adequate braking action shall be provided on all operating sides of the machine within easy reach of all operators.

(F) The outside slitters shall be guarded.

(h) Platers.

(A) A guard shall be arranged across the face of the rolls to serve as a warning that the operator's hand is approaching the danger zone.

(B) A quick power disconnecting device shall be installed on each machine within easy reach of the operator.

(i) Finishing room rewinders.

(A) The nipping points of all drum winders and rewinders located on the operator's side shall be guarded by either automatic or manually operated barrier guards of sufficient height to protect fully anyone working around them. The barrier guard shall be interlocked with the drive mechanism to prevent operating above jog speed without the guard in place. A zero speed switch should be installed to prevent the guard from being raised while the roll is turning.

(B) A nonskid surface shall be provided in front of the rewinder to prevent an employee from slipping in accordance with section (3)(d) of this rule.

(C) Mechanical lifting devices shall be provided for placing and removing rolls from the machine.

(j) Control panels. The requirements of section (12)(t) of this rule shall apply.

(k) Roll-type embosser. The nipping point located on the operator's side shall be guarded by either automatic or manually operated barrier guards interlocked with the drive.

(l) Converting machines.

(A) When using a crane or hoist to place rolls into a backstand and the operator cannot see both ends of the backstand, appropriate means will be implemented to eliminate hazards involved. The operator shall ascertain that rolls are properly seated at winder stand or at roll arms before he or she disengages the hooks.

(B) All power closing sections shall be equipped with an audible warning system which will be activated when closing the sections.

(C) Slitters, slotters, and scorers not in use shall be properly stored so as not to create a hazard.

(D) Mechanical handling equipment shall be provided for handling rolls or devices that are too heavy for safe manual handling based on the NIOSH Work Practice Guide for Manual Lifting — 1981.

(E) Sheer and pinch points. Sheer and pinch points at the feed mechanism shall be color-coded orange and/or identified by signs in accordance with subdivision J, General Environmental Controls.

(m) Sorting and counting tables.

(A) Tables shall be smooth and free from splinters, with edges and corners rounded.

(B) Paddles shall be smooth and free from splinters.

(n) Roll splitters. The nip point and cutter knife shall be guarded by either automatic or manually operated barrier guards.

(o) Corrugators.

(A) Rails of rail-mounted devices such as roll stands shall be flush with the adjacent floor, and so installed to provide a minimum of 18 inches clearance between the equipment and walls or other fixed objects.

(B) All corrugating and pressure rolls shall be equipped with appropriately designed and installed threading guides so as to prevent contact with the infeed nip of the various rolls by the operator.

(C) Lower elevating conveyor belt rolls on the single facer bridge shall have a minimum nip clearance of 4 inches.

(D) Web shears at the discharge end of the double facer shall be equipped with barrier-type guards.

(E) Slitter stations not in use shall be disconnected from the power source by positive means.

(F) The adhesive system shall be so designed and installed as to keep fumes and airborne dust within limits in accordance with OAR 437-002-0382, Oregon Rules for Air Contaminants, in subdivision Z.

(14) Materials Handling.

(a) Hand trucks. No person shall be permitted to ride on a powered hand truck unless it is so designed by the manufacturer. A limit switch shall be on operating handle — 30° each way from a 45° angle up and down.

(b) Power trucks. Power trucks shall comply with subdivision N, Material Handling and Storage. Adequate ventilation shall be provided and the trucks properly maintained, so that dangerous concentrations of carbon monoxide cannot be generated, especially in warehouses or other isolated areas of a plant.

(c) Carton-stitching machine. The carton-stitching machine shall be guarded to prevent the operator from coming in contact with the stitching head.

(d) Banding of skids, cartons, cases, etc. Banders and helpers shall wear eye protection equipment in accordance with section (3)(c) of this rule.

(e) Unloading cars or trucks.

(A) Loading and unloading materials. Platforms with ladders or stairways shall be installed or alternative methods made available when needed so that workers may safely gain access to and perform work on the top of rail cars or trucks when ladders are not installed on such equipment.

(B) Where steel bands or wires are used in boxcars or trucks, all loaders and helpers shall wear eye protection in accordance with subdivision I, Personal Protective Equipment.

(C) The construction and use of bridge or dock plates shall conform to the requirements of American National Standard B56.1-1988.

(D) Flag signals, derails, or other protective devices shall be used to protect workers during switching operations. The blue flag policy shall be invoked according to section (4)(j) of this rule.

[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 7-1994, f. & cert. ef. 11-4-94; OSHA 3-1998, f. & cert. ef. 7-7-98; OSHA 2-2001, f. & cert. ef. 2-5-01

437-002-0313
Additional Oregon Rules for Sawmills

(1) Application. This section includes safety requirements for sawmill operations including, but not limited to, log and lumber handling, sawing, trimming, and planing; waste disposal; operation of dry kilns; finishing; shipping; storage; yard and yard equipment; and for power tools and affiliated equipment used in connection with such operations.

(2) Conveyors. Feed conveyors for chippers, hogs, burners, and other dangerous machines shall be fully guarded to prevent workers from falling into the conveyor. Where a part of the guard must be omitted to permit workers to feed the conveyor, they shall be provided with and shall wear a safety belt and lanyard tied off to a life line.

(3) Unloading Equipment:

(a) The tile and overarm grapple of all hydraulically operated log handling machines shall be equipped with a means for preventing the release of the tilt and/or grapple devices in case of a failure in the hydraulic system;

(b) A-frames and similar log unloading devices shall be guyed and braced to provide stability and prevent tipping.

NOTE: Pond Boats. Small pond boats which are not designed to transport more than one person are exempt from the life-ring requirement.

(4) Transfers and Tracks:

(a) Guardrails and handrails shall be installed on and about transfers and transfer tracks wherever necessary for the safety or workers;

(b) Cars shall not be moved while workers are in the bight of tow lines;

(c) Tracks shall be clear of obstructions before rail cars are moved.

(5) Green Chains and Sorting Tables:

(a) Green chains and similar equipment shall be provided with a stopping device which is readily accessible to one or more persons working on the chain;

(b) A toe board not less than six inches in height of nominal two by six inch material shall be installed on the vertical face of all green chain and sorting tables;

(c) The flow of lumber or other materials on sorting tables and green chain shall be regulated as evenly as possible.

(d) Rollers or other devices shall be provided for removing heavy material from the chain or table.

(e) Workers shall not cross over operating conveyors, rolls, or belts unless elevated cross-overs are provided for this purpose.

(6) Transfer Rolls:

(a) Power driven rolls shall be operated in a manner to prevent end collisions;

(b) The space between live rolls, for a distance of at least one roll on either side of cross-overs or walkways, shall be filled in with substantial material;

(c) Live roll sprockets, chains, gears and drive shafts shall be guarded wherever exposed to contact;

(d) Live rolls shall be replaced when a hole (sufficient to impair its strength, or catch clothing) has developed.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 7-1993, f. 6-8-93, cert. ef. 8-1-93; OSHA 3-1996, f. & cert. ef. 7-22-96

437-002-0314
Veneer and Plywood Machinery

NOTE: 1910.265(c) and (d) also apply to Veneer and Plywood Machinery. See OAR 437-002-0313(1).

(1) Purpose. The purpose of this rule is to prescribe minimum requirements for veneer and plywood operations.

(2) Veneer Lathe:

(a) A mechanical lock shall be provided to prevent the back-up roll from closing until activated by the operator;

(b) A guard or positive interlock and necessary hydraulic or air controls shall be provided to prevent forward movement of the charger, if such movement may be hazardous;

(c) Positive means shall be provided to hold the head in the open position while servicing the knife;

(d) A protective device for the knife edge shall be provided for use when transporting the knife;

(e) Where there is a hazard from "exploding" logs, both lathe operator's and charger operator's stations shall be protected against flying slabs and chips;

(f) Means shall be provided in the knife grinding area to drain cleaning or cooling liquids from the work station;

(g) Knives and other cutting equipment shall be stored in planned storage areas;

(h) The area under the elevating ramp (tipple) from the lathe to the stock trays shall be guarded to prevent entrance while the lathe is in operation.

(3) Veneer Slicer. The veneer slicer knife shall be guarded at front and rear to prevent accidental contact with the knife edge.

(4) Veneer Clipper:

(a) Clippers shall be provided with a guard on both in-feed and out-feed sides to protect the employees;

(b) Each operating treadle for veneer clippers shall be covered by a device which is adequate to avoid accidental activation or tripping.

(5) Veneer Cutter:

(a) Power-driven guillotine veneer cutters (except continuous feed trimmers) shall be equipped with the following:

(A) A starting device which requires the simultaneous action of both hands to start the cutting motion, and at least one hand on a control during the complete stroke of the knife; or

(B) An automatic device which will remove the hands of the operator from the danger zone at every descent of the blade used in conjunction with one-hand starting devices which require two distinct movements of the device to start the cutting motion.

(b) All power-driven veneer cutters shall be so designed that the knife positively returns to the starting position after each complete cycle of the knife;

(c) Where two or more workers are employed at the same time on the same power-driven guillotine veneer cutter equipped with two-hand control, the device shall be so arranged that each worker shall be

required to use both hands simultaneously on the controls to start the cutting motion, and at least one hand on a control to complete the cut.

NOTE: The controls should be of a type that cannot be defeated by tying down one of them.

(d) In addition to the brake or other stopping mechanism, a non-repeat device shall be provided which will prevent the machine from operating in the event of a mechanical failure;

(e) Where no other device serves as protection, a guard running the length of the knife shall be installed on the in-feed side;

(f) A protective device, such as side shields, shall be provided on the out-feed side;

(g) A protective device for the knife edge shall be provided for use when transporting the knife;

(h) Positive means of opening and locking the control circuit and supporting the mechanism in the "up" position shall be provided for use during knife changes;

(i) When the hold-down clamp and knife are in their uppermost positions, the knife edge shall not extend below the lower edge of the hold-down clamp.

(6) Tray System:

(a) The tray system shall be equipped with controls at each end so that the system cannot be operated unless both switches are in the "on" position;

(b) A walkway shall be constructed the entire length of the trays so that the top tray can be reached in the event of a "plug-up" without having to climb up the frames.

(7) Veneer Dryer:

(a) A standard stairway and catwalk across the tray lines shall be constructed to provide safe access in the event of a "plug-up" and dryer feed controls, including a positive lock out, shall be provided at the feeders' station;

(b) Steam lines outside the dryer which may be contacted by personnel shall be insulated or enclosed;

(c) Suitable gloves and aprons shall be worn by workers off-bearing veneer from chain or table;

(d) Where a band saw is used to trim panel core, it shall be guarded in accordance with 1910.265(e)(2)(ii)(c).

(8) Hot Press or Veneer Press:

(a) Steam lines which may be contacted by personnel shall be insulated or enclosed;

(b) Standard guard rails shall be provided on the ends of loading and unloading elevators or hoist platforms or both. (See OAR chapter 437, division 2/D, 1910.23(e)(1));

(c) Hot-press hoists shall be provided with a braking and holding mechanism which will operate automatically in case of failure of lifting chains or cables;

(d) On a hot-press equipped with an automatic charger, an electrically interlocked gate or chain shall be provided across the opening between the charger and the press which, when opened, will open the circuit to prevent the charger from moving;

(e) Where two workers are employed in loading the press, closing control devices shall be provided within reach of each work station, so interconnected as to require activation of both controls to operate the press, and a quick opening device shall be provided at each station on the press hoist platform;

(f) Floor openings on non-working sides of press and pit shall be protected with standard guard rails. (See OAR chapter 437, division 2/D 1910.23(a)(8));

(g) Means shall be provided for safe access into the press pit, the top of the press, and each side, and a positive means of blocking up the hoist platform.

(9) Stripsaw and Patch Machine:

(a) An anti-kickback device and hood guard shall be provided on the veneer stripsaw;

(b) The patch machine shall be guarded to prevent operator's hands from entering the punch area, and the foot treadle shall be guarded.

(10) Veneer Chipper and Hogs:

(a) The top feed roll shall be equipped with a guard and a shield or panel shall be provided on the operator's side to prevent operator from reaching the roll;

(b) Chippers and hogs shall be guarded in accordance with 1910.265(c)(20)(i) through (c)(21)(ii)(c). Feed conveyors to chippers and hogs shall be guarded in accordance with OAR 437-002-0313(1).

(11) Electronic Laminating Press and Edge Gluer:

(a) Interlocked gates shall be provided on in-feed and out-feed sides of batch-type presses which are interlocked to prevent power being activated until gates are completely lowered;

(b) Shielding shall be provided to protect against harmful exposure to radiation that may be emitted;

(c) All screens and filters shall be equipped with interlocks which will shut off all power in the event they are removed.

(12) Edge Gluer Jointer:

(a) A barrier shall be installed at the end of the travel of the head to prevent flying splinters from injuring personnel;

(b) A gate shall be installed to prevent access between the edge gluer jointer and the grasshopper, so arranged that when the gate is opened, all electricity, air, and hydraulic lines will be shut off and the cylinders bled;

(c) A device should be positioned across the front of the in-feed nip point, so arranged as to shut off the equipment if contact is made with it.

(13) Wide Belt Sanders. Wide-belt sanders shall be equipped with non-kickback fingers and a barrier at the in-feed side adjusted to prevent more than one panel entering the sander at a time.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 7-1993, f. 6-8-93, cert. ef. 8-1-93

437-002-0315
Shake and Shingle Machinery

NOTE: 1910.265(c) and (d) also apply to Shake and Shingle Machinery. (See OAR 437-002-0313(1).)

(1) Purpose. The purpose of this rule is to prescribe minimum requirements for shake and shingle manufacturing operations.

(2) Definitions applicable to shake and shingle machinery:

(a) "Blocks" shall mean those sections of a log cut in various lengths;

(b) "Blocks" and "Bolts" may be considered to be synonymous;

(c) "Clipper Saw" shall mean a circular saw used to trim manufactured shingles;

(d) "Groover" shall mean a cylinder-type knife (knives) similar to a planer knife (knives), used to cut grooves into the face surface on the side edge of shakes or shingles;

(f) "Johnson Bar" shall mean a shaft used to control the feed of the carriage;

(g) "Knee Bolter Circular Saw" shall mean a stationary circular saw used to trim and debark blocks (the blocks are manually maneuvered onto a carriage and fed into a saw);

(h) "Log Haul" shall mean a power conveyor used to move logs into position to cut into blocks;

(i) "Packers" shall mean employees who pack the manufactured shakes or shingles into bundles;

(j) "Pantograph Power Splitter" shall mean a hydraulically operated wedge, manually positioned into place, used to split blocks;

(k) "Power Saw Splitter" shall mean a stationary circular saw used to split (saw) blocks, (the blocks are manually maneuvered onto a carriage and fed into the saw);

(l) "Set Works" shall mean a component of the shingle machine, located on the machine frame, used to control the thickness of each shingle being manufactured;

(m) "Shake Machine" shall mean a band saw used to cut shake blanks into manufactured shakes;

(n) "Shake Splitter" shall mean a stationary hydraulically operated wedge, manually controlled, used to split shake blocks into shake blanks;

(o) "Shim Saw" shall mean a circular saw used to re-cut manufactured shingles into narrow widths;

(p) "Shingle Machine" shall mean a machine used to manufacture shingles; composed of a feed, set works, and carriage system, all functioning in relation to a circular saw;

(q) "Shingle Saw" shall mean a circular saw used to cut shingles from blocks;

(r) "Spault" shall mean the first and last section(s) of block as it is cut into shingles;

(s) "Spault Catcher" shall mean a device located on the shingle machine next to the solid feed rolls, used to hold the last section of each block being cut (called a spault), in place;

(t) "Track or Swing Cut Off Saw" shall mean a circular saw used to cut blocks from a log.

(3) Track or Swing Cut Off Circular Saw:

(a) A power operated track or swing cut off circular saw shall have controls so arranged that operators are not positioned directly in front of the saw while making a cut;

(b) All track or swing cut off circular saws shall be completely encased or guarded when the saw is in the retract position, except for that portion of the guard that must be left open for the operation of the saw;

(c) Track or swing cut off circular saw guards shall be constructed of sheet metal not less than 1/8-inch thick, or a wood guard of not less than nominal two-inch thick wood material, or equivalent;

NOTE: Hinged or removable doors or gates will be permitted where necessary to permit adjusting and oiling.

(d) The driving belts on the track or swing cut off circular saw shall be guarded;

(e) A safety catch shall be provided to prevent the track cut off saw from leaving the track.

(4) Overhead Deck Splitter — Pantograph:

(a) Pantograph splitters shall have a shroud incorporated on the upper pressure plate to eliminate the possibility of the splitter moving from the operating are. This shroud shall be constructed of substantial design with a minimum width of three inches and a minimum thickness of 3/8-inch;

(b) Mechanically operated overhead splitters shall have handles moving opposite the stroke of the piston;

(c) When the leading edge of the pantograph splitter is completely extended, the minimum clearance from the deck to the splitting edge shall be two inches.

(5) Power Splitter Saw. Power splitters shall have spreaders behind the saw to prevent materials from squeezing the saw or being thrown back on the operator. The top of the saw shall be completely covered.

(6) Knee Bolter Circular Saw:

(a) A safety catch shall be provided to prevent the bolter carriage from leaving the track;

(b) Bolter saws shall be provided with a canopy guard of sheet metal not less than 1/8-inch thick, or cast iron guard not less than 3/16-inch thick or a wood guard of not less than nominal two-inch thick wood material or equivalent:

(A) Such guard shall completely enclose the rear portion of the saw;

(B) It shall be so arranged and adjusted as to cover the front of the saw; not to exceed 20 inches from the top of the carriage to the bottom of the guard on 16-inch and 18-inch blocks and 26 inches on 24-inch blocks, or the material being cut.

(c) Knee bolter saws shall be provided with wipers of belting or other suitable material. These wipers shall be installed on both sides of the saw in such a manner as to deflect knots, chips, slivers, etc., that are carried by the saw;

(d) A positive device shall be provided and used to manually lock and hold the feed table of knee bolter saws in the neutral position when not in use;

(e) That portion of all saws which is below and behind the saw table shall be effectively guarded by the exhaust hood of other device;

(f) Hinged or removable doors or gates will be permitted where necessary to permit adjusting and oiling.

(7) Shake Machinery:

(a) Shake Splitters:

(A) A positive de-energizing device shall be provided within ready reach of each shake splitter operator;

(B) Each shake splitter shall be provided with an adjustable stroke limiter to eliminate the splitting blade from striking the table;

(C) All splitters shall have a minimum clearance of four inches, from the splitting edge to the table surface, when the splitter is in the extended position;

(D) All splitter tables shall have a friction surface to reduce kick out of the material being split;

(E) Shake splitters shall not be operated at a speed that would cause chunks to be thrown in such a manner as to create a hazard to the operator;

(F) The use of foot pedal (treadle) mechanisms shall be provided with protection to prevent unintended operation from falling or moving objects or by accidental stepping onto the pedal:

(i) The pedal shall have a nonslip surface;

(ii) The pedal return spring shall be of the compression type, operating on a rod or guided within a hole or tube, or designed to prevent interleaving of spring coils in event of breakage;

(iii) If pedal counterweights are provided, the path of the travel of the weight shall be enclosed.

(b) Shake Saw Guards:

(A) Every shake band saw shall be equipped with a saw guard on both sides of the blade down to the top side of the guide;

(B) The outside saw guard shall extend a minimum of 3-1/2 inches below the bottom edge of the saw guide;

(C) The maximum opening between the saw guide and table rolls shall be 15 inches.

(c) Shake Saw Band Wheel Guards:

(A) The band wheels on all shake band saws shall be completely encased or guarded on both sides;

(B) The guards shall be constructed of not less than No. 14 U.S. gauge metal or material equal in strength;

(C) The metal doors, on such guards, shall have a wood liner of a minimum thickness of 1/2 inch.

(d) Shake Saw Band Wheels Speed and Maintenance:

(A) No band wheel shall be run at a peripheral speed in excess of that recommended by the manufacturer;

(B) Each band wheel shall be carefully inspected at least once a month by management;

(C) Any band wheel in which a crack is found in the rim or in a spoke shall be immediately discontinued from service until properly repaired;

(D) Each band saw frame shall be provided with a tension indicator.

(8) Upright Shingle Machine:

(a) Upright Shingle Saw Guards:

(A) Every shingle machine carriage shall be equipped with a hand guard which:

(i) Projects at least one inch beyond the cutting edge of the saw;

(ii) Shall be located not more than 1/2-inch from the side of the saw blade.

(B) Shingle saw guards shall have a rim guard so designed and installed as to prevent chips and knots from flying from the saws. Such guards shall cover the edge of the saw to at least the depth of the teeth, except such part of the cutting edge as is essential for sawing the material;

(C) Saws, arbors, and couplings shall be guarded;

(D) Every part of a clipper saw, except that part which is exposed to trim shingles, shall be enclosed by a guard, so designed and installed to prevent contact with the clipper saw. An additional guard shall be installed not more than four inches above the clipper board and not more than 1/2-inch from the vertical plane of the saw;

(E) The underside of clipper saw boards shall be equipped with a substantial finger guard to effectively protect the operator's fingers. The guard shall be a minimum of five inches long and 1-1/4 inches deep.

(b) Upright Carriage Guards:

(A) Automatic revolving cam set works and rocker arms, on machine frame, shall be guarded where exposed to contact;

(B) The spault catchers shall be not less than 3/16-inch thick and kept sharp at all times. Missing teeth shall be replaced.

(c) Carriage Feed Works:

(A) The pinion gear, bull wheel and Johnson bar operating the same carriage, shall be guarded where exposed to contact;

(B) Each shingle machine clutch treadle shall be arranged so that it is necessary to manually operate the treadle to start the machine:

(i) The use of devices to permit the automatic starting of the machine when the jaw treadle is released is prohibited;

(ii) The carriage shall have a brake to hold it in a neutral position.

(C) Carriage speed shall not exceed 34 strokes per minute.

(9) Related Shake and Shingle Sawing Machinery:

(a) Flat or Taper Saw. A wood or metal guard or its equivalent shall be secured to the sliding table at the side nearest the sawyer to protect him/her from contact with the cutting edge of the saw when a block is not in the cut;

(b) Hip and Ridge Saws:

(A) The hip and ridge saws shall be guarded with a hood-like device;

(B) This guard shall cover that portion of the saw not needed to cut the material, located above the cutting table;

(C) The remaining portion of the saw, located below the table, shall be effectively guarded.

NOTE: The above subsection is applicable to both shake and shingle hip and ridge saws.

(c) Shim Stock Saws. The top ends and sides of the shim stock saws shall be guarded;

(d) Shake or Shingle Groover. The top ends and sides of the groover, to include the press rolls, shall be guarded;

(e) Mechanical Power Transmission Machinery. All mechanical power transmission equipment shall be guarded in accordance with the requirements of Division 2, Subdivision O, Machinery and Machine Guarding.

(10) Circular Saws, Speeds, and Repairs:

(a) Maximum Allowable Speeds:

(A) No circular saw shall be run at a speed in excess of that recommended by the manufacturer;

(B) The manufacturer's recommended speed shall be etched or otherwise permanently marked on the blade, and that speed shall not be exceeded.

(b) Repairs and Reconditioning:

(A) Shingle saws when reduced in size to less than 40 inches in diameter shall be discontinued from service as shingle saws on upright or vertical machines;

(B) Shingle saws may be reconditioned for use as clipper saws, provided the surfaces are reground and the proper balance attained;

(C) Shingle saws may be used to no less than 36 inches on flat or taper saw machines.

(c) Operations:

(A) Workers shall not leave shingle machines unattended while the carriage is in motion:

(i) Chunks may be placed horizontally one tier high on top of shingle blocks;

(ii) Shingle blocks shall be piled in a stable manner, not more than 72 inches high, within the immediate working area of the shingle sawyer or the area shall be barricaded.

(B) Provisions shall be made to prevent blocks from falling into the packing area;

(C) On each machine operated by electric motors, positive means shall be provided for rendering such controls or devices inoperative while repairs or adjustments are being made to the machines they control;

(D) Workers shall not stand on top of blocks while in the process of splitting such blocks into bolts.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 7-1993, f. 6-8-93, cert. ef. 8-1-93

NOTE: Federal rule 1910.268(a)(1), was NOT adopted by OR-OSHA. Instead, OAR 437-002-0316(1) applies:

437-002-0316
Oregon Rules for Telecommunications

(1) Application. This division sets forth safety and health standards that apply to the work conditions, practices, means, methods, operations, installations, and processes performed at telephone, TV cable, and other signaling equipment centers and installations, and at field installations used to transmit or control communication or other signals of the service supplier and may be located outdoors or in building spaces used for such field installations. "Center" work includes the installation, operation, maintenance, rearrangement, and removal of communications equipment and other associated equipment in telecommunications switching centers. "Field" work includes the installation, operation, maintenance, rearrangement, and removal of conductors and other equipment used for signal or communication service, and of their supporting or containing structures, overhead or underground on public or private rights of way, including buildings or other structures.

(2) Employee protection in public work areas.

(a) Before work is begun in the vicinity of vehicular or pedestrian traffic which may endanger employees, pedestrian and traffic control devices shall be provided for all operations on or adjacent to streets, alleys and walkways. The traffic control shall conform to the American National Standards Institute (ANSI) D6.1e-1989 Manual on Uniform Traffic Control Devices for Streets and Highways and the Oregon Department of Transportation's Short Term Work Zones Manual. Where further protection is needed, barriers shall be utilized. At night, warning lights shall be prominently displayed, and excavated areas shall be enclosed with protective barricades.

(b) Once a work area has been established, it shall be the employer's responsibility to provide adequate supervision and periodic surveillance to assure that the above requirements are met.

(3) Before work is performed on overhead lines, underground (such as in manholes), or in buried plants, the employer or designated representative shall make a complete evaluation of the work location to determine if a hazard exists or could be created in the performance of the work. The employer or designated representative shall determine from this evaluation, a safe procedure for performing the work and those means or methods shall be implemented before the work proceeds. Examples of possible worksite conditions that may be hazardous include, but are not limited to:

(a) Manhole, pit, and pole locations, street intersections, alleys and isolated areas;

(b) Weather and road conditions (such as ice, snow, and rain);

(c) Visibility;

(d) Time of day;

(e) Manhole atmosphere conditions (such as explosive gases, exhaust fumes, and oxygen deficiency);

(f) Jointly occupied manholes with foreign utilities; and

(g) Power hazards.

(4) All equipment, tools, and safety devices shall be installed, used and operated in accordance with the manufacturer's recommendations and operating instructions and its listing or labeling.

(5) Rubber insulating equipment.

(a) Rubber insulating equipment designed for the voltage levels to be encountered shall be provided and the employer shall ensure that they are used by employees as required by OAR 437, Division 2/R, 1910.268, Telecommunications.

(b) Rubber insulating equipment shall meet the electrical and physical requirements contained in ASTM Standard D-120-87, "Standard Specifications for Rubber Insulating Gloves," and ASTM Standard D 1048-88(a), "Standard Specifications for Rubber Insulating Blankets," with the exception that:

(A) The maximum proof test current for a 14-inch Class I glove shall be no more than 14 mA; and with the further exception that:

(B) Existing 14-inch Class I rubber gloves that meet a maximum proof test current of 16 mA and a minimum breakdown voltage of 17,000 volts (RMS) acquired prior to July 1, 1975 may be used as long as these gloves comply with the retest requirements of paragraph (f)(5) of 1910.268.

(c) Patching rubber goods is prohibited; rubber protective equipment shall not be vulcanized or patched.

(d) Rubber gloves for workers. A pair of approved rubber gloves and bag shall be assigned to each worker when workers are required to work on or be exposed to energized parts.

(6) Equipment.

(a) Ladder hooks. When ladder hooks are engaged the safety straps shall be lashed around the top rung and strand or otherwise secured to the strand.

(b) Chain saw usage.

(A) Chain saws shall be inspected prior to use and kept in good repair at all times. Saws with defective parts shall not be used.

(B) Chain saw engines shall be shut off while being fueled.

(C) Chain saws shall be equipped with an automatic throttle control which will return the engine to idling speed upon release of the throttle.

(D) All employees using chain saws shall wear flexible ballistic nylon pads or other equivalent protection sewn or otherwise fastened to the trousers, which will protect the legs from the thigh to below the knee, except when working from an aerial lift device.

(E) Chain saws shall not be brought into a bucket or work platform of an aerial lift device. Saws shall be carried on the outside of the aerial lift device. Chain saws shall be started and used only outside of the aerial lift device.

(7) Training. The employer shall see that employees who operate derricks and cranes are properly trained as required in OAR 437,

Division 2/N, OAR 437-002-0229(2), Crane Operator Training Requirements.

(8) Handling poles near energized power conductors.

(a) Insulating gloves shall be worn when handling the pole with either hands or tools, when there exists a possibility that the pole may contact a power conductor. Where the voltage to the ground of the power conductor exceeds 15kV to ground, Class II gloves (as defined in ASTM D1048-88a shall be used. For voltages not exceeding 15kV to ground, insulating gloves shall have a breakdown voltage of at least 17kV.

(b) The guard or insulating material used to protect the pole shall meet the appropriate 3 minute proof test voltage requirements contained in ASTM D 1048-88a.

(9) Fiber optic/lightwave transmission.

(a) Only qualified employees shall install, service, maintain or use lightwave test equipment.

(b) Employees shall avoid eye exposure to emissions from unterminated energized optical connectors.

(c) Employees shall not look into vacant regenerator slots with an optical instrument.

(d) Employees should not examine or look into broken, severed, or disconnected fiber optic cables.

(e) Lightwave emissions may only be viewed with an indirect image converting device.

(f) Microscopes, magnifying glasses and eye loupes shall not be used to examine energized fiber optic cables.

(g) Lightguide terminals must be tagged "Do Not Energize" when splicing technicians are restoring a damaged system.

(10) Reserved.

(11) Additional definitions in Oregon.

(a) "Clearance:"

(A) For working on, means the certification by the property authority that a specified line or piece of equipment is deenergized; that the proper precautionary measures have been taken and that the line or equipment is being turned over to the workers.

(B) From hazard, means adequate separation or protection by the use of protective devices to prevent accidental contact by persons or objects on approach to a point of danger.

(b) "Climbing space" — The vertical space reserved along the side of poles or structures to permit ready access for linemen to equipment and conductors located on poles or structures.

(c) "Communication plant" — The conductors and their associated equipment required to provide public or private signals or communicative service.

(d) "Competent or qualified person" — A person who is familiar with the construction of, or operation of, such lines and/or equipment that concerns his or her position and who is fully aware of the hazards connected therewith or one who has passed a journeyman's examination for the particular branch of the trades with which he or she may be connected.

(e) "Emergency" — When an unusual condition exists that endangers life and/or property.

(f) "Foreman or Person-in-charge" — That person directly in charge of workers doing the work regardless of title.

(g) "Grounding" — The act of placing shorts and grounds on conductors and equipment for the purpose of protecting workers from dangerous voltages while working on such lines or equipment.

(h) "Guard or guarded" — Covered, shielded, fenced, enclosed, or otherwise protected by means of suitable covers, casings, barriers, rails, screens, mats, platforms, or warning signs or devices which are suitable to remove the possibility of dangerous contact on approach by other persons or objects to a point of danger.

(i) "Manlift equipment" — Such types of portable truck-mounted equipment as mechanical, electric or hydraulic ladders and boom-mounted buckets or cages.

(j) "Protection from hazardous voltage" — The isolation from or deenergizing of equipment to prevent accidental contact by persons or objects on approach to point of danger.

(k) "Protective devices" — Those devices such as rubber gloves, rubber blankets, line hose, rubber hoods or other insulating devices, which are specially designed for the protection of workers.

(l) "Public highway" — Land, road, street, boulevard, and every way or place in the state open as matter of right to public vehicular travel, both inside and outside the limit of cities and towns.

(m) "Sheath" — As applied to sharp tools, a case that effectively covers the tool.

(n) "Voltage communications" — Voltage used for electronic communications equipment to which workers or protective equipment may be subjected.

(A) "High" — Over 600 volts to ground — RMS AC or DC or over 1,000 volts RMS across bare parts.

(B) "Medium high" — 151 to 600 volts to ground — RMS AC or DC or 301 to 1,000 volts RMS AC across any bare parts.

(o) "Voltage electric supply" — The maximum effective line voltage to which the workers or protective equipment may be subjected.

(A) "Low" — Includes voltages from 100 to 600 volts.

(B) "High" — Those voltages in excess of 600 volts.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 11-1993, f. 8-4-93, cert. ef. 10-1-93; OSHA 1-1996, f. & cert. ef. 2-16-96; OSHA 2-1999, f. & cert. ef. 4-30-99; OSHA 3-1999, f. & cert. ef. 4-30-99

NOTE: In Oregon, live-line work is prohibited by OAR 437-002-0317(2) below. Other Oregon rules are contained in 437-002-0317(1):

437-002-0317
Additional Oregon Rules for Electric Power Generation, Transmission and Distribution

(1) Two-worker rule.

(a) Not less than two journeymen, or workers with equivalent training and experience, shall be required for work on energized high voltage equipment. A qualified apprentice may work in place of one of the journeymen for the purpose of training.

(b) Exceptions: The following exceptions to the two-worker rule apply:

(A) When refusing circuits with a hot stick.

(B) When operating switches by means of operating handles or switch sticks.

(C) When a qualified apprentice is assigned to work with a journeyman for the purpose of training.

(D) Where life or the public safety are in immediate danger, one worker may remove only the immediate hazard if no other workers are immediately available.

(E) When installing or removing a hot line clamp connection with an approved hot stick on single phase line or apparatus, providing that the connection or disconnection does not interrupt or pick up a load.

(c) Rubber Gloves. Rubber gloves shall not be used for working on circuits in excess of 5,000 volts between phases.

(2) Bare-Hand Work. Live-line bare-hand work is prohibited.

NOTE: 1910.269(q)(3) was NOT adopted by OR-OSHA. In Oregon, OAR 437-002-0317(2) prohibits live-line bare-hand work:
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 3-1994, f. & cert. ef. 8-1-94

Electrical

NOTE: The following rule adopts by reference the federal Electrical Standard.

437-002-0320
Adoption by Reference

In addition to, and not in lieu of, any other health and safety codes contained in OAR Chapter 437, the Department adopts by reference the following rules as printed in the Code of Federal Regulations, 29 CFR 1910, revised as of 7/1/93:

(1) 29 CFR 1910.301 Introduction; published 1/16/81, Federal Register vol. 46, p. 4056; amended 8/7/81, FR vol. 46, p. 40185.

Design Safety Standards for Electrical Systems

(2) 29 CFR 1910.302 Electrical utilization systems; published 1/16/81, Federal Register vol. 46, p. 4056; amended 8/7/81, FR vol. 46, p. 40185; 2/14/07, FR vol. 72, no. 30, p. 7136.

(3) 29 CFR 1910.303 General requirements; published 1/16/81, Federal Register vol. 46, p. 4056; amended 8/7/81, FR vol. 46, p. 40185; 2/14/07, FR vol. 72, no. 30, p. 7136.

OAR 437-002-0321 through 0325, Additional Oregon General Requirements.

(4) 29 CFR 1910.304 Wiring design and protection; published 1/16/81, Federal Register vol. 46, p. 4056; amended 8/7/81, FR vol. 46, p. 40185; amended 8/6/90, FR vol. 55, no. 151, pp. 32016–32020; 2/14/07, FR vol. 72, no. 30, p. 7136.

(5) 29 CFR 1910.305 Wiring methods, components and equipment for general use; published 1/16/81, Federal Register vol. 46, p. 4056; amended 8/7/81, FR vol. 46, p. 40185; 2/14/07, FR vol. 72, no. 30, p. 7136.

(6) 29 CFR 1910.306 Specific purpose equipment and installations; published 1/16/81, Federal Register vol. 46, p. 4056; amended 8/7/81, FR vol. 46, p. 40185; 2/14/07, FR vol. 72, no. 30, p. 7136.

(7) 29 CFR 1910.307 Hazardous (classified) locations; published 1/16/81, Federal Register vol. 46, p. 4056; amended 8/7/81, FR vol. 46, p. 40185; 2/14/07, FR vol. 72, no. 30, p. 7136.

(8) 29 CFR 1910.308 Special systems; published 1/16/81, Federal Register vol. 46, p. 4056; amended 8/7/81 FR vol. 46, p. 40185; 2/14/07, FR vol. 72, no. 30, p. 7136.

(9) (Reserved for 1910.309 – .330)

Safety-Related Work Practices

(10) 29 CFR 1910.331 Scope; published 8/6/90, Federal Register vol. 55, no. 151, pp. 32016–32020; amended 1/31/94, FR vol. 59, no. 20, pp. 4475-6.

(11) 29 CFR 1910.332 Training; published 8/6/90, Federal Register vol. 55, no. 151, pp. 32016–32020.

(12) 29 CFR 1910.333 Selection and use of work practices; published 8/6/90, Federal Register vol. 55, no. 151, pp. 32016-32020; amended 11/1/90, FR vol. 55, no. 212, pp. 46052–46054; amended 1/31/94, FR vol. 59, no. 20, pp. 4475–6; amended with OR-OSHA AO 4-2007, filed and effective 8/15/07.

(13) 29 CFR 1910.334 Use of equipment; published 8/6/90, Federal Register vol. 55, no. 151, pp. 32016-32020; amended 11/1/90, FR vol. 55, no. 212, pp. 46052–46054.

(14) 29 CFR 1910.335 Safeguards for personnel protection; published 8/6/90, Federal Register vol. 55, no. 151, pp. 32016–32020.

(15) (Reserved for 1910.336 – .360)

Safety-Related Maintenance Requirements

(16) (Reserved for 1910.361 – .380)

Safety Requirements for Special Equipment

(17) (Reserved for 1910.381 – .398)

Definitions

(18) 29 CFR 1910.399 Definitions Applicable to this Subdivision; published 1/16/81, Federal Register vol. 46, p. 4056; amended 8/7/81, FR vol. 46, p. 40185, amended 4/12/88, FR vol. 53, p. 12123; amended 8/6/90 FR vol. 55, no. 151, pp. 32016–32020; 2/14/07, FR vol. 72, no. 30, p. 7136.

(19) Appendices: Appendix A — Reference Documents

These standards are available at the Oregon Occupational Safety and Health Division (OR-OSHA), Department of Consumer and Business Services; and the United States Government Printing Office.

Stat. Auth.: ORS 654.025(2) & 656.726(4)

Stats. Implemented: ORS 654.001 - 654.295.

Hist.: OSHA 2-1991, f. 2-4-91, cert. ef. 4-1-91; OSHA 3-1994, f. & cert. ef. 8-1-94; OSHA 4-2007, f. & cert. ef. 8-15-07

Commercial Diving Operations

437-002-0340
Adoption by Reference

In addition to, and not in lieu of, any other safety and health codes contained in OAR chapter 437, the Department adopts by reference the following federal rules as printed in the Code of Federal Regulations, 29 CFR 1910, revised as of 7/1/03, and any subsequent amendments published in the Federal Register as listed below:

(1) 29 CFR 1910.401 Scope and application, published 7/22/77, Federal Register, vol. 42, p. 37668; amended 11/26/82, FR vol. 47, p. 53365; amended 2/17/04, FR vol. 69, p. 7351.

(2) 29 CFR 1910.402 Definitions, published 7/22/77, Federal Register, vol. 42, p. 37668; amended 11/26/82, FR vol. 47, p. 53365; amended 2/17/04, FR vol. 69, p. 7351.

(3) 29 CFR 1910.410 Qualification of dive team, published 7/22/77, Federal Register, vol. 42, p. 37668.

(4) 29 CFR 1910.420 Safe practices manual, published 7/22/77, Federal Register, vol. 42, p. 37668; amended 4/30/84, FR vol. 49, p. 18295.

(5) 29 CFR 1910.421 Pre-dive procedures, published 7/22/77, Federal Register, vol. 42, p. 37668; amended 4/6/82, FR vol. 47, p. 14706; 6/7/89, FR vol. 54, p. 24334.

(6) 29 CFR 1910.422 Procedures during dive, published 7/22/77, Federal Register, vol. 42, p. 37668.

(7) 29 CFR 1910.423 Post-dive procedures, published 7/22/77, Federal Register, vol. 42, p. 37668; amended 4/30/84, FR vol. 49, p. 18295.

(8) 29 CFR 1910.424 SCUBA diving, published 7/22/77, Federal Register, vol. 42, p. 37668.

(9) 29 CFR 1910.425 Surface-supplied air diving, published 7/22/77, Federal Register, vol. 42, p. 37668.

(10) 29 CFR 1910.426 Mixed-gas diving, published 7/22/77, Federal Register, vol. 42, p. 37668.

(11) 29 CFR 1910.427 Liveboating, published 7/22/77, Federal Register, vol. 42, p. 37668.

(12) 29 CFR 1910.430 Equipment, published 6/27/74, Federal Register, vol. 39, p. 23502; amended 4/30/84, FR vol. 49, p. 18295; 9/18/88, FR, vol. 51, p. 33033.

(13) 29 CFR 1910.440 Recordkeeping requirements, published 7/22/77, Federal Register, vol. 42, p. 37688; amended 5/23/80, FR vol. 45, p. 35281; 4/6/82, FR, vol. 47, p. 14706; 9/29/86, FR, vol. 51, p. 34562; 3/7/96, FR vol. 61, no. 46, p. 9242; 4/3/06, FR vol. 71, no. 63, p. 16669.

(14) 29 CFR 1910.441 Effective date, published 7/22/77, Federal Register, vol. 42, p. 37668; 4/3/06, FR vol. 71, no. 63, p. 16669.

(15) 29 CFR 1910, Appendix A to Subdivision T, Examples of conditions which may restrict or limit exposures to hyperbaric conditions, published 7/22/77, Federal Register, vol. 42, p. 37668.

(16) 29 CFR 1910, Appendix B to Subdivision T, Guidelines for scientific diving, published 1/9/85, Federal Register, vol. 50, p. 1050.

(17) 29 CFR 1910, Appendix C to Subdivision T, Alternative Conditions under sec.1910.401(a)(3) for Recreational Diving Instructors and Diving Guides (Mandatory), published 2/17/04, Federal Register, vol. 69, p. 7351.

NOTE: These standards are on file at the Oregon Occupational Safety and Health Division, Oregon Department of Consumer and Business Services, and the United States Government Printing Office.

Stat. Auth.: ORS 654.025(2) & 656.726(4)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 5-1993, f. 5-3-93, cert. ef. 6-1-93; OSHA 4-1997, f. & cert. ef. 4-2-97; OSHA 2-2004, f& cert. ef. 5-20-04; OSHA 4-2006, f. & cert. ef. 7-24-06

Additional Oregon Rules for Commercial Diving

437-002-0342
Additional Oregon Definition

"Depth" The actual depth of the dive measured in feet below the water's surface. For purposes of determining pressure equivalents, these measurements are assumed to be salt water at 0.445 pounds per square inch per foot of depth (0.445 psi/ft depth). Fresh water equals 0.432 psi/ft depth.

Stat. Auth.: ORS 654.025(2) & 656.726(3)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 5-1993, f. 5-3-93, cert. ef. 6-1-93

437-002-0345
Inland Emergency Aid

If conducting inland dive operation, the telephone or call numbers of the nearest local sheriff's office shall be included on the "Emergency Aid" list.

Stat. Auth.: ORS 654.025(2) & 656.726(3)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 5-1993, f. 5-3-93, cert. ef. 6-1-93

437-002-0355
Air Supply Systems (Compressed Gases and Air)

(1) For purposes of this standard, air supply systems shall include:

(a) Air supplied directly to a diver;

(b) Compressed systems used to fill air cylinders (tanks);

(c) Compressed air cylinders (tanks); and

(d) Compressed oxygen cylinder;

(e) For additional requirements for compressed gas cylinders, see OAR division 2/I, 1910.134(d), Respiratory Protection; Division 2/H, 1910.101, Compressed Gases; and 30 CFR 11, Respiratory Protective Devices.

(2) Tests for carbon monoxide shall be conducted on the air in air supply systems as follows:

(a) At least daily for air supplied directly to the diver; and

(b) At least once for each group or batch of cylinders filled or purchased.

(3) The employer shall insure that the requirements of 1910.430(d) through (i) are met, regardless of where compressed gas cylinder (tanks) are purchased or filled.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-1993, f. 5-3-93, cert. ef. 6-1-93

Toxic and Hazardous Substances

437-002-0360
Adoption by Reference

In addition to, and not in lieu of, any other safety and health codes contained in OAR chapter 437, the Department adopts by reference the following federal rules as printed in the Code of Federal Regulations, 29 CFR 1910, revised as of 7/1/99, and any subsequent amendments published in the **Federal Register** as listed below:

(1) (Reserved) 29 CFR 1910.1000 Air contaminants, published 6/27/74, Federal Register, vol. 39, pp. 23540-23543; amended in the following FR publications: 5/28/75, vol. 40, pp. 23072-23073; 5/3/77, vol. 42, p. 22525; 1/17/78, vol. 43, p. 2600; 2/10/78, vol. 43, p. 5963; 3/29/78, vol. 43. p. 13563; 5/4/78, vol. 43, p. 19624; 6/23/78, vol. 43, p. 27394; 6/30/78, vol. 43, p. 28473; 10/3/78, vol. 43, p. 45809; 11/14/78, vol. 43, p. 53007; 12/8/78, vol. 43, pp. 57602-57603; 2/5/79, vol. 44, p. 7141; 6/18/80, vol. 45, pp. 12416-12417; 7/28/80, vol. 45, pp. 50328-50329; 6/19/81, vol. 46, p. 32022; 6/22/84, vol. 49, p. 25796; 1/02/85, vol. 50, p. 64; 12/13/85, vol. 50, p. 51173; 11/17/86, vol. 51, p. 41477; 9/11/87, vol. 52, p. 34562; 12/4/87, vol. 52, p. 46291; 1/19/89, vol. 54, pp. 2920-2983; 7/5/89, vol. 54, no. 127, pp. 28054-28061; 9/5/89, vol. 54, no. 170, pp. 36767-36768; 11/15/89, vol. 54, no. 219, p. 47513; 2/5/90, vol. 55, no. 24, pp. 3724; 5/9/90, vol. 55, no. 90, pp. 19258-19259; 11/8/90, vol. 55, no. 217, pp. 46948-46950; 7/1/92, vol. 57, no. 127, pp. 29204-29206.

NOTE: 29 CFR 1910.1000 was repealed on 11/15/93 by OR-OSHA. In Oregon, OAR 437-002-0382 applies.

(2) 29 CFR 1910.1001 Asbestos, published 6/20/86, Federal Register, vol. 51, no. 119, pp. 22612-22790; amended 10/17/86, FR vol. 51, pp. 37002-37007; amended 5/12/87, FR vol. 52, pp. 17754-17755; amended 9/14/88, FR vol. 53, no. 178, pp. 35610-35627; amended 9/23/88, FR vol. 53, no. 185, p. 37080; amended 7/21/89, FR vol. 54, no. 139, p. 30704-30705; amended 12/20/89, FR vol. 54, no. 243, p. 52028; amended 2/5/90, FR vol. 55, no. 24, pp. 3731-3732; amended 12/10/90, FR vol. 55, no. 237, pp. 50685-50687; amended 9/4/91, FR vol. 56, no. 171, pp. 43699-43700; 3/5/92, FR vol. 57, no. 44, p. 7878; 6/8/92, FR vol. 57, no. 110, p. 24330; 8/10/94, FR vol. 59, no. 153, p. 41065; 6/29/95, FR vol. 60, no. 125, pp. 33983-34002; 8/23/96, FR vol. 61, no. 165, pp. 43434-43459; 1/8/98, FR vol. 63, no. 5, p. 1285; 4/23/98, FR vol. 63, no. 78, p. 20099; 1/5/05, FR vol. 69, p. 1111; 4/3/06, FR vol. 71, no. 63, p. 16669; 8/24/06, FR vol. 71, no. 164, p. 50122.

(3) 29 CFR 1910.1002 Coal tar pitch volatiles, interpretation of term, published 1/21/83, Federal Register, vol. 43, p. 2768.

(4) 29 CFR 1910.1003 13 Carcinogens, published 3/7/96, Federal Register, vol. 61, no. 46, p. 9242; 1/8/98, FR vol. 63, no. 5, p. 1286; 4/23/98, FR vol. 63, no. 78, p. 20099; 1/5/05, FR vol. 69, p. 1111; 4/3/06, FR vol. 71, no. 63, p. 16669.

(5) 29 CFR 1910.1004 See §1910.1003, 13 Carcinogens.

(6) Reserved for 29 CFR 1910.1005.

(7) 29 CFR 1910.1006 See §1910.1003, 13 Carcinogens.

(8) 29 CFR 1910.1007 See §1910.1003, 13 Carcinogens.

(9) 29 CFR 1910.1008 See §1910.1003, 13 Carcinogens.

(10) 29 CFR 1910.1009 See §1910.1003, 13 Carcinogens.

(11) 29 CFR 1910.1010 See §1910.1003, 13 Carcinogens.

(12) 29 CFR 1910.1011 See §1910.1003, 13 Carcinogens.

(13) 29 CFR 1910.1012 See §1910.1003, 13 Carcinogens.

(14) 29 CFR 1910.1013 See §1910.1003, 13 Carcinogens.

(15) 29 CFR 1910.1014 See §1910.1003, 13 Carcinogens.

(16) 29 CFR 1910.1015 See §1910.1003, 13 Carcinogens.

(17) 29 CFR 1910.1016 See §1910.1003, 13 Carcinogens.

(18) 29 CFR 1910.1017 Vinyl chloride, published 10/4/74, Federal Register, vol. 39, p. 35896; amended by the following FR publications: 12/3/74, FR vol. 39, p. 41848; 3/25/75, FR vol. 40, p. 13211; 5/28/75, FR vol. 40, p. 23072; 10/24/78, FR vol. 43, p. 49751; 5/23/80, FR vol. 45, p. 35282; 6/7/89, FR vol. 54, p. 24334; 6/30/93, FR vol. 58, no. 124, p. 35310; 1/8/98, FR vol. 63, no. 5, p. 1286; 1/5/05, FR vol. 69, p. 1111; 4/3/06, FR vol. 71, no. 63, p. 16669; 8/24/06, FR vol. 71, no. 164, p. 50122.

(19) 29 CFR 1910.1018 Inorganic arsenic, published 5/25/78, Federal Register, vol. 43, p. 19624; amended by the following FR publications: 6/30/78, FR vol. 43, p. 28472; 5/23/80, FR vol. 45, p. 35282; 6/7/89, FR vol. 54, p. 24334; 6/30/93, FR vol. 58, no. 124, p. 35310; 3/7/96, FR vol. 61, no. 46, p. 9245; 1/8/98, FR vol. 63, no. 5, p. 1286; 1/5/05, FR vol. 69, p. 1111; 4/3/06, FR vol. 71, no. 63, p. 16669; 8/24/06, FR vol. 71, no. 164, p. 50122.

(20) 29 CFR 1910.1020 Access to Employee Exposure and Medical Records, published May 23, 1980, Federal Register, vol. 45, no. 102, pp. 35277-35281; amended September 29, 1988, Federal Register, vol. 53, no. 189, pp. 38163-38168; 3/7/96, FR vol. 61, no. 46, p. 9235; 6/20/96, FR vol. 61, p. 31427; 4/3/06, FR vol. 71, no. 63, p. 16669. **Appendix A** — Sample Authorization Letter. **Appendix B** — Availability of NIOSH RTECS.

(21) 29 CFR 1910.1025 Lead, published 11/14/78, Federal Register, vol. 44, p. 53007; amended by the following FR publications: 1/26/79, vol. 44, p. 5447; 3/13/79, vol. 44, p. 14554; 8/28/79, vol. 44 p. 50338; 10/23/79, vol. 44, p. 60981; 11/30/79, vol. 44, 68828; 5/23/80, vol. 45, p. 35283; 12/11/81, vol. 46, p. 60775; 11/12/82, vol. 47, p. 51117; 3/6/83, vol. 48, p. 9641; 4/30/84, vol. 49, p. 18295; 6/5/84, vol. 49, p. 23175; 6/5/84, vol. 49, p. 23175; and modified by OSHA Instruction CPL 2-2.47 published by the U. S. Department of Labor on 1/5/89. Amended 7/11/89, vol. 54, p. 29142; 1/30/90, vol. 55, no. 20, pp. 3166-3167; 2/13/90, vol. 55, no. 30, pp. 4998-4999; modification of OSHA Instruction CPL 2-2.47, published by Office of Health Compliance Assistance, OSHA, on 7/10/90. Amended 5/31/91, FR vol. 56, no. 105, p. 24686; amended 10/11/95, FR vol. 60, p. 52856; 1/8/98, FR vol. 63, no. 5, p. 1287; 4/23/98, FR vol. 63, no. 78, p. 20099; 1/5/05, FR vol. 69, p. 1111; 4/3/06, FR vol. 71, no. 63, p. 16669; 8/24/06, FR vol. 71, no. 164, p. 50122.

(22) 29 CFR 1910.1026 Chromium (VI), published 2/28/06, Federal Register, vol. 71, no. 39, p. 10100; 6/23/06, FR vol. 71, no. 121, p. 36008.

(23) 29 CFR 1910.1027 Cadmium, published 9/14/92, Federal Register, vol. 57, no. 178, pp. 42388-42453; corrections published 4/23/93, FR vol. 58, no. 77, pp. 21778-21787; 1/8/98, FR vol. 63, no. 5, p. 1288; 1/5/05, FR vol. 69, p. 1111; 4/3/06, FR vol. 71, no. 63, p. 16669; 8/24/06, FR vol. 71, no. 164, p. 50122.

(24) 29 CFR 1910.1028 Benzene, and Appendices A, B, C, D, and E, published 9/11/87, Federal Register, vol. 52, no. 176, pp. 34562-34578; 1/8/98, FR vol. 63, no. 5, p. 1289; 4/23/98, FR vol. 63, no. 78, p. 20099; 1/5/05, FR vol. 69, p. 1111; 4/3/06, FR vol. 71, no. 63, p. 16669; 8/24/06, FR vol. 71, no. 164, p. 50122.

(25) 29 CFR 1910.1029 Coke oven emissions, published 10/22/76, Federal Register, vol. 41, p. 46784; amended by the following FR publications: 1/18/77, FR vol. 42, p. 3304; 5/23/80, FR vol. 45, p. 35283; 9/13/85, FR vol. 50, p. 37353; 6/7/89, FR vol. 54, p. 24334; 1/8/98, FR vol. 63, no. 5, p. 1290; 1/5/05, FR vol. 69, p. 1111; 4/3/06, FR vol. 71, no. 63, p. 16669; 8/24/06, FR vol. 71, no. 164, p. 50122.

(26) 29 CFR 1910.1030 Bloodborne pathogens, published 12/6/91, Federal Register, vol. 56, no. 235, pp. 64175-64182; amended 7/1/92, vol. 57, no. 127, p. 29206; 1/18/01, FR vol. 66, no. 12, p. 5318; 4/3/06, FR vol. 71, no. 63, p. 16669.

(27) 29 CFR 1910.1043 Cotton dust, published 6/23/78, Federal Register, vol. 43, p. 27394; amended by the following FR publications: 8/8/78, FR vol. 43, p. 35035; 10/10/80, FR vol. 45, p. 67340; 12/13/85, FR vol. 50, p. 51173; 7/3/86, FR vol. 51, p. 24325; 6/7/89, FR vol. 54, p. 24334; 1/8/98, FR vol. 63, no. 5, p. 1290; 12/7/00, FR vol. 65, no. 236, p. 76563; 1/5/05, FR vol. 69, p. 1111; 4/3/06, FR vol. 71, no. 63, p. 16669; 8/24/06, FR vol. 71, no. 164, p. 50122.

(28) 29 CFR 1910.1044 1,2-dibromo-3-chloropropane, published 3/17/78, Federal Register, vol. 43, p. 11527; amended by the following FR publications: 5/23/80, FR vol. 45, p. 35283; 4/30/84, FR vol. 49, p. 18295; 6/7/89, FR vol. 54, p. 24334; 6/30/93, FR vol. 58, no. 124, p. 35310; 1/8/98, FR vol. 63, no. 5, p. 1291; 1/5/05, FR vol. 69, p. 1111; 4/3/06, FR vol. 71, no. 63, p. 16669; 8/24/06, FR vol. 71, no. 164, p. 50122.

(29) 29 CFR 1910.1045 Acrylonitrile, published 10/3/78, Federal Register, vol. 43, p. 45809; amended by the following FR publications: 5/23/80, FR vol. 45, p. 35283; 6/7/89, FR vol. 54, p. 24334; 6/30/93, FR vol. 58, no. 124, p. 35310; 1/8/98, FR vol. 63, no. 5, p. 1291; 4/23/98, FR vol. 63, no. 78, p. 20099; 1/5/05, FR vol. 69, p. 1111;

4/3/06, FR vol. 71, no. 63, p. 16669; 8/24/06, FR vol. 71, no. 164, p. 50122.

(30) 29 CFR 1910.1047 Ethylene oxide, published 6/22/84, Federal Register, vol. 49, p. 25796; amended 3/12/85, FR vol. 50, p. 9801; amended 10/11/85, FR vol. 50, p. 41494; amended 7/10/86, FR vol. 51, p. 25053; amended 4/6/88, FR vol. 53, p. 11437; amended 7/26/88, FR vol. 53, p. 27960; 1/8/98, FR vol. 63, no. 5, p. 1292; 1/5/05, FR vol. 69, p. 1111; 4/3/06, FR vol. 71, no. 63, p. 16669; 8/24/06, FR vol. 71, no. 164, p. 50122.

(31) 29 CFR 1910.1048 Formaldehyde, and **Appendices A**, **B**, **C**, **D** and **E**, published 12/4/87, Federal Register, vol. 52, no. 233, pp. 46291-46312; and amendments to 1910.1048 published 3/2/88, FR vol. 53, no. 41, pp. 6628-6629; 11/8/88, FR vol. 53, pp. 45080-45088; 11/22/88, FR vol. 53, p. 47188; 7/13/89, FR vol. 54, no. 133, pp. 29545-29546; 8/1/89, FR vol. 54, No. 146, p. 31765; 8/29/89, FR vol. 54, p. 35639; 9/11/89, FR vol. 54, p. 37531; 10/24/89, vol. 54, pp. 43344-43346; 6/13/90, FR vol. 55, no. 114, p. 24070; 8/10/90, FR vol. 55, no. 155, p. 32616; 12/17/90, FR vol. 55, no. 242, p. 51698; 3/12/91, FR vol. 56, no. 48, pp. 10377-8; 6/12/91, FR vol. 56, no. 113, p. 26909; 8/8/91, FR vol. 56, no. 153, p. 37650-1, 11/13/91, FR vol. 56, no. 219, p. 57593; 1/23/92, FR vol. 57, no. 15, p. 2681-2; 5/5/92, FR vol. 57, no. 87, p. 19262; 5/27/92, FR vol. 57, no. 102, pp. 22307-9; 6/10/92, FR vol. 57, no. 112, p. 24701; 6/18/92, FR vol. 57, no. 118, pp. 27160-1; 1/8/98, FR vol. 63, no. 5, p. 1293; 4/23/98, FR vol. 63, no. 78, p. 20099; 1/5/05, FR vol. 69, p. 1111; 4/3/06, FR vol. 71, no. 63, p. 16669; 8/24/06, FR vol. 71, no. 164, p. 50122.

(32) 29 CFR 1910.1050 Methylenedianiline (MDA), published 8/10/92, Federal Register, vol. 57, no. 154, pp. 35666-35681; 1/8/98, FR vol. 63, no. 5, p. 1293; 4/23/98, FR vol. 63, no. 78, p. 20099; 4/3/06, FR vol. 71, no. 63, p. 16669; 8/24/06, FR vol. 71, no. 164, p. 50122.

(33) 29 CFR 1910.1051 1,3-Butadiene, published 11/4/96, Federal Register, vol. 61, no. 214, p. 56831; 1/8/98, FR vol. 63, no. 5, p. 1294; 1/5/05, FR vol. 69, p. 1111; 4/3/06, FR vol. 71, no. 63, p. 16669.

(34) 29 CFR 1910.1052 Methylene Chloride, published 1/10/97, Federal Register, vol. 62, no. 7, p. 1601; 10/20/97, FR vol. 62, p. 54382; 12/18/97, FR vol. 62, no. 243, p. 66275; 1/8/98, FR vol. 63, no. 5, p. 1295; 4/23/98, FR vol. 63, no. 78, p. 20099; 9/22/98, FR vol. 63, no. 183, p. 50729; amended by AO 12-2001, reference typo corrected, f. and ef. 10/26/01; 4/3/06, FR vol. 71, no. 63, p. 16669; 8/24/06, FR vol. 71, no. 164, p. 50122.

NOTE: 29 CFR 1910.1101 Asbestos, was repealed by Federal Register, vol. 57, no. 110, issued 6/8/92, p. 24330.

(35) 29 CFR 1910.1096 Ionizing radiation, published 6/27/74, Federal Register, vol. 39, p. 23502; amended 10/24/78, FR vol. 43, p. 49746; 11/7/78, FR vol. 43, p. 51759; 4/30/84, FR vol. 49, p. 18295; 6/30/93, FR vol. 58, no. 124, p. 35309; 6/20/96, FR vol. 61, no. 46, p. 31427.

(36) 29 CFR 1910.1200 Hazard communication, published 8/24/87, Federal Register, vol. 52, p. 31877; amended by the following FR publications: 12/4/87, FR vol. 52, p. 46080; 4/27/88, FR vol. 53, p. 15035; 2/15/89, FR vol. 54, p. 6888; 6/7/89, FR vol. 54, p. 24334; 2/9/94, FR vol. 59, no. 27, pp. 6126-6184; 4/13/94, FR vol. 59, no. 71, pp. 17478; 12/22/94, FR vol. 59, no. 245, p. 65947; 3/7/96, FR vol. 61, no. 46, p. 9245.

(37) 29 CFR 1910.1201 Retention of DOT Markings, Placards and Labels, published 7/19/94, Federal Register, vol. 59, p. 36700.

(38) 29 CFR 1910.1450 Occupational Exposure to Hazardous Chemicals in Laboratories, published 1/31/90, Federal Register, vol. 55 no. 21, pp. 3300-3335; corrected 3/6/90, FR vol. 55, no. 44, p. 7967; 7/1/92, vol. 57, no. 127, p. 29204; 4/3/06, FR vol. 71, no. 63, p. 16669.

(39) 29 CFR 1910.1499 Removed. Published 3/7/96, Federal Register, vol. 61, no. 46, p. 9245.

(40) 29 CFR 1910.1500 Removed. Published 3/7/96, Federal Register, vol. 61, no. 46, p. 9245.

These standards are available at the Oregon Occupational Safety and Health Division, Oregon Department of Consumer and Business Services, and the **United States Government Printing Office**.

Stat. Auth.: ORS 654.025(2) & 656.726(4)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: APD 13-1988, f. 8-2-88 & ef. 8-2-88; APD 14-1988, f. & ef. 9-12-88; APD 18-1988, f. & ef. 11-17-88; APD 4-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 6-1989(Temp), f. 4-20-89, ef. 5-1-89; APD 9-1989, f. & ef. 7-7-89; APD 11-1989, f. 7-14-89, ef. 8-14-89; APD 13-1989, f. & ef. 7-17-89; OSHA 1-1990(Temp), f. & ef. 1-11-90; OSHA 3-1990(Temp), f. & ef. 1-19-90; OSHA 6-1990, f. & ef. 3-2-90; OSHA 7-1990, f. & ef. 3-2-90; OSHA 9-1990, f. 5-8-90, ef. 8-8-90; OSHA 11-1990, f. 6-7-90, ef. 7-1-90; OSHA 13-1990(Temp), f. 6-28-90, ef. 8-1-90; OSHA 14-1990, f. 6-28-90, ef. 8-1-90; OSHA 19-1990, f. & ef. 8-31-90; OSHA 20-1990, f. & ef. 9-18-90; OSHA 21-1990, f. & ef. 9-18-90; OSHA 7-1991, f. & cert. ef. 4-25-91; OSHA 13-1991, f. & cert. ef. 10-10-91; OSHA 15-1991, f. & cert. ef. 12-13-91; OSHA 1-1992, f. & cert. ef. 1-22-92; OSHA 4-1992, f. & cert. ef. 4-16-92; OSHA 5-1992, f. 4-24-92, cert. ef. 7-1-92; OSHA 6-1992, f. & cert. ef. 5-18-92; OSHA 9-1992(Temp), f. & cert. ef. 9-24-92; OSHA 11-1992, f. & cert. ef. 10-9-92; OSHA 12-1992, f. & cert. ef. 10-13-92; OSHA 14-1992, f. & cert. ef. 12-7-92; OSHA 15-1992, f. & cert. ef. 12-30-92; OSHA 1-1993, f. & cert. ef. 1-22-93; OSHA 6-1993(Temp), f. & cert. ef. 5-17-93; OSHA 12-1993, f. 8-20-93, cert. ef. 11-1-93; OSHA 17-1993, f. & cert. ef. 11-15-93; OSHA 4-1994, f. & cert. ef. 8-4-94; OSHA 1-1995, f. & cert. ef. 1-19-95; OSHA 4-1995, f. & cert. ef. 3-29-95; OSHA 5-1995, f. & cert. ef. 4-6-95; OSHA 8-1995, f. & cert. ef. 8-25-95; OSHA 4-1996, f. & cert. ef. 9-13-96; OSHA 6-1996, f. & cert. ef. 11-29-96; OSHA 4-1997, f. & cert. ef. 4-2-97; OSHA 6-1997, f. & cert. ef. 5-2-97; OSHA 8-1997, f. & cert. ef. 11-14-97; OSHA 1-1998, f. & cert. ef. 2-13-98; OSHA 3-1998, f. & cert. ef. 7-7-98; OSHA 1-1999, f. & cert. ef. 3-22-99; OSHA 2-1999, f. & cert. ef. 4-30-99; OSHA 6-2001, f. & cert. ef. 5-15-01; OSHA 10-2001, f. 9-14-01, cert. ef. 10-18-01; OSHA 12-2001, f. & cert. ef. 10-26-01; OSHA 1-2005, f. & cert. ef. 4-12-05; OSHA 4-2006, f. & cert. ef. 7-24-06; OSHA 6-2006, f. & cert. ef. 8-30-06; OSHA 10-2006, f. & cert. ef. 11-30-06

437-002-0361
Oregon-Initiated Rules

(1) The requirements in these rules which pertain only to or are triggered by the excursion limit shall become effective 60 days after the adoption of these rules, except for the excursion limit provisions in 1910.1047(a)(2), (d), (f)(2), (g)(3), and (j), which shall become effective 142 days after adoption of these rules.

(2) Compliance with the requirements of this section which pertain only to or are triggered by the excursion limit shall be by 180 days (six months) following the adoption of these rules, except for compliance with the excursion limit provisions of 1910.1047(a)(2), (d), (f)(2), (g)(3), and (j) which shall be effective 210 days (seven months) after the adoption of these rules, and implementation of engineering controls specified for compliance with the excursion limit, which shall be nine months after the adoption of these rules.

Stat. Auth.: ORS 654.025(2) & 656.726(3)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: APD 18-1988, f. & ef. 11-17-88

437-002-0363
Oregon Amendment

1910.1028(j)(1)(ii) is amended to read (wording in brackets is deleted): 1910.1028(j)(1)(ii) The employer shall ensure that labels or other appropriate forms of warning are provided for containers of benzene within the workplace. [There is no requirement to label pipes.] The labels shall comply with the requirements of CFR 1910.1200(f) and in addition shall include the following legend:

Danger
Contains Benzene
Cancer Hazard

Stat. Auth.: ORS 654.025(2) & 656.726(3)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: APD 13-1988, f. & ef. 8-2-88

437-002-0364
Oregon Rules for MOCA (4,4'-Methylene Bis (2-chloroaniline))

NOTE: The following Oregon-initiated rule, OAR 437-002-0364, contains wording formerly contained in Division 116, Carcinogens, but the wording is now applicable only to MOCA, which is not covered by federal standards for carcinogens.

(1) Application. This rule applies to any areas in which MOCA (4,4'-Methylene bis (2-chloroaniline)) (CAS# 101-14-4) is manufactured, processed, repackaged, released, handled, or stored, but shall not apply to transhipment in sealed containers, except for the labeling requirements under OAR 437-002-0364(5)(b), (c), and (d).

(2) Definitions:

(a) "Absolute Filter" is one capable of retaining 99.97 percent of a monodisperse aerosol of 0.3 µm particles;

(b) "Administrator" means the Administrator of the Oregon Occupational Safety and Health Division, or any person directed to act for the Administrator;

(c) "Authorized Employee" means an employee whose duties require them to be in the regulate area and who has been specifically assigned by the employer;

(d) "Clean Change Room" means a room where employees put on clean clothing and-or protective equipment in an environment free of MOCA. The clean change room shall be contiguous to and have an entry from a shower room, when the shower room facilities are otherwise required in this rule;

(e) "Closed System" means an operation involving MOCA where containment prevents the release of MOCA into regulated areas, nonregulated areas, or the external environment;

(f) "Decontamination" means the inactivation of MOCA or its safe disposal;

(g) "Disposal" means the safe removal of MOCA from the work environment;

(h) "Emergency" means an unforeseen circumstance or set of circumstances resulting in the release of MOCA which may result in exposure to or contact with MOCA;

(i) "External Environment" means any environment external to regulated and nonregulated areas;

(j) "Isolated System" means a fully enclosed structure other than the vessel of containment of MOCA which is impervious to the passage of MOCA and which would prevent the entry of MOCA into regulated areas, nonregulated areas, or the external environment, should leakage or spillage from the vessel of containment occur;

(k) "Laboratory Type Hood" is a device enclosed on three sides and the top and bottom, designed and maintained so as to draw air inward at an average linear face velocity of 150 feet per minute with a minimum of 125 feet per minute; designed, constructed, and maintained in such a way that an operation involving MOCA within the hood does not require the insertion of any portion of any employee's body other than their hands and arms;

(l) "Nonregulated Area" means any area under the control of the employer where entry and exit is neither restricted nor controlled;

(m) "Open-Vessel System" means an operation involving MOCA in an open vessel, which is not in an isolated system, a laboratory type hood, nor in any other system affording equivalent protection against the entry of MOCA into regulated areas, nonregulated areas, or the external environment;

(n) "Protective Clothing" means clothing designed to protect an employee against contact with or exposure to MOCA;

(o) "Regulated Area" means an area where entry and exit is restricted and controlled.

(3) Requirements for areas containing MOCA:

(a) A regulated area shall be established by an employer where MOCA is manufactured, processed, used, repackaged, released, handled or stored. All such areas shall be controlled in accordance with the requirements for the following category or categories describing the operation involved;

(A) Isolated systems. Employees working with MOCA within an isolated system, such as a "glove box" shall wash their hands and arms upon completion of the assigned task and before engaging in other activities not associated with the isolated system.

(B) Closed system operation. Within regulated areas where MOCA is stored in sealed containers, or contained in a closed system, including piping systems, with any sample ports or openings closed while MOCA is contained within:

(i) Access shall be restricted to authorized employees only; and

(ii) Employees shall be required to wash hands, forearms, face and neck upon each exit from the regulated areas, close to the point of exit and before engaging in other activities.

(C) Open vessel system operations. Open vessel system operations as defined in section (2) of this rule are prohibited;

(D) Transfer from a closed system, charging or discharging point operations, or otherwise opening a closed system. In operations involving "laboratory type hoods," or in locations where MOCA is contained in an otherwise "closed system." but is transferred, charged, or discharged into other normally closed containers, the provisions of this rule shall apply:

(i) Access shall be restricted to authorized employees only;

(ii) Each operation shall be provided with continuous local exhaust ventilation so that air movement is always from ordinary work areas to the operation. Exhaust air shall not be discharged to regulated areas, nonregulated areas or the external environment unless decontaminated. Clean make-up air shall be introduced in sufficient volume to maintain the correct operation of the local exhaust system;

(iii) Employees shall be provided with, and required to wear, clean, full body protective clothing (smocks, coveralls, or long-sleeved shirt and pants), shoe covers and gloves prior to entering the regulated area;

(iv) Employees engaged in MOCA handling operations shall be provided with and required to wear and use a half-face, filter-type respirator for dusts, mists, and fumes, in accordance with OAR chapter 437, Division 2-I, Personal Protective Equipment, 1910.134, Respiratory Protection. A respirator affording higher levels of protection may be substituted;

(v) Prior to each exit from a regulated area, employees shall be required to remove and leave protective clothing and equipment at the point of exit and at the last exit of the day, to place used clothing and equipment in impervious containers at the point of exit for purposes of decontamination or disposal. The contents of such impervious containers shall be identified, as required under subsections (5)(b), (c) and (d) of this rule;

(vi) Employees shall be required to wash hands, forearms, face and neck on each exit from the regulated area, close to the point of exit, and before engaging in other activities;

(vii) Employees shall be required to shower after the last exit of the day;

(viii) Drinking fountains are prohibited in the regulated area.

(E) Maintenance and decontamination activities. In cleanup or leaks or spills, maintenance or repair operations on contaminated systems or equipment, or any operations involving work in an area where direct contact with MOCA could result, each authorized employee entering that area shall:

(i) Be provided with and required to wear clean, impervious garments, including gloves, boots and continuous-air supplied hood in accordance with OAR chapter 437, division 2-I, Personal Protective Equipment;

(ii) Be decontaminated before removing the protective garments and hood; and

(iii) Be required to shower upon removing the protective garments and hood.

(F) Premixed solutions. Where MOCA is present only in a single solution at a temperature not exceeding 220°F, the establishment of a regulated area is not required; however:

(i) Only authorized employees shall be permitted to handle such materials;

(ii) Each day employees shall be provided with and required to wear a clean change of protective clothing (smocks, coveralls, or long-sleeved shirts and pants), gloves, and other protective garments and equipment necessary to prevent contact with the solution in the process used;

(iii) Employees shall be required to remove and leave protective clothing and equipment when leaving the work area at the end of the work day, or at any time solution is spilled on such clothing or equipment. Used clothing and equipment shall be placed in impervious containers for purposes of decontamination or disposal. The contents of such impervious containers shall be identified, as required under subsections (5)(b), (c) and (d) of this rule;

(iv) Employees shall be required to wash hands and face after removing such clothing and equipment and before engaging in other activities;

(v) Employees assigned to work covered by paragraph (3)(a)(F) of this rule shall be deemed to be working in regulated areas for the purposes of subsection (4)(a); paragraphs (b)(A) and (B); (c)(C) and (D), and sections (5) through (7) of this rule;

(vi) Work areas where solution may be spilled shall be:

(I) Covered daily or after any spill with a clean covering; or

(II) Cleaned thoroughly daily and after any spill.

(4) General Regulated Area Requirements:

(a) Emergencies. In an emergency, immediate measures including, but not limited to, the requirements of paragraphs (A), (B), (C), (D), and (E) of this subsection shall be implemented:

(A) The potentially affected area shall be evacuated as soon as the emergency has been determined;

(B) Hazardous conditions created by the emergency shall be eliminated and the potentially affected area shall be decontaminated prior to the resumption of normal operations;

(C) Special medical surveillance by a physician shall be instituted within 24 hours, for employees present in the potentially affected area at the time of the emergency. A report of the medical surveillance and any treatment shall be included in the incident report, in accordance with subsection (6)(b) of this rule;

(D) Where an employee has a known contact with MOCA, such employee shall be required to shower as soon as possible, unless contraindicated by physical injuries;

(E) An incident report on the emergency shall be reported as provided in subsection (6)(b) of this rule;

(F) Emergency deluge showers and eyewash fountains supplied with running potable water shall be located near, within sight of, and on the same level with locations where a direct exposure to MOCA would be most likely as a result of equipment failure, or improper work practice.

(b) Hygiene Facilities and Practices:

(A) Storage or consumption of food, storage or use of containers of beverages, storage or application of cosmetics, smoking, storage of smoking materials, tobacco products or other products for chewing, or the chewing of such products, are prohibited in regulated areas;

(B) Where employees are required by this rule to wash, washing facilities shall be provided in accordance with OAR chapter 437, division 2-J, 1910.141, Sanitation;

(C) Where employees are required by this rule to shower, shower facilities shall be provided in accordance with OAR chapter 437, division 2-J, 1910.141, Sanitation;

(D) Where employees wear protective clothing and equipment clean change rooms shall be provided in accordance with OAR chapter 437, division 2-J, 1910.141, Sanitation, for the number of such employees required to change clothes;

(E) Where toilets are in regulated areas, such toilets shall be in a separate room.

(c) Contamination Control:

(A) Regulated areas, except for outdoor systems, shall be maintained under pressure negative with respect to nonregulated areas. Local exhaust ventilation may be used to satisfy this requirement. Clean make-up air in equal volume shall replace air removed;

(B) Any equipment, materials, or other item taken into or removed from a regulated area shall be done so in a manner that does not cause contamination in nonregulated areas or the external environment;

(C) Decontamination procedures shall be established and implemented to remove MOCA from the surfaces of materials, equipment, and the decontamination facility;

(D) Dry, sweeping and dry mopping is prohibited.

(5) Signs, Information and Training:

(a) Signs:

(A) Entrances to regulated areas shall be posted with signs bearing the legend:

Cancer-Suspect Agent
Authorized Personnel Only

(B) Entrances to regulated areas containing operations covered in paragraph (3)(a)(E) of this rule, shall be posted with signs bearing the legend:

Cancer-Suspect Agent Exposed in this Area
Impervious Suit Including Gloves, Boots, and Air-Supplied Hood Required at All Times Authorized Personnel Only

(C) Appropriate signs and instructions shall be posted at the entrance to, and exit from, regulated areas, informing employees of the procedures that must be followed in entering and leaving a regulated area.

(b) Container Contents Identification:

(A) Containers of a carcinogen and containers required under subparagraph (3)(a)(D)(v) of this rule and OAR 437-002-0391(5)(b), (c) and (d), which are accessible only to, and handled only by, authorized employees, or by other employees trained in accordance with subsection (5)(e) of this rule may have contents identification limited to a generic or proprietary name, or other proprietary identification, of MOCA and percent;

(B) Containers of MOCA and containers required under subparagraph (3)(a)(D)(v), and OAR 437-002-0391(5)(b), (c) and (d), which are accessible to, or handled by employees other than authorized employees or employees trained in accordance with subsection (5)(e) of this rule shall have contents identification which includes the full chemical name and Chemical Abstracts Service Registry Number as listed in OAR 437-002-0364(1);

(C) Containers shall have the warning words "Cancer-Suspect Agent" displayed immediately under or adjacent to the contents identification;

(D) Containers which have MOCA contents with corrosive or irritating properties shall have label statements warning of such hazards, noting, if appropriate, particularly sensitive or affected portions of the body.

(c) Lettering. Lettering on signs and instructions required by subsections (5)(a) and (b) of this rule shall be a minimum letter height of two inches. Labels on containers required under this division shall not be less than 1/2 the size of the largest lettering on the package, and not less than eight-point type in any instance; provided that no such required lettering need be more than one inch in height;

(d) Prohibited Statements. No statement shall appear on or near nay required sign, label, or instruction which contradicts or detracts from the effect of any required warning, information or instruction;

(e) Training and Indoctrination:

(A) Each employee prior to being authorized to enter a regulated area, shall receive a training and indoctrination program including, but not necessarily limited to:

(i) The nature of the carcinogenic hazards of MOCA including local and systemic toxicity;

(ii) The specific nature of the operation involving MOCA which could result in exposure;

(iii) The purpose for and application of the medical surveillance program, including, as appropriate, methods of self-examination;

(iv) The purpose for and application of decontamination practices and purposes;

(v) The purpose for and significance of emergency practices and procedures;

(vi) The employee's specific role in emergency procedures;

(vii) Specific information to aid the employee in recognition and evaluation of conditions and situations which may result in the release of MOCA;

(viii) The purpose for and application of specific first aid procedures and practices; and

(ix) A review of OAR 437-002-0364 at the employee's first training and indoctrination program and annually thereafter.

(B) Specific emergency procedures shall be prescribed, and posted, and employees shall be familiarized with their terms, and rehearsed in their application;

(C) All materials relating to the program shall be provided upon request to authorized representatives of the Administrator.

(6) Reports:

(a) Operations. Not later than December 1, 1974, the information required in paragraphs (A), (B), (C) and (D) of this subsection shall be reported in writing to the Administrator. Any changes in such information shall be similarly reported in writing within 15 calendar days of such change:

(A) A brief description and in-plant location of the area(s) regulated and the address of each regulated area;

(B) The name(s) and other identifying information as to the presence of a carcinogen in each regulated area;

(C) The number of employees in each regulated area, during normal operations including maintenance activities; and

(D) The manner in which a carcinogen is present in each regulated area: e.g., whether it is manufactured, processed, used, repackaged, released, stored, or otherwise handled.

(b) Incidents. Incidents which result in the release of MOCA into any area where employees may be potentially exposed shall be reported in accordance with this rule:

(A) A report of the occurrence of the incident and the facts obtainable at that time, including a report of any medical treatment of affected employees, shall be made within 24 hours to the Administrator;

(B) A written report shall be filed with the Administrator within 15 calendar days thereafter, and shall include:

(i) A description of the area involved, and the extent of known and possible employee exposure and area contamination; and

(ii) A report of any medical treatment of affected, employees, and any medical surveillance program implemented; and

(iii) An analysis of the circumstances of the incident, and measures taken or to be taken, with specific completion dates, to avoid further similar releases.

(7) Medical Surveillance. At no cost to the employee, a program of medical surveillance shall be established and implemented for employees considered for assignment to enter regulated areas, and for authorized employees:

(a) Examinations:

(A) Before an employee is assigned to enter a regulated area, a preassignment physical examination by a physician shall be provided. The examination shall include the personal history of the employee, family and occupational background, including genetic and environmental factors;

(B) Authorized employees shall be provided periodic physical examination, not less often than annually, following the preassignemnt examination;

(C) In all physical examinations, the examining physician shall consider whether there exist conditions of increased risk, including reduced immunological competence, those undergoing treatment with steroids or cytotoxic agents, pregnancy and cigarette smoking.

(b) Records:

(A) Employers of employees examined pursuant to this rule shall cause to be maintained complete and accurate records of all such medical examinations. Records shall be maintained for the duration of the employee's employment. Upon termination of the employee's employment, including retirement or death, or in the event that the employer ceases business without a successor, records, or notarized true copies thereof, shall be forwarded by registered mail to the Administrator. A specification of the amount of material released, the amount of time involved and an explanation of the procedure used in determining this figure;

(B) Records required by this rule shall be provided upon request to employees, designated representatives, and the Administrator, in accordance with OAR 437, division 2-3, Access to Employee Exposure and Medical Records;

(C) Any physician who conducts a medical examination required by this rule shall furnish to the employer a statement of the employee's suitability for employment in the specific exposure.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 3-1975, f. 10-6-75, ef. 11-1-75; WCB 4-1979, f. 5-21-79, ef. 7-15-79; WCB 8-1980, f. 11-5-80, ef. 12-1-80; OSHA 12-1993, f. 8-20-93, cert. ef. 11-1-93

437-002-0368
Deterioration

(1) Periodic examination, at least annually, of all asbestos containing material should be performed to detect deterioration.

(2) Asbestos which has become damaged or deteriorated shall be repaired, enclosed, encapsulated, or removed in accordance with the provisions of **29 CFR 1926.1101** in OAR 437, division 3, Construction.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 9-1989, f. & ef. 7-7-89; OSHA 12-1993, f. 8-20-93, cert. ef. 11-1-93; OSHA 4-1995, f. & cert. ef. 3-29-95; OSHA 1-2005, f. & cert. ef. 4-12-05

Oregon-Initiated Rules

NOTE: §1910.1025(a)(1) and (2) were not adopted. In Oregon, OAR 437-002-0371 applies:

437-002-0371
Scope and Application

29 CFR 1910.1025 applies to all occupational exposures to lead, except Construction (see 1926.62 in division 3, Construction).

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 26-1990, f. & cert. ef. 11-16-90; OSHA 6-1994, f. & cert. ef. 9-30-94

NOTE: Former division 130, Thiram, has been redesignated, renumbered, and slightly amended as Oregon-initiated Rule 437-002-0373 to continue coverage not provided in federal standards.

437-002-0373
Oregon Rules for Thiram

(1) Scope and Application:

(a) This rule includes requirements for the control of worker exposure to thiram (tertramethyl thiuram disulfide);

(b) This rule applies where worker exposure to thiram may occur during manufacture, storage, packaging, tree application, treated seedling handling, or use of thiram or thiram treated seedling;

(c) This rule applies to the transportation of thiram or thiram treated trees except to the extent that the U.S. Department of Transportation may regulate the hazards covered by these rules.

(2) Definitions. The following definitions shall apply in the application of thiram rules:

(a) "Clean" — The absence of dirt or materials which may be harmful to a worker's health;

(b) "Large Seedlings" — Those seedlings of such size, either by length or breadth, that during normal planting operations it is difficult to avoid contact of the thiram treated plant with the mouth or face.

(3) General Requirements. The following subsections shall be applicable to thiram:

(a) Permissible Exposure Limits:

(A) No employee may be exposed to thiram at atmospheric concentrations greater than 0.15 mg-m3 over any eight-hour period; and

(B) No employee may be exposed to thiram at atmospheric concentrations greater than 0.30 mg-m3 averaged over any period not exceeding 15 minutes;

(C) Workers shall not be allowed to work more than five days in any seven day period with or around thiram or thiram treated seedlings;

(D) Paragraph (C) of this subsection is not applicable if a specific thiram control program in addition to these rules and approved by the Administrator has been implemented.

(b) Washing and Worker Hygiene:

(A) Workers shall wash their hands prior to eating or smoking and at the close of work;

(B) Warm (at least 85°F, 29.4°C) wash water and single use hand wiping materials shall be provided for washing;

(C) The warm water and hand wiping materials shall be at fixed work locations or at the planting unit;

(D) Where warm water is not available within 15 minutes travel time, non-alcoholic based waterless hand cleaner shall also be provided;

(E) Every planter or nursery worker shall be advised to bathe or shower daily;

(F) The inside of crummies or other worker carrying vehicles shall be washed or vacuumed and wiped down at least weekly during the period of thiram use.

(c) Personal Protective Measures:

(A) Clothing shall be worn by workers to reduce skin contact with thiram to the legs, arms, and torso;

(B) For those workers who have thiram skin irritations, exposed areas of the body shall be protected by a suitable barrier cream;

(C) Only impervious gloves may be worn by workers;

(D) Workers' hands should be clean of thiram before placing them into gloves;

(E) Nursery applicators shall be provided with and use NIOSH approved respirators according to OAR 437, division 2-I, 1910.134, Respiratory Protection, disposable coveralls or rubber slickers or other impervious clothing, rubberized boots, head covers and rubberized gloves;

(F) Nursery workers other than applicators who may be exposed to thiram shall be provided with and use disposable coveralls or rubber slickers or other impervious clothing, impervious footwear and gloves, and head covers unless showers in accordance with OAR chapter 437, division 2-J, 1910.141, Sanitation, have been provided and are used;

(G) Eye protection according to OAR chapter 437, division 2-J, 1910.133, shall be provided and worn by workers who may be exposed to splashes of thiram such as during spraying, plug bundling, belt line grading and plugging or other operations.

(d) Respiratory Protection:

(A) Only certified respiratory protection which is applicable and approved by NIOSH shall be provided to workers;

(B) All respirators shall be used and maintained in accordance with OAR chapter 437, division 2-I, 1010.134, Respiratory Protection;

(C) Respirators shall be worn when planting large seedlings to avoid mouth and face contact with the thiram treated plant unless equally effective measures or planting practices have been taken.

(e) Food Handling:

(A) Food, snacks, beverages, smoking materials, or any other item which is consumed shall not be stored or consumed in the packing area of the nursery;

(B) Crummies or other worker carrying vehicles shall have a clean area for carrying lunches;

(C) The clean area of the vehicle shall be elevated from the floor and not used to carry other than food or other consumable items;

(D) The carrying of lunches, food or other consumable items in tree plating bags is prohibited;

(E) Care shall be taken to ensure that worker exposure to thiram spray, including downwind driftings, is minimized or eliminated;

(F) Workers shall stand upwind when bags that contained thiram or thiram treated seedlings are burned.

(f) Thiram Use and Handling:

(A) Nurseries shall develop a quality control program approved by the Administrator to ensure that only the minimum amount of thiram necessary to achieve the desired anti-browsing results is applied to the tree seedlings;

(B) Thiram treated seedlings shall be allowed to set between the time of spraying and packing;

(C) Seedlings shall be kept moist during packing and whenever possible during planting operations;

(D) Floors where thiram is used shall not be dry swept but instead vacuumed, washed or otherwise cleaned at least daily;

(E) Silica chips used to cover seedling plugs shall be removed at the nursery.

(g) Labeling:

(A) In the event the Oregon Department of Agriculture, or the U.S. Environmental Protection Agency (EPA), has promulgated and maintained administrative rules relative to the labeling of thiram treated seedlings, such rules shall apply;

(B) In the event the Oregon State Department of Agriculture, or EPA, has not promulgated or maintained thiram labeling rules, there shall be attached to each container, bundle, or wrapping or thiram treated seedlings, a clearly legible and visible tag or label, of waterproof material and printing, on which there is stated in English and Spanish the following:

CAUTION

These seedlings have been treated with an animal repellent containing **Thiram** (tetramethyl thiuram disulfide) which may flake off the seedlings during handling. Consumption of alcoholic beverages or use of alcohol-base creams or lotions during a time span from 12 hours before to 7 days after exposure to **Thiram** may result in nausea, headache, vomiting, fatigue, or flushness. Exposure to **Thiram** may also cause irritation of the eyes, nose, throat, or skin.

Thiram may interfere with or render ineffective medications taken by epileptics or heart patients with blood-clotting difficulties. Animal studies at very high concentrations (more than 250 mg-kg) indicate that Thiram may cause birth defects.

SAFETY PRECAUTIONS

1. Keep treated seedlings moist at all times.
2. Clothing shall be worn by workers to reduce skin contact with Thiram to the legs, arms and torso.
3. A fiber or cloth face mask (respirator) may be worn at the planter's discretion, except that when plating large seedlings, respirators shall be required to avoid mouth and face contact with thiram treated plants, unless equally effective measures have been taken.
4. Wash exposed skin areas thoroughly after handling treated seedlings and before smoking, drinking, eating or going to the bathroom.
5. If Thiram flakes come in contact with eyes, immediately flush eyes freely with water.
6. Bathe daily and change work clothes at least every other day.

PRECAUCION

Estas plantas han sido tratadas con un replente contra animales que tiene la substacia **Thiram** (tetramethyl thiuram disulfide) que puede desaparecer en manoseo. La consuncion de bebidas alcoholicas o el uso de cremas o lociones con base de alcohol dentro de 12 horas antes de ser expuesto o hasta 7 dias despues de ser expuesto a **Thiram** puede resultar en sintomas de nausea, dolor de cabeza, vomito, faiga o rubor. Contacto con **Thiram** puede causar irritacion de los ojos, nariz, garganta o piel.

Thiram puede interferir o desv alidar en completa las medicinas de los epilepticos o personas con condiciones de la corazon con dificultades de coagulacion de la sangre. Estudios con animals en concentraciones muy altas (mnas que 250 mg-kg) indican que **Thiram** puede causar desformaciones fetales. Sin que cuando se sembra plantas de semillas grandes macaras estaran requerido a evitar contacto con la boca y la cara con plantas tratado con Thiram excepto cuando otros metodos igualmente efecaz estarah usados.

MEDIAS DE PRECAUTION

1. Guardar mojados las platas siempre.
2. El trabajador necesita usar ropa para reducir el contacto de Thiram con law piernas, brazos, y el torso.
3. Una mascara de fibre o garra (mascara) se puede usar a la discrecion del plantador.
4. Lavese bien los parten expuestos cuando trate los semillos antes de fumar, tomar, comer e ir al bano.
5. Se acaso el Thiram cae en sus ojos, imediatamente labese los ojos libremente con agua.
6. Banese todos los dias y cambiese de ropa de trabojo por lo menos cada otro dia.

(C) Other containers or thiram handling areas shall be signed and labeled in accordance with OAR chapter 437, division 2-J, General Environmental Controls, 1910.144 and 1910.145.

(h) Training:

(A) Each worker engaged in operations where exposure to thiram may occur shall be provided training relating to the hazards or thiram and precautions for its safe use and handling;

(B) The training shall be approved by the Administrator;

(C) The training shall include instruction in:

(i) The nature of the health hazard(s) from chronic exposure to thiram including specifically the potential for birth defects, alcohol intolerance, and drug interaction;

(ii) The specific nature of operations which could result in exposure to thiram and the necessary protective steps;

(iii) The purpose for, proper use, and limitations of protective devices including respirators and clothing;

(iv) The acute toxicity and skin irritation effects of thiram, and the necessary protective steps;

(v) The necessity for and requirements of excellent personal hygiene;

(vi) A review of the thiram rules at the worker's first training and indoctrination, and annually thereafter.

(D) A copy of these thiram rules shall be provided to each worker who may be exposed to thiram.

[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 13-1977(Temp), f. & ef. 11-7-77; WCD 2-1978, f. & ef. 3-6-78; OSHA 12-1993, f. 8-20-93, cert. ef. 11-1-93

437-002-0377
Additional Oregon Rules for Hazard Communication

(1) Subpoenas, Citations, Penalties:

(a) In addition to the provisions of 1910.1200(i)(11), the Oregon Occupational Safety and Health Division shall have the authority under ORS Chapter 654 to issue a subpoena or any protective orders;

(b) Agency actions under ORS Chapter 564 and these rules may be enforced by the issuance of additional citations and penalties pursuant to ORS 654.071(4), 654.086(1)(d), or 654.086(3). The Oregon Occupational Safety and Health Division may refer the matter to the Circuit Court in the county in which the proceedings are pending for enforcement of the subpoena.

(2) Hazard Communication for Agriculture:

(a) Definitions:

(A) "Agricultural Employer" means any person engaged in agricultural production or agricultural services (Standard Industrial Classification (SIC) Manual, Division A, Agriculture, Major Groups 01, 02 and 07) who has one or more employees; or any sole proprietor or member of a partnership who elects workers' compensation coverage as a subject worker pursuant to ORS 656.128;

(B) "Hand-Labor Operations" means agricultural operations performed by hand or with hand tools, and other activities or operations performed in conjunction with hand-labor in the field. Some examples of "hand-labor operation" are the hand-cultivation, hand-weeding, hand-planting, and hand-harvesting of vegetables, nuts, fruits, seedlings or other crops, including mushrooms, and the hand-packing of produce into containers, whether done on the ground, on a moving machine, or in a temporary packing shed located in the field.

(b) Employee Training and Information:

(A) Agricultural employers shall provide all of their employees, or assure that the employees have been provided, with the brochure, "Safe Practices When Working Around Hazardous Agricultural Chemicals," developed by the Oregon Occupational Safety and Health Division. The brochure shall contain information on proper personal hygiene, protective safety equipment, general safety rules, proper work clothing, employee rights with respect to ORS Chapter 654 and common symptoms of exposure to hazardous chemicals;

(B) For employees performing hand-labor operations, provision of the brochure, information regarding the location and availability of Material Safety Data Sheets, and providing employee access to Material Safety Data Sheet information for the residual hazardous chemicals when they may reasonably be expected to contact, will be considered to meet the training and information requirements of 1910.1200.

(c) Material Safety Data Sheets. Upon request by an employee performing hand-labor operations, Material Safety Data Sheet information shall be made readily accessible for the residual hazardous chemicals which employees may reasonably be expected to contact;

(d) Employees who mix, load, apply, or otherwise handle hazardous chemicals shall be provided with all information and training required by 1910.1200.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 6-1984, f. 6-25-84, ef. 11-25-85; APD 1-1988, f. & ef. 2-8-88; OSHA 12-1993, f. 8-20-93, cert.; ef. 11-1-93

NOTE: Former division 153, Pipe Labelling, has been redesignated, renumbered, and amended as Oregon-initiated Rule 437-002-0378, to continue coverage not provided in federal standards.

437-002-0378
Oregon Rules for Pipe Labelling

(1) Scope and Application. This division shall apply to all piping systems containing hazardous substances or that use asbestos as a pipe insulation material in buildings, structures and workplaces. This division does not apply to buried piping.

(2) Definitions:

(a) "Hazardous Substances": Any substance which is a physical or health hazard;

(b) "Health Hazard": A chemical for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employees. The term "health hazard" includes chemicals which are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosive sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic system, and agents which damage the lungs, skin, eyes or mucous membranes;

(c) "Physical Hazard": A chemical for which there is scientifically valid evidence that it is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, or oxidizer, pyrophoric, unstable (reactive) or water-reactive;

(d) "Piping System": Includes pipes, single or multiple, of any kind and, in addition, valves and pipe coverings;

(e) "Pipes": Conduits for the transport of gases, liquids, semiliquids or fine particulate dusts.

(3) Purpose. The purpose of this division is to prescribe minimum labelling requirements for all piping systems which contain hazardous substances, transport substances in a hazardous state, or which use asbestos as a pipe insulation material.

(4) Labelling:

(a) Pipes and piping systems which contain hazardous substances or transport substances in a hazardous state shall be labelled in accordance with paragraphs (A), (B), (C) and (D) of this subsection or otherwise identified in accordance with subsection (c) of this section:

(A) Positive identification of the hazardous contents of a piping system shall be by lettered labels. The label shall give the name of the contents in full or abbreviated form;

(B) Contents shall be identified by labelling with sufficient detail to identify the hazard;

(C) Label wording shall be brief, informative and simple;

(D) Labelling shall be accomplished by stencilling, the use of tape, adhesives, markers or approved alternative means.

(b) Pipes or piping systems which use asbestos as a pipe insulation material shall be labelled in accordance with subsection (c) of this section:

(A) The label for pipe insulation containing asbestos shall include the following:

Danger

Contains Asbestos Fiber
Avoid Creating Dust
Cancer and Lung Disease Hazard

(c) The employer may use signs, placards, process sheets, batch tickets, operating procedures, or other such written materials in lieu of affixing labels to individual pipes, as long as the alternative method identifies the pipe(s) to which it is applicable and conveys the information required by this rule. The written materials shall be readily accessible to the employees in their work areas during each shift. (OAR chapter 437, division 2-Z, Hazard Communication, 1910.1200.)

(5) Location of Labelling:

(a) Labelling shall be applied where confusion may occur, such as close to valves or flanges and adjacent to changes in direction, branches and where pipes pass through walls, floors or ceilings;

(b) Labelling shall be applied, at a minimum, at the beginning and end of continuous pipe runs;

(c) For asbestos insulation, labelling shall be at a minimum, on unobstructed continuous pipe runs, every 75 feet.

(6) Visibility:

(a) Where pipes are located above or below the normal line of vision, the lettering shall be placed below or above the horizontal centerline of the pipe;

(b) Where pipes are inaccessible and-or at a distance which precludes clear identification of the letters on labelling, alternatives to the labelling which meet all other requirements of this rule may be used (i.e., schematics posted on walls in work areas).

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCD 8-1986, f. 9-4-86, cert. ef. 10-1-87; OSHA 12-1993, f. 6-20-93, cert. ef. 11-1-93, Renumbered from 437-153-0004-0025

437-002-0382
Oregon Rules for Air Contaminants

An employee's exposure to any substance listed in Oregon Tables Z-1, Z-2, or Z-3 of this section shall be limited in accordance with the requirements of the following paragraphs of this section.

(1) Oregon Table Z-1.

(a) Substances with limits preceded by "C" — Ceiling Values. An employee's expo- sure to any substance in Oregon Table Z-1, the exposure limit of which is preceded by a "C", shall at no time exceed the exposure limit given for that substance. If instantaneous monitoring is not feasible, then the ceiling shall be assessed as a 15-minute time weighted average exposure which shall not be exceeded at any time during the working day.

(b) Other substances — 8-hour Time Weighted Averages. An employee's exposure to any substance in Oregon Table Z-1, the exposure limit of which is not preceded by a "C", shall not exceed the 8-hour Time Weighted Average given for that substance in any 8-hour work shift of a 40-hour work week.

(c) Other Substances — Excursion Limits. Excursions in worker exposure levels may exceed 3 times the PEL-TWA for no more than a total of 30 minutes during a workday, and under no circumstances should they exceed 5 times the PEL-TWA, provided that the PEL-TWA is not exceeded.

(d) Skin Designation. To prevent or reduce skin absorption, an employee's skin exposure to substances listed in Oregon Table Z-1 with an "X" in the Skin Designation column following the substance name shall be prevented or reduced to the extent necessary in the circumstances through the use of gloves, coveralls, goggles, or other appropriate personal protective equipment, engineering controls or work practices.

(2) Oregon Table Z-2. An employee's exposure to any substance listed in Oregon Table Z-2 shall not exceed the exposure limits specified as follows:

(a) 8-hour time weighted averages. An employee's exposure to any substance listed in Oregon Table Z-2, in any 8-hour work shift of a 40-hour work week, shall not exceed the 8-hour time weighted average limit given for that substance in Oregon Table Z-2.

(b) Acceptable ceiling concentrations. An employee's exposure to a substance listed in Oregon Table Z-2 shall not exceed the acceptable ceiling concentration for the given substance in the table at any time during an 8-hour shift except:

(i) Acceptable maximum peak above the acceptable ceiling concentration for an 8-hour shift. An employee's exposure to a substance listed in Oregon Table Z-2 shall not exceed the acceptable maximum peak above the acceptable ceiling concentration, and shall not exceed the maximum duration for the given substance during an 8-hour shift.

(c) Example. Table During an 8-hour work shift, an employee exposed to benzene may be exposed to an 8-hour time weighted average (TWA) of 10 ppm. Concentrations of benzene during the 8-hour work shift may not exceed 25 ppm, unless that exposure is no more than 50 ppm and does not exceed 10 minutes during an 8-hour work shift. Such exposures must be compensated by exposures to concentrations below 10 ppm so that the 8-hour time-weighted average is less than 10 ppm.

(d) Skin Designation. To prevent or reduce skin absorption, an employee's skin exposure to substances listed in Oregon Table Z-2 with an "X" in the Skin Designation column following the substance name shall be prevented or reduced to the extent necessary in the

circumstances through the use of gloves, coveralls, goggles, or other appropriate personal protective equipment, engineering controls or work practices.

(3) Oregon Table Z-3. An employee's exposure to any substance listed in Oregon Table Z-3, in any 8-hour work shift of a 40-hour work week, shall not exceed the 8-hour time weighted average limit given for that substance in the table.

(4) Computation formulae. The computation formula which shall apply to employee expo — sure to more than one substance for which 8-hour time weighted averages are included in OAR 437, division 2/Z, Toxic and Hazardous Substances, in order to determine whether an employee is exposed over the regulatory limit is as follows:

(a) The cumulative exposure for an 8-hour work shift shall be computed as follows:

E = (CaTa + CbTb + ...CnTn) ÷ 8

Where:

E is the equivalent exposure for the working shift.

C is the concentration during any period of time T where the concentration remain constant.

T is the duration in hours of the exposure at the concentration C.

The value of E shall not exceed the 8-hour time weighted average specified in subpart Z of 29 CFR part 1910 for the substance involved.

(b) To illustrate the formula prescribed in paragraph (4)(a)(i) of this section, assume that Substance A has an 8-hour time weighted average limit of 100 ppm (Oregon Table Z-1). Assume that an employee is subject to the following exposure:

Two hours exposure at 150 ppm

Two hours exposure at 75 ppm

Four hours exposure at 50 ppm

Substituting this information in the formula, we have

[(2 x 150) + (2 x 75) + (4 x 50)] ÷ 8 = 81.25 ppm

Since 81.25 ppm is less than 100 ppm, the 8-hour time weighted average limit, the exposure is acceptable.

In case of a mixture of air contaminants an employer shall compute the equivalent exposure as follows:

Em = (C1 ÷ L1) + (C2 ÷ L2) + . . .(Cn ÷ Ln)

Where:

Em is the equivalent exposure for the mixture.

C is the concentration of a particular contaminant.

L is the exposure limit for that substance specified in Subpart Z of 29 CFR Part 1910.

The value of Em shall not exceed unity (1).

(c) To illustrate the formula prescribed in paragraph (4)(b)(i) of this section, consider the following exposures:

Substituting in the formula, we have:

Em = (500 ÷ 1000) + (45 ÷ 200) + (40 ÷ 200)

Em = 0.500 + 0.225 + 0.200

Em = 0.925

Since Em is less than unity (1), the exposure combination is within acceptable limits.

(4) To achieve compliance with paragraphs (1) through (4) of this section, administrative or engineering controls must first be determined and implemented whenever feasible. When such controls are not feasible to achieve full compliance, protective equipment or any other protective measures shall be used to keep the exposure of employees to air contaminants within the limits prescribed in this section. Any equipment and/or technical measures used for this purpose must be approved for each particular use by a competent industrial hygienist or other technically qualified person. Whenever respirators are used, their use shall comply with 1910.134.

Notes, Footnotes, Table, Note, Footnotes, Table, Footnotes, Table

The measurements under this note refer to the use of an AEC (now NRC) instrument. If the respirable fraction of coal dust is determined with a MRE the figure corresponding to that of 2.4 mg/m3 in the table for coal dust is 4.5 mg/m3.

[ED. NOTE: Tables referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(4)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 17-1993, f. & cert. ef. 11-15-93; OSHA 6-1994, f. & cert. ef. 9-30-94; OSHA 5-1997, f. & cert. ef. 4-22-97; OSHA 6-1997, f. & cert. ef. 5-2-97; OSHA 4-2001, f. & cert. ef. 2-5-01; OSHA 6-2006, f. & cert. ef. 8-30-06

NOTE: The following Oregon-initiated rule is adopted in place of 1910.1450(k).

437-002-0390

Oregon Effective Dates

(1) The effective date for 29 CFR 1910.1450 in Oregon is August 8, 1990.

(2) Start up dates in Oregon:

(a) Employers shall have developed and implemented a written Chemical Hygiene Plan no later than May 8, 1991;

(b) 29 CFR 1910.1450(a)(2) shall not take effect until the employer has developed and implemented a written Chemical Hygiene Plan.

Stat. Auth.: ORS 654.025(2) & 656.726(3)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 9-1990, f. 5-8-90, ef. 8-8-90

NOTE: The following Oregon-initiated Rule 437-002-0391 (formerly 437-0116-0010(6)) has been retained and renumbered from former division 116, Carcinogens.

437-002-0391

Additional Oregon Rules for Carcinogens in Laboratories

(1) Definitions:

(a) "Absolute Filter" is one capable of retaining 99.97 percent of a monodisperse aerosol of 0.3 µm particles;

(b) For the purposes of OAR 437-002-0391, "carcinogen" is defined as the substances regulated by 29 CFR 1910.1003, 1910.1004, 1910.1006, 1910.1007, 1910.1008, 1910.1009, 1910.1010, 1910.1011, 1910.1012, 1910.1013, 1910.1014, 1910.1015, 1910.1016 and OAR 437-002-0364.

(2) Laboratory Activities. The requirements of this section shall apply to research and quality control activities involving the use of a carcinogen:

(a) Mechanical pipetting aids shall be used for all pipetting procedures;

(b) Experiments, procedures and equipment which could produce aerosols shall be confined to laboratory-type hoods or glove boxes;

(c) Surfaces on which a carcinogen is handled shall be protected from contamination;

(d) Contaminated wastes and animal carcasses shall be collected in impervious containers which are closed and decontaminated prior to removal from the work area. Such wastes and carcasses shall be incinerated in such a manner that no carcinogenic products are released;

(e) All other forms of a carcinogen shall be inactivated prior to disposal;

(f) Laboratory vacuum systems shall be protected with disposable absolute filters. Exhaust systems containing such filters shall be provided with suitable ports or openings to enable determination of whether the filter in its operating location, does meet the efficiency requirements defined in section (1) of this rule. Determination of filter efficiency shall be by measurement, with a forward light scattering photometer, of passage of a polydisperse dioctyl phthalate aerosol;

(g) Employees engaged in animal support activities shall be:

(A) Provided with, and required to wear, a complete protective clothing change, clean each day, including coveralls or pants and shirt, foot covers, head covers, gloves, and appropriate respiratory protective equipment or devices; and

(B) Prior to each exit from a regulated area, employees shall be required to remove and leave protective clothing and equipment at the point of exit and at the last exit of the day, to place used clothing and equipment in impervious containers at the point of exit for purposes of decontamination or disposal. The contents of such impervious containers shall be identified as required under OAR 437-002-0364(5)(b), (c) and (d);

(C) Required to wash hands, forearms, face and neck upon each exit from the regulated area close to the point of exit, and before engaging in other activities; and

(D) Required to shower after the last exit of the day.

(h) Employees, other than those engaged only in animal support activities, each day shall be:

(A) Provided with and required to wear a clean change of appropriate laboratory clothing, such as a solid front gown, surgical scrub suit, or full buttoned laboratory coat;

(B) Prior to each exit from a regulated area, employees shall be required to remove and leave protective clothing and equipment at the point of exit and at the last exit of the day, to place used clothing and equipment in impervious containers at the point of exit for purposes of decontamination or disposal. The contents of such impervious containers shall be identified as required under OAR 437-002-0364(5)(b), (c) and (d);

(C) Required to wash hands, forearms, face and neck upon each exit from the regulated area close to the point of exit, and before engaging in other activities.

(i) Air pressure in laboratory areas and animal rooms where a carcinogen is handled and bioassay studies are performed shall be negative in relation to the pressure in surrounding areas. Exhaust air shall

not be discharged to regulated areas, nonregulated areas or the external environment unless decontaminated;

(j) There shall be no connection between regulated areas and any other areas through the ventilation system;

(k) A current inventory of carcinogens shall be maintained;

(l) Ventilated apparatus such as laboratory type hoods, shall be tested at least semiannually or immediately after ventilation modification or maintenance operations, by personnel fully qualified to certify correct containment and operation.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: WCB 3-1975, f. 10-6-75, ef. 11-1-75; OSHA 12-1993, f. 6-20-93, cert. ef. 11-1-93

437-002-1030
Additional Oregon Rules for Bloodborne Pathogens

Every employer with employees that use medical sharps in direct patient care must, at least annually, identify, evaluate, and select engineering and work practice controls, including safer medical devices.

(1) This evaluation must involve non-managerial front-line employees responsible for direct patient care.

(2) This evaluation must be done on a facility-by-facility basis. When a facility has multiple departments with specific equipment and/or work practice concerns, the evaluation must involve employees from those departments.

(3) After a device is evaluated and selected, the employer must make a decision on implementing that device.

(a) If a device is not purchased because of employer or employee concerns, those concerns must be documented. However, if the employer does not purchase a device that had employee support, the employer must also document the employee support, as well as the justification for not purchasing that device.

(b) If a device is purchased without the consent of the employees who evaluated it, the employer must document the employees' concerns, as well as the employers' justification for purchasing that device.

(c) All documentation required by 437-002-1030(3) must be kept as part of the written Exposure Control Plan.

(4) The employer must ensure that all affected employees are informed on the process for selecting safer medical devices.

(5) Employees must be trained in the use of safer medical devices before the employees use those devices.

Stat. Auth: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 10-2001, f. 9-14-01, cert. ef. 10-18-01

437-002-1035
Oregon Rule for Sharps Injury Log

The requirement to establish and maintain a sharps injury log applies to any employer who is required to maintain an Exposure Control Plan. The sharps injury log must be maintained for 5 years.

Stat. Auth: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 10-2001, f. 9-14-01, cert. ef. 10-18-01

437-002-1139
Working Over or In Water

(1) Scope and Application: This rule applies to employees not covered by division 3, Construction; division 4, Agriculture or division 6, Forest Practices. These rules apply where the danger of drowning exists and the water is more than five feet deep. These rules do not apply to law enforcement or emergency services workers nor to any workers protected by general or personal fall protection nor to employees covered by OAR 437-002-1910.401 through 1910.441, Commercial Diving Operations.

(2) Definition: Rescue device — A ring buoy and line, gaff pole, throwable rescue device or other device that serves as a means to rescue somebody from the water without requiring the rescuer to enter the water.

(3)(a) Workers in water must wear a Coast Guard approved or equivalent, wearable personal flotation device (PFD).

(b) Workers over water on floating or unstable surfaces must wear a Coast Guard approved or equivalent, wearable personal floatation device (PFD).

(c) Piers, docks, wharves and work sites along developed shorelines must have rescue devices available within 200 feet of the water or shoreline work area.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 1-2001, f. 1-18-01, cert. ef. 3-1-01

437-002-2224
Vehicle Drivers and Riders.

(1) Scope. This rule applies, without regard to vehicle ownership when your employees drive or ride as part of their employment.

NOTE: The Oregon Bureau of Labor and Industries (BOLI) administers rules about using minors as drivers. Please contact the nearest BOLI office for more information.

(2) Driver Qualifications. You must not allow an employee to drive a vehicle on a public highway or road unless they have a valid driver's license appropriate for that type vehicle.

(3) General Safety.

(a) Do not allow employees to drive or ride in any vehicle known to be unsafe.

(b) Require employees to report any safety problems effecting vehicles you own or provide.

(4) Rider Safety — General.

(a) Except as in (5), (6) and (7), do not allow employees to occupy a vehicle in excess of its seating capacity.

(b) Require employees to comply with all applicable seatbelt and traffic safety laws.

(5) Rider Safety in the Bed of Dump Trucks, Pickups and Similar Vehicles. Do not transport workers in the beds of dump trucks, pickups or similar vehicles unless these conditions are met when applicable:

(a) When seating is available, it must be secure to the floor and passengers may not stand.

(b) The bed is secure to the frame. Beds that tilt or slide must be secure from movement.

(c) Dump beds must be secure or the activating lever locked.

(d) The total height of the sides of the transport area must be at least 42 inches. If riders sit on the floor, the height must be at least 24 inches.

(e) There must be a tailgate the same height as the sides or three evenly spaced chains, cables or ropes taut across the back.

(f) Not more than 4 workers may ride on a flatbed without sides or a tailgate and then only when the speed will not be more than 30 mph. There must be two handholds for each rider.

(g) Workers must not ride in space with cargo unless it is secure from movement.

(6) Standing Rider Safety — Buses. Riders must not sit on the floor while the vehicle is moving. Riders may stand if these conditions are met:

(a) There must be an aisle at least 12 inches wide leading to the emergency exit.

(b) There are no seats in or boards across the aisle.

(c) There must be handholds for standing riders.

(d) Not more than one rider per row of seats may stand.

(e) Riders may not sit or stand near the driver and not ahead of the forward-most row of seats.

(f) Workers in transit must not stand for more than one hour or 45 miles, whichever is less. At the end of that period, the standing workers must get a seat or the vehicle must stop for a 15-minute rest allowing the workers to get out.

(7) Fueling.

(a) There must be no smoking or other source of ignition within 25 feet of any refueling operation.

(b) Do not fill any container that is not bonded or grounded while it is inside the vehicle, in the pickup bed or anyplace other than on the ground.

(c) Stop the engine (except diesels) during fueling.

(d) Refueling vehicles with LPG must be outdoors.

(8) Hauling gasoline or flammable liquid.

(a) For buses, vehicles that carry 16 or more, crew trucks, vans and passenger cars, use only DOT or UL approved containers that hold 5 gallons or less and secure them in an area separate from passengers.

(b) For pickups, flatbeds and other vehicles not in (a), there is no container size limit as long it is not in an enclosed passenger area.

(9) Hauling Explosives. When hauling explosives, only the driver and one qualified person may be in the vehicle. Comply with OAR 437-002-1910.109 and 437-002-0109.

(10) Loading or Unloading. When loading or unloading vehicles in a manner that is likely to cause the vehicle to move, set the brakes and chock the wheels.

(11) High Voltage Clearances. When operating a vehicle near overhead lines carrying more than 600v, OAR 437-002-0047 applies for general industry employers and OAR 437-003-0047 applies for Construction employers.

(12) Traffic Control. You must require employees to set up appropriate traffic controls when they stop on or adjacent to a highway, street, or road in a way that creates a hazard and when traffic cannot adjust safely on its own. The controls must conform to the Millennium Edition of the (FHWA) Manual of Uniform Traffic Control Devices (MUTCD), December 2000.

NOTE: Get a copy of the Millennium Edition from the following organizations: American Traffic Safety Services Association, 15 Riverside Parkway, Suite 100, Fredericksburg, VA 22406-1022; Telephone: 1-800-231-3475; Fax: (540) 368-1722; www.atssa.com; Institute of Transportation Engineers, 1099 14th Street, NW., Suite 300 West, Washington, DC 20005-3438; Fax: (202) 289-7722; www.ite.org; and American Association of State Highway and Transportation Officials; www.aashto.org; Telephone: 1-800-525-5562.OR: Download the MUTCD 2000 at http://mutcd.fhwa.dot.gov/kno-millennium. OR: The MUTCD 2000 is available for review at the Oregon OSHA Resource Center, 350 Winter Street NE, Basement - Room 26, Salem, Oregon 97301-3882; Telephone: (503) 378-3272, or toll free in Oregon 1-800-922-2689.

NOTE: Employers who follow the most current edition of the Oregon Temporary Traffic Control Handbook for Operations of 3 Days or Less comply with this requirement.

Stat. Auth.: ORS 654.025(2), 656.726(4).
Stat. Implemented: ORS 654.001 - 654.295.
Hist.: OSHA 6-2007, f. & cert. ef. 9-26-07

437-002-2225
Vehicles for Highway and Road Operation Characteristics and Maintenance

(1) Scope. This applies to employer-owned vehicles licensed for highway and road use, driven and/or maintained by employees on public or private property, except the following:

(a) Powered Industrial Trucks covered by OR-OSHA standard 1910.178 and OAR 437-002-0227.

(b) Earth moving equipment (scrapers, loaders, bulldozers and graders) covered by OAR 437-003-1926.602.

(c) Manufactured structures, ATVs, golf carts and other similar devices not intended for highway or road use.

NOTE: When operating a vehicle near overhead power lines more than 600 volts, OAR 437-002-0047 applies for General Industry employers and OAR 437-003-0047 applies for Construction employers.

(2) Vehicle Components.

(a) The engine start/stop control must be within reach of the driver.

(b) There must be steps, ladders and railings to allow safe access to and exit from areas on vehicles where employees must access. Steps and rungs must be slip resistant.

(c) Vehicles whose cargo is loaded by cranes, power shovels or other powered loaders must have a cab or cab shield that protects the occupants from the impact of falling material.

(d) Secure all material, equipment or tools to prevent movement or a barrier must be in place to protect the occupants from moving items.

(e) Vehicles with cabs must have a door or doors for entry and exit.

(f) Vehicle cargo must not prevent occupants from exiting under any condition.

(g) Vehicles must comply with ORS 811.225, Failure to Maintain Safety Belts in Working Order.

(3) Flashing Warning Lights. Buses with a capacity of 16 or more passengers must have a working flashing light system that complies with ORS 816.260 if they load or unload passengers on a public highway or road.

(4) Buses and Crew Trucks.

(a) Buses and crew trucks must have a secure seat with back rest for each occupant.

(b) Buses with an enclosed seating area for 12 or more workers, unless loaded from the rear, must have an emergency exit not less than 24 inches wide by not less than 48 inches high on the left side or rear of the vehicle. It must open easily from inside or outside the vehicle.

(5) Passenger Compartments.

(a) Floors and decks must be slip resistant.

(b) Seal openings between the engine compartment and muffler area to prevent carbon monoxide from entering the enclosed passenger compartment.

(c) Enclosed passenger compartment must be substantially dust proof and watertight.

(d) Areas where workers sit or stand must be free of protruding nails, screws, splinters or similar physical hazards.

(e) Protect riders from inclement weather by enclosing riding areas as necessary.

(6) Steering. Do not allow spinner knobs on vehicles without power steering. Spinner knobs must be on the inside of the steering wheel.

(7) Lighting. Where general lighting in vehicle operating areas is less than 2 footcandles per square foot, vehicles must have working lights that sufficiently light the travel path.

(8) Testing, Maintenance, and Repair.

(a) Block or crib heavy machinery, equipment or parts supported by slings, hoists, jacks or otherwise prevent it from falling before employees work underneath or between such objects.

(b) During repair or maintenance set all controls in neutral, stop the motor and set the brakes unless the work requires otherwise.

(c) During maintenance or inspection on vehicles with dump bins, use an attached, lockable support that prevents unintentional lowering of the bin.

(d) Disconnect the vehicle battery when the work allows and the energized system could cause injury.

(9) Warning Devices.

(a) All vehicles must have a working horn that can be heard above surrounding area noise. Paragraph (b) does not apply when the vehicle backs up with an observer or when the operator verifies that there is nobody behind the vehicle or when nobody may enter the danger area without the operator's knowledge.

(b) Vehicles with an obstructed view to the rear must have a backup alarm that can be heard over the surrounding noise. If surrounding noise prevents this or if there are so many vehicles using backup alarms that they cannot be distinguished from each other, flashing or strobe lights are acceptable.

(10) Control of Exhaust Gases.

(a) Vehicles must have a working muffler.

(b) Exhaust pipes must direct the gasses away from occupants.

(c) Insulate or otherwise protect exhaust pipes exposed to worker contact.

(11) First Aid Kits. Vehicles for transport of 16 or more workers must have a clean, stocked first aid kit with enough supplies for the number of workers usually transported.

NOTE: Laws and/or administrative rules administered by other government agencies require fire extinguishers in vehicles under specifically defined circumstances.

(12) Controls.

(a) Levers that control dump or hoist devices must have a latch or other device that prevents accidental starting or tripping of the mechanism.

(b) The operator of a dump truck must be able to operate the tailgate trip handle from a position clear of the dumping load.

Stat. Auth.: ORS 654.025(2), 656.726(4).
Stat. Implemented: ORS 654.001 - 654.295.
Hist.: OSHA 6-2007, f. & cert. ef. 9-26-07

437-002-2226
Vehicles for Use on Property Other Than Public Roads and Highways Operation, Characteristics and Maintenance

(1) Scope. This rule applies to employer-owned vehicles, not licensed or normally operated on public highways or roads, except the following:

(a) Powered Industrial Trucks covered in OR-OSHA standard 1910.178 and OAR 437-002-0227.

(b) Earth moving equipment, (scrapers, loaders, bulldozers and graders) covered by OAR 437-003-1926.602.

(c) Manufactured structures, ATVs, golf carts and other similar devices not intended for highway or road use.

(2) Safe Operation. You must require the driver to:

(a) Look in the direction of travel and have a clear view unless being guided by somebody with a clear view of the route.

(b) Slow or stop as appropriate at intersections and not drive in marked pedestrian lanes.

(c) Not drive a vehicle up to a person standing in front of a stationary object.

(d) Manually control all towed or pushed vehicles unless they use a towbar.

(3) Vehicle Loads. You must protect employees from hazardous vehicle loads by requiring that they:

(a) Not load a vehicle beyond its rated capacity.

(b) Stabilize, lash down or otherwise secure the load.

(c) Never be under an elevated load.

(4) Basic Equipment Requirements. You must assure your vehicles comply with the following:

(a) Vehicles with windshields must have working powered wipers and an effective defroster.

(b) There must be no broken glass that impairs the driver's vision.

(c) When the load or passengers obstruct the use of the interior rear view mirror, there must be an outside rear view mirror on each side of the vehicle.

(d) Vehicle brakes must be effective when the vehicle is fully loaded. The parking brake must hold the loaded vehicle on any slope which it may operate.

NOTE: The rules on safety chains do not apply to saddle-mount towing, or to a semitrailer coupled to a towing vehicle with a fifth wheel and kingpin assembly so designed that the upper and lower halves may not separate without being manually released onto a dolly without a tow bar.

(5) Uncoupled towing. You must assure that:

(a) Towed vehicles with a gross weight of 5,000 pounds or less must have at least one safety chain or cable. Towed vehicles with a gross weight more than 5,000 pounds must have at least two safety chains or cables.

(b) Safety chains or cables must be strong enough to control the towed vehicle in event the tow bar or coupling device fails.

(c) Safety chains or cables must connect to the towed and towing vehicles and to the tow bar so as to prevent the tow bar from dropping to the ground if it or the coupling device fails.

(d) There must be only enough slack in safety chains or cables to permit proper turning.

(6) Coupled towing. You must assure that:

(a) Drawbar, coupling device, and other connections for towing of trailers must be strong enough to hold the weight of the towed vehicle on any grade over which it may operate.

(b) Any coupling device on any towing vehicle used as a connection for the tow bar on any towed vehicle with a gross weight more than 5,000 pounds must be firmly attached to the frame or to a solid connection to the frame.

(c) There must be a suitable locking means to prevent accidental separation of the towed and towing vehicles.

(d) Connections must have only enough slack to allow for universal action of the connections.

NOTE: When operating a vehicle near overhead power lines more than 600 volts, OAR 437-002-0047 applies for General Industry employers and OAR 437-003-0047 applies for Construction employers.

Stat. Auth.: ORS 654.025(2), 656.726(4).

Stat. Implemented: ORS 654.001 - 654.295.

Hist.: OSHA 6-2007, f. & cert. ef. 9-26-07

DIVISION 3

CONSTRUCTION

437-003-0001

Adoption by Reference

In addition to, and not in lieu of, any other safety and health codes contained in OAR Chapter 437, the Department adopts by reference the following federal rules as printed in the Code of Federal Regulations, 29 CFR 1926, revised as of 7/1/99, and any subsequent amendments published in the Federal Register as listed below:

(1) Subdivision A — GENERAL:

(a) 29 CFR 1926.1 Purpose and Scope, published 2/9/79, Federal Register (FR), vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(b) 29 CFR 1926.2 Variances from safety and health standards, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(c) 29 CFR 1926.3 Inspections — right of entry, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(d) 29 CFR 1926.4 Rules of practice for administrative adjudications for enforcement of safety and health standards, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(2) Subdivision B — GENERAL INTERPRETATIONS:

(a) 29 CFR 1926.10 Scope of subpart, published 2/9/79, Federal Register, vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(b) 29 CFR 1926.11 Coverage under section 103 of the act distinguished, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(c) 29 CFR 1926.12 Reorganization plan No. 14 of 1950, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(d) 29 CFR 1926.13 Interpretation of statutory terms, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(e) 29 CFR 1926.14 Federal contracts for 'mixed' types of performance, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(f) 29 CFR 1926.15 Relationship to the service contract act; Walsh-Healey Public Contracts Act, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(g) 29 CFR 1926.16 Rules of construction, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(3) Subdivision C — GENERAL SAFETY AND HEALTH PROVISIONS:

(a) 29 CFR 1926.20 General safety and health provisions, published 2/9/79, Federal Register, vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(b) 29 CFR 1926.21 Safety training and education, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(c) 29 CFR 1926.22 Recording and reporting of injuries (Reserved).

(d) 29 CFR 1926.23 First aid and medical attention, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(e) 29 CFR 1926.24 Fire protection and prevention, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(f) 29 CFR 1926.25 Housekeeping, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(g) 29 CFR 1926.26 Illumination, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(h) 29 CFR 1926.27 Sanitation, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(i) 29 CFR 1926.28 Personal protective equipment, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(j) 29 CFR 1926.29 Acceptable certifications, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(k) 29 CFR 1926.30 Shipbuilding and ship repairing, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 3/7/96, FR vol. 61, no. 46, p. 9249.

(l) 29 CFR 1926.31 Incorporation by reference, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 3/7/96, FR vol. 61, no. 46, p. 9249; 6/18/98, FR vol. 63, no. 117, p. 33468.

(m) 29 CFR 1926.32 Definitions, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 6/30/93, FR vol. 58, no. 124, p. 35078.

(n) 29 CFR 1926.33 Access to employee exposure and medical records, published 6/20/96, FR vol. 61, no. 46, p. 31427.

(o) 29 CFR 1926.34 Means of egress, published 6/30/93, Federal Register, vol. 58, no. 124, p. 35083.

(4) Subdivision D — OCCUPATIONAL HEALTH AND ENVIRONMENTAL CONTROLS:

(a) 29 CFR 1926.50 Medical services and first aid, published 2/9/79, Federal Register, vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 6/18/98, FR vol. 63, no. 117, p. 33469.

(b) 29 CFR 1926.51 Sanitation, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 6/30/93, FR vol. 58, no. 124, p. 35084.

(c) 29 CFR 1926.52 Occupational noise exposure, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(d) 29 CFR 1926.53 Ionizing radiation, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(e) 29 CFR 1926.54 Nonionizing radiation, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(f) 29 CFR 1926.55 Gases, vapors, fumes, dusts, and mists, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 10/17/86, FR vol. 51, p. 37007; 12/4/87, FR vol. 52, p. 46312; 11/4/96, FR vol. 61, no. 214, p. 56856; 1/10/97, FR vol. 62, no. 7, p. 1619.

(g) 29 CFR 1926.56 Illumination, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(h) 29 CFR 1926.57 Ventilation, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 6/30/93, FR vol. 58, no. 124, p. 35099; 3/7/96, FR vol. 61, no. 46, p. 9250; 1/8/98, FR vol. 63, no. 5, p. 1295.

(i) 29 CFR 1926.58 Reserved, §1926.58, Asbestos, tremolite, anthophyllite and actinolite is redesignated as §1926.1101, Asbestos, and §1926.58 is reserved (8/10/94, FR vol. 59, no. 153, pp. 41131-62).

(j) 29 CFR 1926.59 Hazard Communication, published 8/24/87, FR vol. 52, p. 31852; amended 12/4/87, FR vol. 52, 46075; 4/27/88, FR vol. 53, no. 81, pp. 15033-15035; stay lifted on 2/17/89, FR vol. 54, p. 6886; 2/9/94, FR vol. 59, no. 27, pp. 6126-6184; 4/13/94, FR vol. 59, no. 71, pp. 17478-17479; 12/22/94, FR vol. 59, no. 245, p. 65947; 6/20/96, FR vol. 61, p. 31427.

(k) 29 CFR 1926.60 Methylenedianiline (MDA), published 8/10/92, FR vol. 57, no. 154, pp. 35681-35695; 6/20/96, FR vol. 61, p. 31427; 1/8/98, FR vol. 63, no. 5, p. 1296; 12/6/04, FR vol. 69, p. 70373; 1/5/05, FR vol. 69, p. 1111; 4/3/06, FR vol. 71, no. 63, p. 16669; 8/24/06, FR vol. 71, no. 164, p. 50122.

(l) 29 CFR 1926.61 Retention of DOT markings, placards and labels, published 7/19/94, FR vol. 59, no. 137, pp. 36700; 6/20/96, FR vol. 61, p. 31427.

(m) 29 CFR 1926.62 Lead, published 5/4/93, FR vol. 58, no. 84, pp. 26626-26649; 1/8/98, FR vol. 63, no. 5, p. 1296; 1/5/05, FR vol. 69, p. 1111; 4/3/06, FR vol. 71, no. 63, p. 16669.

NOTE: Cadmium has been redesignated as §1926.1127.

(n) 29 CFR 1926.65 Hazardous Waste Operations and Emergency Response.

NOTE: Division 2/H, 1910.120, Hazardous Waste Operations and Emergency Response, applies to Construction.

(5) Subdivision E — PERSONAL PROTECTIVE AND LIFE SAVING EQUIPMENT:

(a) 29 CFR 1926.95 Criteria for personal protective equipment, published 6/30/93, Federal Register, vol. 58, p. 35152.

(b) 29 CFR 1926.100 Head protection, published 2/9/79, Federal Register, vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(c) 29 CFR 1926.101 Hearing protection, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(d) 29 CFR 1926.102 Eye and face protection, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 6/30/93, FR vol. 58, no. 124, p. 35160.

(e) 29 CFR 1926.103 Respiratory protection, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 1/8/98, FR vol. 63, no. 5, p. 1297.

NOTE: 29 CFR 1926.104 Removed, 8/9/94, FR vol. 59, no. 152, p. 40729

(f) 29 CFR 1926.105 Reserved, 8/9/94, FR vol. 59, no. 152, p. 40729.

(g) 29 CFR 1926.106 Working over or near water, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(h) 29 CFR 1926.107 Definitions applicable to this subpart, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 8/9/94, FR vol. 59, no. 152, p. 40729.

(6) Subdivision F — FIRE PROTECTION AND PREVENTION:

(a) 29 CFR 1926.150 Fire protection, published 2/9/79, Federal Register, vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(b) 29 CFR 1926.151 Fire prevention, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 7/11/86, FR vol. 51, p. 25318.

(c) 29 CFR 1926.152 Flammable and combustible liquids, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 6/18/98, FR vol. 63, no. 117, p. 33469; 6/30/93, FR vol. 58, no. 124, p. 35162.

(d) 29 CFR 1926.153 Liquefied petroleum gas (LP-Gas), published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 6/30/93, FR vol. 58, no. 124, p. 35170.

(e) 29 CFR 1926.154 Temporary heating devices, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(f) 29 CFR 1926.155 Definitions applicable to this subpart, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(7) Subdivision G — SIGNS, SIGNALS, AND BARRICADES

(a) 29 CFR 1926.200 Accident prevention signs and tags, published 2/9/79, Federal Register, vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 6/30/93, FR vol. 58, no. 124, p. 35173; amended with OR-OSHA Admin. Order 2-2003, f. 1/30/03, ef. 1/30/03.

(b) 29 CFR 1926.201 Signaling, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; REPEALED with OR-OSHA Admin. Order 2-2003, f. 1/30/03, ef. 1/30/03.

(c) 29 CFR 1926.202 Barricades, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; REPEALED with OR-OSHA Admin. Order 2-2003, f. 1/30/03, ef. 1/30/03.

(d) 29 CFR 1926.203 Definitions applicable to this subpart, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; amended with OR-OSHA Admin. Order 2-2003, f. 1/30/03, ef. 1/30/03.

(8) Subdivision H — MATERIALS HANDLING, STORAGE, USE AND DISPOSAL

(a) 29 CFR 1926.250 General requirements for storage, published 2/9/79, Federal Register, vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 8/9/94, FR vol. 59, no. 152, p. 40729; 6/30/93, FR vol. 58, no. 124, p. 35173.

(b) 29 CFR 1926.251 Rigging equipment for material handling, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 6/30/93, FR vol. 58, no. 124, p. 35173.

(c) 29 CFR 1926.252 Disposal of waste materials, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(9) Subdivision I – TOOLS – HAND AND POWER

(a) 29 CFR 1926.300 General requirements, published 2/9/79, Federal Register, vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 6/30/93, FR vol. 58, no. 124, p. 35076; 3/7/96, FR vol. 61, no. 46, p. 9250.

(b) 29 CFR 1926.301 Hand tools, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(c) 29 CFR 1926.302 Power operated hand tools, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 6/30/93, FR vol. 58, no. 124, p. 35175.

(d) 29 CFR 1926.303 Abrasive wheels and tools, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 6/30/93, FR vol. 58, no. 124, p. 35175.

(e) 29 CFR 1926.304 Woodworking tools, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 3/7/96, FR vol. 61, no. 46, p. 9251.

(f) 29 CFR 1926.305 Jacks - lever and ratchet, screw, and hydraulic, published Federal Register vol. 58, no. 124, p. 35176.

(10) Subdivision J — WELDING AND CUTTING:

(a) 29 CFR 1926.350 Gas welding and cutting, published 2/9/79, Federal Register, vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 6/30/93, FR vol. 58, no. 124, p. 35179.

(b) 29 CFR 1926.351 Arc welding and cutting, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 7/11/86, FR vol. 51, p. 25318.

(c) 29 CFR 1926.352 Fire prevention, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(d) 29 CFR 1926.353 Ventilation and protection in welding, cutting, and heating, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 6/30/93, FR vol. 58, no. 124, p. 35179.

(e) 29 CFR 1926.354 Welding, cutting, and heating in way of preservative coatings, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(11) Subdivision K — ELECTRICAL:

(a) 29 CFR 1926.400 Introduction, published 2/9/79, Federal Register, vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 7/11/86, FR vol. 51, no. 133, pp. 25294-25335.

(b) 29 CFR 1926.401 (Reserved)

(c) 29 CFR 1926.402 Applicability, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 7/11/86, FR vol. 51, no. 133, pp. 25294-25335.

(d) 29 CFR 1926.403 General requirements, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 7/11/86, FR vol. 51, no. 133, pp. 25294-25335.

(e) 29 CFR 1926.404 Wiring design and protection, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 7/11/86, FR vol. 51, no. 133, pp. 25294-25335; amended with AO 5-2002, repeal (b)(1), f. 6/28/02, ef. 10/1/03.

(f) 29 CFR 1926.405 Wiring methods, components, and equipment for general use, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 7/11/86, FR vol. 51, no. 133, pp. 25294-25335.

(g) 29 CFR 1926.406 Specific purpose equipment and installations, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 7/11/86, FR vol. 51, no. 133, pp. 25294-25335.

(h) 29 CFR 1926.407 Hazardous (classified) locations, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 7/11/86, FR vol. 51, no. 133, pp. 25294-25335.

(i) 29 CFR 1926.408 Special systems, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 7/11/86, FR vol. 51, no. 133, pp. 25294-25335.

(j) 29 CFR 1926.409 (Reserved).

(k) 29 CFR 1926.415 (Reserved).

(l) 29 CFR 1926.416 General requirements, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 7/11/86, FR vol. 51, no. 133, pp. 25294-25335; 6/30/93, FR vol. 58, no. 124, p. 35179; 3/7/96, FR vol. 61, no. 46, p. 9251; 8/12/96, FR vol. 61, no. 156, p. 41738.

(m) 29 CFR 1926.417 Lockout and tagging of circuits, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 7/11/86, FR vol. 51, no. 133, pp. 25294-25335; 6/30/93, FR vol. 58, no. 124, p. 35181; 3/7/96, FR vol. 61, no. 46, p. 9251; 8/12/96, FR vol. 61, no. 156, p. 41739.

(n) 29 CFR 1926.418 (Reserved)

(o) 29 CFR 1926.430 (Reserved)

(p) 29 CFR 1926.431 Maintenance of equipment, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 7/11/86, FR vol. 51, no. 133, pp. 25294-25335.

(q) 29 CFR 1926.432 Environmental deterioration of equipment, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 7/11/86, FR vol. 51, no. 133, pp. 25294-25335.

(r) 29 CFR 1926.433 - 29 CFR 1926.440 (Reserved)

(s) 29 CFR 1926.441 Battery locations and battery charging, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 7/11/86, FR vol. 51, no. 133, pp. 25294-25335.

(t) 29 CFR 1926.442 - 29 CFR 1926.448 (Reserved)

(u) 29 CFR 1926.449 Definitions applicable to this subpart, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 7/11/86, FR vol. 51, no. 133, pp. 25294-25335.

(12) Subdivision L — SCAFFOLDING:

(a) 29 CFR 1926.450 Scope, application and definitions applicable to this subpart, published 8/30/96, FR vol. 61, no. 170, p. 46104.

(b) 29 CFR 1926.451 General requirements, published 8/30/96, FR vol. 61, no. 170, p. 46107; 11/25/96, FR vol. 61, no. 228, p. 59831.

(c) 29 CFR 1926.452 Additional requirements applicable to specific types of scaffolds, published 8/30/96, FR vol. 61, no. 170, p. 46113.

(d) 29 CFR 1926.453 Aerial lifts, published 8/30/96, FR vol. 61, no. 170, p. 46116; 11/25/96, FR vol. 61, no. 228, p. 59832.

(e) 29 CFR 1926.454 Training, published 8/30/96, FR vol. 61, no. 170, p. 46117.

(f) Appendix A to Subpart L Scaffold Specifications, published 8/30/96, FR vol. 61, no. 170, p. 46117.

(g) Appendix B to Subpart L Criteria for determining the feasibility of providing safe access and fall protection for scaffold erectors and dismantlers (Reserved), published 8/30/96, FR vol. 61, no. 170, p. 46122.

(h) Appendix C to Subpart L List of National Consensus Standards, published 8/30/96, FR vol. 61, no. 170, p. 46122.

(i) Appendix D to Subpart L List of training topics for scaffold erectors and dismantlers, published 8/30/96, FR vol. 61, no. 170, p. 46122.

(j) Appendix E to Subpart L Drawing and illustrations, published 8/30/96, FR vol. 61, no. 170, p. 46122; 11/25/96, FR vol. 61, no. 228, p. 59832.

(13) Subdivision M — FALL PROTECTION:

(a) 29 CFR 1926.500 Scope, application, and definitions applicable to this subpart. Amended 8/9/94, FR vol. 59, no. 152, p. 40730-40731; 1/18/01, FR vol. 66, no. 12, p. 5265; 7/17/01, FR vol. 66, no. 137, p. 37137; amended with AO 6-2002, f. and ef. 7/19/02.

(b) 29 CFR 1926.501 Duty to have fall protection. Amended 8/9/94, FR vol. 59, no. 152, p. 40732-40733; amended 2/5/01 (Oregon Exceptions); amended with AO 6-2002, f. and ef. 7/19/02.

(c) 29 CFR 1926.502 Fall protection systems criteria and practices. Amended 8/9/94, FR vol. 59, no. 152, p. 40733-40738; amended with AO 6-2002, f. and ef. 7/19/02.

(d) 29 CFR 1926.503 Training requirements. Amended 8/9/94, FR vol. 59, no. 152, p. 40738; REPEALED with AO 6-2002, f. and ef. 7/19/02, replaced with OI.

(e) Appendix A to Subpart M Determining Roof Widths, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; amended 8/9/94, FR vol. 59, no. 152, p. 40738-40742.

(f) Appendix B to Subpart M Guardrail Systems, published 8/9/94, FR vol. 59, no. 152, p. 40743.

(g) Appendix C to Subpart M Personal Fall Arrest Systems, published 8/9/94, FR vol. 59, no. 152, p. 40743-40746.

(h) Appendix D to Subpart M Positioning Device Systems, published 8/9/94, FR vol. 59, no. 152, p. 40746.

(14) Subdivision N — CRANES, DERRICKS, HOISTS, ELEVATORS, AND CONVEYORS:

(a) 29 CFR 1926.550 Cranes and derricks, published 2/9/79, Federal Register, vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 4/6/82, FR vol. 47, p. 14706; 8/2/88, FR vol. 53, p. 29139; 4/18/89, FR vol. 54, no. 73, p. 15405; 8/9/94, FR vol. 59, no. 152, p. 40730; 6/30/93, FR vol. 58, no. 124, p. 35183.

(b) 29 CFR 1926.551 Helicopters, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(c) 29 CFR 1926.552 Material hoists, personnel hoists, and elevators, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(d) 29 CFR 1926.553 Base-mounted drum hoist, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(e) 29 CFR 1926.554 Overhead hoists, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(f) 29 CFR 1926.555 Conveyors, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(15) Subdivision O — MOTOR VEHICLES, MECHANIZED EQUIPMENT, AND MARINE OPERATIONS:

(a) 29 CFR 1926.600 Equipment, published 2/9/79, Federal Register, vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 6/30/93, FR vol. 58, no. 124, p. 35183.

(b) 29 CFR 1926.601 Motor vehicles, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; REPEALED by AO 6-2007, f. 9/26/07, ef. 9/26/07.

(c) 29 CFR 1926.602 Material handling equipment, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 6/30/93, FR vol. 58, no. 124, p. 35183; 12/1/98, FR vol. 63, no. 230, p. 66274; amended by AO 7-2003, f. 12/5/03, ef. 12/5/03.

(d) 29 CFR 1926.603 Pile driving equipment, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(e) 29 CFR 1926.604 Site clearing, published 6/24/74, FR vol. 39, p. 22801; amended 7/22/77, FR vol. 42, p. 37674.

(f) 29 CFR 1926.605 Marine operations and equipment, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(g) 29 CFR 1926.606 Definitions applicable to this subpart, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(16) Subdivision P — EXCAVATIONS:

(a) 29 CFR 1926.650 Scope, application, and definitions applicable to this subdivision, published 2/9/79, Federal Register, vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 10/31/89, FR vol. 54, no. 209, pp. 45959-45961.

(b) 29 CFR 1926.651 General requirements, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 10/31/89, FR vol. 54, no. 209, pp. 45960-45961; 8/9/94, FR vol. 59, no. 152, p. 40730.

(c) 29 CFR 1926.652 Requirements for protective systems, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 10/31/89, FR vol. 54, no. 209, pp. 45961-45962.

(d) Appendices A-F to Subdivision P, Excavations, published 10/31/89, FR vol. 54, no. 209, pp. 45962-45991.

(17) Subdivision Q — CONCRETE AND MASONRY CONSTRUCTION:

(a) 29 CFR 1926.700 Scope, application and definitions applicable to this subpart, published 2/9/79, Federal Register, vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 6/16/88, FR vol. 53, p. 22612; 10/18/90, FR vol. 55, no. 202, p. 42326.

(b) 29 CFR 1926.701 General requirements, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 6/16/88, FR vol. 53, p. 22612; 8/9/94, FR vol. 59, no. 152, p. 40730.

(c) 29 CFR 1926.702 Requirements for equipment and tools, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 6/16/88, FR vol. 53, p. 22612.

(d) 29 CFR 1926.703 Requirements for cast-in-place concrete, published 6/16/88, FR vol. 53, p. 22612.

(e) 29 CFR 1926.704 Requirements for precast concrete, published 6/16/88, FR vol. 53, p. 22612; amended 10/5/89, FR vol. 54, no. 192, p. 41088.

(f) 29 CFR 1926.705 Requirements for lift-slab construction operations, published 6/16/88, FR vol. 53, p. 22612; amended 10/18/90, FR vol. 55, no. 202, p. 42326.

(g) Appendix A to 1926.705 Lift-slab operations, published 10/18/90, FR vol. 55, no. 202, p. 42326.

(h) 29 CFR 1926.706 Requirements for masonry construction, published 6/16/88, FR vol. 53, p. 22612; amended with OR-OSHA Admin. Order 1-2003, f. 1/30/03, ef. 4/30/03.

(18) Subdivision R — STEEL ERECTION:

(a) 29 CFR 1926.750 Scope, published 1/18/01, Federal Register, vol. 66, no. 12, p. 5265; amended 7/17/01, FR vol. 66, no. 137, p. 37137.

(b) 29 CFR 1926.751 Definitions, published 1/18/01, Federal Register, vol. 66, no. 12, p. 5265; amended 7/17/01, FR vol. 66, no. 137, p. 37137; amended with AO 6-2002, f. and ef. 7/19/02; amended with AO 8-2003, f. 12/30/03, ef. 1/1/04.

(c) 29 CFR 1926.752 Site layout, site-specific erection plan and construction sequence, published 1/18/01, Federal Register, vol. 66, no. 12, p. 5265; amended 7/17/01, FR vol. 66, no. 137, p. 37137.

(d) 29 CFR 1926.753 Hoisting and rigging, published 1/18/01, Federal Register, vol. 66, no. 12, p. 5265; amended 7/17/01, FR vol. 66, no. 137, p. 37137.

(e) 29 CFR 1926.754 Structural steel assembly, published 1/18/01, Federal Register, vol. 66, no. 12, p. 5265; amended 7/17/01, FR vol. 66, no. 137, p. 37137; amended with AO 6-2002, f. and ef. 7/19/02; amended with AO 8-2003, f. 12/30/03, ef. 1/1/04; amended 1/18/06, FR vol. 71, no. 11, p. 2879; 4/3/06, FR vol. 71, no. 63, p. 16669.

(f) 29 CFR 1926.755 Column anchorage, published 1/18/01, Federal Register, vol. 66, no. 12, p. 5265; amended 7/17/01, FR vol. 66, no. 137, p. 37137.

(g) 29 CFR 1926.756 Beams and columns, published 1/18/01, Federal Register, vol. 66, no. 12, p. 5265; amended 7/17/01, FR vol. 66, no. 137, p. 37137.

(h) 29 CFR 1926.757 Open web steel joists, published 1/18/01, Federal Register, vol. 66, no. 12, p. 5265; amended 7/17/01, FR vol. 66, no. 137, p. 37137; amended with AO 8-2003, f. 12/30/03, ef. 1/1/04.

(i) 29 CFR 1926.758 Systems-engineered metal buildings, published 1/18/01, Federal Register, vol. 66, no. 12, p. 5265; amended 7/17/01, FR vol. 66, no. 137, p. 37137.

(j) 29 CFR 1926.759 Falling object protection, published 1/18/01, Federal Register, vol. 66, no. 12, p. 5265; amended 7/17/01, FR vol. 66, no. 137, p. 37137.

(k) 29 CFR 1926.760 Fall protection, published 1/18/01, Federal Register, vol. 66, no. 12, p. 5265; amended 7/17/01, FR vol. 66, no. 137, p. 37137; amended with AO 6-2002, f. and ef. 7/19/02; amended with AO 8-2003, f. 12/30/03, ef. 1/1/04.

(l) 29 CFR 1926.761 Training, published 1/18/01, Federal Register, vol. 66, no. 12, p. 5265; amended 7/17/01, FR vol. 66, no. 137, p. 37137; amended with AO 6-2002, f. and ef. 7/19/02; amended with AO 8-2003, f. 12/30/03, ef. 1/1/04.

(m) Appendix A to Subpart R Guidelines for establishing the components of a site-specific erection plan: Nonmandatory Guidelines for Complying with §1926.752(e), published 1/18/01, Federal Register, vol. 66, no. 12, p. 5265; amended 7/17/01, FR vol. 66, no. 137, p. 37137.

(n) Appendix B to Subpart R Reserved.

(o) Appendix C to Subpart R Illustrations of bridging terminus points: Nonmandatory Guidelines for Complying with §1926.757(a)(10) and §1926.757(c)(5), published 1/18/01, Federal Register, vol. 66, no. 12, p. 5265; amended 7/17/01, FR vol. 66, no. 137, p. 37137.

(p) Appendix D to Subpart R Illustration of the use of control lines to demarcate controlled decking zones (CDZs): Nonmandatory Guidelines for Complying with §1926.760(c)(3), published 1/18/01, Federal Register, vol. 66, no. 12, p. 5265; amended 7/17/01, FR vol. 66, no. 137, p. 37137; REPEALED with AO 6-2002, f. and ef. 7/19/02; amended with AO 8-2003, f. 12/30/03, ef. 1/1/04.

(q) Appendix E to Subpart R Training: Nonmandatory Guidelines for Complying with §1926.761, published 1/18/01, Federal Register, vol. 66, no. 12, p. 5265; amended 7/17/01, FR vol. 66, no. 137, p. 37137.

(r) Appendix F to Subpart R Perimeter columns: Nonmandatory Guidelines for Complying with §1926.756(e) to Protect the Unprotected Side or Edge of a Walking/Working Surface, published 1/18/01, Federal Register, vol. 66, no. 12, p. 5265; amended 7/17/01, FR vol. 66, no. 137, p. 37137.

(s) Appendix G to Subpart R Fall protection systems criteria and practices from §1926.502: Nonmandatory Guidelines for Complying with Complying with §1926.760(d), published 1/18/01, Federal Register, vol. 66, no. 12, p. 5265; amended 7/17/01, FR vol. 66, no. 137, p. 37137; REPEALED with AO 6-2002, f. and ef. 7/19/02; amended with AO 8-2003, f. 12/30/03, ef. 1/1/04.

(t) Appendix H to Subpart R Double connections: Illustration of a clipped end connection and a staggered connection: Non-Mandatory Guidelines for Complying with Complying with §1926.756(c)(1), published 1/18/01, Federal Register, vol. 66, no. 12, p. 5265; amended 7/17/01, FR vol. 66, no. 137, p. 37137.

(19) Subdivision S — UNDERGROUND CONSTRUCTION, CAISSONS, COFFERDAMS, AND COMPRESSED AIR:

(a) 29 CFR 1926.800 Tunnels and shafts, published 2/9/79, Federal Register, vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940. Underground Construction, published 6/2/89, FR vol. 54, no. 105, p. 23824; 1/8/98, FR vol. 63, no. 5, p. 1297; 4/3/06, FR vol. 71, no. 63, p. 16669.

(b) 29 CFR 1926.801 Caissons, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(c) 29 CFR 1926.802 Cofferdams, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(d) 29 CFR 1926.803 Compressed air, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 7/11/86, FR vol. 51, p. 25318.

(e) 29 CFR 1926.804 Definitions applicable to this subpart, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(f) Appendix A to Subpart S Decompression Tables, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(20) Subdivision T — DEMOLITION:

(a) 29 CFR 1926.850 Preparatory operations, published 2/9/79, Federal Register, vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(b) 29 CFR 1926.851 Stairs, passageways, and ladders, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(c) 29 CFR 1926.852 Chutes, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(d) 29 CFR 1926.853 Removal of materials through floor openings, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(e) 29 CFR 1926.854 Removal of walls, masonry sections, and chimneys, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(f) 29 CFR 1926.855 Manual removal of floors, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(g) 29 CFR 1926.856 Removal of walls, floors, and materials with equipment, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(h) 29 CFR 1926.857 Storage, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(i) 29 CFR 1926.858 Removal of steel construction, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(j) 29 CFR 1926.859 Mechanical demolition, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(k) 29 CFR 1926.860 Selective demolition by explosives, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(21) Subdivision U — BLASTING AND USE OF EXPLOSIVES

(a) 29 CFR 1926.900 General provisions, published 2/9/79, Federal Register, vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(b) 29 CFR 1926.901 Blaster qualifications, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(c) 29 CFR 1926.902 Surface transportation of explosives, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 6/30/93, FR vol. 58, no. 124, p. 35311.

(d) 29 CFR 1926.903 Underground transportation of explosives, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(e) 29 CFR 1926.904 Storage of explosives and blasting agents, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 6/30/93, FR vol. 58, no. 124, p. 35311.

(f) 29 CFR 1926.905 Loading of explosives or blasting agents, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 6/30/93, FR vol. 58, no. 124, p. 35184.

(g) 29 CFR 1926.906 Initiation of explosive charges – electric blasting, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 6/18/98, FR vol. 63, no. 117, p. 33469.

(h) 29 CFR 1926.907 Use of safety fuse, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(i) 29 CFR 1926.908 Use of detonating cord, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(j) 29 CFR 1926.909 Firing the blast, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(k) 29 CFR 1926.910 Inspection after blasting, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(l) 29 CFR 1926.911 Misfires, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(m) 29 CFR 1926.912 Underwater blasting, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(n) 29 CFR 1926.913 Blasting in excavation work under compressed air, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(o) 29 CFR 1926.914 Definitions applicable to this subpart, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 6/30/93, FR vol. 58, no. 124, p. 35184, 35311.

(22) Subdivision V — POWER TRANSMISSION AND DISTRIBUTION

(a) 29 CFR 1926.950 General requirements, published 2/9/79, Federal Register, vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(b) 29 CFR 1926.951 Tools and protective equipment, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 8/9/94, FR vol. 59, no. 152, p. 40730.

(c) 29 CFR 1926.952 Mechanical equipment, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(d) 29 CFR 1926.953 Material handling, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(e) 29 CFR 1926.954 Grounding for protection of employees, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(f) 29 CFR 1926.955 Overhead lines, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(g) 29 CFR 1926.956 Underground lines, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(h) 29 CFR 1926.957 Construction in energized substations, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(i) 29 CFR 1926.958 External load helicopters, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(j) 29 CFR 1926.959 Lineman's body belts, safety straps, and lanyards, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(k) 29 CFR 1926.960 Definitions applicable to this subpart, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(23) Subdivision W — ROLLOVER PROTECTIVE STRUCTURES: OVERHEAD PROTECTION

(a) 29 CFR 1926.1000 Rollover protective structures (ROPS) for material handling equipment, published 2/9/79, Federal Register, vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(b) 29 CFR 1926.1001 Minimum performance criteria for rollover protective structure for designated scrapers, loaders, dozers, graders, and crawler tractors, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940.

(c) 29 CFR 1926.1002 Protective frame (ROPS) test procedures and performance requirements for wheel-type agricultural and industrial tractors used in construction, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 3/7/96, FR vol. 61, no. 46, p. 9251; 12/29/05, FR vol. 70, no. 249, p. 76979; 2/28/06, FR vol. 71, no. 39, p. 9909; 7/20/06, FR vol. 71, no. 139, p. 41127..

(d) 29 CFR 1926.1003 Overhead protection for operators of agricultural and industrial tractors, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 3/7/96, FR vol. 61, no. 46, p. 9251; 12/29/05, FR vol. 70, no. 249, p. 76979; 2/28/06, FR vol. 71, no. 39, p. 9909.

(24) Subdivision X — STAIRWAYS AND LADDERS

(a) 29 CFR 1926.1050 Scope, application and definitions applicable to this Subdivision, published 11/14/90, Federal Register, vol. 55, no. 220, p. 47687; amended 1/23/91, FR vol. 56, no. 15, p. 2585; 6/30/93, FR vol. 58, no. 124, p. 35184.

(b) 29 CFR 1926.1051 General requirements, published 11/14/90, FR vol. 55, no. 220, p. 47688.

(c) 29 CFR 1926.1052 Stairways, published 11/14/90, FR vol. 55, no. 220, p. 47688; amended 1/23/91, FR vol. 56, no. 15, p. 2585; 2/7/91, FR vol. 56, no. 26, p. 5061; 8/23/91, FR vol. 56, no. 164, pp. 41793-41794.

(d) 29 CFR 1926.1053 Ladders, published 11/14/90, FR vol. 55, no. 220, p. 47689; amended 1/23/91, FR vol. 56, no. 15, p. 2585; 8/23/91, FR vol. 56, no. 164, pp. 41793-41794.

(e) 29 CFR 1926.1054 (Reserved)

(f) 29 CFR 1926.1055 (Reserved)

(g) 29 CFR 1926.1056 (Reserved)

(h) 29 CFR 1926.1057 (Reserved)

(i) 29 CFR 1926.1058 (Reserved)

(j) 29 CFR 1926.1059 (Reserved)

(k) 29 CFR 1926.1060 Training requirements, published 11/14/90, FR vol. 55, no. 220, p. 47691.

(25) Subdivision Z — TOXIC AND HAZARDOUS SUBSTANCES

(a) 29 CFR 1926.1101 Asbestos, published 2/9/79, FR vol. 44, p. 8577; amended 4/6/79, FR vol. 44, p. 20940; 6/20/86, FR vol. 51, p. 22612; 10/17/86, FR vol. 52, p. 17756; 7/20/88, FR vol. 53, no. 138, p. 27346; 9/14/88, FR vol. 53, p. 35627; 9/23/88, FR vol. 53, no. 185, p. 37080; 7/21/89, FR vol. 54, no. 139, p. 30705, 12/20/89, FR vol. 54, no. 243, pp. 52027-52028; 2/5/90, FR vol. 55, no. 24, p. 3792; 12/10/90, FR vol. 55, no. 237, pp. 50685-50687; 9/4/91, FR vol. 56, no. 171, pp. 43699-43700; 3/5/92, FR vol. 57, no. 44, p. 7878; 6/8/92, FR vol. 57, no. 110, pp. 24330-1; 6/30/92, FR vol. 57, no. 126, p. 29119; 8/10/94, FR vol. 59, no. 153, pp. 41131-62; 6/29/95, FR vol. 60, no. 125, pp. 33983-34002; 7/13/95, FR vol. 60, p. 36043; 9/29/95, FR vol. 60, p. 50411; 8/23/96, FR vol. 61, no. 165, p. 43454; 1/8/98, FR vol. 63, no. 5, p. 1298; 4/23/98, FR vol. 63, no. 78, p. 20099; 6/29/98, FR vol. 63, no. 124, p. 35137; 1/5/05, FR vol. 69, p. 1111; 4/3/06, FR vol. 71, no. 63, p. 16669; 8/24/06, FR vol. 71, no. 164, p. 50122.

(b) 29 CFR 1926.1126 Chromium (VI), published 2/28/06, Federal Register, vol. 71, no. 39. p. 10100; 6/23/06, FR vol. 71, no. 121, p. 36008.

(c) 29 CFR 1926.1127 Cadmium, published 9/14/92, FR vol. 57, no. 178, pp. 42453-42463; amended 4/23/93, FR vol. 58, no. 77, p. 21778; 1/3/94, FR vol. 59, no. 1, p. 215; 6/20/96, FR vol. 61, p. 31427; 1/8/98, FR vol. 63, no. 5, p. 1298; 1/5/05, FR vol. 69, p. 1111; 4/3/06, FR vol. 71, no. 63, p. 16669; 8/24/06, FR vol. 71, no. 164, p. 50122.

(d) 29 CFR 1926.1152 Methylene Chloride, published 1/10/97, Federal Register, vol. 62, no. 7, p. 1619; 10/20/97, FR vol. 62, p. 54382; 12/18/97, FR vol. 62, no. 243, p. 66275.

These standards are available at the Oregon Occupational Safety and Health Division, Oregon Department of Consumer and Business Services, and the United States Government Printing Office.

Stat. Auth.: ORS 654.025(2) & 656.726(4)

Stats. Implemented: ORS 654.001–654.295

Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89; APD 14-1989(Temp), f. 7-20-89, ef. 8-1-89; APD 15-1989, f. & ef. 9-13-89; OSHA 3-1990(Temp), f. & cert. ef. 1-19-90; OSHA 7-1990, f. & cert. ef. 3-2-90; OSHA 8-1990, f. & cert. ef. 3-30-90; OSHA 13-1990(Temp), f. 6-28-90, ef. 8-1-90; OSHA 19-1990, f. & cert. ef. 8-31-90; OSHA 27-1990, f. 12-12-90, cert. ef. 2-1-91; OSHA 6-1991, f. 3-18-91, cert. ef. 4-15-91; OSHA 7-1991, f. & cert. ef. 4-25-91; OSHA 15-1991, f. & cert. ef. 12-13-91; OSHA 16-1991, f. 12-16-91, cert. ef. 1-1-92; OSHA 6-1992, f. & cert. ef. 5-18-92; OSHA 11-1992, f. & cert. ef. 10-9-92; OSHA 1-1993, f. & cert. ef. 1-22-93; OSHA 16-1993, f. & cert. ef. 11-1-93; OSHA 4-1994, f. & cert. ef. 8-4-94; OSHA 1-1995, f. & cert. ef. 1-19-95; OSHA 3-1995, f. & cert. ef. 2-22-95; OSHA 4-1995, f. & cert. ef. 3-29-95; OSHA 5-1995, f. & cert. ef. 4-6-95; OSHA 6-1995, f. & cert. ef. 4-18-95; OSHA 8-1995, f. & cert. ef. 8-25-95; OSHA 5-1996, f. & cert. ef. 11-29-96; OSHA 6-1996, f. & cert. ef. 11-29-96; OSHA 2-1997, f. & cert. ef. 3-12-97; OSHA 4-1997, f. & cert. ef. 4-2-97; OSHA 6-1997, f. & cert. ef. 5-2-97; OSHA 7-1997, f. & cert. ef. 9-15-97; OSHA 3-1998, f. & cert. ef. 7-7-98; OSHA 6-1998, f. & cert. ef. 10-15-98; OSHA 7-1998, f. & cert. ef. 12-18-98; OSHA 2-1999, f. & cert. ef. 4-30-99; OSHA 6-1999, f. & cert. ef. 5-26-99; OSHA 3-2000, f. & cert. ef. 2-8-00; OSHA 3-2001, f. & cert. ef. 2-5-01; OSHA 3-2002, f. 4-15-02, cert. ef. 4-18-02; OSHA 5-2002, f. 6-28-02 cert. ef. 10-1-03; OSHA 6-2002, f. & cert. ef. 7-19-02; OSHA 1-2003, f. 1-30-03 cert. ef. 4-30-03; OSHA 2-2003, f. & cert. ef. 1-30-03; OSHA 7-2003, f. & cert. ef. 12-5-03; OSHA 8-2003, f. 12-30-03 cert. ef. 1-1-04; OSHA 1-2005, f. & cert. ef. 4-12-05; OSHA 2-2006, f. & cert. ef. 4-28-06; OSHA 4-2006, f. & cert. ef. 7-24-06; OSHA 5-2006, f. 8-7-06, cert. ef. 1-1-07; OSHA 6-2006, f. & cert. ef. 8-30-06; OSHA 10-2006, f. & cert. ef. 11-30-06; OSHA 6-2007, f. & cert. ef. 9-26-07

437-003-0003
Purpose

The purpose of these rules is to prescribe minimum safety requirements for employees engaged in construction work, including demolition, blasting and use of explosives, and power transmission distribution and maintenance work.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0005
Additional Applicability

If a specific type of equipment, process or practice is not limited to the construction industry, the provisions contained in other divisions of OAR chapter 437, Oregon Occupational Safety and Health Code, shall apply.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0006
General Oregon Definitions

For the purposes of administration of the Oregon Safe Employment Act, the following terms mean:

(1) "Act" means the Oregon Safe Employment Act, ORS Chapter 654.

(2) "Agency" means the Accident Prevention Division, Department of Insurance and Finance.

(3) "Assistant Secretary" means the Administrator of the Accident Prevention Division or designated representative.

(4) "Assistant Secretary of Labor for Occupational Safety and Health" means the Administrator of the Accident Prevention Division or designated representative.

(5) "Office of the Solicitor of Labor" means Legal Counsel for the Accident Prevention Division.

(6) "Occupational Safety and Health Administration" or "OSHA" means the Accident Prevention Division, Department of Insurance and Finance.

(7) "Standards" mean any occupational safety and health standard which has been adopted and promulgated by a nationally-recognized standards-producing organization, the federal government, or the State of Oregon and shall have the same meaning as, and include, the terms "code(s)" and "rule(s)."

(8) "Administrative Rules" means OAR chapter 437, division 001, Rules for the Administration of the Oregon Safe Employment Act, and Oregon Revised Statutes (ORS) Chapter 183.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.:APD 8-1989, f. & ef. 7-7-89

437-003-0007
Additional Rules of Practice for Administrative Adjudications

In addition to and not in lieu of administrative and legal actions outlined in **29 CFR 1926.4**, the State of Oregon will use the provisions of ORS Chapter 183 and 654, and OAR chapter 437, division 1, to administer this code.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0011
Additional Definitions

The following definitions are in addition to those found in **29 CFR 1926.32**:

(1) "Department" The Department of Insurance and Finance.

(2) "Employee" Any individual, including a minor whether lawfully or unlawfully employed, who engages to furnish his services for a remuneration, financial or otherwise, subject to the direction and control of an employer, and includes salaried, elected and appointed officials of the state, state agencies, counties, cities, school districts and other public corporations, or any individual who is provided with workers' compensation coverage as a subject worker pursuant to ORS Chapter 656, whether by operation of law or by election.

(3) "Employer" Any person who has one or more employees, or any sole proprietor or member of a partnership who elects workers' compensation coverage as a subject worker pursuant to ORS 656.128.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

Sanitation

437-003-0015
Drinking Water

In addition to and no in lieu of any provisions in 1926.51(a), drinking water containers shall be constructed of materials that maintain water quality, shall be refilled daily or more often as necessary, shall be kept covered, and shall be regularly cleaned.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0017
Additional Definitions to Concrete and Masonry Construction

(1) Deadman is a large weight of sufficient mass used to anchor the base of a brace to a masonry wall.

(2) Grout lift is an increment of grout height within the total grout pour.

(3) Grout pour is the total height of a masonry wall to be grouted prior to the erection of additional masonry. A grout pour can consist of one or more grout lifts.

(4) High wind area is where construction activity continues when winds are expected to exceed 35 mph on a regular basis.

(5) Protected area is a location at a jobsite that is not exposed to winds, such as basements and interior areas.

(6) Running bond (half bond) is a bond pattern in which block are placed half way over units directly below creating a staggered look.

(7) Safe location is an area at a jobsite that employees can take refuge in order to avoid hazardous conditions.

(8) Stack bond is a bond pattern in which blocks are stacked directly over each other (not lapped longitudinally) creating continuous joints both vertically and horizontally.

(9) Straight coil loop insert is a wall insert that loops around the structural rebar and is suitable for the attachment of braces in a structural masonry wall. Minimum size of a coil loop insert is 3/4 inch.

(10) Structural rebar is rebar that extends full length or height and can be spliced per required lap.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 1-2003, f. 1-30-03 cert. ef. 4-30-03

437-003-0020
Toilets

In addition to and not in lieu of any provisions in **26 CFR 1926.51(c):**

(1) At the site of every project with an estimated cost of $500,000 or more, the employer or owner of such place of employment shall provide flush toilet facilities in accordance with Subsection (2) of **29 CFR 1926.51(c)** and washing facilities which include wash basins, warm water and soap.

NOTE: Section (1) of this rule does not apply to highway construction or maintenance projects or to electricity, water, sewer or gas transmission facility construction or maintenance projects. The director may, by order, exempt or partially exempt, individual or classes of construction projects from the requirements of section (1) of this rule when conditions are such that compliance is impractical or impossible.

(2) Where toilet facilities will not be used by women, urinals may be provided instead of toilets, except that the number of toilets in such cases shall not be reduced to less than 2-3 of the minimum specified.

(3) Toilets and toilet area shall be maintained in good repair and in a clean and sanitary condition.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89; OSHA 1-1994, f. & cert. ef. 4-27-96

Occupational Noise Exposure

NOTE: §1926.52 was not adopted by the Department. In Oregon, 437-003-0027 applies:

437-003-0027
Applicable Rules

Whenever any employee is exposed to noise in the workplace, the requirements of OAR chapter 437, division 2/G, 1910.95, Occupational Noise Exposure shall apply.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 8-1989, f. & ef. 7-7-89; OSHA 6-1994, f. & cert. ef. 9-30-94

Asbestos, Tremolite, Anthophyllite and Actinolite

Hazard Communication

NOTE: §1926.55 was not adopted by the Department. In Oregon, OAR 437-002-0382 applies.

437-003-0035
Additional Rules

In addition to and not in lieu of administrative and legal actions outlined in **29 CFR 1926.59(i)(11)**, the State of Oregon may take the following actions:

(1) Issue subpoenas or any protective orders;

(2) Issue additional citations and penalties pursuant to ORS 654.071(4), 654.086(1)(d), (3) or OAR chapter 437, division 1; or

(3) Refer the matter to the circuit court in the county in which the proceedings are pending for enforcement of the subpoena.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

Respiratory Protection

NOTE: §1926.103(a)(2) was not adopted by the Department. In Oregon, OAR 437-003-0037 applies.

437-003-0037
Acceptable Equipment

Respiratory protective devices shall be approved by the National Institute for the Occupational Safety and Health (NIOSH), or acceptable to the Department of Insurance and Finance, for the specific contaminants to which the employee is exposed.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 8-1989, f. & ef. 7-7-89

Personal Protective Equipment

NOTES:

-1- §1926.451(u)(3) was not adopted by the Department. In Oregon, OAR 437-003-0040, applies. See §1926.104 for Oregon-Initiated Rule OAR 437-003-0040, Fall Protection.

-2- Oregon Exception 1: On sloped roofs with a roof slope between 3:12 to and including 6:12, and having a ground-to-eave height not to exceed twenty-five (25) feet, 2 x 6 roofing brackets, with full bearing on a solid surface, may be used for fall protection when performing roofing and sheathing work on residential type structures.

-3- Oregon Exception 2: On residential type structures with a roof slope greater than 6:12 to and including 8:12, and having a ground-to-eave height not to exceed twenty-five (25) feet, roofing brackets may be used when brackets are used in multiples and spaced every eight (8) feet vertically. All brackets shall bear on a solid surface.

-4- Oregon Exception 3: When performing residential type construction work such as leading edge work, top plate work, constructing and setting walls and trusses or doing roofing and sheathing work, the fall distance to a lower level may be increased from 6 feet to 10 feet.

437-003-0045
Additional Definitions

The following definitions are in addition to those found in 1926.751:

(1) Certification required by this section means "in writing."

NOTE: In Oregon, a competent person is considered to be someone with equivalent skills as a qualified person in identifying existing and potential hazards in the workplace, while also being authorized by the employer or employer's representative to take immediate corrective action to control or eliminate hazards.

(2) Dangerous equipment — Equipment such as pickling or galvanizing tanks, degreasing units, machinery, electrical equipment, and other units which, as a result of form or function, may be hazardous to employees who fall onto or into such equipment.

(3) Lower levels — Those areas or surfaces to which an employee can fall. Such areas or surfaces include, but are not limited to, ground levels, floors, platforms, ramps, runways, excavations, pits, tanks, material, water, equipment, structures.

NOTE: Oregon OSHA did not adopt the federal OSHA definition of "Opening." In Oregon, OAR 437-003-0045(4) applies.

(4) Opening means a gap or void 12 inches (30.5 cm) or more in any dimension in a floor, roof or other walking/working surface. For the purposes of this subpart, skylight and smoke domes that do not meet the strength requirements of 1926.754(e)(3) shall be regarded as openings.

(5) Walking/working surface means any surface, whether horizontal or vertical on which an employee walks or works, including, but not limited to, floors, roofs, ramps, bridges, runways, formwork, beams, columns, trusses and concrete reinforcing steel but not ladders, vehicles, or trailers, on which employees must be located in order to perform their job duties.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89; OSHA 3-2002, f. 4-15-02, cert. ef. 4-18-02 10-1-03; OSHA 6-2002, f. & cert. ef. 7-19-02

Electrical — Safety-Related Work Practices

437-003-0047
Working Near Overhead High Voltage Lines and Equipment

(1) Definitions.

(a) Insulating Barrier or Guard. A structure, installation, barrier, or guard (such as a wall, fence, pole, shield, or something similar) that stops movement and prevents all possible contact with the lines or equipment. Its design, material composition, and installation prevents possible conduction of electricity up to the maximum voltage of the system.

(b) Restricted Space.

(A) For lines rated more than 600 V to 50 kV, restricted space extends 10 feet in all directions from the surface of the line or equipment.

(B) For lines rated over 50 kV, restricted space extends 10 feet plus 0.4 inch for each 1 kV over 50 kV, or twice the length of the insulator (but never less than 10 feet) in all directions from the surface of the line or equipment.

(C) For equipment or structures in transit, on level surfaces, restricted space extends 4 feet in all directions from lines or equipment rated 50 kV or less, 10 feet in all directions for lines or equipment rated over 50 kV, and 16 feet in all directions for lines or equipment rated over 345 kV up to and including 750 kV.

(c) Proper Notification. The person(s) responsible for the planned activity must notify the owner/operator of the line or equipment, at their business office, at least 2 business days prior to the anticipated beginning of work (business days are Monday through Friday, excluding federal and state holidays). The notification must include:

(A) The proposed date to start activity within restricted space;

(B) The location of the planned activity;

(C) A description of the planned activity; and

(D) Name and contact information of the contact person.

(2) General requirement. Do not enter, perform any function or activity (such as handling, erecting, operating, transporting, or storing any tools, equipment or materials, moving a building or structure) within the restricted space surrounding an overhead high voltage line or equipment unless:

(a) You are the owner, an authorized employee, or authorized (in writing) agent of the overhead high voltage system: or

(b) Proper notification is provided; and

(A) The line and/or equipment is de-energized and visibly grounded by the owner of the high voltage system or their authorized agent; or

(B) Accidental contact is effectively prevented by use of insulating barriers or guards. Barriers or guards must:

(i) Be erected or installed by the owner of the high voltage system or their authorized agent;

(ii) Not be attached to, or be part of the lines, equipment, or machinery;

Note: Overhead line covers are only for visual reference, and their use does not allow entry into restricted space. If used, they must be installed by the owner of the high voltage system or their authorized agent.

(iii) Prevent all possible contact with the lines or equipment; and

(iv) Insulate against the system's maximum voltage; or

(c) Insulated lines (not tree wire) and equipment (designed and engineered to allow only incidental contact) are erected or installed by the owner of the high voltage system or their authorized agent.

Note: Nothing in this standard shifts the responsibility for safe and healthy working conditions from the person(s) responsible for the activity to the owner of the lines or their agent.

Note: Nothing in this standard mandates that the owner of the lines or equipment, or their authorized agent must agree to de-energize, move, barricade, guard, or insulate lines or equipment, or take other action to allow entry into restricted space.

(3) Do not move, reposition, or reduce restricted space in any direction by applying stress or force to a line, equipment, or supporting structure.

(4) Operation of machinery or equipment.

(a) Do not enter restricted space when using insulating links or proximity warning devices on equipment.

(b) Post a warning sign on each piece of equipment which is capable of vertical, lateral, or swinging motion, such as a crane, derrick, power shovel, drilling rig, or pile driver.

(A) The sign must be made of durable material.

(B) It must be in clear view of the operator.

(C) The message must be legible to the operator when at the controls.

(D) The message must be understood by the operator.

(E) The message must clearly convey that it is "Unlawful to operate the piece of equipment within 10 feet of high voltage lines".

(c) Use an observer to provide audible warning (able to be clearly heard over surrounding noise) when it becomes difficult for an operator to identify restricted space by using visual means. The observer's only task is to watch the clearance and warn the operator if it appears that restricted space will be breached.

(d) Restrict, barricade, or otherwise make it impossible for a machine or piece of equipment to reach into restricted space if it is reasonable to anticipate that the operator's attention may be focused on the work process rather than the location of an overhead high voltage line or equipment (such as during excavating, or other fast-paced, repetitive work).

(5) Railway and commuter systems

(a) Standard rail equipment used to transport freight and/or passengers, and relief trains or other equipment used in emergencies, may enter restricted space surrounding high voltage lines or equipment.

(b) Qualified employees, authorized and supervised by a person familiar with the hazards of the railway high voltage system, may perform normal repair or construction work within restricted space prior to compliance with the clearance and safeguard requirements in sections (1) through (4).

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89; OSHA 2-2007, f. 6-8-07, cert. ef. 6-15-07

Ladders

437-003-0065
Extension Ladders

Extension ladders shall be equipped with necessary guide irons, locks, and hooks and shall be assembled so that the sliding (upper) section shall be on top of the base (lower) section.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

Scaffolds

437-003-0071
Manually Propelled Elevating Aerial Platforms

When using manually propelled elevating aerial platforms as covered by **ANSI/SIA** A92.3-1990, the manufacturer's operating manual must be with the equipment. You must follow all operating and maintenance instructions and recommendations of the manufacturer.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 2-1997, f. & cert. ef. 3-12-97

437-003-0073
Boom Supported Elevating Work Platforms

(1) When using boom supported elevating work platforms as covered by **ANSI/SIA** A92.5-1992, the manufacturer's operating manual must be with the equipment. You must follow all operating and maintenance instructions and recommendations of the manufacturer.

(2) Workers must use personal fall protection that complies with Subdivision M of this division, when working in these devices.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 2-1997, f. & cert. ef. 3-12-97

437-003-0074
Scissor Lifts — Self-Propelled Elevating Work Platforms

When using self-propelled elevating aerial platforms, scissor lifts, as covered by **ANSI/SIA** A92.6-1990, the manufacturer's operating manual must be with the equipment. You must follow all operating and maintenance instructions and recommendations of the manufacturer.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 2-1997, f. & cert. ef. 3-12-97

Cranes and Derricks

437-003-0080
Wind Velocity Device

(1) The employer shall provide a wind velocity device which will give a visible or audible alarm to the crane operator at a predetermined wind velocity; and

(2) The employer shall ensure that:

(a) The wind velocity device is compatible with the manufacturer's crane specifications; and

(b) The crane operators are fully instructed regarding the maximum permissible wind speeds during operation; and

(c) The load chart contains the wind velocity operating limits.

Stat. Auth.: ORS 643.014(1) & 646.716(2)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 16-1991, f. 12-18-91, cert. ef. 1-1-92; OSHA 6-1994, f. & cert. ef. 9-30-94

Cranes, Derricks, Hoists, Elevators, and Conveyors

437-003-0081
Crane Operator Training Requirements

(1) The employer shall establish written procedures for the safe operation of all cranes used in construction.

(2) The employer shall see that employees who operate cranes are properly trained, have sufficient practical experience, and follow operating procedures for the safe operation of the crane.

(3) The level of training and experience received by the employee as meeting OAR 437-003-0081(2) shall be recorded in writing.

(4) The employer shall maintain all written records of the crane operator's safety training and experience as set forth in OAR 437-003-0081, and shall make such records available for review by the Oregon Occupational Safety and Health Division (OR-OSHA) upon request.

(5) In addition to the basic training and experience required by OAR 437-003-0081(2), all employees engaged in construction work who operate cranes of 5 ton capacity or greater shall have additional training and experience as set forth in Appendices OR-A through OR-E of this Subdivision, and shall possess a valid crane operator's safety training card issued by a training provider or employer.

(a) OAR 437-003-0081(5) does not apply to hoists, wreckers, line trucks, cranes used by railroads on railroad right-of-ways, or to cranes while used for handling logs.

NOTE: The term "line truck" means a truck used to transport workers, tools, and material, and is sometimes equipped with a boom and auxiliary equipment for setting poles, digging holes, and elevating material or personnel.

(b) An employee with prior training and experience having a minimum of 1500 hours of prior crane experience on a specific type or type(s) of crane shall be deemed to have met the requirements of OAR 437-003-0081(5) if that person has written records of such training and experience.

(c) Upon receipt and verification of such written records of experience, the employer may issue a crane operator's card to the employee.

(d) After January 1, 1992, all operators of cranes of 5 ton or greater capacity that are used in construction shall comply with OAR 437-003-0081(5) by successfully completing a training course which meets the provisions of OAR 437-003-0081(2) and Appendices OR-A through OR-E of this Subdivision.

(e) A crane operator's safety training card, as required by OAR 437-003-0081(5), need not be in any particular form, but at a minimum shall specify the type or types and size of cranes the operator is trained to operate, a picture of the operator, the original issue date, expiration date, name, signature of the operator, and the name and signature of the training provider or employer.

(f) All cards issued after January 1, 1992, shall be laminated in clear plastic to prevent tampering. All cards issued prior to January 1, 1992, shall be laminated in plastic and shall have the operator's picture on the card by April 1, 1992.

(g) The crane operator's safety training card required by OAR 437-003-0081(5) shall be renewed and signed every three years by a training institution or employer upon:

(A) Verification that the employee has read the current OR-OSHA rules on cranes contained in Division 3, Construction, Subdivision N, Cranes, Derricks, Hoists, Elevators and Conveyors; and

(B) Completion of crane operator safety training refresher training consisting of 4 hours at a minimum.

(6) Persons who are in training either through a recognized apprenticeship program, or any other properly supervised program may operate a crane under visual supervision of a crane operator who possesses a current operator's safety training card for that type of crane.

(7) Any person from another state wishing to operate a crane of 5 ton capacity or greater for the purpose of construction work may be issued an operator's safety training card by the employer or training provider upon:

(a) Verification of a minimum of 1500 hours experience on a specific type or types of cranes being operated and is being trained in Oregon for the purpose of operating this type of crane. This temporary operator's safety training card shall be valid for 30 days from the date of issue; or

(b) Presenting a valid crane operator's safety training card issued in a state which has crane operator's safety training standards equal to or greater than those listed in Appendices OR-A through OR-E of this Subdivision.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 16-1991, f. 12-16-91, cert. ef. 1-1-92; OSHA 6-1994, f. & cert. ef. 9-30-94; OSHA 3-2002, f. 4-15-02, cert. ef. 4-18-02

APPENDIX OR-A

Classroom Training: Minimum Training Required for Operating Cranes of 5 Ton Capacity or Greater, Basic and Specialty Basic Core Training Curriculum

Unit of Study Instruction

SAFETY — Overview of causes of crane accidents and training in managing the work environment safely.
OR-OSHA CRANE RULES — Familiarity with OR-OSHA'S Division 3, Construction, Subdivision N, Cranes, Derricks, Hoists, Elevators, and Conveyors.
CRANES AND COMPONENTS — Types of cranes, names of crane components, selection of cranes for job.
DEFINITIONS OF TERMS — Center of gravity, radius, gross and net load, static load and dynamic load(s), effective weights, ultimate strength and rated strength, safety factors, stowed and stored, tipping axis, jib angle to ground.
TECHNICAL DATA — Leverage: when using the crane in general, the hook, block and the boom hoist. Changes in leverage, rate of tipping, forward stability, backward stability, crane failures, gantries, live and high masts, counterweights, effect of boom angle, effects of jib angle, jib as a boom extension, effect of load on booms, production lifts, rope safety factors.
QUADRANTS OF OPERATION DEFINITIONS — Over the rear, over the side, 360 degree rotation.
WEIGHT OF THE LIFT — Sources of weight data, calculating weights, principles examples, lifting in water, tests lifts, check lifts.
CONDITIONS & CAPACITIES — Summary of conditions affecting crane capacities: off-level, wind, eccentric reeving, swingout, sideloading, impact loading, outrigger position, ground conditions, counterweights, gantries and high masts, equipment condition, swing bearing wear, tire condition and inflation, boom pad wear, outrigger and pad condition, bent chords and lacings.
MULTIPLE CRANE LIFTS — Types of equalizer beams, pivot points in lines, pivot points not in-line, load as an equalizer beam, necessary calculations.
CALCULATIONS — Crane capacities: results of over loading, division of load charts, gross and net capacity, gross and net load, radius between values, boom length between values, boom angle between values, parts of line; calculating capacities: on the boom, on the pinned section, on the extension, on the jib.
PREPARING FOR A LIFT — Boom assembly and disassembly, reasons to repair/scrap boom sections, Wire rope installation, reeving, wedge sockets, telescoping booms, setting-up, measuring radius, radius over boom angle, outrigger set-up, block outriggers, leveling methods.
CONDITIONS DURING LIFTS — Swingout, slack rope on drums, pick and carry, lifting on tires, protection of personnel around high voltage and results of making contact, working in the vicinity, effects of electrical current, hitting booms, boom over back, causes of two-blocking, shift of center of gravity, cold weather operation, tipping over backwards.
LEAVING CRANES UNATTENDED — Short periods, extended periods.
RESPONSIBILITIES — Management and operator responsibilities.
MISCELLANEOUS — Signals, composition of wire rope, rope strengths, tables of rates and capacities, determine sling loadings, using blocks and tackle.
CRANE CHECKLIST — Operator's daily checklist.
ERECTION, DISMANTLING, TRANSPORT — Erection checklist, bolting procedures, bolting.
INSPECTION & TESTING — Frequency of inspections, testing maintenance, and storage of crane components.
NOTE: Complete program includes at least one crane specific class in addition to basic core.

APPENDIX OR-B

Training (Crane Specific): Minimum Training Required for Operating Cranes of 5 Ton Capacity or Greater, Hydraulic Cranes

Unit of Study Instruction

INTRODUCTION — Hydraulic cranes: 5 ton to 50 ton.
ACCIDENTS/SAFETY — Overview of crane accidents and safety awareness.
CRANE NOMENCLATURE — Type of cranes, industrial hydraulic crane (carry deck), commercial mounted boom truck, hydraulic rough terrain crane (exploded view), characteristics, name of components, transporting, erecting & dismantling, hydraulic crane operator checklist (daily inspection).
MACHINE CONDITION — Configuration, repairs/modifications, swing assembly, cab/controls, fluid levels, boom/load hoist, boom/jib extensions, wire rope/load blocks, safety devices, annual inspection.
SAFE OPERATING PRACTICES — Quadrants of operation: over the front, over the rear, over the side, over the outriggers; mobile and rubber-tired cranes; weight of the lift; load charts; calculating capacities.
CONDITIONS & CAPACITIES — Land based, barge mounted.

APPENDIX OR-C

Training: Minimum Training Required for Operating Cranes of 5 Ton Capacity or Greater, Tower and Whirley Cranes

Unit of Study Instruction

ACCIDENTS/SAFETY — Overview of crane accidents and safety awareness.
CRANE NOMENCLATURE — Type of cranes, characteristics, name of components.

Tower & Whirley Operator Checklist

MACHINE CONDITION — Configuration, repairs/modifications, swing assembly, cab/controls, fluid levels, boom/load hoist, boom/jib extensions, wire rope/load blocks, safety devices.

Tower Crane Climbing

SAFE OPERATING PRACTICES — Quadrants of operation, weight of the lift, load charts, calculating capacities.

APPENDIX OR-D

Training: Minimum Training Required for Operating Cranes of 5 Ton Capacity or Greater, Conventional Cranes

Unit of Study Instruction

ACCIDENTS/SAFETY — Overview of crane accidents and safety awareness.
CRANE NOMENCLATURE — Type of cranes, truck cranes, crawler, characteristics, name of components, transporting, erecting and dismantling, conventional crane operator checklist (daily inspection).
MACHINE CONDITION — Configuration, repairs/modifications, swing assembly, cab/controls, fluid levels, boom/load hoist, boom/jib extensions, wire rope/load blocks, safety devices, annual inspection
SAFE OPERATING PRACTICES — Quadrants of operation for mobile and rubber-tired cranes: over the rear, over the side, over the outriggers, over the front. Quadrants of operation for crawler cranes: over the side, ends, 360 degree rotation; weight of the lift; load charts; calculating capacities.
CONDITIONS & CAPACITIES — Land base, barge mounted.

APPENDIX OR-E

Practical Experience: Minimum Training Required for Operating Cranes of 5 Ton Capacity or Greater

This Area is Meant to Have an Operator Demonstrate a Minimum Acceptable Levelof Competency in the Listed Areas as Appropriate to the Specific Type of Crane Being Operated

(1) Method and sequence of checks to be conducted on cranes prior to operation.
(2) Procedures for assembling and dismantling cranes and their transportation.
(3) Crane Set-Up:
(a) Site preparation
(b) Counterweights
(c) Outriggers

(d) Rigging methods and materials
(4) Crane Operation:
(a) Safe operating procedures
(b) Principles of leverage and power transmission
(c) Purpose and use of load charts and boom angles
(d) Picking loads
(e) Adjacent hazards
(5) Frequency, sequence and methods of inspections.
(6) Maintenance.
(7) Effect of overloading, instability, and structural or functional failure.
(8) Procedures for Tower Crane climbing (as applicable).
(9) Familiarity with OR-OSHA Crane rules and Manufacturer's Operating Manuals.

APPENDIX OR-F

Curriculum for Crane Safety Refresher Training

Unit of Study Instruction

OR-OSHA REQUIREMENTS — Division 3, Subdivision N.
RESPONSIBILITIES — Site supervisor's responsibilities. Crane owner's responsibilities. Operator's responsibilities.
CENTER OF GRAVITY — Crane center of gravity. Load center of gravity. Combined center of gravity. Effect of boom position on combined center of gravity.
RADIUS — Changes in load, boom angle and rotation point.
LOAD — Load on lattice boom cranes. Load on hydraulic cranes. Load on hydraulic crane boom extensions. Load on the jib of lattice and hydraulic boom cranes. Gross capacity vs. net capacity. Static and dynamic loads.
TIPPING AXIS — Rough terrain cranes: Tipping axis. Crawler mounted cranes: Tipping axis.
CALCULATIONS — Overloads and tipping. Division of load charts. Main boom capacity — lattice booms. Values of boom angle, boom length and load radius between chart listings. Parts of line. Crane capacities. Range diagrams.
ACCIDENT PREVENTION — Common causes of tower whirley accidents. Rigging the load. Handling the load. Electrical hazards. Review/analysis of known incidents/accidents.

Equipment

437-003-0085
General Requirement

An unimpaired horizontal clearance or not less than three feet shall be maintained between the rotating superstructure of any mechanical equipment and any adjacent object or surface. If this clearance cannot be maintained, barricades shall be installed to isolate the hazardous area.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0090
Pinchpoints

To protect against workers being exposed to the hazardous pinchpoint area between the rotating superstructure and the non-rotating undercarriage of any mechanical equipment:

(1) Signs shall be conspicuously posted on all sides of any mechanical equipment warning workers:

Danger — Stay Clear

(2) Items of personal property, tools, or other miscellaneous materials shall not be stored on or near any mechanical equipment if retrieval of such items would expose a worker to the hazardous pinchpoint.

(3) Workers shall approach the hazardous pinchpoint area only after informing the operator of his intent and receiving acknowledgement from the operator that the operator understands his intention. All mechanical equipment shall be stopped while any worker is in the hazardous pinchpoint area; and

(4) When the nature of the work requires a person to work within three feet of the swing radius of the rotating upper structure, a warning barricade shall be provided. This requirement shall not apply to mechanical equipment when:

(a) The distance from the highest point of the undercarriage to the lowest point of the rotating superstructure is greater than 18 inches. This applies only to that portion of the rotating superstructure that swings directly over the undercarriage;

(b) The distance from the ground to the lowest point of the rotating superstructure is greater than five feet six inches. This applies only to that portion of the rotating superstructure that swings directly over the undercarriage; or

(c) On crawler-type track-mounted mechanical equipment only, the rotating superstructure is positioned at a right angle to the tracks, and the distance from the side of the cab to the extreme end of the track is four feet or less. This exemption shall apply to side barricades only; barricades between the tracks at both ends of any crawler-type mechanical equipment are required regardless of the right angle dimension.

Stat. Auth: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

NOTE: §1910.501(a) was NOT adopted by OR-OSHA. In Oregon, OAR 437-002-0093 applies:

437-003-0094
Personnel Platforms

Whenever a lift truck is used for lifting personnel without controls at the platform, the following precautions shall be taken for the protection of personnel being elevated:

(1) A work platform equipped with standard guardrails or equivalent means, and firmly secured to the lifting carriage or forks, shall be used.

(2) The hydraulic system shall be so designed that the lift mechanism will not drop faster than 135 feet per minute in the event of a failure in any part of the system.

(3) An operator shall attend the lift equipment while workers are on the platform.

(4) The operator shall be in the normal operating position while raising or lowering the platform.

(5) The vehicle shall not travel from point to point with the work platform elevated at a height greater than 4 feet while workers are on the platform. When necessary at heights greater than 4 feet, inching may be permitted provided it is done at a very slow speed.

(6) If workers on the platform can contact the lift chains or other dangerous pinch or shear points on the mast or carriage, the platform must have a screen or guard that prevents contact.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 6-1999, f. & cert. ef. 5-26-99

Specific Excavation Requirements

437-003-0096
Underground Installations

In addition to an not in lieu of any rules relating to "underground installations" adopted in OAR chapter 437, the following Oregon Revised Statues and Oregon Administrative Rules administered by the Oregon Public Utility Commission (PUC) shall apply:

(1) ORS 757.451 through 757.571; and
(2) OAR 860-024-0006 and 860-024-0007.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 8-1990, f. 3-30-90, cert. ef. 9-1-90

Power Transmission and Distribution

437-003-0110
Personnel

Only qualified persons shall be engaged in the construction, maintenance and/or operation of electrical transmission and distribution facilities. This paragraph shall not be construed as prohibiting in-service training when properly supervised and all necessary precautions are exercised to safeguard such work.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

Two-Worker Rules

437-003-0115
High Voltage

Not less than two journeyman, or workers with equivalent training and experience, shall be required for work on energized high voltage equipment. A qualified apprentice may work in place of one of the journeyman for the purpose of training.

NOTE: See OAR 437-003-0120 for additional exceptions.
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0120
More than 750 Volts

(1) Two journeymen shall work together on the same pole or structure when working energized circuits in excess of 750 volts between phases. Two separate poles or structures shall be considered as one for the purpose of this rule if both workers can step to the other pole or structure without having to descend to the ground to do so.

(2) Exceptions: The following exceptions to the two-worker rule apply:

(a) When re-fusing circuits with a hot stick;

(b) When operating switches by means of operating handles or switch sticks;

(c) When a qualified apprentice is assigned to work with a journeyman for the purpose of training;

(d) Where life or the public safety are in immediate danger, one worker may remove only the immediate hazard is no other workers are immediately available;

(e) When installing or removing a hot line clamp connection with an approved hot stick on single phase line or apparatus, providing that the connection or disconnection does not interrupt or pick up a load.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0125
Proximity

Workers within reach of each other shall not work on different phases of the same circuit, or on different circuits, or on one energized phase and a ground conductor at the same time.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0128
High Visibility Garments

Employees exposed to hazards caused by on-highway type moving vehicles in construction zones and street/highway traffic must wear highly visible upper body garments. The colors must contrast with other colors in the area sufficiently to make the worker stand out. Colors equivalent to strong red, strong orange, strong yellow, strong yellow-green or fluorescent versions of these colors are acceptable. During hours of darkness, the garments must also have reflective material visible from all sides for 1000 feet.

NOTE: High visibility garments for flaggers must meet the requirements in 1926.201(a)(4).

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 10-2000, f. 11-7-00, cert. ef. 4-1-01

437-003-0130
Training — Experience

At least two journeymen or workers having the equivalent training and experience are required to work where contact with energized high voltage is possible unless or until proper guards or barriers have been installed.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0135
Additional Personnel

When it is necessary to patrol lines when road conditions, weather conditions, or other factors make it impossible to patrol safely with one person, additional help shall be provided to perform the job safely.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0140
Working Foreman

A foreman shall not work as a journeyman while supervising two or more other journeymen who are engaged in high voltage or equally hazardous work.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

Safety Watcher

437-003-0145
General

A qualified safety watcher shall be provided whenever workers or equipment are required to perform work in areas where inadvertent motions or movements would violate specified clearances. The safety watcher's sole duty is to keep constant watch over persons under his observation and to warn them of danger.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001-654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0150
Foreman as Safety Watcher

The foreman may act as the safety watcher providing his other duties do not interfere. Should the foreman, for any reason, find his attention distracted or leave the immediate vicinity, he shall either designate another qualified person as the safety watcher or order the work stopped.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0155
Selection

The foreman or worker in charge of the work will be held responsible for the designation of the safety watcher. It is the foreman's responsibility to select a qualified worker for this job who is capable, and who is familiar with the work being done.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0160
Request for Safety Worker

Any worker may ask for a safety watcher when one is required by this code.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0165
Safety Watcher for Nonelectrical Workers

(1) A safety watcher shall be provided whenever a clearance is necessary for the performance of nonelectric work. Safety watchers shall obtain such clearances and see that necessary grounds are installed.

(2) Exceptions:

(a) Clearances and safety watchers are not required for the painting of transmission line towers as long as all painters and their rigging remain below the level of the lowest energized conductor and at least ten feet from such conductor;

(b) Warning signs or danger flags shall be attached to each tower leg that can be climbed to a location consistent with the above;

(c) Painters shall be clearly instructed to remain below these signs or workers.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

Identification of Lines, Cables and Equipment

437-003-0170
No Defacement

Marks of identification on electrical equipment shall not be defaced.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0175
Proper Identification

Lines, cables or equipment that are or may become energized shall not be worked upon until properly identified.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0180
Both Ends Identified

All primary cables shall be permanently and plainly identified by tags or other methods at both ends.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

Cutting and Splicing

437-003-0185
Energized Cables

Energized cables shall be spliced only by persons qualified for such work. Extreme caution and suitable tools and protective devices shall be used for such operations.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0190
Cable Tests

Cables shall not be cut until tests are made to verify that cables are not energized.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0195
Protective Equipment

(1) Any intervening conductor or ground between the workers and the conductor to be worked on shall be covered with protective equipment designed for that purpose.

(2) Such protective equipment shall be installed so that the nearest conductor or ground shall be covered first.

(3) In removing the protective equipment, the sequence shall be reversed.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0200
Guards — Barriers

Suitable guards and barriers shall be erected, so that workers or tools and equipment will not fall into or accidentally contact energized conductors or equipment.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0205
Markers

Unsafe areas shall be marked off with barricade tape or by equivalent means.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0210
No Attachments

No attachments shall be placed on poles, towers, or other structures which are not authorized by the utilities involved.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0215
Emergency Procedures and First Aid

All linemen and persons doing aerial work shall be trained in pole top rescue.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89
NOTE: §1926.950(d)(1) was not adopted by the Department. In Oregon, OAR 437-003-0220 applies.

437-003-0220
Working Clearance

When de-energizing lines or equipment and the means of disconnecting from electric energy are not visibly locked out, the following requirements shall be met:

(1) The section of line or equipment to be de-energized shall be clearly identified, and it shall be isolated from all sources of voltage.

(2) All switches and disconnectors through which electric energy may be supplied to the line or equipment to be worked on shall be de-energized.

(3) All switches and disconnectors shall be plainly tagged indicating that workers are at work.

(4) When the design of switches and disconnectors permit, they shall be rendered inoperable.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0225
Required Precautions

After receiving notification from the dispatcher that the circuit or equipment is de-energized, the person making the request shall take the following precautions before coming in contact with the circuit or equipment:

(1) The circuit or equipment shall be tested to make sure that it is de-energized.

(2) The circuit or equipment shall be grounded and shorted as prescribed by the grounding section of these rules.

(3) Guards or barriers shall be erected as necessary to prevent approach or contact with adjacent energized lines or equipment.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0227
Clearing-Tagging Before Work and Removal After Work

(1) When more than one independent crew requires the same line or equipment to be de-energized, each crew must have the de-energized circuit or equipment cleared and tagged for itself individually, unless working under the direct supervision of a single foreman or supervisor who has the circuit or equipment cleared and tagged for himself.

(2) Upon completion of work on de-energized lines or equipment, each designated employee in charge shall determine that all employees in his crew are clear, that protective grounds installed by his crew have been removed, and he shall report to the designated authority that all tags protecting his crew may be removed.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0230
Verification Before Contact

No person shall contact a circuit or equipment that has been taken out of service to be worked on until he has assured himself the circuit or equipment is cleared, tagged and grounded.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

Tools and Protective Equipment

Tools

437-003-0235
Additional Requirements

(1) The use of axes, hatchets and power saws is prohibited on all over-head work where workers are supported by a single climbing belt or rope.

(2) When power saws are used on overhead work where workers are supported by climbing belts or ropes, the requirement in OAR 437-003-0705 shall apply.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0240
Other Materials and Tools

Materials and tools other than belt tools for which the body belt is designed:

(1) Shall be raised or lowered by means of a suitable container and/or handline.

(2) Shall not be thrown to or from linemen working on poles or structures.

(3) Shall not be carried up or down poles or structures in belts.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0245
Tools in Belt

Small tools carried in the belt shall be placed so they present the least danger of coming in accidental contact with energized parts, and where they will not interfere with use of "D" rings. No sharp or pointed tools shall be carried except when in scabbards or otherwise effectively safeguarded.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0250
Housekeeping

Loose tools and materials shall not be left on poles, crossarms, ladders, or other elevated locations.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

Protective Equipment

437-003-0255
Designated Voltage Barriers

Line guards, insulator covers and other protective devices shall be considered adequate barriers for the voltages for which they are specifically designed.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989, f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0260
NEC Compliance

Fixed protective guards and barriers, when installed and maintained in compliance with the National Electric Code, shall be considered as providing adequate clearance.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0265
Tests and Records

Rubber blankets, line hose and hoods shall be electrically tested at least once each six months after they are checked out for use, and complete records kept of all such tests and date of issue. Rubber protective equipment not checked out for use within one year shall be re-tested before being issued.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0270
Rubber Gloves

Rubber gloves referred to in these rules shall be those guaranteed by the manufacturer to pass a minimum dielectric test of 10,000 volts. Rubber gloves shall not be used for working on circuits in excess of 5,000 volts between phases.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0275
Tests of Gloves and Sleeves

Rubber gloves and sleeves shall be electrically tested at least once each sixty days after they are checked out for use, and complete records shall be kept of all such tests and date of issue. Rubber gloves and sleeves not checked out for use within one year shall be re-tested before being issued.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0280
Glove Assignment

A pair of rubber gloves with protectors and a container shall be assigned to each worker who is required to work on, or to be exposed to, energized parts where rubber protective equipment is necessary.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0285
Required Protection

Rubber gloves or hot sticks shall be used while installing or removing protective equipment on conductors or equipment energized at 5,000 volts or less.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0290
Hot Sticks or Other Protective Devices

Protective equipment and devices shall be installed with hot sticks when used on conductors or equipment energized in excess of 5,000 volts. If no protective equipment or device has been manufactured for a particular situation, protective equipment may be installed with rubber gloves on voltages not over 15,000 for that situation only.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0295
Adequate Protection

(1) Rubber protective equipment shall be considered as adequate barriers when used on voltages of not more than 5,000 volts between phases.

(2) Exceptions:

(a) Rubber protective equipment may be used for protection against accidental contact only up to 15,000 volts between phases to cover those parts of energized equipment for which no satisfactory protecting device has been developed;

(b) Rubber gloves shall be used as protection, from accidental contact only, on voltages above 5,000 and not over 15,000 volts between phases.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0300
Removal of Foreign Objects

Rubber gloves shall be worn or hot sticks used when handling or removing foreign materials or objects that are in contact with high voltage equipment or conductors.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0305
High Voltage Vicinity

Workers shall have rubber gloves on before reaching a position where they can touch high voltage conductors or equipment that are not protected and they shall not remove their rubber gloves until entirely clear and out of reach of all such high voltage conductors or equipment.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0310
Two-Worker Rules

When the two-worker rules apply and rubber gloves are required, they shall be worn by both workers.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0315
Leather Protectors

Workers shall use leather protectors over rubber gloves at all times.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0320
Glove Containers

When not in use, rubber gloves shall be carried in a protective container designed for this purpose.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0325
Correct Use

Rubber gloves shall not be worn or stored inside out.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0330
Defective Gloves

Defective rubber gloves shall not be used.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0335
Providing and Maintaining Protective Equipment

All protective equipment and devices used in electrical work, such as insulating gloves, hoods, insulating blankets, hose, hot sticks, fuse pullers, tongs, grounding equipment and other special tools and devices must be provided and used when their need is indicated, and shall be maintained in a manner that will preserve adequate dielectric strength.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0340
Design and Use

All protective equipment or protective devices shall be of safe design, fabrication and condition, and their use shall be restricted to the use and purpose for which they are designed.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0345
Suspected Defect

Any piece of protective equipment suspected of being defective shall be tested and found safe before us. Any protective equipment found to be defective shall be removed from service.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0350
Housekeeping

All protective equipment and protective devices shall be properly stored when not in use to prevent damage and resist deterioration.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

Climbers

437-003-0355
Climber Gaffs

Climber gaffs shall be kept sharpened. Gaffs of 1-1-4 inches or less shall not be used.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0360
Gaffs Guarded

While climbers are not being worn, the gaffs shall be properly guarded.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0365
Restrictions on Use of Climbers

(1) Workers shall remove climbers before driving any vehicle.

(2) Climbers shall not be worn except when required.

(3) Workers shall not continue to wear their climbers while working on the ground except for brief periods when a worker is necessarily off the pole.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

Hot Line (or Live Line) Tools

437-003-0370
Inspection and Condition

Hot line tools shall be inspected by a competent person frequently enough to insure that they will not be used in an unsafe condition. The surface finish shall be kept free from scratches and abrasions which would reduce the insulating qualities.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0375
Handling and Transporting

Hot line tools shall be handled carefully and maintained in first class condition. They shall be kept in a dry place. When transporting, they shall be kept in separate special storage compartments, or be contained in protective bags. They shall not be laid directly on the ground.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0380
Margin of Safety

All hot line tools shall be designed and constructed to provide an ample margin of safety for the voltage on which they are recommended for use. They shall be of sufficient length to allow the user to remain outside the minimum required clearance.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0385
Required Use

Hot line tools shall be used by workers when doing work on energized lines in excess of 5,000 volts.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0390
Weather and Other Factors

Hot line tools shall not be used when rain, fog, or any other factor is sufficient to reduce their insulating qualities to the extent that leakage can be felt.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0395
Tested and Warranted

Only hot line tools that are tested and warranted by the manufacturer to be adequate for the voltage involved shall be used.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0400
Rope Use

Hot line type ropes shall be used where there is a possibility of ropes coming in contact with energized conductors of more than 5,000 volts. Hot line ropes shall be used solely for hot line work and shall be kept free as possible from dirt and moisture.

Stat. Auth.: ORS 654.025(2) & 656.726(3)

Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0404
Branch circuits.

(1) General. Use ground fault circuit interrupters specified in (2) below or an assured equipment grounding conductor program as in (3) below. These requirements are in addition to any other requirements for equipment grounding conductors.

(2) All 125-volt, single-phase, 15-, 20-, and 30-ampere receptacles on construction sites, that are for temporary power and are available for use by employees, must have approved ground-fault circuit interrupters. GFI protection must be at the outlet end of the circuit. Extension cords or other devices with listed ground-fault circuit interrupter protection for personnel identified for portable are acceptable.

(3) Assured equipment grounding conductor program: Receptacles more than 125-volt, single-phase, 30-amperes must have protection that complies with (2) above, or an assured equipment grounding conductor program that complies with the following:

(a) A written description of the program, including the employer's specific procedures. The program must be at the job site for inspection and copying by the Administrator and any affected employee.

(b) The employer must designate one or more competent persons (defined in §1926.32(f)) to implement the program.

(c) Before each day's use, visually inspect each extension cord, or other device, and any equipment connected by cord and plug, for external defects, such as deformed or missing pins or insulation damage, and for signs of possible internal damage. Extension cords, devices and receptacles not exposed to damage are exempt from this inspection. Do not use damaged or defective equipment.

(d) Do these tests on all extension cords, other devices and receptacles that are not part of the permanent wiring of the building or structure, and cord- and plug-connected equipment required to be grounded:

(A) Test all equipment grounding conductors for continuity.

(B) Test each receptacle or plug to assure the equipment grounding conductor is connected to its proper terminal.

(e) Do all required tests:

(A) Before first use;

(B) Before first use after repair;

(C) Before use after any incident that reasonably could cause damage (for example, when a cord set is run over); and

(D) At intervals not longer than 3 months. Inspect fixed extension cords, other devices and receptacles not exposed to damage at least every 6 months.

(f) Record all tests required in this paragraph. This test record must identify each receptacle, cord set, and cord- and plug-connected equipment that passed the test and indicate the last date of testing or the test interval. Keep this record by means of logs, color coding, or other effective means. Keep the record until replaced by a newer record. The record must be available on the job site for inspection by the Administrator and any affected employee.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2002, f. 6-28-02 cert. ef. 10-1-03

437-003-0405
Removal of Foreign Objects

Hot line tools shall be used while handling or removing foreign materials or objects that are in contact with high voltage equipment or conductors energized in excess of 5,000 volts.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

Ladders

437-003-0410
Damaged-Defective Ladders

Damaged or defective ladders shall be removed from the jobsite.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

Mechanical Equipment

437-003-0415
General

(1) Equipment and rigging shall be regularly inspected and maintained in safe operating condition.

(2) Position measures shall be taken to prevent vehicles or pedestrians from coming in contact with wires, rope or equipment being used.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89
NOTE: §1926.200(g)(2) was not adopted by the Department. In Oregon, 437-003-0420 applies.

437-003-0420
Traffic Control

(1) Adequate and appropriate traffic controls must be provided for all operations on or adjacent to a highway, street, or roadway. The traffic controls must conform to the Millennium Edition of the (FHWA) Manual of Uniform Traffic Control Devices (MUTCD), December 2000.

(2) Signaling by flaggers and the use of flaggers, including warning garments worn by flaggers must conform to the Millennium Edition of the (FHWA) Manual of Uniform Traffic Control Devices (MUTCD), December 2000.

(3) Barricades for protection of employees must conform to the Millennium Edition of the (FHWA) Manual of Uniform Traffic Control Devices (MUTCD), December 2000.

NOTE: You may obtain a copy of the Millennium Edition from the following organizations: American Traffic Safety Services Association, 15 Riverside Parkway, Suite 100, Fredericksburg, VA 22406-1022; Telephone: 1-800-231-3475; Fax: (540) 368-1722; www.atssa.com; Institute of Transportation Engineers, 1099 14th Street, NW., Suite 300 West, Washington, DC 20005-3438; Fax: (202) 289-7722; www.ite.org; and American Association of State Highway and Transportation Officials; www.aashto; Telephone: 1-800-525-5562.
NOTE: Electronic copies of the MUTCD 2000 are available for downloading at http://mutcd.fhwa.dot.gov/kno-millennium.
NOTE: A copy of the MUTCD 2000 is available for inspection at the Oregon OSHA Resource Center, 350 Winter Street NE, Basement - Room 26, Salem, Oregon 97301-3882; Telephone: (503) 378-3272, or toll free in Oregon 1-800-922-2689.
NOTE: Employers who are following the most current edition of the Oregon Department of Transportation's Short Term Traffic Control Handbook will be considered to be in compliance with this requirement.
[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89; APD 16-1989(Temp), f. & ef. 9-13-89; OSHA 2-1989, f. & ef. 10-17-89; OSHA 2-2003, f. & cert. ef. 1-30-03

437-003-0425
Rigging

Workers shall stand in the clear of rigging under tension.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0430
Suitable Equipment

Equipment used for handling conductors under tension shall be suitable for the purpose.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

Outriggers

437-003-0435
Position for Hoisting

Means shall be provided to hold all outriggers securely in a retracted position when blocked for hoisting.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0440
Stability

When outriggers are placed on soft or unstable soil, additional pads shall be placed to prevent slipping or sinking of outriggers.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

Aerial Manlift Equipment

437-003-0445
High Voltage Contact

Direct contact between the basket, supporting boom, or ladder on aerial equipment and energized high voltage conductors or equipment shall be avoided. Special tools, fittings, or masts designed for use on energized equipment are excepted.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0450
Two-Worker Rules

The use of aerial equipment shall not create an exception to the two-worker rules. The presence of a second lineman in a position to operate the controls or otherwise observe and render immediate assistance will be considered in compliance with the two-worker rules.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

Controls of Aerial Equipment

437-003-0455
Proximity to High Voltage

Workers operating controls of aerial equipment shall not stand on the ground or a grounded surface unless wearing rubber gloves or standing on an insulating board or mat where equipment is exposed to high voltage conductors.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0460
Inadvertent Contact Protection

Controls shall be so placed and/or guarded that the equipment cannot be activated by inadvertent contact by the operator, tools, equipment, lines, or foreign objects.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

Operation of Aerial Equipment

437-003-0465
Operation-Maintenance Manual

The manufacturer's operation and maintenance manual shall be available. The operating instructions, proper sequence, and maintenance procedures prescribed by the manufacturer should be followed.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0470
Posted Capacity

The rated load capacity shall be posted at a conspicuous place on the equipment and shall be kept in a legible condition.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

Inspection, Testing and Repair

437-003-0475
Operational Check

(1) The operator shall make an operational test or check of all parts of his vehicle vital to safe operation at the beginning of each shift.

(2) Any malfunction noted shall be reported to the proper authority, and the necessary repairs or adjustments shall be made before the vehicle is placed in regular operation.

(3) Any vehicle which develops defects in parts vital to safe operation during a work shift shall be removed from service until necessary repairs are made.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

Grounding for Protection of Employees

Grounding and De-Energizing

437-003-0480
Worker's Presence

Any worker's request that the grounding set be installed in his presence shall be complied with.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0485
Three Phase Line

While working on extra high voltage transmission circuits under de-energized conditions with three phase mechanical shorts and grounds closed at the terminal ends of the line, workers may perform work on one phase of the three phase line after having grounded the phase being directly worked on. The ungrounded phases are to be treated as energized until they are properly grounded.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0490
Overheat Static Wires

When work is being done on overhead static wires (ground wires), they shall be grounded as though they were line conductors, unless they are permanently grounded on the structure where the work is being performed.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0495
No Contact with Conducting Objects

Workers on the ground shall avoid unnecessary contacts with lower conductors, tower legs, ground rods, winch lines, vehicles, and other conducting objects.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

Working Clearance

437-003-0500
Clearance Request

Clearance shall be required from the dispatcher or person acting in at capacity on all circuits and equipment under his control.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0502
Personal Fall Restraint

Fall restraint systems and their use shall conform to the following provisions:

(1) Personal fall restraint systems shall be rigged to prevent the user from falling any distance.

(2) Fall restraint systems must use fall arrest system components that conform to the criteria in 1926.502, except as otherwise provided for in this section.

EXCEPTION: A body belt may be used in fall restraint systems.

(3) The attachment point to the body belt or full body harness may be at the back, front or side dee-rings.

(4) Anchorages used for attachment of personal fall restraint equipment shall be independent of any anchorage being used to support or suspend platforms and shall be capable of supporting 3000 pounds (13.3kN) per employee attached, or be designed, installed and used as follows:

(a) As part of a complete personal fall restraint system which maintains a safety factor of at least two; and

(b) Under the supervision of a qualified person.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist: OSHA 6-2002, f. & cert. ef. 7-19-02

437-003-0503
Training Requirements

(1) Training Program.

(a) The employer shall provide a training program for each employee who might be exposed to fall hazards. The program shall enable each employee to recognize the hazards of falling and shall train each employee in the procedures to be followed in order to minimize these hazards.

(b) The employer shall assure that each employee has been trained, as necessary, by a competent person qualified in the following areas:

(A) The nature of fall hazards in the work area;

(B) The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used;

(C) The use and operation of guardrail systems, personal fall arrest systems, safety net systems, warning line systems, safety monitoring systems, personal fall restraint systems, slide guard systems, positioning devices, and other protection to be used;

(D) The role of each employee in the safety monitoring system when this system is used;

(E) The limitations on the use of mechanical equipment during the performance of roofing work;

(F) The correct procedures for the handling and storage of equipment and materials and the erection of overhead protection; and

(G) The role of employees in the fall protection work plan;

(H) The standards contained in this subpart.

(2) Certification of training.

(a) The employer shall verify compliance with paragraph (a) of this section by preparing a written certification record. The written certification record shall contain the name or other identity of the employee trained, the date(s) of the training, and the signature of the person who conducted the training or the signature of the employer. If the employer relies on training conducted by another employer or completed prior to the effective date of this section, the certification record shall indicate the date the employer determined the prior training was adequate rather than the date of actual training.

(b) The latest training certification shall be maintained.

(3) Retraining. When the employer has reason to believe that any affected employee who has already been trained does not have the understanding and skill required by paragraph (a) of this section, the employer shall retrain each such employee. Circumstances where retraining is required include, but are not limited to, situations where:

(a) Changes in the workplace render previous training obsolete; or

(b) Changes in the types of fall protection systems or equipment to be used render previous training obsolete; or

(c) Inadequacies in an affected employee's knowledge or use of fall protection systems or equipment indicate that the employee has not retained the requisite understanding or skill.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist: OSHA 6-2002, f. & cert. ef. 7-19-02

437-003-0505
Identity of Dispatcher

Workers shall obtain the name of the dispatcher when requesting clearance.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0510
Identity of Requestor

The dispatcher shall obtain the name of the person requesting clearance and assure himself that the person is qualified to receive such clearance.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0515
Request Content

The person requesting the clearance shall state exactly what circuit or equipment he wants de-energized and the reason.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0520
Request Verification

The dispatcher shall repeat the request for clearance and be certain that the request is fully understood.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0525
Notification Necessary

The circuit or equipment shall be considered as energized until notification from the dispatcher to the contrary is received.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0530
Verification of Clearance

Before considering any circuit or equipment de-energized, the dispatcher shall assure himself that all switches which could possibly energize the circuit or equipment in question have been opened, all phases, checked, tagged with "Work in Progress" or "Hold" tags, and locked or blocked in the open position. Only a visible air break shall be regarded as clearing a circuit.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0535
Multiple Workers

If two or more workers are required to do a job on a circuit or equipment which has been removed from service, each worker must understand who is in charge and responsible for the clearance.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0540
Release of Clearance

A dispatcher shall not authorize any person to energize the circuit or equipment that has been taken out of service for the purpose of having work done on it until all persons having clearances on such circuit or equipment have released their clearances and authorized their "Hold" or "Work in Progress" tags to be removed.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0545
Tags Prohibited Use

No person shall operate a switch to which "Hold" or "Work in Progress" tags are attached.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0550
Tag Removal

No person shall remove any "Hold" or "Work in Progress" tags for any purpose without the authorization of the dispatcher.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0555
Responsibility of Requestor

Any person to whom a clearance has been given shall be held responsible for removing all protective grounds and shorts installed by him or under his direction, before releasing the circuits or equipment to the dispatcher for service.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0560
Attaching and Removing Grounds

Grounding shall conform to the following rules:

(1) A ground set or grounding device shall be a positive pressure contact clamp that can be applied with insulated hot stick or sticks, and

shall be of sufficient current carrying capacity to activate the protective devices without damaging the ground set.

(2) A short and ground shall be placed at the point of work on all phase conductors. When the conductor is to be opened, a short and ground set shall be placed on both sides of the opening at the point of work. When the placement of a short and ground at the point of work increases the hazard to workers, a short and ground may be placed as near to the point of work as possible.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

Overhead Lines

General

437-003-0565
Dead End Towers

Removing structural or lacing members of dead end towers during stringing operations shall be prohibited except on tangent (0° angle) dead end towers.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0570
Wire Rope

Conductive rigging (wire rope) shall not be used to raise poles, transformers and other equipment except when such rigging is below, protected or at a sufficient distance from energized high voltage conductors to prevent hazardous contact.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0575
Ladders

Ladders or other suitable devices shall be used when working on strands or conductors that cannot be ridden. If ladders are used, they must either be held by another worker until the ladder can be securely lashed to the strand or conductor, or secured by strand hooks. After making the ladder secure, the worker shall attach his safety strap to the strand, conductor or other support.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0580
Strength Check

Before riding a conductor, every precaution shall be taken to determine that the conductor in the span, and its supports are of sufficient strength to safely bear the weight of the workers and their equipment.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0585
Route Check

Before riding a strand or conductor, a worker shall survey his proposed route to insure that there will be no hazardous contacts.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0590
Equipment Check

Only equipment properly designed for the purpose shall be used as a means for riding strands or conductors.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0595
Platform Use

Workers shall not crawl out over insulator strings, but shall use a platform or other suitable device from which to work when making dead ends or doing other work beyond strings of insulators at such distance that the work cannot be reached from the pole or fixture. While working on the platform or other device, they shall secure themselves to the device or structure with their safety straps or a rope.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0600
Bare-Hand Work

Live-line bare-hand work is prohibited.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

Raising Poles, Towers, Fixtures

437-003-0605
Qualified Supervision

Raising poles, towers or fixtures in close proximity of high voltage conductors shall be done under the supervision of a worker especially qualified for this work. Workers handling such poles, towers or fixtures shall wear rubber gloves or be otherwise adequately protected.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89
NOTE: §1926.955(a)(5)(i) was not adopted by the Department. In Oregon, OAR 437-003-0610 applies:

437-003-0610
Proximity to High Voltage

When setting, moving, or removing poles using cranes, derricks, gin poles, A-frames, or other mechanized equipment near energized lines or equipment, precautions shall be taken to avoid contact with energized lines or equipment.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

Stringing or Removing De-Energized Conductors

437-003-0615
Positive Control

Conductors being strung in or removed shall be kept under positive control by the use of adequate tension reels, guard structures, tielines, or other means to prevent accidental contact with energized circuits.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0620
Removing Conductors

Conductors shall be strung or removed with a dry, nonconductive rope used as a running or trailing line. In replacing a conductor with a new or larger conductors, the conductor being removed shall not be used to pull in the new conductor unless the conductor being removed has been carefully inspected for its entire length and then adjudged to have adequate strength.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0625
Pulling

Each pull shall be snubbed or dead ended at both ends before subsequent pulls.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0630
Bare Conductors

Bare conductors being strung or removed shall be run through an effectively grounded block or be grounded at the reel or the first possible point where the conductor could contact energized high voltage conductors.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0635
Stringing Conductors

Conductors being strung shall not be allowed to slack enough to be in reach of traffic or pedestrians, unless guarded by flaggers or other suitable safeguards.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0640
Sleeves

When stringing or removing conductors under tension, there shall be no sleeves pulled through the bull wheel or the puller on the tension machine.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0645
Reel Tender

A lineman or experienced person under the supervision of a lineman shall be placed in charge of the reels as the reel tender.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0650
Reel Tending Equipment

Reels shall be grounded. Reel tenders shall be provided with and use a suitable insulated platform or rubber mat on which to stand, and shall wear rubber gloves.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0655
Equipment Secured

Reel handling equipment, including pulling, braking and sagging equipment shall be firmly anchored or secured during operations.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

NOTE: OAR 437-003-0665 through 0715 were repealed by OR-OSHA Admin. Order 27-1990, f. 12-12-90, ef. 2-1-91. Refer to Division 2-R, Tree and Shrub Services, OAR 437-002-0301 through 0311.

Power Transmission and Distribution

437-003-0706
Protection of Employees On or Near Masonry Walls

(1) Nonreinforced Masonry Walls. The limited access zone for a masonry wall that is not reinforced and braced in accordance with 437-003-0706(3) must run the entire length of the wall, and extend away from the wall a distance equal to the height of the wall plus four feet.

(2) Limited Access Zone for Masonry Walls. The limited access zone shall remain in place until the wall is adequately supported to prevent overturning and to prevent collapse unless the height of wall is over eight feet, in which case, the limited access zone shall remain in place until the requirements of 437-003-0706(3) of this section have been met.

(3) Bracing for Masonry Walls. All masonry walls over eight feet in height must be adequately braced to prevent overturning and collapse unless the wall is adequately supported. Bracing must remain in place until permanent supporting elements of the structure are in place. The bracing system must be designed by a registered professional engineer, or follow the requirements of 437-003-0706(4).

(4) Protection of Employees On or Near Braced Masonry Walls.

(a) A limited access zone must be established when constructing a reinforced masonry wall.

(A) A limited access zone must be established before construction of the wall begins.

(B) A limited access zone must run the entire length of the wall, and extend away from the wall a distance equal to the height of the grout pour plus four feet.

(C) A limited access zone must be located on the side of the wall not scaffolded.

(D) All activity within the limited access zone is under the direction and control of a competent person.

(E) Entry into the limited access zone is limited to employees actively engaged in construction of the wall. No other employees are allowed to enter the zone without permission from a competent person.

(F) A competent person is responsible for monitoring wind speeds. When speeds reach 25 mph all braces must be examined and the site made secure.

(G) When wind speeds reach 35 mph, all employees in the limited access zone and in proximity to the wall under construction must move to a safe location.

(H) The limited access zone must remain in place until any wall over 8 feet in height is adequately braced as per paragraph 437-003-0706(4)(e) of this section or supported to prevent overturning and to prevent collapse.

(b) During construction of a masonry wall, adequate bracing must be in place to prevent the wall from overturning or collapse. If any of these conditions exist, the bracing is not needed:

(A) The wall is 8 feet or less in height.

(B) A qualified person demonstrates that modifications to paragraph 437-003-0706(4)(e) are adequate when addressing these or other inherently more stable conditions:

(i) Shafts;
(ii) Infills in existing walls;
(iii) Construction in protected areas;
(iv) Changes in wall thickness;
(v) Masonry pilasters; or
(vi) Corner returns, intersecting walls.

(C) Permanent supporting elements of the structure are in place.

(c) Design bracing systems according to paragraphs 437-003-0706(4)(d) and (e) of this section and install them under the direction of a competent person.

(d) A registered professional engineer must design bracing when there is one or more of the following:

(A) The wall is more than 24 feet in height;

(B) the minimum requirements of 437-003-0706(4)(e)(A) or (B) are not met;

(C) Stack bond; or

(D) High wind areas.

(e) A structural masonry wall bracing system must be designed by a qualified person. The design and installation of the bracing system must comply with the following requirements:

(A) Minimum design requirements, including minimum requirements per chapter 26 of the Uniform Building Code, for use in Options 1 or 2:

NOTE: This information may be included in the blueprints.

(i) F'm 1500 psi, concrete block laid in running bond pattern.
(ii) Type S mortar.
(iii) 60 ksi rebar, with minimum placement of 2 - #4 horizontally and 1 - #5 vertically at 48 inches on center.
(iv) 2,000 psi grout required at reinforced areas.
(v) Straight coil loop insert with coil bolts (safe working load = 2250 lb.).
(vi) Metal concrete tilt braces.
(vii) Wall height not to exceed 24 feet.

(B) Minimum field requirements for use in Options 1 or 2:

(i) The horizontal spacing distance between two or more braces must not exceed 20 feet;

(ii) The horizontal bracing distance from an end of wall or control joint must not exceed 10 feet;

(iii) A qualified person must determine if walls less than 20 feet in length require two braces;

(iv) The connection of the brace to the masonry wall must consist of a minimum 3/4 inch straight coil loop insert, placed around a structural rebar located at an ungrouted bond beam;

(v) At least one structural rebar must be located between the attached bar and face shell that receives brace (see figure 1);

(vi) The base connection of brace must consist of a minimum 3/4 inch anchor attached to either a 4 inch minimum thick slab or deadman;

(vii) The brace angle must not be greater than 60 degrees from the horizontal;

(viii) The slab or deadman connection must resist a minimum 3,400 lbs. pullout force.

(C) Option 1 — Bracing structural masonry walls when grout pours are limited to 5 feet 4 inches or less in height.

(i) A maximum 8 feet of initial wall height may be laid with minimum reinforcement and then grouted.

(ii) A maximum 5 feet, 4 inches of additional wall may be laid with reinforcement located to receive straight coil loop inserts at the bond beam location.

(iii) The first brace must be connected to the wall insert and attached to slab or deadman at base of wall.

(iv) The reinforced section must be grouted.

(v) Additional wall may be constructed following steps 437-003-0706(4)(e)(C)(ii) through (iv).

(D) Option 2 — Bracing structural masonry walls with grout pours up to 8 feet in height.

(i) A maximum 8 feet of the initial wall height may be laid with minimum reinforcement and then grouted.

(ii) A maximum 5 feet, 4 inches of additional wall may be laid with reinforcement located to receive straight coil loop inserts at a bond beam location.

(iii) Braces must be connected to coil loop inserts in the wall and attached at the base to either a slab or deadman.

(iv) The wall may be laid and reinforced up to the grout pour.

(v) No more than 4 feet of ungrouted wall above the brace point is permitted.

(vi) Grouting may be done after each section of wall is adequately braced.

(vii) A maximum of 8 feet of additional wall height may be constructed and braced following steps 437-003-0706(4)(e)(D)(ii) through (iv). Figure 1: [Figure not included, see ED. NOTE.] Straight coil loop insert attached to rebar with perpendicular rebar between it and face shell to receive brace.

[ED. NOTE: Figure referenced is available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(4)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 1-2003, f. 1-30-03 cert. ef. 4-30-03

437-003-0707

Chipper Equipment and Operation

(1) Enclose chipper rotating components in a housing capable of retaining broken chipper knives or foreign material.

(2) Chipper feed chutes and side members must be designed to prevent operator contact with rotating blades during normal operation.

(3) Chippers without a mechanical infeed system must have:

(a) An infeed hopper that measures at least 85 inches from the blades or knives to ground level at the centerline of the hopper.

(b) A flexible antikickback device in the feed hopper. This device must protect the operator and other persons in the area from flying chips and debris.

(c) A shut-off switch within convenient reach of the worker feeding the chipper.

(4) Chippers with a mechanical infeed system must have a quick stop reversing device on the infeed. The quick stop reversing device control lever must be across the top and along each side of the hopper, as close to the feed end of the hopper as practicable within easy reach of the operator.

(5) Employees in the immediate area of an operating chipper must wear personal protective equipment as required by Subdivision E of this Division.

(6) Workers feeding chippers must not wear loose clothing, gauntlet-type gloves, rings or watches.

(7) Prevent accidental restart of equipment shut down for adjustment or repair as required by Division 2/J, 1910.147, Lockout/Tagout.

(8) Guard exposed adjacent blades when replacing chipper blades.

(9) Close and secure all access panels before operating the chipper.

(10) The chipper operator must have a coworker in the immediate vicinity when feeding chipper.

(11) Do not feed foreign objects into chipper.

(12) Feed chippers from the side of the centerline. The operator must immediately turn away from the feed table as brush is drawn into the rotor. Feed chippers from curbside whenever practical.

(13) Feed and discharge chutes must be in place to prevent contact with rotating blades during chipper operation.

(14) Chipper operators must be familiar with the manufacturer's operating instructions, maintenance and safe work practices.

(15) When trailer chippers are detached from trucks they must be chocked or otherwise secured.

(16) Before towing chipper, cross safety chains under the tongue of the chipper and attach them to the towing vehicle.

Stat. Auth.: ORS 654.025(2) & 656.726(4)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 5-2001, f. & cert. ef. 4-6-01

First Aid Requirements

437-003-0720

CPR Training

Tree trimming personnel shall be trained in cardio-pulmonary resuscitation.

Stat. Auth.: ORS 654.025(2) & 656.726(3)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0725

Rescue Training

All tree trimmers shall be trained in rendering pole top rescue.

Stat. Auth.: ORS 654.025(2) & 656.726(3)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0752

Site-Specific Erection Plan

In addition to and not in lieu of the provisions of **29 CFR 1926.752(e),** the steel erection contractor must develop and implement a written site-specific erection plan.

(1) The site-specific erection plan must:

(a) Be developed by a qualified person;

(b) Identify the site;

(c) Be available at the work site; and

(d) Be signed by the qualified person responsible for its development and any modification(s).

NOTE: The site-specific erection plan does not have to be developed by an engineer, or resemble an engineering report.

(2) The site-specific erection plan must contain the following:

(a) A description of the procedures that will be used to comply with 1926.754(a). Consider the dead weight of the structure, the weight and working reactions of all static and dynamic loads placed on it, and all external forces that may be applied such as wind and reactions by erection equipment.

NOTE: There is a presumption that some form of temporary guying or bracing is necessary to provide lateral stability to the structural steel framing as it is being erected. Accordingly, the employer has the burden of establishing that the structural steel framing is inherently stable during erection and/or the sequence of erection, plumbing, bolting and decking is such that structural stability is maintained at all times and no temporary guying or bracing is needed. Such determination must be documented in the site-specific erection plan.

(b) A description of the procedures and work practices that will be used to protect employees from falls and other hazards where it is necessary to walk/work on suspended loads. Employee(s) are allowed on suspended loads only when a competent person has determined that it is the safest way to accomplish a specific task or there is no other way to do the work.

Stat. Auth.: ORS 654.025(2) & 656.726(4)

Stats. Implemented: ORS 654.001-654.295

Hist.: OSHA 3-2002, f. 4-15-02, cert. ef. 4-18-02

437-003-0753

Tag Lines

Tag lines shall be used to control loads except when it is determined, by a qualified rigger, that they create a hazard.

Stat. Auth.: ORS 654.025(2) & 656.726(4)

Stats. Implemented: ORS 654.001 - 654.295

Hist: OSHA 6-2002, f. & cert. ef. 7-19-02

437-003-0761

Additional Training Requirements

(1) Certification of training.

(a) The employer shall verify compliance with this section by preparing a written certification record. The written certification record shall contain the name or other identity of the employee trained, the date(s) of the training, and the signature of the person who conducted the training or the signature of the employer. If the employer relies on

training conducted by another employer or completed prior to the effective date of this section, the certification record shall indicate the date the employer determined the prior training was adequate rather than the date of actual training.

(b) The latest training certification shall be maintained.

(2) Retraining. When the employer has reason to believe that any affected employee who has already been trained does not have the understanding and skill required by this section, the employer shall retain each such employee. Circumstances where retaining is required include, but are not limited to, situations where:

(a) Changes in the workplace render previous training obsolete; or

(b) Changes in the types of fall protection systems or equipment to be used render previous training obsolete; or

(c) Inadequacies in an affected employee's knowledge or use of fall protection systems or equipment indicate that the employee has not retained the requisite understanding or skill.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist: OSHA 6-2002, f. & cert. ef. 7-19-02

Underground Lines and Confined Spaces

Street Openings

NOTE: §1926.956(a)(1) and (2) were not adopted by the Department. In Oregon, OAR 437-003-0770 and 0775 apply:

437-003-0770
Barriers, Guards, Warning Signs

(1) Protective barriers or suitable guards shall be erected and appropriate warning signs shall be placed before covers over openings are removed or excavations made in places accessible to vehicular or pedestrian traffic.

(2) Warning lights or flares shall be displayed if work is being done in reduced visibility.

(3) Protective measures shall be maintained until permanent or adequate covers are in place or the hazard removed.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0775
Guarding Required Before Entering

No employee shall enter an opening or excavation accessible to vehicular or pedestrian traffic which is not protected by a barrier, temporary cover, or other suitable guard.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

NOTE: §1926.956(b)(3) was not adopted by the Department. In Oregon, OAR 437-003-0780 applies:

437-003-0780
Test for Flammability

(1) No torch, open flame, or other source of ignition shall be used in any excavation, manhole, or similarly confined work area until the atmosphere of such work area has been tested and found safe, or cleared of combustible vapors or liquids.

(2) A test for flammability of the vapors in the work area shall be made, using an appropriate device for this purpose.

(3) Unless the percentage of flammable vapor is found to be less than 20 percent of its lower explosive limit, no source of ignition shall be permitted.

(4) Frequent testing for determining the concentration of flammable vapors shall be made, and if the concentration exceeds 20 percent of its lower explosive limit, sources of ignition shall be removed immediately.

(5) Fire extinguishing equipment adequate to cope with possible hazards shall be maintained close at hand.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0785
Illumination

When it is necessary to illuminate a manhole, guarded electric lights only shall be used. Leads, sockets and connections shall be well insulated and maintained in good condition.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

Battery Rooms, General Requirements

437-003-0790
Designation and Posting

Proper identification and warning signs shall be posted at all entrances to battery rooms or compartments.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0795
Use of Sources of Ignition

The use of open flames, tools which may generate sparks, or other sources of ignition shall be avoided in battery rooms, except where cells are not actively gassing and the room has been ventilated.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0800
Personal Protection

Workers shall wear goggles, acid proof gloves and aprons when handling battery solution

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0805
Static Electricity

Workers having occasion to work on storage batteries should first discharge the static electricity from their bodies.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0810
Ventilation

Suitable ventilation or other equally effective means shall be provided to make certain that toxic or flammable gases are not present in hazardous quantities.

NOTE: See OAR chapter 437, division 2, subdivision E, Means of Egress, Rules 437-002-0005 - 437-002-0053
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

Construction in Energized Substances

Safety Watcher

NOTE: §1926.957(e)(1) was not adopted by the Department. In Oregon, OAR 437-003-0815 applies.

437-003-0815
Use of Equipment

Use of vehicles, gin poles, cranes, and other equipment in restricted or hazardous areas shall at all times be controlled by a safety watcher other than the equipment operator.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0820
Use of Barrier

A safety watcher shall be provided for all other work being performed in any energized substation yard except when the work is separated from all energized equipment by a suitable and adequate barrier.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0825
Nonelectrical Workers

As an exception to OAR 437-003-0165 and 437-003-0820, certain nonelectrical workers will be allowed to work in substations without barriers and without a safety watcher if all the following conditions are observed:

(1) Permission to enter must be obtained from the substation operator or other authorized person.

(2) The worker must not get off the ground without the specific approval of the person responsible for control of entry except to operate such equipment as light motor vehicles which have no equipment or loads that can project above the cab.

(3) The worker must be qualified as having sufficient experience and knowledge to protect himself against electrical hazards.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

External Load Helicopters

437-003-0830
Additional Rules

The rules in OAR chapter 437, division 089, Cranes, OAR 437-089-0520 through 437-089-0550, Helicopters, shall apply to all helicopter operations.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0835
Hooking and Unhooking Loads

Employees may work under hovering helicopters only for that limited period of time necessary to guide, secure, hook, or unhook the loads. In addition:

(1) When guiding, securing, hooking or unhooking the load in transmission and distribution structures at elevated positions, employees shall be assisted by, and use, a positive positioning guide system. The following definitions shall apply:

(a) "Elevated" — Any position where work is performed with the worker's feet above ground or water level;

(b) "Positive Positioning Guide System" — System or method of installing a load into position so that the load is capable of being released from the helicopter without being otherwise secured so that the load will remain in position permanently or until otherwise secured by physical means.

(2) When under hovering helicopters at any other location, the employee shall have a safe means of access and egress, including readily available escape route or routes in the event of an emergency.

(3) No other work or work-related activity, other than the aforementioned, shall be permitted under hovering helicopters.

(4) Bolting of, or otherwise permanently securing the structures, is prohibited under hovering helicopters, except that in the event of an unforeseen contingency of an emergency nature which represents a substantial hazard to life or property, an employee may do such work as is necessary to preserve life or protect substantial property.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

Lineman's Body Belts, Safety Strap and Lanyards

Use and Care of Body Belts, Safety Straps and Lanyards

437-003-0840
Use of Body Belts and Safety Lines

Workers, when working from a hook ladder, must either belt themselves securely to the ladder, attach themselves to the structure by means of a safety line, or belt themselves to the ladder safety equipment, which shall consist of a safety rope or belting, threaded through the rungs or secured to the ladder at intervals not to exceed three feet.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0845
Use of Safety Straps

Linemen shall not place safety straps around the pole above the top crossarm except where adequate protection is taken to prevent it from slipping over the top of the pole. Linemen shall not allow either end of the strap to hang loose, either in climbing or descending poles or other structures.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0850
Storing Equipment

Body belts and safety straps (when not in use) shall never be stored with sharp or edged tools. When a body belt safety strap and climbers are kept in the same compartment, care shall be taken in storing them to avoid cutting, puncturing or otherwise damaging the belt or strap.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

Personal Climbing Equipment

437-003-0855
Use of Straps and Lanyards

Body belts with straps or lanyards shall be worn to protect employees working at elevated locations on poles, towers, or other structures except where such use creates a greater hazard to the safety of the employees, in which case other safeguards shall be employed.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0860
Equipment Criteria

Body belts and safety straps shall meet the requirements of **29 CFR 1926.959(a)(2)** through **(b)(7)(iii)**. In addition to being used as an employee safeguarding item, body belts with approved tool loops may be used for the purpose of holding tools. Body belts shall be free from additional metal hooks and tool loops other than those permitted in **29 CFR 1926.929(a)(2)** through **(b)(7)(iii)**.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0865
Equipment Inspection Before Use

Body belts and straps shall be inspected before use each day to determine that they are in safe working condition.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0870
Monthly Supervisory Inspection

Foremen shall inspect, at least once each month, the belts, spurs and safety straps of all workers under their supervision. Whenever such equipment is found to be unsafe, it shall be withdrawn from service immediately.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0875
Additional Rules

Life lines and lanyards shall comply with the requirements of OAR 437-050-0050 in chapter 437, division 050, Personal Protective Equipment.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0880
Safety Lines

Safety lines are not intended to be subjected to shock loading and are used for emergency rescue such as lowering a worker to the ground. Such safety lines shall be a minimum of one-half-inch diameter and three or four strand first-grade manila or its equivalent in strength (2,650 lb.) and durability.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0885
Replacement

Defective safety line ropes shall be replaced.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0890
Additional Definitions

The following Oregon-initiated definitions are additional to those found in **29 CFR 1926.960**:

(1) "Aerial Manlift Equipment" All types of mobile equipment primarily designed to place personnel aloft to work on elevated structures and equipment. This equipment includes, but is not necessarily limited to, extending towers, boom-mounted cages or baskets, and truck-mounted ladders.

(2) "Clearance" Notification from an authorized person that all necessary actions have been taken to de-energize a circuit, line, or equipment and the line or equipment is safe to be worked, so that workers may be authorized to proceed with intended operations.

(3) "Dispatcher" A properly qualified and authorized worker who shall be in charge of the operation of electrical circuits and equipment and who is directly responsible for their safe operation.

(4) "Low Voltage" — Any voltage of less than 750 volts phase to phase.

(5) "High Voltage" — Any voltage between 750 and 230,000 volts inclusive phase to phase.

(6) "Extra High Voltage" — Any voltage of over 230,000 volts phase to phase.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

Other Structural Requirements

437-003-0905
Flooring

In buildings or other structures of wood floor construction, the under-flooring shall be laid on each tier of joists as the structure progresses, or if double floors are not to be used, the tier of joists next below where work is being performed shall be entirely floored over except for such spaces as are required for ladders and shaftways.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0910
Temporary Floors

Temporary floors shall be of sufficient strength to support expected loading.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0915
Shoring, Bracing or Guying of Structures

During erection, alteration, or repair, structures, including each part thereof, shall be braced or guyed as necessary to prevent overturning or collapse. All temporary shoring, bracing, or guying used for this purpose shall be maintained until the structure or any part of same is otherwise secured against overturning or collapse.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89

437-003-0920
Project Plans

The Administrator of the Accident Prevention Division may require plans and specifications of temporary shoring and bracing used in the construction or alteration of any building, structure, or excavation project. Required plans shall be certified by a qualified engineer, whenever there is a question as to compliance with requirements of this code.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: APD 5-1989(Temp), f. 3-31-89, ef. 5-1-89; APD 8-1989, f. & ef. 7-7-89
NOTE: This rule was NOT adopted by OR-OSHA. In Oregon, OAR 437-003-0925 applies.

437-003-0925
Powder-Actuated Tools

Powder-actuated tools used by employees shall meet all other applicable requirements of American National Standards Institute, ANSI A10.3-1985, Safety Requirements for Powder-Actuated Fastening Systems.

[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 8-1990, f. 3-30-90, cert. ef. 9-1-90

437-003-1000
Oregon Rules for Air Contaminants

An employee's exposure to any substance listed in Oregon Tables Z-1, Z-2, or Z-3 of this section shall be limited in accordance with the requirements of the following paragraphs of this section.

(1) Oregon Table Z-1.

(a) Substances with limits preceded by "C" — Ceiling Values. An employee's exposure to any substance in Oregon Table Z-1, the exposure limit of which is preceded by a "C", shall at no time exceed the exposure limit given for that substance. If instantaneous monitoring is not feasible, then the ceiling shall be assessed as a 15-minute time weighted average exposure which shall not be exceeded at any time during the working day.

(b) Other substances — 8-hour Time Weighted Averages. An employee's exposure to any substance in Oregon Table Z-1, the exposure limit of which is not preceded by a "C", shall not exceed the 8-hour Time Weighted Average given for that substance in any 8-hour work shift of a 40-hour work week.

(c) Other Substances — Excursion Limits. Excursions in worker exposure levels may exceed 3 times the PEL-TWA for no more than a total of 30 minutes during a workday, and under no circumstances should they exceed 5 times the PEL-TWA, provided that the PEL-TWA is not exceeded.

(d) Skin Designation. To prevent or reduce skin absorption, an employee's skin exposure to substances listed in Oregon Table Z-1 with an "X" in the Skin Desig- nation column following the substance name shall be prevented or reduced to the extent necessary in the circumstances through the use of gloves, coveralls, goggles, or other appropriate personal protective equipment, engineering controls or work practices.

(2) Oregon Table Z-2. An employee's exposure to any substance listed in Oregon Table Z-2 shall not exceed the exposure limits specified as follows:

(a) 8-hour time weighted averages. An employee's exposure to any substance listed in Oregon Table Z-2, in any 8-hour work shift of a 40-hour work week, shall not exceed the 8-hour time weighted average limit given for that substance in Oregon Table Z-2.

(b) Acceptable ceiling concentrations. An employee's exposure to a substance listed in Oregon Table Z-2 shall not exceed the acceptable ceiling concentration for the given substance in the table at any time during an 8-hour shift except: Acceptable maximum peak above the acceptable ceiling concentration for an 8-hour shift. An employee's exposure to a substance listed in Oregon Table Z-2 shall not exceed the acceptable maximum peak above the accept- able ceiling concentration, and shall not exceed the maximum duration for the given substance during an 8-hour shift.

(c) Example. [Table not included. See ED. NOTE.] During an 8-hour work shift, an employee exposed to benzene may be exposed to an 8-hour time weighted average (TWA) of 10 ppm. Concentrations of benzene during the 8-hour work shift may not exceed 25 ppm, unless that exposure is no more than 50 ppm and does not exceed 10 minutes during an 8-hour work shift. Such exposures must be compensated by exposures to concentrations below 10 ppm so that the 8-hour time-weighted average is less than 10 ppm.

(3) Oregon Table Z-3. An employee's exposure to any substance listed in Oregon Table Z-3, in any 8-hour work shift of a 40-hour work week, shall not exceed the 8-hour time weighted average limit given for that substance in the table.

(4) Computation formulae. The computation formula which shall apply to employee exposure to more than one substance for which 8-hour time weighted averages are included in OAR 437, Division 2/Z, Toxic and Hazardous Substances, in order to deter- mine whether an employee is exposed over the regulatory limit is as follows:

(a)(A) The cumulative exposure for an 8-hour work shift shall be computed as follows:

E = (CaTa + Cb Tb +... CnTn) ÷ 8

Where:

E is the equivalent exposure for the working shift.

C is the concentration during any period of time T where the concentration remain constant.

T is the duration in hours of the exposure at the concentration C.

The value of E shall not exceed the 8-hour time weighted average specified in subpart Z of 29 CFR part 1910 for the substance involved.

(B) To illustrate the formula prescribed in paragraph (4)(a)(i) of this section, assume that Substance A has an 8-hour time weighted average limit of 100 ppm (Oregon Table Z-1). Assume that an employee is subject to the following exposure: [Table not included. See ED. NOTE.]

Substituting this information in the formula, we have:

[(2x150) + (2x75) + (4x50)] ÷ 8 = 81.25 ppm

Since 81.25 ppm is less than 100 ppm, the 8-hour time weighted average limit, the exposure is acceptable.

(b)(A) In case of a mixture of air contaminants an employer shall compute the equivalent exposure as follows:

Em = (C1 ÷ L1) + (C2 ÷ L2) +... (Cn ÷ Ln)

Where:

Em is the equivalent exposure for the mixture.

C is the concentration of a particular contaminant.

L is the exposure limit for that substance specified in Subpart Z of 29 CFR Part 1910.

The value of Em shall not exceed unity (1).

(B) To illustrate the formula prescribed in paragraph (4)(b)(i) of this section, consider the following exposures: [Table not included. See ED. NOTE.] Substituting in the formula, we have:

Em = (500 ÷ 1000) + (45 ÷ 200) + (40 ÷ 200)

Em = 0.500 + 0.225 + 0.200

Em = 0.925

Since Em is less than unity (1), the exposure combination is within acceptable limits.

(5) To achieve compliance with paragraphs (1) through (4) of this section, administrative or engineering controls must first be determined and implemented whenever feasible. When such controls are not feasible to achieve full compliance, protective equipment or any other protective measures shall be used to keep the exposure of employees to air contaminants within the limits prescribed in this section. Any equipment and/or technical measures used for this purpose must be approved for each particular use by a competent industrial hygienist or other technically qualified person. Whenever respirators are used, their use shall comply with 1910.134.

[ED. NOTE: Tables referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(4)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 6-1997, f. & cert. ef. 5-2-97; OSHA 4-2001, f. & cert. ef. 2-5-01; OSHA 6-2006, f. & cert. ef. 8-30-06

437-003-1500
Additional Definitions

(1) Body belt means a Type 1 safety belt used in conjunction with lanyard or lifeline for fall restraint only.

(2) Fall protection system means personal fall arrest system, fall restraint system, positioning device system, guardrail system, safety net system, warning line system, or slide guard system.

NOTE: Overhand bricklaying from scaffolds is addressed in Subdivision L.

(3) Personal fall restraint system means a fall protection system that prevents the user from falling any distance. The system is comprised of either a body belt or body harness, along with an anchorage, connectors and other necessary equipment. The other components typically include a lanyard, and may also include a lifeline and other devices.

(4) Rake edge means the inclined roof edges, such as those on the gable end of a building.

(5) Roofing work means the hoisting, storage, application, and removal of roofing materials and equipment, including related insulation, sheet metal, and vapor barrier work, but not including the construction of the roof deck and leading edge work.

(6) Slide guard system means a fall protection system designed to prevent employees from sliding off a sloped roof to a lower level. The system consists of manufactured brackets (roof brackets) used in conjunction with dimensional lumber, or a site built system of similar design and dimension.

(7) Walking/working surface means any surface, whether horizontal or vertical on which an employee walks or works, including, but not limited to, floors, roofs, ramps, bridges, runways, formwork, beams, columns, trusses and concrete reinforcing steel but not ladders, vehicles, or trailers, on which employees must be located in order to perform their job duties.

Stat. Auth.: ORS 654.025(2) & 656.726(4)

Stats. Implemented: ORS 654.001 - 654.295

Hist: OSHA 6-2002, f. & cert. ef. 7-19-02

437-003-1501
General Fall Protection

Except as otherwise provided in paragraphs (1) through (4) of this section, when employees are exposed to a hazard of falling 10 feet or more to a lower level, the employer shall ensure that fall protection systems are provided, installed, and implemented according to the criteria in 1926.502.

(1) Holes.

(a) Each employee on walking/working surfaces shall be protected from falling through holes (including skylights) more than 6 feet (1.8 m) above lower levels, by personal fall arrest systems, personal fall restraint systems, safety net systems, guardrail systems, or covers erected around such holes.

(b) Each employee on a walking/working surface shall be protected from tripping in or stepping into or through holes (including skylights) by covers.

(c) Each employee on a walking/working surface shall be protected from objects falling through holes (including skylights) by covers.

(d) Smoke domes or skylight fixtures are not considered covers for the purpose of this section unless they meet the strength requirements of 29 CFR 1926.502(i).

(2) Wall openings. Each employee working on, at, above, or near wall openings (including those with chutes attached) where the outside bottom edge of the wall opening is 6 feet (1.8 m) or more above lower levels and the inside bottom edge of the wall opening is less than 39 inches (1.0 m) above the walking/working surface, shall be protected from falling by the use of personal fall arrest systems, personal fall restraint systems, safety net systems, or guardrail systems.

(3) Established floors, mezzanines, balconies and walkways. Each employee on established floors, mezzanines, balconies and walkways, with an unprotected side or edge 6 feet (1.8 m) or more above a lower level, shall be protected from falling by the use of personal fall arrest systems, personal fall restraint systems, safety net systems, or guardrail systems.

(4) Excavations.

(a) Each employee at the edge of an excavation 6 feet (1.8 m) or more in depth shall be protected from falling by guardrail systems, fences, or barricades when the excavations are not readily seen because of plant growth or other visual barrier;

(b) Each employee at the edge of a well, pit, shaft, and similar excavation 6 feet (1.8 m) or more in depth shall be protected from falling by guardrail systems, fences, barricades, or covers.

(5) Dangerous Equipment. Each employee shall be protected from falls into or onto dangerous equipment by personal fall arrest systems, personal fall restraint systems, safety net systems, guardrail systems or equipment guards.

Stat. Auth.: ORS 654.025(2) & 656.726(4)

Stats. Implemented: ORS 654.001 - 654.295

Hist: OSHA 6-2002, f. & cert. ef. 7-19-02

437-003-1502
Warning Line Systems for Roofing Work

(1) A warning line system shall not be used as fall protection on roof slopes greater than 2 in 12 (vertical to horizontal).

(2) Employees performing roofing work between a roof edge and a warning line must be protected by a personal fall arrest system, personal fall restraint system, guardrail system, safety net system, or safety monitoring system.

Stat. Auth.: ORS 654.025(2) & 656.726(4)

Stats. Implemented: ORS 654.001 - 654.295

Hist: OSHA 6-2002, f. & cert. ef. 7-19-02

437-003-1752
Written Notifications

A copy of the written notification(s) required by this section must be maintained on the site by the controlling contractor for review until completion of the project.

Stat. Auth.: ORS 654.025(2)-656.726(4)

Stats. Implemented: ORS 654.001 - 654.295

Hist: OSHA 6-2002, f. & cert. ef. 7-19-02

437-003-1754
Roof and floor holes and openings

Roof and floor holes and openings shall be decked over. Where large size configuration or other structural design does not allow openings to be decked over (such as elevator shafts, stairwells, etc.) employees shall be protected by covers or guardrail systems erected around such openings as soon as the openings are created.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 8-2003, f. 12-30-03 cert. ef. 1-1-04

437-003-2502
Safety Monitoring Systems

Safety monitoring systems for roofing work and their use shall comply with the following provisions.

(1) A safety monitoring system shall not be used as a fall protection system for any work other than roofing work on roof slopes of 2 in 12 (vertical to horizontal) or less.

(2) The use of a safety monitoring system alone (i.e., without the warning line system) is not permitted on roofs more than 50 feet (15.25 m) in width (see Appendix A of this subdivision).

(3) The employer shall designate a competent person to monitor the safety of other employees and the employer shall ensure that the safety monitor complies with the following requirements:

(a) The safety monitor shall be competent to recognize fall hazards;

(b) The safety monitor shall warn the employee when it appears that the employee is unaware of a fall hazard or is acting in an unsafe manner;

(c) The safety monitor shall be on the same walking/working surface and within visual sighting distance of the employee being monitored;

(d) The safety monitor shall be close enough to communicate orally with the employee; and

(e) The safety monitor shall not have other responsibilities which could take the monitor's attention from the monitoring function.

(4) Mechanical equipment shall not be used or stored in areas where safety monitoring systems are being used to monitor employees engaged in roofing operations.

(5) No employee, other than an employee engaged in roofing work shall be allowed in an area where an employee is being protected by a safety monitoring system.

[ED. NOTE: Appendices referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist: OSHA 6-2002, f. & cert. ef. 7-19-02

437-003-3224
Vehicle Drivers and Riders.

(1) Scope. This rule applies, without regard to vehicle ownership when your employees drive or ride as part of their employment.

NOTE: The Oregon Bureau of Labor and Industries (BOLI) administers rules about using minors as drivers. Please contact the nearest BOLI office for more information.

(2) Driver Qualifications. You must not allow an employee to drive a vehicle on a public highway or road unless they have a valid driver's license appropriate for that type vehicle.

(3) General Safety.

(a) Do not allow employees to drive or ride in any vehicle known to be unsafe.

(b) Require employees to report any safety problems effecting vehicles you own or provide.

(4) Rider Safety — General.

(a) Except as in (5), (6) and (7), do not allow employees to occupy a vehicle in excess of its seating capacity.

(b) Require employees to comply with all applicable seatbelt and traffic safety laws.

(5) Rider Safety in the Bed of Dump Trucks, Pickups and Similar Vehicles. Do not transport workers in the beds of dump trucks, pickups or similar vehicles unless these conditions are met when applicable:

(a) When seating is available, it must be secure to the floor and passengers may not stand.

(b) The bed is secure to the frame. Beds that tilt or slide must be secure from movement.

(c) Dump beds must be secure or the activating lever locked.

(d) The total height of the sides of the transport area must be at least 42 inches. If riders sit on the floor, the height must be at least 24 inches.

(e) There must be a tailgate the same height as the sides or three evenly spaced chains, cables or ropes taut across the back.

(f) Not more than 4 workers may ride on a flatbed without sides or a tailgate and then only when the speed will not be more than 30 mph. There must be two handholds for each rider.

(g) Workers must not ride in space with cargo unless it is secure from movement.

(6) Standing Rider Safety — Buses. Riders must not sit on the floor while the vehicle is moving. Riders may stand if these conditions are met:

(a) There must be an aisle at least 12 inches wide leading to the emergency exit.

(b) There are no seats in or boards across the aisle.

(c) There must be handholds for standing riders.

(d) Not more than one rider per row of seats may stand.

(e) Riders may not sit or stand near the driver and not ahead of the forward-most row of seats.

(f) Workers in transit must not stand for more than one hour or 45 miles, whichever is less. At the end of that period, the standing workers must get a seat or the vehicle must stop for a 15-minute rest allowing the workers to get out.

(7) Fueling.

(a) There must be no smoking or other source of ignition within 25 feet of any refueling operation.

(b) Do not fill any container that is not bonded or grounded while it is inside the vehicle, in the pickup bed or anyplace other than on the ground.

(c) Stop the engine (except diesels) during fueling.

(d) Refueling vehicles with LPG must be outdoors.

(8) Hauling gasoline or flammable liquid.

(a) For buses, vehicles that carry 16 or more, crew trucks, vans and passenger cars, use only DOT or UL approved containers that hold 5 gallons or less and secure them in an area separate from passengers.

(b) For pickups, flatbeds and other vehicles not in (a), there is no container size limit as long it is not in an enclosed passenger area.

(9) Hauling Explosives. When hauling explosives, only the driver and one qualified person may be in the vehicle. Comply with OAR 437-002-1910.109 and 437-002-0109.

(10) Loading or Unloading. When loading or unloading vehicles in a manner that is likely to cause the vehicle to move, set the brakes and chock the wheels.

(11) High Voltage Clearances. When operating a vehicle near overhead lines carrying more than 600v, OAR 437-002-0047 applies for general industry employers and OAR 437-003-0047 applies for Construction employers.

(12) Traffic Control. You must require employees to set up appropriate traffic controls when they stop on or adjacent to a highway, street, or road in a way that creates a hazard and when traffic cannot adjust safely on its own. The controls must conform to the Millennium Edition of the (FHWA) Manual of Uniform Traffic Control Devices (MUTCD), December 2000.

NOTE: Get a copy of the Millennium Edition from the following organizations: American Traffic Safety Services Association, 15 Riverside Parkway, Suite 100, Fredericksburg, VA 22406-1022; Telephone: 1-800-231-3475; Fax: (540) 368-1722; www.atssa.com; Institute of Transportation Engineers, 1099 14th Street, NW., Suite 300 West, Washington, DC 20005-3438; Fax: (202) 289-7722; www.ite.org; and American Association of State Highway and Transportation Officials; www.aashto.org; Telephone: 1-800-525-5562. OR: Download the MUTCD 2000 at http://mutcd.fhwa.dot.gov/kno-millennium. OR: The MUTCD 2000 is available for review at the Oregon OSHA Resource Center, 350 Winter Street NE, Basement - Room 26, Salem, Oregon 97301-3882; Telephone: (503) 378-3272, or toll free in Oregon 1-800-922-2689.

NOTE: Employers who follow the most current edition of the Oregon Temporary Traffic Control Handbook for Operations of 3 Days or Less comply with this requirement.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 6-2007, f. & cert. ef. 9-26-07

437-003-3225
Vehicles for Highway and Road Operation Characteristics and Maintenance.

(1) Scope. This applies to employer-owned vehicles licensed for highway and road use, driven and/or maintained by employees on public or private property, except the following:

(a) Powered Industrial Trucks covered by OR-OSHA standard 1910.178 and OAR 437-002-0227.

(b) Earth moving equipment (scrapers, loaders, bulldozers and graders) covered by OAR 437-003-1926.602.

(c) Manufactured structures, ATVs, golf carts and other similar devices not intended for highway or road use.

NOTE: When operating a vehicle near overhead power lines more than 600 volts, OAR 437-002-0047 applies for General Industry employers and OAR 437-003-0047 applies for Construction employers.

(2) Vehicle Components.

(a) The engine start/stop control must be within reach of the driver.

(b) There must be steps, ladders and railings to allow safe access to and exit from areas on vehicles where employees must access. Steps and rungs must be slip resistant.

(c) Vehicles whose cargo is loaded by cranes, power shovels or other powered loaders must have a cab or cab shield that protects the occupants from the impact of falling material.

(d) Secure all material, equipment or tools to prevent movement or a barrier must be in place to protect the occupants from moving items.

(e) Vehicles with cabs must have a door or doors for entry and exit.

(f) Vehicle cargo must not prevent occupants from exiting under any condition.

(g) Vehicles must comply with ORS 811.225, Failure to Maintain Safety Belts in Working Order.

(3) Flashing Warning Lights. Buses with a capacity of 16 or more passengers must have a working flashing light system that complies with ORS 816.260 if they load or unload passengers on a public highway or road.

(4) Buses and Crew Trucks.

(a) Buses and crew trucks must have a secure seat with back rest for each occupant.

(b) Buses with an enclosed seating area for 12 or more workers, unless loaded from the rear, must have an emergency exit not less than 24 inches wide by not less than 48 inches high on the left side or rear of the vehicle. It must open easily from inside or outside the vehicle.

(5) Passenger Compartments.

(a) Floors and decks must be slip resistant.

(b) Seal openings between the engine compartment and muffler area to prevent carbon monoxide from entering the enclosed passenger compartment.

(c) Enclosed passenger compartment must be substantially dust proof and watertight.

(d) Areas where workers sit or stand must be free of protruding nails, screws, splinters or similar physical hazards.

(e) Protect riders from inclement weather by enclosing riding areas as necessary.

(6) Steering. Do not allow spinner knobs on vehicles without power steering. Spinner knobs must be on the inside of the steering wheel.

(7) Lighting. Where general lighting in vehicle operating areas is less than 2 footcandles per square foot, vehicles must have working lights that sufficiently light the travel path.

(8) Testing, Maintenance, and Repair.

(a) Block or crib heavy machinery, equipment or parts supported by slings, hoists, jacks or otherwise prevent it from falling before employees work underneath or between such objects.

(b) During repair or maintenance set all controls in neutral, stop the motor and set the brakes unless the work requires otherwise.

(c) During maintenance or inspection on vehicles with dump bins, use an attached, lockable support that prevents unintentional lowering of the bin.

(d) Disconnect the vehicle battery when the work allows and the energized system could cause injury.

(9) Warning Devices.

(a) All vehicles must have a working horn that can be heard above surrounding area noise. Paragraph (b) does not apply when the vehicle backs up with an observer or when the operator verifies that there is nobody behind the vehicle or when nobody may enter the danger area without the operator's knowledge.

(b) Vehicles with an obstructed view to the rear must have a backup alarm that can be heard over the surrounding noise. If surrounding noise prevents this or if there are so many vehicles using backup alarms that they cannot be distinguished from each other, flashing or strobe lights are acceptable.

(10) Control of Exhaust Gases.

(a) Vehicles must have a working muffler.

(b) Exhaust pipes must direct the gasses away from occupants.

(c) Insulate or otherwise protect exhaust pipes exposed to worker contact.

(11) First Aid Kits. Vehicles for transport of 16 or more workers must have a clean, stocked first aid kit with enough supplies for the number of workers usually transported.

NOTE: Laws and/or administrative rules administered by other government agencies require fire extinguishers in vehicles under specifically defined circumstances.

(12) Controls.

(a) Levers that control dump or hoist devices must have a latch or other device that prevents accidental starting or tripping of the mechanism.

(b) The operator of a dump truck must be able to operate the tailgate trip handle from a position clear of the dumping load.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 6-2007, f. & cert. ef. 9-26-07

437-003-3226
Vehicles for Use on Property Other Than Public Roads and Highways Operation, Characteristics and Maintenance.

(1) Scope. This rule applies to employer-owned vehicles, not licensed or normally operated on public highways or roads, except the following:

(a) Powered Industrial Trucks covered in OR-OSHA standard 1910.178 and OAR 437-002-0227.

(b) Earth moving equipment, (scrapers, loaders, bulldozers and graders) covered by OAR 437-003-1926.602.

(c) Manufactured structures, ATVs, golf carts and other similar devices not intended for highway or road use.

(2) Safe Operation. You must require the driver to:

(a) Look in the direction of travel and have a clear view unless being guided by somebody with a clear view of the route.

(b) Slow or stop as appropriate at intersections and not drive in marked pedestrian lanes.

(c) Not drive a vehicle up to a person standing in front of a stationary object.

(d) Manually control all towed or pushed vehicles unless they use a towbar.

(3) Vehicle Loads. You must protect employees from hazardous vehicle loads by requiring that they:

(a) Not load a vehicle beyond its rated capacity.

(b) Stabilize, lash down or otherwise secure the load.

(c) Never be under an elevated load.

(4) Basic Equipment Requirements. You must assure your vehicles comply with the following:

(a) Vehicles with windshields must have working powered wipers and an effective defroster.

(b) There must be no broken glass that impairs the driver's vision.

(c) When the load or passengers obstruct the use of the interior rear view mirror, there must be an outside rear view mirror on each side of the vehicle.

(d) Vehicle brakes must be effective when the vehicle is fully loaded. The parking brake must hold the loaded vehicle on any slope which it may operate.

NOTE: The rules on safety chains do not apply to saddle-mount towing, or to a semitrailer coupled to a towing vehicle with a fifth wheel and kingpin assembly so designed that the upper and lower halves may not separate without being manually released onto a dolly without a tow bar.

(5) Uncoupled towing. You must assure that:

(a) Towed vehicles with a gross weight of 5,000 pounds or less must have at least one safety chain or cable. Towed vehicles with a gross weight more than 5,000 pounds must have at least two safety chains or cables.

(b) Safety chains or cables must be strong enough to control the towed vehicle in event the tow bar or coupling device fails.

(c) Safety chains or cables must connect to the towed and towing vehicles and to the tow bar so as to prevent the tow bar from dropping to the ground if it or the coupling device fails.

(d) There must be only enough slack in safety chains or cables to permit proper turning.

(6) Coupled towing. You must assure that:

(a) Drawbar, coupling device, and other connections for towing of trailers must be strong enough to hold the weight of the towed vehicle on any grade over which it may operate.

(b) Any coupling device on any towing vehicle used as a connection for the tow bar on any towed vehicle with a gross weight more than 5,000 pounds must be firmly attached to the frame or to a solid connection to the frame.

(c) There must be a suitable locking means to prevent accidental separation of the towed and towing vehicles.

(d) Connections must have only enough slack to allow for universal action of the connections.

NOTE: When operating a vehicle near overhead power lines more than 600 volts, OAR 437-002-0047 applies for General Industry employers and OAR 437-003-0047 applies for Construction employers.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 6-2007, f. & cert. ef. 9-26-07

437-003-3502
Slide Guard Systems

(1) Slide Guard Systems. Slide guard systems, and their use, shall comply with the following provisions:

(a) Slide guard systems shall be installed under the supervision of a competent person.

(b) Slide guards shall not be used on roofs with a ground-to-eave height greater than 25 feet.

(c) Slide guards shall not be used as a fall protection system on roofs with a slope less than 3:12 nor greater than 8:12.

(A) On roofs with slopes greater than or equal to 3:12 up to and including 6:12, at least one slide guard shall be placed below the work area, no closer than 6 inches from the eave.

(B) On roofs with slopes greater than 6:12 and not more than 8:12, multiple slide guards shall be used, spaced no more than eight feet apart, vertically. The lower slide guard shall be no closer than 6 inches from the eave.

(d) Installation of the lowest slide guard shall be perpendicular (90 degrees) to the roof surface. When multiple slide guards are used, the angle of installation for the upper slide guards shall not be less than 60 degrees to the roof surface.

(e) Slide guards shall be continuous below all walking or working areas.

(f) Personnel shall not be allowed to ascend or descend the roof slope within six feet of the rake edge except where that limitation would prevent the performance of work.

(g) Supplies and materials shall not be stored within 6 feet of the rake edge, or three feet where tile roof systems are being installed.

(2) Manufactured roof brackets. Manufactured roof brackets shall meet, or exceed the following minimum safety standards:

(a) Roof brackets shall be installed according to the manufacturer's specifications.

(b) Minimum 6 inch brackets shall be used.

(c) All brackets shall bear on a solid surface.

(d) Brackets shall not be spaced greater than 8 feet apart horizontally, or according to the manufacturer's specifications, whichever is less.

(e) Nominal 2 inch by 6 inch material shall be used for slide guards, and shall be secured to the brackets or otherwise protected against cantilevering and failure due to material flex.

(f) The manufacturer's specifications shall be available for review.

(3) Job-made slide guards shall meet or exceed the following minimum safety standards:

(a) Nominal 2 inch by 6 inch material for both vertical and horizontal members shall be used. Vertical members shall be backed to the horizontal (flat) members.

(b) Horizontal (flat) members shall be anchored with two "16 penny" (16d) common nails or the equivalent, every 4 feet, to solid bearing surfaces. Vertical members shall be anchored to the horizontal members with one "16 penny" (16d) common nail or the equivalent, every 2 feet.

(c) The vertical member shall be provided with full support bracing every eight feet, horizontally.

(d) Engineering specifications shall be available for review whenever design and/or installation does not meet the above minimum guidelines.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist: OSHA 6-2002, f. & cert. ef. 7-19-02

DIVISION 4

AGRICULTURE

General Subjects

437-004-0001
Application

Everything in this standard is the responsibility of the employer. It is the responsibility of the employer to assure that their workers, facilities and equipment comply with this standard.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-0002
Scope

Standard Industrial Classifications – division 004, Agriculture, applies only to employers with the following Standard Industrial Classifications (SIC) or North American Industrial Classification system (NAICS) codes.

NOTE: If you don't know your code, contact your Workers' Compensation Insurance carrier.

(1) All of major groups 01 (NAICS 111), and 02 (NAICS 112). The following sub-groups of major groups 07 and 08 (NAICS 111). SIC NAICS

(a) 0711 115112 Soil Preparation Services

(b) 0721 115112 Crop Planting, Cultivating, and Protection

(c) 0722 115113 Crop Harvesting, Primarily by Machine

(d) 0723 115114 Crop Preparation Services for Market: Except Cotton Ginning

(e) 0761 115115 Farm Labor Contractors and Crew Leaders

(f) 0762 115116 Farm Management Services

(g) 0811 111421 Christmas Tree Growing and Harvest

(2) Reserved.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98; OSHA 9-2006, f. & cert. ef. 9-22-06

437-004-0003
Exclusive Coverage

(1) Division 4, Agriculture, and parts of division 1, General Administrative Rules, are the only Oregon OSHA standards that apply to employers in 437-004-0002. Employers in 437-004-0002 will not be cited from standards in division 2 or division 3, Construction, unless division 4 states they are applicable.

(2) The following parts of division 1 **DO NOT** apply to Agriculture. This division has language covering their subjects.

(a) 437-001-0760;

(b) 437-001-0765.

NOTE: ORS 654.010 applies to all places of employment in Oregon. It is commonly referred to as the General Duty Clause.

IMPORTANT NOTE: As you read through these standards, remember the two basic elements that must be present for Oregon OSHA to issue a citation for a violation. They are: (1) A health or safety hazard must exist. (2) There must be employee exposure to the hazard.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-0004
Worker Protection Standard

Oregon OSHA administers and enforces the Worker Protection Standard **(40 CFR 170)**. It is part of this division. All parts apply in addition to and not instead of any other part of division 4, Agriculture. Should any parts of these two standards conflict, comply with the part offering the most protection to workers.

[Publications: Publications referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-0005
Access to Employee Exposure and Medical Records

For agricultural employers, OAR 437-002-1910.1020 applies.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-0099
General Standards

(1) Miscellaneous.

(a) Conspicuously post warning signs, danger signs, warning flags, warning lights, or similar devices where hazards not otherwise adequately guarded warrant their use.

(b) Maintain and use in an operable condition any safeguard or device required by any rule in this division to fulfill its intended purpose.

(c) Erect protective barriers or suitable guards when covers over openings are removed or excavations made in places accessible to workers or vehicles.

(d) Do not allow the use of intoxicating liquor or drugs on the job. Do not allow anyone to work with impaired ability to work safely.

(e) Do not allow horseplay, scuffling, practical jokes or any other similar activity.

(2) Supervision and competency.

(a) Require employees to demonstrate their ability to work safely.

(b) Provide enough supervision over employees to ensure and enforce compliance with safe operating procedures and practices.

NOTE: It is not the meaning of this rule to require a supervisor on every part of any operation, nor to prohibit workers from working alone.

(c) Take all reasonable means to require employees:

(A) To work and act in a safe and healthful manner;

(B) To work in compliance with all applicable safety and health rules;

(C) To use all means and methods, including but not limited to, ladders, scaffolds, guardrails, machine guards, safety belts and lifelines, necessary to work safely where employees are exposed to a hazard;

(D) Not to remove, displace, damage, destroy or carry off any safety device, guard, notice or warning provided for use in any employment or place of employment where safety and health rules require such use.

(d) Use a procedure, appropriate for the work, to check on the well-being of workers whose duties require them to work alone or in isolation. Instruct all workers about the procedure.

NOTE: A two-way system of signals, thoroughly understood by both parties or other form of two-way communication is acceptable. Motor noise is not acceptable as contact or as an indication of well-being.

(e) Employers must provide all health hazard control measures necessary to protect the employees' health from harmful or hazardous conditions and must maintain those control measures in good working order and assure their use.

(f) Employers must inform their employees about the known health hazards to which they are exposed, the measures taken for the prevention and control of those hazards, and the proper methods for using the control measures.

(3) Inspections. A competent person or persons must inspect every place of employment at least quarterly. OAR 437-004-0250(6)(e) has other requirements related to these inspections.

(4) Investigations.

(a) The employer must investigate every work-related lost time injury. The object of the investigation is to determine how to prevent recurrence. OAR 437-004-0250(6)(e) has other requirements related to these investigations.

NOTE: As mentioned above, "lost time injury" is the same as the ORS 656.005(7)(c) definition of "disabling compensable injury." That is: an injury that entitles the worker to compensation for disability or death. To fall into this category the employee must miss three consecutive calendar days beginning with the day the worker first loses time or wages from work as a result of the compensable injury. This includes weekends and holidays when they might normally be off.

(b) At the request of authorized OR-OSHA representatives, you or your superintendents, supervisors and employees must furnish all evidence and names of known witnesses to an accident.

(c) Employees in charge of work are agents of the employer in the discharge of their authorized duties, and are always responsible for:

(A) The safe performance of the work under their supervision; and

(B) The safe conduct of the crew under their supervision; and

(C) The safety of all workers under their supervision.

(5) Extraordinary hazards. When conditions arise that cause unusual or extraordinary hazards to workers, take additional means and precautions to protect workers or to control the hazardous exposure. If you cannot make the operation reasonably safe, stop work while the abnormal conditions exist or until the work is safe.

(6) Signals and signal systems.

(a) Give control signals by only one person at a time.

(A) When given, make signals clear and distinct.

(B) The person receiving the signals must understand their meaning before taking action.

(b) Act immediately on emergency stop signals from whatever source.

(c) Do not throw any type of material that can produce injury, such as rocks, wooden or metal objects, etc., as a signal.

(d) Do not give signals for the movement of materials or equipment until all persons who might be in danger by the movement are in the clear. Employment of Minors

NOTE: Information on current regulations about the employment of minors is available from the local office of the Oregon Bureau of Labor and Industries, or by writing to: Wage and Hour Division, Oregon Bureau of Labor, 3865 Wolverine NE Rm E-1, Salem, Oregon 97310.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98; OSHA 9-2006, f. & cert. ef. 9-22-06

Definitions

437-004-0100
Universal Definitions

Universal definitions. These are definitions applicable throughout division 4, Agriculture, except that definitions in **40 CFR 170,** Worker Protection Standard, apply to that standard instead of these.

(1) Accepted Something is "accepted" if a nationally recognized testing laboratory has inspected it and found it to conform to specified plans or to procedures of applicable codes.

(2) Adequate is sufficient for the required purpose.

(3) Agricultural employer — means any person, corporation, association, or other legal entity that:

(a) Owns or operates an agricultural establishment;

(b) Contracts with the owner or operator of an agricultural establishment in advance of production for the purchase of a crop and exercises substantial control over production; or

(c) Recruits and supervises employees or is responsible for the management and condition of an agricultural establishment.

(4) Agricultural establishment — means any farm, ranch, nursery, or greenhouse.

(5) Capacity is the maximum load or severity of service determined by the manufacturer or a qualified engineer, that a tool, machine, equipment, structure, or material may withstand without failure, deformation, separation or fracture.

(6) Certified is something that:

(a) Was tested and found by a nationally recognized testing laboratory to meet nationally recognized standards or to be safe for use in a specified manner; or

(b) Is of a kind whose production is periodically inspected by a nationally recognized testing laboratory; and

(c) It bears a label, tag, or other record of certification.

(7) Combustible liquid is any liquid with a flashpoint at or more than 100º F. (37.8°C) Combustible liquids are divided into two classes as follows:

(a) "Class II liquids" include those with flashpoints at or more than 100°F (37.8°C) and below 140°F (60°C), except any mixture with components with flashpoints of 200°F (93.3°C) or higher, the volume of which make up 99 percent or more of the total volume of the mixture.

(b) "Class III liquids" include those with flashpoints at or more than 140°F (60°C) Class III liquids are subdivided into two subclasses:

(A) "Class IIIA liquids" include those with flashpoints at or more than 140°F (60°C) and less than 200°F (93.3°C), except any mixture with components with flashpoints of 200°F (93.3°C), or higher, the total volume of which make up 99 percent or more of the total volume of the mixture.

(B) "Class IIIB liquids" include those with flashpoints at or more than 200°F (93.3°C). This section does not cover Class IIIB liquids. The term "Class III liquids" means only Class IIIA liquids.

(c) When a combustible liquid is heated for use to within 30°F (16.7°C) of its flashpoint, handle it according to the requirements for the next lower class of liquids.

(8) Competent person is a person who, because of training and experience, can identify existing and predictable hazards in equipment, material, conditions or practices and who has the knowledge and authority to take corrective steps.

(9) Farming — Agricultural production of field crops, fruits and nuts, horticultural specialties, livestock, and animal specialties of all types. "Farming" includes agricultural services such as soil preparation, planting, cultivating, crop production, harvesting and crop preparation for market. "Farming" includes veterinary and other services to animals, farm labor and management services, landscaping and horticultural services, ornamental shrub and tree services, and greenhouse operations. A detailed listing of farming, i.e., Agricultural Production Enterprises is contained in the Appendix.

NOTE: Throughout this division, the term "farming," "agriculture" and "production agriculture" are synonymous.

(10) Flammable liquid any liquid with a flashpoint below 100°F (37.8°C), except any mixture with components with flashpoints of 100°F (37.8°C) or higher, the total of which make up 99 percent or more of the total volume of the mixture. Flammable liquids are known as Class I liquids. Class I liquids are divided into three classes as follows:

(a) Class IA includes liquids with flashpoints less than 73°F (22.8°C) and a boiling point below 100°F (37.8°C).

(b) Class IB includes liquids with flashpoints less than 73°F (22.8°C) and a boiling point at or more than 100°F (37.8°C).

(c) Class IC includes liquids with flashpoints at or more than 73°F (22.8°C) and less than 100°F (37.8°C).

(11) Labeled is something that has an attached label, symbol, or other identifying mark of a nationally recognized testing laboratory that:

(a) Makes periodic inspections of the production of such equipment; and

(b) Whose labeling indicates compliance with nationally recognized standards or tests to determine safe use in a specified manner.

(12) Listed is something mentioned in a list that:

(a) Is published by a nationally recognized laboratory that makes periodic inspection of the production of such equipment; and

(b) States such equipment meets nationally recognized standards or was tested and found safe for use in a specified manner.

(13) Place of employment — Every place, fixed, movable or moving, where either temporarily or permanently an employee works or is intended to work. It includes every place where there is any activity related to an employer's business, including a labor camp.

NOTE: Place of employment does not include any place where the only employment involves non-subject workers employed in or about a private home.

(14) Reasonable means — What a prudent person, familiar with the circumstances of the industry would do to work in a safe and healthful manner.

(15) Safeguard — Any form of safety device, equipment, personal protective equipment, guard, barricades, warning, danger sign, method or process prescribed or adopted for the protection of an employee.

(16) Substantial — Constructed with sufficient strength or installed to provide ample support to withstand loads to which the structure or device may be subject.

(17) Worker is identical in every respect to employee as defined in ORS 654.005(4).

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-0150
Standards Organizations

Division 4 references various standards from these organizations. Get copies from:

National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.
American National Standards Institute, 1430 Broadway, New York, NY 10018.
Underwriters' Laboratories, Inc., 207 East Ohio Street, Chicago, IL 60611.
Factory Mutual Engineering Corp., PO Box 688, Norwood, MA 02062.
National Association of Plumbing and Mechanical Officials, 5032 Alhambra Avenue, Los Angeles, CA 90032.
American Society of Agricultural Engineers, 2950 Niles Road, PO Box 229, St. Joseph, MI 49085.
American Society of Mechanical Engineers, Inc., United Engineering Center, 345 East 47th Street, New York, NY 10017.
American Society of Heating, Refrigeration, and Air Conditioning Engineers, Inc., 345 East 47th Street, New York, NY 10017.
Crane Manufacturers Association of America, Inc., 1 Thomas Circle NW, Washington, DC 20005.
Society of Automotive Engineers, Inc., 485 Lexington Avenue, New York, NY 10017.
American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.
Compressed Gas Association, Inc., 1235 Jefferson Davis Highway, Arlington, VA 22207.
American Petroleum Institute, 1220 L Street NW, Washington, DC 20005.
American Welding Society, 550 NW LeJeune Road, PO Box 351040, Miami, FL 33135.
Rubber Manufacturers Association, 1400 K Street NW, Washington, DC 20005.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

Safety Awareness

437-004-0240
Safety Orientation for Seasonal Workers

Seasonal Worker — a person employed in a job tied to a certain time of year by an event or pattern and for not more than 10 months in a calendar year.

(1) This applies to agricultural employers with 10 or fewer non-seasonal workers. (See the notice at the end of this page.)

(2) All seasonal workers must receive at least the following information in their orientation meeting before beginning work for the first time or when work conditions or locations change in a way that reasonably could affect their safety or health:

(a) Reserved.

NOTE: OAR 437-004-9800(7)(d), Hazard Communication requires you to give OR-OSHA publication 1951, "Safe Practices – Working With Hazardous Agricultural Chemicals" to every employee.

NOTE: This paragraph satisfies the training requirements under 437-004-9800, Hazard Communication for workers doing field and hand labor. It also satisfies the requirements for training under the Worker Protection Standard, 437-004-40 CFR 170.130(c). See Subdivision W.

(b) Employer's safety and health rules for the work they will do.

(c) The employer's procedures for workers to contact supervisors or managers in case of accident, illness or any problem related to safety or health.

(d) The employer's procedures for treatment of injured or sick workers and the summon- ing of emergency assistance.

(e) The location of posted safety and health information.

NOTE: These are only minimum requirements and are not all inclusive. Other parts of the Agriculture standard require specific or general training for certain types of work. Those requirements are in addition to these general orientation requirements.

NOTICE: If you employ more than 10 non-seasonal workers, read and comply with OAR 437-004-0250 which follows this standard. If you employ 10 or fewer non-seasonal workers but have had one or more accepted disabling claims in any 12-month period, read and comply with OAR 437-004-0250 which follows this standard.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1999, f. & cert. ef. 4-30-99; OSHA 9-2006, f. & cert. ef. 9-22-06

Safety Committees

437-004-0250
Safety Committees

(1) Application.

(a) Agricultural employers with more than 10 non-seasonal workers must have an effective safety committee.

(b) Agricultural employers with 10 or fewer non-seasonal workers do not need a safety committee unless they had one or more lost workday cases during a 12-month period.

Note: Under (b) above, you must have your first safety committee meeting the month after your first lost workday case during any 12-month period. You can stop the meetings after you complete a 12-month period without a lost workday case.

(c) Labor contractors must have a committee based on the number of workers over which they exercise direction and control.

(2) Purpose. The purpose of a safety committee is to bring workers and management together in a non-adversarial, cooperative effort

to promote safety and health in each workplace. A safety committee assists the employer and makes recommendations for change.

(3) Effective committee. An effective committee must produce at least the following results:

(a) Workers must be aware of the committee, who is on it, how it functions, when it meets and how information passes from workers to management and from management to workers.

(b) Workers must be aware of their right to have matters placed on the committee's agenda and into the meeting minutes.

(c) Workers must know the employer's method or system for the reporting of safety and health concerns, incidents and accidents.

(d) Workers must know the committee's responsibility to review all incident and accident reports.

(4) Definitions.

(a) Management — includes all supervisors and persons who regularly exercise direction and control over workers.

(b) Seasonal Worker — a person employed in a job tied to a certain time of year by an event or pattern and employed for not more than 10 months in a calendar year.

(c) Workers — for the purposes of determining the need for a safety committee, include both full and part-time employees.

(5) General requirements.

(a) Employers who also hire seasonal workers must hold safety orientation meetings for those crews. See paragraphs OAR 437-004-0250(8).

(b) If you have more than one geographic employment location, use a combined committee only if:

(A) The locations are close enough to assure that a joint committee meets the requirements in OAR 437-004-0250(3); or

(B) The locations employ some of the same workers; and

(C) The joint committee represents safety and health concerns of all workers at all locations.

(c) The safety committee of employers with 20 or fewer non-seasonal workers must have at least one manager and one worker. Employers with more than 20 non-seasonal workers must have at least two managers and two workers on the committee.

(A) Do not coerce workers to serve on the committee. Give all workers the opportunity to volunteer to serve on the committee. If there are no volunteers, the employer may appoint the member(s).

Note: Do not count seasonal workers when calculating the number of members needed on the committee.

(B) Reserved.

(d) Employers must pay workers their regular hourly rate for attending safety committee meetings or instruction or training required as part of their safety committee duties.

(6) Duties and functions.

(a) Regular safety committee meetings must be held monthly except in months when there are inspections under OAR 437-004-0099(3). Committees for employers with 10 or fewer workers, under (1)(b), must meet quarterly in addition to their inspection months.

Note: It is acceptable to combine required safety committee meetings with seasonal worker orientation sessions if you fulfill all requirements for the committee meetings.

(b) Keep a record of all safety committee meetings and make the records available to workers. Keep the record for 3 years for inspection by OR-OSHA.

(c) All reports, inspections, evaluations, recommendations and items brought before the committee must be part of the record.

(d) The employer must respond to safety committee recommendations in a reasonable time.

(e) The committee must:

(A) Establish procedures for the committee to do the safety inspections in OAR 437-004-0099(3).

(B) Review all reports of the quarterly inspections required in OAR 437-004-0099(3).

(C) Establish procedures for investigating all safety incidents, accidents, illnesses and deaths.

(D) Evaluate accident and illness prevention programs.

(E) Set guidelines for the training of safety committee members.

(7) Training.

(a) Discuss OAR 437-004-0250 (these rules) and the purpose and operation of the committee with safety committee members.

(b) Committee members must have timely access, through the employer, to all OR-OSHA standards that apply to their work.

(c) Committee members must receive training in hazard identification.

(8) Safety orientations for seasonal workers. All seasonal workers doing hand labor and field work must receive at least the following information in their safety orientation meeting before beginning work for the first time or when work conditions or locations change in a way that reasonably could affect their safety or health:

(a) Reserved.

NOTE: OAR 437-004-9800(7)(d), Hazard Communication requires you to give OR-OSHA publication 1951, "Safe Practices – Working With Hazardous Agricultural Chemicals" to every employee.

NOTE: This paragraph satisfies the training requirements under 437-004-9800, Hazard Communication for workers doing field and hand labor. It also satisfies the requirements for training under the Worker Protection Standard, 437-004-40 CFR 170.130(c). See Subdivision W.

(b) Employer's safety and health rules for the work they will do.

(c) The employer's procedures for workers to contact supervisors or managers in case of accident, illness or any problem related to safety or health.

(d) The employer's procedures for treatment of injured or sick workers and the summoning of emergency assistance.

(e) The location of posted safety and health information.

NOTE: These are only minimum requirements and are not all inclusive. Other parts of the Agriculture standard require specific or general training for certain types of work. Those requirements are in addition to these general orientation requirements.

Stat. Auth.: ORS 654.025(2) & 656.726(4)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98; OSHA 4-1999, f. & cert. ef. 4-30-99; OSHA 7-2000, f. & cert. ef. 7-26-00; OSHA 1-2002, f. & cert. ef. 2-15-02; OSHA 9-2006, f. & cert. ef. 9-22-06

Work Surfaces

437-004-0310
Working Surfaces

(1) Scope. This section applies to all places of agricultural employment. Measures to control toxic materials are outside the scope of this section.

(2) Housekeeping. Floors, work areas, aisles and passageways must be in good repair and must not have protruding nails, unevenness, obstructions, debris or loose boards that create a hazard.

(3) Aisles, walkways, inclines and passageways.

(a) There must be sufficient clearance for safe operation of mechanical handling equipment in aisles, at loading docks, through doorways and at turns. Aisles and passageways must be clear and in good repair with no obstructions that could be a hazard.

(b) Mark permanent aisles and passageways.

(c) Aisles, passageways, and walkways must be wide enough for safe work but never less than 22 inches wide. Passageways more than 4 feet above the ground or floor level must have standard guardrails.

(d) Fixed inclined walkways must be at least 22 inches wide, incline at no more than 24 degrees and be securely fastened at the top and bottom. They must have guardrails on each open side.

(e) Inclined walkways that may be slippery must have anti-slip surfaces or cleats secured at uniform intervals of not more than 18 inches, and extending the full width of the walkway.

(f) Inclines from floor to floor, without open sides, used instead of stairways must have standard railings according to the requirements for stairways.

(g) Ramps for wheelbarrows, if made of planking, must have an odd number of planks with no cleats on the center plank.

(4) Covers and guardrails. There must be covers and/or guardrails to protect people from the hazards of open pits, tanks, vats, excavations, etc.

(5) Surface loads. For all new and remodel construction after December 1, 1997, post the load capacities on overhead storage areas. Do not allow overloading.

(6) Barriers. There must be protective barriers or suitable guards for uncovered openings or excavations that are accessible to vehicle or pedestrian traffic. Use warning lights or flares if working at night.

(7) Vertical clearances. There must be a vertical clearance of at least 6-1/2 feet over work areas. Where it is impractical to provide this clearance, use padding, contrasting paint or similar warnings on overhead obstructions.

NOTE: This does not apply to crop storage areas where people are there for short periods.

(8) Working above other workers. Areas above other workers, for handling or mixing acids, caustics, or other harmful materials must have water-tight floors that drain to a safe location, except where workers underneath wear personal protective equipment suitable for the hazard.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-0320
Guarding Floor and Wall Openings and Holes

(1) Definitions: Unless otherwise stated, these terms mean:

(a) Floor hole. An opening less than 12 inches but more than 1 inch in its least dimension, in any walking surface, through which materials but not persons may fall. This includes belt holes, pipe openings, or slot openings.

(b) Floor opening. An opening 12 inches or more in its least dimension, in any walking surface through which persons may fall including hatchways, stairs or ladder openings, pits, or large manholes. Floor openings occupied by elevators, dumb waiters, conveyors, machinery, or containers are excluded from this subdivision.

(c) Handrail. A single bar or pipe supported on brackets from a wall or partition, and used as a handhold for persons on stairs or ramps.

(d) Platform. An elevated work space; such as a balcony or mezzanine for the operation of machinery and equipment.

(e) Runway. An elevated passageway, such as a footwalk along shafting or a walkway between buildings.

(f) Stair railing. A vertical barrier along exposed sides of a stairway to prevent people from falling.

(g) Standard railing. A vertical barrier along exposed edges of a floor opening, wall opening, ramp, platform, or runway to prevent people from falling.

(h) Standard strength and construction. Any construction of railings, covers, or other guards that meets the requirements of OAR 437-004-0320(6).

(i) Toeboard. A vertical barrier at floor level along exposed edges of a floor opening, wall opening, platform, runway, or ramp to prevent things from falling.

(j) Wall hole. An opening less than 30 inches but more than 1 inch high, of unrestricted width, in any wall or partition; such as a ventilation hole.

(k) Wall opening. An opening at least 30 inches high and 18 inches wide, in any wall or partition, through which persons may fall; such as a window, doorway or chute opening.

(2) Floor openings and floor holes.

(a) Stairway floor openings must have a standard railing, that complies with OAR 437-004-0320(6), on all exposed sides (except at entrance to the stairway). For infrequently used stairways where traffic across the opening prevents the use of fixed standard railing, the guard must be a hinged floor opening cover of sufficient strength and removable standard railings on all exposed sides (except at entrance to the stairway).

(b) Ladder way floor openings or platforms must have a standard railing with standard toeboard on all exposed sides (except at entrance to opening). The passage through the railing must either have a swinging gate or be offset so that a person cannot walk directly into the opening.

(c) Hatchways and chute floor openings must have one of the following:

(A) Hinged floor opening cover with standard railings. When the opening is not in use, close the cover or guard the exposed sides at both top and intermediate positions by removable standard railings.

(B) A removable railing with toeboard on not more than two sides of the opening and fixed standard railings with toeboards on all other exposed sides. The removable railings must be in place when the opening is not in use.

(C) Where operating conditions necessitate the feeding of material into any hatchway or chute opening, protection must prevent a person from falling through the opening.

(d) Skylight floor openings and holes must have a standard skylight screen or a fixed standard railing on all exposed sides.

(e) Pit and trapdoor floor openings must have a floor opening cover of sufficient strength. While the cover is not on, an attendant must be at the pit or trap opening or there must be removable standard railings on all sides.

(f) Manhole floor openings must have a standard manhole cover that need not be hinged in place. While the cover is off, there must be an attendant at the manhole opening or it must have removable standard railings.

(g) Temporary floor openings must have standard railings, or an attendant.

(h) Floor holes into which persons can accidentally walk must have either:

(A) A standard railing with standard toeboard on all exposed sides; or

(B) A floor hole cover of sufficient strength. While the cover is off, the floor hole must have an attendant or a removable standard railing.

(i) Floor holes into which persons cannot accidentally walk must have a cover that leaves no openings more than 1 inch wide. The cover must be securely held in place to prevent tools or materials from falling through.

(j) Where doors or gates open directly on a stairway, there must be a platform, and the swing of the door must not reduce the effective width to less than 20 inches.

(3) Wall openings and holes.

(a) Wall openings with a drop of more than 4 feet must have one of the following:

(A) Rail, roller, picket fence, half door, or equivalent barrier. Where there is exposure below to falling materials, there must be a toe board or the equivalent. When the opening is not in use for handling materials, the guard must be in position regardless of a door on the opening. In addition, there must be a grab handle on each side of the opening with its center about 4 feet above floor level and of standard strength and mounting.

(B) Extension platform to receive hoisted materials for handling. It must have side rails or equivalent guards of standard specifications.

(b) Chute wall openings with a drop of more than 4 feet must have one or more of the barriers in (3)(a) above or as required by the conditions.

(c) Window wall openings at a stairway landing, floor, platform, or balcony, with a drop of more than 4 feet, and where the bottom of the opening is less than 3 feet above the platform or landing, must have a guard of standard slats, standard grill work (as in OAR 437-004-0320(6)(k)), or standard railing.

(d) Where the window opening is below the landing, or platform, there must be a standard toeboard.

(e) Every temporary wall opening must have adequate guards but these need not be of standard construction.

(f) Where there is a hazard of materials falling through a wall hole, and the lower edge of the near side of the hole is less than 4 inches above the floor, and the far side of the hole more than 5 feet above the next lower level, the hole must have a standard toeboard, or a solid enclosing screen, or one as described in OAR 437-004-0320(6)(k).

(4) Open-sided floors, platforms, and runways.

(a)(A) Open-sided floors or platforms 4 feet or more above adjacent floor or ground level must have a standard railing (or the equivalent from OAR 437-004-0320(6)(c)) on all open sides except where there is entrance to a ramp, stairway, or fixed ladder. The railing must have a toeboard where, beneath the open sides:

(i) Persons can pass;

(ii) There is moving machinery; or

(iii) There is equipment with which falling materials could create a hazard.

(B) When operating conditions make it necessary, the railing may be left off of one side if the platform is at least 18 inches wide.

EXCEPTION: When things regularly have to be passed over the edge of the floor, as in hay storage, there is no requirement for the intermediate railing and toeboard. This exception applies also where the railing is set back from the edge 12 inches or more. There is no requirement for any railing when the employer can show that it creates a greater hazard than working without one.

(b) Runways must have a standard railing (or the equivalent from OAR 437-004-0320(6)(c)) on all open sides 4 feet or more above floor or ground level. Where the use of tools, machine parts, or materials on the runway is likely, there must be a toeboard on each exposed side.

NOTE: Runways exclusively for special purposes may omit the railing on one side when operating conditions make it necessary, if the runway is at least 18 inches wide. Where persons entering runways have exposure to machinery, electrical equipment, or other dangers, additional guarding may be required for protection.

(c) Regardless of height, open-sided floors, walkways, platforms, or runways above or adjacent to dangerous equipment must have a standard railing and toeboard.

(5) Stairway railings and guards.

(a) Stairs with four or more risers must have standard stair railings or standard handrails from (A) through (E) below. Measure the width of the stairs clear of all obstructions except handrails:

(A) On stairways less than 44 inches wide with both sides enclosed, at least one handrail, preferably on the right side descending.

(B) On stairways less than 44 inches wide with one side open, at least one stair railing on open side.

(C) On stairways less than 44 inches wide with both sides open, one stair railing on each side.

(D) On stairways more than 44 inches wide but less than 88 inches wide, one handrail on each enclosed side and one stair railing on each open side.

(E) On stairways 88 or more inches wide, one handrail on each enclosed side, one stair railing on each open side, and one intermediate stair railing approximately midway of the width.

(b) Winding stairs must have a handrail offset to prevent walking on any treads less than 6 inches wide.

(6) Railing, toeboards, and cover specifications.

(a) A standard railing must have a top rail, intermediate rail, and posts, and must be between 36 and 44 inches high from the upper surface of the top rail to the walking surface. The top rail must be smooth. The intermediate rail must be about halfway between the top rail and the floor, platform, runway, or ramp. The ends of the rails must not overhang the terminal posts except where such overhang is not a projection hazard.

(b) A stair railing must be similar to a standard railing but the height must be between 30 and 36 inches from upper surface of top rail to surface of tread in line with face of the riser at the forward edge of tread.

(c)(A) For wood railings, the posts must be at least 2-inch by 4-inch stock spaced not to exceed 6 feet; the top and intermediate rails must be at least 2-inch by 4-inch stock. If top rail is made of two right-angle pieces of 1-inch by 4-inch stock, posts may be spaced on 8-foot centers, with 2-inch by 4-inch intermediate rail.

(B) For pipe railings, posts and top and intermediate railings must be at least 1-1/2 inches nominal diameter with posts spaced not more than 8 feet on center.

(C) For structural steel railings, posts and top and intermediate rails must be of 2-inch by 2-inch by 3/8-inch angles or other metal shapes of equivalent bending strength with posts spaced not more than 8 feet on center.

(D) The anchoring of posts and framing of members for railings of all types must be strong enough that the completed structure can withstand a load of at least 200 pounds applied in any direction at any point on the top rail.

(E) Other types, sizes, and arrangements of railing construction are acceptable if they meet the following conditions:

(i) A smooth-surfaced top rail at a height above floor, platform, runway, or ramp level of 42 inches nominal;

(ii) A strength to withstand at least the minimum requirement of 200 pounds top rail pressure;

(iii) Protection between top rail and floor, platform, runway, ramp, or stair treads, equivalent at least to that afforded by a standard intermediate rail.

(d) A standard toeboard must be 4 inches nominal in height from its top edge to the level of the floor, platform, runway, or ramp. It must be securely fastened in place and with not more than 1/4-inch clearance above floor level. It may be made of any material either solid or with openings not more than 1 inch in greatest dimension. Where material can fall through the space between the standard toeboard and mid rail, there must be paneling or screen from floor to the mid rail. If material can fall through the space between the mid rail and top rail, there also must be paneling or screen there.

(e)(A) A handrail must have a lengthwise member mounted directly on a wall or partition. Mounting brackets must attach to the lower side of the handrail so that the top and sides are smooth. The handrail must furnish an adequate handhold for anyone grasping it to avoid falling.

(B) The height of handrails must be 30 to 34 inches from upper surface of handrail to surface of tread in line with face of a riser or to surface of the ramp.

(C) Hardwood handrails must be at least 2 inches in diameter. Metal pipe handrails must be at least 1-1/2 inches in diameter. Brackets must be long enough to give at least 1-1/2 inches clearance between handrail and wall. Bracket spacing must be not more than 8 feet.

(D) Handrails must be able to withstand a load of at least 200 pounds applied in any direction at any point on the rail.

(f) All handrails and railings must have a clearance of at least 1-1/2 inches between the handrail or railing and any other object.

(g) Floor opening covers may be of any material that meets the following strength requirements:

(A) Trench or conduit covers and their supports must be able to stand a truck rear-axle load of at least 20,000 pounds if they are where vehicles can pass over them.

(B) Floor opening covers may be made of any material strong enough to handle the load. Covers may project not more than 1 inch above the floor level if all edges are beveled to an angle with the horizontal of not more than 30 degrees. All hinges, handles, bolts, or other parts must be flush with the floor or cover surface.

(h) Skylight screens must be capable of withstanding a load of at least 200 pounds applied perpendicularly on the screen. They must be strong enough that under ordinary loads or impacts, they will not deflect downward sufficiently to break the glass below them. Those with grillwork must have openings not more than 4 inches long. Those of slatwork must have openings not more than 2 inches wide with length unrestricted.

(i) Wall opening barriers (rails, rollers, picket fences, and half doors) must be capable of withstanding a load of at least 200 pounds applied in any direction (except upward) on the top rail or corresponding member.

(j) Wall opening grab handles must be not less than 12 inches long and mounted to give 3 inches clearance from the side framing of the wall opening. The size, material, and anchoring of the grab handle must be such that it can withstand a load of at least 200 pounds applied in any direction.

(k) Wall opening screens must be able to withstand a load of at least 200 pounds applied horizontally on the near side of the screen. They may be solid, grillwork with openings not more than 8 inches long, or slatwork with openings not more than 4 inches wide with length unrestricted.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-0330
Fixed Industrial Stairs

(1) Definitions. Unless otherwise stated, fixed industrial stair terms mean:

(a) Handrail. A single bar or pipe supported on brackets from a wall or partition, and used as a handhold for persons on stairs or ramps.

(b) Nose, nosing. That part of a tread projecting beyond the face of the riser.

(c) Open riser. The space between the treads of stairways without upright parts (risers).

(d) Platform. An extended step or landing breaking a continuous run of stairs.

(e) Railing. A vertical barrier along exposed sides of stairs and platforms to prevent people from falling. The top rail usually serves as a handrail.

(f) Rise. The vertical distance from the top of a tread to the top of the next higher tread.

(g) Riser. The upright part of a step at the back of a lower tread and near the leading edge of the next higher tread.

(h) Stairs, stairway. A set of steps with three or more risers, from one level or floor to another, or leading to platforms, pits or around machinery, tanks, and other equipment.

(i) Tread. The horizontal part of a step.

(j) Tread run. The horizontal distance from the leading edge of a tread to the leading edge of an adjacent tread.

(k) Tread width. The horizontal distance from front to back of tread including nosing.

(2) Application. This section has specifications for the safe design and construction of fixed stairs. This includes interior and exterior

stairs around machinery, tanks, and other equipment, and stairs leading to or from floors, platforms, or pits. This section does not apply to stairs used for fire exits, private residences or articulated stairs, the angle of which changes with the rise and fall of the base support.

(3) Where fixed stairs are required. There must be fixed stairs where work requires regular travel between floors or levels, and access to operating platforms at any equipment that requires frequent attention. There also must be fixed stairs for daily access to elevations or for access at each shift for such purposes as inspection, regular maintenance, etc. There must be fixed stairs where work may expose employees to acids, caustics, gases, or other harmful substances, or where employees normally must carry tools or equipment by hand. (It is not the intent of this section to preclude using fixed ladders for access to elevated tanks, towers, and similar structures, etc., where their use is common practice.) Spiral stairs are not legal except for special limited use and secondary access situations where it is not practical to provide a conventional stairway. Winding stairs are acceptable on tanks and similar round structures where the diameter of the structure is at least five (5) feet.

(4) Stair strength. Fixed stairs must be able to carry a load of five times the normal live load anticipated but never less than a moving concentrated load of 1,000 pounds.

(5) Stair width. Fixed stairs must be at least 22 inches wide.

(6) Angle of stairway rise. Fixed stairs must be at angles to the horizontal of between 30° and 50°. Use any uniform combination of rise/tread dimensions that will result in stairs at an angle to the horizontal between 30° and 50°. Table 1 gives rise/tread dimensions that will produce stairs within this range. However, other allowable rise/tread combinations are possible. [Table not included. See ED. NOTE.]

(7) Stair treads. All treads must be slip-resistant and the nosings must be a nonslip finish. Welded bar grating treads without nosings are acceptable if the leading edge can be readily identified by people descending the stairs and if the tread is serrated or is of nonslip design. Rise height and tread width must be uniform throughout any flight of stairs including any foundation structure used as one or more treads of the stairs. Treads must not be loose. Replace or repair defective treads quickly.

(8) Stairway platforms. Stairway platforms must be no less than the width of the stairway and a minimum of 30 inches long measured in the direction of travel.

(9) Railings and handrails. There must be standard railings on the open sides of exposed stairs and stair platforms. There must be handrails on at least one side of closed stairs preferably on the right side going down. Stair railings and handrails must comply with OAR 437-004-0320.

(10) Vertical clearance. Vertical clearance above any stair tread to an overhead obstruction must be at least 6-1/2 feet measured from the leading edge of the tread.

[ED. NOTE: Tables referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001-654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-0340
Portable Ladders

(1) Definitions. Portable ladder terms mean:

(a) Check. A lengthwise separation of the wood, most of which occurs across the rings of annual growth.

(b) Compression failure. A deformation (buckling) of the fibers due to excessive compression along the grain.

(c) Decay. Disintegration of wood substance due to action of wood-destroying fungi. It is also known as dote and rot.

(d) Extension ladder. A nonself-supporting portable ladder of adjustable length. It has two or more sections that adjust to varied lengths.

(e) Extension trestle ladder. An adjustable, self-supporting portable ladder made of a trestle ladder base and a vertical extension section.

(f) Ladder. A device with steps, rungs or cleats between rails, for people to climb up or down.

(g) Low density wood. Exceptionally light in weight and usually deficient in strength for the species.

(h) Platform ladder. A fixed length, self-supporting portable ladder with a platform at the highest permissible standing level.

(i) Platform. A landing surface for working or standing.

(j) Reinforced plastic. A plastic made stronger than its base by the addition of high strength fillers, usually fibers, fabrics or mats.

(k) Section.

(A) Bottom or base section. The lowest section of a nonself-supporting portable ladder.

(B) Middle or intermediate section. The section(s) between the top (fly) and bottom (base) sections of a nonself-supporting portable ladder.

(C) Top or fly section. The uppermost section of a nonself-supporting portable ladder.

(l) Sectional ladder. A nonself-supporting, fixed length, portable ladder, with two or more sections of ladder that may combine to work as a single ladder. Its size is the length of the assembled sections.

(m) Shake. A separation along the grain, most of which occurs between the rings of annual growth.

(n) Single section ladder. A fixed length, nonself-supporting portable ladder made of one section.

(o) Stepladder. A fixed length, self-supporting portable ladder with a hinged back.

(p) Top cap. The very top part of a stepladder.

(q) Top step. The first step below the top cap of a stepladder. If the ladder has no top cap, the top step is the first one below the top of the rails.

(r) Trestle ladder. A fixed length, self-supporting portable ladder made of two sections and hinged at the top. It can be climbed by two people at once, one per side.

(s) Wane. Bark, or the lack of wood from any cause, on the corner of a piece.

(t) Wood irregularities. Natural characteristics in or on wood that may lower its durability, strength, or utility.

(u) Working Load Rating. The maximum load authorized by the manufacturer for the ladder.

(2) Application. This standard covers the selection, use and care of portable ladders used in agriculture. It does not cover orchard ladders, special ladders, combination step and extension ladders, aisle way stepladders, and shelf ladders.

(3) Ladder selection. Portable reinforced plastic (fiberglass) ladders must comply with American National Standard A14.5-1992. Wood ladders must comply with American National Standard A14.1-1994. Metal ladders must comply with American National Standard A14.2-1990.

NOTE: Unaltered and properly maintained ladders that meet the ANSI standard in effect at the time of their manufacture comply with this standard as do ladders that comply with newer versions of the particular ANSI standard.

(4) Condition of wood ladders. There must be no sharp edges or splinters on wood parts. Visual inspection must show no check, shake, wane, compression failures, decay, or other wood irregularities. Ladders may not be made of low density wood.

(5) General requirements — all ladders.

(a) Step spacing must be uniform and not more than 12 inches. Steps must be parallel and level when the ladder is in the normal use position.

(b) All joints, attachments and working parts of ladders must be tight and not worn to a point that causes a hazard. Do not use ladders with damaged or bent parts.

(c) Replace frayed or badly worn rope.

(d) Safety feet and other auxiliary equipment must in good condition.

(e) Inspect ladders and remove from use any with defects. Ladders awaiting repair must be tagged, “Dangerous, Do Not Use.”

(f) There can be no dents, breaks or bends in the side rails or rungs;

(g) Do not make ladders by fastening cleats across a single rail.

(h) Portable ladders must have nonslip bases.

(6) General requirements — portable stepladders.

(a) The minimum width between side rails at the top, inside to inside, must be not less than 11 1/2 inches. From top to bottom, the side rails must spread at least 1-inch for each foot of length of the stepladder.

(b) The bottoms of the four rails must have insulating nonslip material.

(c) There must be a metal spreader or locking device strong enough to hold the ladder open. The spreader must have no sharp

points or edges. For Type III ladders, the pail shelf and spreader can be one unit (a shelf-lock ladder).

(7) Use — all ladders. Use ladders only for purposes approved or recommended by the manufacturer.

(a) Do not load ladders beyond their working load rating. Do not allow more than one person at a time on ladders not intended by the manufacturer to hold more than one person.

(b) Do not use ladders in front of doors that open toward the ladder without blocking, locking or guarding the door.

(c) Do not use ladders placed on boxes, barrels, or other unstable bases to obtain additional height.

(d) Do not use ladders with broken or missing steps, rungs, or cleats, broken side rails, or other faulty parts.

(e) Do not splice sections of short ladders together to make a long one.

(f) When used, metal reinforcers must be on the underside of rails of portable rung ladders.

(g) A ladder for access to a roof must extend at least 3 feet above the top support point, at the eave, gutter, or roof line.

(h) Secure ladders as necessary when used on surfaces that may allow slipping or movement. Use one of the following methods:

(A) non-slip bases on the ladder feet; or,

(B) steel points or safety shoes on the ladder feet, designed for the type of surface the ladder is on; or

(C) nail the ladder to the floor, or set it against secured blocks or chocks.

NOTE: Non-slip bases are not a substitute for care in safely placing, lashing, or holding a ladder on oily, metal, concrete, or slippery surfaces.

(i) Use portable ladders only on a surface that gives stable, level footing.

(j) The climber must face the ladder and have free use of both hands when climbing up or down.

(k) Do not step or jump between erected ladders.

(l) There must be only one person at a time on a ladder unless its labeling specifically allows use by more than one person.

(m) Do not use ladders as planks or bridges between walking surfaces or in other horizontal applications.

(n) Do not use ladders to gain additional height from elevated surfaces like scaffolds, truck beds, vehicle bodies, tractor scoops or boom truck buckets.

(o) Do not use metal ladders or wood ladders with vertical metal parts for electrical work or where they may contact electric conductors. This type ladder must have markings reading "WARNING — do not use around energized electrical equipment" or words of equal meaning.

(8) Use of specific types of ladders.

(a) Portable stepladders. Do not use stepladders more than 20 feet long.

(A) Do not climb on the back section of the ladder unless it has steps meant for climbing. Do not stand on the top step or top cap of stepladders.

(B) There must be only one person at a time on the ladder.

(C) Do not use stepladders in freestanding positions when not fully opened. Do not use them as supports for working platforms or scaffolding planks.

(b) Portable rung ladders.

(A) Single ladder.

(i) Do not use single ladders more than 30 feet long.

(ii) Place these ladders at an angle shown in Figure 1.

(iii) The tops must be tied down or secured if there is a possibility of sliding or movement.

(iv) Single ladders are acceptable as fixed ladders only when they comply with 437-004-0360.

(B) Two-section ladder.

(i) Do not use two-section extension ladders more than 60 feet long. All ladders of this type must have two sections, one to fit within the side rails of the other, and arranged so that the upper section will raise and lower.

(ii) Set up and use extension ladders so that the top section or fly is resting on the bottom section or base. Rung locks must be in the proper position.

(iii) Place these ladders at an angle shown in **Figure 1**.

(iv) The tops must be tied down or secured if there is a possibility of sliding or movement.

(v) On two-section extension ladders the minimum overlap for the two sections in use must be as follows: [Figure not included. See ED. NOTE.]

(C) Sectional ladder.

(i) Do not use assembled combinations of sectional ladders longer than lengths allowed in this subdivision.

(ii) Place these ladders at an angle shown in **Figure 1**.

(iii) The tops must be tied down or secured if there is a possibility of sliding or movement.

(iv) Do not use three section extension ladders longer than 72 feet.

(D) Trestle and extension trestle ladder. Do not use trestle ladders, or extension sections or base sections of extension trestle ladders more than 20 feet long.

[ED. NOTE: Figures referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(4)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98; OSHA 9-2006, f. & cert. ef. 9-22-06

437-004-0350

Orchard Ladders

Definition: Orchard Ladder. A self-supporting portable tripod ladder of fixed length. It has two front side rails and a single back support leg.

(1) Application. This covers the maintenance, use and care of orchard ladders.

(2) Maintenance.

(a) Each step of wooden orchard ladders must have these reinforcements:

(A) A steel rod not less than 0.160 inch in diameter, that passes through metal washers big enough to prevent pressing into the side rails, and through a truss block between the rod and the center of each step; or

(B) A metal angle brace on each end firmly secured to the steps and side rails; or

(C) Construction of equivalent strength and safety.

(b) If the ladder has rod reinforcement, the bottom step must also have a metal angle brace on each end securely attached to the bottom step and side rails.

(c) All steps 27 inches or longer must have a metal angle brace at each end securely attached to the step and rail.

(d) The minimum width between side rails at the highest step for standing, inside to inside, is 9-1/2 inches. From top to bottom the side rails must spread at least an average of 2-1/2 inches for each foot of ladder length.

(e) All orchard ladders must have a top with tightly secured wood or metal brackets or fittings, side rails and back leg. The back leg must swing freely without excessive play or wear at the joints.

(f) Do not make ladders by fastening cleats across a single rail.

(g) There must be no dents, breaks or bends in the side rails or rungs.

(3) Training.

(a) Prior to assigning an employee to work with orchard ladders, the employer must assure that they have the necessary skills and knowledge to use the ladder safely; or

(b) The employer must train new employees about the requirements of this standard and the special procedures and cautions associated with using an orchard ladder.

(4) Use and care.

(a) Do not use orchard ladders longer than 16 feet.

(b) Do not use the top as a step.

(c) Do not allow more than one person at a time on ladders.

(d) Do not step or jump between two or more erected ladders.

(e) Do not use ladders to gain additional height from already elevated surfaces like scaffolds, truck beds, vehicle bodies, tractor scoops or boom truck buckets.

(f) Inspect ladders before each use. Do not use any with defects, loose, warped, bent or broken parts. Tag these ladders, "Dangerous, Do Not Use" until they are fixed.

(g) Do not use metal ladders or wood ladders with vertical metal parts for electrical work or where they may contact electric conductors. This type ladder must have markings reading "WARNING — do not use around energized electrical equipment" or words of equal meaning.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-0360
Fixed Ladders

(1) Definitions. Fixed ladder terms mean:

(a) Cage. A guard sometimes referred to as a basket guard that is an enclosure fastened to the side rails of a fixed ladder or to a structure to encircle the climbing space of the ladder.

(b) Cleats. Ladder cross-pieces of rectangular cross-section placed on edge on which a person may step when climbing up or down.

(c) Fastenings. A device to attach a ladder to a structure, building, or equipment.

(d) Fixed ladder. A ladder permanently attached to a structure, building, or equipment.

(e) Grab bars. Individual handholds adjacent to or as an extension above ladders to provide access beyond the limits of the ladder.

(f) Individual-rung ladder. A fixed ladder with each rung individually attached to a structure, building, or equipment.

(g) Ladder. A device with steps, rungs or cleats between rails, for people to climb up or down.

(h) Ladder safety device. Any device, other than a cage or well, designed to eliminate or reduce the possibility of accidental falls, that may use life belts, friction brakes, and sliding attachments.

(i) Pitch. The included angle between the horizontal and the ladder, measured on the opposite side of the ladder from the climbing side.

(j) Rail ladder. A fixed ladder with side rails joined at regular intervals by rungs or cleats and fastened in full length or in sections to a building, structure, or equipment.

(k) Railings. Any one or a combination of those railings made according to OAR 437-004-0320. A standard railing is a vertical barrier along exposed edges of walking surfaces to prevent people from falling.

(l) Rungs. Ladder cross-pieces of circular or oval cross-section on which a person may step when climbing up or down.

(m) Side-step ladder. One from which a person getting off at the top must step sideways to reach the landing.

(n) Steps. The flat cross-pieces of a ladder on which a person may step when climbing up or down.

(o) Through ladder. A ladder from which a person getting off at the top must step through to reach the landing.

(p) Well. A permanent complete enclosure around a fixed ladder, that is attached to the walls of the well. Proper clearances for a well will give the climber the same protection as a cage.

(2) Design requirements. Design considerations: All ladders, appurtenances, and fastenings must meet these load requirements:

(a) The minimum design live load must be a single concentrated load of 200 pounds.

(b) Design consideration must include the number and position of additional concentrated live load units of 200 pounds each as determined from anticipated use.

(c) Consider the live loads caused by persons on the ladder to be concentrated at such points as will cause the maximum stress in the structural member being under evaluation.

(d) Use the weight of the ladder and attachments together with the live load when designing rails and fastenings.

(e) All wood parts of fixed ladders must meet the requirements of OAR 437-004-0340(3).

(f) For fixed ladders with wood side rails and wood rungs or cleats, used at an angle between 75° and 90°, and intended for use by no more than one person per section, single ladders in OAR 437-004-0340(8)(b)(A) are acceptable.

(3) Specific features.

(a) Rungs and cleats.

(A) All rungs must have a minimum diameter of 3/4 inch for metal ladders, except as in paragraph OAR 437-004-0360(3)(g)(A) and a minimum diameter of 1-1/8 inches for wood ladders.

(B) The distance between rungs, cleats, and steps must be uniform and not more than 12 inches.

(C) The minimum clear length of rungs or cleats must be 16 inches.

(D) Rungs, cleats, and steps must not have splinters, sharp edges, burrs, or projections.

(E) The rungs of an individual rung ladder must not allow the climber's foot to slide off the end. Figure 2 shows a suggested design. [Figure not included. See ED. NOTE.]

(b) Side rails. Side rails that might be used as a climbing aid must be of such cross sections as to afford adequate gripping surface without sharp edges, splinters, or burrs.

(c) Fastenings. Fastenings must be an integral part of fixed ladder design.

(d) Splices. All splices must meet design requirements noted in (a) above. All splices and connections must have smooth transition with original members and no sharp or extensive projections.

(e) Electrolytic action. Protect dissimilar metals from electrolytic action when they are joined.

(f) Welding. All welding must be according to the "Code for Welding in Building Construction" (AWSD1.0-1966).

(g) Protection from deterioration. Paint or treat metal ladders and attachments to resist corrosion and rusting when necessary. Ladders with individual metal rungs imbedded in concrete, that serve as access to pits and to other areas under floors, must have rungs with a minimum diameter of 1 inch or paint or treatment to resist corrosion and rusting.

(4) Clearance. [Figure not included. See ED. NOTE.]

(a) Climbing side. On fixed ladders, the perpendicular distance from the centerline of the rungs to the nearest permanent object on the climbing side of the ladder must be 36 inches for a pitch of 76°, and 30 inches for a pitch of 90° (fig. 3), with minimum clearances for intermediate pitches varying between these two limits in proportion to the slope, except as in (4)(c) and (e) below.

(b) Ladders without cages or wells. There must be a clear width of at least 15 inches each way from the centerline of the ladder in the climbing space, except when cages or wells are necessary.

(c) Ladders with cages or baskets. Subparagraphs (4)(a) and (b) above do not cover ladders with a cage or basket. They must conform to (5)(a)(E). Subparagraph (4)(a) above does not cover fixed ladders in smooth-walled wells. They must conform to (5)(a)(F).

(d) Clearance in back of ladder. The distance from the centerline of rungs, cleats, or steps to the nearest permanent object in back of the ladder must be not less than 7 inches, except that when there are unavoidable obstructions, there must be minimum clearances shown in Figure 4. [Figure not included. See ED. NOTE.]

(e) Clearance in back of grab bar. The distance from the centerline of the grab bar to the nearest permanent object in back of the grab bars must be not less than 4 inches. Grab bars must not protrude on the climbing side beyond the rungs of the ladder that they serve.

(f) Step-across distance. The step-across distance from the nearest edge of the ladder to the nearest edge of equipment or structure must be not more than 12 inches, or less than 2-1/2 inches (fig. 5). [Figure not included. See ED. NOTE.]

(g) Hatch cover. Counterweighted hatch covers must open a minimum of 60° from the horizontal. The distance from the centerline of rungs or cleats to the edge of the hatch opening on the climbing side must be not less than 24 inches for offset wells or 30 inches for straight wells. There must be no protruding potential hazards within 24 inches of the centerline of rungs or cleats; any such hazards within 30 inches of the centerline of the rungs or cleats must have deflector plates at an angle of 60° from the horizontal as shown in figure 6. The relationship of a fixed ladder to an acceptable counterweighted hatch cover is shown in figure 7. [Figures not included. See ED. NOTE.]

(5) Special requirements.

(a) Cages, Wells and Ladder Climbing Safety systems.

(A) Cages, wells or laddders climbing safety systems must be on all ladders (except chimneys) where the length of climb is more than 24 feet but not more than 50 feet or the top of the ladder is more than 24 feet above the ground or nearest lower landing surface.

NOTE: Design secifications for cages and wells are in Figures 8, 9 and 10.

(B) Ladders with a length of climb more than 50 feet (except chimneys) must have a cage, well or climbing safety system and must meet one of the following two requirements:

(i) When using a cage or well the ladder must be in sections, horizonitally offset, with real platforms at least every 50 feet.

(ii) When using a climbing safety system the ladder must have rest platforms at least every 150 feet. [Figure not included. See ED. NOTE.]

(C) Cages must extend at least 42 inches above the top of the landing, unless there is other acceptable protection.

(D) Cages must extend down the ladder to a point not less than 7 feet nor more than 8 feet above the base of the ladder. The bottom must flare not less than 4 inches or a portion of the cage opposite ladder must extend to the base.

(E) Cages must not extend less than 27 nor more than 28 inches from the center line of the rungs of the ladder. Cages must not be less than 27 inches in width. The inside must be clear of projections. Vertical bars must be at a maximum spacing of 40 degrees around the circumference of the cage; this will give a maximum spacing of approximately 9-1/2 inches, center to center.

(F) Ladder wells must have a clear width of at least 15 inches measured each way from the center line of the ladder. Smooth-walled wells must be a minimum of 27 inches from the center line of rungs to the well wall on the climbing side of the ladder. Where other obstructions on the climbing side of the ladder exist, there must be a minimum of 30 inches from the centerline of the rungs. [Figures not included. See ED. NOTE.]

(b) Landing platforms.

(A) Where a person has to step a distance more than 12 inches from the center line of the rung of a ladder to the nearest edge of a structure or equipment, there must be a landing platform. The minimum step-across distance is 2-1/2 inches.

(B) All landings must have standard railings and toeboards, that give safe access to the ladder. Platforms must be not less than 24 inches wide and 30 inches long.

(C) One rung of any section of ladder must be at the level of the landing laterally served by the ladder. Where access to the landing is through the ladder, the rung spacing from the landing platform to the first rung below the landing must be the same as on the ladder.

(c) Ladder extensions. The side rails of through or side step ladder extensions must extend 3-1/2 feet above parapets and landings. For through ladder extensions, omit the rungs from the extension. There must be not less than 18 nor more than 24 inches clearance between rails. For side step or offset fixed ladder sections, at landings, the side rails and rungs must extend to the next regular rung beyond or above the 3-1/2 foot minimum (fig.11). [Figure not included. See ED. NOTE.]

(d) Grab bars. Space grab bars by a continuation of the rung spacing when they are horizontal. Vertical grab bars must have the same spacing as the ladder side rails. Grab bar diameters must be the equivalent of the round rung diameters.

(6) Pitch.

(a) Preferred pitch. The preferred pitch of fixed ladders is between 75° and 90° with the horizontal (fig. 12). [Figure not included. See ED. NOTE.]

(b) Substandard pitch. Fixed ladders are substandard if they are between 60° and 75° with the horizontal. Substandard fixed ladders are allowed only where necessary to meet conditions of installation.

(c) Scope of coverage in this section. This section covers only fixed ladders between 60° and 90° with the horizontal.

(d) Pitch more than 90°. No ladder may be more than 90° with the horizontal.

(7) Maintenance. All ladders must be in safe condition. Inspect ladders at intervals determined by use and exposure.

[ED. NOTE: Figures referenced are available from the agency.]
[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-0370
Scaffolding

(1) Scope. This section has safety requirements for scaffolds.

(2) Definitions. Scaffolding terms mean:

(a) Bearer. A horizontal part of a scaffold on which the platform rests and which may use ledgers as support.

(b) Boatswain's chair. A seat supported by slings attached to a suspended rope, designed to accommodate one worker in a sitting position.

(c) Brace. A tie that holds one scaffold part in a fixed position with respect to another.

(d) Crawling board or chicken ladder. A plank with cleats spaced and secured at equal intervals, for use on roofs, not designed to carry any material.

(e) Double pole or independent pole scaffold. A scaffold supported from the base by a double row of uprights, independent of support from the walls and constructed of uprights, ledgers, horizontal platform bearers, and diagonal bracing.

(f) Guardrail. A rail secured to uprights that run along the exposed sides and ends of platforms.

(g) Heavy duty scaffold. A scaffold built to carry a working load of not more than 75 pounds per square foot.

(h) Horse scaffold. A scaffold for light or medium duty, made of horses supporting a work platform.

(i) Ladder jack scaffold. A light duty scaffold supported by brackets attached to ladders.

(j) Ledger (stringer). A horizontal scaffold member that extends from post to post and supports the putlogs or bearer forming a tie between the posts.

(k) Light duty scaffold. A scaffold built to carry a working load not more than 25 pounds per square foot.

(l) Manually propelled mobile scaffold. A portable rolling scaffold mounted on casters.

(m) Maximum intended load. The total of all loads including the working load, the weight of the scaffold, and such other loads as may be reasonably anticipated.

(n) Medium duty scaffold. A scaffold built to carry a working load not more than 50 pounds per square foot.

(o) Mid-rail. A rail approximately midway between the guardrail and platform and secured to the uprights along the exposed sides and ends of platforms.

(p) Putlog. A scaffold part on which the platform rests.

(q) Roofing bracket. A bracket used in sloped roof construction. It has a way for fastening to the roof or is supported by ropes fastened over the ridge and secured to some suitable object.

(r) Runner. The lengthwise horizontal bracing or bearing parts or both.

(s) Scaffold. Any temporary elevated platform and its supporting structure used for supporting workers or materials or both.

(t) Single pole scaffold. Platforms resting on putlogs or crossbeams, the outside ends of which are on ledgers secured to a single row of posts or uprights and the inner ends of which are on or in a wall.

(u) Toeboard. A barrier secured along the sides and ends of a platform, to keep material from falling.

(v) Tubular welded frame scaffold. A sectional, panel, or frame metal scaffold made of prefabricated welded sections, that has posts and bearers with intermediate connecting members, braced with diagonal or cross braces.

(w) Working load. Load imposed by workers, material and equipment.

(3) General requirements for all scaffolds.

(a) The footing or anchorage for scaffolds must be sound, rigid, and able to carry the maximum intended load without settling or displacement. Do not use unstable objects such as barrels, boxes, loose brick, or concrete blocks to support scaffolds or planks.

(b) Scaffolds and their components must be able to support at least four times the maximum intended load.

(c) Scaffolds and other devices mentioned here must be in safe condition. Do not alter or move an occupied stationary scaffold.

(d) Remove from use any damaged or weakened scaffold until repairs are done.

(e) Do not overload scaffolds. Follow manufacturers' instructions.

(f) Loaded planks or platforms must not deflect more than 1/60th of the span (2 inches in 10 feet).

(g) Nails or bolts used to make scaffolds must be strong enough and in sufficient numbers at each connection to assure the designed strength of the scaffold. Do not subject nails to a straight pull. Drive all nails completely.

(h) Overlap all planking or platforms (minimum 12 inches) or secure them from movement.

(i) There must be a ladder or equivalent safe access.

(j) Scaffold planks must extend over their end supports not less than 6 inches nor more than 18 inches.

(k) The poles, legs, or uprights of scaffolds must be plumb, and securely and rigidly braced to prevent swaying and displacement.

(l) Use a tag line when hoisting materials onto a scaffold.

(m) There must be overhead protection for employees exposed to overhead hazards.

(n) If persons work or pass under the scaffolds there must be a screen between the toeboard and the guardrail, along the entire opening. The screen must be No. 18 gauge U.S. Standard Wire 1/2-inch mesh or the equivalent.

(o) Employees must not work on scaffolds during storms or high winds.

(p) Employees must not work on scaffolds covered with ice or snow or that have slippery surfaces.

(q) Accumulations of tools, materials, and debris must not cause a hazard.

(r) Wire or fiber rope for scaffold suspension must be able to support at least six times the intended load.

(s) Do not use shore scaffolds or lean-to scaffolds.

(t) Lumber sizes, used here, refer to nominal sizes except where otherwise stated.

(u) Use anchor bolts, reveal bolts, or other equivalent means to secure scaffolds to permanent structures. Do not use window cleaners' anchor bolts.

(v) Take special precautions to protect scaffold members, including any wire or fiber ropes, when using a heat-producing process.

(4) General requirements for wood pole scaffolds.

(a) Scaffold poles must be plumb and on a foundation that prevents settling.

(b) Where wood poles are spliced, the ends must be square and the upper section must rest squarely on the lower section. There must be wood splice plates, at least 4 feet long, on at least two adjacent sides and overlapping the abutted ends equally. These plates must be the same width as the pole. Splice plates of other materials of equivalent strength are acceptable.

(c) Set independent pole scaffolds as near to the wall of the building as practicable.

(d) Guy or tie pole scaffolds to the building or structure. If they are more than 25 feet high or long, secure them at intervals not more than 25 feet vertically and horizontally.

(e) Set putlogs or bearers with their greater dimensions vertical, long enough to project over the ledgers of the inner and outer rows of poles at least 3 inches for proper support.

(f) Reinforce every wooden putlog on single pole scaffolds with a 3/16 x 2-inch steel strip or equivalent secured to its lower edge throughout its length.

(g) Ledgers must be long enough to extend over two pole spaces. Do not splice ledgers between the poles. Reinforce ledgers with bearing blocks securely nailed to the side of the pole to form a support for the ledger.

(h) Use diagonal bracing to prevent the poles from moving in a direction parallel with the wall of the building, or from buckling.

(i) Use cross bracing between the inner and outer sets of poles in independent pole scaffolds. Cross brace the free ends of pole scaffolds.

(j) There must be full diagonal face bracing across the entire face of pole scaffolds in both directions. Splice the braces at the poles.

(k) Lay platform planks with their edges close together so the platform will be tight with no spaces through which tools or material can fall.

(l) When lapped, each plank must lap its end supports at least 12 inches. Where the ends of planks abut each other to form a flush floor, the butt joint must be at the centerline of a pole. Rest abutted ends on separate bearers. Use intermediate beams where necessary to prevent dislodgment of planks due to deflection. Nail or cleat the ends to prevent their dislodgment.

(m) When a scaffold turns a corner, lay the platform planks to prevent tipping. The planks that meet the corner putlog at an angle must be laid first, extending over the diagonally placed putlog far enough to have a safe bearing, but not far enough to involve any danger from tipping. The planking running in the opposite direction at right angles must be laid to extend over and rest on the first layer of planking.

(n) When moving platforms to the next level, leave the old platform undisturbed until the new putlogs or bearers are in place.

(o) Install guardrails, 2 x 4 inches or the equivalent, between 36 inches and 42 inches high at all open sides on all scaffolds more than 10 feet above the ground or floor. The mid-rail, when required, must be 1 x 4-inch lumber or equivalent, and there must be toeboards at least 4 inches high. Use wire mesh according to paragraph OAR 437-004-0370(3)(o).

(p) All wood pole scaffolds 60 feet or less in height must be built according to tables 1 through 6. If they are more than 60 feet high, a registered professional engineer must design them. A copy of the typical drawings and specifications must be available to the employer and for inspection purposes. [Tables not included. See ED. NOTE.]

(5) Tubular welded frame scaffolds.

(a) Metal tubular frame scaffolds, including accessories such as braces, brackets, trusses, screw legs, ladders, etc., must be able to safely support four times the maximum intended load.

(b) Spacing of panels or frames must be consistent with the loads imposed.

(c) Scaffolds must have cross bracing or diagonal braces, or both, to secure vertical members together laterally. The cross braces must be long enough to automatically square and aline vertical members so that the erected scaffold is always plumb, square, and rigid. All brace connections must be secure.

(d) Scaffold legs must be on adjustable bases or plain bases on mud sills or other foundations adequate to support the maximum intended load.

(e) The frames must be one on top of the other with coupling or stacking pins to provide proper vertical alinement of the legs.

(f) Where uplift may occur, lock panels together vertically with pins or other equivalent means.

(g) Install guardrails, 2 x 4 inches or the equivalent, between 36 inches and 42 inches high at all open sides on all scaffolds more than 10 feet above the ground or floor. The mid-rail, when required, must be 1 x 4-inch lumber or equivalent, and there must be toeboards at least 4 inches high. Use wire mesh according to paragraph OAR 437-004-0370(3)(o).

(h) All tubular metal scaffolds must be able to support four times the maximum intended loads.

(i) To prevent movement, secure the scaffold to the building or structure at intervals not more than 30 feet horizontally and 26 feet vertically.

(j) Maximum permissible spans of planking must conform with paragraph OAR 437-004-0370(3)(g).

(k) A registered professional engineer must design drawings and specifications for frame scaffolds more than 125 feet high above the base plates. Copies must be available to the employer and for inspection purposes.

(l) Only competent and experienced personnel may set up tubular welded frame scaffolds.

(m) Frames and accessories for scaffolds must be in good repair. Remove them from use until they have no defects, unsafe conditions and are in compliance with this section. Do not use any broken, bent, excessively rusted, altered, or otherwise structurally damaged frames or accessories.

(n) Make periodic inspections of all welded frames and accessories. Complete any maintenance, including painting, or minor corrections recommended by the manufacturer, before further use.

(6) Boatswain's chairs.

(a) The chair seat must be not less than 12 by 24 inches, and 1-inch thick. Use a seat with reinforcement on the underside to prevent the board from splitting.

(b) The two fiber rope seat slings must be 5/8-inch diameter, reeved through the four seat holes to cross each other on the underside of the seat.

(c) Seat slings must be at least 3/8-inch wire rope when a worker is using a heat producing process such as gas or arc welding.

(d) Protect the worker with a safety life belt and lifeline attached to substantial members of the structure (not the scaffold), or to securely rigged lines, that will safely suspend the worker in case of a fall.

(e) The tackle must have the correct size ball bearing or bushed blocks and properly spliced 5/8-inch diameter first-grade manila.

(f) The roof irons, hooks, or the object to which the tackle is anchored must be secure. Tiebacks, when used, must be at right angles to the face of the building and securely fastened to a chimney.

(7) Horse scaffolds.

(a) Horse scaffolds must not be more than two tiers or 10 feet high.

(b) The members of the horses must be not less than those in Table 7. [Table not included. See ED. NOTE.]

(c) Space horses not more than 5 feet for medium duty and not more than 8 feet for light duty.

(d) When arranged in tiers, each horse must be directly over the horse in the tier below.

(e) On all scaffolds arranged in tiers, nail the legs to the planks to prevent displacement or thrust and cross brace each tier.

(f) Do not use horses or parts that are weak or defective.

(g) Install guardrails, 2 x 4 inches or the equivalent, between 36 inches and 42 inches high at all open sides on all scaffolds more than 10 feet above the ground or floor. The midrail, when required, must be 1 x 4-inch lumber or equivalent, and there must be toeboards at least 4 inches high. Use wire mesh according to paragraph OAR 437-004-0370(3)(o).

(8) Ladder-jack scaffolds.

(a) All ladder-jack scaffolds are only for light duty and may not be more than 20 feet above the floor or ground.

(b) All ladders used with ladder-jack scaffolds must be heavy-duty and designed and constructed according to 437-004-0340.

(c) The ladder jack must bear on the side rails in addition to the ladder rungs, or if bearing on rungs only, the bearing area must be at least 10 inches on each rung.

(d) To prevent slipping, use special devices, secure placement or anchor ladders used with ladder jacks.

(e) The wood platform planks must be not less than 2 inches (nominal) thick. Both metal and wood platform planks must overlap the bearing surface not less than 12 inches. The span between supports for wood must be not more than 8 feet. The platform must be at least 18 inches wide.

(f) Not more than two persons may be on any given 8 feet of a ladder-jack scaffold at one time.

(9) Roofing brackets.

(a) Roofing brackets must fit the pitch of the roof.

(b) Nail brackets in place in addition to using the pointed metal projections. Drive the nails all the way into the roof. When using rope supports, they must be first-grade manila of at least 3/4-inch diameter, or equivalent.

(c) A substantial catch platform must be below the working area of roofs more than 20 feet from the ground to eaves with a slope more than 3 inches in 12 inches and no parapet. In width the platform must extend 2 feet beyond the projection of the eaves and have a safety rail, midrail, and toeboard. This does not apply where employees are using a personal fall protection system.

(10) Crawling boards or chicken ladders.

(a) Crawling boards must be not less than 10 inches wide and 1 inch thick, with 1 x 1-1/2 inch cleats. The cleats must be equal in length to the width of the board and spaced at equal intervals not more than 24 inches. Drive nails through and clinch them on the underside. The crawling board must extend from the ridge pole to the eaves when used with roof construction, repair, or maintenance.

(b) A firmly fastened lifeline of at least 3/4-inch rope must be strung beside each crawling board for a handhold.

(c) Use adequate ridge hooks or equivalent effective means to secure crawling boards to the roof.

(11) Manually propelled mobile scaffolds.

(a) The height of free-standing mobile scaffold towers must not be more than four times the smallest base dimension.

(b) Casters must be able to support four times the maximum intended load. All casters must have a positive locking device.

(c) Scaffolds must have cross bracing and horizontal bracing.

(d) Platforms must have tight planking for the full width of the scaffold except for necessary entrance opening. Platforms must not be free to move.

(e) There must be a fixed or built-in ladder or stairway for access and exit.

(f) Move the mobile scaffold by force applied near or as close to the base as practicable. Keep the scaffold stable during movement. Move scaffolds only on level floors with no obstructions or openings.

(g) Workers may not ride on manually propelled scaffolds unless the following conditions exist:

(A) The floor or surface is within 3 degrees of level, and free from pits, holes, or obstructions;

(B) The smallest dimension of the scaffold base is at least one-half of the height. If it has outriggers, they must be on both sides of the staging;

(C) The wheels have rubber or similar resilient tires.

(h) Scaffolds must rest upon a suitable footing and be plumb. Lock the casters or wheels to prevent unintended movement.

(i) Guardrails made of lumber, not less than 2 X 4 inches (or other material providing equivalent protection), between 39 and 42 inches high, with a midrail and toeboards, must be on all open sides and ends of scaffolds more than 10 feet above the ground or floor. Toeboards must be at least 4 inches high. If people may pass under the scaffold, use wire mesh between the toeboard and top of the guardrail.

[ED. NOTE: Tables referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-0380
Manually Propelled Mobile Ladder Stands and Scaffolds (Towers)

Standards for the use of mobile work platforms and scaffolds are found in division 2, subdivision D, 1910.29 which applies to agricultural places of employment.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-0390
Other Working Surfaces

(1) Dockboards (bridge plates).

(a) Use bridge plates over any gap of more than 4 inches between two surfaces.

(b) Portable and powered dockboards must be strong enough to carry the load imposed on them.

(c) Anchor portable dockboards or use devices that prevent them from slipping.

(d) Powered dockboards must comply with Commercial Standard CS202-56 (1961) "Industrial Lifts and Hinged Loading Ramps" published by the U.S. Department of Commerce.

(e) Portable dockboards must have handholds or other ways to allow safe handling.

(f) There must be positive protection to prevent railroad cars from moving while dockboards or bridge plates are in position.

(g) Bridgeplates must be able to carry four times the heaviest expected load.

(h) Bridgeplates must sit evenly on the surface at each end. Repair or replace plates that teeter or rock.

(2) Floors.

(a) Floors, floor supports, and required appurtenances must be in good repair.

(b) Floors must not be slippery.

(3) Ramps and runways.

(a) Ramps and runways must be in safe condition.

(b) Ramps and runways for vehicles must be wide enough and have an even surface. They must have timber guards of not less than nominal 6-inch by 6-inch material set on nominal 3 inch blocks, or the equivalent, secured to the sides of the ramp or runway.

[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98.

Exits/Plans

437-004-0405
Exits and Emergency Action Plan

(1) Application. This does not apply to agricultural labor housing, agricultural buildings or mobile workplaces, such as vehicles or vessels. This applies to non-agricultural type buildings like offices and warehouses where employees spend most of their work time.

(2) Definitions.

(a) Exit. The part of the exit route, separate from other areas, that is a protected way out of a work area.

(b) Exit route. A continuous, unobstructed path from anywhere in a work area to a safe outside place. Exit routes are three dimensional.

(3) General.

(a) There must be permanent, unobstructed exit routes to get out of work areas safely during emergencies.

(b) There must be two or more exit routes depending on the size and layout of the work area and the number of people involved. A single exit route is acceptable only if all workers can get out through it safely during an emergency. Locate multiple exit routes apart from each other.

(4) Design.

(a) There must be a clear and unobstructed access and exit to any location more than 4 feet above or below the floor. Access may be by a ladder, stairs or ramp that complies with these standards.

(b) There must be unobstructed access to exit routes.

(A) Exit routes must not pass through or into lockable rooms or dead ends.

(B) Exit routes must be mostly level or have stairs or ramps.

(c) Exits must open from the inside without keys, tools or special knowledge. Devices that lock only from the outside are acceptable. There must be nothing on an exit door that could hinder its use during an emergency.

(d) An exit route must be able to handle the maximum number of persons allowed in the area it serves. Exit capacity must not decrease if the direction of travel changes.

(e) Exit routes must be at least 6 feet 8 inches high at all points.

(f) Exit routes must be at least 28 inches wide between handrails and wider if needed to handle the expected occupant load.

(g) Nothing can project into an exit route that reduces its minimum height or width.

(h) Exit routes must minimize danger to workers during emergencies.

(i) Exit routes must have adequate lighting.

(5) Marking.

(a) There must be exit signs at all emergency exits, except those that are obviously and clearly identifiable. Install additional directional signs to exits where necessary.

(b) If workers could mistake a nonexit for an exit, mark it, "Not an Exit" or mark it to indicate its real use.

(6) Special situations.

(a) Exit doors serving hazardous areas must swing in the direction of exit and open in a way that does not obstruct exit passageways. Do not allow anything to obstruct or pre- vent the use of an exit. During fire or panic, it must be easy to open all escape exit doors and windows from the inside.

(b) Rooms subject to extremes in temperature or with toxic atmospheres must have at least one door that opens from the inside. If this door is lockable from the outside, lighting and a set of instructions for opening the door must be inside the room on or near the door. It must be easy to find equipment needed to open the door from the inside. Also, inside the room there must be a way to communicate or a control that operates an alarm outside the building, or if other employees are on duty 24 hours a day, outside the room.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98; OSHA 9-2006, f. & cert. ef. 9-22-06

437-004-0450
Emergency Action Plan

(1) The plan must be in writing, be kept in the work place and be available to employees. Employers with fewer than 11 permanent, year-around workers may have a verbal plan.

(2) An emergency action plan must include:

(a) Procedures for reporting a fire or other emergency;

(b) Procedures for emergency operation or shut down of critical equipment;

(c) Procedures for rescue and medical duties; and

(d) Names or job titles of employees to contact to get more information about the duties of employees under the plan.

(3) There must be a communication system to alert employees or an employee alarm system with a distinctive signal for each purpose.

(4) The employer must review the emergency action plan with each covered employee:

(a) When the plan is new or the employee is new to the job;

(b) When the employee's responsibilities under the plan change; and

(c) When the plan changes.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

Manlifts

437-004-0570
Manlifts

(1) Application. Manlifts covered here have platforms or brackets and handholds mounted on or attached to an endless belt that runs vertically in one direction only. Its support and drive are through top and bottom pulleys. Manlifts are for moving people only. This does not cover moving stairways, elevators with enclosed platforms ("Paternoster" elevators), gravity lifts nor conveyors used only to convey material.

(2) Definitions.

(a) Closed type. A cup-shaped device, open at the top in the direction of travel, and closed at the bottom.

(b) Handhold (Handgrip). A device attached to the belt for the passenger to hold.

(c) Limit switch. A device to cut off the power to the motor and apply the brake to stop the carrier when a loaded step passes the terminal landing.

(d) Manlift. A power-driven endless belt moving only in one direction and with steps or platforms and handholds for the transportation of personnel from floor to floor.

(e) Open type. One with a fully exposed handgrip surface that can be encircled by the passenger's fingers.

(f) Rated speed. The designed speed of the device.

(g) Split-rail switch. An electric limit switch operated mechanically by the rollers on the manlift steps. It has an additional hinged or "split" rail, mounted on the regular guide rail, over which the step rollers pass. It is spring loaded in the "split" position. If the step supports no load, the rollers will "bump" over the switch. If a loaded step passes over it, the split rail will be forced straight, tripping the switch and opening the electrical circuit.

(h) Step (platform). A step is a passenger carrying unit.

(i) Travel. The travel is the distance between the centers of the top and bottom pulleys.

(3) General requirements.

(a) Design requirements. Equipment installed after June 27, 1974 must comply with "American National Standard for Manlifts ANSI A90.1-1969."

(b) Floor openings.

(A) Allowable size. Floor openings for both the "up" and "down" runs must be between 28 inches and 36 inches wide for a 12-inch belt; between 34 inches and 38 inches wide for a 14-inch belt; and between 36 inches and 40 inches wide for a 16-inch belt. They must extend at least 24 inches, but not more than 28 inches from the face of the belt.

(B) Uniformity. All floor openings for a manlift must be the same size and approximately circular.

(c) Landing.

(A) Vertical clearance. The clearance between the floor or mounting platform and the lower edge for the conical guard above it required by (d) below must be at least 7 feet 6 inches. Do not allow access to the manlift if this clearance is not possible. Enclose the manlift runway where it passes through the floor.

(B) Clear landing space. Keep the landing space around the floor openings unobstructed and clear. This landing space will be at least 2 feet wide from the edge of the floor opening.

(C) Lighting and landing. Lighting must be not less than 5 footcandles, at each floor landing when the lift running.

NOTE: A 40 watt or larger light bulb should provide the equivalent to 5 footcandles.

(D) Landing surface. There must be safe footing at landing surfaces.

(E) Emergency landings. If the travel is 50 feet or more between floor landings, there must be one or more emergency landings. There

must be a landing (either floor or emergency) for every 25 feet or less of manlift travel.

(i) Emergency landings must be accessible from both the "up" and "down" rungs of the manlift. They must give access to the ladder as required in OAR 437-004-0570(i).

(ii) Completely enclose emergency landings with a standard railing and toeboard.

(iii) Platforms built for access to bucket elevators or other equipment for inspection or maintenance may also be emergency landings. All such platforms are then part of the emergency landing and must have standard railings and toeboards.

(d) Guards on underside of floor openings.

(A) Fixed type. The ascending side of the manlift floor openings must have a bevel guard or cone meeting the following requirements:

(i) The cone must be at an angle of not less than 45° with the horizontal. Use an angle of 60° or greater where ceiling heights permit.

(ii) The lower edge of this guard must extend at least 42 inches outward from any handhold on the belt. It must not extend beyond the upper surface of the floor above.

(iii) The cone must be at least No. 18 U.S. gauge sheet steel or material of equivalent strength or stiffness. Roll the lower edge to a minimum diameter of 1/2 inch. The interior must be smooth with no rivets, bolts or screws protruding.

(B) Floating type. A floating safety cone is acceptable instead of the fixed guards in (A) above. They must be mounted on hinges at least 6 inches below the underside of the floor. A force of 2 pounds on the edge of the cone closest to the hinge must actuate a limit switch. The maximum depth of this floating cone is 12 inches.

(e) Protection of entrances and exits.

(A) Guardrail requirement. Guard the entrances and exits at all floor landings with access to the manlift with a maze (staggered railing) or a standard guardrail with self-closing gates.

(B) Construction. The rails will be standard guardrails with toeboards as described in OAR 437-004-0320(6).

(C) Gates. Gates must open outward and be self-closing. Round the corners of gates.

(D) Maze. Maze or staggered openings must offer no direct passage between enclosure and outer floor space.

(E) Except where building layout prevents it, entrances at all landings must be in the same relative position.

(f) Guards for openings.

(A) Construction. Use a wall, standard guardrail and toeboard or wire mesh panels to guard the floor opening at each landing on sides not used for entrance or exit.

(B) Height and location. Guards for openings must be at least 42 inches high on the up-running side and 66 inches on the down-running side.

(g) Bottom arrangement.

(A) Bottom landing. At the bottom landing the clear area must not be smaller than the area enclosed by the guardrails on the floors above. Any wall in front of the down-running side of the belt must be at least 48 inches from the face of the belt. There must be no stairs or ladders in this space.

(B) Location of lower pulley. The lower (boot) pulley must be supported by the lowest landing served. Guard the sides of the pulley support to prevent contact with the pulley or the steps.

(C) Mounting platform. There must be a mounting platform in front or to one side of the up run at the lowest landing. This isn't necessary if the floor level allows the floor or platform to be at or above the point where the upper surface of the ascending step completes its turn and becomes horizontal.

(D) Guardrails. Guard the area on the downside of the manlift according to OAR 437-004-0570(e). Protect the area between the belt and the platform with a standard guardrail.

(h) Top arrangements.

(A) Clearance from floor. There must be at least 11 feet of top clearance above the top terminal landing. This clearance must be from a plane through each face of the belt to a vertical cylindrical plane having a diameter 2 feet greater than the diameter of the floor opening, extending upward from the top floor to the ceiling on the up-running side of the belt. There must be no encroachment of structural or machine supporting members within this space.

(B) Pulley clearance.

(i) There must be at least 5 feet between the center of the head pulley shaft and any ceiling obstruction.

(ii) The center of the head pulley shaft must be at least 6 feet above the top terminal landing.

(C) Emergency grab rail. There must be an emergency grab bar or rail and platform at the head pulley when the distance to the head pulley is more than 6 feet above the top landing. Otherwise there must be only a grab bar or rail to allow the rider to swing free if the emergency stops don't work.

(i) Emergency exit ladder. Provide a fixed metal ladder accessible from both the "up" and "down" run of the manlift for the entire travel of the manlift. The ladder must meet ANSI A14.3-1956, Safety Code for Fixed Ladders.

(j) Superstructure bracing. Secure manlift rails to avoid spreading, vibration, and misalignment.

(k) Lighting.

(A) General. There must be adequate lighting for both runs of the manlift when it is running. (See OAR 437-004-0570(3)(c)(C) for lighting requirements at landings.)

(B) Control of lighting. Circuits for lighting of manlift runways must be permanently tied to the building circuits with no switches or there must be switches at each landing. Where there are separate switches at each landing, every switch must work all lights for the entire runway.

(l) Weather protection. Protect the manlift and its driving mechanism from the weather.

(4) Mechanical requirements.

(a) Machines, general.

(A) Brakes. Brakes for stopping and holding a manlift must be inherently self-engaging, require power or force from an external source to cause disengagement. The brake must release electrically and work on the motor shaft for direct-connected units or the input shaft for belt-driven units. The brake must be able to stop and hold the manlift when the descending side is loaded with 250 pounds on each step.

(B) Belt.

(i) The belts must be of hard-woven canvas, rubber-coated canvas, leather or other material meeting the strength requirements of OAR 437-004-0570(3)(a). It must also have a coefficient of friction that when used with an adequate tension device will meet the brake test in (4)(a)(A) above.

(ii) The belt must be at least 12 inches wide for travel up to 100 feet, at least 14 inches wide for travel more than 100 feet and up to 150 feet and 16 inches wide for travel more than 150 feet.

(C) Do not splice or use repaired manlift belts.

(b) Maximum speed. Do not install or use a manlift designed for a speed over 80 feet per minute.

(c) Platforms or steps.

(A) Minimum depth. Steps or platforms must be 12 inches to 14 inches deep, measured from the belt to the edge of the step or platform.

(B) Width. The width of the step or platform must be at least as wide as the belt to which it is attached.

(C) Distance between steps. The distance between steps must be equal and at least 16 feet measured from the upper surface of one step to the upper surface of the next step above it.

(D) Angle of step. The surface of the step must be at approximately a right angle with the "up" and "down" run of the belt and must travel an approximate horizontal position with the "up" and "down" run of the belt.

(E) Surfaces. The upper or working surfaces of the step must be nonslip (coefficient of friction not less than 0.5) or have a secure nonslip covering.

(F) Strength of step supports. When loaded with 400 pounds at the approximate center of the step, step frames or supports and their guides must be strong enough to:

(i) Prevent the disengagement of any step roller.

(ii) Prevent any appreciable misalignment.

(iii) Prevent any visible deformation of the steps or its support.

(G) Prohibition of steps without handholds. All steps have a corresponding handhold above or below them meeting the requirements of OAR 437-004-0570(4)(d). When removing a step or steps, remove corresponding handholds before the lift is restarted.

(d) Handholds.

(A) Location. Handholds attached to the belt must be at least 4 feet but not more than 4 feet 8 inches above the step tread. Locate them on both "up" and "down" run of the belt.

(B) Size. The grab surface of the handhold must be at least 4-1/2 inches wide, at least 3 inches deep and have 2 inches of clearance from the belt. Fastenings for handholds must be at least 1 inch from the edge of the belt.

(C) Strength. The handhold must withstand a load of 300 pounds applied parallel to the run of the belt.

(D) Prohibition of handhold without steps. All handholds must have a corresponding step. When removing handholds permanently or temporarily, remove the corresponding steps and handholds for the opposite direction of travel before restarting the lift.

(E) Type. All handholds must be of the closed type.

(e) Up limit stops.

(A) Requirements. There must be two separate automatic stop devices to cut off the power and apply the brake when a loaded step passes the upper terminal landing. One of these must be a split-rail switch mechanically operated by the step roller and located not more than 6 inches above the top terminal landing. The second automatic stop device may have any of the following:

(i) Any split-rail switch placed 6 inches above and on the side opposite the first limit switch.

(ii) An electronic device.

(iii) A switch actuated by a lever, rod or plate, the latter to be on the "up" side of the head pulley so as to just clear a passing step.

(B) Manual reset location. After a stop device halts the manlift reset must be done manually. The device must be where a person resetting it would have a clear view of both the "up" and "down" runs of the manlift. It must be impossible to reset the device from any step or platform.

(C) Cut-off point. The initial limit stop device must stop the manlift before the loaded step has reached a point 24 inches above the top terminal landing.

(D) Electrical requirements.

(i) When switches open the main motor circuit directly they must be the multi-pole type.

(ii) When using electronic devices they must be designed and installed so that failure will shut off the power to the driving motor.

(iii) Where flammable vapors or combustible dusts may be present, electrical installations must be according to the requirements of Division 4/S for such locations.

(iv) Controller contacts carrying the main motor current must be oil immersed, copper to carbon or equal, except where the circuit is broken at two or more points at once.

(f) Emergency stop.

(A) General. There must be an emergency stop device.

(B) Location. It must be easy reach from the ascending and descending runs of the belt.

(C) Operation. This stop device must cut off the power and apply the brake when pulled in the direction of travel.

(D) Rope. If made of rope, it must be at least 3/8 inch in diameter. Do not use wire rope unless it has marlin covering or equivalent.

(g) Instruction and warning signs.

(A) Instruction signs at landings or belts. At each landing or stenciled on the belt there must be conspicuous and easily read instruction signs for the use of the manlift. The instructions must read as follows:

Face the Belt.
Use the Handholds.
To Stop - Pull Rope.

(B) Top floor warning sign and light.

(i) At the top floor there must be a lighted sign with the following wording: "**TOP FLOOR — GET OFF**." Signs must have block letters at least 2 inches high. Locate the sign within easy view of an ascending passenger and not more than 2 feet above the top terminal landing.

(ii) In addition to the sign required by (4)(g)(B)(i) above, a red warning light of at least 40-watts must be immediately below the upper landing terminal so as to shine in the passenger's face.

(C) Visitor warning. The following conspicuous sign must be at each landing: — AUTHORIZED PERSONNEL ONLY —

(5) People only. Do not move objects or material on a manlift. Manlifts are for people only.

(6) Periodic inspection.

(a) Frequency. A competent designated person must inspect manlifts at least every 30 days. Check limit switches weekly. Do not use unsafe manlifts until repairs make them safe again.

(b) Items covered. This periodic inspection must cover at least the following items:

(A) Steps.
(B) Step Fastenings.
(C) Rails.
(D) Rail Supports and Fastenings.
(E) Rollers and Slides.
(F) Belt and Belt Tension.
(G) Handholds and Fastenings.
(H) Floor Landings.
(I) Guardrails.
(J) Lubrication.
(K) Limit Switches.
(L) Warning Signs and Lights.
(M) Illumination.
(N) Drive Pulley.
(O) Bottom (boot) Pulley and Clearance.
(P) Pulley Supports.
(Q) Motor.
(R) Driving Mechanism.
(S) Brake.
(T) Electrical Switches.
(U) Vibration and Misalignment.
(V) "Skip" on up or down run when mounting step (indicating worn gears).

(c) Inspection record. Keep a certification record of each inspection. It must include the date of the inspection, the signature of the inspector and the serial number or other identifier of the manlift. On request, this record must be made available to OR-OSHA.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

Health/Environment

437-004-0610
Ventilation

Agricultural employers that do abrasive blasting, grinding, polishing and buffing or spray finishing in any part of their operation must follow the standards in OAR 437-002-1910.94 and 437-002-0081 found in subdivision 2/G.

These paraphrased excerpts are from 1910.94, Ventilation, in the OR-OSHA General Industry Standards, Division 2/G. If the amount or duration of the covered work or processes you do could meet one of the criteria below, consult 437-002-1910.94 in Division 2/G.

Grinding, polishing and buffing.

1910.94(b)(2) Application. You must use a mechanical local exhaust ventilation system to keep the 8-hour time-weighted average (TWA) exposures to substances in 437-004-9000 or other parts of this division, within required limits when dry grinding, dry polishing or buffing whether or not employees use a respirator.

Spray finishing.

1910.94(c)(8) Scope. This paragraph (c) does not apply to exterior spraying of buildings, fixed tanks or similar structures nor to small portable spraying apparatus not used repeatedly in the same location

Open surface tanks.

1910.94(d)(13)(i) Scope. This paragraph (d) applies to all work involving the immersion of materials in liquids, or in the vapors of such liquids, for cleaning or altering their surfaces, or adding or imparting a finish or changing the character of the materials. It also applies to the subsequent removal from the liquids or vapors, draining, and drying. Such work includes washing, pickling, quenching, dyeing, dipping, bleaching, degreasing, alkaline cleaning, stripping, rinsing and similar processes. It does not include molten materials handling or surface coating.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-0630
Noise Exposure

(1) You must have a noise monitoring program (see (3) below) when an employee's exposure equals or is more than an 8-hour time-weighted average (TWA) of 85 decibels (dB).

NOTE: Most large or older farm machines and tractors, especially those without cabs, have the potential to produce more than 85 decibels of noise. Audiologists often say that if you have to shout or significantly raise your voice to talk with somebody 2 feet away, the noise is probably at the action level of 85 decibels.

(2) Noise classified as impulse or impact noise cannot be more than 140 dB peak sound pressure level.

NOTE: These noises are sudden and sharp and include such things as the firing of a weapon and sudden release of pressurized air.

(3) Noise Monitoring Employers must use a noise sampling strategy that determines which employees need to be part of a hearing conservation program. This sampling will also determine their need for hearing protection or when to consider engineering controls.

(a) Use a sound level meter or a dosimeter to do noise level surveys over an 8-hour period to get a time-weighted average. When the employees are mobile or there are significant changes in the sound level or impulse noise components, you must use representative personal sampling unless area samples produce equal results.

(b) Repeat the noise surveys when there is a change in production, process, equipment or controls that increases noise levels or exposures to or above the action level. Also repeat the surveys if the increase in noise may require additional noise reduction from hearing protectors already in use.

(c) Notify each monitored employee of the noise monitoring results if the exposure was at or above the 85 decibel TWA.

(d) The employer must give affected employees or their representatives the opportunity to observe the noise survey process.

WARNING: Employer responsibilities in this standard require special knowledge and equipment to be done successfully. In most cases it is advisable and in some cases mandatory to have these tests done by a professional. See OAR 437-004-0630(5)(c).

(4) Engineering Controls If the noise survey results are more than in **Table 1** below, use administrative or engineering controls to reduce the noise, if feasible. If not feasible or if the engineering or administrative controls fail to reduce the noise to levels within **Table 1** limits, provide appropriate training and enforce the use of hearing protection to reduce the noise to levels within the **Table 1**. [Table not included. See ED. NOTE.]

(a) You must provide all hearing protection equipment and devices without cost to the employee. Employees may voluntarily elect to use their own equipment but the employer is responsible to assure that it provides adequate protection.

(b) All hearing protection equipment and devices must be kept serviceable and clean according to the manufacturer's recommendations or accepted audiological practices. **Table 1** [Table not included. See ED. NOTE.]

(5) Hearing Conservation Program Establish and maintain an effective hearing conservation program for employees whose noise exposure equals or is more than an 8-hour TWA of 85 decibels, or an equivalent dose, before attenuation by hearing protectors. The program must include an audiometric (hearing) testing program, employee training and personal hearing protection.

(a) All parts of the hearing conservation program must be without charge to employees.

(b) You must tell the employees to avoid high levels of non-occupational noise exposure during the 14-hour period before any hearing test. Also, you must assure that the employee uses hearing protection or avoids noise exposure on the job for 14 hours before getting a baseline hearing test.

(c) Only a technician certified by the Council of Accreditation in Occupational Hearing Conservation, a licensed or certified audiologist, otolaryngologist or other physician may do a hearing test. Certified technicians must be responsible to an audiologist, otolaryngologist or physician.

NOTE: Audiograms must meet the requirements of OAR 437-002-1910.95, Appendix C, Audio- metric Measuring Instruments. The background noise in the test room must comply with OAR 437-002-1910.95, Appendix D, Audiometric Test Rooms. The audiometers used for the test and the methods must comply with the American National Standard Specifications for Audiometers, S3.6-1969. Oregon OSHA strongly suggests that employers hire a professional to provide services required by this standard.

(6) There are two types of hearing tests required by this standard.

(a) A baseline hearing test must be done within 6 months of the employees first exposure to noise at or above the action level. This test is the comparison base for future tests.

(b) After the baseline audiogram is done, each employee still exposed at or above the 8-hour TWA must have annual hearing tests. Compare the annual tests to the baseline tests to determine if there has been a standard threshold shift.

(c) The audiologist, otolaryngologist or physician evaluation of the audiogram may revise the baseline when the standard threshold shift in hearing revealed by the test is persistent or the hearing threshold shows an improvement over the baseline audiogram.

(7) For purposes of this standard a standard threshold shift of hearing compared to the baseline hearing test is called a standard threshold shift and is an average of 10 dB or more at 2000, 3000, and 4000 Hz in either ear. In Oregon there is no allowance from age correction charts for this calculation.

(8) Follow-Up The qualified person doing the hearing test will compare the results of the annual hearing test to the baseline audiogram to see if it is valid and if there has been a standard threshold shift change in hearing as in (7) above.

(a) The employer may retest to assure validity within 30 days and use that as the annual test.

(b) An audiologist, otolaryngologist or physician must review all problem audiograms to determine the need for more evaluation. This may include follow up as described below.

(c) The employer is responsible to pay for this evaluation.

(d) The employer must assure that the reviewing audiologist, otolaryngologist or physician has the following information:

(A) A copy of the requirements for hearing conservation in this section.

(B) The employees baseline and most recent audiogram.

(C)Measurements of the noise levels in the audiometric test room.

(D) Records of audiometer calibrations as required by this section.

(9) If an employee's hearing test reveals a standard threshold shift, the employer must do (a) through (d) below unless the physician determines that the shift is not work-related or aggravated by work-related noise exposure.

(a) Fit employees with hearing protection, train them in its use and care. Require them to use it.

(b) Refit and retrain employees already using hearing protectors. Give them hearing protectors that offer more noise reduction.

(c) Refer the employee for a clinical audiological evaluation or an otological examination, as appropriate, if additional testing is necessary. Also refer the employee to the physician if the wearing of hearing protectors causes or aggravates a medical problem of the ear.

(d) Inform the employee of the need for an otological examination if a medical pathology of the ear could be unrelated to the use of hearing protectors.

(10) If future hearing tests show that the standard threshold shift of hearing is not persistent and the noise exposure is less than a 8-hour TWA of 90 decibels the employer must tell the employee of the new results and may end the required use of hearing protectors.

(11) Training All employees exposed at or above the 8-hour TWA of 85 decibels must receive initial and annual training. Update the training program if there are changes in the hearing protection or work processes. The training program must include:

(a) The effects of noise on hearing.

(b) The purpose of hearing protectors, the advantages, disadvantages and attenuation of various types and instructions on selection, fitting, use and care.

(c) The purpose of the hearing test and an explanation of the test procedures.

(12) Hearing Protection Hearing protection must be available at no cost to all employees exposed to an 8-hour TWA of 85 dB. Wearing of hearing protection that offers adequate noise reduction is mandatory for employees exposed at 90 dB TWA. In addition, if an employee has had a standard threshold shift, they must wear hearing protection at 85 decibels or more.

(a) The employer must ensure proper initial fitting of the hearing protectors, supervise the correct use of them, and provide training in the use and care of the hearing protectors.

(b) The employees must have the chance to select the hearing protectors from a variety of appropriate hearing protectors and the hearing protectors must reduce the noise to at least an 8-hour TWA of 90 decibels.

(c) When noise exposure increases enough that the hearing protectors may no longer give proper protection, reevaluate the adequacy of the protectors noise reduction. Pro- vide more effective hearing protection where necessary.

(13) Recordkeeping The employer must keep employees noise exposure records according to the Access to Employee Exposure and Medical Records standard OAR 437-004-0005. The records must be

available to employees, former employees, representatives designated by the employee and Oregon OSHA. The test record must include:

(a) Name and job classification of the employee.

(b) Date of the audiogram.

(c) The examiner's name.

(d) Date of the last acoustic or exhaustive calibration of the audiometer.

(e) Employees most recent noise exposure assessment.

(14) If you sell your business, give the buyer all records required by this section.

NOTE: The professional who does your audiometric work will supply most of the records required by this section.

[ED. NOTE: Tables referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(4)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98; OSHA 9-2006, f. & cert. ef. 9-22-06

437-004-0650
Ionizing Radiation

NOTE: The Oregon Department of Human Resources, Health Division, enforces 1910.96 Ionizing Radiation and 437-004-0650 in Oregon, under an Interagency Agreement with the Department of Consumer and Business Services, OR-OSHA Division. Copies are available from OR-OSHA and the Health Division.

In addition to and not instead of 1910.96, the rules and regulations in ORS 453.0605 to 453.0745, Control of Radiation, administered by the Department of Human Resources, Oregon Health Division, apply to all employees working with or near ionizing radiation sources.

Stat. Auth.: ORS 654.025(2) & 656.726(3)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

Hazardous Materials

437-004-0710
Compressed Gases

(1) Employers are responsible to keep compressed gas cylinders under their control in a safe condition by doing visual inspections that cover these points:

(a) Corrosion or pitting which reduces the wall thickness.

(b) Cuts, gouges or digs.

(c) Dents, bulges or other distortion or unsymmetrical condition or appearance.

(d) Distortion, looseness or failure of welds in the cylinder rings.

(e) Evidence of having been burned or exposed to fire, arc or torch burns.

(f) Damage to cylinder neck threads or inability to obtain a gas-tight seal by reasonable methods.

(2) If a compressed gas cylinder or tank shows any of the above conditions, or any other condition that could affect its safety, do not use it. Do not return it to service until it is thoroughly inspected by a person qualified to do so and they find it to be safe and in compliance with the Compressed Gas Association directives.

(3) The handling, storage, and use of all compressed gases in cylinders, portable tanks or motor vehicle cargo tanks must comply with the following:

(a) Do not use cylinders without a legible label identifying the contents.

(b) Keep the cylinder caps on except when the gauges are on the cylinder.

(c) Do not use cylinders for rollers, supports or for any purpose other than to contain the product.

(d) Do not place cylinders where they may become part of an electrical circuit. Do not ground cylinders used in conjunction with electric welding.

(e) Do not subject cylinders to temperatures above 125°F. If ice or snow accumulates on a cylinder, thaw at room temperature or with water less than 125°F.

(f) Contact your gas supplier when in doubt about proper handling of the cylinder.

(g) When returning empty cylinders, close the valve and replace the valve protection cap.

(h) Do not drag or slide cylinders.

(i) Do not drop or permit cylinders to strike against each other or other surfaces violently.

(j) Do not lift cylinders by the protective cap or with magnets.

(k) Do not suspend cylinders from ropes, chains or slings unless the cylinder was manufactured with an appropriate lifting attachment or suitable cradles or platforms are used.

(l) Post the storage areas with the name of the gases to be stored.

(m) Store cylinders away from ignitable substances such as gasoline or waste or combustibles in bulk including oil.

(n) Store cylinders upright and secure to prevent them from being knocked over.

(o) Secure cylinders when in use.

(4) Compressed gas cylinders, portable tanks, and cargo tanks must have pressure relief devices.

Stat. Auth.: ORS 654.025(2) & 656.726(3)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-0715
Acetylene

(1) Cylinders. The transfer, handling, storage, and use of acetylene in cylinders must comply with the general requirements of compressed gases.

(2) Piped systems. The piped systems for the transfer and distribution of acetylene must comply with the Compressed Gas Association Pamphlet G-1.3-1970.

[Publications: Publications referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(3)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-0716
Oxygen

(1) Scope. This applies to the installation of bulk oxygen systems on agricultural establishments.

(2) Bulk oxygen systems.

(a) Definition. A bulk oxygen system is an assembly of equipment, such as oxygen storage containers, pressure regulators, safety devices, vaporizers, manifolds, and interconnecting piping, with storage capacity more than 13,000 cubic feet of oxygen, Normal Temperature and Pressure (NTP), connected in service or ready for service, or more than 25,000 cubic feet of oxygen (NTP) including unconnected reserves on hand at the site. The bulk oxygen system ends where oxygen at service pressure first enters the supply line. The oxygen containers may be stationary or movable, and the oxygen may be gas or liquid.

(b) Location.

(A) General. Bulk oxygen storage systems must be above ground, outdoors or in a noncombustible building, adequately vented and used exclusively for oxygen storage. Locate containers and associated equipment so there is no exposure to electric power lines, flammable or combustible liquid lines, or flammable gas lines.

(B) Accessibility. Locate the system so that it is readily accessible to mobile supply equipment at ground level and to authorized personnel.

(C) Leakage. For liquid oxygen storage, provide noncombustible surfacing in the area where any leakage might fall during operation of the system and filling of the container. Asphalt or bituminous paving is combustible.

(D) Elevation. When locating bulk oxygen systems near above-ground flammable or combustible liquid storage that may be either indoors or outdoors, it is advisable to locate the system on ground higher than the flammable or combustible liquid storage.

(E) Dikes. When a bulk oxygen system must be lower than adjacent flammable or combustible liquid storage, there must be suitable means (such as diking, diversion curbs, or grading) to prevent accumulation of liquids under the bulk oxygen system.

(c) Distance between systems and exposures.

(A) The minimum distance from any bulk oxygen storage container to exposures, measured in the most direct line except as in (2)(c)(A)(v) and (vii) below, must be as follows:

(i) Fifty feet from combustible structures.

(ii) Twenty-five feet from structures with fire-resistive exterior walls or sprinklered buildings of other construction, but not less than one-half the height of the adjacent side wall of the structure.

(iii) At least 10 feet from any opening in adjacent walls of fire resistive structures. Spacing from such structures must be adequate to permit maintenance, but not be less than 1 foot.

(iv) Flammable liquid storage above-ground. [Table not included. See ED. NOTE.]

(v) Flammable liquid storage below-ground. [Table not included. See ED. NOTE.]

(vi) Combustible liquid storage above-ground. [Table not included. See ED. NOTE.]

(vii) Combustible liquid storage below ground. [Table not included. See ED. NOTE.]

(viii) Flammable gas storage. (Such as compressed flammable gases, liquefied flammable gases and flammable gases in low pressure gas holders). [Table not included. See ED. NOTE.]

(ix) Fifty feet from solid materials that burn rapidly, such as excelsior or paper.

(x) Twenty-five feet from solid materials that burn slowly, such as coal and heavy timber.

(xi) Seventy-five feet in one direction and 35 feet in approximately 90° direction from confining walls (not including firewalls less than 20 feet high) to provide adequate ventilation in courtyards and similar confining areas.

(xii) Twenty-five feet from areas such as offices, lunchrooms, locker rooms, time clock areas, and similar locations where people may gather.

(B) Exceptions. The distances in (2)(c)(A)(i), (ii), (iv) to (x) above, do not apply where there are protective structures, like firewalls, between the bulk oxygen storage installation and the exposure high enough to safeguard the oxygen storage systems. In those cases, the bulk oxygen storage installation may be a minimum distance of 1 foot from the firewall.

(d) Storage containers.

(A) Permanently installed containers must be on substantial noncombustible supports on firm noncombustible foundations.

(B) Make liquid oxygen storage containers from materials meeting the impact test requirements of paragraph UG-84 of ASME Boiler and Pressure Vessel Code, Section VIII — Unfired Pressure Vessels — 1968. Containers operating at pressures more than 15 pounds per square inch gage (p.s.i.g.) must comply with ASME Boiler and Pressure Vessel Code, Section VII — Unfired Pressure Vessels — 1968. Insulation on the liquid oxygen container must be noncombustible.

(C) High-pressure gaseous oxygen containers must comply with one of the following:

(i) ASME Boiler and Pressure Vessel Code, Section VIII — Unfired Pressure Vessels — 1968.

(ii) DOT Specifications and Regulations.

(e) Piping, tubing, and fittings.

(A) Piping, tubing, and fittings must be suitable for oxygen service and for the pressures and temperatures involved.

(B) Piping and tubing must conform to Section 2 — Gas and Air Piping Systems of Code for Pressure Piping, American National Standard (ANSI), B31.1-1967 with addenda B31.10a-1969.

(C) Fabricate piping or tubing for operating temperatures below 20°F from materials meeting the impact test requirements of paragraph UG-84 of ASME Boiler and Pressure Vessel Code, Section VIII — Unfired Pressure Vessels — 1968, when tested at the anticipated minimum operating temperature.

(f) Safety relief devices.

(A) Equip bulk oxygen storage containers, regardless of design pressure, with safety relief devices required by the ASME code or the DOT specifications and regulations.

(B) Bulk oxygen storage containers designed and constructed according to DOT specifications must have safety relief devices as required.

(C) Bulk oxygen storage containers that comply with the ASME Boiler and Pressure Vessel Code, Section VIII — Unfired Pressure Vessel — 1968 must have safety relief devices that comply with the Compressed Gas Association Pamphlet "Safety Relief Device Standards for Compressed Gas Storage Containers," S-1, Part 3.

(D) Equip insulation casings on liquid oxygen containers with suitable safety relief devices.

(E) Safety relief devices must not allow moisture that would interfere with proper operation to collect and freeze.

(g) Liquid oxygen vaporizers.

(A) Anchor the vaporizer and use connecting piping sufficiently flexible to compensate for expansion and contraction due to temperature changes.

(B) Adequately protect the vaporizer and its piping on the oxygen and heating medium sections with safety relief devices.

(C) Heat used in an oxygen vaporizer must be indirectly supplied only through media such as steam, air, water or water solutions that do not react with oxygen.

(D) If electric heaters provide the primary source of heat, ground the vaporizing system.

(h) Equipment assembly and installation.

(A) Remove oil, grease or other readily oxidizable materials before placing the system in service.

(B) Make joints in piping and tubing by welding or by using flanged, threaded, slip, or compression fittings. Gaskets or thread sealants must be suitable for oxygen service.

(C) Valves, gages, regulators, and other accessories must be suitable for oxygen service.

(D) People familiar with proper practices must supervise the installation of bulk oxygen systems.

(E) After installation test and prove tight all field erected piping at maximum operating pressure. Use oil-free, non-flammable substances for testing.

(F) Protect storage containers, piping, valves, regulating equipment, and other accessories from physical damage and tampering.

(G) Adequately ventilate enclosures for oxygen control or operating equipment.

(H) The bulk oxygen storage location must have permanent placards that say: "**OXYGEN — NO SMOKING — NO OPEN FLAMES**," or an equivalent warning.

(I) Bulk oxygen installations are not hazardous locations as defined and covered in Division 4/S. Therefore, general purpose or weatherproof types of electrical wiring and equipment are acceptable depending on whether the installation is indoors or outdoors. Install this equipment according to Division 4/S.

(i) For installations that require operation of equipment by the user, keep legible instructions by the equipment.

(j) Cut back or clear combustible growth 15 feet from any bulk oxygen storage container.

[ED. NOTE: Tables referenced are available from the agency.]

[Publications: Publications referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(3)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-0717

Hydrogen

Agricultural employers that use hydrogen in any part of their operation must comply with OAR 437-002-1910.103 in subdivision 2/H.

NOTE: For your convenience, this is the scope statement from that standard to help you know if your work falls under its jurisdiction.

(2) Scope

(i) Gaseous hydrogen systems.

(a) Paragraph (b) of this section applies to the installation of gaseous hydrogen systems on consumer premises where the hydrogen supply to the consumer premises originates outside the consumer premises and is delivered by mobile equipment.

(b) Paragraph (b) of this section does not apply to gaseous hydrogen systems having a total hydrogen content of less than 400 cubic feet, nor to hydrogen manufacturing plants or other establishments operated by the hydrogen supplier or his agent for the purpose of storing hydrogen and refilling portable containers, trailers, mobile supply trucks, or tank cars.

(ii) Liquefied hydrogen systems.

(a) Paragraph (c) of this section applies to the installation of liquefied hydrogen systems on consumer premises.

(b) Paragraph (c) of this section does not apply to liquefied hydrogen portable containers of less than 150 liters (39.63 gallons) capacity; nor to liquefied hydrogen manufacturing plants or other establishments operated by the hydrogen supplier or his agent for the sole purpose of storing liquefied hydrogen and refilling portable containers, trailers, mobile supply trucks, or tank cars.

Stat. Auth.: ORS 654.025(2) & 656.726(3)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-0720

Flammable and Combustible Liquids

(1) Definitions:

(a) Approved — Acceptance or approval by a responsible U.S. Federal agency such as Bureau of Mines, Department of Transportation, U.S. Coast Guard, etc., or by a responsible agency of the State of Oregon, or by a nationally recognized testing laboratory such

as Factory Mutual Engineering Corp., or Underwriters' Laboratories, Inc. which issue approvals for such equipment.

(b) Closed container — A container sealed with a lid or other device that prevents the loss of liquid or vapor at ordinary temperatures.

(c) Combustible liquids — See definition in 4/B, OAR 437-004-0100.

NOTE: Examples of some common combustible liquids are diesel fuel, fuel oils, kerosene and Stoddard Solvent.

(d) Flammable — Capable of being easily ignited, burning intensely, or having a rapid rate of flame spread.

(e) Flammable liquids — See definition in 4/B, OAR 437-004-0100.

NOTE: Examples of some common flammable liquids are:
(A) Ethers and other highly volatile liquids (Class IA).
(B) Gasolines (Class IB).
(C) Methyl Alcohol (Class IC).

(f) Portable tank — A closed container with a liquid capacity more than 60 U.S. gallons (230 liters) and not intended for fixed installation.

(g) Safety can — An approved closed container, of not more than 5 gallons (20 liters) capacity, with a flash-arresting screen, spring-closing lid and spout cover and designed so that it will safely relieve internal pressure when subjected to fire.

(h) Salamander — A self-contained heating device using combustibles and not vented to the outside atmosphere.

NOTE: Catalytic-type heaters are included in this definition as well as flame-type heaters.

(2) Storage and transporting.

(a) The storage of flammable and combustible liquids in containers with a capacity of 60 gallons (230 liters) or more must be in fixed or portable tanks. Such tanks must meet the material and design requirements in National Fire Protection Association Bulletins NR 340 or NR 395.

NOTE: The NFPA bulletins are generally kept at every Fire Department office, and in the offices of the Occupational Safety and Health Division of the Department of Consumer and Business Services. Should you desire information from the bulletins, contact your local fire chief or fire marshal, or write to: Occupational Safety and Health Division, Department of Consumer and Business Services, Attn: Technical Services Section, 350 Winter Street NE, Salem, Oregon 97310

(b) Storage of flammable and combustible liquids in containers of less than 60 gallons (230 liters) capacity must be in one of the following:

(A) Closed metal drums which meet DOT requirements.

(B) Closed metal containers.

(C) Approved metal safety cans.

(D) Approved closed plastic containers of not more than 5 gallons (20 liters) capacity and bearing an approval label stamped or molded into the container.

(c) Store flammable or combustible liquids in a manner that will not obstruct, impede, or limit use of exits, stairways, or areas normally used for safe exit.

(d) Flammable or combustible liquids transported in passenger-type vehicles (cars, buses, carry-alls, crew transporters, etc.) must be in approved metal safety containers of not more than 5 gallons (20 liters) capacity. Carry these containers outside the passenger compartment, secured in a ventilated area that prevents the accumulation of flammable or explosive vapors, and protects against rupture in a collision.

(3) Tanks and containers.

(a) Clearly mark tanks and containers with the name of the product in them and with the following statement "**FLAMMABLE — KEEP FIRE AND FLAME AWAY.**" Mark fill risers and pumps or discharge devices with the name of the product they contain.

(b) Protect pumps, containers, tanks, and supports for tanks used for combustible or flammable liquids against collision damage.

(c) Mount above ground tanks on supports that are strong and stable enough to safely support the load. Provide enough clearance to permit inspection and maintenance as well as clearance from the ground.

NOTE: If you have or intend to install an in-ground tank, refer to the Department of Environmental Quality for standards.

(4) Tanks elevated for gravity discharge.

(a) The gravity discharge outlet must have an approved hose with a self-closing valve at the discharge end.

(b) The bottom opening for gravity discharge must have a shut-off valve adjacent to the tank shell that can be closed manually. Underground tanks from which fuel flows under gravity must have a manual shut-off valve between the tank and the hose.

(5) Tanks with top openings only.

(a) Tanks with all openings in the top must have a firmly attached, approved pumping device and an approved hose.

(b) Do not use siphons and discharge devices requiring pressure in the container.

(c) There must be an effective anti-siphoning device in the pump discharge; tank plumbing must not permit fuel to siphon or flow from the tank when the pump is not operating, even though discharge nozzle valves or line valves are open.

(6) Dispensing and fueling.

(a) Maintain pumping devices or faucets used to dispense flammable and combustible liquids so they do not leak enough material to puddle or cause a fire hazard.

(b) Fuel tanks and pumps from which Class I liquids are dispensed must have an approved hose of long enough to fill containers.

(A) Hoses must have a metal nozzle at the discharge end.

(B) Hoses must incorporate an effective electrical interconnect between the nozzle and the supply tank.

(c) Do not dispense Class I liquids into or from portable or stationary metal tanks or drums of over 50 gallons net capacity unless there is an effective electrical interconnect (bond) between the source and the receiving containers.

NOTE: The electrical interconnect may be made by assuring that the metal nozzle of the approved hose is in contact with the metal fill neck or bung of the receiving container during filling.

(d) Shut off internal combustion engines, except diesel engines, while refueling.

(7) Handling and use of flammable and combustible liquids.

(a) Control leakage or the escape of flammable and combustible liquids and use measures to prevent accidental spills. Promptly clean and neutralize soaked or contaminated areas.

NOTE: Other agencies may have rules pertaining to the cleaning and neutralizing of spills.

(b) Use flammable liquids, including gasoline, only where there is no open flame or other source of ignition within 50 feet of the operation, or within the possible path of vapor travel.

NOTE: This rule does not prohibit the refueling of orchard heaters used outdoors while adjacent heaters are burning.

(c) Do not use flammable liquids, including gasoline, indoors as a solvent or for cleaning purposes unless there is adequate ventilation to bring and keep the concentrations of explosive vapors in the atmosphere below 20% of its lower explosive limit.

(d) Keep flammable liquids, including gasoline, in closed containers when not in use.

(8) Heating devices that use flammable and combustible liquids.

NOTE: Heating devices and associated equipment must conform with the State of Oregon Mechanical Specialty Code and Mechanical and Life Safety Code, Vol. 2 of the Uniform Building Code.

(a) Set heaters, when in use, on a stable, level base; or mount them as specified by the manufacturer.

(b) Heaters not suitable for use on wood floors must rest on heat insulating material or at least 1 inch concrete, or equivalent. The insulating material must extend beyond the heater 2 feet or more in all directions.

(c) Locate heaters used near combustible tarpaulins, canvas, or similar coverings at least 10 feet from the coverings and securely fasten them to prevent ignition or upsetting of the heater due to wind action on the covering or other material.

(d) Liquid-fired heaters must have a primary safety control to stop the flow of fuel in the event of flame failure.

NOTE: Barometric or gravity oil feed is not a primary safety control.

(e) Do not use heating devices without built-in means to effectively control the fuel supply or the flame in occupied buildings.

(f) Vent heating devices that use combustibles inside occupied buildings to the outside atmosphere except when:

(A) The heating device has an "approval label" issued by the American Gas Association or a nationally recognized testing laboratory indicating its approval for use as an unvented heater in occupied buildings; or

(B) Prior to entry, test the atmosphere inside buildings where unvented heating devices are in use to assure it is free of hazardous levels of carbon monoxide; or

(C) Workers who must enter buildings where unvented heating devices are in use must wear an approved respiratory protection device that provides a safe breathing medium.

NOTE: See OAR 437-004-0610, Ventilation.

(g) Fuel-burning devices must have means that prevent the emission of sparks or other sources of ignition.

(9) Design, construction, and capacity of storage cabinets.

(a) Maximum capacity. Do not store more than 60 gallons of Class I or Class II liquids, nor more than 120 gallons of Class III liquids in a storage cabinet. (See (10)(b)(C) below.)

(b) Fire resistance. Storage cabinets must meet NFPA 30-1996 standards. Label cabinets with "Flammable — Keep Fire Away."

(10) Design and construction of inside storage rooms.

(a) Construction. Construct inside storage rooms to meet the required fire-resistive rating in NFPA 30-1996. Such construction must comply with the test specifications in Standard Methods of Fire Tests of Building Construction and Materials, NFPA 251-1969. Where there is an automatic sprinkler system, design and install the system according to accepted engineering practices. Openings to other rooms or buildings must have noncombustible, liquid-tight, raised sills or ramps at least 4 inches high, or the floor in the storage area must be at least 4 inches below the surrounding floors. Openings must have approved self-closing fire doors. The room must be liquid-tight where the walls join the floor. A permissible alternate to the sill or ramp is an open-grated trench inside the room that drains to a safe location. Where other parts of the building or other properties are exposed, protect windows as required in the Standard for Fire Doors and Windows, NFPA No. 80-1968, for Class E or F openings. Wood at least 1 inch nominal thickness is acceptable for shelving, racks, dunnage, scuffboards, floor overlay, and similar installations.

(b) Rating and capacity. Storage in inside storage rooms must comply with **Table 1**. [Table not included. See ED. NOTE.]

(c) Wiring. Electrical wiring and equipment in inside storage rooms used for Class I liquids must comply with OAR 437-004-2840 Division 4/S for Class I, Division 2 Hazardous Locations; for Class II and Class III liquids, and be approved for general use.

[ED. NOTE: Tables referenced are available from the agency.]

[Publications: Publications referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(3)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-0725

Spray Finishing

If you have a "spray booth" or a "spray room" or do production level spraying, you must follow the rules in OAR 437-002-1910.107, Spray Finishing Using Flammable and Combustible Liquids, and OAR 437-002-0107, Spray Finishing.

NOTE: This does not apply to casual spraying such as touch-up work, small items, or parts of vehicles.

Stat. Auth.: ORS 654.025(2) & 656.726(3)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-0770

Explosives and Blasting Agents

Agricultural employers that use explosives and blasting agents must comply with OAR 437-002-1910.109 in subdivision 2/H.

NOTE: For your convenience, this is the scope statement from that standard to help you know if your work falls under its jurisdiction.

NOTE: This section applies to the manufacture, keeping, storage, sale, transportation, and use of explosives, blasting agents, and pyrotechnics. The section does not apply to the sale and use (public display) of pyrotechnics, commonly known as fireworks, nor the use of explosives in the form prescribed by the official U.S. Pharmacopeia.

Stat. Auth.: ORS 654.025(2) & 656.726(3)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-0780

Storage and Handling of Liquefied Petroleum Gases

NOTE: OAR 437-004-0790, following this rule, covers the use of LPG and natural gas in fields and orchards. This rule (0780) does not cover those applications.

(1) Definitions.

(a) API-ASME container — A container built to comply with OAR 437-004-0780(3)(b)(C).

(b) ASME container — A container built to comply with OAR 437-004-0780(3)(b)(A).

(c) Approved — See universal definition in 4/B.

(d) Container assembly — An assembly of the container and fittings for all container openings, including shutoff valves, excess flow valves, liquid-level gaging devices, safety relief devices, and protective housing.

(e) Containers — All vessels, such as tanks, cylinders, or drums, used to transport or store liquefied petroleum gases.

(f) DOT — Department of Transportation.

(g) DOT container — A container built to comply with 49 CFR Chapter 1.

(h) DOT cylinders — cylinders meeting the requirements of 49 CFR Chapter I.

(i) DOT Specifications — regulations of the Department of Transportation published in 49 CFR Chapter I.

(j) Liquefied petroleum gases — "LPG" and "LP-Gas" — Any material made mostly of any of the following hydrocarbons, or mixtures of them; propane, propylene, butane (normal butane or isobutane), and butylenes.

(k) Listed — see universal definition in 4/B.

(l) Movable fuel storage tenders or farm carts — Containers not more than 1,200 gallons water capacity, with wheels for towing. They are not highway vehicles, but may occasionally be moved on public roads or highways. They are a fuel supply vehicle.

(m) P.S.I.A. — pounds per square inch absolute.

(n) P.S.I.G. — pounds per square inch gauge.

(o) Systems — an assembly of the container or containers, major devices such as vaporizers, safety relief valves, excess flow valves, regulators, and connecting piping.

(p) Vaporizer-burner — an integral vaporizer-burner unit, dependent on the heat generated by the burner as the source of heat to vaporize the liquid used for dehydrators or dryers.

(q) Ventilation, adequate — when specified for the prevention of fire during normal operation, ventilation is adequate when the concentration of the gas in a gas-air mixture does not exceed 25 percent of the lower flammable limit.

(2) Scope.

(a) Application.

(A) Paragraph OAR 437-004-0780(3) applies to installations made according to OAR 437-004-0780(4), (5), (6) and (8), except as noted in each of those paragraphs.

(B) Paragraphs OAR 437-004-0780(4) through (8) have their own application statements.

(b) Exclusions. This section does not apply to:

(A) LP-Gas refrigerated storage systems;

(B) LP-Gas used with oxygen. The requirements of OAR 437-004-2310 apply to that use;

(C) Low-pressure (not more than one-half pound per square inch or 14 inches water column) LP-Gas piping systems, and the installation and operation of residential and commercial appliances including their inlet connections, supplied through such systems. For those systems, the National Fire Protection Association Standard for the Installation of Gas Appliances and Gas Piping, NFPA 54-1996 apply.

(c) Retroactivity. Unless otherwise stated, this section is not retroactive. Existing plants, appliances, equipment, buildings, structures, and installations for the storage, handling or use of LP-Gas, that met the National Fire Protection Association Standard for the Storage and Handling of Liquefied Petroleum Gases NFPA No. 58, 1995, at the time of manufacture or installation are acceptable, if their use does not cause a recognized hazard to employees.

(3) Basic rules.

(a) Approval of equipment and systems.

(A) Each system using DOT containers according to 49 CFR Part 178 must use approved container valves, connectors, manifold valve assemblies, and regulators.

(B) Each system for domestic or commercial use with containers of 2,000 gallons or less water capacity, other than those built according to 49 CFR Part 178, must have a container assembly and one or more regulators, and may include other parts. The system as a unit or the container assembly as a unit, and the regulator or regulators, must be individually listed.

(C) In systems using containers of more then 2,000 gallons water capacity, each regulator, container valve, excess flow valve, gaging device, and relief valve installed on or at the container, must be listed

by a nationally recognized testing laboratory. Refer to 29 CFR 1910.7 for the definition of nationally recognized testing laboratory.

(b) Requirements for construction and original test of containers.

(A) Containers used with systems in OAR 437-004-0780(5), (6) and (8), except in (6)(c)(C), must comply with the Rules for Construction of Unfired Pressure Vessels, section VIII, Division 1, American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, 1968 edition.

(B) Containers constructed according to the 1949 and earlier editions of the ASME Code do not have to comply with paragraphs U-2 through U-10 and U-19 of it. Do not use containers constructed according to paragraph U-70 in the 1949 and earlier editions.

(C) Containers designed, constructed, and tested before July 1, 1961, according to the Code for Unfired Pressure Vessels for Petroleum Liquids and Gases, 1951 edition with 1954 Addenda, of the American Petroleum Institute and the American Society of Mechanical Engineers are acceptable. Containers constructed according to API-ASME Code do not have to comply with section I or with appendix to section I. Paragraphs W-601 to W-606 inclusive in the 1943 and earlier editions do not apply.

(D) Paragraph (3)(b)(A) above does not prohibit the use or reinstallation of containers constructed and maintained according to the standard for the Storage and Handling of Liquefied Petroleum Gases NFPA No. 58 in effect at the time of fabrication.

(E) Containers used with systems covered in OAR 437-004-0780(3), (5)(c)(C), and (7), must comply with DOT specifications effective at the date of their manufacture.

(c) Welding of containers.

(A) Welding to the shell, head, or any other part of the container subject to internal pressure, must comply with the code under which the tank was built. Other welding is permitted only on saddle plates, lugs, or brackets attached to the container by the tank manufacturer.

(B) Welding of DOT containers, must be done by a qualified manufacturer making containers of the same type, and must comply with DOT regulations.

(d) Markings on containers.

(A) Each container in (3)(b)(A) above, except as in (3)(b)(D) above must have these markings:

(i) A mark identifying compliance with, and other markings required by, the rules of the reference under which the container is constructed; or with the stamp and other markings required by the National Board of Boiler and Pressure Vessel Inspectors.

(ii) Notation as to whether the container is designed for underground or aboveground installation or both. If intended for both and different style hoods are provided, the marking must indicate the proper hood for each type of installation.

(iii) The name and address of the supplier of the container, or with the trade name of the container.

(iv) The water capacity of the container in pounds or gallons, U.S. Standard.

(v) The pressure in p.s.i.g., for which the container is designed.

(vi) The wording "This container must not contain a product with a vapor pressure in excess of ___ p.s.i.g. at 100°F," see (m)(G).

(vii) The tare weight in pounds or other identified unit of weight for containers with a water capacity of 300 pounds or less.

(viii) Marking indicating the maximum level to which the container may be filled with liquid at temperatures between 20°F and 130°F, except on containers provided with fixed maximum level indicators or which are filled by weighing. Markings must be increments of not more than 20°F. This marking may be located on the liquid level gaging device.

(ix) The outside surface area in square feet.

(B) Marks must be on a metal nameplate attached to the container and visible after installation of the container.

(C) When storing or using LP-Gas and one or more other gases in the same area, the containers must identify their content.

(e) Location of containers and regulating equipment.

(A) Containers, and first stage regulating equipment if used, must be outside buildings, except under one or more of the following:

(i) In buildings used exclusively for container charging, vaporization pressure reduction, gas mixing, gas manufacturing, or distribution.

(ii) For portable use according to OAR 437-004-0780(4)(e).

(iii) LP-Gas fueled engines according to OAR 437-004-0780 (6)(j) or (k).

(iv) LP-Gas fueled industrial trucks used according to OAR 437-004-0780(6)(l).

(v) LP-Gas fueled vehicles garaged according to OAR 437-004-0780(6)(m).

(vi) Containers awaiting use or resale when stored according to OAR 437-004-0780(7).

(B) Place individual containers with respect to the nearest building or group of buildings according to Table 1. [Table not included. See ED. NOTE.]

(C) Do not stack containers on each other during use.

(D) Keep easily ignitible material such as weeds and long dry grass 10 feet away from containers.

(E) Keep at least 20 feet between liquefied petroleum gas containers and flammable liquid tanks. The minimum separation between a container and the centerline of the dike is 10 feet. This does not apply when LP-Gas containers of 125 gallons or less capacity are next to Class III flammable liquid tanks of 275 gallons or less capacity.

(F) Prevent the accumulation of flammable liquids under adjacent liquefied petroleum gas containers by diking, diversion curbs, grading or the equivalent.

(G) Do not put liquefied petroleum gas containers within the dikes around flammable liquid tanks.

(f) Container valves and container accessories.

(A) Valves, fittings, and accessories connected directly to the container including primary shutoff valves, must have a rated working pressure of at least 250 p.s.i.g. and be suitable for LP-Gas service. Do not use cast iron. This does not prohibit the use of container valves made of malleable or nodular iron.

(B) Connections to containers, except safety relief connections, liquid level gaging devices, and plugged openings, must have shutoff valves as close to the container as practicable.

(C) Excess flow valves, must close automatically at the rated flows of vapor or liquid as specified by the manufacturer. The connections or line including valves, fittings, etc., being protected by an excess flow valve must have a greater capacity than the rated flow of the excess flow valve.

(D) Liquid level gaging devices do not need excess flow valves if their outward flow is less than would pass through a .055 inch opening.

(E) Openings from the container or through fittings attached directly to it with a pressure gauge connected do not need shutoff or excess flow valves if they are not larger than .055 inch.

(F) Except as in OAR 437-004-0780(4)(e)(A)(ii), excess flow and back pressure check valves required here must be inside the container or at an outside point where the line enters the container. In the latter case, make installation so that strain beyond the excess flow or back pressure check valve will not cause a break between the container and the valve.

(G) Excess flow valves must have a bypass, not to exceed a .040 inch opening to allow equalization of pressures.

(H) Containers with water capacity between 30 gallons and 2,000 gallons, filled by volume and made after December 1, 1963, must fill into the vapor space.

(g) Piping — including pipe, tubing, and fittings.

(A) Pipe, except as in OAR 437-004-0780(6)(f)(A), must be wrought iron or steel (black or galvanized), brass, copper, or aluminum alloy. Aluminum alloy pipe must be at least Schedule 40. Do not use alloy 5456. Protect aluminum alloy pipe against external corrosion when it contacts dissimilar metals other than galvanized steel. Also protect it when it is subject to repeated wetting by such liquids as water (except rainwater), detergents, sewage, or leaking from other piping, or it passes through flooring, plaster, masonry, or insulation. Galvanized sheet steel or pipe, galvanized inside and out, is good protection. The maximum nominal pipe size for aluminum pipe is 3/4 inch. Limit pressures to less than 20 p.s.i.g. Do not install aluminum alloy pipe within 6 inches of the ground.

(i) Vapor piping with operating pressures not more than 125 p.s.i.g. must be suitable for a working pressure of at least 125 p.s.i.g. It must be at least Schedule 40 (ASTM A-53-69, Grade B Electric Resistance Welded and Electric Flash Welded Pipe or equal).

(ii) Vapor piping with operating pressures more than 125 p.s.i.g. and all liquid piping must be suitable for a working pressure of at least

250 p.s.i.g. It must be at least Schedule 80 if it has threaded or threaded and back welded joints. It must be at least Schedule 40 (ASTM A-53-69 Grade B Electric Resistance Welded and Electric Flash Welded Pipe or equal) if it has welded, or welded and flanged joints.

(B) Tubing must be seamless and of copper, brass, steel, or aluminum alloy. Copper tubing must be type K or L or equivalent as covered in the Specification for Seamless Copper Water Tube, ANSI H23.1-1970 (ASTM B88-69). Aluminum alloy tubing must be Type A or B or equivalent as in Specification ASTM B210-68. It must have markings every 18 inches indicating compliance with ASTM Specifications. The minimum nominal wall thickness of copper tubing and aluminum alloy tubing is in Table 2 and Table 3. [Tables not included. See ED. NOTE.]

Protect aluminum alloy tubing against external corrosion when it contacts dissimilar metals other than galvanized steel. Also protect it when it is subject to repeated wetting by liquids such as water (except rainwater), detergents, sewage, or leakage from other piping, or it passes through flooring, plaster, masonry, or insulation. Galvanized sheet steel or pipe, galvanized inside and out, is good protection. The maximum outside diameter for aluminum alloy tubing is 3/4 inch. Limit pressures to less than 20 p.s.i.g. Do not install aluminum alloy pipe within 6 inches of the ground.

NOTE: The standard size to designate tubing is 1/8 inch smaller than its nominal outside diameter.

(C) Pipe jointmay be screwed, flanged, welded, soldered, or brazed with a material with a melting point more than 1,000°F. Joints on seamless copper, brass, steel, or aluminum alloy gas tubing must be made with approved gas tubing fittings, or soldered or brazed with a material having a melting point more than 1,000° F.

(D) For operating pressures of 125 p.s.i.g. or less, fittings must withstand a pressure of at least 125 p.s.i.g. For operating pressures above 125 p.s.i.g., fittings withstand a minimum of 250 p.s.i.g.

(E) You may not use threaded cast iron pipe fittings such as ells, tees, crosses, couplings, and unions. Use aluminum alloy fittings with aluminum alloy pipe and tubing. Use insulated fittings where aluminum alloy pipe or tubing connects with a dissimilar metal.

(F) Strainers, regulators, meters, compressors, pumps, etc., are not pipe fittings. This does not prohibit the use of malleable, nodular, or higher strength gray iron for such equipment.

(G) All materials such as valve seats, packing, gaskets, diaphragms, etc., must be resistant to the action of liquefied petroleum gas.

(H) After assembly, test all piping, tubing, or hose at not less than normal operating pressures. After installation, test piping and tubing with a manometer or similar tester that shows a pressure drop. There must be no leaks. Do not test with a flame.

(I) Use flexible connections to compensate for expansion, contraction, jarring, vibration, and settling.

(J) Piping outside buildings may be buried, aboveground, or both. It must have good support and protection against physical damage. Where soil conditions warrant, protect piping against corrosion. Where condensation may occur, the piping must pitch back to the container, or there must be another way to change the condensate back to a vapor.

(h) Hose specifications.

(A) Hose must be made of materials that are resistant to the action of LP-Gas. If the hose has wire braid reinforcing, it must be corrosion-resistant.

(B) Mark hose for container pressure "LP-Gas" or "LPG" at least every 10 feet.

(C) Hose for container pressure must have a bursting pressure rating of not less than 1,250 p.s.i.g.

(D) Hose for container pressure must be listed (see definitions in subdivision B).

(E) Hose connections for container pressure must withstand, without leaks, a test pressure of at least 500 p.s.i.g.

(F) Hose and hose connections on the low-pressure side of the regulator or reducing valve must have a bursting pressure rating of not less than 125 p.s.i.g. or five times the set pressure of the relief devices protecting that portion of the system, whichever is higher.

(G) Hose is acceptable on the low-pressure side of regulators to connect to other than domestic and commercial gas appliances if:

(i) The appliances connected with a hose are portable and need a flexible connection.

(ii) For use inside buildings the hose must be of minimum practical length, but not more than 6 feet except as in OAR 437-004-0780(4)(e)(A)(vii). It may not extend from one room to another, nor pass through any walls, partitions, ceilings, or floors. Such hose must be in view and not concealed. Outside buildings, the hose may be longer but must be as short as practical.

(iii) Use only approved hose. Do not use it where temperatures are likely to be more than 125°F. Securely connect the hose to the appliance and do not use rubber slip ends.

(iv) The shutoff valve for an appliance connected by hose must be in the metal pipe or tubing and not at the appliance end of the hose. When shutoff valves are installed close to each other, take precautions to prevent operation of the wrong valve.

(v) Protect hose connected to wall outlets from physical damage.

(i) Safety devices.

(A) Every container except those meeting DOT specifications and every vaporizer (except motor fuel vaporizers and except vaporizers in OAR 437-004-0780(3)(j)(B)(iii) and (5)(d)(E)(i)) whether heated by artificial means or not, must have one or more spring loaded safety relief valves. These valves must allow free venting to the outer air with discharge not less than 5 feet horizontally away from any opening into nearby buildings. The rate of discharge must meet the requirements of (3)(i)(B) or (3)(i)(C) below for vaporizers.

(B) The minimum rate of discharge in cubic feet per minute of air at 120 percent of the maximum permitted start to discharge pressure for safety relief valves on containers other than DOT containers must be as follows: [Table not included. See ED. NOTE.]

(C) Minimum Required Rate of Discharge for Safety Relief Valves for Liquefied Petroleum Gas Vaporizers (Steam Heated, Water Heated, and Direct Fired). Determine the minimum required rate of discharge for safety relief valves as follows:

(i) Obtain the total surface area by adding the surface area of the vaporizer shell in square feet directly in contact with LP-Gas and the heat exchanged surface area in square feet directly in contact with LP-Gas.

(ii) Obtain the minimum required rate of discharge in cubic feet of air per minute, at 60°F and 14.7 p.s.i.a. from (3)(i)(B) above, for this total surface area.

(D) Container and vaporizer safety relief valves must be set to start-to-discharge, with relation to the design pressure of the container, according to Table 4.

(E) Safety relief devices used with systems having other than DOT containers must discharge at not less than the rates in (3)(i)(B) above, before the pressure is more than 120 percent of the maximum (not including the 10 percent in (3)(i)(D) above) permitted start to discharge pressure setting of the device. [Table not included. See ED. NOTE.]

(F) Some places have continuous high temperatures that require storage of a lower vapor pressure product or the use of a higher designed pressure vessel to prevent the safety valves opening. As an alternative use cooling devices like sprayers, shade or other methods.

(G) Place safety relief valves to discourage tampering. If pressure setting or adjustment is external, the relief valves must have approved means for sealing adjustment.

(H) Shutoff valves must not be between the safety relief devices and the container, or the equipment or piping to which the safety relief device is connected unless there is full required capacity flow through the safety relief device.

(I) Safety relief valves must have direct communication with the vapor space of the container at all times.

(J) Mark each container safety relief valve used with systems covered by OAR 437-004-0780(5), (6), and (8), except as in (6)(c)(C) as follows:

(i) "Container Type" of the pressure vessel on which the valve is designed to be installed;

(ii) The pressure in p.s.i.g. at which the valve will discharge;

(iii) The actual rate of discharge of the valve in cubic feet per minute of air at 60°F and 14.7 p.s.i.a.;

(iv) The manufacturer's name and catalog number, for example: T200-250-4050 AIR — indicating that the valve is suitable for use on a Type 200 container that it is set to start to discharge at 250 p.s.i.g., and

(v) That its rate of discharge is 4,050 cubic feet per minute of air as noted in OAR 437-004-0780(i)(B).

(K) Safety relief valve assemblies, including their connections, must provide the rate of flow required for the container on which they are installed.

(L) A hydrostatic relief valve must be between each pair of shut-off valves on liquefied petroleum gas liquid piping to discharge into a safe atmosphere. The start-to-discharge pressure setting must not be more than 500 p.s.i.g. The minimum setting on relief valves in piping connected to other than DOT containers must not be lower than 140 percent of the container relief valve setting and in piping connected to DOT containers not lower than 400 p.s.i.g. The start-to-discharge pressure setting of a relief valve installed on the discharge side of a pump, must be more than the maximum pressure permitted by the recirculation device in the system.

(M) Safety relief devices must not discharge in or beneath a building, except devices covered by OAR 437-004-0780(3)(f)(A)(i) through (iv), or (4)(d)(A) or (e).

(N) Container safety relief devices and regulator relief vents must be at least five (5) feet in any direction from air openings into sealed combustion system appliances or mechanical ventilation air intakes.

(j) Vaporizer and housing.

(A) Indirect fired vaporizers using steam, water, or other heating medium must comply with the following:

(i) Vaporizers must comply with OAR 437-004-0780(3)(b)(A)–(C) and have permanent marks as follows:

(I) The code marking signifying the specifications of the vaporizer.

(II) The allowable working pressure and temperature for the vaporizer.

(III) The sum of the outside surface area and the inside heat exchange surface area in square feet.

(IV) The name or symbol of the manufacturer.

(ii) Vaporizers with an inside diameter of 6 inches or less exempted by the ASME Unfired Pressure Vessel Code, Section VIII of the ASME Boiler and Pressure Vessel Code — 1968 must have a design pressure not less than 250 p.s.i.g. and need no permanent marks.

(iii) Do not install heating or cooling coils inside a storage container.

(iv) Vaporizers are acceptable in buildings, rooms, sheds, or lean-tos used exclusively for gas manufacturing or distribution, or in other structures of light, noncombustible construction or equivalent, well ventilated near the floor line and roof. When vaporizing and/or mixing equipment is in a structure or building not used exclusively for gas manufacturing or distribution, either attached to or within such a building, separate the structure or room from the rest of the building with a wall that will withstand a static pressure of at least 100 pounds per square foot. This wall must have no openings or pipe or conduit passing through it. Such structure or room must have enough ventilation and must have a roof or at least one exterior wall of lightweight construction.

(v) Vaporizers must have, at or near the discharge, a relief valve with an discharge rate complying with OAR 437-004-0780(3)(i)(C), except as in (4)(d)(F)(i).

(vi) The heating medium lines into and leaving the vaporizer must have suitable means for preventing gas flow into the heat systems in the event of tube rupture in the vaporizer. Vaporizers must have suitable automatic means to prevent liquid passing through the vaporizers to the gas discharge piping.

(vii) The device that supplies the necessary heat for producing steam, hot water, or other heating medium may be in a building, compartment, room, or lean-to that must have ventilation near the floorline and roof to the outside. A wall that can withstand a static pressure of at least 100 pounds per square foot must separate the device from all compartments or rooms that have liquefied petroleum gas vaporizers, pumps, and central gas mixing devices. This wall must have no openings or pipes or conduit passing through it. This requirement does not apply to the domestic water heaters that may supply heat for a vaporizer in a domestic system.

(viii) Gas-fired heating systems supplying heat exclusively for vaporization purposes must have automatic devices to shut off the flow of gas to main burners, if the pilot light should fail.

(ix) Vaporizers may be an integral part of a fuel storage container directly connected to the liquid section or gas section or both.

(x) Vaporizers must not have fusible plugs.

(xi) Vaporizer houses must not have unprotected drains to sewers or sump pits.

(B) Atmospheric vaporizers using heat from the ground or surrounding air must be as follows:

(i) Buried underground; or

(ii) Inside the building close to a point at which pipe enters the building if the capacity of the unit does not exceed 1 quart.

(iii) Vaporizers of less than 1 quart capacity heated by the ground or surrounding air, need not have relief valves if adequate tests show that the assembly is safe without them.

(C) Make, mark and install direct gas-fired vaporizers as follows:

(i)(I) In accordance with the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code — 1968 that are applicable to the maximum working conditions for which the vaporizer is designed.

(II) With the name of the manufacturer; rated Btuinput to the burner; the area of the heat exchange surface in square feet; the outside surface of the vaporizer in square feet; and the maximum vaporizing capacity in gallons per hour.

(ii)(I) Vaporizers may be connected to the liquid section or the gas section of the storage container, or both; but in any case there must be at the container a manually operated valve in each connection to permit completely shutting off when desired, of all flow of gas or liquid from container to vaporizer.

(II) Vaporizers with capacity not more than 35 gallons per hour must be at least 5 feet from container shutoff valves. Vaporizers with capacity of more than 35 gallons but not more than 100 gallons per hour must be at least 10 feet from the container shutoff valves. Vaporizers with a capacity more than 100 gallons per hour must be at least 15 feet from container shutoff valves.

(iii) Vaporizers may be in buildings, rooms, housings, sheds, or lean-tos used exclusively for vaporizing or mixing of liquefied petroleum gas. Vaporizing housing structures must be of non-combustible construction, well ventilated near the floorline and the highest point of the roof. When vaporizer and/or mixing equipment is located in a structure or room attached to or within a building, such structure or room must be separated from the remainder of the building by a wall that can withstand a static pressure of at least 100 pounds per square foot. This wall must have no openings or pipes or conduit passing through it. Such structure or room must have adequate ventilation, and must have a roof or at least one exterior wall of lightweight construction.

(iv) Vaporizers must have at or near the discharge, a relief valve with an effective discharge rate complying with OAR 437-004-0780(3)(i)(C). The relief valve must not be subjected to temperatures more than 140°F.

(v) Vaporizers must have suitable automatic means to prevent liquid passing from the vaporizer to the gas discharge piping of the vaporizer.

(vi) Vaporizers must have means for manually turning off the gas to the main burner and pilot.

(vii) Vaporizers must have automatic devices to shut off the flow of gas to main burners if the pilot light should fail. When the flow through the pilot is more than 2,000 Btuper hour, the pilot also must have an automatic device to shut off the flow of gas to the pilot if the pilot flame goes out.

(viii) Pressure regulating and pressure reducing equipment if within 10 feet of a direct fire vaporizer must be separated from the open flame by a substantially airtight noncombustible partition or partitions.

(ix) Except as in (iii), keep the following minimum distances between direct fired vaporizers and the nearest building or group of buildings:

(I) Ten feet for vaporizers with a capacity of 15 gallons per hour or less vaporizing capacity.

(II) Twenty-five feet for vaporizers with a vaporizing capacity of 16 to 100 gallons per hour.

(III) Fifty feet for vaporizers with a vaporizing capacity more than 100 gallons per hour.

(x) Direct fired vaporizers must not raise the product pressure above the design pressure of the vaporizer equipment or raise the product pressure within the storage container above the pressure in the second column of **Table H-8**.

(xi) Vaporizers must not have fusible plugs.

(xii) Vaporizers must not have unprotected drains to sewers or sump pits.

(D) Install and use direct gas-fired tank heaters as follows:

(i) Direct gas-fired tank heaters, and tanks to which they are applied, must only be above ground.

(ii) Tank heaters must have permanent markings with the name of the manufacturer, the rated Btu input to the burner, and the maximum vaporizing capacity in gallons per hour.

(iii) Tank heaters may be an integral part of a fuel storage container directly connected to the container liquid section, or vapor section, or both.

(iv) Tank heaters must have a means for manually turning off the gas to the main burner and pilot.

(v) Tank heaters must have an automatic device to shut off the flow of gas to main burners, if the pilot light should fail. When flow through pilot exceeds 2,000 Btu per hour, the pilot also must have an automatic safety device to shut off the gas to the pilot if the pilot flame goes out.

(vi) Separate pressure regulating and pressure reducing equipment if within 10 feet of a direct fired tank heater, from the open flame by a substantially airtight noncombustible partition.

(vii) Keep these minimum distances between a storage tank heated by a direct fired tank heater and the nearest important building or group of buildings:

(I) Ten feet for storage containers of less than 500 gallons water capacity.

(II) Twenty-five feet for storage containers of 500 to 1,200 gallons water capacity.

(III) Fifty feet for storage containers of over 1,200 gallons water capacity.

(viii) No direct fired tank heater must raise the product pressure within the storage container over 75 percent of the pressure set out in the second column of Table H-8.

(E) The vaporizer section of vaporizer-burners used for dehydrators or dryers must be outside of buildings and as follows:

(i) Vaporizer-burners must have a minimum design pressure of 250 p.s.i.g. with a factor of safety of five.

(ii) Manually operated positive shut-off valves must be at the containers to shut off all flow to the vaporizer-burners.

(iii) Minimum distances between storage containers and vaporizer-burners is as follows: [Table not included. See ED. NOTE.]

(iv) The vaporizer section of vaporizer-burners must have a hydrostatic relief valve. The relief valve must not be subjected to temperatures more than of 140°F. The start-to-discharge pressure setting must be set protect the components involved, but not less than 250 p.s.i.g. The discharge must be upward and away from component parts of the equipment and away from operating personnel.

(v) Vaporizer-burners must have means for manually turning off the gas to the main burner and pilot.

(vi) Vaporizer-burners must have automatic devices to shut off the flow of gas to the main burner and pilot if it goes out.

(vii) Locate or protect pressure regulating and control equipment so that the temperatures surrounding this equipment do not exceed 140°F except that you may use equipment components at higher temperatures if designed to withstand such temperatures.

(viii) Pressure regulating and control equipment when downstream of the vaporizer must be able to withstand the maximum discharge temperature of the vapor.

(ix) The vaporizer section of vaporizer-burners must not have fusible plugs.

(x) Vaporizer coils or jackets must be ferrous metal or high temperature alloys.

(xi) Equipment using vaporizer-burners must have automatic shutoff devices upstream and downstream of the vaporizer section connected to operate in case of excessive temperature, flame failure, and, if applicable, insufficient airflow.

(k) Filling densities.

(A) The "filling density" is the percent ratio of the weight of the gas in a container to the weight of water the container will hold at 60°F. Fill containers according to the filling densities in Table 5. [Table not included. See ED. NOTE.]

(B) Except as in (3)(k)(C) below, any container including mobile cargo tanks and portable tank containers, shipped under DOT jurisdiction or made according to 49 CFR Chapter I Specifications must be charged according to 49 CFR Chapter I requirements.

(C) Portable containers not subject to DOT jurisdiction (such as, but not limited to, motor fuel containers on industrial and lift trucks, and farm tractors in OAR 437-004-0780(6), or containers recharged at the installation) may be filled either by weight, or by volume using a fixed length dip tube gaging device.

(l) LP-Gas in buildings.

(A) Pipe vapor into buildings at pressures more than 20 p.s.i.g. only if the buildings or separate areas:

(i) Comply with this section;

(ii) Are used only for vaporization equipment, pressure reduction, gas mixing, gas manufacturing, or distribution, or to house internal combustion engines, industrial processes, research and experimental laboratories, or equipment and processes using such gas and with a similar hazard;

(iii) Buildings, structures, or equipment under construction or undergoing major renovation.

(B) Liquid is permitted in buildings as follows:

(i) Buildings, or separate areas of buildings, used exclusively to house equipment for vaporization, pressure reduction, gas mixing, gas manufacturing, or distribution, or to house internal combustion engines, industrial processes, research and experimental laboratories, or equipment and processes using such gas and having a similar hazard; and when such buildings, or separate areas are constructed according to this section.

(ii) Buildings, structures, or equipment under construction or undergoing major renovation if the temporary piping meets the following conditions:

(I) Liquid piping inside the building must conform to the requirements of OAR 437-004-0780(3)(g), and must not exceed three-fourths iron pipe size. Copper tubing with an outside diameter of 3/4 inch or less is acceptable if it conforms to Type K of Specifications for Seamless Water Tube, ANSI H23.1-1970 (ASTM B88-69) (see Table 24). All such piping must have protection against construction hazards. Liquid piping inside buildings must be kept to a minimum. Fasten such piping securely to walls or other surfaces for adequate protection from breakage and place it to subject the liquid line to lowest ambient temperatures.

(II) There must be a shutoff valve in each intermediate branch line where it takes off the main line. A shutoff valve must also be at the appliance end of the intermediate branch line. Such shutoff valves must be upstream of any flexible connector used with the appliance.

(III) Suitable excess flow valves must be in the container outlet line supplying liquid LP-Gas to the building. A suitable excess flow valve must be immediately downstream of each shutoff valve. Suitable excess flow valves must be installed and sized where piping size is reduced.

(IV) Hydrostatic relief valves must comply with OAR 437-004-0780(3)(i)(l).

(V) Do not use hose to carry liquid between the container and the building or at any point in the liquid line, except at the appliance connector.

(VI) Where flexible connectors are necessary for appliance installation, make them as short as practicable and they must comply with OAR 437-004-0780(3)(g)(B) or (h).

(VII) Minimize the release of fuel by either of the following methods when any section of piping or appliances is disconnected.

(C) Using an approved automatic quick-closing coupling (a type closing in both directions when coupled in the fuel line); or

(D) Closing the valve nearest to the appliance and allowing the appliance to operate until the fuel in the line is consumed.

(E) Do not take portable containers into buildings except as in OAR 437-004-0780(3)(e)(A).

(m) Transfer of liquids. The employer must assure that:

(A) At least one attendant stays close to the transfer connection, during the transfer of the product.

(B) Do not use or refill containers made according to 49 CFR Part 178 and authorized by 49 CFR Chapter 1 as a "single trip" or "non-refillable container."

(C) Do not vent gas or liquid to the atmosphere while transferring contents of one container to another, except as in OAR 437-004-0780(6)(e)(D). This does not preclude the use of listed pumps that use LP-Gas vapor as a source of energy. They may vent to the atmosphere at a rate not more than that from a .1200 inch opening. Such venting and liquid transfer must be at least 50 feet from the nearest building.

(D) Filling of fuel containers for industrial trucks or motor vehicles from industrial bulk storage containers must be at least 10 feet

from the nearest masonry-walled building or at least 25 feet from the nearest building or other construction and in any case, not less than 25 feet from any building opening.

(E) Filling of portable containers, containers on skids, fuel containers on farm tractors, or similar applications, from storage containers used in domestic or commercial service, must be at least 50 feet from the nearest building.

(F) The filling connection and the vent from the liquid level gages in containers, filled at point of installation, must be at least 10 feet in any direction from air openings into sealed combustion system appliances or mechanical ventilation air intakes.

(G) Gage and charge fuel supply containers only in the open air or in buildings especially for that purpose.

(H) The maximum vapor pressure of the product at 100°F during transfer into a container must comply with paragraphs OAR 437-004-0780(c)(2) and (d)(3). (For DOT containers use DOT requirements.)

(I) Use only gases for which the system is designed, examined, and listed, particularly regarding pressures.

(J) Pumps or compressors must be designed for use with LP-Gas. When using compressors they must take suction from the vapor space of the container being filled and discharge to the vapor space of the container being emptied.

(K) Pumping systems, with a positive displacement pump, must have a recirculating device that limits the differential pressure on the pump under normal operating conditions to its maximum differential pressure rating. Protect the discharge of the pumping system so that pressure is never more than 350 p.s.i.g. If a recirculation system discharges into the supply tank and has a manual shutoff valve, there must be an adequate secondary safety recirculation system that has no means of making it inoperative. Manual shutoff valves in recirculation systems must be open except during an emergency or when the system is under repair.

(L) When necessary, unloading piping or hoses must have suitable bleeder valves to relieve pressure before disconnection.

(M) Agricultural air moving equipment, including crop dryers, must be off when filling supply containers unless the air intakes and sources of ignition are at least 50 feet from the container.

(N) Agricultural equipment using open flames or equipment with integral containers, such as flame cultivators, weed burners, and, tractors, must be off during refueling.

(n) Tank car or transport truck loading or unloading points and operations.

(A) The track of tank car sidings must be relatively level.

(B) A "Tank Car Connected" sign, as covered by DOT rules, must be at the active end or ends of the siding while the tank car is connected.

(C) While cars are on sidetrack for loading or unloading, block the wheels at both ends.

(D) The employer must insure that an employee is always present during loading or unloading of tank cars or trucks.

(E) A backflow check valve, excess-flow valve, or a shutoff valve with means of remote closing, to protect against uncontrolled discharge of LP-Gas from storage tank piping must be close to the point where the liquid piping and hose or swing joint pipe connect.

(F) Except as in (3)(n)(G) below, when the size (diameter) of the loading or unloading hoses and/or piping is reduced below the size of the tank car or transport truck loading or unloading connections, the adaptors to which lines are attached must have either a backflow check valve, a properly sized excess flow valve, or shutoff valve with means of remote closing, to protect against uncontrolled discharge from the tank car or transport truck.

(G) The requirement of (3)(n)(F) above does not apply if the tank car or transport has a quick-closing internal valve that remotely closes.

(H) The location of the tank car or transport truck loading or unloading point must consider the following:

(i) Nearness to railroads and highway traffic.

(ii) With respect to buildings on installer's property.

(iii) Nature of occupancy.

(iv) Topography.

(v) Type of construction of buildings.

(vi) Number of tank cars or transport trucks that may be safely loaded or unloaded at one time.

(vii) Frequency of loading or unloading. Where practical, the distance of the unloading or loading point must conform to the distances in OAR 437-004-0780(3)(e)(B).

(o) Instructions. Personnel performing installation, removal, operation, and maintenance work must have proper training.

(p) Electrical equipment and other sources of ignition.

(A) Fixed electrical equipment in classified areas must comply with OAR 437-004-0780(q). Other electrical equipment and wiring must comply with 4/S.

(B) There must be no open flames or other sources of ignition in vaporizer rooms (except those housing direct-fired vaporizers), pump houses, container charging rooms or other similar locations. Direct-fired vaporizers may not be in pump houses or container charging rooms.

(C) Liquefied petroleum gas storage containers do not require lightning protection.

(D) Since liquefied petroleum gas is in a closed system of piping and equipment, the system does not need to be electrically conductive or electrically bonded for protection against static electricity.

(E) Open flames, cutting or welding, portable electric tools, and extension lights capable of igniting LP-Gas, must not be in classified areas in Table 6 unless the LP-Gas facilities are free of all liquid and vapor. [Table and Figure not included. See ED. NOTE.]

(q) Fixed electrical equipment in classified areas. Fixed electrical equipment and wiring in classified areas in Table 6 must comply with Table 6 and subdivision 4/S. This provision does not apply to fixed electrical equipment at residential or commercial installations of LP-Gas systems or to systems covered by OAR 437-004-0780(4).

(r) Liquid-level gaging device.

(A) Each container made after December 31, 1965, and filled on a volumetric basis must have a fixed liquid-level gage to indicate the maximum filling level as in OAR 437-004-0780(b)(19)(v). Each container made after December 31, 1969, must have permanently attached to the container adjacent to the fixed level gage a marking showing the percentage full that will be shown by that gage. When there is also a variable liquid-level gage, the fixed gage will also serve as a way to check the variable gage. OAR 437-004-0780(b)(12) requires these gages in charging containers.

(B) Arrange all variable gaging devices so that the maximum allowed liquid level for butane, for a 50-50 mixture of butane and propane, and for propane, is readily determinable. The markings indicating the various liquid levels from empty to full must be on the system nameplate or gaging device or part may be on the system nameplate and part on the gaging device. Dials of magnetic or rotary gages must show whether they are for cylindrical or spherical containers and whether for aboveground or underground service. The dials of gages intended for use only on aboveground containers of over 1,200 gallons water capacity must be so marked.

(C) Gaging devices that require bleeding of the product to the atmosphere, such as the rotary tube, fixed tube, and slip tube, must have a bleed valve maximum opening not larger than .0550 inch, unless they have an excess flow valve.

(D) Gaging devices must have a design working pressure of at least 250 p.s.i.g.

(E) Length of tube or position of fixed liquid-level gage must indicate the maximum fill level of the container for the product contained. This level must be based on the volume of the product at 40°F at its maximum permitted filling density for aboveground containers and at 50°F for underground containers. The employer must calculate the filling point for which the fixed liquid level gage must be designed according to the method in this subdivision.

(i) It is impossible to set out in a table the length of a fixed dip tube for various capacity tanks because of the varying tank diameters and lengths and because the tank may be installed either in a vertical or horizontal position. Knowing the maximum permitted filling volume in gallons, however, the length of the fixed tube can be determined by the use of a strapping table obtained from the container manufacturer. The length of the fixed tube should be such that when its lower end touches the surface of the liquid in the container, the contents of the container will be the maximum permitted volume as determined by the following formula: [Formula not included. See ED. NOTE.]

(ii) Formula for determining maximum volume of liquefied petroleum gas for which a fixed length of dip tube must be set: [Table not included. See ED. NOTE.]

(iii) The maximum volume of LP-Gas that can be in a container when determining the length of the dip tube expressed as a percentage of total water content of the container is calculated by the following formula.

(iv) The maximum weight of LP-Gas which may be placed in a container for determining the length of a fixed dip tube is determined by multiplying the maximum volume of liquefied petroleum gas obtained by the formula in (3)(r)(E)(i) above by the pounds of liquefied petroleum gas in a gallon at 40°F for aboveground and at 50°F for underground containers. For example, typical pounds per gallon are below: [Formula not included. See ED. NOTE.]

(F) Fixed liquid-level gages on containers other than DOT containers must be stamped on the exterior of the gage with the letters "DT" followed by the vertical distance (expressed in inches and carried out to one decimal place) from the top of container to the end of the dip tube or to the centerline of the gage when it is at the maximum permitted filling level. For portable containers that may be filled in the horizontal and/or vertical position the letters "DT" must be followed by "V" with the vertical distance from the top of the container to the end of the dip tube for vertical filling and with "H" followed by the proper distance for horizontal filling. For DOT containers the stamping must be both on the exterior of the gage and on the container. On above-ground or cargo containers where the gages are positioned at specific levels, the marking may be in percent of total tank contents and the marking must be on the container.

(G) Columnar gage glasses must be restricted to charging plants where the fuel is withdrawn in the liquid only. They must have valves with metallic handwheels, excess flow valves, and extra-heavy glass adequately protected with a metal housing applied by the gage manufacturer. They must be shielded against the direct rays of the sun. Do not use columnar gage glasses on tank trucks, motor fuel tanks or on containers used in domestic, commercial, and industrial installations.

(H) Gaging devices of the float, or equivalent type that do not require flow for their operation and with connections extending to a point outside the container do not have to have excess flow valves if the piping and fittings will withstand the container pressure and are properly protected against physical damage.

(s) Requirements for appliances.

(A) Except as in (3)(s)(B) below, new commercial and industrial gas consuming appliances must be approved.

(B) If an appliance was made to use a gas other than LP-Gas, it may be used with LP-Gas only after it is properly converted, adapted and tested for performance before placing it in use.

(C) Unattended heaters inside buildings for animal or poultry production or care must have an approved automatic device to shut off the gas if the flame goes out.

(D) Install all agricultural appliances or equipment according to the requirements of this section and the following:

(i) Domestic and commercial appliances — NFPA 54-1969, Standard for the Installation of Gas Appliances and Gas Piping.

(ii) Industrial appliances — NFPA 54A-1969, Standard for the Installation of Gas Piping and Gas Equipment on Industrial Premises and Certain Other Premises.

(iii) Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines — NFPA 37-1970.

(4) Cylinder systems.

(a) Application. This paragraph applies specifically to systems using DOT containers. All requirements of OAR 437-004-0780(3) apply to this paragraph unless otherwise noted in OAR 437-004-0780(3).

(b) Marking of containers.

(A) Container markings must comply with DOT regulations. Additional markings not in conflict with DOT regulations are acceptable.

(B) Each container must show its water capacity in pounds or other identified unit of weight unless it is filled and maintained only by the owner or their representative and the water capacity is identified by a code.

(C) Each container must show its tare weight in pounds or other identified unit of weight including all permanently attached fittings but not the cap.

(c) Description of a system. A system includes the container base or bracket, containers, container valves, connectors, manifold valve assembly, regulators, and relief valves.

(d) Containers and regulating equipment outside of buildings or structures.

(A) Do not bury containers. This does not prohibit installation below grade level if the container and regulating equipment do not contact the ground. The area must have drainage and ventilate horizontally to the outside air from its lowest level. The outlet must be at least 3 feet away from any building opening that is below it.

Except as in OAR 437-004-0780(3)(i)(M), the discharge from safety relief devices must be at least 3 feet horizontally away from any building opening below the level of discharge and must not end beneath any building unless the space has good ventilation and only two enclosed sides.

(B) Containers must be on a firm foundation or otherwise firmly secured. Connect outlet pipes with a flexible or special fitting.

(e) Containers and equipment inside buildings or structures.

(A) When you must use portable containers inside buildings or structures follow (i) through (xii) below, and other parts of this subparagraph (A) that apply.

(i) Use containers with and connect only to compatible equipment or appliances.

(ii) Systems using containers with a water capacity more than 2-1/2 pounds (nominal 1 pound LP-Gas capacity) must have excess flow valves. The valves must be integral either with the container valves or in the connections to the container valve outlets. In either case, an excess flow valve must prevent strain beyond the excess flow valve from causing a break between the container and the valve.

(iii) Regulators must be connect directly either to the container valves or to manifolds connected to the container values. The regulator must be suitable for use with LP-Gas. Manifolds and fittings connecting containers to pressure regulator inlets must withstand at least 250 p.s.i.g. service pressure.

(iv) Protect valves on containers with a water capacity more than 50 pounds (nominal 20 pounds LP-Gas capacity) while in use.

(v) Containers must have markings that comply with OAR 437-004-0780(3)(d)(C) and (4)(b).

(vi) Pipe or tubing must conform to OAR 437-004-0780(3)(g). Do not use aluminum pipe or tubing.

(vii)(I) Hose must have a working pressure of at least 250 p.s.i.g. Hose and hose connections must be listed by a nationally recognized testing laboratory. The hose length may be more than the length in OAR 437-004-0780(3)(h)(G)(ii), but must be as short as practicable. Refer to §1910.7 for definition of nationally recognized testing laboratory.

(II) Hose must be long enough to permit compliance with spacing provisions of this subparagraph without kinking or straining or causing hose to be so close to a burner as to be damaged by heat.

(viii) Portable heaters, including salamanders, must have an approved automatic device to shut off the gas if the flame does out. Heaters with inputs more than 50,000 Btu made on or after May 17, 1967, and heaters with inputs more than 100,000 Btu made before May 17, 1967, must have either:

(I) A pilot that must light before the main burner can be turned on; or

(II) An electric ignition system.

NOTE: This paragraph (viii) does not apply to tar kettle burners, torches, melting pots, nor to portable heaters less than 7,500 B.t.u.h. input used with containers with a maximum water capacity of 2-1/2 pounds. Do not use container valves, connectors, regulators, manifolds, piping, and tubing as structural supports for heaters.

(ix) Locate containers, regulating equipment, manifolds, pipe, tubing, and hose to minimize exposure to abnormally high temperatures, physical damage, or tampering by unauthorized persons.

(x) Locate and use heat producing equipment in a way that minimizes the possibility of ignition of combustibles.

(xi) Containers with a water capacity more than 2-1/2 pounds (nominal 1 pound LP-Gas capacity) connected for use, must be upright on a firm and level surface.

(xii) Containers, including the valve protective devices, must be installed to minimize the probability of impingement of discharge of safety relief devices on containers.

(B) Containers with a maximum water capacity of 2-1/2 pounds (nominal 1 pound LP-Gas capacity) are allowed inside buildings as part of approved self-contained hand torch assemblies or similar appliances.

(C) You may use containers in buildings or structures under construction or major renovation and not occupied by the public, as follows:

(i) The maximum water capacity of individual containers is 245 pounds (nominal 100 pounds LP-Gas capacity).

(ii) For temporary heating such as curing concrete, drying plaster and similar applications, heaters (other than integral heater-container units) must be at least 6 feet from any LP-Gas container. This does not prohibit the use of heaters designed for attachment to the container or to a supporting standard, if they do not allow direct or radiant heat application onto the container. Blower and radiant type heaters must not point toward any LP-Gas container within 20 feet.

(iii) If two or more heater-container units, of either the integral or non-integral type, are in an unpartitioned area on the same floor, separate them by at least 20 feet.

(iv) Storage of containers awaiting use must comply with OAR 437-004-0780(7).

(D) Containers are allowed in buildings for temporary emergency heating purposes, to prevent damage to the buildings or contents, when the permanent heating system is temporarily out of service, as follows:

(i) Containers and heaters must comply with and be used according to OAR 437-004-0780(4)(e)(C).

(ii) Do not leave the temporary heating equipment unattended.

(f) Container valves and accessories.

(A) Valves in the assembly of multiple container systems must allow replacement of containers without shutting off the flow of gas in the system.

NOTE: This does not require an automatic changeover device.

(B) Firmly attach regulators and low-pressure relief devices to the cylinder valves, cylinders, supporting standards or the building walls. The weather must not affect their operation.

(C) Protect valves and connections to the containers while in transit, in storage, and while being moved into final use, as follows:

(i) By setting into the recess of the container to prevent their being struck if the container is dropped on a flat surface, or

(ii) By ventilated cap or collar, fastened to the container and strong enough to prevent the force of a blow from affecting the valve or other connection.

(D) Keep outlet valves tightly closed or plugged on unconnected containers, although the containers are empty.

(E) Containers with a water capacity more than 50 pounds (approximately 21 pounds LP-Gas capacity), recharged at the installation, must have excess flow or backflow check valves to prevent the discharge of contents in case of failure of the filling or equalizing connection.

(g) Safety devices.

(A) Containers must have safety devices as required by DOT regulations.

(B) A final stage regulator of an LP-Gas system (excluding any appliance regulator) must have on the low-pressure side with a relief valve set to start to discharge within the limits in Table 8. [Table not included. See ED. NOTE.]

(C) When using a regulator or pressure relief valve inside a building for other than purposes in OAR 437-004-0780(3)(e)(A)(i)–(vii), vent the relief valve and the space above the regulator and relief valve diaphragms to the outside air with the discharge outlet at least 3 feet horizontally away from any building opening below the discharge. This does not apply to protected individual appliance regulators nor to OAR 437-004-0780(4)(e) and (3)(i)(m).

(h) Reinstallation of containers. Do not reinstall containers unless they requalify according to DOT regulations.

(i) Permissible product. Do not put a product in a container marked with a service pressure less than four-fifths of the maximum vapor pressure of the product at 130°F.

(5) Systems using containers other than DOT containers.

(a) Application. This paragraph applies specifically to systems using storage containers other than those that comply with DOT specifications. OAR 437-004-0780(3) applies unless otherwise noted in OAR 437-004-0780(3).

(b) Design pressure and classification of storage containers. Storage containers must comply with Table 9. [Table not included. See ED. NOTE.]

(c) Container valves and accessories, filler pipes, and discharge pipes.

(A) The filling pipe inlet terminal must not be inside a building. For containers with a water capacity of 125 gallons or more, such terminals must be at least 10 feet from any building, 5 feet or more from a driveway (see OAR 437-004-0780(3)(e)(B)) and in a protective housing built for the purpose.

(B) The filling connection must have one of the following:

(i) Combination back-pressure check valve and excess flow valve.

(ii) One double or two single back-pressure check valves.

(iii) A positive shutoff valve, with either:

(I) An internal back-pressure valve; or

(II) An internal excess flow valve.

(C) All openings in a container must have approved automatic excess flow valves except in the following: Filling connections in OAR 437-004-0780(5)(c)(B); safety relief connections, liquid-level gaging devices OAR 437-004-0780(3)(f)(D); pressure gage connections in (3)(f)(E).

(D) If the following exist, you do not need an excess flow valve in the withdrawal service line:

(i) Such systems' total water capacity does not exceed 2,000 U.S. gallons.

(ii) Control of the discharge from the service outlet is by a manual shutoff valve that is:

(I) Threaded directly into the service outlet of the container; or

(II) Is an integral part of a substantial fitting threaded into or on the service outlet of the container; or

(III) Threaded directly into a substantial fitting threaded into or on the service outlet of the container.

(iii) The shutoff valve has an attached handwheel or the equivalent.

(iv) The controlling orifice between the contents of the container and the outlet of the shutoff valve is not more than 5/16 inch in diameter for vapor withdrawal systems and 1/8 inch in diameter for liquid withdrawal systems.

(v) An approved pressure-reducing regulator is directly attached to the outlet of the shutoff valve and is rigidly supported, or that an approved pressure-reducing regulator is attached to the outlet of the shutoff valve with a suitable flexible connection, if the regulator has adequate support and protection on or at the tank.

(E) All inlet and outlet connections except safety relief valves, liquid level gaging devices and pressure gages on containers of 2,000 gallons water capacity, or more, and on any container that supplies fuel directly to an internal combustion engine, must have labeling to show whether they communicate with vapor or liquid space. Labels may be on valves.

(F) Instead of an excess flow valve, openings may have a quick-closing internal valve that, except during operating periods remains closed. The internal mechanism for such valves may have a secondary control that must have a fusible plug (not more than 220° melting point) that closes the internal valve automatically in case of fire.

(G) There can be only two plugged openings on a container of 2,000 gallons or less water capacity.

(H) Containers of 125 gallons water capacity or more made after July 1, 1961, must have an approved device for liquid evacuation. The minimum size is 3/4 inch National Pipe Thread minimum. A plugged opening does not satisfy this requirement.

(d) Safety Devices.

(A) All safety devices must comply with the following:

(i) All container safety relief devices must be on the containers and have a direct link with the vapor space of the container.

(ii) Protect safety relief device discharge terminals against physical damage and such discharge pipes must have loose rain caps. There can be no return bends or restrictive pipe fittings.

(iii) Discharge lines from two or more safety relief devices on the same unit, or similar lines from two or more different units, may be run into a common discharge header, if the cross-sectional area of the header is at least equal to the sum of the crosssectional areas of the individual discharge lines, and the setting of safety relief valves are the same.

(iv) Each storage container of more than 2,000 gallons water capacity must have a suitable pressure gage.

(v) A final stage regulator of an LP-Gas system (excluding any appliance regulator) must have, on the low-pressure side, a relief valve set to start to discharge within the limits in Table 8.

(vi) When a regulator or pressure relief valve is inside a building, it and the space above the regulator and relief valve diaphragms must vent to the outside air. The discharge outlet must be at least 3 feet horizontally away from any opening into the building that is below such discharge. (This does not apply to protected individual appliance regulators.)

(B) Provide safety devices for aboveground containers as follows:

(i) Containers above ground of 1,200 gallons water capacity or less that may contain liquid fuel must have a spring-loaded relief valve or valves with a rate of discharge required by OAR 437-004-0780(3)(i)(B). In addition to the required spring-loaded relief valve(s), you can use suitable fuse plug(s) if their total discharge area for each container is not more than 0.25 square inches.

(ii) The fuse plugs must melt between 208°F and 220°F. Relief valves and fuse plugs must have a direct link with the container's vapor space.

(iii) On a container with a water capacity more than 125 gallons, but not more than 2,000 gallons, vent the discharge from the safety relief valves away from the container vertically upwards and unobstructed to prevent any impingement of escaping gas upon the container. Use loose-fitting rain caps. There must be a way to drain condensate that may accumulate in the relief valve or its discharge pipe.

(iv) On containers of 125 gallons water capacity or less, the discharge from safety relief devices must be at least 5 feet horizontally away from any opening into the building below the level of the discharge.

(v) On a container with a water capacity more than 2,000 gallons, the discharge from the safety relief valves must vent away from the container vertically upwards to a point at least 7 feet above the container, and unobstructed to the open air in a way that prevents any impingement of escaping gas upon the container. Use only loose-fitting rain caps. Condensation inside the safety relief valve or its discharge pipe must not make the valve inoperative. If there is a drain, there must be a way to protect the system against impingement of flame from ignition of any product escaping from the drain.

(e) Vaporizers. Safety devices for vaporizers must be provided as follows:

(A) Vaporizers of less than 1 quart total capacity, heated by the ground or the surrounding air, need not have safety relief valves if adequate tests certified by any of the authorities in OAR 437-004-0780(3)(b), demonstrate that the assembly is safe without them.

(B) Vaporizers must not have fusible plugs.

(f) Reinstallation of containers. Containers may be reinstalled if they do not show any evidence of harmful external corrosion or other damage. Containers reinstalled underground, must have corrosion resistant coating in good condition (see OAR 437-004-0780(5)(h)(D)). Containers reinstalled above ground, must have safety devices and gaging devices that comply with OAR 437-004-0780(5)(d) and 437-004-0780(3)(r) respectively.

(g) Capacity of containers. Maximum capacity for a storage container is 90,000 gallons water capacity.

(h) Installation of storage containers.

(A) Above ground containers, except as in (5)(h)(G) below, must have substantial masonry or noncombustible structural supports on firm masonry foundation.

(B) Aboveground containers have support as follows:

(i) Horizontal containers must be on saddles in such a manner as to permit expansion and contraction. Use structural metal supports only with approved fire protection. There must be suitable means of preventing corrosion on the part of the container that contacts the foundations or saddles.

(ii) Containers of 2,000 gallons water capacity or less may have non-fireproofed ferrous metal supports if mounted on concrete pads or footings, and if the distance from the outside bottom of the container shell to the concrete pad, footing, or the ground is not more than 24 inches.

(C) Any container may have non-fireproofed ferrous metal supports if mounted on concrete pads or footings, and if the distance from the outside bottom of the container to the ground is not more than 5 feet, if the container is in an isolated location.

(D) Containers may be partially buried if the following requirements are met:

(i) The portion of the container below the surface and for a vertical distance not less than 3 inches above the surface of the ground is protected to resist corrosion, and the container is protected against settling and corrosion as required for fully buried containers.

(ii) Spacing requirements must be as specified for underground tanks in OAR 437-004-0780(3)(f)(B).

(iii) Relief valve capacity must be as required for aboveground containers.

(iv) Container is not subject to vehicular damage, or has adequate protection against such damage.

(v) Filling densities must be as required for above-ground containers.

(E) The top of buried containers must be at least 6 inches below grade. Where an underground container might be subject to abrasive action or physical damage due to vehicular traffic or other causes, it must be:

(i) Not less than 2 feet below grade; or

(ii) Otherwise protected against such physical damage.

NOTE: It will not be necessary to cover the portion of the container to which manhole and other connections are affixed; however, where necessary, there must be protection against vehicular damage. When necessary to prevent floating, containers must be securely anchored or weighted.

(F)(i) Containers must have a protective coating before being placed under ground. This coating must be equivalent to hot-dip galvanizing or to two coatings of red lead followed by a heavy coating of coal tar or asphalt. In lowering the container into place, do not damage to the coating. Repair any damage to the coating must before backfilling.

(ii) Containers must be on a firm foundation (firm earth is okay) and surrounded with earth or sand firmly tamped in place.

(G) Containers with attached foundations (portable or semi-portable containers with suitable steel "runners" or "skids" known in the industry as "skid tanks") must comply with these rules subject to the following:

(i) If they are for a given general location for a temporary period not longer than 6 months they need not have fire-resisting foundations or saddles but must have adequate ferrous metal supports.

(ii) The outside bottom of the container shell must not be more than 5 feet above the ground unless there are fire-resisting supports.

(iii) The bottom of the skids must be at least 2 inches but not more than 12 inches below the outside bottom of the container shell.

(iv) Flanges, nozzles, valves, fittings, and the like, having communication with the interior of the container, must have protection against physical damage.

(v) When not permanently on fire-resisting foundations, piping connections must be sufficiently flexible to minimize the possibility of breakage or leakage of connections if the container settles, moves, or is otherwise displaced.

(vi) Secure skids or lugs for attachment of skids, to the container according to the code or rules under which it was designed and built (with a minimum factor of safety of four) to withstand loading in any direction equal to four times the weight of the container and attachments when filled to the maximum permissible loaded weight.

(H) Field welding where necessary must be made only on saddle plates or brackets which were applied by the manufacturer of the tank.

(I) For aboveground containers, secure anchorage or adequate pier height must be provided against possible container flotation wherever sufficiently high floodwater might occur.

(J) When permanently installed containers are interconnected, compensate for expansion, contraction, vibration, and settling of containers, and interconnecting piping. Where flexible connections are used, they must be an approved type and must designed for a bursting pressure of at least five times the vapor pressure of the product at 100°F. Do not use nonmetallic hose for permanently interconnecting such containers.

(K) Container assemblies listed for interchangeable installation above ground or under ground must conform to the requirements for above-ground installations with respect to safety relief capacity and filling density. For installation above ground all other requirements for above-ground installations apply. For installation under ground all other requirements for underground installations apply.

(i) Protection of container accessories. Protect valves, regulating, gaging, and other container accessory equipment against tampering and physical damage.

(j) Drips for condensed gas. Where vaporized gas on the low-pressure side of the system may condense to a liquid at normal operating temperatures and pressures, there must be suitable means for revaporization of the condensate.

(k) Damage from vehicles. Protect LP-Gas systems from vehicle traffic.

(l) Drains. Do not direct drains or blowoff lines into or near sewer systems.

(m) Lighting. Electrical equipment and installations must comply with OAR 437-004-0780(3)(n) and (o).

(n) Vaporizers for internal combustion engines. Paragraph OAR 437-004-0780(6)(g) applies.

(o) Gas regulating and mixing equipment for internal combustion engines. Paragraph OAR 437-004-0780(6)(h) applies.

(6) Liquefied petroleum gas as a motor fuel.

(a) Application.

(A) This applies to internal combustion engines, fuel containers, and equipment for the use of LPG as a motor fuel on portable units including self-propelled vehicles.

(B) Paragraph OAR 437-004-0780(5) covers fuel containers and equipment for stationary internal combustion engines using LPG. This does not apply to containers for transportation of liquefied petroleum gases. All of OAR 437-004-0780(3) applies to this paragraph, unless otherwise noted in OAR 437-004-0780(3).

(b) General.

(A) Do not fuel vehicles while passengers are on board.

(B) Fuels industrial trucks (including forklifts) with permanently mounted fuel tanks outdoors. Charging equipment must comply with paragraph (8).

(C) LP-Gas fueled industrial trucks must comply with the Standard for Type Designations, Areas of Use, Maintenance and Operation of Powered Industrial Trucks, NFPA 505-1969.

(D) Engines on vehicles must be off while fueling if the fueling operation involves venting to the atmosphere.

(c) Design pressure and classification of fuel containers.

(A) Except as in (6)(c)(B) and (C) below, containers must comply with Table 10.

(B) Fuel containers for use in industrial trucks (including forklifts) must be either DOT containers authorized for LP-Gas service with a minimum service pressure of 240 p.s.i.g. or minimum Container Type 250. Under 1950 and later ASME codes, this means a 312.5 p.s.i.g. design pressure container. [Table not included. See ED. NOTE.]

(C) Containers made and maintained under DOT specifications and regulations are acceptable fuel containers. They must conform to all requirements of this paragraph.

(D) All container inlets and outlets except safety relief valves and gaging devices must have labels that designate whether they link to vapor or liquid space. Labels may be on valves.

(d) Installation of fuel containers.

(A) Containers must be in a place that minimize the possibility of damage. Containers in the rear of trucks and buses, when protected by bumpers, comply. Fuel containers on passenger-carrying vehicles must be as far from the engine as practicable. There must be a seal between the passenger space or any space with radio equipment and the container space to prevent direct seepage of gas to these spaces. The container compartment must vent to the outside. If the fuel container is near the engine or the exhaust system, shield it from direct heat.

(B) Mount all fuel containers to prevent jarring loose, slipping, or rotating. The fastenings must withstand static loading in any direction equal to twice the weight of the tank and attachments when filled using a safety factor of not less than four. Only do field welding on saddle plates, lugs or brackets, originally attached to the container by the manufacturer.

(C) Permanently install fuel containers on buses.

(e) Valves and accessories.

(A) Container valves and accessories must have a rated working pressure of at least 250 p.s.i.g., and suitable for use on a liquefied petroleum gas service.

(B) The filling connection must have an approved double back-pressure check valve, or a positive shutoff in conjunction with an internal back-pressure check valve. On a removable container the filler valve may be a hand operated shutoff valve with an internal excess flow valve. Main shutoff valves on the container on liquid and vapor lines must be readily accessible.

(C) With the exceptions of (D)(iii) below, filling connections with approved automatic back-pressure check valves, and safety relief valves, all connections to containers with openings for the flow of gas more than .055 inch must have approved automatic excess flow valves.

(D) Liquid-level gaging devices:

(i) Do not use variable liquid-level gages that require the venting of fuel to the atmosphere on fuel containers of industrial trucks (including forklifts).

(ii) On portable containers that fill vertically and/or horizontally, the fixed liquid-level gage must show maximum permitted filling level for both vertical and horizontal filling with the container oriented to place the safety relief valve in communication with the vapor space.

(iii) For containers used only on farm tractors and charged at a point at least 50 feet from any building, the fixed liquid-level gaging device may equal that passed by a .1200 inch opening. You do not need an excess flow valve. Mark fittings with the restricted opening and the container they are on to show the size of the opening.

(iv) Protect all valves and connections on containers from damage. For farm tractors where parts of the vehicle protect the valves and fittings, this requirement is met. On removable containers the protection for the fittings must be permanently attached.

(v) For systems with removable fuel containers, there must be a way in the system to minimize the escape of fuel when exchanging containers. Either of these methods are acceptable:

(I) Using an approved automatic quick-closing coupling (a type closing in both directions when uncoupled) in the fuel line, or

(II) Closing the valve at the fuel container and allowing the engine to run until the fuel line is empty.

(f) Piping — including pipe, tubing, and fittings.

(A) Pipe from fuel container to first-stage regulator must be at least schedule 80 wrought iron or steel (black or galvanized), brass or copper; or seamless copper, brass, or steel tubing. Steel tubing must have a minimum wall thickness of 0.049 inch. Steel pipe or tubing must have protection against exterior corrosion. Copper tubing must be types K or L or equivalent with a minimum wall thickness of 0.032 inch. Approved flexible connections may be used between container and regulator or between regulator and gas-air mixer within the limits of approval. Do not use aluminum pipe or tubing. For removable containers use an approved flexible connection between the container and the fuel line.

(B) Install, brace and support all piping to reduce to a minimum the possibility of vibration strains or wear.

(g) Safety devices.

(A) Use only spring-loaded internal type safety relief valves on motor fuel containers.

(B) The discharge outlet from safety relief valves must be on the outside of enclosed spaces and as far as practicable from possible sources of ignition. It must vent upward within 45 degrees of the vertical to prevent impingement of escaping gas on containers, or parts of vehicles, or on vehicles in adjacent lines of traffic. Use a rain cap or other protector to keep water and dirt from collecting in the valve.

(C) When using a discharge line from the container safety relief valve, the line must be metallic, other than aluminum, and may not restrict the required flow of gas from the safety relief valve. Such discharge line must be able to withstand the pressure resulting from the discharge of vapor when the safety relief valve is fully open. When flexibility is necessary, use flexible metal hose or tubing.

(D) You can fill portable containers with volumetric filling in either the vertical or horizontal position only if the safety relief valve links with the vapor space.

(E) Paragraph OAR 437-004-0780(3)(i)(L) for hydrostatic relief valves applies.

(h) Vaporizers.

(A) Vaporizers and any part thereof and other devices that may be subjected to container pressure must have a design pressure of at least 250 p.s.i.g.

(B) Each vaporizer must have a valve or suitable plug which will permit substantially complete draining of the vaporizer. It must be located at or near the lowest portion of the section occupied by the water or other heating medium.

(C) Securely fasten vaporizers to minimize the possibility of their becoming loose.

(D) Permanently mark each vaporizer at a visible point as follows:

(i) With the design pressure of the fuel-containing portion in p.s.i.g.

(ii) With the water capacity of the fuel-containing portion of the vaporizer in pounds.

(E) Devices to supply heat directly to a fuel container must have an automatic device to cut off the supply of heat before the pressure inside the fuel container reaches 80 percent of the start to discharge pressure setting of the safety relief device on the fuel container.

(F) Engine exhaust gases are acceptable as a direct source of heat supply for the vaporization of fuel if the materials of construction of those parts of the vaporizer in contact with exhaust gases are resistant to the corrosive action of exhaust gases and the vaporizer system is designed to prevent excessive pressures.

(G) Vaporizers must not have fusible plugs.

(i) Gas regulating and mixing equipment.

(A) Approved automatic pressure reducing equipment must be between the fuel supply container and gas-air mixer to reduce the pressure of the fuel delivered to the gas-air mixer.

(B) An approved automatic shutoff valve must be in the fuel system ahead of the inlet of the gas-air mixer, to prevent flow of fuel to the mixer when the ignition is off and the engine is not running. For industrial trucks and engines operating in buildings other than those that exclusively house engines, the automatic shutoff valve must operate if the engine stops. Atmospheric type regulators (zero governors) are adequate as an automatic shutoff valve only in outdoor operation such as farm tractors, irrigation pump engines, and on other outdoor stationary engines.

(C) The source of the air for combustion must be completely isolated from the passenger compartment, ventilating system, or air conditioning system.

(j) Capacity of containers. No single fuel container on passenger carrying vehicles can be more than 200 gallons water capacity. No single fuel container on other vehicles normally operating on the highway can be more than 300 gallons water capacity.

(k) Stationary engines in buildings. Stationary engines and gas turbines in buildings, including portable engines used instead of or to supplement stationary engines, must comply with the Standard for the Institution and Use of Stationary Combustion Engines and Gas Turbines, NFPA 37-1970, and OAR 437-004-0780(a), (b), and (c).

(l) Portable engines in buildings.

(A) Only use portable engines in buildings for emergencies, except as in OAR 437-004-0780(10).

(B) Exhaust gases must discharge outside the building or to an area where they are not hazard.

(C) There must be sufficient air for combustion and cooling.

(D) An approved automatic shutoff valve must be in the fuel system ahead of the engine, to prevent flow of fuel to the engine when the ignition is off or if the engine stops.

(E) The capacity of LP-Gas containers used with such engines must comply with OAR 437-004-0780(4)(e).

(m) Industrial trucks inside buildings.

(A) LP-Gas-fueled industrial trucks are permitted in buildings and structures.

(B) No more than two LP-Gas containers can be on an industrial truck for motor fuel purposes.

(C) Do not leave industrial trucks unattended near sources of ignition.

(n) Garaging LP-Gas-fueled vehicles.

(A) LP-Gas-fueled vehicles may be stored or serviced inside garages.

(B) Keep the shutoff valve closed on LP-Gas-fueled vehicles being repaired in garages except when the engine must run.

(7) Storage of containers awaiting use.

(a) Application. This paragraph applies to the storage of portable containers not more than 1,000 pounds water capacity, filled or partially filled, at user location but not connected for use.

(b) General.

(A) Do not store containers near sources of heat or ignition or near stairs or exits.

(B) Keep the outlet valves of stored containers closed.

(C) Empty containers, stored inside, that have held LP-Gas are treated like full containers when calculating the maximum quantity of LP-Gas permitted by this paragraph.

(c) Storage within buildings not frequented by the public (such as agricultural buildings). Do not store more than 300 pounds (approximately 2,550 cubic feet in vapor form) except as in (d) below.

(d) Storage within special buildings or rooms.

(A) Do not store more than 10,000 pounds of LP-Gas in special buildings or rooms.

(B) The walls, floors, and ceilings of container storage rooms that are within or next to other parts of the building must have at least a 2-hour fire resistance rating.

(C) Part of the exterior walls or roof with an area at least 10 percent of the combined area of the enclosing walls and roof must be of explosion relieving construction.

(D) Each opening from such storage rooms to other parts of the building must have a 1-1/2 hour (B) fire door listed by a nationally recognized testing laboratory. Refer to §1910.7 for definition of nationally recognized testing laboratory.

(E) The must be no open flames in the rooms.

(F) The rooms must have adequate ventilation both top and bottom to the outside only. The openings from such vents must be at least 5 feet away from any other opening into any building.

(G) The floors of such rooms must not be below ground level.

(H) The rooms may not adjoin a property line occupied by schools, churches, hospitals, athletic fields or other public gathering places.

(I) Fixed electrical equipment must comply with OAR 437-004-0780 (3)(o).

(e) Storage outside buildings.

(A) Storage outside buildings, for containers awaiting use, must comply with Table 11 with respect to:

(i) The nearest building or group of buildings;

(ii) Busy highways; [Table not included. See ED. NOTE.]

(B) Containers must be in a suitable enclosure or otherwise protected against tampering.

(f) Fire protection. Storage locations must have at least one approved portable fire extinguisher with rating of 8-B, C or more.

(8) Liquefied petroleum gas dispensing.

(a) Application. This paragraph applies to storage containers, dispensing devices, and equipment where LP-Gas is stored and dispensed into fuel tanks of motor vehicles. See OAR 437-004-0780(6) for requirements covering use of LP-Gas as a motor fuel. All requirements of OAR 437-004-0780(3) apply to this paragraph unless otherwise noted.

(b) Design pressure and classification of storage containers. Storage containers must comply with Table 12. [Table not included. See ED. NOTE.]

(c) Container valves and accessories.

(A) A filling connection on the container must have one of the following:

(i) A combination back-pressure check and excess flow valve.

(ii) One double or two single back-pressure valves.

(iii) A positive shutoff valve, in conjunction with either:

(I) An internal back-pressure valve; or

(II) On internal excess flow valve.

NOTE: Instead of an excess flow valve, filling connections may have a quick-closing internal valve, that must remain closed except during operating periods. The mechanism for such valves may have a secondary control that causes it to close automatically in case of fire. When using a fusible plug, its melting point must not be more than 220° F

(B) A filling pipe inlet terminal not on the container must have a positive shutoff valve in conjunction with either:

(i) A black pressure check valve; or

(ii) An excess flow check valve.

(C) All openings in the container except those below must have approved excess flow check valves:

(i) Filling connections as in subdivision (A) above.

(ii) Safety relief connections as in OAR 437-004-0780(3)(f)(B).

(iii) Liquid-level gaging devices as in OAR 437-004-0780(3)(f)(D).

(iv) Pressure gage connections as in OAR 437-004-0780(3)(f)(E).

(D) All container inlets and outlets except those listed below must have labels to designate whether they connect with vapor or liquid (labels may be on valves):

(i) Safety relief valves.

(ii) Liquid-level gaging devices.

(iii) Pressure gages.

(E) Each storage container must have a suitable pressure gage.

(d) Safety-relief valves.

(A) All safety-relief devices must be as follows:

(i) On the container and directly connected with the vapor space.

(ii) Safety-relief valves and discharge piping must have protection against physical damage. The outlet must have loose-fitting rain caps. There must be no return bends or restrictions in the discharge piping.

(iii) The discharge from two or more safety relief valves with the same pressure settings may be run into a common discharge header. The cross-sectional area of the header must be at least equal to the sum of the cross-sectional areas of the individual discharges.

(iv) Safety relief devices must not discharge in or under a building.

(B) Aboveground containers must have safety relief valves as follows:

(i) The rate of discharge, provided by one or more valves, must be not less than in OAR 437-004-0780(3)(i)(B).

(ii) The discharge from safety relief valves must vent to open air unobstructed and vertically in a way that prevents any impingement of escaping gas on the container. Use loose-fitting rain caps. On a container with a water capacity more than 2,000 gallons, the discharge from the safety relief valves must vent away from the container vertically to a point at least 7 feet above it. Condensation inside the relief valve or its discharge pipe must not make the valve inoperative. If there is a drain, there must be a way protect the container, adjacent containers, piping, or equipment against impingement of flame from ignition of the product escaping from the drain.

(C) Underground containers must be provided with safety relief valves as follows:

(i) The discharge from safety-relief valves must be piped vertically upward to a point at least 10 feet above the ground. The discharge lines or pipes must be adequately supported and protected against physical damage.

(ii) If no liquid is put into a container until after it is buried and covered, the rate of discharge of the relief valves may be reduced to not less than 30 percent of the rate in OAR 437-004-0780(3)(j)(B). If liquid fuel is present during installation of containers, the rate of discharge must be the same as for above-ground containers. Such containers must not be uncovered until emptied of liquid fuel.

(e) Capacity of liquid containers. Individual liquid storage containers must not exceed 30,000 gallons water capacity.

(f) Installation of storage containers.

(A)(i) Each storage container used exclusively in dispensing operations must comply with the following table that specifies minimum distances to a building and groups of buildings. [Table not included. See ED. NOTE.]

(ii) There must be a 10-foot area around containers that is free of combustibles.

(iii) The minimum separation between LP-Gas containers and flammable liquid tanks is 20 feet and the minimum separation between a container and the centerline of the dike is 10 feet.

(iv) LP-Gas containers near flammable liquid containers must have dikes, diversion curbs, or grading to protect against the flow or accumulation of flammable liquids.

(v) LP-Gas containers must not be within diked areas for flammable liquid containers.

(vi) Do field welding on saddle plates or brackets applied by the container manufacturer.

(vii) Where flexible connections are used, they must be approved type and have a bursting pressure of not less than five times the vapor pressure of the product at 100°F. Do not use nonmetallic hose for interconnecting such containers.

(viii) Where there may be a high water table or flood conditions there must be protection against container flotation.

(B) Aboveground containers must comply with this subdivision.

(i) Containers may be horizontal or vertical.

(ii) Unless protected by location, there must be protective barriers around containers. Do not service vehicles within 10 feet of containers.

(iii) Container foundations must be masonry or other noncombustible material. Containers must be on saddles that permit expansion and contraction.

(C) Underground containers must be installed in accordance with this subdivision.

(i) Containers must be given a protective coating before being placed under ground. This coating must be equivalent to hot-dip galvanizing or to two coatings of red lead followed by a heavy coating of coal tar or asphalt. In lowering the container into place, care must be exercised to minimize abrasion or other damage to the coating. Damage to the coating must be repaired before back-filling.

(ii) Containers must be set on a firm foundation (firm earth may be used) and surrounded with earth or sand firmly tamped in place. Backfill should be free of rocks or other abrasive materials.

(iii) A minimum of 2 feet of earth cover must be provided. Where ground conditions make compliance with this requirement impractical, equivalent protection against physical damage must be provided. The portion of the container to which manhole and other connections are attached need not be covered. If the location is subjected to vehicular traffic, protect containers by a concrete slab or other cover adequate to prevent the weight of a loaded vehicle imposing concentrated direct loads on the container shell.

(g) Protection of container fittings. Valves, regulators, gages, and other container fittings must have protection against tampering and physical damage.

(h) Transport truck unloading point. The filling pipe inlet terminal must not be in a building nor within 10 feet of any building or driveway. It must be protected against physical damage.

(i) Piping, valves, and fittings.

(A) Piping may be underground, aboveground, or a combination of both.

(B) Piping beneath driveways must have protection from vehicle damage.

(C) Piping must be wrought iron or steel (black or galvanized), brass or copper pipe; or seamless copper, brass, or steel tubing and suitable for a minimum pressure of 250 p.s.i.g. Pipe joints may be screwed, flanged, brazed, or welded. Do not use aluminum alloy piping or tubing.

(D) All shutoff valves (liquid or gas) must be suitable for liquefied petroleum gas service and designed for not less than the maximum anticipated operating pressure. Valves that may experience container pressure must have a rated working pressure of at least 250 p.s.i.g.

(E) All materials used for valve seats, packing, gaskets, diaphragms, etc., must be resistant to the action of LP-Gas.

(F) Fittings must be steel, malleable iron, or brass with a minimum working pressure of 250 p.s.i.g. Do not use cast iron pipe fittings.

(G) After assembly, test all piping to assure it is free of leaks at not less than normal operating pressures.

(j) Pumps and accessories. All pumps and accessory equipment must be suitable for LP-Gas service, and designed for not less than the maximum anticipated operating pressure. Accessories must have a minimum rated working pressure of 250 p.s.i.g. Positive displacement pumps must have suitable pressure actuated bypass valves permitting flow from pump discharge to storage container or pump suction.

(k) Dispensing devices.

(A) Meters, vapor separators, valves, and fittings in the dispenser must be suitable for LP-Gas service and have a minimum working pressure of 250 p.s.i.g.

(B) Vent LP-Gas in a dispensing device to a safe location.

(C) Pumps used to transfer LP-Gas must allow control of the flow and prevent leakage or accidental discharge. There must be a way outside the dispensing device to shut off the power in case of fire or accident.

(D) A manual shutoff valve and an excess flow check valve must be downstream of the pump and ahead of the dispenser inlet.

(E)(i) Dispensing hose must be resistant to the action of liquid LP-Gas and have a minimum bursting pressure of 1,250 p.s.i.g.

(ii) An excess flow check valve or automatic shutoff valve must be at the terminus of the liquid line at the point of attachment of the dispensing hose.

(F)(i) LP-Gas dispensing devices must be at least 10 feet from aboveground storage containers more than 2,000 gallons water capac-

ity. The dispensing devices must be at least 20 feet from any building (not including canopies), basement, cellar, pit, or line of adjoining property that may be developed and not less than 10 feet from sidewalks, streets, or thoroughfares. No drains or blowoff lines may discharge into or near to the sewer systems used for other purposes.

(ii) LP-Gas dispensing devices must be on a concrete foundation or as part of a complete storage and dispensing assembly mounted on a common base, and must be adequately protected from physical damage.

(iii) LP-Gas dispensing devices may not be in a building except that they may be under a weather shelter or canopy if it is not enclosed on more than two sides. If the enclosing sides are next to each other, the area must have proper ventilation.

(G) The dispensing of LP-Gas into the fuel container of a vehicle must be done by a competent attendant who stays at the LP-Gas dispenser during the entire transfer operation.

(l) Smoking. There must be no smoking on the driveway of dispensing facilities or transport truck unloading areas. Post signs prohibiting smoking in places easily seen by facility users.

(m) Motors. The motors of all vehicles being fueled must be off during the fueling operations.

(n) Electrical. Electrical equipment and installations must conform to OAR 437-004-0780(3)(n) and (o).

(o) Fire protection. Each dispensing facility must have at least one approved portable fire extinguisher with at least an 8-B, C, rating.

[ED. NOTE: Tables, Figures and Equations referenced are available from the agency.]
[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-0790
Use of Liquefied Petroleum Gas or Natural Gas in Fields and Orchards

(1) Scope. This applies to the storage and use of liquefied petroleum gas or natural gas, in fields and orchards, to fuel or power stationary orchard heaters, fans, and other such fixed equipment. It does not cover portable orchard and field equipment. OAR 437-004-0780 covers all other uses of these gases.

(2) Definitions.

(a) Approved — See universal definition in 4/B.

(b) Competent person — See universal definition in 4/B.

(c) Labeled — See universal definition in 4/B.

(d) Liquefied petroleum gases — "LPG" and "LP-Gas" — Any material made mostly of any of the following hydrocarbons, or mixtures of them; propane, propylene, butane (normal butane or isobutane), and butylenes.

(e) Listed — See universal definition in 4/B.

(3)(a) Components. The tank regulator and all components in between must be labeled, listed or approved.

(b) All piping and end use components, like fans and heaters, must be on the low pressure side of approved regulators.

(4) Installation. Installation of systems and equipment that use liquefied petroleum gas must only be by persons licensed according to ORS 480.410–460 and must conform to OAR 837, division 30. (Contact the Office of State Fire Marshal for more information on these requirements.)

(5) Welding. Do not weld on parts of the system subject to pressure.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98; OSHA 7-2001, f. & cert. ef. 5-15-01

437-004-0800
Storage and Handling of Anhydrous Ammonia

(1) Scope.

(a) This standard applies to the operation of anhydrous ammonia systems including refrigerated ammonia storage systems.

(b) This standard does not apply to applications that use ammonia solely as a refrigerant.

(2) Definitions.

(a) Appurtenances — All devices such as pumps, compressors, safety relief devices, liquid-level gaging devices, valves and pressure gages.

(b) Capacity — Total volume of the container in standard U.S. gallons.

(c) Certified — See universal definitions in Subdivision 4/B, OAR 437-004-0100.

(d) Code — The Boiler and Pressure Vessel Code, Section VIII, Unfired Pressure Vessels of the American Society of Mechanical Engineers (ASME) — 1968.

(e) Container — Includes all vessels, tanks, cylinders, or spheres used for transportation, storage, or application of anhydrous ammonia.

(f) Cylinder — A container of 1,000 pounds of water capacity or less built according to Department of Transportation specifications.

(g) Design pressure — is identical to the term "Maximum Allowable Working Pressure" used in the Code.

(h) DOT — U.S. Department of Transportation.

(i) DOT specifications — Regulations of the Department of Transportation in 49 CFR Chapter I.

(j) Farm vehicle (implement of husbandry) — A vehicle for use on a farm with a container of not more than 1,200 gallons water capacity on it.

(k) Labeled — See universal definitions in Subdivision 4/B, OAR 437-004-0100.

(l) Listed — See universal definitions in Subdivision 4/B, OAR 437-004-0100.

(3) Basic rules.

(a) Approval of equipment and systems. All systems, equipment and appurtenances must comply with one of the following three paragraphs.

(A) If installed before February 8, 1973, it must comply with American National Standard for the Storage and Handling of Anhydrous Ammonia, K61.1-1999 or CGA G-2.1-1999.

(B) It must be listed and labeled by a nationally recognized testing laboratory as defined in 29 CFR 1910.7.

(C) A registered engineer may test and certify custom designed and custom built systems as meeting the criteria in OAR 437-004-0800(3)(a)(A). This certification must be on file with the employer for agency review. The certification must detail the test criteria, data and results along with the qualifications of the person doing the test.

(b) Requirements for construction, original test and recertification of non-refrigerated containers.

(A) Only competent persons and/or companies may design, install and maintain non-refrigerated containers.

(B) Containers used with systems in OAR 437-004-0800(4), (7), (8) and (9) must comply with the Code (Boiler and Pressure Vessel Code, Sec VIII, Unfired Pressure Vessels of the American Society of Mechanical Engineers (ASME) — 1968). Construction under Table UW 12 at a basic joint efficiency of less than 80 percent is not authorized.

(C) Containers more than 36 inches in diameter or 250 gallons water capacity must comply with one or more of the following:

(i) Containers must be stress relieved after fabrication according to the Code; or

(ii) Cold-form heads must be stress relieved; or

(iii) Use only hot-formed heads.

(D) Paragraph (B) above does not prohibit the continued use or reinstallation of containers constructed and maintained according to the 1949, 1950, 1952, 1956, 1959, and 1962 editions of the Code or any revisions in effect at the time of fabrication.

(E) Welding to the shell, head or any other part of the container subject to internal pressure must comply with the Code. Other welding is permitted only on saddle plates, lugs or brackets attached to the container by the container manufacturer.

(F) Containers used with systems in OAR 437-004-0800(5) must comply with DOT specifications.

(c) Marking of containers. Keep the original markings on refrigerated and non-refrigerated containers as they were at the time of installation.

(d) Location of containers.

(A) When selecting the location for the storage container consider the physiological effects as well as adjacent fire hazards. Locate containers outside buildings unless the building was built for this purpose.

(B) Locate permanent storage containers 50 feet from a dug well or other sources of potable water supply, unless the container is a part of a water-treatment installation.

(C) Keep storage areas free of readily ignitible materials such as waste, weeds and long dry grass.

(e) Container appurtenances.

(A) Design appurtenances to stand the maximum working pressure of that part of the system on which they are installed. Make appurtenances from material proved suitable for anhydrous ammonia service.

(B) All connections to containers except safety relief devices, gaging devices, or those fitted with a .0550-inch orifice must have shutoff valves as close to the container as practicable.

(C) Excess flow valves where required by these standards must close automatically at the rated flows of vapor or liquid specified by the manufacturer. The connections and line including valves and fittings protected by an excess flow valve must have a larger capacity than the rated flow of the excess flow valve so that the valve will close in case of failure of the line or fittings.

(D) Liquid-level gaging devices that require bleeding of the product to the atmosphere and are built so that outward flow will not be more than that passed by a .0550-inch opening do not need excess flow valves.

(E) Openings from the container or through fittings attached directly on the container to which pressure gage connections are made need do not need excess flow valves if they are not larger than .0550-inch.

(F) Excess flow and back pressure check valves where required by this section must be inside the container or if outside as close as practicable to where the line enters the container. In the latter case installation must prevent strain beyond the excess flow or back pressure check valve from causing a break between the container and the valve.

(G) Excess flow valves must have a bypass not to exceed a .0400-inch opening to allow equalization of pressures.

(H) All excess flow valves must have plain and permanent markings with the name or trademark of the manufacturer, the catalog number, and the rated capacity.

(f) Piping, tubing and fittings.

(A) All piping, tubing and fittings must be made of material suitable for anhydrous ammonia service.

(B) All piping, tubing and fittings must be designed for a pressure not less than the maximum pressure under which they might operate.

(C) All refrigerated piping must conform to the Refrigeration Piping Code, American National Standard, B31.5-1966 with addenda B31.5a-1968 as it applies to ammonia.

(D) Piping on non-refrigerated systems must be at least American Society for Testing and Materials (ASTM) A-53-69 Grade B Electric Resistance Welded and Electric Flash Welded Pipe or equal. For welded or welded and flanged joints the pipe must be at least schedule 40. For threaded joints the pipe must be at least schedule 80. Do not backweld threaded connections. Do not use brass, copper or galvanized steel pipe.

(E) Do not use tubing made of brass, copper, or other material subject to attach by ammonia.

(F) Do not use cast iron fittings but this does not prohibit the use of fittings made specifically for ammonia service or malleable, nodular, or high strength gray iron meeting American Society for Testing and Materials (ASTM) A47-68, ASTM 395-68 or ASTM A126-66 Class B or C.

(G) Use joint compounds that are resistant to ammonia.

(g) Hose specifications.

(A) Hose used in ammonia service must conform to the joint Agricultural Ammonia Institute — Rubber Manufacturers Association Specifications for Anhydrous Ammonia Hose.

(B) Hose subject to container pressure must be designed for a minimum working pressure of 350 p.s.i.g. and a minimum burst pressure of 1,750 p.s.i.g. Hose assemblies, when made up, must be capable of withstanding a test pressure of 500 p.s.i.g.

(C) Hose and hose connections on the low-pressure side of flow control or pressure-bleeding valves must have a bursting pressure rating of not less than five times the pressure setting of the safety relief devices protecting that part of the system but not less than 125 p.s.i.g. All connections must not leak when connected.

(D) Where using hose to transfer liquid from one container to another, "wet" hose is recommended. Such hose must have approved shutoff valves at the discharge end. Prevent excessive pressure in the hose.

(E) On all hose 1/2-inch outside diameter and larger, used for the transfer of anhydrous ammonia liquid or vapor, there must be etched, cast, or impressed at 5-foot intervals the following information.

NOTE: "Anhydrous Ammonia" xxx p.s.i.g. (maximum working pressure), manufacturer's name or trademark, year of manufacture.

NOTE: In place of this requirement the same information may be on a nameplate permanently attached to the hose.Table 1 Footnotes

(h) Safety relief devices.

(A) Every container in systems covered by OAR 437-004-0800(4), (7), (8) and (9) must have one or more safety relief valves of the spring-loaded or equivalent type. The discharge from safety-relief valves must vent away from the container, upward and unobstructed to the atmosphere. All relief-valve discharge openings must have suitable rain caps that allow free discharge of the vapor and prevent entrance of water. Accumulated condensation must drain away. The rate of the discharge must comply with **Table 1**.

(B) Container safety-relief valves must be set to start-to-discharge as follows, with relation to the design pressure of the container: [Table not included. See ED. NOTE.]

(C) Safety relief devices in systems covered by OAR 437-004-0800(4), (7), (8) and (9) must discharge at not less than the rates in (3)(h)(A) above before the pressure is in excess of 120 percent (not including the 10 percent tolerance in (3)(h)(B) above) of the maximum permitted start-to-discharge pressure setting of the device.

(D) Arrange safety relief valves to minimize the possibility of tampering. If the pressure setting adjustment is external, the relief valves must have a means of sealing the adjustment.

(E) Shutoff valves must not be between the safety relief valves and the container; except, that a shutoff valve may be where the arrangement of this valve is such as to always afford full required capacity flow through the relief valves.

(F) Safety relief valves must have direct communication with the vapor space of the container.

(G) Each container safety relief valve used with systems covered by OAR 437-004-0800(4), (7), (8) and (9) must have plain and permanent markings with the symbol "NH3" or "AA"; with the pressure in pounds-per-square-inch at which the valve is set to start-to-discharge; with the actual rate of discharge of the valve at its full open position in cubic feet per minute of air at 60 degrees F. and atmospheric pressure; and the manufacturer's name and catalog number.

Example: "NH3 250-4050 Air" indicates that the valve is suitable for use on an anhydrous ammonia container, is set to start-to-discharge at a pressure of 250 p.s.i.g., and that its rate of discharge at full open position is 4,050 cubic feet per minute of air.

(H) There must be no connection on either the upstream or downstream side that restricts the flow capacity of the relief valve.

(I) A hydrostatic relief valve must be between each pair of valves in the liquid ammonia piping or hose to relieve into the atmosphere at a safe location.

(i) General.

(A) All stationary storage installations must have at least two readily accessible suit- able gas masks. Full face masks with ammonia canisters, not cartridges, approved by the National Institute of Occupational and Safety and Health (NIOSH), are suitable for emergency action for most leaks, particularly those that are outdoors. For protection in concentrated ammonia atmospheres the use of self-contained breathing air apparatus is mandatory. Refer to OAR 437-004-1041 Respiratory Protection, Division 4/I for additional requirements for personal protective equipment.

(B) Stationary storage installations must have an easily accessible shower or a 50-gallon drum of water.

(C) Each vehicle transporting ammonia in bulk except farm applicator vehicles must carry a container of at least 5 gallons of water and a full face mask.

(j) Charging of containers.

(A) The filling densities for unrefrigerated containers must not be more than the following:

(B) Aboveground uninsulated containers may be charged 87.5 percent by volume if the temperature of the anhydrous ammonia being charged is not lower that 30 degrees F. or if the charging of the container stops at the first indication of frost or ice formation on its outside surface and does not resume until the frost or ice is gone.

(k) Transfer of liquids.

(A) Anhydrous ammonia must always be at a temperature suitable for the material of construction and the design of the receiving container.

(B) The employer must require the continuous presence of an attendant in the vicinity of the operation during ammonia transfer.

(C) Charge and use containers only with authorization of the owner.

(D) Gage and charge containers only in the open atmosphere or in buildings or areas for that purpose.

(E) Pumps used for transferring ammonia must be made for that purpose.

(i) Pumps must be designed for at least 250 p.s.i.g. working pressure.

(ii) Positive displacement pumps must have, installed off the discharge port, a constant differential relief valve discharging into the suction port of the pump through a line of sufficient size to carry the full capacity of the pump at relief valve setting, which setting and installation must be according to the pump manufacturer's recommendations.

(iii) On the discharge side of the pump, before the relief valve line, there must be a pressure gage graduated from 0 to 400 p.s.i.

(iv) Plant piping must have shutoff valves as close as practical to pump connections.

(F) Compressors for transferring or refrigerating ammonia must be recommended for ammonia service by the manufacturer.

(i) Compressors must be designed for at least 250 p.s.i.g. working pressure.

(ii) Plant piping must have shutoff valves located as close as practical to compressor connections.

(iii) A relief valve large enough to discharge the full capacity of the compressor must be connected to the discharge before the shutoff valve.

(iv) Compressors must have pressure gages at suction and discharge graduated to at least 1 1/2 times the maximum pressure.

(v) Adequate means, such as a drainable liquid trap, must be on the compressor suction to minimize the entry of liquid into the compressor.

(G) In case the hose breaks, loading and unloading systems must have suitable devices to prevent emptying of the storage or supply container. Backflow check valves or properly sized excess flow valves must be where necessary to provide this protection. If such valves are not practical, remotely operated shutoff valves may are acceptable.

(l) Tank car unloading points and operations.

(A) Unloading of tank cars must conform to the applicable recommendations in DOT regulations.

(B) The employer must insure that unloading operations are done by reliable persons properly instructed and with the authority to monitor careful compliance with all applicable procedures.

(C) Caution signs must be on the track or car to give warning to people approaching the car from the open end or ends of the siding. They must be left up until after the car is empty and disconnected from discharge connections. Signs must be metal or other suitable material, at least 12 inches by 15 inches and bear the words "STOP — Tank Car Connected" or "STOP — Men at Work" the word, "STOP," being in letters at least 4 inches high and the other words in letters at least 2 inches high.

(D) The track of a tank car siding must be substantially level.

(E) Set the brakes and block the wheels on cars during unloading.

(m) Liquid-level gaging device.

(A) Each container except those filled by weight must have an approved liquid-level gaging device. A thermometer well must be in containers without a fixed liquid-level gaging device.

(B) All gaging devices must be arranged so that the maximum liquid level to which the container is filled is readily determined.

(C) Gaging devices that require bleeding of the product to the atmosphere such as the rotary tube, fixed tube, and slip tube devices must have a maximum opening of the bleed valve not larger than .0550-inch unless they have an excess flow valve. (This requirement does not apply to farm vehicles used for the application of ammonia as in OAR 437-004-0800(9).)

(D) Gaging devices must have a design pressure equal to or greater than the design pressure of their host container.

(E) Fixed tube liquid-level gages must indicate the container's 85 percent fill level of its water capacity.

(F) Use columnar gage glasses only on stationary storage installations. They must have shutoff valves with metallic handwheels, excess-flow valves and extra heavy glass adequately protected with a metal housing applied by the gage manufacturer. They must be shielded from the direct rays of the sun.

(n) Electrical equipment and wiring.

(A) Electrical equipment and wiring for use in ammonia installations must be general purpose or weather resistant as appropriate.

(B) Electrical systems must comply with 4/S.

(4) Systems using stationary, non-refrigerated storage containers.

(a) Applies to all storage containers except portable DOT containers.

(A) The minimum design pressure and construction for non-refrigerated containers is 250 p.s.i.g.

(B) Each filling connection must have a combination back-pressure check valve and excess-flow valve; one double or two single back-pressure check valves; or a positive shutoff valve in conjunction with either an internal back-pressure check valve or an internal excess flow valve.

(C) All liquid and vapor connections to containers except filling pipes, safety relief connections, and liquid-level gaging and pressure gage connections with orifices not larger than .0550-inch required in OAR 437-004-0800(3)(e)(D) and (E) must have excess-flow valves.

(D) Each storage container must have a pressure gage graduated from 0 to 400 p.s.i. Gages must be designated for use in ammonia service.

(E) All containers must have vapor return valves.

(b) Safety-relief devices.

(A) Every container must have one or more safety-relief valves of the spring-loaded or equivalent type according to OAR 437-004-0800(b)(9).

(B) The rate of discharge of spring-loaded safety relief valves on underground containers may be a minimum of 30 percent of the rate of discharge in Table 1. After installation, do not uncover containers with this protection until empty of liquid ammonia. Consider containers that may contain liquid ammonia before being installed underground and before being completely covered with earth to be aboveground containers when determining the rate of discharge requirements of the safety-relief valves.

(C) On underground installations where there is a probability of the manhole or housing becoming flooded, the discharge from vent lines must be above the high water level. All manholes or housings must have ventilated louvers or their equivalent, the area which equal or exceed the combined discharge areas of safety-relief valves and vent lines that discharge their content into the manhole housing.

(D) Do not restrict vent pipes. They may not be a smaller diameter than the relief-valve outlet connection.

(E) Vent pipes from two or more safety-relief devices on the same unit, or similar lines from two or more different units may run into a common discharge header, if the capacity of the header is at least equal to the sum of the capacities of the individual discharge lines.

(c) Reinstallation of containers.

(A) Containers that were installed underground must not be reinstalled above-ground or underground, unless they withstand hydrostatic pressure retests at their original rating required by the code under which they were made. They must show no serious corrosion.

(B) Containers reinstalled aboveground, must have safety devices or gaging devices that comply with OAR 437-004-0800(i) and this paragraph respectively for above-ground containers.

(d) Installation of storage containers.

(A) Aboveground containers, except as in (4)(d)(E) below must have substantial concrete or masonry supports, or structural steel supports on firm concrete or masonry foundations. All foundations must extend below the frost line.

(B) Horizontal aboveground containers must be on foundations that permit expansion and contraction. Containers must have supports that prevent the concentration of excessive loads on the supporting portion of the shell. That part of the container in contact with foundations or saddles must have corrosion protection.

(C) The top of underground containers must be below the frost line and at least 2 feet below the surface. If ground conditions make compliance with these requirements impracticable, installation methods must prevent physical damage. It is not necessary to cover the part

of the container where there are manhole and other connections. Anchor or weight containers when necessary to prevent floating.

(D) Underground containers must be on a firm foundation (firm earth is OK) and surrounded with compacted earth or sand. The container must have a corrosion resisting protective coating. This coating must remain undamaged when placing the container into the ground.

(E) Containers with foundations (portable or semi-portable tank containers with suitable steel "runners" or "skids" and commonly known in the industry as "skid tanks") must comply with OAR 437-004-0800(4)(a)(A).

(F) There must be secure anchorage or adequate pier height to prevent container flotation where high flood water might occur.

(G) The distance between underground containers of over 2,000 gallons capacity must be at least 5 feet.

(e) Protection of appurtenances.

(A) Protect valves, regulators, gages and other appurtenances against tampering and physical damage. This also applies during transit of containers.

(B) All connections to underground containers must be within a dome, housing, or manhole and with access by means of a substantial cover.

(f) Damage from vehicles. Protect ammonia systems from vehicle damage.

(4) Refrigerated storage systems.

(a) Container design.

(A) The design temperature must be the minimum temperature to which the container will be refrigerated.

(B) Containers with a design pressure more than 15 p.s.i.g. must comply with OAR 437-004-0800(3)(b), and the materials must be from those in **API Standard 620**, **Recommended Rules for Design and Construction of Large, Welded, Low-Pressure Storage Tanks, Fourth Edition, 1970, Tables 2.02**, **R2.2, R2.2(A), R2.2.1,** or **R2.3**.

(C) Containers with a design pressure of 15 p.s.i.g. and less must comply with the applicable requirements of API Standard 620 including its **Appendix R**.

(D) Use the Code as a guide to select austenitic steels or non-ferrous materials to build containers for use at the design temperature.

(E) The filling density for refrigerated storage containers must be such that the container will not be liquid full at a liquid temperature corresponding to the vapor pressure at the start-to-discharge pressure setting of the safety-relief valve.

(b) Installation.

(A) Containers must be on suitable non-combustible foundations.

(B) There must be adequate protection against flotation or other water damage where high flood water might occur.

(C) Containers for product storage at less than 32 degrees F. must have protection from freezing and consequent frost heaving.

(c) Shutoff valves. When operating conditions make it advisable, there must be a check valve on the fill connection and a remotely operated shutoff valve on other connections below the maximum liquid level.

(d) Safety relief devices.

(A) Set safety relief valves to start-to-discharge at a pressure not more than the design pressure of the container. The valves must prevent a maximum pressure in the container of more than 120 percent of the design pressure. Relief valves for refrigerated storage containers must be self-contained spring-loaded, weight-loaded, or self-contained pilot-operated type.

(B) The total relieving capacity must be the larger of:

(i) Possible refrigeration system upset such as (1) cooling water failure, (2) power failure, (3) instrument air or instrument failure, (4) mechanical failure of any equipment, (5) excessive pumping rates.

(ii) Fire exposure determined by Compressed Gas Association (CGA) S-1, Part 3, Safety Relief Device Standards for Compressed Gas Storage Containers, 1959, except that "A" must be the total exposed surface area in square feet up to 25 feet above grade or to the equator of the storage container if it is a sphere, whichever is greater. If the relieving capacity required for fire exposure is greater than that required by OAR 437-004-0800(a), the additional capacity may be provided by weak roof to shell seams in containers operating at essentially atmospheric pressure and having an inherently weak roof-to-shell seam. The weak roof-to-shell seam is not to provide any of the capacity required in OAR 437-004-0800(a).

(C) If vent lines conduct the vapors from the relief valve, the back pressure under full relieving conditions must not be more than 50 percent of the start-to-discharge pressure for pressure balanced valves or 10 percent of the start-to-discharge pressure for conventional valves. The vent lines must prevent accumulation of liquid in the lines.

(D) The valve or valve installation must provide weather protection.

(E) Atmospheric storage must have vacuum breakers. Ammonia gas, nitrogen, methane, or other inert gases are acceptable to provide a pad.

(e) Protection of container appurtenances. Protect appurtenances against tampering and physical damage.

(f) Reinstallation of refrigerated storage containers. When reinstalling containers that require field fabrication, reconstruct and reinspect them according to their original construction requirements. Pressure retest the containers and if rerating is necessary, it must comply with applicable requirements.

(g) Damage from vehicles. Protect containers from damage by vehicles.

(h) Refrigeration load and equipment.

(A) Compute the total refrigeration load as the sum of the following:

(i) Load imposed by heat flow into the container caused by the temperature differential between design ambient temperature and storage temperature.

(ii) Load imposed by heat flow into the container caused by maximum sun radiation.

(iii) Maximum load imposed by filling the container with ammonia warmer than the design storage temperature.

(B) A single refrigeration system may serve more than one storage container.

(i) Compressors.

(A) There must be a minimum of two compressors either of which must be large enough to handle the loads. Where there are more than two compressors, there must be minimum standby equipment equal to the largest normally operating equipment. Filling compressors are acceptable as standby equipment for holding compressors.

(B) Compressors must be able to operate with a suction pressure at least 10 percent below the minimum setting of the safety valve(s) on the storage container and must withstand a suction pressure at least equal to 120 percent of the design pressure of the container.

(j) Compressor drives.

(A) Each compressor must have its individual driving unit.

(B) There must be an emergency power source that can handle the loads unless facilities are available to safely dispose of vented vapors while the refrigeration system is not operating.

(k) Automatic control equipment.

(A) The refrigeration system must have suitable controls to govern the compressor operation.

(B) There must be an emergency alarm system to function in case the container pressure rises to the maximum allowable operating pressure.

(C) An emergency alarm and shut-off must be in the condenser system to respond to excess discharge pressure caused by failure of the cooling medium.

(D) All automatic controls must be prevent operation of alternate compressors unless the controls will function with the alternate compressors.

(l) Separators for compressors. An entrainment separator of suitable size and design pressure must be in the compressor suction line of lubricated compression. The separator must have a drain and gaging device.

(m) Condensers. The condenser system may be air or water cooled or both. The condenser must have minimum design pressure of at least 250 p.s.i.g. There must be a way to purge noncondensibles either manually or automatically.

(n) Receiver and liquid drain. A receiver must have a liquid-level control to discharge the liquid ammonia to storage. The receiver must be able to operate at least 250 p.s.i.g. and have the necessary connections, safety valves, and gaging device.

(o) Insulation. Insulated refrigerated containers and pipelines must have covers of a material of suitable quality and thickness for the temperatures. Weatherproofing must be flame retardant.

(5) Systems using portable DOT containers.

(a) Cylinders must comply with DOT specifications and must comply with 49 CFR Chapter I and Marking Portable Compressed Gas Containers to Identify the Material Contained, ANSI Z48.1-1954 (R1970).

(b) Store cylinders in an area free from ignitable debris and in such manner as to prevent external corrosion. Storage may be indoors or outdoors.

(c) Cylinders filled according to DOT regulations will become liquid full at 145 degrees F. Protect cylinders from heat sources such as radiant flame and steam pipes. Do not apply heat directly to cylinders to raise the pressure.

(d) Store cylinders in a way that protects them from vehicles or external damage.

(e) Any cylinder designed to have a valve protection cap must have the cap securely in place when the cylinder is not in service.

(6) Tank motor vehicles for the transportation of ammonia.

(a) This paragraph applies to containers and equipment on tank motor vehicles including semitrailers and full trailers used to transport ammonia. This paragraph does not apply to farm vehicles. For requirements covering farm vehicles, refer to OAR 437-004-0800(8) and (9). Paragraph (b) below applies to this paragraph unless otherwise noted. Containers and pertinent equipment for tank motor vehicles for the transportation of anhydrous ammonia, must also comply with DOT requirements.

(b) Design pressure and construction of containers.

(A) The minimum design pressure for containers must comply with DOT regulations.

(B) The shell or head thickness of containers must be at least 3/16-inch.

(C) All container openings, except safety relief valves, liquid-level gaging devices, and pressure gages, must have labels that designate whether they communicate with liquid or vapor space.

(c) Container appurtenances.

(A) Protect appurtenances from physical damage.

(B) All connections to containers, except filling connections, safety relief devices, and liquid-level and pressure gage connections, must have suitable automatic excess flow valves, or may have quick-closing internal valves, that must remain closed except during delivery operations. The control mechanism for such valves may have a secondary control remote from the delivery connections and such control mechanism must have a fusible section (melting point 208 degrees F. to 220 degrees F.) that permits the internal valve to close automatically in case of fire.

(C) Filling connections must have automatic back-pressure check valves, excess-flow valves, or quick-closing internal valves, to prevent back-flow in case the filling connection breaks. You do not need an automatic valve where the filling and discharge connect to a common opening in the container shell and that opening has a quick-closing internal valve as in OAR 437-004-0800(f)(3)(ii).

(D) All containers must be capable of spray loading (filling in the vapor space) or with an approved vapor return valve of adequate capacity.

(d) Piping and fittings.

(A) Securely mount all piping, tubing, and fittings and protect them from damage. Protect hoses while the vehicle is moving.

(B) Fittings must comply with OAR 437-004-0800(3)(e). Pipe must be Schedule 80.

(e) Safety relief devices.

(A) The discharge from safety relief valves must vent upward away from the container and to the open air in such a manner as to prevent any impingement of escaping gas. Use loose-fitting rain caps. Size of discharge lines from safety valves must not be smaller than the nominal size of the safety-relief valve outlet connection. Condensate that accumulates in the discharge pipe must drain off.

(B) Any part of liquid ammonia piping that may close at both ends must have a hydrostatic relief valve.

(f) Transfer of liquids.

(A) Determine the content of tank motor vehicle containers by weight, by a suitable liquid-level gaging device, or other approved methods. If using a liquid-level measurement, the container must have a thermometer well. This volume when converted to weight must not be more than the filling density specified by the DOT.

(B) Any pump, except a constant speed centrifugal pump, must have a suitable pressure actuated bypass valve permitting flow from discharge to suction when the discharge pressure rises above a predetermined point. Pump discharge must also have a spring-loaded safety relief valve set at a pressure not more than 135 percent of the setting of the bypass valve or more than 400 p.s.i.g., whichever is larger.

(C) Compressors must have manually operated shutoff valves on both suction and discharge connections. Pressure gages of bourdon-tube type must be on the suction and discharge of the compressor before the shutoff valves. The compressor must not operate if either pressure gage is removed or is inoperative. A spring-loaded, safety-relief valve capable of discharging to atmosphere the full flow of gas from the compressor at a pressure not more than 300 p.s.i.g. must be between the compressor discharge and the discharge shutoff valve.

(D) Valve functions have clear and legible identification by metal tags or nameplates permanently affixed to each valve.

(g) Full trailers and semitrailers.

(A) Securely attach full trailers to the vehicle drawing them with suitable drawbars and a safety chain (or chains) or safety cables.

(B) Every full trailer or semitrailer must have reliable brakes that operate from the driver's seat.

(C) Every full trailer must have self-energizing brakes.

(D) Full trailers must follow substantially in the path of their towing vehicle and will not whip or swerve dangerously from side to side.

(E) Where using a fifth wheel, securely fasten it to both units, and use a positive locking mechanism that prevents separation of the two units except by manual release.

(h) Protection against collision. Each tank motor vehicle must have properly attached bumpers or chassis extension that protects the tank, piping, valves, and fittings from physical damage.

(i) Chock blocks. There must be at least two chock blocks. Use these blocks to prevent rolling during loading and unloading.

(j) Portable tank containers (skid tanks). Where these tanks are for farm storage they must comply with OAR 437-004-0800(4)(a)(A). When portable tank containers substitute for cargo tanks and are permanently on tank motor vehicles for the transportation of ammonia, they must comply with the requirements of this paragraph.

(7) Systems on farm vehicles other than for the application of ammonia.

(a) Application. This paragraph applies to containers of 1,200 gallons capacity or less and equipment on farm vehicles (implements of husbandry) not used to apply ammonia to the soil. OAR 437-004-0800(4) applies unless otherwise noted.

(b) Design pressure and classification of containers.

(A) The minimum design pressure for containers is 250 p.s.i.g.

(B) Container shell or head thickness must be at least 3/16-inch.

(c) Mounting containers.

(A) A suitable "stop" or "stops" must be on the vehicle or on the container so that the container does not be come loose from its mounting.

(B) At one or more places on each side of the container, a "hold down" device must anchor the container to the vehicle.

(C) When containers are on four-wheel trailers, the weight must be even over both axles.

(d) Container appurtenances.

(A) All containers must have a fixed liquid-level gage.

(B) All containers with a capacity more than 250 gallons must have a pressure gage with a dial graduated from 0-400 p.s.i.

(C) The filling connection must have a combination back-pressure check valve and excess-flow valve; one double or two single back-pressure check valves; or a positive shutoff valve in conjunction with either an internal back-pressure check valve or an internal excess flow valve.

(D) All containers with a capacity more than 250 gallons must be equipped for spray loading or have an approved vapor return valve.

(E) All vapor and liquid connections except safety-relief valves and those specifically exempted in ANSI K61.1-1966, must have approved excess-flow valves or quick-closing internal valves that, except during operating periods, must be closed.

(F) Fittings must have protection from damage by a metal box or cylinder with an open top fastened to the container or by rigid guards welded to the container on both sides of the fittings or by a metal dome. If there is a metal dome, the relief valve must vent through the dome.

(G) If there is a liquid withdrawal line in the bottom of a container, its connections, including hose, must not be lower than the lowest horizontal edge of the vehicle axle.

(H) Secure both ends of the hose while in transit.

(e) Marking the container. The words, "Caution – Ammonia" must be on each side and the rear end of the container in letters at least 4 inches high or its markings must comply with DOT regulations.

(f) Farm vehicles. All vehicles must carry a container of at least 5 gallons of water for washing ammonia from the skin.

(8) Systems on farm vehicles for the application of ammonia.

(a) This applies to systems using containers of 250 gallons capacity or less on farm vehicles (implements of husbandry) used to apply ammonia to the soil. OAR 437-004-0800(4) applies unless otherwise noted. Larger containers must comply with ANSI K61.1-1966.

(b) Design pressure and classification of containers.

(A) The minimum design pressure for containers is 250 p.s.i.g.

(B) The shell or head thickness of a container is less than 3/16-inch.

(c) Mounting of containers. All containers and flow-control devices must have secure mountings.

(d) Container valves and accessories.

(A) Each container must have a fixed liquid-level gage.

(B) The filling connection must have a combination back-pressure check valve and an excess-flow valve; one double or two single back-pressure check valves: or a positive shut-off valve in conjunction with an internal back-pressure check valve or an internal excess-flow valve.

(C) You can fill the applicator tank by venting to open air if the bleeder valve orifice is not more than 7/16-inch in diameter.

(D) Regulation equipment may connect directly to the tank coupling or flange only with a flexible connection between the regulating equipment and the rest of the liquid withdrawal system. Otherwise, connect the regulating equipment flexibly to the container shutoff valve.

(E) There need be no excess flow valve in the liquid withdrawal line if the controlling orifice between the contents of the container and the outlet of the shutoff valve is not more than 7/16-inch in diameter.

[ED. NOTE: Tables & Appendices referenced are available from the agency.]
[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98; OSHA 9-2006, f. & cert. ef. 9-22-06

437-004-0950
Hazardous Waste Operations and Emergency Response

(1) When you have a chemical spill and you expect your employees to clean it up or help clean it up, there are circumstances that might put the work under the scope of Subdivision 2/H, Hazardous Waste Operations and Emergency Response, and the rules of other government agencies like the Department of Environmental Quality.

(2) The most important consideration in determining your responsibilities is the information on the MSDS for the spilled material. If the characteristics of the chemical or the instructions for handling and cleanup on the MSDS make the work fall outside the scope of "routine tasks" as defined in your written hazard communication program, then follow OAR 437-002-1910.120, Hazardous Waste Operations. One of the other major factors is the amount of the material spilled and what it contacted such as concrete, soil or agricultural products. Another major determinant is the method of clean-up. There may be other factors that make the work fall outside the definition of "routine tasks" and into the scope of OAR 437-002-1910.120, Hazardous Waste Operations.

NOTE: For your convenience, here is a reprint of the scope from OAR 437-002-1910.120, Hazardous Waste Operations so that you'll know if circumstances place you under its jurisdiction.
(v) Emergency response operations for releases of, or substantial threats of releases of, hazardous substances without regard to the location of the hazard.
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

Protective Equipment

437-004-1005
General Requirements

(1) Definitions.

(a) Contaminant — Any substance that causes or can cause physical harm to a person by contact with or entry into the body.

(b) Lanyard — A flexible line connected at one end to a body belt or harness and at the other end to an anchorage.

(c) Lifeline — A flexible line engineered to serve as an anchorage for personal fall arrest or fall restraint systems.

(d) Personal Fall Arrest System — a system that limits a person's fall to between 2 and 6 feet and prevents contact with a lower surface or obstacle.

(e) Personal Fall Prevention/Fall Restraint System — a system that prevents a person from falling more than 2 feet. This includes positioning systems.

(f) Personal protective equipment — Anything worn or used for protecting a person from personal injury or illness.

(g) Safety belt — A strap around a person's waist for attachment to a personal fall restraint system.

(2) Who must supply and pay. Employers must supply, at no cost to employees, all personal protective equipment that is not personal in nature. Payment for items that the worker can use off the job is subject to negotiation between labor and management. Such personal items include steel toed footwear, non speciality safety glasses, some types of cold weather outer wear, and other things. If either the type of items or the character of their use make it impossible, unsafe or not customary for the employee to use them off the job, the employer must pay for them.

(3) Employees' equipment. If employees provide their own protective equipment, the employer is responsible for assuring that it meets OR-OSHA standards and is right for the job and hazards. The employer also must assure that it is clean and in good repair.

(4) Storage. When not in use, store personal protective equipment so that it will be clean and ready for use.

(5) Bad equipment. Do not allow workers to use defective or damaged personal protective equipment.

(6) Skin. Where needed, provide and require the use of protective coverings, aprons, ointments, gloves or other effective protection to employees exposed to materials that are hazardous to their skin.

(7) Follow instruction. Wear and use personal protective equipment according to the manufacturer's instructions.

(8) Watches and jewelry. Employees working where they might contact moving parts of powered machinery or live parts of electrical equipment, must not wear rings, watches, earrings, bracelets or other things that could cause a hazard.

(9) Try controls first. Contain or eliminate hazards at the source by administrative or engineering controls. Employees must use personal protective equipment where this is not feasible or where there are still hazards.

(10) Universal requirements. Personal protective equipment must meet these requirements:

(a) Provide adequate protection against the particular hazards for which it is used.

(b) Fit securely and not interfere with the movements of the wearer.

(c) Employees can clean or disinfect it.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-1020
Personal Fall Protection

(1) Protect all employees working on unguarded surfaces more than 10 feet above a lower level or at any height above dangerous equipment, from fall hazards.

NOTE: These provisions do NOT apply when the work is of limited duration and limited exposure, and it is equally or more hazardous to set up or use the fall protection system. Examples include: the activities of grain weigher-samplers on railroad gondola-hopper cars, or railcar inspectors when testing or inspecting car tops.

(2) Do not use material, not manufactured for the purpose, as belts, harnesses or lanyards in personal fall arrest or prevention systems. Such items include rope, wire and strapping.

(3) Use lifelines, body belts/harnesses and lanyards only for employee fall prevention or fall arrest. Remove this equipment from fall prevention or fall arrest service after it has been subjected to a load.

(4) The point of attachment for lifelines must support a minimum dead weight of 5,000 pounds.

(5) Rig personal fall arrest systems so that an employee can neither free fall more than 6 feet, nor contact any lower level.

(6) Rig personal fall restraint systems so that an employee cannot free fall more than 2 feet.

(7) Use a lifeline with a minimum of 7/8-inch wire core manila rope where cuts or abrasions are possible. For all other lifeline applications, use a minimum of 3/4-inch manila or equivalent with a minimum breaking strength of 5,000 pounds.

(8) Use only drop forged or pressed steel, cadmium plated body belts/harnesses and lanyard hardware. Keep surfaces smooth and free of sharp edges.

(9) Use body belts/harnesses and lanyard hardware, except rivets, with a tensile loading strength of 4,000 pounds. Cracking, breaking, or permanent deformation must not result from this loading.

(10) Use a minimum of 1/2-inch nylon or equivalent material for body belts/harnesses and lanyards. The length must limit the fall to 6 feet or less. The nominal breaking strength must be 5,000 pounds.

(11) Except as in (a) through (d) below, employees working more than 10 feet above the next lower surface must use a personal fall protection system or have safety nets for fall protection:

(a) Haystacks that are not next to open pits, tanks or other hazardous locations;

(b) Fixed or portable ladders not over water, exposed moving machinery or other hazardous locations;

(c) Fixed ladders with cages or safety devices.

(d) Situations covered by OAR 437-004-0310 and 0320.

(12) Inspect all lifelines, lanyards and safety belts before each use. Do not use a defective belt or lifeline.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-1030
Work Clothing

General requirements.

(1) Wear clothing that provides adequate protection for the hazards of the work.

(2) Do not wear loose sleeves or other loose clothing when near enough to be caught in moving parts of machinery.

(3) Do not wear clothing soaked with enough flammable liquids to be hazardous.

NOTE: See OAR 437-004-2230 for requirements for PPE while using chain saws.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98; OSHA 9-2006, f. & cert. ef. 9-22-06

437-004-1035
Eye and Face Protection

(1) General requirements.

(a) Provide and require the use of eye or face protection that protects employees from flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases and vapors or potentially harmful light radiation.

(b) If an employee wears prescription lenses while doing work that involves eye hazards, they must wear eye protection that has the prescription. Otherwise, they must wear protection over the prescription lenses without disturbing the proper position of the prescription lenses or the protective lenses.

(c) Employees must use eye protection with side protection when there is a hazard from flying objects. Detachable side protectors (e.g. clip-on or slide-on side shields) are acceptable.

(d) Eye and face protection equipment must be clean and in good repair.

(2) Criteria for protective eye and face devices.

(a) Protective eye and face devices purchased after July 5, 1994 must comply with ANSI Z87.1-1989, "American National Standard Practice for Occupational and Educational Eye and Face Protection," which is incorporated by reference. The OR-OSHA Resource Center has copies for public review at 350 Winter Street NE, Salem, OR 97310.

(b) Eye and face protective devices purchased before July 5, 1994 must comply with the ANSI "USA standard for Occupational and Educational Eye and Face Protection," Z87.1-1968. The OR-OSHA Resource Center has copies for public review at 350 Winter Street NE, Salem, OR 97310.

[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-1041
Respiratory Protection

(1) Permissible practice.

(a) To control occupational diseases caused by contaminated air, the best method is to prevent contamination with engineering controls. When this approach is not feasible, employers must comply with this standard.

(b) You must provide respirators to all employees when it is necessary to protect their health. Respirators must be appropriate for the hazard. You must also have an effective respirator program that includes at least the requirements of this standard. (See paragraph (3)).

(2) Definitions. The following definitions apply to this standard.

(a) Air-purifying respirator is a respirator with an air-purifying filter, cartridge, or canister that removes specific air contaminants by passing ambient air through the air-purifying element.

(b) Assigned protection factor (APF) means the workplace level of respiratory protection that a respirator or class of respirators is expected to provide to employees when the employer implements a continuing, effective respiratory protection program as specified by this section.

(c) Atmosphere-supplying respirator is a respirator that supplies the user with breathing air from a source independent of the ambient atmosphere, and includes supplied-air respirators (SARs) and self-contained breathing apparatus (SCBA) units.

(d) Canister or cartridge is a container with a filter, sorbent, or catalyst, or combination of these items, that removes specific contaminants from the air passed through the container.

(e) Demand respirator is an atmosphere-supplying respirator that admits breathing air to the face piece only when inhalation creates a negative pressure inside the face piece.

(f) Elastomer (elastomeric) is an elastic substance like rubber or neoprene.

(g) Emergency situation is any event such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment that may or does result in an uncontrolled significant release of an airborne contaminant.

(h) Employee exposure is exposure to a concentration of an airborne contaminant that would occur if the employee were not using respiratory protection.

(i) End-of-service-life indicator (ESLI) is a device, on the cartridge, that warns respirator users when their respirator is near the end of its ability to protect them. For example, an indicator on the cartridge will change to warn the user that the cartridge sorbent material is nearing saturation and is no longer effective.

(j) Engineering control measures are methods to eliminate or control employee exposure to the hazard; e.g., substitution of a less toxic material, general or local ventilation and enclosing the operation.

(k) Escape-only respirator is a respirator only for use during emergency exit.

(l) Filter or air purifying element is a respirator component (e.g., canister or cartridge) that removes solid or liquid aerosols from the inspired air.

(m) Filtering face piece (dust mask) is a tight fitting negative pressure particulate respirator with a filter as an integral part of the face piece or with the entire face piece made of the filtering medium.

(n) Fit factor is a quantitative estimate of the fit of a particular respirator to a specific person, and typically estimates the ratio of the concentration of a substance in ambient air to its concentration inside the respirator when worn. Instrumentation is used with ambient air as the "test agent" to quantify the respirator fit. See appendix A.

(o) Fit test is the use of procedures in Appendix A to qualitatively or quantitatively evaluate the fit of a respirator on a person. (See also Qualitative fit test QLFT and Quantitative fit test QNFT.)

(p) Helmet is a rigid respirator covering that also provides head protection against impact and penetration.

(q) High efficiency particulate air (HEPA) filter is a filter that is at least 99.97 percent efficient in removing monodisperse particles of

0.3 micrometers in diameter. The equivalent NIOSH 42 CFR 84 particulate filters are the N100, R100, and P100 filters.

(r) Hood is a respirator covering that completely covers the head and neck and may also cover portions of the shoulders and torso.

(s) Immediately dangerous to life or health (IDLH) is an atmosphere that poses an immediate threat to life, would cause irreversible adverse health effects, or would impair an individual's ability to escape from a dangerous atmosphere.

(t) Interior structural firefighting is the physical activity of fire suppression, rescue or both, inside of buildings or enclosed structures which are involved in a fire situation beyond the incipient stage.

(u) Loose-fitting face piece is a respiratory covering that forms a partial seal with the face, e.g., hood.

(v) Maximum use concentration (MUC) means the maximum atmospheric concentration of a hazardous substance from which an employee can be expected to be protected when wearing a respirator, and is determined by the assigned protection factor of the respirator or class of respirators and the exposure limit of the hazardous substance. The MUC can be determined mathematically by multiplying the assigned protection factor specified for a respirator by the required OSHA permissible exposure limit, short-term exposure limit, or ceiling limit. When no OSHA exposure limit is available for a hazardous substance, an employer must determine an MUC on the basis of relevant available information and informed professional judgment.

(w) Negative pressure respirator (tight fitting) is a respirator in which the air pressure inside the face piece is negative during inhalation with respect to the ambient air pressure outside the respirator.

(x) Oxygen deficient atmosphere is an atmosphere with an oxygen content less than 19.5 percent by volume.

(y) Physician or other licensed health care professional (PLHCP) is a person whose legally permitted scope of practice (i.e., license, registration, or certification) allows them to independently provide, or be delegated to provide, some or all of the health care services required by this standard.

(z) Positive pressure respirator is a respirator in which the pressure inside the respiratory covering is higher than the air pressure outside the respirator.

(aa) Powered air-purifying respirator (PAPR) is an air-purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering.

(bb) Pressure demand respirator is a positive pressure atmosphere-supplying respirator that admits breathing air to the face piece when inhalation reduces the positive pressure inside the face piece.

(cc) Qualitative fit test (QLFT) is a pass/fail fit test to assess the adequacy of respirator fit that relies on the individual's response to the test agent. See Appendix A.

(dd) Quantitative fit test (QNFT) is an assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator. See Appendix A.

(ee) Respirator covering is that part of a respirator that forms the protective barrier between the user's respiratory tract and an air-purifying device or breathing air source, or both. It may be a face piece, helmet, hood, suit, or a mouthpiece respirator with nose clamp.

(ff) Self-contained breathing apparatus (SCBA) is an atmosphere-supplying respirator for which user carries the breathing air source.

(gg) Service life is the period of time that a respirator, filter or sorbent, or other respiratory equipment adequately protects the wearer.

(hh) Supplied-air respirator (SAR) or airline respirator is an atmosphere-supplying respirator for which the source of breathing air is not carried by the user.

(ii) Tight-fitting face piece is a respirator covering that forms a complete seal with the face, e.g., half mask or full-face piece.

(jj) User seal check is an action by the respirator user to determine if the respirator is properly seated to the face. See appendix B-1.

(3) Respiratory protection program.

(a) When respirators are necessary to protect the health of workers or when you require workers to wear them, you must have an effective, written respiratory protection program, managed by a knowledgeable person, with procedures specific to your work site. Keep the program updated to reflect changes in conditions that require the use of respirators. You must include at least these points:

(A) Procedures for selecting respirators for use in the workplace;

(B) Medical evaluations of employees require to use respirators;

(C) Fit testing procedures for tight-fitting respirators;

(D) Procedures for proper use of respirators in routine and reasonably foreseeable emergency situations;

(E) Procedures and schedules for cleaning, disinfecting, storing, inspecting, repairing, discarding, and otherwise maintaining respirators;

(F) Procedures to ensure adequate air quality, quantity, and flow of breathing air for atmosphere-supplying respirators;

(G) Training of employees in the respiratory hazards to which they are potentially exposed during routine and emergency situations;

(H) Training of employees in the proper use of respirators, including putting on and removing them, any limitations on their use, and their maintenance; and

(I) Procedures for regularly evaluating the effectiveness of the program.

(b) The employer must provide respirators, training, and medical evaluations at no cost to the employee.

(c) Where respirator use is voluntary:

(A) You may provide respirators to employees who request them or they may use their own respirators. If you allow this voluntary use, you must determine that it will not create a hazard to the user. You must provide the voluntary user with the information in Appendix D, and;

(B) You must have a limited written respiratory program for voluntary users. It must include those parts of the standard necessary to ensure that:

(i) The user is medically able to use it without creating a hazard to themselves. Use of respirators other than dust masks require medical evaluations.

(ii) The program includes proper cleaning, storing and maintenance.

EXCEPTION: No program is necessary for voluntary users who only use dust masks (filtering face pieces).

(4) Selection of respirators. Identify and evaluate the respiratory hazard(s) including a reasonable estimate of employee exposures and an identification of the contaminant's chemical state and physical form. You must treat atmospheres with the potential for IDLH conditions as an IDLH hazard and provide appropriate respiratory protection.

(a) General requirements.

(A) You must evaluate respiratory hazards, conditions in the workplace and user factors, then select and provide the appropriate respirators.

(B) All respirators must have NIOSH certification and all use must conform to that certification.

(C) Respirators must correctly fit and be acceptable to the user.

(b) Respirators for IDLH atmospheres.

(A) Provide the following respirators for employee use in IDLH atmospheres:

(i) A full face piece pressure demand SCBA certified by NIOSH for a minimum service life of 30 minutes, or

(ii) A combination full-face piece pressure demand supplied-air respirator (SAR) with auxiliary self-contained air supply.

(B) Respirators only for escape from IDLH atmospheres must have NIOSH certification for escape from the atmosphere of use.

(C) Treat all oxygen-deficient atmospheres as IDLH.

EXCEPTION: If you can demonstrate that, under all foreseeable conditions, the oxygen concentration will stay within the ranges in Table II (i.e., for the altitudes set out in the table), then use any atmosphere-supplying respirator.

(c) Respirators for atmospheres that are not IDLH.

(A) Provide respirators adequate to protect the health of workers and ensure compliance with all other OR-OSHA requirements, under routine and reasonably foreseeable emergency situations.

(i) Assigned Protection Factors (APFs). Employers must use the assigned protection factors listed in Table I to select a respirator that meets or exceeds the required level of employee protection. When using a combination respirator (e.g., airline respirators with an air-purifying filter), employers must ensure that the assigned protection factor is appropriate to the mode of operation in which the respirator is being used.

(ii) Maximum Use Concentration (MUC).

(I) The employer must select a respirator for employee use that maintains the employee's exposure to the hazardous substance, when measured outside the respirator, at or below the MUC.

(II) Employers must not apply MUCs to conditions that are immediately dangerous to life or health (IDLH); instead, they must use respirators listed for IDLH conditions in paragraph (4)(b) of this standard.

(III) When the calculated MUC exceeds the IDLH level for a hazardous substance, or the performance limits of the cartridge or canister, then employers must set the maximum MUC at that lower limit.

(B) The respirator must be appropriate for the chemical state and physical form of the contaminant.

(C) For protection against gases and vapors, provide:

(i) An atmosphere-supplying respirator, or

(ii) An air-purifying respirator, if:

(I) It has and end-of-service-life indicator (ESLI) certified by NIOSH for the contaminant; or

(II) If there is no ESLI appropriate for your conditions, implement a change schedule for canisters and cartridges that is based on objective information or data that will ensure that canisters and cartridges are changed before the end of their service life. Describe in the respirator program the information and data relied on and the basis for the canister and cartridge change schedule and the basis for reliance on the data.

(**NOTE:** The Worker Protection Standard contains criteria for specific change out schedules for respirator canisters and cartridges. See OAR 437-002-170.240.)

(D) For protection against particulates, provide:

(i) An atmosphere-supplying respirator; or

(ii) An air-purifying respirator with a filter certified by NIOSH under 30 CFR part 11 as a high efficiency particulate air (HEPA) filter, or an air-purifying respirator with a filter certified for particulates by NIOSH under 42 CFR part 84; or

(iii) For contaminants consisting primarily of particles with mass median aerodynamic diameters (MMAD) of at least 2 micrometers, an air-purifying respirator with any filter certified for particulates by NIOSH. [Tables not included. See ED. NOTE.]

(5) Medical evaluation.

(a) General. You must provide medical evaluations to determine workers' ability to use a respirator safely. Do this before the worker's fit test and before any work requiring respirator use. The employer may discontinue an employee's medical evaluations when the employee no longer uses a respirator.

(b) Medical evaluation procedures.

(A) Use a physician or other licensed health care professional (PLHCP) to do the evaluations using either a medical questionnaire or an initial examination that produces the same information as in Appendix C.

(c) Follow-up medical examination.

(A) If the PLHCP reports that the employee needs a follow-up examination because of a positive response to any of questions 1 through 8 of the questionnaire in Appendix C or if their initial exam caused the need for a follow-up, you must ensure that they get the opportunity for the examination.

NOTE: If the employee refuses the examination, they may not work in jobs that require a respirator.

(d) Administration of the medical questionnaire and examinations.

(A) You must allow the employee to complete the questionnaire in a way that protects the confidentiality of the information. Employers are not to see the answers or review the completed form. You must allow employees to complete the form during normal working hours or at a time and place convenient to them. If employees need help, allow them to ask your PLHCP or anybody other than their employer or representatives of their employer.

(B) The employer must provide the employee with an opportunity to discuss the questionnaire and examination results with the PLHCP.

(e) Supplemental information for the PLHCP.

(A) You must give the PLHCP the following information before they make any recommendation about a worker's ability to use a respirator.

(i) The type and weight of the respirator the employee will use;

(ii) How long and how often the employee will use the respirator (including use for rescue and escape);

(iii) The expected physical work effort;

(iv) Additional protective clothing and equipment to be worn; and

(v) Temperature and humidity extremes that may exist during use.

(B) You need not provide information more than once if it is unchanged.

(C) You must provide a copy of your written respiratory program and this standard to the PLHCP.

Note to Paragraph (5)(e)(C): When the employer replaces a PLHCP, the employer must ensure that the new PLHCP has this information, either by providing the documents directly to the PLHCP or having the documents transferred from the former PLHCP to the new PLHCP. However, OR-OSHA does not expect employers to have employees medically reevaluated solely because there is a new PLHCP.

(f) Medical determination. In determining the employee's ability to use a respirator, the employer must:

(A) Obtain a written recommendation about the employee's ability to use the respirator from the PLHCP. The recommendation must provide only the following information:

(i) Any limitations on respirator use relating to the medical condition of the employee, or relating to the workplace conditions, including whether or not the employee is medically able to use the respirator;

(ii) The need, if any, for follow-up medical evaluations; and

(iii) A statement that the PLHCP gave a copy of the recommendation to the worker.

(B) If the respirator is a negative pressure respirator and the PLHCP finds that using it would increase the employee's health risk, the employer must provide a PAPR until a subsequent evaluation clears the employee for another type.

(g) Additional medical evaluations. At a minimum, the employer must provide additional medical evaluations that comply with this standard if:

(A) An employee reports medical signs or symptoms related to ability to use a respirator;

(B) A PLHCP, supervisor, or the knowledgeable person informs the employer that an employee needs a reevaluation; or

(C) Information from the respiratory protection program, including observations made during fit testing and program evaluation, indicates a need for employee reevaluation; or

(D) A change occurs in work conditions (e.g., physical work effort, protective clothing, temperature) that may result in a substantial increase in the physiological burden to the employee.

(6) Fit testing.

(a) You must be certain that employees using a tight-fitting face piece respirator pass a qualitative fit test (QLFT) or quantitative fit test (QNFT), using the same make, model, style and size respirator, The fit test must comply with this standard.

(b) Workers using a tight-fitting face piece respirator must renew their fit test annually, before initial use and when they change to another type, style, model or make.

(c) You must do a new fit test on any worker when they or a PLCHP report or you observe any change in the worker's physical condition that could affect the respirator fit.

(d) If after passing a QLFT or QNFT, the employee notifies the employer, supervisor, or PLHCP that the fit of the respirator is unacceptable, you must give them a reasonable opportunity to select a different respirator face piece and redo the fit test.

(e) All fit tests must comply with the Appendix A to this standard.

(f) Do not use qualitative fit tests (QLFT) for negative pressure air purifying respirators for use in atmospheres where the contaminant could be more than 10 times the permissible exposure limit (PEL).

(g) A QNFT fit factor of 100 or more for tight fitting half face piece or a fit factor of 500 for tight fitting full face piece respirators is necessary to pass a quantitative fit test.

(h) For both negative and positive pressure respirators that are tight-fitting, atmosphere-supplying types or powered air-purifying, use only negative pressure quantitative or qualitative fit tests, testing only in the negative pressure mode.

(A) Do qualitative fit testing of these respirators by temporarily converting the respirator user's actual face piece into a negative pressure respirator with appropriate filters, or by using an identical negative pressure air-purifying respirator face piece with the same sealing surfaces as a surrogate for the atmosphere-supplying or powered air-purifying respirator face piece.

(B) Do quantitative fit testing of these respirators by modifying the face piece to allow sampling inside the face piece in the breathing zone of the user, midway between the nose and mouth. Do this by installing a permanent sampling probe onto a surrogate face piece, or

by using a sampling adapter designed to temporarily provide a way to sample air from inside the face piece.

(C) Before returning a face piece to normal use, completely remove any modifications done for fit testing, and restore the face piece to NIOSH-approved.

(7) Use of respirators.

(a) Face piece seal protection.

(A) Workers who must wear tight-fitting face pieces may not have either of the following:

(i) Facial hair between the sealing surface and face or anything that interferes with the valve function; or

(ii) Any other condition that interferes with the face-to-face piece seal or valve function.

(B) If an employee wears glasses or goggles or other personal protective equipment, the employer must ensure that it does not interfere with the seal of the face piece to the face of the user.

(C) Employers must train workers who wear respirators on the need for and technique of doing a user seal check before every use. This training must include the procedures in Appendix B-1 or the recommendations of the respirator manufacturer.

(b) Continuing respirator effectiveness.

(A) You must evaluate the effectiveness of a respirator when there is a change in work area conditions or degree of employee exposure or stress that may affect respirator effectiveness.

(B) You must ensure that employees leave the respirator use area:

(i) To wash their faces and respirator face pieces as necessary to prevent eye or skin irritation associated with respirator use; or

(ii) If they detect vapor or gas breakthrough, changes in breathing resistance, or leakage of the face piece; or

(iii) To replace the respirator or the filter, cartridge, or canister elements.

(C) If the employee detects vapor or gas breakthrough, changes in breathing resistance, or leakage of the face piece, the employer must replace or repair the respirator before allowing the employee to return to the work area.

(c) Procedures for IDLH atmospheres. For all IDLH atmospheres, the employer must ensure that:

(A) One employee or, when needed, more than one employee is outside the IDLH atmosphere;

(B) Visual, voice, or line communication is continuous between the employee(s) in the IDLH atmosphere and the employee(s) outside the IDLH atmosphere;

(C) The employee(s) outside the IDLH atmosphere have the training and equipment to provide effective emergency rescue;

(D) The employer or designee is notified before the employee(s) outside the IDLH atmosphere enter the IDLH atmosphere to provide emergency rescue;

(E) The employer or designee authorized to do so by the employer, once notified, provides necessary assistance appropriate to the situation;

(F) Employee(s) outside the IDLH atmospheres have:

(i) Pressure demand or other positive pressure SCBAs, or a pressure demand or other positive pressure supplied-air respirator with auxiliary SCBA; and either

(ii) Appropriate retrieval equipment for removing the employee(s) who enter(s) these hazardous atmospheres where retrieval equipment would contribute to the rescue of the employee(s) and would not increase the overall risk resulting from entry; or

(iii) Equivalent means for rescue when there is no requirement for retrieval equipment under paragraph (7)(c)(F)(ii).

(d) Procedures for interior structural firefighting. If you require your workers to fight interior structural fires, paragraph (7)(c) applies. You must do the following:

(A) At least two employees enter the IDLH atmosphere and remain in visual or voice contact with one another at all times; and

(B) At least two employees are located outside the IDLH atmosphere; and

(C) All employees engaged in interior structural firefighting use SCBA's.

Note 1 to paragraph (7): One of the two individuals located outside the IDLH atmosphere may be assigned to an additional role, such as incident commander in charge of the emergency or safety officer, so long as this individual is able to perform assistance or rescue activities without jeopardizing the safety of health of any firefighter working at the incident.

Note 2 to paragraph (7): Nothing in this section is meant to preclude firefighters from performing emergency rescue activities before an entire team has assembled.

(8) Maintenance and care of respirators.

(a) Cleaning and disinfecting. You must provide each respirator user with a respirator that is clean, sanitary, and in good working order. You also must ensure that respirators are clean and disinfected using the procedures in Appendix B-2, or procedures recommended by the respirator manufacturer, if they are of equivalent effectiveness. Clean and disinfect the respirators at the following intervals:

(A) Clean and disinfect respirators for exclusive use of one worker as often as necessary to keep them sanitary;

(B) Clean and disinfect respirators for use by more than one worker after each use;

(C) Clean and disinfect emergency use respirators after each use; and

(D) Clean and disinfect fit test and training respirators after each use.

(b) Storage. Store all respirators as follows:

(A) Store all respirators to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, damaging chemicals, and to prevent deformation of the face piece and exhalation valve.

(B) In addition to the requirements of paragraph (8)(b)(A), keep emergency respirators:

(i) Accessible to the work area;

(ii) In compartments or in covers clearly marked as containing emergency respirators; and

(iii) In accordance with any applicable manufacturer instructions.

(c) Inspection.

(A) The employer must require respirator inspections as follows:

(i) Inspect all routine use respirators before each use and during cleaning;

(ii) Inspect emergency use respirators at least monthly and according to the manufacturer's recommendations. Check for proper function before and after each use; and

(iii) Inspect escape respirators before taking them into the area for possible use.

(B) The employer must ensure that respirator inspections include the following:

(i) A check of respirator function, tightness of connections, and the condition of the various parts including, but not limited to, the face piece, head straps, valves, connecting tube, and cartridges, canisters or filters; and

(ii) A check of elastomeric parts for pliability and signs of deterioration.

(C) In addition to the requirements of paragraphs (8)(c)(A) and (B), inspect self-contained breathing apparatus monthly. Keep air and oxygen fully charged and recharge them when the pressure falls to 90 percent of the manufacturer's recommended pressure level. Be certain the regulator and warning devices work properly.

(D) For emergency use respirators, the employer must:

(i) Certify the respirator by documenting the date of inspection, the name (or signature) of the inspector, the findings, required remedial action, and a serial number or other means of identifying the respirator; and

(ii) Provide this information on a tag or label attached to the respirator storage compartment, or keep it with the respirator, or include it in paper or electronic inspection reports. Keep this information until the next report replaces it.

(d) Repairs. Do not use respirators that fail an inspection or are otherwise defective. Discard or repair them according to these procedures:

(A) Only people with appropriate training may repair or adjust respirators. They must use only the manufacturer's NIOSH-approved parts for the particular respirator;

(B) Repairs must conform to the manufacturer's recommendations;

(C) Only the manufacturer or a technician trained by the manufacturer may repair or adjust the reducing and admission valves, regulators and alarms.

(9) Breathing air quality and use.

(a) The employer must ensure or have their supplier certify that compressed air, compressed oxygen, liquid air, and liquid oxygen used for respiration meets the following specifications:

(A) Compressed and liquid oxygen must meet the United States Pharmacopoeia requirements for medical or breathing oxygen; and

(B) Compressed breathing air must meet at least the requirements for Grade D breathing air described in ANSI/Compressed Gas Association Commodity Specification for Air, G-7.1-1989, to include:

(i) Oxygen content (v/v) of 19.5–23.5 percent;

(ii) Hydrocarbon (condensed) content of 5 milligrams per cubic meter of air or less;

(iii) Carbon monoxide (CO) content of 10 ppm or less;

(iv) Carbon dioxide content of 1,000 ppm or less; and

(v) Lack of noticeable odor.

NOTE: Do not fill your own air vessels unless they and the contents meet all the requirements of this standard

(b) Do not use compressed oxygen in respirators that previously held compressed air.

(c) The employer must ensure that the oxygen concentrations more than 23.5 percent are used only in equipment designed for oxygen service or distribution.

(d) The employer must ensure that cylinders to supply breathing air to respirators meet the following requirements:

(A) Cylinders must comply with the Shipping Container Specification Regulations of the Department of Transportation (49 CFR part 173 and part 178);

(B) Cylinders of purchased breathing air have a certificate of analysis from the supplier that the breathing air meets the requirements for Grade D breathing air; and

(C) The moisture content in the cylinder does not exceed a dew point of –50 degrees F. (–45.6 degrees C.) at 1 atmosphere pressure.

(e) The employer must ensure that compressors supplying breathing air to respirators:

(A) Prevent entry of contaminated air into the air-supply system;

(B) Minimize moisture content so that the dew point at 1 atmosphere pressure is 10 degrees F. (5.56 degrees C.) below the ambient temperature;

(C) Have suitable in-line air-purifying sorbent beds and filters to further ensure breathing air quality. Maintain and replace sorbent beds and filters according to the manufacturer's instructions.

(D) Have a tag at the compressor showing the most recent change date and the signature of the authorized person who did the change.

(f) For compressors that are not oil-lubricated, ensure that carbon monoxide levels in the breathing air do not exceed 10 ppm.

(g) For oil-lubricated compressors, use only a high-temperature or carbon monoxide alarm, or both, to monitor carbon monoxide levels. If you use only high-temperature alarms, monitor the air supply often enough to prevent carbon monoxide in the breathing air from exceeding 10 ppm.

(h) The employer must ensure that breathing air couplings are incompatible with outlets for nonrespirable worksite air or other gas systems. Do not allow any asphyxiating substance to get into breathing airlines.

(i) Use only breathing gas containers with marking that comply with the NIOSH respirator certification standard, 42 CFR part 84.

(10) Identification of filters, cartridges, and canisters. The employer must ensure that all filters, cartridges and canisters have labels and color codes that comply with the NIOSH standards and that the label remains in place and legible.

(11) Training and information.

(a) The employer must ensure that each employee can demonstrate knowledge of at least the following:

(A) Why the respirator is necessary and how improper fit, use, or maintenance can compromise the protective effect of the respirator;

(B) What the limitations and capabilities of the respirator are;

(C) How to use the respirator effectively in emergency situations, including situations in which the respirator malfunctions;

(D) How to inspect, put on and remove, use, and check the seals of the respirator;

(E) What the procedures are for maintenance and storage of the respirator;

(F) How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators; and

(G) The general requirements of this rule.

(b) Training must be in a language or form that workers understand.

(c) Training must be complete before workers use respirators.

(d) Retrain respirator users annually and when these situations happen:

(A) Changes in the work or the type of respirator make previous training obsolete;

(B) Inadequacies in the employee's knowledge or use of the respirator indicate that they no longer have the basic understanding or skill; or

(C) Any other situation arises in which retraining appears necessary to ensure safe respirator use.

(e) An employer who can demonstrate that a new employee has training within the last 12 months that addresses the elements in paragraph (11)(a)(A) through (G) does not have to repeat that training if, the employee can demonstrate knowledge of those element(s). Previous training not repeated initially by the employer must be provided no later than 12 months from the date of the previous training.

(f) Provide every voluntary respirator user with the basic advisory information in Appendix D. Any written or oral format is acceptable.

(12) Program evaluation.

(a) Evaluate the workplace as necessary to ensure effective use of the current written program.

(b) Regularly consult your users to get their views on your program's effectiveness and to identify problems. Correct the problem. Things to assess include at least:

(A) Respirator fit (including the ability to use the respirator without interfering with effective workplace performance);

(B) Users have and use the correct respirator for their exposure hazards;

(C) Proper respirator use; and

(D) Proper respirator maintenance.

(13) Recordkeeping.

(a) Medical evaluation. Retain and make available, according to 437-002-1910.1020, all medical evaluations required by this standard.

(b) Fit testing.

(A) You must keep a record of qualitative and quantitative fit tests for each user including:

(i) The name or identification of the employee;

(ii) Type of fit test;

(iii) Specific make, model, style, and size of respirator tested;

(iv) Date of test; and

(v) The pass/fail results for QLFTs or the fit factor and strip chart recording or other recording of the test results for QNFTs.

(B) Keep fit test records until records of a new test replace them.

(c) You must keep a written copy of your current respirator program.

(d) On request, you must make written records required by this standard, available to the OR-OSHA Administrator or their designee for examination or copying.

(14) Appendices.

(a) Compliance with Appendix A, Appendix B-1, Appendix B-2, and Appendix C of this rule is mandatory.

(b) Appendix D of this rule is mandatory and does not create any additional obligations or detract from any existing obligations.

(15) Effective Date. OAR 437-004-1041, Respiratory Protection, is effective March 1, 2007.

[ED. NOTE: Tables & Appendices referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2), 656.726(4).

Stats. Implemented: ORS 654.001 - 654.295.

Hist.: OSHA 3-2006, f. 6-7-06, cert. ef. 3-1-07; OSHA 10-2006, f. & cert. ef. 11-30-06; OSHA 3-2007, f. & cert. ef. 8-13-07

437-004-1050
Head Protection

(1) General requirements. Wear protective helmets (hardhat) when working in areas where there is a potential for injury to the head from falling or flying objects.

(2) Criteria for protective headwear.

(a) Protective headwear purchased after July 5, 1994 must comply with ANSI Z89.1-1986, "American National Standard for Personnel Protection — Protective Headwear for Industrial Workers — Requirements," incorporated here by reference. It is available in the OR-OSHA Resource Center at 350 Winter St. NE, Salem OR 97310.

(b) Protective headwear purchased before July 5, 1994 must comply with the ANSI standard "American National Standard Safety Requirements for Industrial Head Protection," ANSI Z89.1-1969. It is available in the OR-OSHA Resource Center at 350 Winter St. NE, Salem OR 97310.

(c) Employees who work close to moving parts of power-driven machinery or sources of ignition and whose hair is long enough to be caught in it or be ignited, must wear caps or other head covering that completely restrains the hair.

[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-1060
Hand and Foot Protection

(1) General requirements. Wear protective footwear when working where there is a danger of foot injuries due to falling or rolling objects, objects piercing the sole or electrical hazards.

(2) Criteria for protective footwear.

(a) Protective footwear purchased after July 5, 1994 must comply with ANSI Z41-1991, "American National Standard for Personal Protection Protective Footwear," incorporated here by reference. It is available in the OR-OSHA Resource Center at 350 Winter St. NE, Salem OR 97310.

(b) Protective footwear purchased before July 5, 1994 must comply with the ANSI standard "USA Standard for Men's Safety-Toe Footwear," Z41.1-1967, incorporated here by reference. It is available in the OR-OSHA Resource Center at 350 Winter St. NE, Salem OR 97310.

NOTE: Look for ANSI compliance information on the shoe, the box or tags.

(3) Wear special types or designs of shoes, steel-toed boots, or foot guards where conditions exist that make their use necessary for worker safety.

(4) Wear leggings or high boots of leather, rubber or other suitable material to protect legs from the hazards of hot substances, chemical spills, brush, sharp tools or other hazards. Do not wear leather or other absorbent materials to protect against chemical hazards.

(5) Do not wear or provide defective footwear or footwear that is ineffective in preventing or limiting injury if conditions may cause foot injuries.

(6) Employers must select and require employees to use appropriate hand protection when the work exposes employees' hands to hazards such as those from skin absorption of harmful substances; severe cuts or lacerations; severe abrasions; punctures; chemical burns; thermal burns and harmful temperature extremes.

(7) Do not wear gloves near moving parts or machines that might catch them.

[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-1070
Working Underway on Water.

(1) Scope and Application: This rule applies to all employees covered by Division 4, Agriculture.

(2) Definitions:

(a) Boat — means every description of water craft used or capable of being used as a means of transportation on the water, but does not include aircraft built to land on the water.

EXAMPLE: A partial list includes: boats, rafts, barges, pontoons, dredges and floating logs.

(b) Serviceable condition — means the flotation device is able to perform the function that the manufacturer intended.

(c) Underway — means when a boat is not at anchor, or moored, or made fast to the shore, or aground.

(3)(a) Workers in boats that are underway must wear a Coast Guard approved or equivalent, wearable personal flotation device (PFD).

Exception: Workers, below deck or in enclosed parts of boats, like cabins and pilot houses need not wear the PFD but must have it at hand.

(b) The PFD must be the right size for the wearer and must be in serviceable condition according to the manufacturer's requirements and recommendations.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 1-2001, f. 1-18-01, cert. ef. 3-1-01

437-004-1075
Working Over or In Water

(1) Scope and Application: These rules apply where the danger of drowning exists and the water is more than five feet deep. These rules do not apply to any workers protected by general or personal fall protection nor to employees covered by OAR 437-002-1910.401 through 1910.441, Commercial Diving Operations.

(2) Definition:

(a) Rescue device — A ring buoy and line, gaff pole, throwable rescue device or other device that serves as a means to rescue somebody from the water without requiring the rescuer to enter the water.

(3)(a) Workers in water must wear a Coast Guard approved or equivalent, wearable personal flotation device (PFD).

(b) Workers over water on floating or unstable surfaces must wear a Coast Guard approved or equivalent, wearable personal floatation device (PFD).

(c) Piers, docks, wharves and work sites along developed shorelines must have rescue devices available within 200 feet of the water or shoreline work area.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 1-2001, f. 1-18-01, cert. ef. 3-1-01

Work Environment

437-004-1105
Sanitation

(1) General.

(a) Scope. This applies to permanent agricultural places of employment under conditions not covered by other standards such as 4/J, OAR 437-004-1110, Field Sanitation and 4/W, OAR 437-004-9990, Worker Protection Standard.

(b) Definitions applicable to this section.

(A) Non-water carriage toilet facility is a toilet facility not connected to a sewer.

(B) Number of employees is, unless otherwise stated, the maximum number of employees present at any one time on a regular shift.

(C) Potable water is water meeting the bacteriological and chemical quality requirements in the OAR chapter 333, division 61, Public Water Systems, of the Oregon State Health Division.

(D) Sanitary means free from agents harmful to health.

(E) Toilet facility is a fixture in a toilet room for defecation, urination, or both.

(F) Toilet room is a room with toilet facilities in or on any place of employment.

(G) Toxic material is a material in concentration or amount that exceeds the applicable limit established by a standard, or, lacking an applicable standard, is so toxic as to be a recognized hazard that is causing or is likely to cause death or serious physical harm.

(H) Urinal is a toilet facility in a toilet room for the sole purpose of urination.

(I) Water closet is a toilet in a toilet room for both defecation and urination and flushed with water.

(J) Wet process is any process or operation that normally results in employee walking or working surfaces becoming wet.

(c) Housekeeping.

(A) Keep all work areas as clean as the work allows.

(B) Work area floors must be kept as dry as conditions allow. Where there are wet processes, there must be drainage or false floors, platforms, mats, or other dry standing places, where practicable. Otherwise, provide waterproof shoes or boots.

(d) Waste disposal.

(A) Any container for solid or liquid waste or refuse that could rot or decompose must not leak. It must be cleanable, sanitary and have a solid tight-fitting cover unless it can be kept sanitary without one.

(B) Remove sweepings, solid or liquid wastes, refuse, and garbage to avoid creating a health hazard and often enough to keep the work area sanitary.

(2) Disposal of waste materials.

(a) Do not allow scrap, waste material or debris to accumulate in work areas.

(b) Remove flammable waste, such as oily rags, or keep it in containers designed or suitable for it.

(c) Where the use of machines or equipment creates hazardous waste materials, they must have suitable collecting or removal systems. If the refuse is unsuitable for removal that way, find a safe method of temporary storage and regular removal.

(3) Water supply.

(a) Potable water.

(A) Every work area must have potable water for drinking and washing.

(B) Portable drinking water dispensers must be kept sanitary. They must be capable of being closed and have a tap.

(C) Do not use open containers such as barrels, pails, or tanks for drinking water.

(D) Do not use common drinking cups and other common utensils.

(b) Non-potable water.

(A) Outlets for non-potable water must have markings that clearly state that the water is unsafe and is not for drinking, washing, or use with or on food.

(B) Non-potable water systems or systems carrying any other non-potable substance must prevent backflow or back siphonage into a potable water system.

(C) Do not use non-potable water for washing any part of the body, cooking or eating utensils, or clothing. Clean work areas, other than food processing and preparation areas and personal service rooms, with non-potable water only if it has no chemicals, fecal coliform, or other substances that could create insanitary conditions or be harmful to employees.

NOTE: Water supply systems design and construction standards are in the Oregon Health Division rules, OAR chapter 333, division 61, Public Water Systems.

(4) Toilet facilities.

(a) General.

(A) Except as otherwise stated in this paragraph, there must be toilet facilities that comply with Table 1, in toilet rooms separate for each sex. Base the number of facilities for each sex on the number of employees of that sex. You don't need separate rooms for each sex if the toilet rooms are for one person at a time, can be locked from the inside, and have at least one water closet. Where single-occupancy rooms have more than one toilet facility, count only one facility in each toilet room when using table 1. [Table not included. See ED. NOTE.]

(B) The requirements of (4)(a)(A) above do not apply to mobile crews or to normally unattended work locations if employees have transportation immediately available to nearby toilet facilities that meet the requirements of this subparagraph.

(C) The sewage disposal method must not endanger the health of employees.

(b) Construction of toilet rooms. Each water closet must be in a separate compartment with a door and walls or partitions between fixtures high enough to assure privacy.

(c) Toilet facilities. Toilet facilities at permanent work sites must be reasonably accessible.

(5) Washing facilities. Work areas must have adequate facilities or supplies for cleaning hands.

(6) Change rooms. When a standard requires employees to wear protective clothing because of the possibility of contamination with toxic materials, you must provide change rooms with storage facilities for street clothes and separate storage facilities for the protective clothing. This does not apply to outdoor work.

(7) Consumption of food and beverages on the premises. This applies only where employees are permitted to eat on the premises.

(a) Do not allow workers to eat in a toilet room or in any area exposed to a toxic material.

(b) Provide receptacles made of smooth, corrosion resistant, easily cleanable, or disposable materials for the disposal of waste food. Do not allow them to become over filled. Empty them daily unless unused and keep them clean. They must have a solid tight-fitting cover unless they can be kept clean without a cover.

(c) Do not store food or beverages in toilet rooms or in areas exposed to a toxic material, medicines or live virus.

(8) Vermin control. Every enclosed work place must be built and maintained, as much as practicable, to prevent rodents, insects, and other vermin from entering or living in it.

[ED. NOTE: Tables referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(3)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-1110

Field Sanitation for Hand Labor Work

(1) Scope. This applies to any agricultural establishment where employees do hand-labor operations in the field.

(2) Exceptions. These rules do not apply to:

(a) Logging operations;

(b) The care or feeding of livestock;

(c) Hand-labor operations in permanent structures (e.g., canning facilities or packing houses); or

(d) Machine operators working entirely separate from hand-labor operations.

(3) Definitions.

(a) Agricultural employer — See universal definition in 4/B, OAR 437-004-0100.

(b) Agricultural establishment — See universal definition in 4/B, OAR 437-004-0100.

(c) Hand labor operation — means agricultural activities or agricultural operations performed by hand or with hand tools, including:

(A) Hand-cultivation, hand-weeding, hand-planting, and hand-harvesting of vegetables, nuts, fruits, seedlings, or other crops (including mushrooms);

(B) Hand packing or sorting, whether done on the ground, on a moving machine, or in a temporary packing shed in the field; and

(C) Except for purposes of OAR 437-004-1110(6), operation of vehicles or machinery, when such activity is in conjunction with other hand-labor operators.

(d) Handwashing facility — means a facility providing either a basin, container, or outlet with a adequate supply of potable water, soap, and single-use towels.

(e) Potable water — means water that meets the quality standards in **42 CFR** Part **72,** U.S. Public Health Service Drinking Water Standards, or water approved for drinking by the state or local authority with jurisdiction, or water that meets the quality standards in OAR 437-004-1105, Sanitation.

(f) Toilet facility — means a fixed or portable facility designed for adequate collection and containment of the products of both defecation and urination. Toilet facility includes biological, chemical, flush, and combustion toilets and sanitary privies.

(4) General requirements. Agricultural employers must provide and pay for everything required by this section for employees doing hand-labor operations in the field.

(5) Potable drinking water.

(a) Provide potable water that is available immediately to all employees.

(b) The water must be suitably cool and in sufficient amounts, taking into account the air temperature, humidity, and the nature of the work, to meet the needs of all employees.

(c) Dispense water in single-use drinking cups or by angle jet fountains. Do not use common drinking cups or dippers.

(6) Toilet and handwashing facilities.

(a) Provide one toilet facility and one handwashing facility for each twenty (20) employees or fraction thereof.

(b) Toilet facilities must have adequate ventilation, appropriate screens, self-closing doors that close and latch from the inside and ensure privacy.

(c) Maintain privies and portable toilets as follows:

(A) Structures must be free of hazards, in good repair and be stable.

(B) Except for urinals, multiple units must have separate compartments with doors with inside latches to ensure privacy.

(C) Seats must have lids that raise to allow use as urinals, unless there are separate urinals.

(d) Privies and portable toilets built after the effective date of these rules must comply with the rules of the Department of Environmental Quality.

(e) Provide toilet facilities for each sex, where practicable. Distinctly mark them "women" and "men" in English and in the native language of employees expected to work in the fields or with easily understood pictures or symbols.

(f) The employer must ensure that for each toilet facility:

(A) There is enough toilet paper to meet the workers' needs during the shift; and

(B) There are toilet paper holders or dispensers for each seat.

(g) Locate toilet and handwashing facilities adjacent to each other and no more than a 5-minute or a 1/4-mile (1,320 feet) unobstructed walk from each hand laborer's place of work in the field.

(h) Where, due to terrain, it is not feasible to locate facilities as in (g) above, the facilities must be at the point of closest vehicular access.

(7) Maintenance.

(a) Potable drinking water and toilet and handwashing facilities must comply with appropriate public health sanitation practices.

(b) Drinking water containers must be made of materials that maintain water quality. Refill them daily or more often as necessary and keep them covered and clean.

(c) Toilet facilities must work and be clean and safe.

(d) Empty and recharge chemical toilets prior to the start of each season of operation and at least every 6 months thereafter during use or when the tank is three-quarters full, whichever occurs first.

(e) Where crops intended for human consumption are produced, toilets must not contaminate crops.

(f) Refill handwashing facilities with potable water as necessary to ensure an adequate supply and maintain them in a clean and sanitary condition.

(g) Disposal of wastes from facilities, including handwashing water and towels, must not cause unsanitary conditions or contamination of crops.

(8) Field sanitation notice. Employers that grow or harvest food crops for human consumption must post a notice describing the requirements of these rules and advising where workers may file complaints regarding field sanitation matters. It must be in the language of the majority of the workers.

(9) Reasonable use. The employer must notify each employee of the location of the sanitation facilities and water, and allow each employee reasonable opportunities during the workday to use them. The employer must inform each employee of the importance of the following good hygiene practices to minimize exposure to the hazards in the field from heat, communicable diseases, retention of urine and agrichemical residues, including, but not limited to the following:

(a) Using the water and facilities provided for drinking, handwashing, and elimination;

(b) Drinking water frequently and especially on hot days;

(c) Urinating as frequently as necessary;

(d) Washing hands both before and after using the toilet; and

(e) Washing hands before eating and smoking.

[Publications: Publications referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(3)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-1120

Agricultural Labor Housing and Related Facilities

(1) Application.

(a) These rules apply to any agricultural labor housing and related facilities defined in OAR 437-004-1120(4).

(b) These rules apply to any type of labor housing and related facilities together with the tract of land, established, or to be established, operated or maintained for housing workers with or without families whether or not fees are paid or collected.

(c) These rules apply to, but are not limited to, tents, frame construction housing, manufactured and prefabricated structures defined in Oregon Revised Statutes (ORS). Manufactured dwellings must comply with specifications for construction of sleeping places, unless they comply with ORS 446.155 to 446.185 and OAR 918-500-0020(2) that have the requirements and specifications for sanitation and safety design for manufactured dwellings.

(d) These rules apply to housing given to, rented, leased to or otherwise provided to employees for use while employed and provided either by the employer, a representative of the employer or a housing operator.

(e) These rules, unless otherwise stated, apply to all occupants of the labor housing and facilities.

(f) These rules apply to all labor housing sites owned, operated, or allowed to operate on property under the jurisdiction of any state or municipal authority.

(g) Violations relating to the occupants' personal housekeeping practices for issues in paragraphs (8), (9), (10), (11), (12, (13), (16), and (18) will not result in citations to the employer.

(h) For the purposes of OAR 437-004-1120, labor contractors as defined in ORS 658.405 are employers.

(2) Exemptions.

(a) Housing including tents, vehicles, manufactured and prefabricated structures owned or provided by employees for their own use are not subject to these rules. When the employee provides their own housing, the housing operator is responsible for the provision and maintenance of all other services in this standard.

(b) These rules do not apply to accommodations subject to licensing as manufactured dwelling parks, organizational camps, traveler's accommodations or recreation vehicle parks.

(c) Manufactured structures being moved regularly from place to place because of the work are exempt from these rules when at parks or camps meant for parking mobile vehicles.

(3) Scope. These rules apply to any labor housing and related facilities defined in (4) below used in relationship to agricultural employment.

(4) Definitions:

(a) "Clean" means the absence of soil or dirt or removal of soil or dirt by washing, sweeping, clearing away, or any method appropriate to the material at hand.

(b) "Division" means the Oregon Occupational Safety and Health (OR-OSHA) Division of the Department of Consumer and Business Services.

(c) "Facility" means a living area, drinking water installation, toilet installation, sewage disposal installation, food handling installation, or other installation required for compliance with the labor housing and related facility rules.

(d) "Garbage" means food wastes, food packaging materials or any refuse that has been in contact with food stuffs.

(e) "Housing site" is a place where there are living areas.

(f) "Labor housing and related facilities" (formerly called a farm worker camp, farm labor camp, labor camp) — Any place, or area of land, where there are living areas, manufactured or prefabricated structures or other housing provided by a farmer, farm labor contractor, agricultural employer or other person in connection with the recruitment of workers on an agricultural establishment.

(g) "Living area" is any room, structure, shelter, tent, manufactured or prefabricated structure, vehicle or other place housing one or more persons.

(h) "Local public health administrator" is the administrator defined in ORS 431.418 for the county or district where there is labor housing and related facilities.

(i) "Manufactured structure" is:

(A) "Recreational vehicle" (includes park trailers) — a vehicle with or without motive power, designed for human temporary occupancy during recreational, seasonal or emergency use. Gross floor area is not more than 400 square feet when set up.

(B) "Manufactured dwelling" — a residential trailer, for movement on the highway, that has sleeping, cooking and plumbing facilities. Constructed before January 1, 1962. Or, a mobile home, constructed for movement on the highway, that has sleeping, cooking and plumbing facilities. Constructed between January 1, 1962 and June 15, 1976 and met the requirements of Oregon mobile home law in effect at the time of construction.

(C) "Manufactured home" — a structure built for movement on the highway that has sleeping, cooking and plumbing facilities and is used as a residence. Built to comply with federal manufactured housing standards and regulations in effect at the time of construction. These homes were built on or after June 15, 1976.

(D) More information on these definitions is in ORS 446.003(26).

(j) "Operator" means any person or company that operates labor housing and/or related facilities.

(k) "Potable water" is water meeting the bacteriological and other requirements of the Oregon Health Division.

(l) "Prefabricated structure" means a building or subassembly which has been in whole or substantial part manufactured or assembled using closed construction at an off-site location to be wholly or partially assembled on-site; but does not include a manufactured structure. Prefabricated structures are manufactured in accordance with the Oregon state building code and rules adopted by the Building Codes Division in OAR 918-674.

(m) "Privy" is the same as outhouse or pit toilet but is not the same as portable toilets.

(n) "Recyclable material" means containers that are returnable for refund of a deposit.

(o) "Refuse" includes waste materials such as paper, metal, discarded items, as well as debris, litter and trash.

(p) "Sanitary" means free from agents that may be injurious to health.

(q) "Sewage" means the water-carried human and animal wastes, including kitchen, bath, and laundry wastes from residences, buildings, industrial establishments, or other places, together with such groundwater infiltration, surface waters, or industrial wastes as may be present.

(r) "Single isolated dwelling" means one dwelling unit, apart from those of the owners/ operators of an agricultural establishment.

(s) "Toilet room" is a room in or on the premises of any labor housing, with toilet facilities for use by employees and occupants of that housing.

(5) Housing registration requirements.

(a) The following are not labor housing required to be registered with OR-OSHA:

(A) A single isolated dwelling occupied solely by members of the same family, or by five or fewer unrelated persons; or

(B) A hotel or motel that provides similar housing commercially to the public on the same terms as it does to workers.

NOTE: This note is to show where the registration rules originated. ORS 658.705(7) "Farmworker camp" means any place or area of land where sleeping places, manufactured structures or other housing is provided by a farmer, farm labor contractor, employer or any other person in connection with the recruitment or employment of workers to work in the production and harvesting of farm crops or in the reforestation of lands, as described in ORS 658.405. "Farmworker camp" does not include:
(a) A single, isolated dwelling occupied solely by members of the same family, or be five or fewer unrelated individuals; or
(b) A hotel or motel which provides housing with the same characteristics on a commercial basis to the general public on the same terms and conditions as housing is provided to such workers.

(b) Each year, before occupancy, the operator or employer must register all labor housing and related facilities with OR-OSHA as set out below, except those as in (a) above. Follow these mandatory steps:

(A) The operator must contact OR-OSHA at least 45 days before the first day of operation or occupancy of the housing and related facilities. You will receive information with further instructions to follow.

(B) If the housing and related facilities were not registered in the previous year, call OR-OSHA to request a consultation visit to the housing. OR-OSHA will register housing and related facilities not previously registered only after a pre-occupancy consultation that finds the housing or facility to be substantially in compliance with all applicable safety and health rules.

(C) If there were significant changes in the circumstances of the housing or facilities since the last registration, OR-OSHA may, at its discretion, refer the employer for a consultation prior to re-registering the housing and facilities.

(D) Once registered, the operator must display the registration certificate provided by OR-OSHA in a place frequented by employees. The operator must also provide and display a translation of the certificate in the language or languages used to communicate with employees.

(c) The Director may revoke a labor housing and related facilities registration for the following reasons:

(A) Making any negligent or willful material misrepresentation, or false statement in the application for registration.

(B) Conditions under which the registration was accepted no longer exist or have changed; or

(C) OR-OSHA determines that the housing and related facilities are substantially out of compliance with the applicable safety and health rules.

(d) When Oregon OSHA revokes the registration of Agricultural Labor Housing and Related Facilities, operators or their agents have 30 days to file a written appeal. Upon receipt of such appeal, the Director of the Department of Consumer and Business Services or a designee will hold a contested case hearing on that appeal under ORS 183.413, et seq.

(e) Any group or individual may protest the proposed registration or renewal of any labor housing and related facilities under the following conditions:

(A) The signed and dated protest must be submitted in writing and received by the Director prior to issuance of the registration or renewal.

(B) The protest must include the name, address and phone number of the individual or group filing it.

(C) The protest must clearly identify which housing and related facilities is the subject of the protest, including the exact physical location and name of the applicant.

(D) The protest must clearly state the facts and reasons for the protest. Such facts and reasons must be based on factors which are within the scope or ORS 654 and any regulations adopted thereunder.

(E) When the above provisions are met, such group or individual may participate in the contested case as a party or limited party under OAR 137-003-0005.

(6) Site requirements.

(a) The grounds of labor housing and related facilities must be substantially free from waste water, sewage, garbage, recyclable material, refuse or noxious plants such as poison oak and poison ivy.

(b) During housing occupancy, grass, weeds and brush must be cut back at least 30 feet from buildings.

(c) All housing site land must have adequate drainage. The site must not be subject to flooding when occupied.

(d) Adequately dispose of the waste water and food waste under outside water hydrants.

(e) Prevent or control the breeding of mosquitos, flies, and rodents in the immediate housing area and in the barns, pens, feed yards, or similar livestock or poultry areas within 200 feet of any labor housing and related facilities owned or under lawful control or supervision of the operator.

(f) The operator of labor housing is responsible for the maintenance and operation of the housing and its facilities.

(g) Store all toxic materials such as pesticides, fertilizers, paints and solvents in a safe place.

(h) Do not leave empty pesticide containers such as drums, bags, cans, or bottles in the housing area.

(i) Do not allow poultry or livestock in the housing site during occupancy.

(j) Provide electricity to all housing units in labor housing and related facilities.

(k) All electrical wiring and lighting fixtures must comply with the Oregon state building code in effect at the time the work was done. Extension cords or plug strips must have circuit breaker or fuse protection either as part of the set or part of the building wiring.

(l) Facilities built or remodeled before December 15, 1989, must have a ceiling or wall-type electric light fixture in working order and at least one wall-type electrical outlet in every living area. Facilities built or remodeled after that date must comply with the code in effect at the time of construction or remodeling.

(m) Provide a ceiling or wall-type electric light in toilet rooms, lavatories, shower or bathing rooms, laundry rooms, hallways, stairways, the common eating area or other hazardous dark areas.

(n) Light privies either directly or indirectly from an outside light source.

(o) Provide enough light in corridors and walkways to allow safe travel at night.

(p) Each housing site must have its street numbers displayed to be easily visible to responding emergency vehicles on public highways or roads.

(7) Water supply.

(a) All domestic water furnished at labor housing and related facilities must conform to the standards of the Oregon Health Division.

(b) Have a bacteriological analysis done on the water before occupancy and as often as needed to assure a potable water supply, except when the water comes from a community water system.

(c) Provide enough potable water in the labor housing area for drinking, hand washing, bathing and domestic use. An ample supply is at least 35 gallons of water per day per occupant. Water for drinking and domestic use must be within 100 feet of each living area.

(d) Arrange, construct and if necessary, periodically disinfect the water storage and distribution facilities to satisfactorily protect the water from contamination. Install all new plumbing in labor housing and related facilities to comply with the Oregon state building code.

(e) Do not use cups, dippers or other utensils for common drinking purposes.

(f) Drinking fountains at labor housing and related facilities must be angle-jet type with adequate water pressure.

(g) Post as "Unsafe for drinking," non-potable water that is accessible to occupants.

(h) Portable water containers with spigots and tight fitting lids are acceptable for providing and storing drinking water in the housing.

(A) These containers must be made of impervious non-toxic materials that protect the water from contamination.

(B) Wash and sanitize them at least every seven days.

(i) Do not use containers such as barrels, pails or tanks that require dipping or pouring to get the water.

(j) Do not allow cross connection between a system furnishing water for drinking purposes and a non-potable supply.

(8) Laundry, hand washing, toilet, and bathing facilities - General.

(a) Provide an adequate supply of hot and cold water under pressure for all common use hand washing, bathing, and laundry facilities at all labor housing and related facilities.

(b) In installations with flush toilets, lavatory, bathing, or laundry facilities, the floor and walls must be of readily cleanable finish and impervious to moisture.

(c) Separate central bathing or toilet facilities used for both sexes in the same building by a solid, non-absorbent wall extending from the floor to the ceiling.

(d) All individual or common use laundry, toilet facilities, portable toilets, privies, hand washing, and bathing facilities must be clean, sanitary and operating properly.

NOTE: See 437-004-1120(6)(l) for lighting requirements.

(9) Bathing facilities.

(a) Provide floor drains in all showers to remove waste water. Slope floors so they drain and do not use slippery materials for flooring.

(b) Provide at least one shower head with hot and cold water under pressure for every 15 occupants or fraction thereof of each sex. A plumbed-in bathtub will substitute for a shower head. You may provide only one shower when housing a total of 9 or fewer persons of both sexes. Unisex showers are acceptable in the same ratios if they have positive means to assure user privacy.

(c) Mark bathing facilities for each sex with "women" and "men" in English and in the native language of employees expected to occupy the housing or with easily understood pictures or symbols.

(10) Hand washing facilities.

(a) Provide at least one hand washing basin with hot and cold water under pressure for every 15 occupants or fraction thereof. Locate them either adjacent to all toilet facilities or adjacent to the sleeping places. Each 24 linear inches of "trough" type sink with individual faucets counts as one basin.

(b) Do not use a single common towel. If you provide paper towels, there must be a container for their disposal.

(11) Laundry facilities.

(a) When public laundry and drying facilities are not available within five miles, the housing must have readily accessible laundry and drying facilities.

(b) Laundry facilities in the housing area must have trays or tubs, plumbed with hot and cold water in the ratio of 1 for each 25 occupants.

(c) Mechanical washers are optional in the ratio of 1 to 50 occupants with one laundry tray per 100 occupants.

(d) Provide clothes lines or drying facilities to serve the needs of the occupants. Mechanical clothes dryers may be in the ratio of 1 per 50 occupants instead of clothes drying lines.

(12) Toilet facilities.

(a) Locate toilet facilities in labor housing and related facilities within 200 feet from the living area that they serve.

(b) Locate toilets, chemical toilets, or urinals in rooms built for that purpose.

(c) Maintain a usable, unobstructed path or walkway free of weeds, debris, holes or standing water from each living area to the central toilet facilities.

(d) Provide at least one toilet for every 15 occupants or fraction thereof for each sex in the labor housing. You may provide one toilet when housing a total of 9 or fewer persons of both sexes.

EXAMPLE: If you have 24 male employees and 3 female employees, you must have two toilets for the males and one for the females. If you provide unisex toilets, they must be lockable, and you would need two under the above example.

(A) If urinals are in the toilet facility and where three or more toilets are required for men, one urinal substitutes for one toilet (24 inches of trough-type urinal equals one urinal), to a maximum of one-third of the total required toilets.

(B) Existing urinals must be non-absorbent, non-corrosive materials that have a smooth and cleanable finish. Urinals installed after the effective date of this standard must meet Oregon state building code.

(e) Mark toilet facilities for each sex with "women" and "men" in English and in the native language of employees expected to occupy the housing or with easily understood pictures or symbols.

(f) Ventilate all labor housing toilet rooms according to the Oregon state building code.

(g) Install privacy partitions between each individual toilet or toilet seat in multiple toilet facilities. The partitions may be less than the height of the room walls.

(A) The top of the partition must be not less than 6 feet from the floor and the bottom of the partition not more than 1 foot from the floor. The width of the partition must extend at least 1 1/2 feet beyond the front of the toilet seat.

(B) Provide a door or curtain so the toilet compartment is private.

(h) Provide common use toilet facilities with toilet paper and holders or dispensers. Also provide disposal containers with lids.

NOTE: This rule does not apply to units occupied by a single family and that have their own bathrooms.

(13) Portable toilets, Chemical Toilets and Privies.

(a) The location and construction of privies must conform to Department of Environmental Quality standards.

(b) Privies must be between 50 and 200 feet from any living area or any facility where food is prepared or served.

(c) Portable toilets and privies must have adequate lighting either direct or indirect from an outside source.

(14) Sewage disposal and plumbing.

(a) Connect the sewer lines from the labor housing and related facilities to a community sewer system, a septic tank with subsurface disposal of the effluent, pit type privies or other sanitary means conforming to Department of Environmental Quality standards.

(b) Install all plumbing in labor housing and related facilities to comply with Department of Environmental Quality standards and the Oregon state building code.

(15) Garbage and refuse disposal outside of buildings.

NOTE: Recyclable material is not garbage or refuse referred to in this section (15).

(a) Store all refuse and garbage in watertight containers that keep flies and rodents out.

(b) Keep refuse and garbage containers clean and in good repair.

(c) Provide at least one 30-gallon or larger container per 15 occupants. Containers must be accessible to all occupants and never outside of the housing site.

(d) Empty common garbage and refuse containers at least once a week or when full.

(e) Keep all refuse and garbage containers covered and the garbage storage area clean to control flies and rodents.

(f) Do not burn any food, garbage or wet refuse.

(g) Dispose of garbage and refuse according to DEQ standards that govern the disposal of garbage, refuse and other solid wastes.

(16) Living areas.

(a) Keep all living areas, safe and in good repair structurally and stable on their foundations. They must provide shelter for the occupants against the elements and protect the occupants from ground and surface water as well as rodents and insects.

(b) The walls and roof must be tight and solid. Floors must be rigid and durable, with a smooth and cleanable finish in good repair. If tents are living areas, they must have wood, asphalt or concrete floors that are smooth and of tight construction.

(c) Living areas occupied during October through May must have heating equipment capable of keeping a temperature of at least 68ºF. Equipment must comply with state fire, building and electrical regulations.

(d) Solid fuel or gas fired heaters must meet the following:

(A) Install and vent any stoves or other sources of heat that use combustible fuel to prevent fire hazards and dangerous concentration of gases.

(i) Portable heaters must be electric.

(ii) Solid or liquid fuel heaters or stoves installed on or before December 15, 1989, must sit on a concrete slab, insulated metal sheet or other fire resistant material when used in a room with wood or other combustible flooring. Extend it at least 18 inches beyond the perimeter of the base of the stove.

(iii) Solid or liquid fuel heaters or stoves must meet the manufacturer's specifications and the Oregon state building code in effect at the time of installation.

(B) Install fire resistant material on any wall or ceiling within 18 inches of a solid or liquid fuel stove or a stove pipe. Provide a vented metal collar around the stovepipe, or vent passing through a wall, ceiling, floor or roof or combustible material.

(C) Heating systems with automatic controls must cut off the fuel supply on failure or interruption of the flame or ignition, or when they exceed a pre-determined safe temperature or pressure.

(D) All gas appliances and gas piping must comply with the Oregon state building code in effect at time of installation and the manufacturer's instructions.

(E) Do not locate stoves, portable heaters or combustion heaters so they block escape from a sleeping place.

(e) Provide screens of at least 16 mesh on the doors and windows of the living area when flies or mosquitos are present. All screen doors must be tight fitting, in good repair, and self closing.

(f) If tents are living areas, the tent body and screens must be in good repair. Effective October 1, 2000, tents must be flame resistant material or treated with flame retardant. The tents must have adequate screens to effectively keep out flies and mosquitos. Do not use tents for housing between the months of October through May.

(g) Provide beds, bunks or cots for each occupant and suitable storage facilities, such as wall cabinets or shelves, for each occupant or family unit.

(A) Effective October 1, 2000, the camp operator must provide a mattress or pad for each bed or bunk. The beds or bunks must keep the mattress or pad at least 6 inches off the floor.

(i) If you provide foam pads, they must be thicker than two inches.

(ii) Do not provide uncovered foam pads.

(h) Mattresses or pads furnished by the camp operator must be clean, in good repair, and free from insects and parasites.

(A) Fumigate mattresses or pads, used uncovered, or treat with an effective insecticide before each season's occupancy. If you provide covers, clean them before each season's occupancy.

(B) Store mattresses or pads in a clean, dry place.

(i) Space the beds, bunks or cots so that there is enough room to allow for rapid and safe exiting during an emergency.

NOTE: Nothing in this standard prohibits "banking" elevated floors with earth or other suitable material around the outside walls in areas subject to extreme low temperatures.

(j) Each room without double bunk beds must have at least 50 square feet of floor space per employee and at least one half of the floor area must have a minimum ceiling height of 7 feet, with the following exceptions: If employees are members of the same nuclear family (defined as a mother and father, their combined children and grandparents), provide space as follows:

(i) Full space for the first employee over twelve.

(ii) 3/4 space for each additional occupant over twelve, whether or not they are an employee.

(iii) 1/2 space for children under twelve, whether or not they are an employee.

(B) In rooms where workers cook, live, and sleep provide at least 60 square feet of floor space per occupant. Where the same nuclear family is living apply the adjustments from (A) above.

(C) In housing and related facilities built after August 1, 1975 where workers cook, live, and sleep provide at least 100 square feet per occupant. Where the same nuclear family is living apply the adjustments from (A) above.

(k) In rooms used for sleeping only, where there are double bunk beds, provide 40 square feet per occupant. Do not use triple bunks. **Table 1**. [Table not included. See ED. NOTE.]

(l) Provide separate private sleeping areas for unrelated persons of each sex and for each family unit.

(m) Provide a window or skylight that opens directly to the outside, except where there is mechanical or other ventilation, for each habitable room. Windows that meet the requirements of fire exits are also acceptable for ventilation.

(n) Before occupancy clean all living areas and eliminate any rodents, insects, and animal parasites.

(17) Fire protection.

(a) All fires must be in equipment designed for that use. Do not allow open fires within 25 feet of structures.

(b) Effective October 1, 2000, each season, at the time of initial occupancy, each living area must have a working approved smoke detector.

NOTE: The camp operator is not responsible for daily maintenance of the detector nor the actions of occupants that defeat its function.

(c) Provide fire extinguishing equipment in a readily accessible place, not more than 50 feet from each housing unit. The equipment must provide protection equal to a 2A:10BC rated extinguisher.

NOTE: Hoses are acceptable substitutes for extinguishers only if the water supply is constant and reliable. Hoses must be immediately available for firefighting use.

(d) All living areas with more than one room, built before December 15, 1989, with one door, except tents, vehicles, and trailer houses owned by the occupants, must have, in addition to a door, a window in each sleeping room that can be an exit in case of fire.

(A) This window must have an openable space at least 24 inches by 24 inches, nominal.

(B) The lowest portion of the opening must be less than 48 inches above the floor.

(C) This window must open directly to the outdoors and be readily openable by the occupants from inside without breaking the glass.

(D) This window must be in a room other than the room with the outside door. Label the window as an emergency exit.

(e) Living areas built on or after December 15, 1989 must meet the requirements for emergency exits in applicable rules of the Oregon Building Codes Division including the following: Required emergency exit windows in sleeping rooms must have a clear net opening of at least 5.7 square feet, minimum vertical opening of 22 inches and minimum horizontal opening of 20 inches.

NOTE: Construct and maintain all living areas in labor housing and related facilities to comply with other applicable local and state laws and regulations in effect at the time of construction or remodel.

(f) A second story must have at least two exits when its occupant load is 10 or more. Comply with the Uniform Building Code.

(g) Occupants on floors above the second story and in basements must have access to at least two separate exits from the floor or basement as required by the Oregon state building code.

(18) Cooking, eating, and dining facilities.

(a) Central cooking or food preparation facilities must have the following and each living area with an area for use as a kitchen and eating area must have the following:

(A) A gas or electric refrigerator, capable of keeping food at or below 45ºF.

(B) A stove or hot plate large enough to serve the intended number of occupants. If a gas or electric hotplate or wood stove is within 18 inches of a wall, that wall must be made of or finished with smooth cleanable, nonabsorbent, grease resistant and fire resistant material.

NOTE: Labeled and listed appliances are exempt from the 18" requirement when installed according to their listing.

(C) There must be no liquid petroleum gas (LPG like propane) tanks in use inside any occupied building. Outside tanks must connect to appliances with lines approved for that purpose.

(D) Food storage shelves, food preparation areas, food contact surfaces and floors in food preparation and serving areas must be made of or finished with smooth, non-absorbent, cleanable material.

(E) A table and chairs or equivalent seating and eating arrangements to accommodate the number of occupants living in the sleeping place.

(F) The refrigerator and stove or hot plate must always be in working condition. Clean the facilities before each occupancy.

(19) First aid. OAR 437-004-1305, Medical and First Aid, applies to all labor housing and related facilities. This rule includes requirements for first aid supplies, an emergency medical plan and a plan of communication.

NOTE: Division 4/K requires all employees know about the first aid requirements and emergency medical plans. If employees' native language is other than English, this must be taken into account in meeting this requirement.

(20) Access to ORS and OAR. Those wishing access to any of the Oregon Revised Statutes (ORS) or Oregon Administrative Rules (OAR) referenced here, may contact the OR-OSHA Central Office (Resource Center) or nearest Field Office.

(21) Closure and alternative housing.

(a) The operator of agricultural labor housing must provide replacement lodging without charge to the occupants if a government agency with the authority to enforce building, health or safety

standards declares the housing or facilities to be uninhabitable and orders them vacated.

(b) The operator must provide replacement lodging for seven consecutive days from the time the housing was closed or until the closing agency allows the original housing to re-open, whichever is shorter.

(c) Replacement lodging must meet or exceed the health and safety standards of Oregon OSHA. OR-OSHA must approve the location of the replacement housing before employees are sent to it.

(d) Operators must arrange for replacement lodging not later than the end of the day the original housing closes or another date designated by the closing agency.

(e) Post the address of the replacement housing:

(A) Not later than the end of the day the original housing closes.

(B) In a place convenient to affected workers.

(C) In all languages spoken by the occupants.

(f) The posting in (e) above must state that the replacement housing is free to occupants of the closed housing.

(g) The operator must give Oregon OSHA a list of names of the occupants and the location of the replacement housing, for each.

(h) When the cause of the closure is beyond the control of the agricultural labor housing operator, sections (a), (b), (c), (d), (e) and (g) above do not apply. To determine whether the cause of closure was beyond the control of the operator, Oregon OSHA will consider these circumstances, including but not limited to:

(A) Whether the cause of the closure is a natural disaster;

(B) Whether the circumstances leading to the closure were known or should have been known to the operator;

(C) Whether operator diligence could have avoided the circumstances leading to the closure.

(i) Agricultural labor housing occupants entitled to temporary replacement housing under this rule must accept or reject that housing when the original housing closes. These rules do not obligate operators to reimburse displaced occupants for housing they obtain without the operator's knowledge or consent. The operator is responsible for replacement lodging only for as many people as occupied the original closed housing. When an occupant rejects the replacement housing, the operator has no obligation to reimburse that occupant for other replacement housing.

(j) Oregon OSHA may issue a citation and assess a monetary penalty for violation of these rules as in ORS 654.071 and 654.086.

NOTE: Rules on Field Sanitation are in 4/J, OAR 437-004-1110, Field Sanitation.

[ED. NOTE: Tables referenced are available from the agency.]

[Publications: Publications referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(3)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98; OSHA 5-2000, f. 5-18-00, cert. ef. 6-1-00

437-004-1140
Lighting

General lighting.

(1) Provide adequate general and local lighting in rooms, buildings and work areas.

(2) Methods for determining the adequacy and effectiveness of lighting include:

(a) Measure the quantity of light against requirements in the American National Standard ANSI A11.1-1965, "American Standard Practice for Industrial Lighting."

(b) The quality of light as to freedom from glare and correct direction, diffusion and distribution.

[Publications: Publications referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(3)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-1150
Safety Colors for Marking Physical Hazards

Color identification.

(1) Red. Use red as the basic color to identify:

(a) Danger. Safety cans or other portable containers of flammable liquids must be red with highly contrasting markings. Provide red lights at barricades and at temporary obstructions. The main or background color of danger signs must be red.

(b) Stop. Emergency stop bars on hazardous machines must be red. Use red for emergency stop buttons or emergency electrical switches with contrasting letters or other markings.

(2) Yellow. Yellow is the basic color to signal caution and to mark physical hazards such as: Striking against, stumbling, falling, tripping, and "caught between."

Stat. Auth.: ORS 654.025(2) & 656.726(3)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-1180
Accident Prevention Signs

(1) Scope. This section applies to the design, application and use of signs or symbols (as included in paragraphs (3) through (5) below) to warn of specific hazards. This does not apply to bulletin boards or safety posters.

(2) Definitions. Sign — A surface marked to warn people of hazards, or to give safety instructions. Excluded are news releases, safety posters and bulletins.

(3) Classification of signs by use.

(a) Danger signs.

(A) Use signs of uniform design to warn of specific dangers and radiation hazards.

(B) Instruct all employees that danger signs warn of immediate danger and that special precautions are necessary.

(b) Caution signs.

(A) Use caution signs only to warn of hazards or to caution against unsafe practices.

(B) Instruct all employees that caution signs warn of a hazard against which they should take precautions.

(c) Safety instruction signs. Use safety instruction signs for general instructions and suggestions about safety.

(4) Sign design.

(a) Design features. Use signs with rounded or blunt corners and no sharp edges, burrs, splinters or other sharp projections. Place the ends or heads of bolts or other fastening devices so that they are not hazardous.

(b) Danger signs. The color of the background must be red.

(c) Caution signs. The color of the background must be yellow and the panel, black with yellow letters. Use black letters against the yellow background.

(d) Safety instruction signs. Use white for the background and make the panel green with white letters. Any letters used against the white background must be black.

(e) Slow-moving vehicle emblem. This emblem (see fig. 7) has a fluorescent yellow-orange triangle with a dark red reflective border. The reflective border defines the shape of the fluorescent color in daylight and creates a hollow red triangle in the path of motor vehicle headlights at night.

(A) Use this emblem only on vehicles that by design move at 25 m.p.h. or less on public roads. Do not use it as a clearance marker for wide machinery to replace required lighting or marking of slow-moving vehicles. The material, location, mounting, etc., of the emblem must conform to the American Society of Agricultural Engineers Emblem for Identifying Slow-Moving Vehicles, ASAE R276, 1967, or ASAE S276.2 (ANSI B114.1-1971). [Figure not included. See ED. NOTE.]

(5) Sign wordings.

(a) Nature of wording. Use wording on signs that is easily understandable.

(b) Biological hazard signs. Use the biological hazard warning sign to warn of the actual or potential presence of a biohazard. Use it to mark equipment, containers, rooms, materials, experimental animals or combinations of them, that contain or are contaminated with viable hazardous agents. For this subparagraph the term "biological hazard," or "biohazard," means only those infectious agents presenting a risk or potential risk to the well-being of humans.

NOTE: All dimensions are in inches.

[ED. NOTE: Figures referenced are available from the agency.]

[Publications: Publications referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(3)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-1250
Confined and Hazardous Spaces

(1) Definitions.

(a) Competent person is somebody who can identify existing and predictable hazards and take measures to eliminate them.

(b) Confined space is a space that:

(A) Is large enough and so configured that an employee can bodily enter and work; and

(B) Has limited or restricted entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits may have limited entry); and

(C) Is not designed for continuous employee occupancy.

(c) Engulfment is the covering of a person by a liquid or finely divided (flowable) solid substance that when inhaled causes death or that can exert enough force on the body to cause death by strangulation, constriction or crushing.

(d) Entry is passing through an opening into a hazardous or confined space. Entry includes work in the space and occurs when any part of the entrant's body breaks the plane of an opening into the space in a way that creates a hazard.

(e) IDLH Atmospheres. Atmospheres immediately dangerous to life or health (IDLH) are those with less than 19.5 percent oxygen by volume, or which because of the high toxicity of the contaminant, would endanger the life of a person breathing them for even a short period of time.

(f) Oxygen-deficient is an atmosphere with less than 19.5 percent oxygen by volume.

(2) Fuel bins.

(a) Fuel bins must have adequate exits and all necessary devices to provide safety for employees who enter them.

(b) There may be sentry stations or tunnels near the bottom conveyor for employees to use to stoke down congested fuel through openings. Safely built pneumatic bottoms, mechanical agitators or scrapers and similar devices are acceptable.

(3) Entering confined spaces.

(a) Test first. Always test the atmosphere in a confined space before an employee places any part of their body into it. Following the instructions below, test first for oxygen, then flammable atmosphere then toxic atmosphere.

(b) Entry. No person will enter or work in any confined space with an atmosphere immediately dangerous to life or health, except under the following conditions:

(A) They must wear a supplied air or self-contained air breathing apparatus;

(B) They must wear a safety belt with lifeline attached, where practical. Another person, equipped as required in subsection (3)(b)(A) above and with safety belt and lifeline attached, must be at the opening with adequate help available to remove the person if necessary (see (5), Rescue below);

(C) Failure of the person within the enclosure to respond to agreed upon signals requires immediate rescue action by a person or persons equipped as required in subsections (3)(b)(A) and (B) above;

(D) Air supplied to hose masks and positive pressure air helmets must be free from harmful dusts, fumes, mists, vapors, or gases to the extent that breathing it does not constitute harmful exposure. Position the air intake to the blower fan or compressor to prevent contamination of the air by carbon monoxide or other hazardous materials or gases;

(E) Supplied air respiratory equipment must have an automatic pressure relief valve, and connect through a pressure reduction valve in the supply line. Maximum allowable pressure, unless otherwise specifically approved, is 25 pounds per square inch;

(F) To assure safety when using positive-pressure air respiratory equipment, a minimum volume of air delivered to the user must be at least 4 cubic feet of air per minute for a face mask and 6 cubic feet of air per minute for hoods or helmets.

(c) Oxygen-deficient atmospheres. The atmosphere in a sealed or unventilated confined space is considered immediately dangerous to life or health. Nobody will enter such space unless:

(A) All requirements for safety equipment and procedures in (3)(b) above are met; or

(B) A competent person tests the atmosphere with an oxygen indicator or other suitable device immediately before entry to ensure that it contains enough oxygen to sustain life; or

(C) Until mechanical ventilation provides at least one complete change of uncontaminated air immediately before entry and continues while anybody is inside the enclosure. A safety watcher meeting the requirements in (3)(b) above must be at the entry.

(d) Toxic atmospheres. Nobody will enter any sealed or unventilated tank or other confined space that contains or has contained toxic materials or gases, unless:

(A) All requirements for safety equipment and safety procedures in (3)(b) above are met, or a competent person tests the atmosphere with an appropriate instrument or method and finds it to have contaminants below the threshold limit values of the particular material or gas.

(B) If the atmosphere has concentrations of hazardous contaminants not immediately dangerous to life or health, but above the threshold limit values for the toxic material, the person entering the space must wear respiratory protective equipment approved by the National Institute of Occupational Safety and Health, or recommended by the U.S. Department of Agriculture for the exposure.

(e) Flammable or explosive atmospheres. The atmosphere in any sealed or unventilated tank or other confined space and that contains or has contained combustible or flammable materials or gases is an atmosphere immediately dangerous to life or health.

(A) Nobody must enter such space unless all requirements for safety equipment and safety procedures in (3)(b) above are met or atmosphere tests by a competent person using an appropriate instrument or method shows no flammable or explosive atmosphere is present.

(B) If the atmosphere contains flammable or explosive vapors at or above 20 percent of their lower explosive limit, ventilate the space enough to bring the level below 20 percent of the lower explosive limit. Otherwise only persons meeting the requirements of (c) above may enter the enclosure for emergency work, including preparatory work or work to set up equipment to eliminate the gas.

(f) Ventilation. Natural and/or mechanical ventilation must maintain the atmosphere within the limits permissible for explosive or toxic materials and gases while employees are in the space.

(g) Residues and other sources. When there could be a release of explosive or toxic materials from residues or other sources in a confined space, there must be additional testing as necessary to assure the atmosphere has not become immediately dangerous to life or health. If such conditions arise, immediately leave the contaminated space until the atmosphere is safe for persons wearing respiratory protective equipment.

(h) Physical hazards. Do not allow employees to enter confined spaces that contains physical hazards, until you comply with OAR 437-004-1275.

(i) Engulfment. Do not allow employees to enter confined spaces where there is a hazard from engulfment by collapsing material.

(j) Lifeline and attendant. When entering confined spaces that have loose material (such as chips, sand, grain, gravel, sawdust, etc.) you must wear a safety belt with lifeline. There must be an attendant for the lifeline.

(k) Lockout/tagout. Follow the procedures of OAR 437-004-1275, for intake pipelines that convey hazardous substances into confined spaces before workers enter. Blinds, if used, must clearly show whether the line is open or closed. Close, lock and attach warning tags to valves in such lines nearest the containers. Blinding or lockout of cold water and air lines is not necessary if they have positive control valves near the container and you lock, close and tag the valves.

(4) Training.

(a) Train all workers before they do anything covered by this section. Retrain workers when there are changes in their duties or the spaces related to this section.

(b) Training must cover all hazards associated with the employer's confined and hazardous spaces.

(c) Training must cover this standard and all duties associated with it.

(d) Keep written documentation of all training until it is superseded by new training.

(5) Rescue.

(a) These requirements apply to employers who have employees enter confined spaces to rescue people.

(A) You must give each rescuer the personal protective equipment and rescue equipment necessary to make rescues from hazardous

spaces. You must also provide training on the proper use of that equipment.

(B) Train each rescuer in basic first aid and in cardiopulmonary resuscitation (CPR). At least one rescuer with current certification in first aid and in CPR must be available.

(b) When employers arrange to have persons other than their own employees do confined space rescue, the employer must:

(A) Inform the rescue service of the hazards they may confront during the rescue at the host employer's facility; and

(B) Provide the rescue service with access to all confined spaces from which rescue may be necessary so that the rescue service can develop appropriate rescue plans and practice rescue operations.

(c) To accomplish non-entry rescue, attach the other end of the retrieval line to a mechanical device or fixed point outside the hazardous space in a way that rescue can begin as soon as the rescuer becomes aware that rescue is necessary.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-1260
Manure Lagoons, Storage Ponds, Vats, Pits and Separators

(1) Scope. This applies to facilities not covered by confined space rules. (Examples include pole buildings used to store compost material or manure lagoons and separators.)

(2) General.

(a) Do not enter any vat, pit, separator or other hazardous area where the atmosphere may be immediately dangerous to life unless:

(A) Tests by a competent person, immediately before entry, prove it free of toxic gases and with enough oxygen to sustain life; or

(B) Mechanical or natural ventilation provides at least one complete change of uncontaminated air immediately before entry and continues during enclosure occupancy; or

(C) The person entering the area is using a properly functioning supplied air or self-contained breathing apparatus, and is closely supervised by a safety watcher with similar equipment, at the entrance. They must have adequate help to remove the person if necessary.

(b) Vats and pits that have hazardous materials, manure or that are more than 4' deep, must meet one of the following requirements:

(A) A cover or grating must be in place and strong enough to safely support imposed loads; or

(B) The edges must extend at least 42 inches above the adjacent floor level; or

(C) There is a standard guardrail.

(D) Where vehicles operate near vats or pits the railing must be strong enough to keep them out, or there must be a curb or shear rail that keeps the vehicle out.

(c) Manure lagoons or earthen manure storage ponds must have:

(A) Curbs, shear rails or other barriers where vehicles or equipment operate near enough to drive or roll into the lagoon.

(B) Standard guardrails or other protection where employees work over the contents or near enough to the edge to fall into the lagoon.

(C) Cables or chains that connect a vehicle to an adequate anchorage and are short enough to prevent the vehicle from rolling into the lagoon are acceptable.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-1275
The Control of Hazardous Energy (Lockout/Tagout)

(1) Scope. This standard covers work on machines, vehicles and equipment when the unexpected energizing or starting of them, or release of stored energy could injure employees.

(2) Application.

(a) This standard applies to the control of energy during servicing and/or maintenance of machines and equipment.

(b) It does not cover normal production operations. It covers servicing and/or maintenance that takes place during normal production operations only if:

(A) An employee must remove or bypass a guard or other safety device; or

(B) An employee must place any part of the body where they do work on the material being processed (point of operation) or where a danger zone exists.

(c) It does not cover routine, repetitive minor tool changes, adjustments and other minor servicing activities, done during normal operations, if they are necessary to the use of the equipment and if the workers use alternative methods that provide effective protection.

(d) This standard does not apply to work on electric powered equipment, when unplugging it would control the hazard and the employee doing the work controls the plug totally. It also does not apply to work on vehicles when the person doing the work has the ignition key under their exclusive control and there are no other sources of hazardous energy that could be released without the key.

(3) Program requirement. Employers must establish an energy control program and use its procedures for putting appropriate lockout or tagout devices on energy isolating devices. They must disable machines or equipment to prevent injury to employees.

(4) Definitions.

(a) Affected employee. One who operates a machine or equipment during service or maintenance under lockout or tagout. Also, those who work near where covered servicing or maintenance is done.

(b) Authorized person. One who locks out or tags out machines or equipment to service or maintain them. An affected employee becomes an authorized person when they do service or maintenance covered here.

(c) Energized. Connected to an energy source or containing residual or stored energy.

(d) Energy isolating device. A mechanical device that physically prevents the transmission or release of energy. Examples: A manual circuit breaker; a switch; a manual switch that disconnects the conductors of a circuit from all ungrounded supply conductors and where employees can operate no pole independently; a line valve; a block; and any similar device used to block or isolate energy. Push buttons, selector switches and other control circuit type devices are not energy isolating devices.

(e) Energy source. Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, gravity or other energy.

(f) Lockable. An energy isolating device with its own lock or with a hasp or other way to attach a lock. Other energy isolating devices are lockable if they can be locked without being dismantled, rebuilt or replaced or permanently altering their energy control capability.

(g) Lockout. The use of a lockout device on an energy isolating device, according to an established procedure to ensure that the controlled equipment is not operable until an authorized person removes the lockout device.

(h) Lockout device. Something that uses a positive means such as a lock, to hold an energy isolating device in a safe position. Included are blank flanges and bolted slip blinds.

(i) Normal operations. A machine or equipment doing its intended function.

(j) Servicing and/or maintenance. Constructing, installing, setting up, adjusting, inspecting, modifying, and maintaining and/or servicing machines or equipment. This includes removing jams, lubrication or cleaning of machines or equipment and making adjustments or tool changes, where the process may expose the employee to the unexpected energizing or starting of the equipment or release of hazardous energy.

(k) Setting up. Any work done to prepare a machine or equipment for operation.

(l) Tagout. The placement of a tagout device on an energy isolating device, according to an established procedure, warning employees not to operate the energy isolating device and the equipment being controlled until an authorized person removes the tagout device.

(m) Tagout device. A prominent warning device, such as a tag and a secure, sturdy means of attachment to an energy isolating device according an established procedure. The tag must warn employees not to operate the energy isolating device and the equipment being controlled until an authorized person removes the tagout device.

(5) General.

(a) Energy control program. Before doing any servicing or maintenance the employer must have a written energy control program with specific procedures, employee training and periodic reviews. It must

ensure isolation of the equipment from the energy source and make it inoperative in a way to prevent injury.

(b) Lockout/tagout.

(A) If an energy isolating device is not lockable, the energy control program must use a tagout system that provides as much employee protection as is possible.

(B) If the energy isolating device is lockable, the energy control program must use lockout.

(C) Major repair, renovation or modification of a machine or equipment or installation of new machines or equipment requires new energy isolating device(s) to be lockable.

(c) Employee protection.

(A) When using a tagout device on a lockable energy isolating device, attach the tagout device where you would have put the lockout device.

(B) Full compliance with all parts of this standard related to tagout is necessary to assure the highest safety levels. Additional steps that help provide high employee protection include the removal of an isolating circuit element, blocking of a controlling switch, opening of an extra disconnecting device or the removal of a valve handle.

(d) Energy control procedure.

(A) Develop, document and use procedures for the control of potentially hazardous energy when employees are doing work covered by this section.

NOTE: Documenting the required procedure for a particular machine or equipment is not necessary when all of the following are true:
(1) The machine or equipment has no potential for stored or residual dangerous energy or accumulation of stored dangerous energy after shut down;
(2) The machine or equipment has an easily identified and isolated single energy source;
(3) The isolation and locking out of that energy source will eliminate all energy-related hazards;
(4) The machine or equipment is isolated from that energy source and locked out during servicing or maintenance;
(5) A single lockout device will achieve a locked-out condition;
(6) The lockout device is under the exclusive control of the authorized person doing the servicing or maintenance;
(7) The servicing or maintenance does not create hazards for other employees; and
(8) No accidents have happened that involve the unexpected activation or energizing of the machine or equipment during servicing or maintenance done under this exception.

(B) The procedures must specifically outline the scope, purpose, authorization, rules and methods that are mandatory for the control of hazardous energy. They must also include a way to enforce compliance including, but not limited to, the following:

(i) A specific statement of the intended use of the procedure;

(ii) Specific procedural steps for shutting down, isolating, blocking and securing machines or equipment to control hazardous energy;

(iii) Specific procedural steps for the placement, removal and transfer of lockout or tagout devices and the responsibility for them; and

(iv) Specific requirements for testing a machine or equipment to verify the effectiveness of lockout devices, tagout devices and other energy control measures.

(e) Protective materials and hardware.

(A) Each employee's lock must have either a key or combination that is unique to that device.

(B) The employer must provide the necessary locks and/or hardware to do all required lockout/tagout functions.

(C) Individually identify each lockout and tagout device. They must be the only devices used for controlling energy. Do not use devices meant for the lockout program for other purposes. They must meet the following requirements:

(i) Durable.

(I) Lockout and tagout devices must withstand their environment.

(II) Make tagout devices so that exposure to weather conditions or wet and damp locations will not cause them to deteriorate or the message on them to become illegible.

(III) Tags must not deteriorate in corrosive environments such as where you handle or store acid and alkali chemicals.

(ii) Standardized. Use lockout and tagout devices whose appearance is uniform within the facility and easily recognized.

(iii) Substantial.

(I) Lockout devices. Lockout devices must be sturdy enough to prevent removal without the use of excessive force or unusual methods or tools.

(II) Tagout devices. Tagout devices and their means of attachment, must be sturdy enough to prevent inadvertent or accidental removal. The attachment means must be single use and self-locking.

(iv) Identifiable. Lockout and tagout devices must show the identity of the employee who applied them.

(D) On energized machines or equipment, tagout devices must warn against hazardous conditions and must include a phrase like: Do Not Start, Do Not Open, Do Not Close, Do Not Energize, Do Not Operate.

(f) Annual Review.

(A) Do a review of the energy control program at least annually to ensure that it meets the requirements of this standard and employees are following it.

(i) An authorized person must do the review.

(ii) Correct problems found during the review.

(iii) For a lockout program, the review must include a personal review, between the inspector and each authorized person, of that employee's responsibilities under the program.

(iv) For a tagout program, the review must include a personal review, between the inspector and each authorized and affected employee, of that employee's responsibilities under the program.

(B) Document these reviews in writing with the identity of the machine or equipment covered by the program, the date of the review, the employees included in the review, and the person doing it.

(g) Training and communication.

(A) Provide general training that includes the following:

(i) Train authorized persons in the recognition of sources of hazardous energy, the type and amount of energy found in their workplace and the methods of energy isolation and control.

(ii) Instruct affected employees in the purpose and use of the energy control program.

(iii) Instruct other employees who work or may work where there may be energy control procedures, about those procedures and about the prohibition against attempts to restart or energize locked out or tagged out machines or equipment.

(B) For tagout systems, provide the following additional training:

(i) Locks are physical restraints while tags are only warning devices that provide less protection than locks.

(ii) Do not remove a tag attached to an energy isolating means, without authorization of the authorized person responsible for it. Never bypass, ignore or otherwise defeat a tagout device.

(iii) Tags must be legible and understandable by all employees whose work operations are or may be in the area.

(iv) Tags may cause a false sense of security. Understanding their meaning must be part of the overall energy control program.

(v) Securely attach tags to energy isolating devices so that they cannot be inadvertently or accidentally detached.

(C) Employee retraining.

(i) Retrain employees when a change in their job assignment, a change in machines, equipment or processes present a new hazard or when the program changes.

(ii) Retrain employees when a review shows or the employer has reason to believe, that there are problems in the employees' knowledge or use of the program.

(D) Document the employee training in writing with each employee's name and date(s) of training.

(h) Energy isolation. Authorized persons doing the servicing or maintenance must do the lockout or tagout.

(i) Notification of employees. Notify affected employees of the application and removal of lockout or tagout devices before applying the controls and after removing them from the machine or equipment.

(6) Application of control. The established procedures for the application of energy control (the lockout or tagout program) must cover the following points in the following sequence:

(a) Preparation for shutdown. Before an authorized or affected employee turns off a machine or equipment, they must know the type and amount of the involved energy, the hazards of the energy and the method to control it.

(b) Machine or equipment shutdown. Turn off the machine or equipment using the procedures established for it. Do an orderly shutdown to avoid new or increased hazards because of the equipment stoppage.

(c) Machine or equipment isolation. All energy isolating devices must be physically placed and used in ways that isolate the machine or equipment from the energy source(s).

(d) Lockout or tagout device application.

(A) Only authorized persons are to connect lockout or tagout devices to each energy isolating device.

(B) Connect lockout devices in a way that will hold the energy isolating devices in a "safe" or "off" position.

(C) Connect tagout devices in a way that will positively prevent operation or movement of energy isolating devices from the "safe" or "off" position. Directly connect the tag to the energy isolating device, otherwise it must be as close to the device as safely possible and obvious to anyone attempting to operate the device.

(e) Stored energy.

(A) After the application of lockout or tagout devices, relieve or make safe all potentially hazardous stored or residual energy.

(B) If stored energy can again reach a hazardous level, continuously verify its isolation until the servicing or maintenance is done or until the possibility is gone.

(f) Verification of isolation. Before starting work on locked out or tagged out machines or equipment, the authorized person must verify that isolation and de-energizing of the machine or equipment has been done.

(7) Release from lockout or tagout. The authorized person(s) must follow procedures and take actions to guarantee the following before removing lockout or tagout devices and restoring energy to the machine or equipment:

(a) The machine or equipment. Remove non-essential items from the work area and confirm the return of the machine or equipment to pre-lockout or normal running condition.

(b) Employees.

(A) Check the work area to ensure that all employees are safe or removed from the area.

(B) Notify affected employees after removing the lockout or tagout devices but before starting the machine or equipment.

(c) Lockout or tagout devices removal. Only the employee who applies it can remove a lockout or tagout device. However, when that employee is not available, the employer may direct its removal if specific procedures and training for such removal are a part of the employer's energy control program. The employer must show that the specific procedure is as safe as removal by the authorized person who applied it. The specific procedure must include at least the following:

(A) Verification by the employer that the authorized person who applied the device is not at the facility;

(B) Attempting to contact the authorized person to inform him or her about the removal of their lockout or tagout device; and

(C) Ensuring that the authorized person has this knowledge before he or she resumes work at that facility.

(8) Additional requirements.

(a) Testing or positioning of machines, equipment or components thereof. Follow this sequence of actions when it is necessary temporarily to remove lockout or tagout devices and energize the machine or equipment. This must only be done for testing or positioning the machine, equipment or component of it.

(A) Clear the machine or equipment of tools and materials;

(B) Remove employees from the machine or equipment area;

(C) Remove the lockout or tagout devices;

(D) Energize and go on with testing or positioning;

(E) Remove energy from all systems and reapply original energy control measures to continue the servicing and/or maintenance.

(b) Outside personnel (contractors, etc.).

(A) If outside servicing personnel are doing things covered by this standard, the on-site employer and the outside employer must coordinate their respective lockout or tagout procedures.

(B) The on-site employer must be certain that its employees understand and comply with the provisions of the outside employer's energy control program.

(c) Group lockout or tagout.

(A) When a crew, craft, department or other group does service or maintenance, they must use a procedure that gives employees a level of protection equal to that provided by using a personal lockout or tagout device.

(B) Use group lockout or tagout devices according to OAR 437-004-1275(4)(d) including, but not limited to, these requirements:

(i) Primary responsibility is with an authorized person for a set number of employees working under the protection of a group lockout or tagout device (such as an operations lock);

(ii) The authorized person must know the exposure status of individual group members with regard to the lockout or tagout of the machine or equipment and

(iii) When work involves more than one crew, craft, department, etc., assignment of overall job-associated lockout or tagout control responsibility to an authorized person designated to coordinate affected work forces and ensure continuity of protection; and

(iv) Each authorized person must put a personal lockout or tagout device on the group lockout device, group lockbox, or comparable mechanism when they begin work, and must remove those devices when they stop working on the machine or equipment.

(d) Shift or personnel changes. Have specific procedures for shift or personnel changes to ensure the continuity of lockout or tagout protection. These must include the orderly transfer of lockout or tagout device protection between leaving and arriving employees. The procedure must minimize exposure to hazards related to the ongoing process.

NOTE: The following Appendix is a non-mandatory guideline to help employers and employees comply with the requirements.

[ED. NOTE: Appendices referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(3)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-1305

Medical Services and First Aid

(1) Definitions.

(a) Emergency medical service is care by a medically trained person such as in a hospital, clinic, ambulance or rescue vehicle.

(b) Qualified first aid person has evidence to show valid first aid and CPR training within the last 2 years.

(2) First aid supplies.

(a) You must provide first aid supplies based on the types of injuries that could occur at the place of employment. The first aid supplies must be available to all workers on all shifts immediately when needed. Do not lock up or otherwise restrict access to first aid supplies.

(b) Protect first aid supplies from damage, deterioration or contamination. Clearly mark containers. First aid containers may be sealed to protect the contents from contamination.

Note: Supplies such as gloves and a mouth barrier device are personal protective equipment covered by Subdivision I, Personal Protective Equipment.

(3) Medical treatment and services. Emergency medical services for injured or sick employees must be available and summoned in time to give appropriate treatment for the circumstances.

NOTE: These services can be by outside sources such as the local 911 response system or by employees who are qualified first aid persons.

(4) Emergency medical plan.

(a) To determine the appropriate type of medical service for each place of employment, you must do a survey and develop an emergency medical plan. You must evaluate these areas:

(A) Determine the types of injuries and/or illnesses that could occur at the work site.

(B) Contact the local emergency response system and get information about their ability to handle these types of emergencies and in what time frame they can respond. Consider such things as nearness of the responding teams, traffic, equipment, average response times and whether the system is staffed by volunteers or full time people.

(C) Based on this information, decide whether the local response system can handle your situation or whether you need your own qualified first aid persons.

(b) If the local response system is adequate then the minimum emergency medical plan must contain your instruction to employees for action in case of an injury or illness and the emergency phone number they are to use. Post this emergency medical plan where employees gather or are most likely to read it.

(c) If the response system is not able to handle your potential injuries and/or illnesses then your plan must also contain clear and specific instructions for employees' actions in case of injury or illness. The plan of action must have:

(A) The names, locations and phone numbers of people trained and authorized to give first aid and other treatment.

(B) Any special instructions about communications like two-way radios, telephones or other provisions for emergency communication to contact the emergency medical services.

(C) Availability of transportation to a point where an ambulance can be met or to the nearest suitable medical facility.

(D) Train all employees to know the information in the medical plan and their responsibilities during an emergency.

(5) Emergency eyewash and shower facilities. This does not apply to early entry work 170.112(c)(8) or agriculture field work covered under 170.150 which requires provision of an "emergency eye-flush" container as per the pesticide label. Where the pesticide label specifies an "emergency eyewash" be provided when handling the pesticide concentrate, as in mixing and loading activities, these rules apply.

(a) When there are substances that could injure workers by getting into their eyes or onto their bodies, provide them with a system to decontaminate themselves.

(b) Where plumbed water is available at fixed work sites, you must provide a plumbed eyewash station that meets the following:

(A) Locate it so that exposed employees can reach it and begin treatment in 10 seconds or less. The path must be unobstructed and cannot require the opening of doors or passage through obstacles unless other employees are always present to help the exposed worker.

(B) Install the equipment according to the manufacturer's instructions.

(C) The system must have valves that stay open without the use of the hands.

(D) Water temperature must be appropriate for the anticipated types of exposures. Water pressure must be 15 to 25 psi with a flow of .4 gallons per minute for 15 minutes. If the system manufacturer's instructions require different criteria, follow them to assure proper operation of the system.

(c) Where plumbed water is available at fixed work sites you must provide a plumbed full body shower that meets the following:

(A) Locate it so that exposed employees can reach it and begin treatment in 10 seconds or less. The path must be unobstructed and cannot require the opening of doors or passage through obstacles unless other employees are always present to help the exposed worker.

(B) Install the equipment according to the manufacturer's instructions.

(C) The system must have valves that stay open without the use of the hands.

(D) Water temperature must be appropriate for the anticipated types of exposures. Water flow must be at least 30 gallons per minute. If the system manufacturer's instructions require different criteria, follow them to assure proper operation of the system.

(d) For mobile work sites and sites without plumbed water, self-contained systems are acceptable. These systems must provide clean, fresh water at flow rates adequate to provide complete decontamination of the eyes or body. Follow the manufacturer's instructions for use and inspection.

(e) If the MSDS or other information about the expected contaminant gives treatment instructions different from those required in this section, follow them. If the manufacturer requires specific decontaminants or procedures, you must provide them in addition to the eyewash or shower. Certain substances like acids, chlorine and anhydrous ammonia require special treatment. The employer must assure this treatment is available.

(f) If fountains or showers can freeze, take protective measures to prevent freezing.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98; OSHA 9-2006, f. & cert. ef. 9-22-06

Fire

437-004-1430
Sources of Fire

(1) Definitions.

(a) Approved — Acceptance or approval by a federal agency such as Bureau of Mines, Department of Transportation, U.S. Coast Guard, etc., or an agency of the State of Oregon or a nationally recognized testing laboratory that issues approvals for such equipment.

(b) Combustible liquids — See the universal definitions in Subdivision 4/B, OAR 437-004-0100.

NOTE: Examples of common combustible liquids are diesel fuel, fuel oils, kerosene and Stoddard Solvent.

(c) Flammable — Capable of being easily ignited, burning intensely or having a rapid rate of flame spread.

(d) Flammable liquids — See the universal definitions in Subdivision 4/B, OAR 437-004-0100.

NOTE: Examples of common flammable liquids are:
(1) Ethers and other highly volatile liquids (Class IA).
(2) Gasolines (Class IB).
(3) Methyl Alcohol (Class IC).

(2) Store combustible waste material, including oily rags in covered metal receptacles.

(3) If using electric lights, equipment and wiring where there may be flammable or explosive gases, vapors, mists, dust or fibers they must comply with the State Electrical Specialty Code.

(4) Locate internal combustion engines so that there is a clearance of at least 6" between exhausts and exhaust piping and combustible material.

(5) Do not allow smoking, open flames, the use of spark-producing devices or tools not approved for use in such areas and other sources of ignition:

(a) In fueling areas.

(b) When servicing fuel systems for internal combustion engines.

(c) When receiving or dispensing flammable or combustible liquids.

(d) Where using flammable or combustible liquids.

(e) Where storing flammable or combustible liquids.

(f) Areas that may have flammable or explosive gases, vapors, mists, dust, fibers or flyings.

NOTE: Other sources of ignition include cutting and welding; grinding hot surfaces; frictional heat; static, electrical and mechanical sparks; spontaneous ignition including heat producing chemical reactions; and radiant heat.

NOTE: There are more detailed standards for the use and storage of flammable and combustible liquids and LPG in 4/H, OAR 437-004-0720, of this division. Fire prevention standards for welding operations are in 4/Q, OAR 437-004-2310.

[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-1440
Required Postings

(1) Definitions.

(a) Combustible liquids — See the universal definitions in Subdivision 4/B, OAR 437-004-0100.

NOTE: Examples of common combustible liquids are diesel fuel, fuel oils, kerosene and Stoddard Solvent.

(b) Flammable — Capable of being easily ignited, burning intensely or having a rapid rate of flame spread.

(c) Flammable liquids — See the universal definitions in Subdivision 4/B, OAR 437-004-0100.

NOTE: Examples of common flammable liquids are:
(1) Ethers and other highly volatile liquids (Class IA).
(2) Gasolines (Class IB).
(3) Methyl Alcohol (Class IC).

(2) Post signs reading, "No Smoking or Open Flame," in all areas:

(a) For fueling;

(b) For receiving or dispensing flammable or combustible liquids;

(c) For use or storage of flammable or combustible liquids; or

(d) Where there may be flammable or explosive gases, vapors, mists, dust, fibers or flyings.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-1450
Extinguishers

(1) Definitions.

(a) Combustible liquids — See the universal definitions in Subdivision 4/B, OAR 437-004-0100.

NOTE: Examples of common combustible liquids are diesel fuel, fuel oils, kerosene and Stoddard Solvent.

(b) Flammable — Capable of being easily ignited, burning intensely or having a rapid rate of flame spread.

(c) Flammable liquids — See the universal definitions in Subdivision 4/B, OAR 437-004-0100.

NOTE: Examples of common flammable liquids are:
(1) Ethers and other highly volatile liquids (Class IA).
(2) Gasolines (Class IB).
(3) Methyl Alcohol (Class IC).

(2) Provide the class of fire extinguishers designed for use on the class of fire potential in the work area.

NOTE: To make it easy to use the right extinguisher, the NFPA Extinguisher Standard classifies fires into four classes. They are:
Class A: Fires of ordinary combustible materials (such as wood, cloth, paper, rubber, and many plastics) requiring the heat-absorbing (cooling) effects of water, water solutions or the coating effects of certain dry chemicals that retard burning.
Class B: Fires of flammable or combustible liquids, flammable gases, greases and similar materials where extinguishment is best done by excluding air (oxygen), inhibiting the release of combustible vapors or interrupting the combustion chain reaction.
Class C: Fires of energized electrical equipment where safety to the operator requires the use of electrically non-conductive extinguishing agents. (Note: For non energized electrical equipment, Class A or B extinguishers may be best.)
Class D: Fires of certain combustible metals, such as magnesium, titanium, zirconium, sodium, potassium, etc., requiring a heat-absorbing extinguishing medium not reactive with the burning metals.

(3) Original labels and marking on extinguishers must remain attached and legible.

(4) Mount fire extinguishers on hangers, brackets, in cabinets or on shelves. The maximum height of the top of the extinguisher above the floor is: [Table not included. See ED. NOTE.]

(5) Do not obstruct fire extinguishers. They must be in plain sight or clearly mark their location.

(6) Paths to and space in front of fire extinguishers must be clear and free from obstruction.

(7) Inspect fire extinguishers yearly or more often as needed to keep them usable and fully charged.

(8) Do not use fire extinguishers with carbon tetrachloride, chlorobromomethane or other toxic vaporizing fluids indoors or in confined spaces.

[ED. NOTE: Tables referenced are available from the agency.]
[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-1460
Fire Prevention Plan

(1) The plan must be in writing, be kept in the work place and be available to employees. Employers with fewer than 11 permanent, year-around workers may have a verbal plan.

(2) The fire prevention plan must include at least these parts:

(a) Procedures to control accumulations of flammable and combustible waste materials;

(b) Procedures for regular maintenance of safeguards installed on heat producing equipment to prevent accidental ignition of combustible materials;

(c) Procedures for reporting possible fire producing situations.

(3) The employer must:

(a) inform employees of the fire hazards in their work areas; and

(b) review with each employee, new to a job, those parts of the fire prevention plan necessary for self-protection.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-1470
Training

If workers are expected or required to fight fires, their level of training and the fire fighting equipment they use must be adequate for the level of fire fighting involvement expected or required by the employer. The employer must provide all needed equipment and training at no cost to employees and be in compliance with division 2/L, OAR 437-002-0182 Oregon Rules for Fire Fighters, 1910.155 Fire Protection, and 1910.156 Fire Brigades.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98; OSHA 9-2006, f. & cert. ef. 9-22-06

Compressed Gases

437-004-1505
Air Receivers and Pressure Systems

(1) Application. This section applies to compressed air receivers and other equipment making and using compressed air or gas. This section does not apply to the use of compressed air to move materials nor to work in compressed air as in tunnels and caissons. It also does not apply to compressed air machinery and equipment used on transportation vehicles.

(2) General requirements. New and existing equipment.

(a) Construct all new air receivers installed after the effective date of these regulations according to the 1995 edition of the A.S.M.E. Boiler and Pressure Vessel Code Section VIII.

(b) Construct, install and maintain all safety valves according to the A.S.M.E. Boiler and Pressure Vessel Code, Section VIII Edition 1995.

(3) Installation and equipment requirements.

(a) Installation. Install air receivers so that all drains, hand holes and manholes are easily accessible. Do not bury an air receiver underground or put it in an inaccessible place.

(b) Drains and traps. Install a drain pipe and valve at the lowest point of every air receiver to provide for the removal of accumulated oil and water. Adequate automatic traps are acceptable besides drain valves. To prevent excessive amounts of liquid in the receiver, open the drain valve and drain the receiver completely as often as needed.

(c) Gages and valves.

(A) Every air receiver must have an indicating pressure gage that is visible and with one or more spring-loaded safety valves. These valves together must prevent pressure from exceeding the maximum allowable working pressure by more than 10 percent.

(B) No valve of any type must be between the air receiver and its safety valve or valves.

(C) Construct and place safety and control devices so that people cannot defeat them and are protected from the elements.

(D) Test all safety valves frequently to find out if they are in good operating condition.

(4) Compressed air — general.

(a) Never use compressed air or gas to clean clothing that is being worn. Never direct compressed air or gas at a person.

(b) Do not use compressed air for cleaning unless:

(A) It is reduced at the source to less than 30 p.s.i. and then only with effective chip guarding and personal protective equipment; or

(B) The outlet device or nozzle reduces end pressure to less than 30 p.s.i. when dead-ended or placed against an object, then only with effective chip guarding and personal protective equipment.

(c) All hose connections must be secure and maintained to be safe. Do not allow the hose to begin whipping.

NOTE: See 4/P, OAR 437-004-2230 for standards about using tools run by compressed air.

(5) Piping systems.

(a) All piping systems and their component parts that carry air, steam or other material at more than atmospheric pressure must safely withstand pressures to be placed upon them.

(b) To be acceptable for pressure line service with gaseous substances, non-metallic pipe must have its manufacturer's recommendation and listing for compressed air or gas service. Only use PVC pipe for compressed air if you bury or encase it.

(6) High temperature piping. High temperature is 140° fahrenheit or higher.

(a) Cover all steam and other high temperature pipe lines within 7 feet of the floor or work platform or passageway with non-combustible insulating material or otherwise protect it against accidental contact with persons.

(b) All steam hose connections must be secure and maintained to be safe. Do not allow the hose to begin whipping.

[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-1525
Boilers and Steam Systems

NOTE: The Oregon Building Codes Agency (Boiler and Pressure Vessel Section) is the authority for Boilers and Pressure Vessels as defined in Oregon Boiler Pressure Vessel Law, ORS 480.510.

(1) All boilers and pressure vessels must meet minimum standards of design and operation in the Oregon Boiler and Pressure Vessel Safety Law.

(2) Permanently mark each control valve, not at the pressure vessel, with its source and function.

(3) Relief valve exhaust systems must withstand the forces involved. Their discharge must not endanger workers.

[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

Materials Handling

437-004-1610
General Requirements

(1) Material storage.

(a) Storage of material must not create a hazard. Stack, block or interlock stored items and limit their height so that they are stable and secure from sliding or collapse.

(b) Storage areas must be free from accumulated materials that are tripping, fire or explosion hazards.

(c) Pile foundations must support maximum loads without sinking, sagging, or tipping.

(d) Storage of toxic, flammable, radioactive, or irritating substances must comply with other appropriate parts of the Oregon Occupational Safety and Health Code.

(e) Where mechanical handling equipment is in use, there must be safe clearance in aisles, at loading docks, through doorways and where turns are made. Aisles and passageways must be clear and in good repair.

(f) Workers must not be under or near elevated loads and moving material unless they have adequate protection.

(g) Block or crib loads suspended in slings or supported by hoists, jacks, or other devices, before allowing workers to be underneath them.

(h) Do not drop or throw material from an elevation to other people.

(i) Use tag lines or guide ropes when manual control is needed over swinging loads.

(j) Load pallet boards, and trays so that the material is stable.

(k) Stored material must not obstruct lights and fire extinguishing equipment, including sprinklers, aisles, exits, or electrical control panels.

(l) When storing materials that could cause hazardous reactions, segregate and mark them with appropriate warning signs.

(2) Stacks and piles.

(a) All material stacks and piles must be on level and solid supports and be stable.

(b) Use binding strips or cross ties when needed to stabilize stacks and piles.

(3) Bricks and blocks.

(a) Brick stacks must not be more than 7 feet high. When a loose brick stack reaches a height of 4 feet, cross tie it and taper it back 2 inches for every foot of height more than 4-foot.

(b) When stacking masonry blocks more than 6 feet high, cross tie and taper them back one-half block per tier above the 6-foot level.

(4) Lumber.

(a) Remove all nails from used lumber before stacking it.

(b) Lumber stacks must be no more than 1-1/2 times higher than the smallest dimension of the base.

(5) Bagged materials.

(a) Stack bagged materials by stepping back the layers and cross keying the bags at least every 10 bags high.

NOTE: This requirement does not apply if pallets stabilize the stack of bagged materials.

(b) When removing bags from a pile, keep the pile stable.

(6) Pipe and bar stock. Take pipe and bar stock from the ends of unsecured piles not from the side.

(7) Drums, rolls, cylindrical objects.

(a) Barrels, drums, large pipe, rolls of paper, and other cylindrical objects piled on their sides must have blocks to hold the bottom row. Separators between rows of the pile, must have blocks at each end.

(b) There must be spacing strips between bundles.

(8) Equipment design and construction.

(a) All equipment, structures, and accessories used for handling or storing materials must comply with sound engineering practices and the specifications and recommendations of the manufacturer. They must support the loads acting on them in addition to their own dead loads. Allow for wind, impact, erection and any special loadings that may occur. No combination of these loads may cause a stress on any part that exceeds the allowable stress for that part.

(b) Do not exceed equipment manufacturer's recommended safe load capacities.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-1630
Conveyors

(1) Controls.

(a) The operator's station must have a way to quickly stop the motor or engine.

(b) If the operator's station is remote from the power source, there must be a way to quickly stop the system at the motor or engine and at the operator's station.

(2) Backstops and brakes. Inclined conveyors, where reversing or running away is a hazard, must have anti-runaway, backstop devices, or suitable guards.

(3) Loading, transfer and discharge points.

(a) Conveyor loading, transfer and discharge points must have a way to guard workers from injury by moving material.

(b) The area around all loading and unloading points must be clear of obstructions.

(4) Guards.

(a) Screw conveyors must have guards to prevent contact with turning flights.

(b) Where a conveyor passes over a work area, aisles or thoroughfares, there must be guards to prevent material from falling.

(c) Return sections of conveyors less than 7 feet above passageways and work areas, must have guards.

(d) Comply with subdivision 4/O, OAR 437-004-1910, Machine Guarding, for guarding conveyor drive mechanisms and power driven parts.

(e) Input conveyors for chippers, burners, furnaces, or other dangerous machines must have guards to prevent workers from falling into the conveyor. If the machine operation does not allow complete guarding of the opening, the worker must wear a life belt tied off to a lifeline.

(f) Workers must not walk across or step over conveyors except on bridges or walkways.

(5) Portable conveyors.

(a) Portable conveyors must be stable at all operating ranges and must have devices or be blocked to prevent unintended movement.

(b) Portable electric conveyors must be grounded. Wiring, switches, and elecrical connections outside and exposed to the weather must be weatherproof and dustproof.

(6) Riding prohibited. Workers must not ride on a conveyor.

(7) Ramps, skids, rollways.

(a) Where the person putting material down a chute, ramp, skid, or rollway does not have a clear view of a lower landing where workers might be, there must be a working automatic warning device.

(b) If there is no warning device as required in (8)(a) above, fence off or barricade the underside of the chute, ramp, skid, rollway or landing and mark it with warning signs.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-1670
Automotive Hoists

(1) Automotive hoists elevated with a load to a position that is a hazard, must be supported by a safety device capable of preventing descent if the lift fails.

(2) Use the lifts according to the manufacturer's recommendations and those of ANSI B153.1-1990.

(3) Place vehicles on lifts according to the manufacturer's recommendations.

[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-1680
Storage of Hazardous Chemicals

(1) Store hazardous chemicals separately if they could cause hazardous reactions. Label areas by category.

(2) Store all hazardous chemicals in conformance with instructions on their packaging, label or MSDS.

(3) Ventilate storage areas, before employees enter, when needed to keep air contaminants below 25% of the lower exposure limit (LEL) and below the permissible exposure levels (PELs) in 4/Z, OAR 437-004-9000, Air Contaminants.

(4) Provide natural or artificial lighting equal to 20 foot candles for safe entry and removal of chemicals.

(5) Storage and removal of hazardous chemicals must not cause hazards to workers.

NOTE: Electrical wiring in the chemical storage area must comply with 4/S, OAR 437-004-2810 through OAR 437-004-3075.

NOTE: When dispensing a flammable or combustible liquid you must comply with OAR 437-004-0720, Flammable and Combustible Liquids, Subdivision 4/H.

NOTE: Chemical storage must comply with appropriate state and local fire codes, NFPA 34 and OAR 437-004-0720, Flammable and Combustible Liquids, Subdivision 4/H.

NOTE: Cleanup of some chemical spills may fall under the standards in 4/H, OAR 437-004-0950, Hazardous Waste Operations and Emergency Response.

(6) These additional requirements apply for storage and handling of restricted use pesticides:

(a) Lock the storage area to prevent access by unauthorized employees.

(b) There must be separate areas within a storage facility for each category of pesticide. Label these areas by general category.

NOTE: Examples of labeling categories are herbicides, fungicides & insecticides. If other types of hazardous or reactive chemicals are stored in the same room, include additional categories, such as fertilizer, acids, bases or oxidizers.

(c) Floors and shelves must have coatings or sealants that prevent the absorption of hazardous chemicals.

(d) When the storage area contains enough chemicals that a leak or spill could cause material to leave the confines of the building, there must be methods or means to contain the material. This does not apply to storage structures in areas where there are normally no employees.

[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-1700
Forklifts and Other Powered Industrial Trucks

(1) General requirements.

(a) This section has safety requirements for the maintenance and use of fork trucks, forklifts, platform lift trucks, motorized hand trucks, and other specialized industrial trucks used in agriculture. These are considered vehicles and additional standards are found in Division 4/U. This does not apply to compressed air or non-flammable compressed gas-operated industrial trucks, nor to agricultural vehicles defined elsewhere in this standard, nor to vehicles intended primarily for earth moving or over-the-road hauling.

(b) Modifications and additions that affect capacity and safe operation must have the manufacturer's prior written approval. Change the capacity, operation and maintenance instruction plates, tags or decals to reflect any changes to the vehicle.

(c) If the truck has front-end attachments not installed by the factory, the truck markings must identify the attachments and show the approximate weight of the truck and attachment combination at maximum elevation with the load laterally centered.

(d) Keep nameplates and markings in place and legible.

(2) Safety guards.

(a) Overhead guards.

(A) If a lift truck operator could be struck by falling, or stacked objects, the truck must have an overhead guard. The guard must be strong enough to support impact load tests in **Table 1**:

(B) Guards that pass the test must have a metal tag permanently attached to the canopy where reading it from the ground is easy. This tag must show the impact test load, in foot-pounds to which similar guards have been tested.

Note: Guards required by (2)(a)(A) through (C), or by the following rules, do not have to withstand the impact of a capacity load falling from any height.

(C) Untested guards must be made of material in **Table 2** or material of equivalent strength or stronger.

(D) The construction of canopy guards built to comply with (C) above presumes four upright members. Guards with less than four upright members must be equally strong.

(i) Canopy type overhead guard frames must have structural rigidity.

(ii) All guard mountings or attaching brackets must provide adequate support to the upright members of the canopy type overhead guard.

(iii) Cantilever overhead guards must be of equivalent strength.

(E) Guards must not interfere with good visibility. Openings in the top must not be more than 6 inches in one of their two dimensions. Guards must be large enough to extend over the operator under all normal circumstances of operation, including forward tilt.

(i) If the mast-tilting mechanism fails, the overhead guard must not injure the operator.

(ii) There must be at least 39 inches of clear vertical space between the operator's seat when depressed and the underside of the guard. There must be at least 74 inches of clear vertical space between the platform for standing operators and the underside of the guard.

Note: Where overall height of truck with forks in lowered position is limited by head room conditions and there is insufficient space for vertical clearance or for the operator to assume a normal driving position, normal overhead guard heights may be reduced, or the overhead guard may be omitted. The height and stability of stacks of piled material, the weight of individual units handled, and the operating space available must provide reasonable safety for the operator if removing the overhead guard is necessary.

(b) Back rest. Lift trucks that handle small objects or loose units must have a vertical load back rest.

(A) It must be strong enough to prevent the load or any part of it from falling toward the operator.

(B) It must not interfere with good visibility.

(C) Size of openings must not be more than 6 inches in one dimension.

(c) Shear point guards. Shear points on forklift loaders and similar type vehicles must have guards.

(3) Fuel handling and storage.

(a) Store and handle liquid fuels according to 4/H, OAR 437-004-0720.

(b) Store and handle liquefied petroleum gas fuel according to 4/H, OAR 437-004-0780.

(4) Changing and charging storage batteries.

(a) Battery chargers must be in areas that are safe for that purpose.

(b) There must be facilities for flushing and neutralizing spilled electrolyte, for fire protection, for protecting charging apparatus from damage and for adequate ventilation.

(c) Use a conveyor, overhead hoist or equivalent material handling equipment to handle large batteries that power electric forklifts.

(d) Use only a carboy tilter or siphon to handle electrolyte.

(e) Pour acid into water not water into acid when servicing batteries.

(f) Set truck brakes before changing or charging batteries.

(g) Vent caps must function and the battery compartment cover(s) must be open to dissipate heat.

(h) There must be no smoking in the charging area.

(i) Prevent open flames, sparks, or electric arcs in battery charging areas.

(j) Keep tools and other metallic objects away from the top of uncovered batteries.

(5) Lighting for operating areas. Where general lighting is too dim, the vehicle must have its own directional lighting.

(6) Dockboards (bridge plates). See 4/D, OAR 437-004-0390(1).

(7) Trucks.

(a) Set the brakes on trucks or chock the rear wheels to prevent them from rolling while they are boarded with powered industrial trucks.

(b) Use nose jacks when necessary to support a semitrailer and prevent a nose dive during the loading or unloading.

(8) Operator training.

(a) Develop and use a training program for operators of powered industrial trucks. The employer or an outside training entity may give the training. It must contain at least the following:

(A) A study and test portion covering at least the rules in this standard, the information provided by the manufacturer for operation

of the equipment and any special information dictated by the operating environment.

(B) A behind-the-wheel driving portion, supervised by a person competent in the operation of the particular equipment and familiar with the area and circumstances of its use.

(C) Tailor both parts to the specific type of equipment, the material being handled and the location of its use.

(b) Only fully trained workers may operate powered industrial trucks, except those under direct supervision as part of the behind-the-wheel training program.

(c) Conduct refresher training for drivers annually or when their driving record indicates the need for additional training, whichever is more frequent.

(d) Employers may not consider a new worker trained and qualified based on experience from a previous employer unless the previous experience was on the same type of equipment under substantially the same operating circumstances and the worker had a safe operating record acceptable to the new employer.

(9) Truck operations.

(a) Do not drive a powered industrial truck up to anyone standing in front of a fixed object.

(b) Do not stand or pass under the elevated part of a powered industrial truck.

(c) Only the operator may ride on a powered industrial truck unless it has a second seat or area intended for another rider.

(d) Do not put any part of the body between or reach through the uprights of the mast or outside the running lines of the truck.

(A) Fully lower the forks or platform on an unattended powered industrial truck. Also, neutralize the controls, turn off the power, and set the brakes. Block the wheels if it is on an incline.

(B) Unattended is when the operator is 25 feet or more away but vehicle remains in view or anytime the vehicle is not in view.

(C) When the operator gets off the truck but is within 25 feet and can still see it, the forks or platform must be down, the controls in neutral and the brakes set, unless loading or unloading items to or from the forks or platform.

(f) Keep a safe distance from the edge of ramps or platforms while on an elevated dock, platform or freight car.

(g) Whenever a truck has vertical only, or vertical and horizontal controls that elevate with the lifting carriage or forks for lifting personnel, do the following:

(A) Use a safety platform secured to the lifting carriage and/or forks.

(B) Have a way for people on the platform to shut off power to the truck.

(C) Provide protection from falling objects as necessary by the operating conditions.

(h) When using a forklift to lift people, take the following precautions:

(A) Use a platform with standard guardrails secured to the lifting carriage or forks.

(B) The hydraulic system must not be able to drop faster than 135 feet per minute if any part of the system fails.

(C) Someone must be in the operator's station while workers are on the platform.

(D) Someone must be in the normal operating position while raising or lowering the platform.

(E) Other than very slow inching, do not move the truck from point-to-point with the platform raised more than 4 feet while workers are on it.

(F) There must be a guard on the area between the platform and the mast to prevent contact with chains or other shear points.

(10) Traveling.

(a) Climb or descend grades slowly.

(A) Drive loaded trucks with the load upgrade if the incline is steep enough to spill the load.

(B) Tilt the load back and raise the forks or platform only as far as necessary to clear the road surface.

(b) Drive only as fast as conditions permit, leaving enough time to stop.

(c) Slow down on wet and slippery surfaces.

(d) Do not run over loose objects.

(11) Loading.

(a) Do not handle loads heavier than the rated capacity of the truck.

(b) Treat trucks with attachments as partially loaded trucks when not handling a load.

(c) The forks or platform must be under the load as far as possible and the mast tilted backward to stabilize the load.

(d) Do not tilt forward with forks or platform elevated except to pick up a load. Do not tilt an elevated load forward except when it is in a deposit position over a rack, chute or stack. When stacking or tiering, use only enough backward tilt to stabilize the load.

(12) Maintenance of powered industrial trucks.

(a) If a powered industrial truck needs repair, take it out of service until repairs are done.

(b) Do not add fuel while the engine is running.

(c) Clean up spilled oil or fuel or allow it to completely evaporate before restarting the engine. Do not use the vehicle without the fuel filler cap in place.

(d) Do not use a flame to check the electrolyte level in batteries or the level in fuel tanks.

(e) Only authorized persons may repair powered industrial trucks.

(f) Disconnect the battery before working on the electrical system.

(g) Use only replacement parts that assure equivalent safety as the originals.

(h) Do not change the relative positions of parts from what they were when the vehicle was made. Do not remove parts except as in (l) below. Do not add counter weighting to fork trucks without approval by the manufacturer.

(i) Check powered industrial trucks daily before using them. Do not use them if any condition is found that adversely affects the vehicle's safety.

(j) Remove from service any vehicle that gives off hazardous sparks or flames.

(k) Keep powered industrial trucks clean, free of lint, excess oil, and grease. Clean the trucks with noncombustible cleaners. Do not use low flash point (below 100 degrees F.) solvents. Follow the directions on the cleaner's label.

(l) You may convert powered industrial trucks from gasoline to liquefied petroleum gas fuel if the converted truck complies with the specifications for LP or LPG trucks. Use only approved conversion equipment.

(13) Control of gases and fumes. Take effective measures to keep the concentration levels of carbon monoxide gas created by powered industrial trucks below the levels in 4/Z, OAR 437-004-9000.

(14) ROPS requirements. Rollover protective structures are covered in 4/U, OAR 437-004-3650.

[ED. NOTE: Tables referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(4)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98; OSHA 9-2006, f. & cert. ef. 9-22-06

437-004-1750
Helicopters

(1) Scope. This applies to the use of helicopters to harvest ornamental trees.

(2) Briefing. You must hold a briefing before each day's work that covers the safety and communication procedures for the pilot and ground personnel.

(3) Flight path. There must be an established flight path from the pick up point. All employees in the area must know this path before lifting the first load from a new job site or when there is a change in procedures.

(4) Area under the flight path. Equipment or employees must not occupy the area under the flight path during helicopter flight.

(5) Drop zone — where. A pilot and responsible supervisor must establish the location of the drop zone, decking areas, loading areas, and designated safety zones, taking into consideration current operating conditions. Notify all workers on the landing when a change in operating procedures is necessary.

(6) Drop zone — how big. The landing drop zone must be large enough to handle all incoming bundles of trees without crowding the landing crew.

(7) Under the load of helicopter. Workers must never be under the load or the helicopter except one person to hook up or unhook the

load. Workers may approach the load to pull the rigging only after the helicopter leaves the area above the landing.

(8) Landing. Landings must have minimal slope for drainage in the drop zone and decking area to prevent bundles from rolling.

(9) Approach. The approach to the landing must be as clear as possible.

(10) Loads. Loads must be properly slung. Tag lines must be short enough to prevent their being drawn up into the rotors. On freely suspended loads, you must use pressed sleeves, swedged eyes or equivalent means to prevent hand splices from spinning open or cable clamps from loosening.

(11) Electric cargo hooks. All electrically operated cargo hooks must have an electrical activating device that prevents inadvertent operation. They must also have an emergency mechanical control for releasing the load. A competent person must test the hooks before each day's operation to assure that the release functions properly, both electrically and mechanically.

(12) Hardhats. Workers must wear hardhats secured with chin straps, eye protection and other personal protective equipment when in the load receiving area.

NOTE: See Division 4/I for specific requirements about Personal Protective Equipment.

(13) Clothing. Workers must not wear loose-fitting clothing that could flap in rotor downwash and snag on the hoist line.

(14) Flying objects. Take all necessary precautions to protect employees from flying objects in the rotor downwash. Secure or remove all loose gear within 100 feet of the pickup or landing area.

(15) Hook approach. There must be a safe way for employees to reach the hoist line hook and engage or disengage cargo slings.

(16) Rubber gloves. Workers must wear rubber gloves when handling suspended lines or they must use a grounding device to discharge static charges before touching the load.

(17) Weight limit. The weight of lifted loads must not exceed the helicopter manufacturer's rating.

(18) Limited visibility. The employer must ensure that when there is limited visibility because of dust or other conditions workers use special caution to keep clear of main and stabilizing rotors. The employer must also take precautions to eliminate, as far as practical, the dust or other conditions reducing visibility.

(19) Signal systems. The employer must instruct the aircrew and ground personnel on the signal systems in use and must review the system with the employees before flight operations begin. This applies to both radio and hand signal systems.

(20) Approach limit. Do not allow workers to approach within 50 feet of the helicopter when the rotor blades are turning, unless work duties require their presence in that area.

(21) Stay in view. Require employees who must approach the helicopter when blades are rotating to approach or leave in full view of the pilot and stay in a crouched position. Do not allow workers to be in the area from the cockpit or cabin rearward while blades are rotating.

(22) Communication. There must be constant reliable communication between the pilot and a designated member of the ground crew in the pickup and landing area. The designated member must be clearly distinguishable from other ground personnel.

(23) Fire. There must be no open fires where they could be spread by the rotor downwash.

(24) Fueling. Helicopter fueling areas must be separate from all other operations.

(a) Refueling of any type helicopter with aviation gasoline or Jet B (Turbine) type fuel must never be allowed while the engine is running.

(b) Refuel helicopters that use Jet A (turbine kerosene) type fuel with engines running only if these criteria are met:

(A) No unauthorized employees are within fifty (50) feet of the operation or equipment; and

(B) Fire extinguishers are available and have a combined rating of at least 16A:160BC.

(c) Train employees in the refueling operation and the use of the available fire extinguishing equipment.

(d) There must be no smoking, open flames, exposed flame heaters, flare pots or open flame lights within fifty (50) feet of the fueling area or fueling equipment. The fueling area must be posted with "NO SMOKING" signs.

EXCEPTION: Aircraft pre-heaters are exempt. However, do not fuel while the heaters are in operation.

(e) Before refueling, ground the fueling equipment and the helicopter and electrically bond the fueling nozzle to the helicopter. Using conductive hose does not accomplish this bonding. All grounding and bonding connections must be electrically and mechanically firm to clean unpainted metal parts.

(f) Pump fuel only by hand or power, do not pour or use gravity flow. Nozzles must be self-closing or have deadman controls and must not be blocked open. Do not drag nozzles on the ground.

(g) In case of a spill, immediately stop fueling until the person in charge determines that it is safe to resume the operation.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-1805
Rope, Chain, Rigging, and Hoists

(1) Scope. These are standards for the safe use of hoists, rope, chain, and fittings.

(2) Definitions.

(a) Mousing — Using small cordage or wire to prevent unintended separation of rigging components.

(b) Rope — Wire rope unless otherwise specified.

(3) Loading and capacity. Do not load any rigging equipment or hoisting device more than its rated safe working load or capacity.

(4) Inspection. Inspect rigging and hoisting devices before use and as necessary during use to ensure safety. Immediately remove from service defective rigging or hoisting devices.

(5) Operators — handling loads.

(a) Workers must not ride hooks, slings, rigging, or loads. Suspend or elevate a person only when using a safe personnel lift.

(b) Personnel lift must meet these requirements:

(A) The structure must be rigid and strong enough to support loads with a safety factor of 4 times the intended load.

(B) The personnel lift must be big enough to accommodate all persons without crowding, and to provide sufficient work space so workers will not hinder or obstruct each other.

(C) There must be standard guardrails on all sides of the personnel lift. (See 4/D, OAR 437-004-0320(6) for guardrail design specifications.)

(D) The personnel lift must have supports on all four corners that provide full stability against tipping while occupied.

(E) Secure the load lifting attachment for the personnel lift to the crane or derrick hook in a way that will prevent accidental release.

(c) Only one person will give operating signals during hoisting operations.

EXCEPTION: In an emergency, anyone may give a "stop" signal; such signal must be obeyed.

(d) All persons must be in the clear before a signal is given to move a load or equipment.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-1825
Tackle and Hoisting Equipment

(1) Blocks, sheaves, shackles and drums.

(a) Use only sheaves and drums with diameters recommended by the wire rope manufacturer for the size rope.

(b) Secure all pins, including bearing and yoke pins, of all blocks against accidental displacement.

(c) Fit all blocks with line guards or design and use them in a way that prevents fouling.

(d) Sheaves carrying ropes that can be momentarily unloaded must have close-fitting guards or other suitable devices to guide the rope back into the groove when the load is applied again.

(e) Secure pins for all shackles used to hang blocks, jacks, or rigging, or that have hoisting chain, with a bolt, nut and cotter pin (safety-type shackle) or a screw pin with cotter pin, or they must be securely moused.

(f) Shackles used to hang blocks, jacks, or other rigging that can experience stress greater than that imposed by a single part of the pulling line must have a strength equal to but not less than two times the stress imposed by the pulling line.

(g) All shackles used for joining or attaching lines must have a strength of not less than 1-1/2 times that of the lines they join.

(h) Use clamps, socketing or other equal ways to securely fasten ends of lines attached to drums. Always keep at least two wraps of lines on drums.

(i) Do not guide lines onto drums with your hands in direct contact with the line. Use a guide pulley, tool, stick or other mechanical means to guide lines onto drums.

(2) Chains.

(a) Repair or remove from use hoisting chain when the increase in length (stretch) of the measured section exceeds 5%; or when there is a bent, twisted, or otherwise damaged link, or when raised scarfs or defective welds appear.

(b) Do not tie knots in a chain.

(c) Do not use lap links, cold shuts, or patent repair links for hoist chains or slings unless they are stronger than the chain.

(d) End fastenings must be capable of sustained loads equal to the breaking strength of the chain.

(3) Hooks and attachment devices.

(a) Remove from service any distorted or deformed hooks, rings, shackles, and other attachment devices or end fastenings.

(b) Do not use makeshift hooks, links, or fasteners such as those formed from rods, bolts, etc., or other such devices. Use only approved factory-made attachments or fasteners.

(c) When necessary to prevent lifting attachments from inadvertently lifting out of the hook, use a safety-type hook or other device.

(4) Wire rope.

(a) Wire rope and replacement wire rope must be the same size, same or better grade, and same construction as originally furnished by the equipment manufacturer or contemplated in the design, unless otherwise recommended by the equipment or wire rope manufacturer.

(b) Guard running wire ropes if they are within 7 feet of the floor or platform.

(c) Prevent friction of ropes with other objects that will cause chafing or breaking wires. Use thimbles of proper size for the rope in all eye-splices to prevent friction and chafing of the eye.

(d) Remove from use wire rope used as guys, for hoisting or supporting objects, in cable-operated components, and on winches or drums, when any of the following exist:

(A) In standing ropes, more than two broken wires in one lay in sections beyond end connections or more than one broken wire at an end connection.

(B) Corroded, damaged, or improperly aligned end connections.

(C) Evidence of any heat damage from any cause.

(D) Wear of 1/3 the original diameter of outside individual wires. Kinking, crushing, bird caging, or any other damage resulting in distortion of the rope structure.

(E) Reductions from nominal diameter exceeding those in Table 1. [Table not included. See ED. NOTE.]

(5) Cable clips or clamps.

(a) When using cable clips or clamps for form eyes, apply the U-bolt so that the "U" section contacts the dead end of the rope.

(b) When using U-bolt rope clips for form eyes, use Table 2 to figure the number and spacing of clips. [Table not included. See ED. NOTE.]

(c) The use of cable clips or clamps is acceptable only where they are readily accessible and subject to frequent inspection. Clips and clamps must be the correct size and properly applied. (See (5)(a) and (5)(b) above.)

(d) Do not use cable clips or clamps for joining lines except where transferring slack lines from one place to another.

(e) Do not use knots or combination knots and cable clip or clamp attachments as end connections for any hoisting rope or sling.

EXCEPTION: This rule does not apply to drop hammers of pile drivers.

(6) Fiber rope.

(a) Inspect fiber rope frequently. Do not use rope that shows visual signs of excessive wear, abuse, spots indicating caustic or acid damage, or other defect that would reduce the rated strength below the safe working load.

NOTE: The following procedure is recommended for inspection of rope:

(1) Examine the entire length of the rope for cuts or severe abrasions.

(2) Look for spots indicating acid damage.

(3) If there are acid spots, throw a twist in and out of the rope where the spots are; take a short kink in the rope and put on a strain. If the rope has acid damage, you will notice a weakness of the fibers.

(b) In manila rope, eye splices must have at least 3 full tucks, and short splices must have at least 6 full tucks (3 on each side of the centerline of the splice).

(c) In layered synthetic fiber rope, eye splices must have at least 4 full tucks, and short splices at least 8 full tucks (Four on each side of the centerline of the splice).

(d) In fiber rope splices, do not trim strand end tails short (flush with the surface of the rope) immediately adjacent to the full tucks. This precaution applies to both eye and short splices and all types of fiber rope.

(e) For all eye splices in fiber rope, the eye must be big enough to provide an included angle not more than 60° at the splice when the eye is over the load or support.

(f) Do not use knots instead of splices for joining fiber ropes.

(g) When not in use, store fiber rope under cover in a clean, dry, well-ventilated place, free from excessive heat, and protected against corrosives and acid.

(h) Do not use frozen fiber rope. Do not heat frozen rope to thaw it out.

[ED. NOTE: Table referenced is available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(3)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

Equipment Guarding

437-004-1910

General Equipment Guarding

(1) Scope — These are general requirements that apply to all equipment.

(2) Definitions.

(a) Ground driven components — Components powered by the turning motion of a wheel as the equipment travels over the ground.

(b) Guard or shield — A barrier to protect against contact with a moving machine part.

(c) Point of operation — The area of a machine that contacts the work material.

(d) Power take-off shafts — Shafts and knuckles between the tractor, or other power source, and the first gear set, pulley, sprocket, or other components on power take-off shaft driven equipment.

(3) Operating instructions. Instruct every employee on their initial assignment about the safe operation and servicing of all equipment they will use. Renew this instruction at least annually. Include at least these safe practices:

(a) Keep all guards in place when the machine is in use;

(b) Permit no riders on farm field equipment other than persons required for instruction or assistance;

(c) Stop engine, disconnect the power source and wait for all machine movement to stop before servicing, adjusting, cleaning, or unclogging the equipment. Instruct employees in the safe procedures necessary to service or maintain the equipment when it must remain running;

(d) Make sure everyone is clear of machinery before starting the engine, engaging power, or operating the machine;

(e) Refer to and comply with 4/J, OAR 437-004-1275, Lockout/Tagout.

(4) Methods of guarding. Except as otherwise stated, prevent contact with moving machinery parts as follows:

(a) By a guard or shield or guarding by location;

(b) When a guard or shield or guarding by location is infeasible, use a guardrail or fence.

(5) Strength and design of guards.

(a) Design and place guards to protect against inadvertent contact with the hazard. [Table not included. See ED. NOTE.]

NOTE: Minimum requirements for guards are in Table 1.

(b) Unless otherwise specified, each guard and its supports must be able to withstand the force applied to it.

(c) Guards must be free from burrs, sharp edges, and sharp corners. Secure guards to the equipment or building.

(6) Guarding by location. A component is guarded by location during operation, maintenance, or servicing when, because of its location, no employee can inadvertently come in contact with the hazard.

(7) Guarding by railings. Use guardrails or fences to protect employees from inadvertently entering the hazardous area.

(8) Servicing and maintenance. When a moving machinery part presents a hazard during servicing or maintenance, stop the engine, disconnect the power source, and wait for all machine movement to stop before proceeding, except where the employer can establish that:

(a) The equipment must be running for proper service or maintenance; and

(b) Service or maintenance is not possible while a guard or guards required by these rules are in place.

(9) Miscellaneous general requirements. Cover or install a guard on machines that throw stock, material, or objects. (Such machines as rip saws, rotary mowers and beaters, rotary tillers are a few in this classification.)

(10) Machine controls.

(a) A power control switch to stop the machine or machine feed must be within reach of the operator without leaving their normal operating position.

(b) Mark the power control switch to indicate its function and the machine that it controls. Indicate the positions of ON and OFF.

(c) On fixed machines, use red or orange to mark "Stop" buttons. Each machine must have one or more stop buttons according to the working position of the operator or operators.

(d) Locate and guard the machine control switch to prevent its unexpected or accidental movement. Recess electrical switch "Start" buttons.

(11) Anchoring fixed machinery. Securely anchor machines designed for a fixed location to prevent walking or moving.

[ED. NOTE: Tables referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(3)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-1940

Farm Field Equipment

(1) Application. Rule 437-004-1940 applies to all farm field equipment except that the parts below do not apply to equipment manufactured before October 25, 1976:

(a) 1940(4);

(b) 1940(5);

(c) 1940(6)(b)(A).

(2) Definition. Farm field equipment — Tractors or implements, including self-propelled implements, or any combination.

(3) Power take-off guarding.

(a) Guard all power take-off shafts with a master shield or by other protective guarding.

(b) Tractors must have a master shield or guard strong enough to support the operator if they get on or off the tractor using the shield as a step.

(c) Guard equipment driven by a power take-off to protect against employee contact with rotating parts of the power drive system. Where power take-off driven equipment requires removal of the tractor master shield, ensure the equipment includes protection from that portion of the tractor power take-off shaft that protrudes from the tractor.

(d) There must be signs on tractors and power take-off driven equipment to remind operators to keep safety shields in place.

(4) Other power transmission components.

(a) Guard the mesh or nip points of all power driven gears, belts, chains, sheaves, pulleys, sprockets, and idlers by protective shield, location, guardrail or fence.

(b) Guard all revolving shafts, including projections such as bolts, keys, or set screws, by protective shield, location, or guardrail or fence.

(c) Exceptions to the guarding requirements are as follows:

(A) Smooth off shafts and shaft ends (without any projecting bolts, keys, or set screws), revolving at less than 10 rpm, on feed handling equipment used on the top surface of materials in bulk storage facilities; and

(B) Smooth off shaft ends protruding less than one-half the outside diameter of the shaft and its locking means.

(5) Functional components. Guard as much as possible, all moving parts that must be exposed to operate. Ensure the guard does not interfere with the normal operation of the equipment. Examples of these components are snapping or husking rolls, straw spreaders and choppers, cutterbars, flail rotors, rotary beaters, mixing augers, feed rolls, conveying augers, rotary tillers, and similar units.

(6) Access to moving parts.

(a) Ensure that guards, shields, and access doors are in place when equipment is running.

(b) Where removal of a guard or access door will expose an employee to any component that continues to rotate after the power is disengaged, provide the following:

(A) A readily visible or audible warning of rotation; and

(B) A safety sign warning the employee to:

(i) Look and listen for evidence of rotation; and

(ii) Not remove the guard or access door until all components stop.

(7) Electrical disconnect means.

(a) Prevent application of electrical power from a location not under the immediate and exclusive control of the employee or employees maintaining or servicing equipment by:

(A) Providing an exclusive, positive locking means on the main or ignition switch which can be operated only by the employee or employees performing the maintenance and servicing; or

(B) In the case of material handling equipment in a bulk storage structure, by physically locating on the equipment an electrical or mechanical means to disconnect the power.

(b) Ensure all circuit protection devices, including those that are an integral part of a motor, are of the manual reset type.

(c) Exceptions to (b) above are where:

(A) The employer can establish that because of the nature of the operation, distances involved and the amount of time normally spent by employees in the area of the affected equipment, use of the manual reset device would be infeasible;

(B) There is an electrical disconnect switch available to the employee within 15 feet of the equipment being maintained or serviced; and

(C) There is a sign near each hazardous part warning the employee that unless they use the electrical disconnect switch, the motor could automatically reset while the employee is working on the hazardous component.

(8) Additional requirements.

(a) Use a clutch or other effective means for stopping powered machines not driven by an individual motor.

(b) Ensure sufficient clearance for all friction clutches and keep them adjusted to prevent any drag or creeping when disengaged.

Stat. Auth.: ORS 654.025(2) & 656.726(3)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-1970

Farmstead Equipment

(1) Application. Rule 437-004-1970 applies to all farmstead equipment except that the parts below do not apply to equipment manufactured before October 25, 1976:

(a) 1970(4);

(b) 1970(5);

(c) 1970(6)(b)(A).

(2) Definition. Farmstead equipment — Equipment that is normally stationary. This includes, but is not limited to, material handling equipment and accessories for this equipment whether or not it is an integral part of a building.

(3) Power take-off guarding.

(a) Guard all power take-off shafts with either a master shield or by other protective guarding.

(b) Guard power take-off driven equipment to prevent contact with positively driven rotating parts of the power drive system. If power take-off driven equipment requires removal of the tractor master shield, ensure that the equipment includes protection from that part of the tractor power take-off shaft that protrudes from the tractor.

(c) There must be signs on power take-off driven equipment to remind operators to keep safety shields in place.

(4) Other power transmission components.

(a) Guard the mesh or nip points of all power driven gears, belts, chains, sheaves, pulleys, sprockets, and idlers by protective shield, location, guardrail or fence.

(b) Guard all revolving shafts, including projections such as bolts, keys, or set screws, by protective shield, location, or guardrail or fence.

(c) Exceptions to the guarding requirements are as follows:

(A) Smooth off shafts and shaft ends (without any projecting bolts, keys, or set screws), revolving at less than 10 rpm, on feed

handling equipment used on the top surface of materials in bulk storage facilities; and

(B) Smooth off shaft ends protruding less than one-half the outside diameter of the shaft and its locking means.

(5) Functional components.

(a) Guard to the fullest extent all functional components that must be exposed to operate. The guard must not substantially interfere with the normal operation of the equipment. Examples of these components are choppers, rotary beaters, mixing augers, feed rolls, conveying augers, grain spreaders, stirring augers, sweep augers, and feed augers.

(b) Guard sweep arm material gathering mechanisms on the top surface of materials within silo structures. Locate the lower or leading edge of the guard no more than 12 inches above the material surface and no less than 6 inches in front of the leading edge of the rotating member of the gathering mechanism. Ensure the guard is parallel to, and extends the fullest practical length of, the material gathering mechanism.

(c) Paragraph (b) above does not apply to bulk grain storage bins and similar structures where no workers are present except for installation or removal of the sweep arm material gathering mechanisms. During such work, disconnect and lockout the electrical power source following the procedures in OAR 437-004-1275, Division 4/J, Lockout/Tagout.

(d) Guard exposed auger flighting on portable augers with either grating type guards or solid baffle style covers as follows:

(A) Ensure the largest dimensions or openings in grating type guards through which materials must flow are 4-3/4 inches. Ensure the area of each opening is no larger than 10 square inches. Locate the opening no closer to the rotating flighting than 2-1/2 inches.

(B) Ensure slotted openings in solid baffle style covers are not wider than 1-1/2 inches, or closer than 3-1/2 inches to the exposed flighting.

(C) Openings larger than those in (A) and (B) above are allowable if necessary to permit the free flow of material that has a tendency to bridge over. Ensure these openings are no larger than required for proper functioning of the auger. Design, arrange or locate the guard so that no part of an employee's body may contact the auger flighting.

(6) Access to moving parts.

(a) Ensure that guards, shields, and access doors are in place when the equipment is in operation.

(b) Where removal of a guard or access door will expose an employee to any component that continues to move after the power is disengaged, provide the following:

(A) A readily visible or audible warning of rotation; and

(B) A safety sign warning the employee to:

(i) Look and listen for evidence of rotation; and

(ii) Not remove the guard or access door until all parts stop.

(c) There must be a guard with openings no larger than 1/2 inch when the blades of a fan are less than 7 feet above the floor or working level.

(7) Additional guarding requirements.

(a) Properly safeguard carton or bag stitching machines to prevent employees from contacting the stitching head and other pinch or nip points.

(b) Guard the point of operation of all machines. Design and construct the guard to prevent any part of the operator's body from being in the danger zone during the operating cycle. [Table not included. See ED. NOTE.]

NOTE: Table 2 gives the distances that point-of-operation guards must be from the danger line in relation to the size of the opening.

[ED. NOTE: Table referenced is available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(3)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-2000

Powered Saws

(1) Scope — This applies to nonportable powered saws.

(2) General.

(a) Machines must not vibrate when the tool is run at full speed.

(b) Arbors and mandrels must have firm and secure bearing and be free from play.

(c) Do not use any automatic cutoff saw that strokes continuously without operator control of each stroke.

(d) Saw frames and tables must have lugs cast on the frame or an equivalent way to limit the size of the saw blade to avoid overspeed.

(e) Circular saw fences must attach to the table or table assembly without changing their alignment with the saw. The fences for tilting tables or tilting arbors must remain parallel with the saw regardless of the angle of the saw with the table.

(f) Circular saw gages must slide in accurately machined grooves or tracks to insure exact alignment with the saw for all positions of the guide.

(g) Hinged saw tables must be lockable in any position and in alignment with the saw.

(h) Guard all belts, pulleys, gears, shafts, and moving parts to comply with OAR 437-004-1970, division 4/O.

(i) Electrically ground all equipment to comply with OAR 437-004-2810, division 4/S.

(j) A guard must cover the rear portion of the saw beneath or behind the table when exposed to contact. An exhaust hood may serve this purpose if appropriate.

(k) Do not mount any saw, cutter head or tool collar on a machine not made to work with them.

(l) There must be combs (featherboards) or suitable jigs to use when a standard guard cannot be used, like for dadoing, grooving, jointing, moulding, and rabbeting.

(3) Machine controls and equipment.

(a) There must be a mechanical or electrical power control switch so the operator does not have to leave the point of operation to shut off the machine.

(b) Use a locking-type belt shifter or other positive device on machines driven by belts and shafting.

(c) Provide a positive method to prevent a machine from automatically restarting after a power failure.

(d) Locate power and operating controls within reach of the operator. Do not allow the operator to reach over the cutter head to make adjustments. This does not apply to constant pressure controls used only for setup.

(e) Provide a positive means to make electric motor driven machine controls and devices inoperable during repairs or adjustments.

(f) Protect foot-operated controls from unexpected or accidental activation.

(g) Cover feed rolls, of feeder attachments, to protect the operator from contacting hazardous parts.

(4) Band saws.

(a) Completely enclose band wheels. Construct guards of at least No. 14 U.S. gauge metal, nominal 2-inch wood material, or mesh or perforated metal of not less than U.S. gauge No. 20 with 3/8-inch or smaller openings.

(b) Enclose all portions of the band saw blade except the working side of the blade between the guide and the table.

(5) Radial arm saws.

(a) Radial arm saws must have a hood that completely encloses the upper portion of the blade down to a point that includes the end of the saw arbor.

(b) The saw blade must not extend beyond the front edge of the table or roll case.

(c) A lower blade guard must guard the lower part of the blade and stay in contact with the material during the entire cut.

(d) When ripping, radial arm saws must have anti-kickback fingers on each side of the saw.

(e) Mark the direction of saw rotation on the hood.

(f) Attach a permanent warning sign prohibiting rip or plough cuts from the rear of the guard. Rip and plough only against the direction of blade rotation.

(g) Blades or cutting heads on radial arm saws must automatically return gently and stay at the back of the table.

NOTE: Use a counterweight or other effective means, a retractor device, or tilt the arm sufficiently to keep the saw at the back when released by the operator.

(6) Table saws.

(a) Circular crosscut table saws must have a hood that covers the saw at least to the depth of the teeth.

(b) The hood must automatically adjust itself to the thickness of and remain in contact with, the material being cut. When the guard may mar the surfaces of material, it may be raised slightly to avoid contact.

(c) The hood must protect the operator from flying splinters and broken saw teeth.

(d) Fully guard rip table saws, and combination rip and crosscut table saws as required in OAR 437-004-2000(4)(a) and (b). They must have a spreader and anti-kickback fingers. The spreader is not necessary when rabbeting, ploughing, grooving or for cutting dados.

(e) Fully guard the part of the table saw beneath the table.

(f) Use push sticks to guide short stock and ends through table saws without self-feeding devices.

(7) Wobble saws. Do not insert wedges between a saw disk and its collar to form a "wobble saw" for rabbeting.

NOTE: This rule does not apply to properly designed and adjustable rabbeting blades.

(8) Cracks in blades. Do not use a circular saw blade with a crack greater in length than those in the following table: [Table not included. See ED. NOTE.]

[ED. NOTE: Tables referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(4)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98; OSHA 9-2006, f. & cert. ef. 9-22-06

437-004-2100
Grinders

(1) Scope — These rules apply to all grinders except:

(a) Standards for portable, hand-held power-driven grinders are in OAR 437-004-2230, Division 4/P.

(b) Natural sandstone wheels.

(c) Metal, wooden, cloth or paper wheels or discs with a layer or layers of abrasive on the surface.

(2) Definitions.

(a) Abrasive Wheel — cutting device made of abrasive grains held together by organic or inorganic bonds, including diamond and reinforced wheels.

(b) Off-hand Grinding — The grinding of anything held in the operator's hand.

(c) Portable Grinding — A grinding operation where the grinding machine is hand held and easily moved from one place to another.

(d) Safety Guard — An enclosure for an abrasive wheel. It has a peripheral and two side members. Its purpose and design is to contain the pieces of the wheel if the wheel breaks while in use.

(3) Use.

(a) Mount grinders securely on the floor, bench, foundation or other structure.

(b) Do not use grinders that vibrate or are out of balance.

(c) Do not use abrasive wheels that are out of round or out of balance.

(d) Off-hand grinding machines must have work rests that are:

(A) Rigid and adjustable to compensate for wheel wear.

(B) Kept adjusted to within 1/8 inch of the wheel to prevent work from jamming between the wheel and the rest.

(C) Securely tightened after each adjustment.

(e) Do not adjust a moving wheel.

(f) Do side grinding only on wheels designed for that purpose.

NOTE: Dressing on the side of straight wheels is acceptable only with very light pressure.

(4) Mounting.

(a) Assure that grinding wheels fit freely but not loosely on the spindle, sleeves or adapters and remain free under all grinding conditions.

(b) Do not operate an abrasive wheel designed to be held by flanges unless it is properly mounted between suitable flanges. Flanges must be at least 1/3 the diameter of the wheel, except for those types requiring flanges of a special design.

(c) Install blotters (compressible washers) between flanges and abrasive wheel surfaces to insure uniform distribution of flange pressure.

(d) Properly position the safety guard after mounting a wheel.

(e) Run the grinder at operating speed after mounting an abrasive wheel with the safety guard in place or in a protected enclosure for at least one minute before using it. Keep employees away from the front of the wheel during this time.

(f) Do not use wheels larger than those recommended by the manufacturer.

(5) Safety guards.

(a) Use abrasive wheels larger than 2 inches in diameter only on machines with safety guards.

(b) These do not require safety guards:

(A) Specially-shaped abrasive wheels mounted in a mandrel-type bench or floor stand and used for and commonly known as "sickle grinding stones or wheels."

(B) Abrasive wheels where the work itself provides full protection but only while the wheel is within the area of protection.

NOTE: Abrasive wheel safety guards must meet the design specifications of the American National Standard Code for the Use, Care, and Protection of Abrasive Wheels (ANSI B7.1-1988).

(c) Abrasive wheels that cover the spindle end, nut, and outer flange projection of the wheel must have guards. Guard the sides and periphery of the wheel except for that degree of exposure permitted below.

(A) Bench and floor stands.

(i) The maximum permissible angle of exposure is 90°. Begin this exposure at a point not more than 65° above the horizontal plane of the wheel spindle.

(ii) Do not exceed 125° exposure where the nature of the work requires contact with the wheel below the horizontal plane of the spindle. Begin this exposure at a point not more than 65° above the horizontal plane of the wheel spindle.

(B) Swing frame grinders. The maximum permissible angle of exposure is 180°. Enclose the top half of the wheel.

(C) Top grinding. Do not exceed 60° exposure of the grinding wheel periphery where the work contacts the top of the wheel.

(d) The peripheral protecting part of safety guards must adjust to compensate for wheel wear when the operator stands in front of the opening.

(e) Maintain 1/4 inch between the wheel periphery and the adjustable tongue or the guard above the wheel.

[Publications: Publications referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(3)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

Small Tools

437-004-2220
General Requirements — Small Tools

(1) Employers are responsible for the safe condition of tools and equipment used by employees. This includes tools and equipment that belong to employees.

(2) Do not use defective tools.

(3) When not in use, place tools where they will not create a hazard.

(4) Do not use tools whose electric cords have damaged insulation or defective parts.

(5) Do not leave power supply lines or hoses where they may be damaged or create a hazard.

(6) Tool handles must have no sharp edges or splinters and be firmly attached to the tool. Wooden handles of tools must be of firm straight grained stock.

(7) Dress or grind the heads of shock tools (such as hammers, sledges, and cold chisels) as they begin to mushroom or crack. When they show a tendency to chip, take them out of service.

(8) Keep the cutting edges of tools uniformly sharp.

(9) Use heavy leather holsters, guards or equivalent protection for sharp-edged or sharp-pointed tools carried on the worker's person.

(10) When using sharp-edged cutting tools, wear appropriate protective equipment such as gloves, aprons and leg guards.

(11) Use spark-resistant hand tools in explosive or flammable atmospheres.

NOTE: Compressed air used for cleaning. See 4/M, OAR 437-004-1505(4) for rules about cleaning with compressed air or gas.

Stat. Auth.: ORS 654.025(2) & 656.726(3)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-2230
Guarding and Operation of Portable Powered Tools

(1) Portable powered tools.

(a) Portable circular saws.

(A) All portable, power-driven circular saws with a blade diameter greater than 2 inches must have guards above and below the base plate or shoe. The upper guard must cover the saw to the depth of the

teeth, except for the minimum arc to permit tilting the base for bevel cuts. The lower guard must cover the saw to the depth of the teeth, except for the minimum arc that allows proper retraction and contact with the work. When the tool is taken out of the work, the lower guard must automatically and quickly return to covering position. This does not apply to meat cutting saws.

(B) In addition to the provisions in (1)(a)(A) above, the lower guard must have a lug or lever, remote from the blade teeth, that allows the operator to safely lift the guard for starting unusual cuts.

(b) Switches and controls.

(A) All hand-held powered circular saws with a blade diameter more than 2 inches, electric, hydraulic or pneumatic chain saws and percussion tools without positive accessory holding means must have a constant pressure switch or control that will shut off the power when pressure is released.

(B) The following hand-held powered tools must have a constant pressure control switch. They may have a lock-on control if a single motion of the same finger or fingers that turns it on can turn it off. Tappers, drills, fastener drivers, horizontal, vertical and angle grinders with wheels more than 2 inches in diameter. Disc sanders with discs more than 2 inches in diameter. Belt sanders, reciprocating saws, saber, scroll and jig saws with blade shanks more than a nominal 1/4-inch and other similarly operating powered tools.

(C) All other hand-held powered tools may have either a positive "on-off" control, or other controls as in (1)(b)(A) and (B) above.

(i) Saber, scroll and jig saws with non-standard blade holders may use blades with shanks which are non-uniform in width, if the narrowest part of the shank is an integral part in mounting the blade.

(ii) Measure the blade shank width at the narrowest part of the blade when saber, scroll and jig saws have non-standard blade holders.

(iii) "Nominal" in this subparagraph means +0.05-inch.

(D) Exclusions. This subparagraph does not apply to concrete vibrators, concrete breakers, powered tampers, jack hammers, garden appliances, household and kitchen appliances, personal care appliances or to fixed machinery.

(c) Power chain saws.

(A) In addition to (1)(b)(A) above, all power chain saws must meet American National Standard B175.1-1991, Safety Code for Power Chain Saws.

(B) Inspect power chain saws daily when in use and always keep them in good repair. Do not use saws with cracked or loose handle bars or defective parts.

(C) Stop power chain saw engines before fueling.

(D) Power chain saws must have a working chain brake if originally equipped with one.

(E) Chain brakes and other safety features must always work correctly.

(F) All hand-held gasoline powered chain saws must have a constant pressure throttle control that will shut off power to the saw chain when the pressure is released.

(G) Employees using chain saws must wear flexible ballistic nylon pads, chaps or other equivalent protection in a manner that protects the legs from the thigh to the top of the boot. Employers must provide and pay for this equipment.

(H) Do not drop-start chain saws or other power saws.

NOTE: Drop-starting saws is permitted outside of the basket of an aerial lift only after ensuring that the area below the aerial lift is clear of people.

(I) The operator must have secure footing when starting the saw.

(J) Start and operate the saw only when all other workers are clear.

(K) Stop the engine when carrying the power saw but not between cuts during consecutive felling, bucking, limbing or cutting operations.

(i) The chain must not be turning and the operator's hand must be off the throttle lever while moving between work locations.

(ii) Carry small chain saws at your side with the bar of the saw pointed to the rear.

(L) Stop the engine for all cleaning, refueling, adjustments, and repairs to the motor.

(d) Portable belt sanders. Belt sanders must have guards at each nip point where the sanding belt runs onto a pulley. These guards must prevent the operator's hands or fingers from contacting the nip points. The unused run of the sanding belt must have guards against accidental contact.

(e) Cracked saws. Do not use cracked saws.

(f) Grounding. Portable electric powered tools must meet the requirements of Subdivision 4/S.

(2) Pneumatic tools and hose.

(a) Only use compressed air supply hose and hose connections rated for the pressure and service required by the tools they serve.

(b) There must be a shut-off valve at the manifold or permanent pipe outlet of the compressed air supply.

(c) Do not couple or uncouple hose without first shutting off the compressed air supply unless the couplers have check valves that automatically shut it off.

(d) Pneumatic fastener-driving tools and other power-driven fastener tools, except as allowed in (e) below, must have a safety device to prevent ejection of nails, staples or fasteners when the tool is not in firm contact with the work.

(e) You may use power-driven fastener-driving tools without the safety device only when using staples with a diameter of .0475-inch (18 gauge A.W.G.) or less and the operator and all workers within 15 feet are wearing suitable eye protection. This does not apply to office staplers.

(f) Do not use oxygen or combustible gases to drive pneumatic tools.

(g) Direct the exhaust from pneumatic power tools away from the operator.

(3) Portable abrasive wheels.

(a) Definitions.

(A) Mounted wheels. Mounted wheels of 2-inch diameter or smaller, of various shapes. They may be either organic or inorganic bonded abrasive wheels. They are secured to plain or threaded steel mandrels.

(B) Organic bonded wheels. Organic wheels are wheels bonded by an organic material such as resin, rubber, shellac or other similar bonding agent.

(C) Portable grinding. A grinding operation where the grinding machine is hand-held and may move easily from one location to another.

(D) Reinforced wheels. The term "reinforced" as applied to grinding wheels defines a class of organic wheels that contain strengthening fabric or filament. The term "rein- forced" does not cover wheels using such mechanical additions as steel rings, steel cup backs or wire or tape winding.

(E) Safety guard. A safety guard is an enclosure to restrain the pieces of the grinding wheel if it breaks while in use.

(F) Tuck pointing. Removal, by grinding, of cement, mortar or other non-metallic jointing material.

(G) Tuck pointing wheels. Tuck pointing wheels, Type 1, reinforced organic bonded wheels have diameter, thickness and hole size dimension. They are subject to the same limitations of use and mounting as Type 1 wheels. Limitation: Wheels used for tuck pointing should be reinforced, organic bonded.

(H) Type 11 flaring cup wheels. Type 11 flaring cup wheels have double diameter dimensions D and J, and in addition have thickness, hole size, rim and back thickness dimensions. Grinding is always done on the rim face, W dimension. Type 11 wheels are subject to all limitations of use and mounting listed for Type 6 straight sided cup wheels. Side grinding wheel with a wall flared or tapered outward from the back. Wall thickness at the back is normally greater than at the grinding face (W). Limitation: Minimum back thickness, E dimension, should not be less than one-fourth T dimension. Also, when unthreaded hole wheels are specified the inside flat, K dimension, must be large enough to hold a suitable flange.

(I) Type 6 straight cup wheels. Type 6 cup wheels have diameter, thickness, hole size, rim thickness and back thickness dimensions. Grinding is always done on the rim face, W dimension. Type 6 Straight Cup Wheels Side grinding wheel with a diameter, thickness and hole with one side straight or flat and the opposite side recessed. This type, differs from Type 5 in that the grinding is on the wall of the abrasive created by the difference between the diameter of the recess and the outside diameter of the wheel. Therefore, the wall dimension "W" takes precedence over the diameter of the recess as an essential intermediate dimension to describe this shape type. Limitation: Minimum back thickness, E dimension, should not be less than one-fourth T dimension. In addition, when unthreaded hole wheels are specified, the

inside flat, K dimension, must be large enough to hold a suitable flange.

(J) Type one straight wheels. Type 1 straight wheels have diameter, thickness and hole size dimensions and should be used only on the periphery. Mount type 1 wheels between flanges. Peripheral grinding wheel with a diameter, thickness and hole. Limitation: Hole dimension (H) should not be greater than two-thirds of wheel diameter dimension (D) for precision, cylindrical, centerless or surface grinding applications. Maximum hole size for all other applications should not exceed one-half wheel diameter.

(b) General requirements. Use abrasive wheels only on machines with safety guards as in OAR 437-004-2230(3)(a) through (d).

(A) Exceptions. The requirements of paragraph OAR 437-004-2230(3)(a) do not apply to the following classes of wheels and conditions.

(i) Wheels for internal work while within the work being ground;

(ii) Mounted wheels, 2 inches and smaller in diameter, used in portable operations (see definition of Mounted Wheel); and

(iii) Types 16, 17, 18, 18R, and 19 cones and plugs and threaded hole pot balls where the work offers protection.

(B) Untitled.

(i) A safety guard must cover the spindle end, nut and flange projections. Mount the safety guard so as to maintain proper alignment with the wheel. The strength of the fastenings must exceed the strength of the guard.

(ii) Exception. If the work provides a suitable measure of protection to the operator, safety guards may allow exposure to the spindle end, nut and outer flange. Where the work entirely covers the side of the wheel, you may omit the side covers of the guard.

(iii) Exception. On portable machines designed for and used with, type 6, 11, 27, and 28 abrasive wheels, cutting off wheels and tuck pointing wheels, you may leave the spindle end, nut and outer flange exposed.

(c) Cup wheels. Protect cup wheels (Types 6 and 11) by:

(A) Using safety guards in OAR 437-004-2230(3)(a); or,

(B) Using special "revolving cup guards" that mount behind the wheel and turn with it. They must be steel or other material with adequate strength and must enclose the wheel sides upward from the back for one-third of the wheel thickness. The mounting features must conform with all regulations. (See OAR 437-004-2230 (3)(e).) Keep a maximum clearance of 1/16-inch between the wheel side and the guard; or,

(C) Using another form of guard that insures protection equal to that provided by the guards in OAR 437-004-2230(3)(a)(A) or (B).

(d) Vertical portable grinders. Safety guards on machines known as right angle head or vertical portable grinders must have a maximum exposure angle of 180 degrees. Place the guard between the operator and the wheel during use. Adjust the guard to deflect pieces of a broken wheel away from the operator. Figure 4

(e) Other portable grinders. The maximum angular exposure of the grinding wheel periphery and sides for safety guards used on other portable grinding machines must not exceed 180 degrees. Enclose the top half of the wheel. (See Figures 5 and 6.)

(f) Mounting and inspection of abrasive wheels.

(A) Immediately before mounting, inspect all wheels to make sure they are not damaged. Check the spindle speed of the machine before mounting the wheel to be sure it does not exceed the maximum operating speed marked on the wheel.

(B) Grinding wheels must fit freely on the spindle and remain free under all grinding conditions. Keep a controlled clearance between the wheel hole and the machine spindle (or wheel sleeves or adaptors) to avoid excessive pressure from mounting and spindle expansion.

(C) All contact surfaces of wheels, blotters and flangers must be flat and free of foreign matter.

(D) When using a bushing in the wheel hole it must not exceed the width of the wheel nor contact the flanges.

(E) Do not operate an abrasive wheel designed to be held by flanges unless it is properly mounted between suitable flanges. Flanges must be at least one-third the diameter of the wheel, except for those types requiring flanges of a special design.

(F) Install blotters (compressible washers) between flanges and abrasive wheel surfaces to insure uniform distribution of flange pressure.

(g) Excluded machinery. OAR 437-004-2230(3) does not cover natural sandstone wheels and metal, wooden, cloth or paper discs with a layer of abrasive on the surface.

(4) Tools driven by internal combustion engines.

(a) Tools driven by internal combustion engines must have a positive "On" and "Off" ignition switch that will remain in either position.

(b) Tools driven by internal combustion engines must have effective means to control power except those that operate at constant speed. Throttle controls must return the engine to idling speed when released.

(c) Tools driven by internal combustion engines must have a self-rewinding starting device or be equally safe.

(d) Exhaust ports on tools driven by internal combustion engines must have mufflers and deflect exhaust fumes away from the operator when the tool is in use in its normal operating position.

(e) Stop the engine before fueling tools driven by an internal combustion engine.

(f) You must be able to quickly remove sling-carried tools powered by attached portable internal combustion engines.

(g) Inspect the fuel system of sling-carried tools before each use. Fix any defect immediately.

(5) Explosive actuated fastening tools.

(a) Definitions.

(A) Angle control. A safety feature designed to prevent a tool from operating when tilted beyond a pre-determined angle.

(B) Cased Power Load. A power load with the propellant contained in a closed case.

(C) Caseless Power Load. A power load with the propellant in solid form not requiring containment.

(D) Direct-Acting Tool. A tool in which the expanding gas of the power load acts directly on the fastener to be driven.

(E) Explosive power load, also known as load. Any form of any substance that can produce a propellant force.

(F) Fixture. A special shield that gives equal protection where the standard shield is not usable.

(G) Hammer-operated piston tool — low-velocity type. A tool that uses a heavy mass hammer and a load to move a captive piston to drive a stud, pin or fastener into a work surface. It always starts the fastener at rest and in contact with the work surface. Its design must limit the mean velocity of the stud, pin or fastener to a maximum of 300 feet per second when measured 6.5 feet from the muzzle end of the barrel.

(H) Head. That part of a fastener that extends above a work surface after being properly driven.

(I) High-velocity tool. A tool or machine that uses a load to propel or discharge a stud, pin or fastener, at velocities greater than 300 feet per second when measured 6.5 feet from the muzzle end of the barrel.

(J) Indirect-Acting Tool. A tool in which the expanding gas of the powder load acts directly on a captive piston that in turn drives the fastener.

(K) Low-velocity piston tool. A tool that uses a load and captive piston to drive a stud, pin or fastener into a work surface. Its design must limit the mean velocity to a maximum of 300 feet per second when measured 6.5 feet from the muzzle end of the barrel.

(L) Misfire. A condition in which the powder load fails to ignite after an attempt to fire the tool.

(M) Powder-Actuated Fastening System. A method comprising the use of a powder-actuated tool, a power load and a fastener.

(N) Powder-Actuated Tool, also known as Tool. A tool that uses the expanding gases from a power load to drive a fastener.

(O) Protective shield or guard. A device or guard to confine flying particles, attached to the muzzle end of the tool.

(P) Stud, pin, or fastener. A fastening device specifically designed and manufactured for use in explosive-actuated fastening tools.

(Q) Test Velocity. A series of deliberately free-flighted fasteners whose velocities are measured 6 1/2 feet from the muzzle end of the tool using accepted ballistic test methods.

(R) To chamber. To fit properly without the use of excess force and without being loose in the chamber.

(S) Tool. Unless indicated otherwise, an explosive-actuated fastening tool and all its accessories.

(b) General requirements.

(A) Explosive-actuated fastening tools actuated by explosives or any similar means that propel a stud, pin, fastener or other object to affix it to another object must meet the design requirements in "American National Standard Safety Requirements for Explosive-Actuated Fastening Tools," ANSI A10.3-1995. This requirement does not apply to devices designed for attaching objects to soft construction materials, such as wood, plaster, tar, dry wallboard and the like or to stud welding equipment.

(B) Operators and assistants using tools must wear eye protection. If required by the working conditions, use head and face protection as required under Personal Protective Equipment (4/I).

(c) Inspection, maintenance, and tool handling.

(A) High-velocity tools. High velocity tools must have these characteristics:

(i) The muzzle end of the tool must have a protective shield or guard at least 3 1/2 inches in diameter, mounted perpendicular to and concentric with the barrel. It must confine any flying fragments or particles that might be a hazard when fired.

(ii) Where a standard shield or guard will not work or where it does not provide adequate protection, an alternate device is acceptable. It must be built by the manufacturer of the tool, and provide an equal degree of protection.

(iii) It must be impossible to fire the tool unless it has a standard protective shield or guard, or the special device in (ii) above.

(iv) Untitled.

(I) The firing mechanism must prevent the tool from firing during loading or preparation to fire, or if dropped while loaded.

(II) Firing of the tool must require at least two separate and distinct actions of the operator. The final firing movement must be separate from the action of bringing the tool into the firing position.

(v) The tool must not work unless the operator is holding the tool against the work surface with a force at least 5 pounds more than the total weight of the tool.

(vi) The tool must not be operable with the standard guard indexed to the center position if any bearing surface of its guard tilts more than 8 degrees from contact with the work surface.

(vii) The tool must have a positive way of varying the power or there must be some other way for the operator to select a power level adequate to perform the work without excessive force.

(B) Tools of the low-velocity piston type must have the characteristics in (i) through (iv) below.

(i) The muzzle end of the tool must allow suitable protective devices, designed and built by the manufacturer of the tool, to be mounted perpendicular to the barrel. There must be a standard spall shield with each tool.

(ii) Untitled.

(I) In ordinary use the tool must not propel or discharge a stud, pin or fastener while loading or during preparation to fire or if dropped while loaded.

(II) Firing of the tool must depend on at least two separate and distinct actions of the operator. The final firing movement must be separate from the operation of bringing the tool into the firing position.

(iii) The tool must not to be operable unless the operator is holding it against the work surface with a force at least 5 pounds greater than the total weight of the tool.

(iv) The tool must have a positive way of varying the power or there must be some other way for the operator to select a power level adequate to perform the work without excessive force.

(C) Hammer operated piston tools, low-velocity type, must have the characteristics in (i) through (iv) below.

(i) The muzzle end of the tool must allow suitable protective devices, designed and built by the manufacturer of the tool, to be mounted perpendicular to the barrel. There must be a standard spall shield with each tool.

(ii) In ordinary use the tool must not propel or discharge a stud, pin or fastener while loading or during preparation to fire or if dropped while loaded.

(iii) Firing of the tool must depend on at least two separate and distinct actions of the operator. The final firing movement must be separate from the operation of bringing the tool into the firing position.

(iv) The tool must have a positive way of varying the power or there must be some other way for the operator to select a power level adequate to perform the work without excessive force.

(d) Requirements for loads and fasteners.

(A) There must be a standard way to identify the power levels of loads.

(B) Do not use a load (cased or caseless) that will accurately chamber in any existing approved commercially available low-velocity piston tool or hammer operated piston tool, low-velocity type, if it will cause a fastener to have a mean velocity greater than 300 feet per second when measured 6.5 feet from the muzzle end of the barrel. No individual test firing of a series can exceed 300 feet per second by more than 8 per- cent.

(C) Only use fasteners specifically made for a given tool.

(e) Operating requirements.

(A) Before using a tool, inspect it to see that it is clean, all moving parts operate freely and that the barrel is free of obstruction.

(B) When a tool develops a defect during use, immediately stop using it.

(C) Do not load tools until just prior to the intended firing time. Do not point loaded or empty tools at anyone.

(D) Do not leave loaded tools unattended.

(E) If the tool misfires, hold it in the operating position for at least 30 seconds. Then try to operate the tool a second time. Wait another 30 seconds with the tool in the operating position. If it still does not fire remove the explosive load according to the manufacturer's instructions.

(F) Do not leave tools unattended where they are available to unauthorized persons.

(G) Do not drive fasteners into very hard or brittle materials like cast iron, glazed tile, surface-hardened steel, glass block, face brick or hollow tile.

(H) Do not drive fasteners into soft materials so that the projectile could exit the other side.

(I) Untitled.

(i) Do not drive fasteners directly into materials such as brick or concrete closer than 3 inches from the unsupported edge or corner or into steel surfaces closer than 1/2-inch from the unsupported edge or corner, unless the tool has a special guard. (Exception: Low-velocity tools may drive no closer than 2 inches from an edge in concrete or 1/4-inch in steel.)

(ii) When fastening other materials, such as a 2-inch by 4-inch wood section to a concrete surface, it is permissible to drive a fastener of no greater than 7/32-inch shank diameter not closer than 2 inches from the unsupported edge or corner of the work surface.

(J) Do not drive fasteners through existing holes unless you use a positive guide for accurate alignment.

(K) Do not drive a fastener into a spalled area caused by an unsatisfactory fastening.

(L) Do not use explosive actuated tools in an explosive or flammable atmosphere.

(M) Use all tools with the correct shield, guard or attachment recommended by the manufacturer.

(N) Take damaged or defective tools out of service. Inspect tools at regular intervals and repair them according to the manufacturer's specifications.

[ED. NOTE: Figures referenced are available from the agency.]

[Publications: Publications referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(4)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98; OSHA 9-2006, f. & cert. ef. 9-22-06

437-004-2240

Power Lawnmowers

(1) General requirements.

(a) Powered walk-behind, riding-rotary and reel lawnmowers designed for sale to the general public must meet the design specifications in "American National Standard Safety Specifications for Power Lawnmowers" ANSI/OPEI B71.1-1996. These specifications do not apply to a walk-behind mower converted to a riding mower by the addition of a sulky. Also, these specifications do not apply to flail mowers, sickle bar mowers or mowers designed for commercial use.

(b) Guard or place all power-driven chains, belts and gears to prevent accidental contact with the operator, during normal starting, mounting and operation of the machine.

(c) There must be a shutoff device to stop the motor or engine. It must require manual and intentional reactivation to restart the motor or engine.

(d) Clearly mark all positions of the operating controls.

(e) The phrase, "Caution. Be sure the operating control(s) is in neutral before starting the engine," or similar wording must be clearly visible at an engine starting control point on self-propelled mowers.

(2) Walk-behind and riding rotary mowers.

(a) Enclose the mower blade except on the bottom. The enclosure must extend to or below the lowest cutting point of the blade in the lowest blade position.

(b) There must be instructions near the opening warning not to use the mower without either the catcher assembly or the guard in place. This does not apply to side discharge mowers or those with a mulching plug in place.

(c) Properly and completely installed catcher assemblies must not create a hazard.

(d) The word "Caution," or stronger wording, must be on the mower at or near each discharge opening.

(e) Blade(s) must stop from the manufacturer's specified maximum speed within 15 seconds after declutching or shutting off power.

(3) Walk-behind rotary mowers.

(a) The horizontal angle of the grass discharge opening(s) in the blade enclosure, must not direct discharge toward the operator area.

(b) There must be one of the following at all openings in the blade enclosure intended for the discharge of grass:

(A) A minimum unobstructed horizontal distance of 3 inches from the end of the discharge chute to the blade tip circle.

(B) A rigid bar fastened across the discharge opening, secured to prevent removal without the use of tools. The bottom of the bar must be no higher than the bottom edge of the blade enclosure.

(c) Keep the handle attached to the mower to prevent loss of control by unintentional uncoupling while the engine is running.

(d) There must be a positive upstop or latch for the handle in the normal operating position(s). The upstop must not be subject to unintentional disengagement when using the mower. The upstop or latch must not allow the center or the handle grips to come closer than 17 inches horizontally behind the closest path of the mower blade(s) unless manually disengaged.

(e) A swing-over handle, that complies with the above requirements, is acceptable.

(f) Wheel drive disengaging controls, except deadman controls, must move opposite to the direction of the vehicle motion in order to disengage the drive. Deadman controls must automatically interrupt power to a drive when the operator lets go and may operate in any direction to disengage the drive.

(4) Riding rotary mowers.

(a) Opening(s) must not allow grass or debris to discharge directly toward any part of an operator seated in a normal operator position.

(b) One of the following must be at all grass discharge openings in the blade enclosure:

(A) A minimum unobstructed horizontal distance of 6 inches from the end of the discharge chute to the blade tip circle.

(B) A rigid bar fastened across the discharge opening, secured to prevent removal without the use of tools. The bottom of the bar must be no higher than the bottom edge of the blade enclosure.

(c) Mowers must have stops to prevent jackknifing or locking of the steering.

(d) Mowers must have working brakes or a manufacturer designed system for stopping.

(e) Hand-operated wheel drive disengaging controls must move opposite to the direction of vehicle motion to disengage the drive. Foot-operated wheel drive disengaging controls must be depressed to disengage the drive. Deadman controls, both hand and foot operated, must automatically interrupt power to a drive when the operator removes the actuating force and may operate in any direction to disengage the drive.

[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-2260
Other Portable Tools and Equipment

(1) Jacks.

(a) Definitions.

(A) Jack. A jack is an appliance for lifting and lowering or moving horizontally a load by pushing.

(B) Rating. The maximum safe load throughout its course of travel.

(b) Loading and marking.

(A) Do not use a jack with a rating less than the weight of the intended load.

(B) Keep the rated load legibly and permanently marked on the jack.

(c) Operation and maintenance.

(A) If the jack is not on a firm foundation, block its base. If the cap might slip, place a block between it and the load.

(B) Watch the stop indicator and do not go past the limit of travel.

(C) Quickly crib, block or otherwise secure the load after raising it.

NOTE: This does not apply when changing wheels on 4-wheeled vehicles when only one wheel is raised and the employee does not place any part of their body under the vehicle.

(D) Hydraulic jacks exposed to freezing temperatures must contain an adequate antifreeze liquid.

(E) Inspect jacks often enough to assure safe operation but at least:

(i) Once every 6 months for constant or intermittent use; or

(ii) Immediately after an abnormal load or shock.

(F) Mark defective jacks and do not use them until repairs are made.

(2) Abrasive blast cleaning nozzles. Blast cleaning nozzles must have an operating valve that must be held open manually. Provide a support on which the nozzle may rest when it is not in use.

(3) Hand-powered equipment.

(a) Each hand-powered hoist must have an effective brake or equivalent and a ratchet and pawl strong enough to hold the maximum load in any position.

(b) Do not allow hand crank handles to work loose from the drive shaft.

(4) Wheelbarrows, hand trucks, dollies, pallet jacks.

(a) Wheelbarrows, hand trucks, dollies and pallet jacks must be appropriate for the specific work. Do not load them beyond safe capacity. Bodies and frames must be metal or strong wood and able to withstand severe handling and the intended loads.

(b) Keep wheelbarrows, hand trucks, dollies and pallet jacks in good repair.

(c) Do not leave wheelbarrows, hand trucks, dollies, and pallet jacks where they can tip, fall or roll.

(5) Varmint Killers (Explosive Gas and Oxygen) A device for injecting a mix of propane (LPG) and oxygen into ground holes and then igniting it to kill varmints.

Note: OAR 437-004-0710 Compressed Gases apply to all cylinders of gas.

(a) Follow all manufacturer instructions for use and maintenance of this equipment or this standard, whichever is safest.

(b) When transporting these devices in vehicles (other than in the field of use), or when done using them for more than one hour, back out the regulator pressure control screws.

(c) Employees under 18 years old may not operate this equipment.

(d) Employers must train all employees to operate this equipment safely and according to the manufacturer's instructions and these rules.

(e) Operating procedures.

(A) Tanks, valves, couplings, regulators, hose, and apparatus must be free from oily or greasy substances. Do not handle oxygen tanks or apparatus with oily hands or gloves. Never allow a jet of oxygen to strike an oily surface, greasy clothes, or enter a fuel oil or other storage tank.

(B) Handling tanks.

(i) Unless tanks are secured on a special truck, remove regulators and install valve-protection caps, when provided, before moving tanks.

(ii) Close tank valves when work is done.

(iii) Close valves of empty tanks.

(iv) Do not use a hammer or wrench to open tank valves. If opening the valve by hand does not work, check with the supplier.

(v) Do not repair or tamper with tank valves. Notify the supplier if you have trouble with a tank and follow their instructions as to its disposition.

(vi) Do not remove the stem from a diaphragm-type tank.

(C) Attachments and use.

(i) Fuel-gas tanks must have the valve end up when they are in use. Store and ship liquefied gases with the valve end up.

(ii) Before removing a regulator from a tank valve, close the tank valve and release the gas from the regulator.

(iii) Do not use regulators with cracked, broken, or defective parts.

(iv) Before attaching the regulator to a tank, fully release the regulators pressure adjusting screw.

(v) Close the tank valve and release the gas from the regulator before removing it from the tank.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98; OSHA 9-2006, f. & cert. ef. 9-22-06

Welding

437-004-2310
General Requirements

(1) Scope. This subdivision applies to agricultural welding, except the following types that are covered by Subdivision 2/Q:

(a) Production type or amount of welding.

(b) Welding in confined spaces like tanks, vats, pits, or those defined in 4/J, OAR 437-004-1250(1). This section (4/Q) covers some confined space welding topics. In those cases, follow this section in addition to the rules in 2/Q.

(c) Welding with toxic or dangerous coatings or fluxes. This includes manganese, lead, zinc, cadmium, mercury, beryllium, or fluorine compounds.

(d) Welding or heating galvanized materials.

(2) Definition. Welder and welding operator is any operator of electric or gas welding and cutting equipment.

(3) Fire prevention and protection.

(a) Basic precautions. The basic precautions for fire prevention in welding or cutting work are:

(A) Fire hazards. Move either the object you are welding or cutting or any movable fire hazards in the area to a safe place.

(B) Guards. If you can move neither of the above, then use guards to confine the heat, sparks and slag to protect the immovable fire hazards.

(b) Special precautions. When the work falls within the scope of (3)(a)(B) above, additional precautions may be necessary:

(A) Combustible material. Wherever there are floor openings or cracks in the flooring, close them or take precautions so that sparks will not drop through to combustible materials on the floor below. Use the same precautions with cracks or holes in walls, open doorways and open or broken windows.

(B) Fire extinguishers. Keep appropriate fire extinguishing equipment ready for use.

(4) Before beginning. Before beginning, block portable equipment to prevent accidental movement.

(5) Welding or cutting containers.

(a) Clean first. Do not weld, use a torch or do abrasive cutting or other hot work on drums, barrels, tanks or other containers until they have been cleaned so that there are no flammable materials present or any substances that when subjected to heat, might produce flammable or toxic vapors. Disconnect and/or blank any pipe lines or connections to the drum or vessel.

(b) Test often. Use testing equipment prior to and frequently during the welding, torch or abrasive cutting or other hot work to insure that the container is free and remains free of flammable or toxic vapors.

(c) Vent and purge. Vent all hollow spaces, cavities or containers to air or allow gases to escape before preheating, cutting or welding.

(6) Protection of personnel.

(a) General. Cable. Put welding cable and other equipment so that it is clear of passageways, ladders and stairways.

(b) Eye protection.

(A) Selection.

(i) Use helmets or hand shields when arc welding or arc cutting, excluding submerged arc welding. Helpers or attendants must use proper eye protection.

(ii) Use goggles or other suitable eye protection when gas welding or oxygen cutting. Spectacles without side shields, with suitable filter lenses are acceptable for gas welding on light work, for torch brazing or for inspection.

(iii) All operators and attendants of resistance welding or resistance brazing equipment must use transparent face shields or goggles, depending on the particular job, to protect their faces or eyes.

(iv) Provide suitable goggles for brazing work not covered in (6)(b)(A)(i) through (6)(b)(A)(iii) above.

(B) Specifications for protectors.

(i) Helmets and hand shields must be an insulator for heat and electricity. Helmets, shields and goggles must not be flammable and must withstand sterilization.

(ii) Wear helmets and hand shields to protect the face, neck and ears from direct radiant energy from the arc.

(iii) "Lift front" welders' helmets must have a stationary safety glass on the inside of the frame next to the eyes to protect the welder from flying particles when the front is up. Where lens containers do not permit the use of safety glass, wear safety goggles.

(iv) When not using the "lift front" helmet with three glasses or when using the flat type helmet, wear other spectacle-type safety goggles in addition to the filter lens and cover glass.

(v) Use vented goggles to prevent fogging of the lenses as much as practicable.

(vi) Lenses must be tempered glass, substantially free from striae, air bubbles, waves and other flaws.

(vii) Lenses must have permanent distinctive markings to show the source and shade. [Table not included. See ED. NOTE.]

NOTE: The following is a guide for the selection of the proper shade numbers. These recommendations may vary to meet the individual's needs.

(viii) All filter lenses and plates must meet the test for transmission of radiant energy prescribed in ANSI Z87.1-1989 — American National Standard Practice for Occupational and Educational Eye and Face Protection.

(c)(A) Protective clothing, General requirements. Protect employees exposed to the hazards created by welding, cutting or brazing with personal protective equipment according to 4/I, OAR 437-004-1005.

(B) Material. Do not wear clothing that is easily ignited or highly flammable, like that made from synthetic materials.

(d) Work in confined spaces.

(A) General. Where a welder must enter a confined space, follow the rules for confined space work elsewhere in this section, Q, and in 4/J, 437-004-1250.

(B) Ventilation. Ventilation is a prerequisite to work in confined spaces. For ventilation requirements see OAR 437-004-2310(7).

(C) Securing cylinders and machinery. When welding or cutting is done in any confined space, the gas cylinders and welding machines must be left on the outside. Before starting, block heavy portable equipment wheels to prevent accidental movement.

(D) Electrode removal. When you stop arc welding for a period of time, like lunch or overnight, remove all electrodes from the holders and turn the machine off.

(E) Gas cylinder shutoff. When you stop gas welding or cutting for a period of time, like lunch or overnight, close the torch valves and shut off the gas supply to the torch at a point outside the confined area.

(7) Health protection and ventilation.

(a) General. Use general ventilation or a local exhaust system to keep the amount of toxic fumes, gases, or dusts below the limits in 4/Z, 437-004-9000.

(b) Ventilation for general welding and cutting. General. Use mechanical ventilation when welding or cutting on metals not covered in (7)(e) through (7)(h) below. (For specific materials, see the ventilation requirements of (7)(e) through (7)(h) below.)

(A) In a space of less than 10,000 cubic feet (284 m3) per welder.

(B) In a room having a ceiling height of less than 16 feet (5 m).

(C) In confined spaces or where the welding space contains partitions, balconies or other structural barriers to the extent that they significantly obstruct cross ventilation.

(c) Local exhaust hoods and booths. Mechanical local exhaust ventilation may be by means of either of the following: Hoods. Place movable hoods as close as practical to the work and with enough airflow for a velocity in the direction of the hood of 100 linear feet (30 m) per minute in the welding zone. The rates of ventilation to get this control velocity using a 3-inch (7.6 cm) wide flanged suction opening are in the following table: [Table not included. See ED. NOTE.]

(d) Ventilation in confined spaces.

(A) Air replacement. Ventilate all welding and cutting in confined spaces to prevent the build-up of toxic materials or possible oxygen deficiency. This applies not only to the welder but also to helpers and other people in the area. Air replacing the withdrawn air must be clean and respirable.

(B) Airline respirators. Where it is impossible to provide such ventilation, use airline respirators or hose masks approved by the Mine Safety and Health Administration and the National Institute for Occupational Safety and Health.

(C) Self-Contained Units. In areas immediately hazardous to life, use self-contained breathing equipment. Use breathing equipment approved by the Mine Safety and Health Administration and the National Institute for Occupational Safety and Health.

(D) Outside helper. When welding in confined spaces and where welders and helpers use hose masks, hose masks with blowers or self-contained breathing equipment approved by the Mine Safety and Health Administration and the National Institute for Occupational Safety and Health, a worker must be on the outside of the confined space to insure the safety of those working within.

(E) Oxygen for ventilation. Never use oxygen for ventilation.

(e) Cleaning compounds.

(A) Manufacturer's instructions. In the use of cleaning materials, because of their possible toxicity or flammability, follow appropriate precautions such as manufacturer's instructions.

(B) Degreasing. Degreasing and other cleaning involving chlorinated hydrocarbons must be where no vapors will reach or be drawn into the atmosphere surrounding any welding operation. In addition, keep trichloroethylene and perchlorethalene out of atmospheres penetrated by the ultraviolet radiation of gas-shielded welding operations.

(f) Preservative Coatings.

(A) Test first. Before welding, cutting or heating on any surface covered by a preservative coating whose flammability is unknown, a competent person must test to determine its flammability.

(B) Strip if needed. Prevent ignition of highly flammable hardened preservative coatings. When coatings are known to be highly flammable, strip them from the area to be heated to prevent ignition.

(g) Toxic Preservative Coatings.

(A) Enclosed spaces. In enclosed spaces, strip all surfaces covered with toxic preservatives of all toxic coatings for a distance of at least 4 inches from the area of heat application or the employees must use a respirator that protects them from toxic vapors.

(B) Strip if needed. Remove the preservative coatings a sufficient distance from the area to be heated to ensure that the temperature of the unstripped metal will not increase appreciably. Artificial cooling of the metal surrounding the heated area is acceptable to limit the size of the area you must clean.

(h) Cutting of stainless steels. Oxygen cutting, using either a chemical flux or iron powder or gas-shielded arc cutting of stainless steel, must include mechanical ventilation adequate to remove the fumes.

[ED. NOTE: Tables referenced are available from the agency.]
[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-2350
Oxygen-Fuel Gas Welding and Cutting

(1) Scope. This subdivision applies to agricultural welding, except the following types that are covered by Subdivision 2/Q:

(a) Production type or amount of welding.

(b) Welding in confined spaces like tanks, vats, pits, or those defined in 4/J, OAR 437-004-1250(1). This section (4/Q) covers some confined space welding topics. In those cases, follow this section in addition to the rules in 2/Q.

(c) Welding with toxic or dangerous coatings or fluxes. This includes manganese, lead, zinc, cadmium, mercury, beryllium, or fluorine compounds.

(d) Welding or heating galvanized materials.

(2) General requirements.

(a) Flammable mixture. Do not use any device or attachment, not approved for the purpose, that allows air or oxygen to mix with flammable gases prior to consumption, except at the burner or in a standard torch.

(b) Maximum pressure. Never generate (except in approved cylinder manifolds), pipe or use acetylene at a pressure in excess of 15 p.s.i.g. (103 kPa gauge pressure) or 30 p.s.i.a. (206 kPa absolute). (The 30 p.s.i..a (206 kPa absolute) limit is to prevent unsafe use of acetylene in pressurized chambers such as caissons, underground excavations or tunnel construction.) This requirement does not apply to storage of acetylene dissolved in a suitable solvent in cylinders manufactured and maintained according to U.S. Department of Transportation requirements, or to acetylene for chemical use. Never use liquid acetylene for any purpose.

(c) Apparatus. Use only approved apparatus such as torches, regulators or pressure-reducing valves.

(3) Cylinders and containers.

(a) Approval and marking.

(A) DOT. All portable cylinders used for the storage and shipment of compressed gases must meet regulations of the U.S. Department of Transportation, **49 CFR** parts **171–179.**

(B) Markings. Compressed gas cylinders must have legible markings that identify the gas content. They must show either the chemical or the trade name of the gas. These markings must not be easily removable. If possible, the marking must be on the shoulder of the cylinder and conform to the American National Standard Method for Marking Portable Compressed Gas Containers to Identify the Material Contained, ANSI/CGA C-4, 1990.

(C) Connections. Compressed gas cylinders must have connections that comply with the American National Standard Compressed Gas Cylinder Valve Outlet and Inlet Connections, ANSI/CGA V-1, 1987.

(D) Protection cap. All cylinders with a water weight capacity of more than 30 pounds (13.6 kg) must have a means of connecting a valve protection cap or a collar or recess to protect the valve.

(b) Storage of cylinders, General.

(A) No heat. Keep cylinders away from radiators and other sources of heat.

(B) Inside storage. Inside buildings, store cylinders in a well-protected, well-ventilated, dry location, at least 20 feet (6.1 m) from highly combustible materials such as oil or excelsior. Locate storage spaces where cylinders will not be knocked over or damaged by passing or falling objects. Do not keep cylinders in unventilated enclosures such as lockers and cupboards.

(C) Empties. Empty cylinders must have their valves closed.

(D) Caps. Valve protection caps must always be in place, hand-tight, except when cylinders are in use or connected for use.

(E) Secure. Securely lash cylinders in place when necessary to prevent them from falling.

(c) Fuel-gas cylinder storage. Store acetylene cylinders valve end up.

(d) Oxygen cylinder storage.

(A) Oxygen storage. Do not store oxygen cylinders:

(i) Near highly combustible material, especially oil and grease;

(ii) Near reserve stocks of carbide and acetylene or other fuel-gas cylinders, or any other substance likely to cause or accelerate fire.

(B) Not near fuel cylinders. Separate stored oxygen cylinders from fuel-gas cylinders or combustible materials (especially oil or grease), by at least 20 feet (6.1 m) or by a noncombustible barrier at least 5 feet (1.5 m) high with a fire-resistance rating of at least one-half hour.

(e) Operating procedures.

(A) No oil or grease. Cylinders, cylinder valves, couplings, regulators, hose, and apparatus must be free from oily or greasy substances. Do not handle oxygen cylinders or apparatus with oily hands or gloves. Never allow a jet of oxygen to strike an oily surface, greasy clothes, or enter a fuel oil or other storage tank.

(B) Handling cylinders.

(i) Do not drop cylinders or allow them to strike each other.

(ii) Do not use valve-protection caps to lift cylinders from one vertical position to another. Do not use bars under valves or valve-protection caps to pry cylinders loose when frozen to the ground or otherwise fixed.

(iii) Unless cylinders are secured on a special truck, remove regulators and install valve-protection caps, when provided, before cylinders are moved.

(iv) Cylinders without fixed hand wheels must have keys, handles or non-adjustable wrenches on valve stems while they are in service.

In multiple cylinder installations a single key or handle is acceptable for each manifold.

(v) Close cylinder valves before moving cylinders.

(vi) Close cylinder valves when work is done.

(vii) Close valves of empty cylinders.

(viii) Keep cylinders far enough away from the actual welding or cutting operation so that sparks, hot slag, or flame will not reach them. Otherwise, provide fire-resistant shields.

(ix) Do not set cylinders where they might become part of an electric circuit. Never tap an electrode against a cylinder to strike an arc.

(x) Do not use cylinders as rollers or supports, whether full or empty.

(xi) Do not use cylinders with altered or defaced numbers and markings.

(xii) Only the gas supplier, may mix gases in a cylinder. Only the owner of the cylinder or person authorized by them, may refill a cylinder.

(xiii) Do not allow anybody to tamper with safety devices in cylinders or valves.

(xiv) Do not drop or roughly handle cylinders.

(xv) Unless connected to a manifold, do not use oxygen from a cylinder without first attaching an oxygen regulator to the cylinder valve. Before connecting the regulator to the cylinder valve, open the valve slightly for an instant and then close it. Always stand to one side of the outlet when opening the cylinder valve.

(xvi) Do not use a hammer or wrench to open cylinder valves. If opening the valve by hand doesn't work, notify the supplier.

(xvii)(I) Do not repair or tamper with cylinder valves. Notify the supplier if you have trouble with a cylinder and follow their instructions as to its disposition.

(II) Do not remove the stem from a diaphragm-type cylinder.

(C) Attachments and use.

(i) Fuel-gas cylinders must have the valve end up when they are in use. Store and ship liquefied gases with the valve end up.

(ii) Before connecting a regulator to a cylinder valve, open the valve slightly and then close it immediately. Never crack a fuel-gas cylinder valve near other welding work or near sparks, flame, or other possible sources of ignition.

(iii) Before removing a regulator from a cylinder valve, close the cylinder valve and release the gas from the regulator.

(iv) There can be nothing on top of an acetylene cylinder when in use that may damage the safety device or interfere with the quick closing of the valve.

(v) If closing the valves will not stop leaks in cylinders and attachments, take them outdoors away from sources of ignition and allow them to slowly empty.

(vi) Put a warning near cylinders with leaking fuse plugs or other leaking safety devices. It must warn employees not to approach them with a lighted cigarette or other source of ignition. Plainly tag the cylinder and notify the supplier. Follow their instructions.

(vii) Do not tamper with safety devices.

(viii) Never use fuel-gas from cylinders through torches or other devices with shutoff valves without reducing the pressure through a suitable regulator attached to the cylinder valve or manifold.

(ix) Always open the cylinder valve slowly.

(x) Do not open an acetylene cylinder valve more than one and one-half turns of the spindle, and preferably no more than three-fourths of a turn.

(xi) If a cylinder takes a special wrench leave it in position on the stem of the valve while the cylinder is in use. For manifolded or coupled cylinders at least one such wrench must always be available for immediate use.

(xii) Do not use regulators with cracked, broken, or defective parts.

(xiii) Inspect union nuts and connectors on regulators before use. Do not use those with faulty seats.

(xiv) Before attaching the regulator to a cylinder, fully release the regulator's pressure adjusting screw.

(xv) Close the cylinder valve and release the gas from the regulator before removing it from the cylinder.

(D) Blowpipes and torches.

(i) Approved backflow preventer or flashback preventers must be between the blowpipe or torch and the hoses.

(ii) Use only friction lighters, stationary pilot flames or other recognized sources of ignition to ignite torches. Do not use matches or other hand held open flames.

(iii) When welding or cutting stops for an extended period of time, for example, during the lunch break, overnight or longer:

(I) Close the oxygen and fuel-gas cylinder or manifold valves;

(II) Open torch valves momentarily to release all gas pressure from the hoses and then close them;

(III) Release the regulator pressure adjusting screws; and

(IV) When the welding or cutting stops for a few minutes, closing only the torch valves is acceptable.

(iv) Follow the manufacturer's procedures for the sequence of operations in lighting, adjusting, and extinguishing blowpipe flames and connecting to the gas supply.

(v) Use a suitable cylinder truck, chain or steadying device to secure cylinders while in use.

(vi) Post signs conspicuously in fuel-gas storage areas. They must say, "DANGER — NO SMOKING, MATCHES OR OPEN LIGHTS," or equivalent wording.

(vii) Acetylene gas must not contact unalloyed copper except in a blowpipe or torch.

(viii) Do not use oxygen in pneumatic tools, in oil preheating burners, to start internal-combustion engines, to blow out pipelines, to "dust" clothing or work, to create pressure, or for ventilation.

(ix) After connecting welding or cutting apparatus to oxygen and fuel-gas cylinders, or when starting to reuse the apparatus after a half hour or more, let each gas flow through its respective hose separately for a few seconds to purge the hose of any mixture of gases.

(x) Never put down a torch unless the oxygen and fuel-gas have been completely shut off at the torch.

NOTE: Regulation of manifolds, piping systems, acetylene generators and calcium carbide are found in Division 2, 1910.253.

[Publications: Publications referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(3)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-2400

Arc Welding and Cutting

(1) Scope. This subdivision applies to agricultural welding, except the following types that are covered by Subdivision 2/Q:

(a) Production type or amount of welding.

(b) Welding in confined spaces like tanks, vats, pits, or those defined in 4/J, OAR 437-004-1250(1). This section (4/Q) covers some confined space welding topics. In those cases, follow this section in addition to the rules in 2/Q.

(c) Welding with toxic or dangerous coatings or fluxes. This includes manganese, lead, zinc, cadmium, mercury, beryllium, or fluorine compounds.

(d) Welding or heating galvanized materials.

(2) Instruction. Only trained and qualified workers will be allowed to run arc welding equipment.

(3) Application of arc welding equipment.

(a) General. Equipment that complies with the Requirements for Electric Arc-Welding Apparatus, NEMA EW-1-1983, National Electrical Manufacturers Association or the Safety Standard for Transformer-Type Arc-Welding Machines, ANSI/UL 551, 1993, Underwriters' Laboratories assures consideration of safety in design.

(b) Voltage. Do not exceed the following limits:

(A) Alternating-current machines.

(i) Manual arc welding and cutting — 80 volts.

(ii) Automatic (machine or mechanized) arc welding and cutting — 100 volts.

(B) Direct-current machines.

(i) Manual arc welding and cutting — 100 volts.

(ii) Automatic (machine or mechanized) arc welding and cutting — 100 volts.

(C) Special processes. When special welding and cutting processes require higher open circuit voltages than those above, there must be a way to prevent the operator from making accidental contact with the high voltage.

(4) Installation of arc welding equipment.

(a) General. Installation including power supply must be according to the requirements of subdivision 4/S.

(b) Grounding. Ground the frame or case of the welding machine (except engine-driven machines) according to subdivision 4/S.

(5) Operation and maintenance.

(a) Machine hook up. Before starting operations check all connections to the machine to make certain they are properly made. The work lead must be firmly attached to the work; magnetic work clamps must be free from adherent metal particles of spatter on contact surfaces. Coiled welding cable must be spread out before use to avoid serious overheating and damage to insulation.

(b) Grounding. Check the grounding of the welding machine frame. Give special attention to safety ground connections of portable machines.

(c) Manufacturers' instructions. Follow the printed rules and instructions supplied by the manufacturers.

(d) Electrode holders. When not in use place electrode holders so they cannot make electrical contact with persons, conducting objects, fuel or compressed gas tanks.

(e) Electric shock. Do not use cables with splices within 10 feet (3 m) of the holder.

(f) Damage. Do not use work lead cables or electrode lead cables with damaged insulation or exposed conductors.

(g) Cable. Do not coil or loop the electrode cable around your body.

[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

Electricity

437-004-2810
General Requirements

(1) Scope. This standard (4/S) covers electrical work and equipment in buildings and on premises. It applies to all work and equipment covered by other sections of Subdivision 4/S.

(2) Unless stated otherwise in OAR 437-004-2810 through 437-004-3075, all electrical work, equipment and systems must comply with standards under the jurisdiction of the Oregon Building Codes Division, Department of Consumer and Business Services.

(3) Do not allow employees to work near live power sources without protection from shock.

(4) Isolate exposed live electrical conductors from contact by persons or equipment.

NOTE: Paragraphs (3) and (4) above do not apply to electric fences or containment devices.

(5) Lights 7 feet or closer to the floor or work surface must have a guard, fixture or holder to protect the bulb or tube from breakage.

(6) Only qualified persons, authorized by the employer may make electrical repairs. (See Subdivision 4/B.)

(7) Install or remove fuses from live terminals only with special tools insulated for the voltage.

(8) When the exact location of underground electric power lines is unknown, workers using jackhammers, bars or other hand tools that may contact a line must use insulated protective gloves.

(9) Before beginning work near exposed lines or equipment, the employer must determine if they are live. If they are, you must advise the employees of the position of the lines, the hazards involved and the protective measures they must use.

(10) Before beginning work like digging, drilling or remodeling, that may lead to hidden power sources the employer must locate them and determine their voltage. Locate underground lines by calling 1-800-332-2344 or in the Portland Metropolitan area 246-6699. The employer must then:

(a) Post and maintain proper warning signs where such circuits exist; and

(b) Advise the employees of the position of the lines, the hazards involved and the protective measures they must use.

NOTE: If the work covered by (8) and (9) above might involve voltages over 750v, see OAR 437-004-3050.

(11) There must be sufficient space near electrical equipment to permit safe operation and maintenance.

(a) Near exposed parts, the minimum clearance from floor to ceiling must be at least 76 inches. There must be a clear radius of at least 36 inches in front of the panel.

(b) There must be enough clearance to permit at least a 90 degree opening of all doors or hinged panels.

(c) Do not store anything in front of electrical panels.

(12) There must be suitable barriers or other means to ensure that work space for electrical equipment is not used as a passageway when energized parts are exposed.

(13) Require workers to report all electric shocks to management or supervisors immediately.

(a) Check the equipment causing the shock and remove from service or repair it before further use.

(14) Electrical equipment must be free from recognized hazards that may cause death or serious physical harm. Use the criteria below to determine the safety of equipment.

(a) Electrical equipment must be listed or labeled, except custom-made components and utilization equipment. (See Division 4/B, OAR 437-004-0100, for definitions of listed and labeled.)

(b) Mechanical strength and durability, and for parts that enclose and protect other equipment, the adequacy of the protection.

(c) Classification by type, size, voltage, current capacity or specific use.

(d) Other factors that contribute to the practical safeguarding of employees using or likely to contact the equipment.

(15) Follow manufacturer's instructions or recommendations when installing listed or labeled equipment.

(16) In wet or damp locations, use only fixtures approved for that purpose. Install them so that water cannot enter or accumulate in wireways, lampholders, or other electrical parts.

(17) All pull boxes, junction boxes and fittings must have approved covers. Metal covers must be grounded.

(18) All wall plugs and switches must have approved, unbroken covers or faceplates and no broken parts.

(19) Receptacles, plugs, fixtures, lamp-holders lamps and other holders and outlets must have no exposed live parts.

NOTE: Rosettes and cleat-type lamp-holders may have exposed parts if they are 8 feet or higher above the floor.
Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98; OSHA 9-2006, f. & cert. ef. 9-22-06

437-004-2850
Temporary Lighting and Wiring

(1) Temporary Wiring.

(a) Walkways and similar locations must be kept clear of power cords.

(b) Ground all temporary wiring.

(c) Keep wiring equipment as vapor, dust, or fiber tight as intended by the manufacturer. There must be no loose or missing screws, gaskets, threaded connections, or other impairments to this tight condition.

(d) Take precautions to make open wiring inaccessible to unauthorized personnel.

(e) Temporary electrical power and lighting installations are acceptable during construction, remodeling, maintenance, repair, or demolition of buildings, structures, equipment, or similar activities.

(f) Temporary electrical power and lighting installations are acceptable for not more than 90 days for decorative lighting and as in (e) above.

(2) Temporary Lighting.

(a) Temporary lights must be at least 7 feet above the work surface or have guards to prevent contact with the bulb.

(b) Temporary lights must have electric cords, connections and insulation rated for their use.

(c) Do not suspend temporary lights by their cords unless the manufacturers' instructions allow the practice.

(d) Do not use brass shell, paper lined portable hand lamp holders. Hand lamps must have a handle and a substantial guard over the bulb.

(e) Portable extension lamps used where flammable vapors, gases, combustible dusts, easily ignitible fibers or flyings are present, must be approved for the type of hazard involved. Do not modify, repair or add to these systems without approval of the manufacturer.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-2860
Flexible Cable and Extension Cords

(1) Extension cords used with portable electric tools and appliances must be at least three-wire type and have an approved grounding plug and receptacle providing ground continuity.

(2) Use only extension cords rated for the intended use.

(3) Do not use worn or frayed electric cords and cables.

(4) Protect flexible cables and extension cords against damage caused by traffic, sharp corners, pinching or projections.

(5) Cover or elevate cables that pass through work areas to protect them from damage.

(6) Do not use staples to fasten flexible cables and extension cords. Do not hang them from nails or suspend them by wire.

(7) Do not use flexible cables and extension cords as a substitute for fixed structural wiring.

(8) Flexible cables and extension cords must not run through holes in walls, ceilings, or floors or through doorways, windows, or similar openings, except during construction.

(9) Electrical conductors must be spliced or joined in splicing devices suitable for the use, by brazing, welding or soldering with a fusible metal or alloy.

(a) Secure soldered splices first mechanically and electrically without solder, then solder. (Use rosin-core solder, NOT acid core solder, when joining electrical conductors.)

(b) Insulation on splices and joints and the free ends of conductors must be equivalent to the original insulation.

(c) Splices for flexible cords must provide flexibility and use characteristics of the original cord. Vulcanized splices or equivalent means, such as shrinkable materials, are acceptable for repairs.

(10) Do not plug extension cords together to make them longer.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-2870
Attachment Plugs and Receptacles

(1) Attachment plugs must be heavy enough to endure rough use and have a suitable cord grip to prevent strain on the terminal screws.

(2) Use only approved, grounding type attachment plugs.

(3) Use only approved concealed contact type receptacles for attachment plugs. They must extend ground continuity. They must allow removal of the plug without exposing live parts to contact.

(4) Polarized attachment plugs, receptacles and cord connectors must have proper continuity.

(5) Use only attachment plugs, receptacles and cord connectors that have the grounded (common) terminal conductor identified. If the terminal is not visible, the connection hole must be marked with the word “white.”

(6) The terminal for the equipment grounding conductor (bare wire) must have:

(a) A green colored, not easily removable terminal screw with hexagonal head; or

(b) A green colored, hexagonal, not easily removable terminal nut; or

(c) A green colored pressure wire connector.

(d) If the terminal for the grounding conductor is not visible, mark the conductor entrance hole with the word “green” or otherwise identify it with the color green.

(e) A grounded conductor must not be attached to any terminal or lead to reverse the designated polarity.

(7) Where portable cords supply different voltages or types of current (A.C. or D.C.) receptacles and attachment plugs must not be interchangeable.

(8) Attachment plugs or other connectors supplying equipment at more than 300 volts must have skirts or otherwise confine arcs.

(9) Do not use a grounding terminal or grounding-type device on a receptacle, cord connector, or attachment plug for purposes other than grounding.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-2880
Cord and Plug-Connected Equipment

(1) Portable or plug-connected equipment with noncurrent-carrying metal parts must be grounded.

(2) It is not necessary to ground portable tools and appliances with approved double insulation, or its equivalent, but they must have distinctive markings.

(3) Ground exposed noncurrent-carrying metal parts of fixed electrical equipment, including motors, frames, electrically driven machinery, refrigerators, freezer, electric ranges, clothes dryers, etc.

(4) Cord and plug-connected high-pressure spray washing machines must have a factory installed ground-fault circuit interrupter that is an integral part of the attachment plug or is in the supply cord within 12 inches of the attachment plug.

(5) Enclose or separate parts of electric equipment that in ordinary operation produces arcs, sparks, flames, or molten metal. Isolate this equipment from all combustible material.

(6) Do not use electrical equipment without descriptive markings that identify the approving organization (such as U.L.) for the product. Other markings that give voltage, current, wattage, or other ratings as necessary must also be visible.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-2900
Grounding and Bonding

(1) The path from circuits, equipment, structures, and conduit enclosures to ground must be permanent and continuous with enough capacity to conduct safely the currents that might be imposed on it. The path must also have impedance low enough to limit the potential above ground and to result in the operation of the over current devices in the circuit.

(2) Driven rod electrodes must, where practicable, have a resistance to ground not to exceed 25 ohms. Where the resistance is not as low as 25 ohms, use two or more electrodes connected in parallel.

(3) Check grounding circuits to ensure that the circuit between the ground and the grounded power conductor has a resistance low enough to permit enough current to flow to cause the fuse or breaker to interrupt the circuit.

(4) Conductors used for bonding and grounding stationary and moveable equipment must be able to carry the anticipated current.

(5) Outside conductors, 600 volts, nominal or less. Paragraphs (a), (b), (c), and (d) below apply to branch circuit, feeder, and service conductors rated 600 volts, nominal, or less and run outdoors as open conductors. Paragraph (e) below applies to lamps installed under these conductors.

(a) Conductors on poles must provide a horizontal climbing space not less than the following:

(A) Power conductors below communication conductors — 30 inches.

(B) Power conductors alone or above communication conductors: 300 volts or less — 24 inches; more than 300 volts — 30 inches.

(b) Clearance from ground to open conductors must conform to the following minimum clearances:

(A) 10 feet above finished grade, sidewalks, or from any platform or projection from which they might be reached.

(B) 12 feet over areas subject to vehicle traffic other than truck traffic.

(C) 15 feet over areas other than those in paragraph (5)(b)(D) below, where there may be truck traffic.

(D) 18 feet over public streets, alleys, roads, and driveways.

(c) Conductors must have a clearance of at least 3 feet from windows, doors, porches, fire escapes, or similar locations. Conductors run above the top level of a window do not have to be 3 feet away.

(d) Conductors must have a clearance of not less than 8 feet from the highest point of roofs over which they pass, except that:

(A) Where the voltage between conductors is 300 volts or less and the roof has a slope of not less than 4 inches in 12, the clearance from roofs must be at least 3 feet; or

(B) Where the voltage between conductors is 300 volts or less and the conductors do not pass over more than 4 feet of the overhang portion of the roof and they terminate at a through-the-roof raceway or approved support, the clearance from roofs must be at least 18 inches.

(e) Lamps for outdoor lighting must be below all live conductors, transformers, or other electric equipment, unless the equipment has a disconnecting means that is lockable in the open position or unless

there are adequate clearances or other safeguards for lamp replacement.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-2950
Switches and Circuit Breakers

(1) There must be at least 3 feet of clear space in front of switch centers or panels. Passageways to switch centers or panels must be unobstructed.

(2) There must be enclosures or screens around live parts of electrical switchboards and panelboards.

(3) Each disconnecting means for motors and appliances, and each service feeder or branch circuit at the point where it originates, must have legible markings to indicate their purpose unless the purpose is evident.

(4) Locate or shield disconnecting means to avoid injury to employees. Do not use open knife switches.

(5) Securely mount boxes for disconnecting means and keep their covers in place.

(6) Boxes and disconnecting means in damp or wet locations must be waterproof.

(7) There must be sufficient light for all indoor working spaces around service equipment, switchboards, panelboards, and motor control centers.

(8) The minimum headroom of working spaces around service equipment, switchboards, panelboards, or motor control centers must be 6 feet 3 inches.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-3000
Identification and Load Ratings

(1) Name plates, rating data, and marks of identification on electrical equipment and electrically operated machines must be present and legible.

(2) Do not change the circuit protection in existing installations to increase the load to more than the load rating of the circuit wiring.

(3) Do not allow tampering, bridging, or using oversize fuses. Require workers to report immediately to management or a qualified electrician, any fuses or breakers that blow repeatedly.

(4) Do not attempt to restart electric motors that kick out repeatedly.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-3050
Work Near Overhead Lines

Clearance or Safeguards Required

NOTE: High voltage is 750 v or higher.

(1) Isolate exposed overhead conductors from contact by persons or equipment.

(2) Do not store irrigation pipe within 100 feet of overhead high voltage conductors.

(3) Do not allow upending if irrigation pipe is within 100 feet of overhead conductors.

(4) Do not set up or operate any part of a water or irrigation system, or any other device that discharges a conductive liquid, so that the discharge is toward or may come within 10 feet of overhead high-voltage lines or any other exposed electric conductor.

(5) Do not require or permit an employee to pass or work near high-voltage lines, unless you effectively guard against danger from contact.

(6) No work activity may bring workers or equipment within 10 feet of high-voltage lines.

(7) Do not operate equipment or machines near power lines except:

(a) When electrical distribution and transmission lines are deenergized and visibly grounded at the point of work or where insulating barriers are in place to prevent physical contact with the lines;

(b) For lines rated 50 kV. or below, minimum clearance between the lines and any part of the object must be 10 feet;

(c) For lines rated more than 50 kV. minimum clearance between the lines and any part of the object must be 10 feet plus 0.4 inches for each 1 kV., more than 50 kV., or twice the length of the line insulator but never less than 10 feet.

(d) In transit, the clearance must be a minimum of 4 feet for voltages less than 50 kV., 10 feet for voltages more than 50 kV. up to and including 345 kV., and 16 feet for voltages up to and including 750 kV.

(e) A person must observe clearances and give timely warning for all work where it is difficult for the operator to maintain the desired clearance by sight.

(8) **Warning Sign Required:** The employer must post and keep in plain view of the operator on each derrick, power shovel, drilling rig, hay loader, hay stacker or similar apparatus, any part of which is capable of vertical, lateral or swinging motion, a warning sign legible at 12 feet reading "Unlawful to operate this equipment within 10 feet of high-voltage lines."

(9) **Notification to Power Company and Responsibility for Safeguards:** When any work may be within 10 feet of any high-voltage line, the person or persons responsible for the work must promptly notify the power company and is responsible for the completion of required safety measures before beginning the work.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-3075
Agricultural Buildings with Special Hazards

(1) Scope. These standards apply to the following agricultural buildings or parts of buildings or adjacent areas.

(a) Agricultural buildings where excessive dust and dust with water may accumulate. This includes all areas of poultry, livestock and fish confinement systems, where litter dust or feed dust, including mineral feed particles may accumulate.

(b) Agricultural buildings where a corrosive atmosphere exists. This includes areas where poultry and animal excrements may cause corrosive vapors; corrosive particles may combine with water; the area is damp and wet due to periodic washing for cleaning and sanitizing with water and cleansing agents; or where similar conditions exist.

(2) Wiring. Use types UF, NMC, copper SE, or other cables or raceways suitable for the location, with approved termination fittings. Secure all cables within 8 inches of each cabinet, box, or fitting.

(3) Enclosures. Boxes, fittings, wiring devices, switches, circuit breakers, controllers and fuses including push-buttons, relays, and similar devices must have enclosures as in (a) and (b) below.

(a) Buildings with excessive dust and dust with water must use dustproof and weather proof enclosures.

(b) Buildings with a corrosive atmosphere must use enclosures for those conditions.

(4) Motors and machines. Motors and other rotating electrical machinery must be totally enclosed or designed to minimize the entrance of dust, moisture, or corrosive particles.

(5) Lighting fixtures. Install lighting fixtures to minimize the entrance of dust, foreign matter, moisture and corrosive material.

(a) Guard lighting fixtures exposed to physical damage.

(b) Lighting fixtures exposed to water must be watertight.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

Miscellaneous

437-004-3100
Excavation

(1) Definition. Excavation — A man-made cut, hole, pit, trench or depression in the earth.

NOTE: Before any digging you must comply with Oregon's "Call Before You Dig" law. Call 1-800-332-2344.

(2) Five feet or more. Employees must not enter any excavation 5 feet or deeper unless protective systems are in place to protect from cave-in or sloughing.

(3) Less than 5 feet. Employees must not enter any excavation less than 5 feet deep when the sides are losing their shape, are loose or show other signs of being unstable unless protective systems are in place to protect from cave-in or sloughing.

(4) Strength. Systems installed in the excavation must be strong enough and engineered to provide protection from hazards of the particular excavation.

(5) Design. Systems must be as follows:

(a) Designed by a registered professional engineer.

(b) Designed using the manufacturer's or other tabulated data.

(6) Follow instructions. When using manufactured systems, follow the instructions and do not exceed the limitations of the system.

(7) System size. Systems must extend from the bottom of the excavation to at least the top edge.

(8) Sloping. Sloping is an acceptable system to protect workers. Sloping must be at a ratio of at least 1 1/2 to 1. That means a horizontal setback of 1 1/2 feet for every 1-foot of trench depth.

(9) Access/Exit. There must be a safe way, such as a ladder or steps, to get into and out of excavations 4 or more feet deep. In trenches, these exits must be at least every 25 linear feet.

(10) Water. Workers will not enter excavations where there is accumulating water, either from ground seepage or surface run-off, unless there are adequate protections from hazards caused by the water.

(11) Inspect daily. A person familiar with these rules and the work must inspect all excavations daily, before workers enter or reenter.

(12) Spoils and equipment. Keep soil and material removed from the excavation (spoils) at least two feet away from the edge of the excavation or restrained. Equipment that could roll or fall into the excavation must also be at least two feet back or restrained.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98; OSHA 9-2006, f. & cert. ef. 9-22-06

Vehicles

437-004-3410
Agricultural, Commercial and Industrial Vehicles

(1) Scope. This applies to all motor vehicles used by employees.

(2) Definitions.

(a) Agricultural vehicle — A vehicle specifically designed or modified for use exclusively in agricultural operations, and not licensed for use on public roads under Oregon laws.

NOTE: Included in this definition is farm field equipment such as tractors, harvesters, planters or any combination thereof; unlicensed trucks and wagons or trailers such as feeder trucks or wagons and specialized crop handling vehicles; and mobile elevating and rotating work platforms such as orchard aerial lift devices.

(b) Commercial-type vehicles — Motor vehicles primarily for the transportation of persons or material on roads. Commercial type vehicles used to transport workers are:

(A) Class 'A' vehicle — A bus type vehicle or van that can carry 12 or more workers; or the "work crew" vehicle built or altered for carrying passengers.

(B) Class 'B' vehicle — A vehicle or van especially built for transporting work crews in compartments separate from the space used to transport supplies, tools and equipment.

(C) Class 'C' vehicle — A flatbed, pickup body or dump truck type vehicle, or vehicle of similar open body construction.

(D) Class 'D' vehicle — A passenger car or station wagon type.

NOTE: Typically a bus type vehicle has two axles and six tires or three or more axles. This does not include vans.

(c) Industrial-type vehicles — Vehicles designed for non-highway use, primarily for pulling trailers or other mobile loads, straddle trucks such as lumber carriers, power industrial trucks, and other types of vehicles especially designed for handling materials.

NOTE: When this rule uses "vehicle" by itself, it includes all the above definitions.

(3) General requirements.

(a) Operation of vehicles.

(A) Nobody may operate any unsafe vehicle. Fix unsafe conditions before using it.

(B) Only trained and authorized employees may operate any vehicle.

(C) Only the operator may ride on vehicles unless there are safe riding facilities for additional riders. Persons are never to ride on fenders, axles, hitches, tongues, buckets, forks, drawbars or any other area not intended to carry passengers.

(D) Do not drive a vehicle up to anyone who is in front of a stationary object.

(E) The operator must look in the direction of travel, and have a clear view of the path of travel, unless guided by a signal person with a clear view of the route.

(F) Except when using a towbar, keep manual control over vehicles under tow.

(G) Do not stand or walk under an elevated part of a vehicle whether loaded or empty unless it is blocked or cribbed according to OAR 437-004-3410(5)(d).

(H) Workers may not be under loads or units of materials during movement.

(I) Do not overload any vehicle. Keep loads stable and well balanced.

(J) Employees must not ride in a loaded or partially loaded cargo space while the vehicle is moving unless the load is adequately shored, braced, or otherwise secured.

(K) Do not drive a vehicle with an unstable or insecure load.

(L) Block the wheels and set the brakes when loading Agricultural Vehicles, Class C, Commercial –Type Vehicles and Industrial-Type Vehicles who's movement might cause a hazard. This does not apply when loading "on the go."

(M) The parking brake must be set on parked commercial and industrial vehicles. Block or turn to a curb the wheels of vehicles parked on an incline.

(N) Do not put arms or legs between working parts or outside the running lines of vehicles.

(O) Vehicles must have a safe way of access and exit.

(P) Do not jump on or off moving vehicles.

(Q) There must be no stunt driving or horseplay.

NOTE: Appendix A is a reprint of Oregon Revised Statutes that govern the use of some agricultural vehicles and equipment on public highways and roads. While Oregon OSHA has the legal authority to cite these sections, law enforcement officers are the usual source of enforcement. We offer these laws here as a courtesy to Oregon agricultural employers and in the interest of employee safety.

(b) Hauling of explosives. Only a driver and one other person may ride in a vehicle hauling explosives.

(c) Operating near power lines. For requirements when operating vehicles around high voltage power lines, see Subdivision 4/S.

(d) Parking. When the operator of a commercial or industrial vehicle is not at the controls, the brakes must be set or the wheels blocked to prevent movement. Also, fully lower or block elevated attachments or components against descent. Unattended vehicles must be shut off. If parked on a slope, the wheels of commercial and industrial vehicles must be blocked or chocked.

(e) When towing, there must be a pin or other positive method of keeping the hitch pin in the hitch.

NOTE: Unattended is when the operator cannot see the vehicle or when they are more than 25 feet from it.

(4) Vehicle components.

(a) General.

(A) The engine shut-off device must be within reach of the operator when in their normal operating position.

(B) There must be steps, ladders, handholds, or grab bars on vehicles for safe access. Steps must have slip-resistant surfaces.

(C) The operator's station and work platforms on all agricultural vehicles must have guardrails or other fall protection when any of the following conditions exist:

(i) The operator is standing or not protected from falling by the framework, body, or design of the equipment; or

(ii) The floor of the operator's station is more than 22 inches above the adjacent floor level; or

(iii) The operator's station, regardless of height, is located so that a worker could fall into the path of equipment or into moving parts.

NOTE: For guardrails or similar barricades, the toprail must be 36 inches to 44 inches above the deck; the railing must have a midrail except when it would impair the operator's view to crop gathering or other functions.

(D) All vehicles loaded by cranes, power shovels, loaders or similar equipment must have a cab shield or canopy adequate to protect the operator from shifting or falling materials.

(E) The backs of vehicle cabs exposed to shifting loads must have a substantial bulkhead or similar device.

(F) Loads must not prevent doors of vehicle cabs from opening.

(G) When transporting workers and materials simultaneously, there must be a barrier to protect the workers and driver from the hazards of the materials. Otherwise, anchor or restrain the load.

(H) Class "A" and "B" commercial vehicles and industrial vehicles must have seats and back rests firmly secured in place, and such sides and ends as necessary to prevent riders from falling off the vehicle.

(I) The operator's platform must have a slip-resistant floor.

(J) Operating levers controlling hoisting or dumping devices on haulage bodies must have a latch or other device that prevents accidental starting or tripping of the mechanism.

(K) Trip handles for tailgates of dump trucks must work without endangering the operator.

(L) Surfaces of foot pedals must be slip resistant or have slip resistant coverings.

(b) Passenger compartments.

(A) Floors and decks must have safe footing.

(B) Floors and interior of sides and ends and tops of compartments used for transporting workers must be free of protruding objects that might cause injury.

(c) Windshields — windows.

(A) Windshields and windows must be safety glass that meets the requirements for safety glazing material for use anywhere in a motor vehicle as defined in the American National Standard, Safety Glazing Materials for Glazing Motor Vehicles Operating on Land Highways, Z26.1-1990, or a material that will furnish equivalent safety.

(B) Replace defective or broken glass that impairs the vision of the operator. Remove and replace broken or shattered glass that could cause injury to occupants.

NOTE: There is no requirement to change non-safety glass installed as "original equipment" in agricultural vehicles acquired before March 31, 1975 if it is unbroken. However, when it is replaced, the replacement glass must be approved safety glass.

(d) Brakes.

(A) All commercial and industrial vehicles must have brakes that can control them while fully loaded on any grade over which they might run.

(B) Parking brakes must be able to hold the loaded vehicle on any grade on which it may park, on any surface free of ice or snow.

(C) Brakes must be in safe working condition.

(e) Steering. Use steering or spinner knobs only if the steering mechanism is a type that prevents road reactions from causing the steering wheel to spin. The steering knob must be within the periphery of the wheel.

(f) Lights. Vehicles operated at night must have sufficient light at the operator's station.

(5) Inspection, testing, maintenance, and repair.

(a) Check vehicles as often as needed to assure that they are in safe operating condition and free of damage that could cause failure while in use.

(b) Before using it, fix defects that affect the safe operation of the vehicle.

(c) Do not continue to use a vehicle that becomes unsafe during use.

(d) Block or crib heavy machinery, equipment, elevated parts or parts supported by slings, hoists, jacks, or other devices, to prevent falling or shifting before employees work under or between them.

(A) Fully lower or block bulldozer and scraper blades, end-loader, end-loader buckets, dump bodies, and similar equipment when working on them or when they are not in use.

(B) All controls must be in neutral with motors off and brakes set, unless the work requires otherwise.

(e) Vehicles with dump bodies or other elevating parts must have positive means of support, permanently attached, and capable of being locked in position to prevent accidental lowering of the body. This device must support a raised body during maintenance or inspection work.

(f) Disconnect the battery when repairing a vehicle electrical system if accidental closing of the circuit could cause injury.

(6) Transportation of workers.

(a) Do not transport workers in flatbed trucks, dump trucks and pickups unless:

NOTE: This does not apply to field work or loading or unloading moving vehicles.

(A) Tilting, sliding or otherwise movable decks or bodies are secured to prevent accidental movement. Secure dump truck bodies or lock the hoist lever.

(B) Flatbed vehicles without seats must have sides and end gates at least 24 inches high. Workers must sit on the floor.

(b) Close pickup and dump truck tailgates and make workers sit on the floor unless there are seats secured in place and sides at least 42 inches high. A chain or rope must be across the rear of such vehicles with seats.

(c) When workers sit on low boxes or similar equipment, there must be side rails that increase the height of pickup and dump truck bodies to at least 36 inches. Omit the side rails when there is heavy canvas secured as a top and sides.

(d) In Class "A" and "B" commercial vehicles with seats workers must not sit on the floor in the aisles while the vehicle is moving. Not more than one worker per row of seats may stand. No workers may stand or sit in the driver's area ahead of the front row of seats. Never place boards across an aisle to provide additional seating space. Do not put seats in an aisle. Standing workers must use handholds.

(e) When transporting workers in any vehicle, nobody may stand for more than 1-hour or for more than 45 miles of travel, whichever is less. After that, they must get a rest period of at least 15 minutes or be given a seat.

(7) Fueling.

(a) When fueling vehicles there may be no smoking within 35 feet.

(b) Stop vehicle engines, except diesels, while fueling.

(c) Do not fuel vehicles within 35 feet of any open fires, flame or other sources of ignition.

(d) Refilling of vehicle tanks that use liquefied petroleum gases must be done outside. Do not overfill the tanks.

(8) Hauling of gasoline and other flammables.

(a) Do not transport gasoline and other flammable liquids on commercial vehicles carrying workers except:

(A) In closed containers of not more than 5 gallons capacity, and

(B) The containers must be accepted, labeled or listed. (As per definitions in OAR 437-004-0100 Universal Definitions), and

(C) Do not carry containers inside the passenger compartment, and

(D) Secure the containers to prevent shifting and put them in well-ventilated compartments or racks.

(b) You can haul gasoline in containers of more than 5 gallons in Class "C" commercial vehicles if all workers ride in the cab of the vehicle or in a separate compartment.

NOTE: Appendix A is a reprint of Oregon Revised Statutes that govern the use of some agricultural vehicles and equipment on public highways and roads. While Oregon OSHA has the legal authority to cite these sections, law enforcement officers are the usual source of enforcement. We offer these laws here as a courtesy to Oregon agricultural employers and in the interest of employee safety.

(9) Warning devices.

(a) All commercial and industrial vehicles must have an audible warning (horn) device that can be clearly heard above the surrounding noise near the vehicle.

(b) Vehicles with obstructed view to the rear must have a backup alarm audible above the surrounding noise level, unless:

(A) The vehicle backs up only when an observer signals that doing so is safe; or

(B) The vehicle operator first verifies that no person is in the path of the reverse travel, or can enter it unobserved.

(c) When towing mobile farm equipment, if the driver cannot see the workers in or on the towed unit, there must be a way to communicate with them. Otherwise, there must be a way for the riders in the towed unit to stop it in case of an emergency.

(10) Control of exhaust gases.

(a) Exhaust pipes must direct the exhaust gases away from the operator and passengers.

(b) Insulate or isolate exhaust pipes exposed to contact.

(11) Safety equipment — vehicles operated on public roads.

(a) There must be a first aid kit on Class A and B commercial type vehicles that transport workers. First aid kits must be clean, stocked and readily available to the driver or crew.

(b) There must be a B/C fire extinguisher on Class A and B commercial type vehicles that transport workers.

(c) Vehicles designed to run less than 25 mph must display a "slow moving vehicle" emblem as in 4/J, OAR 437-004-1180, Accident Prevention Signs, Symbols, Tags of the Oregon Occupational

Safety and Health Code and in ORS 483.457, "Slow Moving Vehicle Emblem."

[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98; OSHA 9-2006, f. & cert. ef. 9-22-06

437-004-3420
Working from **Vehicles and Vehicle Loads**

(1) Riding on loads. Employees must not ride on top of loads that may dangerously shift, topple over, or otherwise become unstable. Employees must sit when riding loads, except when doing field work at slow, even speeds over smooth ground.

(2) Field operations. When employees work on the cargo space of moving trucks or trailers, as in field operations, the operator must:

(a) Reduce vehicle speed to the slowest possible.

(b) Operate the vehicle at a steady, smooth rate. Avoid erratic moves.

(c) Travel parallel to rows or corrugations. When necessary to cross corrugations or ditches, warn employees to sit down in a safe place, away from the edge, and to hold on to a secure hand hold.

(d) Except for vehicles being loaded while moving, set the brakes during loading.

(3) Load stability. Secure loads against dangerous displacement either by piling or securing to prevent shifting, toppling, over or other instability.

(4) Access to the load. There must be adequate access to safely reach the top of the load for manual loading or unloading of high loads.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-3430
Training for Agriculture Tractor Operators

Training. Train all employees who drive an agricultural tractor about the operating practices below and about any other practices peculiar to the work environment. Do this training at the time of initial assignment to driving duties and at least annually after that.

(1) Securely fasten your seat belt if the tractor has a ROPS.

(2) Where possible, avoid operating the tractor near ditches, embankments, and holes.

(3) Reduce speed when turning, crossing slopes and on rough, slick or muddy surfaces.

(4) Stay off slopes too steep for safe operation.

(5) Watch where you are going, especially at row ends, on roads, and around trees.

(6) Do not permit others to ride unless there is a safe seat.

(7) Operate the tractor smoothly — no jerky turns, starts, or stops.

(8) Hitch only to the drawbar and hitch points recommended by the tractor manufacturer.

(9) When the tractor is stopped, set brakes securely and use park lock if available.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-3460
Industrial Vehicles

(1) Modifications. The manufacturer or a professional engineer must direct modifications and additions that affect capacity and safe operation of industrial vehicles. Change the capacity, operations, and maintenance instruction plates, tags, or decals to reflect the changes.

(2) Nameplates and markings. All nameplates and markings must be in place and legible.

(3) Capacity markings. The rated capacity of each power industrial truck must be legible and in plain view of the operator.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-3480
Bridges, Roads and Ramps

(1) Application. This applies to bridges, roads and ramps on agricultural places of employment.

(2) Roads.

(a) Roads must be wide enough to allow safe operation of equipment.

(b) Low clearance areas that could present a hazard must have warning signs.

(c) Do not drive vehicles on or over broken planking, deep holes, large rocks, logs or other dangerous surface defects.

(d) Remove obstructions to clear view at intersections or sharp curves or take precautions to relieve the hazards.

(3) Bridges, runways and ramps.

(a) Bridges, runways or ramps and loading docks must be built to safely support any anticipated load. Ramp surfaces must have a material that minimizes the danger of skidding. Structural members must be sound and free of decay or deterioration that could reduce safety.

(b) Bridges and culverts must be wide enough to allow safe operation of equipment.

(c) The road surface of bridges and culverts must be safe, free of holes, broken planking, and sloughing, caving, or slipping fill materials or approaches.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-3550
Servicing Multi Piece and Single Piece Rim Wheels

(1) Workers must use a safety tire rack, cage, or equivalent protection over tires mounted on split rims with locking rings or similar devices, when:

(a) Inflating tires; or

(b) Adding air to tires on or off the vehicle if the tire was run while flat or if the rim or locking device was disturbed in any way.

NOTE: A tire is flat if it has lost more than 50% of its normal pressure.

(2) Airlines used to inflate tires must have clip-on chucks.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-3600
Roll-Over Protective Structures (ROPS) for Tractors in Agriculture

(1) Definitions.

(a) Agricultural tractor — A two- or four-wheel drive type vehicle, or track vehicle, of more than 20 engine horsepower, designed to furnish the power to pull, carry, propel, or drive implements designed for agriculture. Self-propelled implements are excluded.

(b) Low profile tractor — A wheeled tractor with these characteristics:

(A) The front wheel spacing equals the rear wheel spacing, measured from the centerline of each right wheel to the centerline of the opposite left wheel;

(B) The clearance from the bottom of the chassis to the ground is less than 18 inches;

(C) The highest point of the hood is 60 inches or less; and

(D) The tractor is designed so that a seated operator straddles the transmission.

(c) Tractor weight — Includes the protective frame or enclosure, all fuels, and other components required for normal use of the tractor. Add ballast as necessary to get a minimum total weight of 110 pounds (50.0 kilograms) per maximum power takeoff horsepower at the rated engine speed or the maximum gross vehicle weight specified by the manufacturer, whichever is the greatest. Front end weight must be at least 25 percent of the tractor test weight. If power takeoff horsepower is not available, use 95 percent of net engine flywheel horsepower.

(2) General requirements. Agricultural tractors manufactured after October 25, 1976 and before January 1, 2007, must meet these requirements:

(a) Roll-over protective structures (ROPS) for tractors used in agriculture. A roll-over protective structure must be on each tractor operated by an employee. Except as in OAR 437-004-3600(5), ROPS on wheel-type tractors must meet the test and performance requirements of one of these: The American Society of Agricultural Engineers Standard (ASAE) S306.3-1974, "Protective Frame for Agricultural Tractors — Test Procedures and Performance Requirements" and Society of Automotive Engineers (SAE) Standard J334-1970, "Protective Frame Test Procedures and Performance Requirements." ASAE Standard S336.1-1974, "Protective Enclosures for Agricultural

Tractors — Test Procedures and Performance Requirements" and SAE J1194-1994.

These ASAE and SAE standards are incorporated by reference. Get copies from:

American Society of Agricultural Engineers
2950 Niles Road, PO Box 229
St Joseph MI 49085

Society of Automotive Engineers
485 Lexington Avenue
New York NY 10017

Copies are available for review at the Oregon OSHA Resource Center, 350 Winter Street NE, Salem, Oregon 97301-3882.

(b) Agricultural tractors manufactured on or after January 1, 2007, must meet these requirements:

(A) Roll-over protective structures (ROPS) for tractors used in agriculture. A roll-over protective structure must be on each tractor operated by an employee. Except as in OAR 437-004-3600(5), ROPS on wheel-type tractors must meet the test and performance requirements of:

(i) 29 CFR 1928.52 Protective frames for wheel-type agricultural tractors — test procedures and performance requirements. Link: http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=13076; and

(ii) 29 CFR 1928.53 Protective enclosures for wheel-type agricultural tractors — test procedures and performance requirements. Link: http://www.osha.gov/pls/oshaweb/owadisp.show_ document?p_table=STANDARDS&p_id=13077 Copies of Federal OSHA rules are available at the Oregon OSHA Resource Center, 350 Winter Street NE, Salem, Oregon 97301-3882.

(3) Seat belts.

(a) When these rules require ROPS, the employer must:

(A) Have a seat belt that meets the requirement of this rule on each tractor;

(B) Ensure that workers use a seat belt while the tractor is moving; and

(C) Ensure that the worker tightens the seat belt enough to hold them in the protective area of the ROPS.

(b) Each seat belt must meet the requirements in Society of Automotive Engineers Standard J114-1994, J140-1995, J141-1995, J339-1994, and J800-1994, except;

(c) On suspended seats, fasten the seat belt to the movable part of the seat to accommodate the ride motion of the operator.

(d) The seat belt anchorage must be able to withstand a static tensile load of 1,000 pounds (453.6 kilograms) at 45 degrees to the horizontal equally divided between the anchorages. The seat mounting must be able to withstand this load plus a load equal to four times the weight of all applicable seat components applied at 45 degrees to the horizontal in a forward and upward direction. In addition, the seat mounting must be able to withstand a 500-pound (226.8 kilograms) belt load plus twice the weight of all applicable seat components both applied at 45 degrees to the horizontal in an upward and rearward direction. Floor and seat deformation is acceptable if there is no structure failure or release of the seat adjusted mechanism or other locking device.

(e) The seat belt webbing material must be resistant to acids, alkalis, mildew, aging, moisture, and sunlight.

(4) Protection from sharp surfaces. Sharp edges and corners at the operator's station must not contribute to operator injury in case of a tip over or roll-over.

(5) Exempted uses. OAR 437-004-3600(2) and (3) do not apply to the following uses:

(a) "Low profile" tractors used in orchards, vineyards or hop yards where the vertical clearance would interfere with normal use, and while their use is incidental to the work done in that location.

(b) "Low profile" tractors used inside a farm building or greenhouse where the vertical clearance does not allow a tractor with ROPS to operate, and while their use is incidental to the work done in that location.

(c) Tractors with mounted equipment that is incompatible with ROPS (e.g., corn pickers, cotton strippers, vegetable pickers and fruit harvesters);

(d) Track-type agricultural tractors whose overall width (as measured between the outside edges of the tracks) is at least three times the height of their rated center of gravity, and whose rated maximum speed in either forward or reverse is not greater than 7 mph, when used only for tillage or harvesting operations and while their use is incidental thereto, and that:

(A) Does not involve operating on slopes more than 40 percent from the horizontal; and

(B) Does not involve operating on piled crop products or residue, such as, silage in stacks or pits; and

(C) Does not involve operating near irrigation ditches, or other excavations more than 2 feet deep which contain slopes more than 40 percent from the horizontal; and

(D) Does not involve construction type work, such as bulldozing, grading or land clearing.

(6) Remounting. When ROPS is removed for any reason, remount it to meet the requirements of these rules.

(7) Labeling. Each ROPS must have a permanent label that gives the:

(a) Manufacturer's or fabricator's name and address;

(b) ROPS model number, if any;

(c) Tractor makes, models, or series numbers that it is designed to fit; and

(d) That the ROPS model was tested according to the requirements of these rules.

[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98; OSHA 9-2006, f. & cert. ef. 9-22-06

437-004-3650
Roll-Over Protective Structures — Industrial Vehicles

(1) Application. There must be roll-over protective structures (ROPS) on certain industrial vehicles manufactured after July 1, 1969. ROPS requirements apply to the following types of industrial vehicles and equipment: Rubber-tired self-propelled scrapers; front-end loaders and dozers; wheel-type industrial tractors; crawler tractors; crawler-type loaders; and motor graders, with or without attachments. This requirement does not apply to sideboom pipe laying tractors, or other vehicles whose structure prevents overturn. 4/U, OAR 437-004-3600 covers ROPS for tractors used only in farming.

(2) ROPS — general requirements.

(a) Roll-over protective structures and their supporting attachments to industrial vehicles must be capable of supporting twice the weight of the vehicle, applied at the point of impact.

(b) The design objective for roll-over protective structures on industrial vehicles is to minimize the likelihood of a complete vehicle overturn, and to minimize the possibility of the operator being crushed.

(c) There must be a vertical clearance of at least 52 inches between the work deck and the ROPS canopy.

(d) Once removed, remount ROPS with bolts or welding or equal or better quality as required for the original mounting.

(3) Defects.

(a) Repairs to defective ROPS must be of equal quality or better materials and welding as on the original structure.

(b) Minimum performance criteria for roll-over protective structures for designated vehicles are in the following Society of Automotive Engineers (SAE) standards:

(A) Prime movers, for scrapers, water wagons, bottom dump wagons, side dump wagons, rear dump wagons, towed fifth wheel attachments. (SAE J1040, 1994)

(B) Wheeled front-end loaders and wheeled dozers. (SAE J1040, 1994)

(C) Track-type tractors and front-end loaders. (SAE J1040, 1994)

(D) Motor graders. (SAE J1040, 1994)

(E) Wheel-type agricultural and industrial tractors. (SAE J167, 1992)

(F) Falling object protective structures (FOPS). (SAE J231, May 1981)

(4) Identification of ROPS. Each ROPS must have the following information permanently affixed to the structure:

(a) Manufacturer or fabricator's name and address;

(b) ROPS model number, if any; and

(c) Machine make, model, or series number that the structure fits.

(5) Approved structures. Any machine in use, with roll-over protective structures, complies with these rules if it meets the roll-over protective structure requirements of the U. S. Army Corps of

Engineers, or the Bureau of Reclamation of the U. S. Department of the Interior, in effect on April 5, 1972. The requirements in effect are:

(a) U. S. Army Corps of Engineers: General Safety Requirements, EM-385-1-1 (September 1996).

(b) Bureau of Reclamation, U. S. Department of the Interior: Safety and Health Regulations for Construction, Part II (September 1971).

[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-3660
Vehicle-Mounted Elevating and Rotating Work Platforms

NOTE: This section does not apply to aerial devices made and used in orchards or tree operations, such as pruning.

(1) Definitions.

(a) Aerial device. Any vehicle-mounted device, telescoping or articulating, or both, for positioning personnel.

(b) Platform. Any personnel-carrying device (basket or bucket) which is part of an aerial device.

(2) Design requirements.

(a) The equipment operation manual must be with the equipment or the workers using it. Workers must follow the manufacturer's instructions and procedures. Work must not exceed equipment limitations and restrictions.

(b) "Field modification" of aerial lifts for uses other than those intended by the manufacturer are acceptable, if the manufacturer certifies in writing that the modification conforms with ANSI A92.2-1990 and this section and is at least as safe as the equipment was before modification. This certification may also be by any other equivalent entity, such as a nationally recognized testing laboratory.

(c) Platforms must have standard guardrails that conform with 4/D, OAR 437-004-0320(6).

(d) Gates in platform enclosures must have safety latches that prevent unintended opening.

(e) Articulating boom and extensible boom platforms, primarily designed to carry personnel, must have both platform (upper) and lower controls. Upper controls must be in or beside the platform within easy reach of the operator. Lower controls must allow overriding of the upper controls. Markings must clearly show each control's function.

(3) Specific requirements. Extensible and articulating boom platforms.

(a) Test lift controls before use to determine that they are in safe working condition.

(b) Allow only trained persons to operate an aerial lift.

(c) Do not belt off to an adjacent pole, structure or equipment while working from an aerial lift.

(d) Stand firmly on the floor of the basket, do not sit or climb on the edge of the basket or use planks, ladders or other devices for a work position.

(e) Wear a body belt and a lanyard attached to the boom or basket when in an aerial lift. The lanyard must be as short as possible for the work but in no case longer than 6 feet.

(f) Do not exceed the manufacturer's boom and basket load limits. Keep those limits legibly posted on the boom.

(g) Set the brakes and position the outriggers on pads or a solid surface. Chock the wheels before using an aerial lift on an incline.

(h) Do not move an aerial lift truck when the boom is elevated with people in the basket, except for equipment specially designed for such movement.

(i) Do not alter the insulated portion of an aerial lift in a way that might reduce its insulating value.

(j) Except as in (3)(h) above, before moving an aerial lift for travel, inspect the boom(s) to see that it is properly cradled and outriggers are stowed.

(4) Working near overhead high voltage lines.

(a) Required clearances for stationary work. Do not require or permit anybody to enter or work near high-voltage lines unless danger from accidental contact with the lines is guarded against or eliminated. Clearances and distances in 4/S, OAR 437-004-3050 apply.

(b) Clearance or safeguards for moving equipment. Do not move equipment in a way that might allow the people or objects to come within 10 feet of high-voltage lines.

(A) For equipment in transit, on smooth surfaces, the clearance must be at least 4 feet for voltages less than 50 kV., 10 feet for voltages more than 50 kV., up to and including 345 kV., and 16 feet for voltages up to and including 750 kV.

(B) When it is hard for the operator to see well enough to keep the desired clearance, somebody must watch the work and warn the operator.

(C) Movement of the structures supporting the high-voltage lines or any of their equipment, fixtures or attachments must not reduce the 10-foot clearance requirement.

(c) Warning signs required. Post a warning sign, readable from 12 feet, that says, "Unlawful to operate this equipment within 10 feet of high-voltage lines."

(d) Notification to power company and responsibility for safeguards. When working or placing material or equipment within 10 feet of any high-voltage line, the employer must promptly notify the operator of the high-voltage line. Employers are responsible for completing the safety measures required before allowing any work that could impair the clearance.

[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

Worker Protection Standard

437-004-6000
Adoption by Reference of Federal Standard

In addition to, and not in lieu of, any other safety and health codes contained in OAR chapter 437, the Department adopts by reference the following federal regulations printed as part of the **Code of Federal Regulations**, **40 CFR 170**, in the Federal Register on 8/21/92, vol. 57, no. 163. **Subpart A — GENERAL PROVISIONS**:

(1) **40 CFR 170.1** Scope and purpose, published 8/21/92, Federal Register, vol. 57, no. 163, pp. 38102-38176.

(2) **40 CFR 170.3** Definitions, published 8/21/92, Federal Register, vol. 57, no. 163, pp. 38102-38176.

(3) **40 CFR 170.5** Effective date and compliance dates, published 8/21/92, Federal Register, vol. 57, no. 163, pp. 38102-38176.

(4) **40 CFR 170.7** General duties and prohibited actions, published 8/21/92, Federal Register, vol. 57, no. 163, pp. 38102-38176.

(5) **40 CFR 170.9** Violations of this part, published 8/21/92, Federal Register, vol. 57, no. 163, pp. 38102-38176.

(6) **Subpart B — STANDARD FOR WORKERS**.

(7) **40 CFR 170.102** Applicability of this subpart, published 8/21/92, Federal Register, vol. 57, no. 163, pp. 38102-38176; 5/3/95, FR vol. 60, no. 85, p. 21952.

(8) **40 CFR 170.103** Exceptions, published 8/21/92, Federal Register, vol. 57, p. 38151; 5/3/95, FR vol. 60, no. 85, p. 21952.

(9) **40 CFR 170.104** Exemptions, published 8/21/92, Federal Register, vol. 57, p. 38151; 5/3/95, FR vol. 60, no. 85, p. 21952.

(10) **40 CFR 170.110** Restrictions associated with pesticide applications, published 8/21/92, Federal Register, vol. 57, no. 163, pp. 38102-38176.

(11) **40 CFR 170.112** Entry restrictions, published 8/21/92, Federal Register, vol. 57, no. 163, pp. 38102-38176; 6/10/94, FR vol. 59, p. 30264; 5/3/95, FR vol. 60, no. 85, p.21952; 9/1/04, FR vol. 69, no. 169, p.53341.

(12) **40 CFR 170.120** Notice of applications, published 8/21/92, Federal Register, vol. 57, no. 163, pp. 38102-38176; 6/26/96, FR vol. 61, no. 124, p. 33207.

(13) **40 CFR 170.122** Providing specific information about applications, published 8/21/92, Federal Register, vol. 57, no. 163, pp. 38102-38176.

(14) **40 CFR 170.124** Notice of applications to handler employers, published 8/21/92, Federal Register, vol. 57, no. 163, pp. 38102-38176.

(15) **40 CFR 170.130** Pesticide safety training, published 8/21/92, Federal Register, vol. 57, no. 163, pp. 38102-38176; 5/3/95, FR vol. 60, no. 85, p. 21947 and 21952.

(16) **40 CFR 170.135** Posted pesticide safety information, published 8/21/92, Federal Register, vol. 57, no. 163, pp. 38102-38176.

(17) **40 CFR 170.150** Decontamination, published 8/21/92, Federal Register, vol. 57, no. 163, pp. 38102-38176; 6/26/96, FR vol. 61, no. 124, p. 33212.

(18) **40 CFR 170.160** Emergency assistance, published 8/21/92, Federal Register, vol. 57, no. 163, pp. 38102-38176.

(19) **Subpart C — STANDARD FOR PESTICIDE HANDLERS**.

(20) **40 CFR 170.202** Applicability of this subpart, published 8/21/92, Federal Register, vol. 57, no. 163, pp. 38102-38176.

(21) **40 CFR 170.203** Exceptions, published 8/21/92, Federal Register, vol. 57, p. 38151; 5/3/95, FR vol. 60, no. 85, p. 21952.

(22) **40 CFR 170.204** Exemptions, published 8/21/92, Federal Register, vol. 57, p. 38151; 5/3/95, FR vol. 60, no. 85, p. 21953.

(23) **40 CFR 170.210** Restrictions during applications, published 8/21/92, Federal Register, vol. 57, no. 163, pp. 38102-38176.

(24) **40 CFR 170.222** Providing specific information about applications, published 8/21/92, Federal Register, vol. 57, no. 163, pp. 38102-38176.

(25) **40 CFR 170.224** Notice of applications to agricultural employers, published 8/21/92, Federal Register, vol. 57, no. 163, pp. 38102-38176.

(26) **40 CFR 170.230** Pesticide safety training, published 8/21/92, Federal Register, vol. 57, no. 163, pp. 38102-38176; 5/3/95, FR vol. 60, no. 85, p. 21953

(27) **40 CFR 170.232** Knowledge of labeling and site-specific information, published 8/21/92, Federal Register, vol. 57, no. 163, pp. 38102-38176.

(28) **40 CFR 170.234** Safe operation of equipment, published 8/21/92, Federal Register, vol. 57, no. 163, pp. 38102-38176.

(29) **40 CFR 170.235** Posted pesticide safety information, published 8/21/92, Federal Register, vol. 57, no. 163, pp. 38102-38176.

(30) **40 CFR 170.240** Personal protective equipment, published 8/21/92, Federal Register, vol. 57, no. 163, pp. 38102-38176; 6/26/96, FR vol. 61, no. 124, p. 33213; 9/1/04, FR vol. 69, no. 169, p. 53341; OR-OSHA note added with AO 9-2006, filed and effective 9/22/06.

(31) **40 CFR 170.250** Decontamination, published 8/21/92, Federal Register, vol. 57, no. 163, pp. 38102-38176; 6/26/96, FR vol. 61, no. 124, p. 33213; OR-OSHA note added with AO 9-2006, filed and effective 9/22/06.

(32) **40 CFR 170.260** Emergency assistance, published 8/21/92, Federal Register, vol. 57, no. 163, pp. 38102-38176.

These standards are available at the Oregon Occupational Safety and Health Division, Oregon Department of Consumer and Business Services, and the United States Government Printing Office.

Stat. Auth.: ORS 654.025(2) & 656.726(4)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98; OSHA 7-2004, f. & cert. ef. 12-30-04; OSHA 9-2006, f. & cert. ef. 9-22-06

Chemicals/Toxins

437-004-9000
Air Contaminants

Exposure to any substance in Tables Z-1, Z-2, or Z-3 must comply with the following:

(1) Table Z-1.

(a) Substances with limits preceded by "C" — ceiling values. Exposure to any substance in Table Z-1, must never be more than the exposure limit for that substance. If instantaneous monitoring is not feasible, then assess the ceiling as a 15-minute time- weighted average. Exposure must not exceed that level any time during the workday.

(b) Other substances — 8-hour time-weighted averages. Exposure to any substance in Table Z-1, must never be more than the 8-hour Time-Weighted Average for that substance in any 8-hour shift of a 40-hour work week.

(C) Other substances — excursion limits. Excursions in exposure levels may be more than three times the PEL-TWA for no more than a total of 30 minutes during a workday, and must never be more than five times the PEL-TWA, if the PEL-TWA is not exceeded.

(d) Skin designation. Use gloves, coveralls, goggles, or other appropriate personal protective equipment, engineering controls or work practices to prevent or reduce skin absorption of substances in Table Z-1 with an "X" in the Skin Designation column follow- ing the substance name.

(e) Table Z-1 has hazardous substances commonly found in agriculture. Division 2/Z, OAR 437-002-1000, Table Z-1 has a complete list of regulated substances. If your operation uses substances not common to agriculture, you must check Table Z-1 in 437-002-1000. That table is adopted here and applies equally to agriculture.

(2) Table Z-2. Exposure to any substance in Table Z-2 must never be more than the follow- ing limits:

(a) 8-hour time-weighted averages. Exposure to any substance in Table Z-2, in any 8-hour work shift of a 40-hour work week, must never be more than the 8-hour time-weighted average limit for that substance in Table Z-2.

(b) Acceptable ceiling concentrations. Exposure to a substance in Table Z-2 must never be more than the acceptable ceiling concentration during an 8-hour shift except:

(A) Acceptable maximum peak above the acceptable ceiling concentration for an 8-hour shift. Exposure to a substance in Table Z-2 must never be more than the acceptable maximum peak above the acceptable ceiling concentration and must not exceed the maximum duration for the substance during an 8-hour shift.

(B) Example. During an 8-hour work shift, an employee's exposure to benzene may be an 8-hour time-weighted average (TWA) of 10 ppm. Concentrations of benzene during the 8-hour work shift may not be more than 25 ppm, unless that exposure is no more than 50 ppm and for not longer than 10 minutes during an 8-hour work shift. Such exposures must be compensated by exposures to concentrations below 10 ppm so that the 8-hour time-weighted average is less than 10 ppm.

(C) Skin designation. Use gloves, coveralls, goggles, or other appropriate personal protective equipment, engineering controls or work practices to prevent or reduce skin absorption of substances in Table Z-2 with an "X" in the Skin Designation column following the substance name.

(3) Table Z-3. An employee's exposure to any substance in Table Z-3, in any 8-hour work shift of a 40-hour work week, must never be more than the 8-hour time-weighted average limit given for that substance.

(4) Computation formulae. The computation formula that applies to exposure to more than one substance, for which 8-hour time-weighted averages are in OAR 437, Division 4/Z, Chemicals/Toxins, to determine if an exposure is over the regulatory limit is:

(a)(A) Compute the cumulative exposure for an 8-hour work shift as follows:

E = (CaTa + CbTb + ...CnTn) ÷ 8
Where:
E is the equivalent exposure for the shift.
C is the concentration during any period T where the concentration remains constant.
T is the duration in hours of the exposure at the concentration C.
The value of E must not exceed the 8-hour time-weighted average in Subdivision 4/Z.

(B) To illustrate the formula in (4)(a)(i) above, assume that Substance A has an 8-hour time-weighted average limit of 100 ppm (Table Z-1). Assume that an employee is subject to the following exposure:

Two hours exposure at 150 ppm
Two hours exposure at 75 ppm
Four hours exposure at 50 ppm
Substituting this information in the formula, we have
[(2 x 150) + (2 x 75) + (4 x 50)] ÷ 8 = 81.25 ppm
Since 81.25 ppm is less than 100 ppm, the 8-hour time-weighted average limit, the exposure is acceptable.

(C) In case of a mixture of air contaminants, compute the equivalent exposure as follows:

Em = (C1 ÷ L1) + (C2 ÷ L2) + . . .(Cn ÷ Ln)
Where:
Em is the equivalent exposure for the mixture.
C is the concentration of a particular contaminant.
L is the exposure limit for that substance in Subdivision 4/Z.
The value of Em must not exceed unity (1).

(b)(A) To illustrate the formula in (4)(b)(i) above, consider the following exposures: [Tables not included. See ED. NOTE.]

Substituting in the formula, we have:
Em = (500 ÷ 1000) + (45 ÷ 200) + (40 ÷ 200)
Em = 0.500 + 0.225 + 0.200
Em = 0.925
Since Em is less than unity (1), the exposure combination is within acceptable limits.

(5) Engineering or administrative controls. Use engineering or administrative controls first to comply with (1) through (4) above, when feasible. When such controls are not feasible, mandate the use of protective equipment or any other protective measures to keep exposure within the limits in this section. Any equipment and/or technical measures used for this purpose must be approved for each particular use by a competent industrial hygienist or other technically qualified person. When using respirators, comply with 4/I, OAR 437-004-1040. [Tables and Notes not included. See ED. NOTE.] The measurements under this note refer to the use of an AEC (now NRC) instrument. If

the respirable fraction of coal dust is determined with a MRE the figure corresponding to that of 2.4 mg/m3 in the table for coal dust is 4.5 mg/m3.

[ED. NOTE: Tables and Notes referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98; OSHA 4-2001, f. & cert. ef. 2-5-01; OSHA 9-2001, f. & cert. ef. 9-14-01; OSHA 6-2006, f. & cert. ef. 8-30-06

437-004-9010
Fumigated Areas.

(1) Scope: Covers pesticides which when applied, forms a gas to control pests.

(2) Definitions:

(a) Types of fumigants include aluminum phosphide, methyl bromide, chloropicrin, 1,3-D (Telone), dazomet, metam sodium and iodomethane.

(b) Types of fumigations include soil, space (warehouse), vertical storage, flat storage, tarpaulin, spot (includes grain handling equipment, empty tanks and empty silos), chamber, vehicle and rodent burrows.

(3) All work with fumigants must follow the instructions and precautions in the manufacturer's application manual and on the product label and MSDS.

(4) All entry points into fumigated interior areas must have signs that identify the area as fumigated and prohibit entry.

(5) Leave the signs posted according to the instructions of the manufacturer of the fumigating chemical or until the hazard resulting from the fumigation is gone, whichever is the longer time.

(6) After fumigation, there must be a way to aerate the fumigated area without contaminating other areas where there are employees.

(7) If the fumigation process requires the worker to be in the fumigated area, there must be at least one other person present to assist during an emergency. That person must have the same training and access to the same personal protective equipment as the first worker.

(8) Fumigation chambers or areas must not allow the toxic fumigants to escape or otherwise enter other areas where they can be hazardous to other workers.

(9) If the fumigant concentration can exceed 10 percent of the lower explosive limit (LEL), all electrical equipment, fittings, and connections must be vapor proof.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 9-2006, f. & cert. ef. 9-22-06

437-004-9050
Asbestos

NOTE: Agricultural employers normally will not encounter asbestos during everyday operations. However, when working with old structures, pipe systems, boilers and other equipment, frequently asbestos is found in the insulation, flooring and other places.

Definition. Asbestos includes chrysotile, amosite, crocidolite, tremolite asbestos, anthopyllite asbestos, actinolite asbestos and any of these minerals that have been chemically treated or altered.

(1) The employer is responsible to determine, before work begins, if any task or work assigned to workers will expose them to asbestos.

(2) Work that exposes employees to asbestos must comply with OAR 437-002-1001, Asbestos, except as in (4) below.

(3) You must do periodic examinations of material known to contain asbestos to assure that there is no deterioration or damage causing exposure or possible exposure. If you find damage or deterioration, the material must be repaired, enclosed or removed according to OAR 437-002-1910.1001.

(4) OAR 437-003-1926.1101 regulates worker exposure to asbestos during construction work defined in OAR 437-002-1910.12(b).

NOTE: For your convenience, here is the definition mentioned above from 1910.12(b).
Construction work means work for construction, alteration and/or repair, including painting and decorating.
EXAMPLES: [Examples not included. See ED. NOTE.]
[ED. NOTE: Examples referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-9090
Carcinogens

(1) The employer is responsible to determine, before work begins, if any task or work will expose employees to any of the carcinogens below.

(2) Work that exposes employees to the carcinogens below must comply with OAR 437-002-1003, Carcinogens.

(a) 4-Nitrobiphenyl;
(b) alpha-Naphthylamine;
(c) Methyl chloromethyl ether;
(d) 3,3-Dichlorobenzidine;
(e) bis-Chloromethyl ether;
(f) beta-Naphthylamine;
(g) Benzidine;
(h) 4-Aminodiphenyl;
(i) Ethyleneimine;
(j) beta-Propiolactone;
(k) 2-Acetylaminoflourene;
(l) 4-Dimethylaminoazobenzene;
(m) N-Nitrosodimethylamine.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-9600
Lead

(1) Definition. Lead means any metallic lead, all inorganic lead compounds and organic lead soaps. All other organic lead compounds are not included.

(2) The employer is responsible to determine, before work begins, if any task or work assigned will expose employees to lead.

(3) Work that exposes employees to lead must comply with OAR 437-002-1910.1025.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98; OSHA 9-2006, f. & cert. ef. 9-22-06

437-004-9620
Cadmium

Definition. Cadmium means cadmium and cadmium compounds.

(1) The employer is responsible to determine, before work begins, if any task or work assigned will expose employees to cadmium.

(2) Work that exposes employees to cadmium must comply with OAR 437-002-1027, Cadmium, except as in (3) below.

(3) OAR 437-003-1926.1127 regulates worker exposure to cadmium during construction work defined in OAR 437-002-1910.12(b).

NOTE: For your convenience, here is the definition mentioned above from 1910.12(b):
Construction work means work for construction, alteration and/or repair, including painting and decorating.
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-9640
Benzene

Definition. Benzene (C(6)H(6)) (CAS Registry No. 71-43-2) means liquefied or gaseous benzene. It includes benzene in liquid mixtures and benzene vapors released by these liquids. It does not include trace amounts of unreacted benzene in solid materials.

(1) The employer is responsible to determine, before work begins, if any task or work assigned will expose employees to benzene.

(2) Work that exposes employees to benzene must comply with OAR 437-002-1910.1028, Benzene.

NOTE: This does not cover the following work situations:
(i) The storage, transportation, distribution, dispensing, sale or use of gasoline, motor fuels, or other fuels containing benzene after final discharge from bulk wholesale storage facilities. It does cover operations where workers dispense gasoline or motor fuels more than 4 hours per day in an indoor location.
(ii) The storage, transportation, distribution or sale of benzene or liquid mixtures containing more than 0.1 percent benzene in intact containers while sealed in a way to contain benzene vapors or liquid, except for 4/Z, OAR 437-004-9800 as incorporated into this section.
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-9650
Bloodborne Pathogens

Application. This applies to all occupational exposure to blood or other potentially infectious materials defined below.

(1) Definitions.

(a) Blood means human blood, human blood components and products made from human blood.

(b) Other Potentially Infectious Materials means:

(A) The following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid with visible contamination of blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids;

(B) Any unfixed tissue or organ (other than intact skin) from a human (living or dead); and

(C) HIV-containing cell or tissue cultures, organ cultures, and HIV- or HBV-containing culture medium or other solutions; and blood, organs, or other tissues from experimental animals infected with HIV or HBV.

(2) The employer is responsible to determine, before work begins, if any task or work assigned will expose employees to bloodborne pathogens.

(3) Work that exposes employees to bloodborne pathogens must comply with OAR 437-002-1910.1030, Bloodborne Pathogens.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-9710
Acrylonitrile

Definition. Acrylonitrile or "AN" means acrylonitrile monomer, chemical formula CH2 = CHCN. Liquid AN means AN monomer in liquid form, and liquid or semi-liquid polymer intermediates, including slurries, suspensions, emulsions, and solutions, made during the polymerization of AN.

(1) The employer is responsible to determine, before work begins, if any task or work assigned will expose employees to acrylonitrile.

(2) Work that exposes employees to acrylonitrile must comply with OAR 437-002-1910.1045, Acrylonitrile. The scope and application of that standard is below for your convenience.

(a) Scope and application.
(1) This section applies to all occupational exposures to acrylonitrile (AN), Chemical Abstracts Service Registry No. 000107131, except as provided in paragraphs (a)(2) and (a)(3) of this section.
(2) This section does not apply to exposures which result solely from the processing, use, and handling of the following materials:
(i) ABS resins, SAN resins, nitrile barrier resins, solid nitrile elastomers, and acrylic and modacrylic fibers, when these listed materials are in the form of finished polymers, and products fabricated from such finished polymers;
(ii) Materials made from and/or containing AN for which objective data is reasonably relied upon to demonstrate that the material is not capable of releasing AN in airborne concentrations in excess of 1 ppm as an eight (8)-hour time-weighted average, under the expected conditions of processing, use, and handling which will cause the greatest possible release; and
(iii) Solid materials made from and/or containing AN which will not be heated above 170° F during handling, use, or processing.

(3) An employer relying upon exemption under paragraph (a)(2)(ii) shall maintain records of the objective data supporting that exemption, and of the basis of the employer's reliance on the data, as provided in paragraph (q) of this section.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-9720
Thiram

(1) Scope and application.

(a) These rules apply where worker exposure to thiram may occur during manufacture, storage, packaging, tree application, treated seedling handling, or use of thiram or thiram treated seedlings.

(b) These rules apply to the transportation of thiram or thiram treated trees except to the extent that the U. S. Department of Transportation may regulate the hazards covered by these rules.

(2) Definitions.

(a) Clean — The absence of dirt or materials that may be harmful to a worker's health.

(b) Large seedlings — Seedlings long enough or wide enough that during normal planting avoiding mouth of face contact with the thiram treated plant is difficult.

(3) General requirements.

(a) Permissible exposure limits.

(A) Do not expose workers to thiram at atmospheric concentrations more than 0.15 mg/m3 over any 8-hour period; and

(B) Do not expose workers to thiram at atmospheric concentrations more than 0.30 mg/m3 averaged over any period not longer than 15 minutes.

(C) Workers must not work more than 5 days in any 7-day period with or around thiram or thiram treated seedlings.

(D) Paragraph (3)(a)(C) above is not applicable if there is a specific thiram control program, beyond these rules and approved by the Administrator.

(b) Washing and worker hygiene.

(A) Workers must wash their hands before eating or smoking and when done working.

(B) At fixed work sites or planting units, provide warm (at least 85 degrees F, 29.4 degrees C) wash water and single use hand wiping materials for washing.

(C) Where warm water is not available within, or the means to access within, a 15 minutes travel time, provide clean water, soap and single-use towels.

(D) Advise every planter or nursery worker to bathe or shower daily.

(E) Wash or vacuum and wipe down the inside of crummies or other worker carrying vehicles at least weekly during thiram use.

(c) Personal protective measures.

(A) Workers must wear clothing that reduces skin contact with thiram on the legs, arms and torso.

(B) For those workers with thiram skin irritations, protect exposed areas with a suitable barrier cream.

(C) Workers may wear only impervious gloves.

(D) Workers' hands must be clean of thiram before placing them into gloves.

(E) Provide nursery applicators with approved respirators, disposable coveralls or rubber slickers or other impervious clothing, rubberized boots, head covers and rubberized gloves. They must use the respirators according to 4/I, OAR 437-004-1041, Respiratory Protection.

(F) Other than applicators, nursery workers who may suffer thiram exposure must have and use disposable coveralls or rubber slickers or other impervious clothing, impervious footwear and gloves, and head covers unless they use showers that comply with 4/J, OAR 437-004-1105, Sanitation.

(G) Provide eye protection that complies with 4/I, OAR 437-004-1035. Workers exposed to thiram such as during spraying, plug bundling, belt line grading and plugging or other operations must wear this eye protection.

(d) Respiratory protection.

(A) When worker exposure is more than the Permissible Exposure Limit (PEL), provide them with applicable, certified respiratory protection approved by NIOSH.

(B) Use and maintain respirators according to 4/I, OAR 437-004-1041, Respiratory Protection.

(C) Workers must wear respirators when planting large seedlings to avoid mouth and face contact with the thiram treated plant unless they use equally effective measures or planting practices.

(e) Food handling.

(A) Do not store or consume food, snacks, beverages, smoking materials, or any similar items in the packing area of the nursery.

(B) Crummies or other worker carrying vehicles must have a clean area for carrying lunches.

(C) The clean area of the vehicle must be above from the floor and not used to carry other than food or other consumable items.

(D) Do not carry lunches, food or other consumable items in tree planting bags.

(E) Minimize or eliminate worker exposure to thiram spray, including downwind driftings.

(F) Workers must stand upwind when burning bags that contained thiram or thiram treated seedlings.

(f) Thiram use and handling.

(A) Nurseries must develop a quality control program approved by the Administrator to ensure that they apply only the minimum amount of thiram necessary to achieve the desired anti-browsing results to the tree seedlings.

(B) Thiram treated seedlings must set between the time of spraying and packing.

(C) Keep seedlings moist during packing and when possible during planting.

(D) Vacuum or wash floors daily where thiram is used, do not sweep them.

(E) Remove silica chips covering seedling plugs at the nursery.

(g) Labeling.

(A) Rules enforced by the Oregon Department of Agriculture, or the U.S. Environ- mental Protection Agency (EPA), about the labeling of thiram treated seedlings, apply.

(B) If the Oregon Department of Agriculture, or EPA, has no thiram labeling rules, each container, bundle or wrapping of thiram treated seedlings must have a clearly legible and visible tag or label, of waterproof material and printing, on which is the following in English and Spanish:

CAUTION

These seedlings are treated with an animal repellent containing Thiram (tetramethyl thiuram disulfide) that may flake off during handling. Consumption of alcoholic beverages or use of alcohol-base creams or lotions during a time span from 12 hours before to 7 days after exposure to Thiram may result in nausea, headache, vomiting, fatigue, or flushness. Exposure to Thiram may also cause irritation of the eyes, nose, throat, or skin.

Thiram may interfere with or render ineffective medications taken by epileptics or heart patients with blood-clotting difficulties. Animal studies at very high concentrations (more than 250 mg/kg) suggest that Thiram may cause birth defects.

SAFETY PRECAUTIONS

1. Keep treated seedlings moist.
2. Wear clothing to reduce skin contact with Thiram to the legs, arms and torso.
3. A fiber or cloth face mask (respirator) may be worn at the planter's discretion, except that when planting large seedlings, you must wear a respirator to avoid mouth and face contact with thiram treated plants, unless you use equally effective measures
4. Wash exposed skin areas thoroughly after handling treated seedlings and before smoking, drinking, eating or going to the bathroom.
5. If Thiram flakes contact eyes, immediately flush eyes freely with water.
6. Bathe daily and change work clothes at least every other day.

PRECAUCION

Estas plantas han sido tratadas con un replente contra animales que tiene la substacia Thiram (tetramethyl thiuram disulfide) que puede desaparecer en manoseo. La consuncion de bebidas alcoholicas o el uso de cremas o lociones con base de alcohol dentro de 12 horas antes de ser expuesto o hasta 7 dias despues de ser expuesto a Thiram puede resultar en sintomas de nausea, dolor de cabeza, vomito, faiga o rubor. Contacto con Thiram puede causar irritacion de los ojos, nariz, garganta o piel.

Thiram puede interferir o desvalidar en completa las medicinas de los epilepticos o personas con condiciones de la corazon con dificultades de coagulacion de la sangre. Estudios con animals en concentraciones muy altas (mas que 250 mg/kg) indican que Thiram puede causar desformaciones fetales. Sin que cuando se sembra plantas de semillas grandes macaras estaran requerido a evitar contacto con la boca y la cara con plantas tratado con Thiram excepto cuando otros metodos igualmente efecaz estarah usados.

MEDIAS DE PRECAUCION

1. Guardar mojados las platas siempre.
2. El trabajador necesita usar ropa para reducir el contacto de Thiram con las piernas, brazos, y el torso.
3. Una mascara de fibre o garra (mascara) se puede usar a la discrecion del plantador.
4. Lavese bien los parten expuestos cuando trate los semillos antes de fumar, tomar, comer e ir al bano.
5. Se acaso el Thiram cae en sus ojos, imediatamente lavese los ojos libremente con agua.
6. Banese todos los dias y cambiese de ropa de trabajo por lo menos cada otro dia.

(C) Other containers or thiram handling areas must have signs and labels that comply with 4/J, OAR 437-004-1150 and 1180.

(h) Training.

(A) Where exposures to thiram may occur, train each worker about the hazards of thiram and precautions for its safe use and handling.

(B) The training must be approved by the Administrator.

(C) The training must include:

(i) The health hazard(s) of chronic exposure to thiram including the potential for birth defects, alcohol intolerance, and drug interaction.

(ii) The specific nature of work that could result in exposure to thiram and the necessary protective steps;

(iii) The purpose for, proper use, and limitations of protective devices including respirators and clothing;

(iv) The acute toxicity and skin irritation effects of thiram, and the necessary protective steps;

(v) The need for and requirements of excellent personal hygiene;

(vi) A review of the thiram rules at the worker's first training and indoctrination, and annually thereafter.

(D) Give each worker a copy of these thiram rules.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98; OSHA 9-2006, f. & cert. ef. 9-22-06

437-004-9740
Ethylene Oxide

Definition. "Ethylene oxide" or "EtO" means the three-membered ring organic compound with chemical formula C_2H_4O.

(1) The employer is responsible to determine, before work begins, if any task or work assigned will expose employees to ethylene oxide.

(2) Work that exposes employees to ethylene oxide must comply with OAR 437-002-1047, Ethylene Oxide.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-9760
Formaldehyde

Definition. Formaldehyde means the chemical substance (HCHO) (CAS Registry No. 50-00-0).

(1) The employer is responsible to determine, before work begins, if any task or work assigned will expose employees to formaldehyde.

(2) Work that exposes employees to formaldehyde must comply with OAR 437-002-1910.1048, Formaldehyde.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-9780
Methylendianiline

Definition. 4,4' Methylenedianiline or MDA means the chemical, 4,4'-diaminodiphenylmethane, Chemical Abstract Service Registry number 101-77-9, in the form of a vapor, liquid, or solid. The definition also includes the salts of MDA.

(1) The employer is responsible to determine, before work begins, if any task or work assigned will expose employees to Methylenedianiline.

(2) Work that exposes employees to Methylenedianiline must comply with OAR 437-002-1910.1050, Methylenedianiline.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-9800
Hazard Communication

(1) Purpose.

(a) This is to ensure that employers and employees know the hazards of chemicals where they work through a comprehensive hazard communication program, including container labeling and other warnings, material safety data sheets and training.

(b) This covers evaluation of the potential hazards of chemicals, and the communication of information about hazards and protective measures to workers. It preempts any legal requirements of a state, or political subdivision of a state, about this subject. This standard requires as a minimum: developing and maintaining a written hazard communication program, keeping a list of hazardous chemicals; labeling of containers of chemicals; preparation and distribution of material safety data sheets to workers; and development and use of worker training programs about hazards of chemicals and protective measures. Under section 18 of the Act, no state or political subdivision of a state may adopt or enforce, through any court or agency, any requirement relating to the issue addressed by this Federal standard, except pursuant to a Federally-approved state plan.

NOTE: This subdivision was scaled down to exclude parts covering manufacturers of chemicals. On occasion, agricultural employers engage in activities that fit the definition of "produce" in this standard. If you do, you must get OAR 437-002-1910.1200, Hazard Communication, and follow the standards for manufacturers and producers of chemicals.

In the definition of "produce" you find the term "blend." If you mix or blend chemicals and the resultant mixture has no new hazardous characteristics, you can use the MSDS sheets for the ingredients and you not a producer or manufacturer. However, if the "blend" creates a new set of hazards, you have become a manufacturer and need to follow the above paragraph.

(2) Scope and application.

(a) Employers must inform their workers about hazardous chemicals by using a hazard communication program, labels, material safety data sheets, information and training.

(b) This applies to any chemical known to be in the work place in a way that may expose workers under normal conditions of use or in a foreseeable emergency.

(c) Agricultural employers with laboratories, doing other than quality control or quality assurance work, must consult OAR 437-002-1910.1200 and 1910.1450.

(d) Where workers only handle chemicals in unopened sealed containers, this section applies only as follows:

(A) Do not allow removal or defacing of labels on incoming containers of hazardous chemicals;

(B) Keep copies of material safety data sheets received with incoming shipments of the sealed containers of hazardous chemicals. Get a material safety data sheet as soon as possible for sealed containers of hazardous chemicals received without one if an employee requests the material safety data sheet. Material safety data sheets must be readily accessible at all times to all employees; and

(C) Give employees information and training that complies with OAR 437-004-9800(7) (except for the location and availability of the written hazard communication program under OAR 437-004-9800(7)(d)(C)), to the extent necessary to protect them in the event of a spill or leak of a hazardous chemical from a sealed container.

(e) This section does not require labeling of the following chemicals:

(A) Any pesticide defined in the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. 136 et seq.), when subject to the labeling requirements of that Act and labeling regulations issued under that Act by the Environmental Protection Agency;

(B) Any chemical substance or mixture defined in the Toxic Substances Control Act (15 U.S.C. 2601 et seq.), when subject to the labeling requirements of that Act and labeling regulations issued under that Act by the Environmental Protection Agency;

(C) Any food, food additive, color additive, drug, cosmetic, or medical or veterinary device or product, including materials intended for use as ingredients in such products (e.g. flavors and fragrances), defined in the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 301 et seq.) or the Virus-Serum-Toxin Act of 1913 (21 U.S.C. 151 et seq.), and regulations issued under those Acts, when they are subject to the labeling requirements under those Acts by either the Food and Drug Administration or the Department of Agriculture;

(D) Any distilled spirits (beverage alcohols), wine, or malt beverage intended for nonindustrial use, defined in the Federal Alcohol Administration Act (27 U.S.C. 201 et seq.) and regulations issued under that Act, when subject to the labeling requirements of that Act and labeling regulations issued under that Act by the Bureau of Alcohol, Tobacco, and Firearms;

(E) Any consumer product or hazardous substance defined in the Consumer Product Safety Act (15 U.S.C. 2051 et seq.) and Federal Hazardous Substances Act (15 U.S.C. 1261 et seq.) respectively, when subject to a consumer product safety standard or labeling requirement of those Acts, or regulations issued under those Acts by the Consumer Product Safety Commission; and

(F) Agricultural or vegetable seed treated with pesticides and labeled according to the Federal Seed Act (7 U.S.C. 1551 et seq.) and the labeling regulations issued under that Act by the Department of Agriculture.

(f) This section does not apply to:

(A) Any hazardous waste defined by the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended (42 U.S.C. 6901 et seq.), when subject to regulations issued under that Act by the Environmental Protection Agency;

(B) Any hazardous substance defined by the Comprehensive Environmental Response, Compensation and Liability ACT (CERCLA) (42 U.S.C. 9601 et seq.), when the hazardous substance is the focus of remedial or removal action being conducted under CERCLA according to Environmental Protection Agency regulations;

(C) Tobacco or tobacco products;

(D) Wood or wood products, including lumber that will not be processed, where the chemical manufacturer or importer can establish that the only hazard they pose to employees is the potential for flammability or combustibility (not exempt are wood or wood products treated with a hazardous chemical covered by this standard, and wood that may later be sawed or cut, generating dust);

(E) Articles (defined in OAR 437-004-9800(3));

(F) Food or alcoholic beverages sold, used, or prepared in a retail establishment (such as a grocery store, restaurant, or drinking place), and foods intended for personal consumption by employees while at work;

(G) Any drug, defined in the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 301 et seq.), when it is in solid, final form for direct administration to the patient (e.g., tablets or pills); drugs packaged by the chemical manufacturer for sale to consumers in a retail establishment (e.g., over-the-counter drugs); and drugs intended for personal consumption by employees while at work (e.g., first aid supplies);

(H) Any consumer product or hazardous substance, defined in the Consumer Product Safety Act (15 U.S.C. 2051 et seq.) and Federal Hazardous Substances Act (15 U.S.C. 1261 et seq.) respectively, where the employer can show that it is used in the work place for the purpose intended by the chemical manufacturer or importer of the product, and the use results in a duration and frequency of exposure not more than the range of exposures that could reasonably be experienced by consumers;

(I) Nuisance particulates where the chemical manufacturer or importer can establish that they do not pose any physical or health hazard covered under this section;

(J) Ionizing and non-ionizing radiation; and

(K) Biological hazards.

(3) Definitions.

(a) Agricultural employer — see 4/B, OAR 437-004-0100.

(b) Article means a manufactured item other than a fluid or particle:

(A) Formed to a specific shape or design during manufacture;

(B) With end use function(s) dependent in whole or in part on its shape or design during end use; and

(C) Which under normal conditions of use does not release more than very small quantities, e.g., minute or trace amounts of a hazardous chemical and does not pose a physical hazard or health risk to employees.

(c) Administrator is the Administrator of the Oregon Occupational Safety and Health Division, or their designee.

(d) Chemical is any element, chemical compound or mixture of elements and/or compounds.

(e) Chemical manufacturer is an employer with a work place where chemical(s) are made for use or distribution.

(f) Chemical name is the scientific designation of a chemical according to the nomenclature system developed by the International Union of Pure and Applied Chemistry (IUPAC) or the Chemical Abstracts Service (CAS) rules of nomenclature, or a name that clearly identifies the chemical for the purpose of conducting a hazard evaluation.

(g) Combustible liquid — see 4/B, OAR 437-004-0100, Universal Definitions.

(h) Commercial account is an arrangement whereby a retail distributor sells hazardous chemicals to an employer, generally in large quantities over time and/or at costs that are below the regular retail price.

(i) Common name means any designation or identification such as code name, code number, trade name, brand name or generic name used to identify a chemical other than by its chemical name.

(j) Compressed gas:

(A) A gas or mixture of gases with, in a container, an absolute pressure more than 40 psi at 70° F (21.1° C); or

(B) A gas or mixture of gases with, in a container, an absolute pressure more than 104 psi at 130° F (54.4° C) regardless of the pressure at 70° F (21.1° C); or

(C) A liquid with a vapor pressure exceeding 40 psi at 100° F (37.8° C) as determined by ASTM D-323-72.

(k) Container is any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank, or the like that has a hazardous chemical. Pipes or piping systems, and engines, fuel tanks, or other operating systems in a vehicle, are not considered to be containers.

(l) Designated representative is any individual or organization to whom an employee gives written authorization to exercise such employee's rights. A recognized or certified collective bargaining

agent is automatically a designated representative without regard to written employee authorization.

(m) Distributor means a business, other than a chemical manufacturer or importer, that supplies hazardous chemicals to other distributors or to employers.

(n) Employee is a worker who may be exposed to hazardous chemicals under normal operating conditions or in foreseeable emergencies. Workers such as office workers or bank tellers who encounter hazardous chemicals only in non-routine, isolated instances are not covered.

(o) Employer is a person engaged in a business where chemicals are either used, distributed, or are produced for use or distribution, including a contractor or subcontractor.

(p) Explosive is a chemical that causes a sudden, almost instantaneous release of pressure, gas, and heat when subjected to sudden shock, pressure, or high temperature.

(q) Exposure or exposed means an employee is subjected in the course of employment to a chemical that is a physical or health hazard, and includes potential (e.g. accidental or possible) exposure. "Subjected" in terms of health hazards includes any route of entry (e.g. inhalation, ingestion, skin contact or absorption).

(r) Flammable is a chemical that falls into one of the following categories:

(A) Aerosol, flammable is an aerosol that, when tested by the method described in **16 CFR 1500.45,** yields a flame projection more than 18 inches at full valve opening, or a flashback (a flame extending back to the valve) at any degree of valve opening;

(B) Gas, flammable means:

(i) A gas that, at ambient temperature and pressure, forms a flammable mixture with air at a concentration of thirteen (13) percent by volume or less; or

(ii) A gas that, at ambient temperature and pressure, forms a range of flammable mixtures with air wider than twelve (12) percent by volume, regardless of the lower limit.

(C) Liquid, flammable — see 4/B, OAR 437-004-0100, Universal Definitions.

(D) Solid, flammable is a solid, other than a blasting agent or explosive as defined in 1910.109(a), that is liable to cause fire through friction, absorption of moisture, spontaneous chemical change, or retained heat from manufacturing or processing, or that can be ignited readily and when ignited burns so vigorously and persistently as to create a serious hazard. A chemical is a flammable solid if, when tested by the method described in **16 CFR 1500.44,** it ignites and burns with a self-sustained flame at a rate greater than one-tenth of an inch per second along its major axis.

(s) Flashpoint is the minimum temperature at which a liquid gives off a vapor in sufficient concentration to ignite when tested as follows:

(A) Tagliabue Closed Tester (See American National Standard Method of Test for Flash Point by Tag Closed Tester, Z11.24-1979 (ASTM D 56-79)) for liquids with a viscosity of less than 45 Saybolt Universal Seconds (SUS) at 100° F (37.8° C), that do not contain suspended solids and do not have a tendency to form a surface film under test; or

(B) Pensky-Martens Closed Tester (See American National Standard Method of Test for Flash Point by Pensky-Martens Closed Tester, Z11.7-1979 (ASTM D 93-79)) for liquids with a viscosity equal to or more than 45 SUS at 100° F (37.8° C), or that contain suspended solids, or that have a tendency to form a surface film under test; or

(C) Setaflash Closed Tester (see American National Standard Method of Test for Flash Point by Setaflash Closed Tester (ASTM D 3278-78)).

NOTE: Organic peroxides, that undergo auto accelerating thermal decomposition, are excluded from any of the flashpoint determination methods above.

(t) Foreseeable emergency means any potential event such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment that could result in an uncontrolled release of a hazardous chemical into the work place.

(u) Hand-labor operations is field work done by hand or with hand tools. This includes the cultivation, weeding, planting, and harvesting of crops, including mushrooms, and the packing of produce into containers, whether done on the ground, on a moving machine, or in a temporary packing shed in the field.

(v) Hazardous chemical is any chemical that is a physical hazard or a health hazard.

(w) Hazard warning means any words, pictures, symbols, or combination appearing on a label or other appropriate form of warning that convey the specific physical and health hazard(s), including target organ effects, of the chemical(s) in the container(s). (See the definitions for "physical hazard" and "health hazard" to determine the hazards which must be covered.)

(x) Health hazard is a chemical for which there is statistically significant evidence based on at least one study conducted according to established scientific principles that acute or chronic health effects may occur in exposed employees. The term "health hazard" includes chemicals that are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic system, and agents that damage the lungs, skin, eyes, or mucous membranes. Appendix A gives more definitions and explanations of the scope of health hazards covered by this section. Appendix B describes the criteria for determining whether or not a chemical is hazardous for purposes of this standard.

(y) Identity is any chemical or common name that is on the material safety data sheet (MSDS) for the chemical. The identity must allow cross-references to be made among the required list of hazardous chemicals, the label and the MSDS.

(z) Immediate use means that the hazardous chemical will be under the control of and used only by the person who transfers it from a labeled container and only within the work shift in which it is transferred.

(aa) Importer is the first business with employees within the Customs Territory of the United States that receives hazardous chemicals made in other countries for the purpose of supplying them to distributors or employers within the United States.

(bb) Label is any written, printed, or graphic material displayed on or affixed to containers of hazardous chemicals.

(cc) Material safety data sheet (MSDS) is written or printed material about a hazardous chemical prepared according to OAR 437-004-9800(6).

(dd) Mixture means any combination of two or more chemicals if the combination is not, in whole or in part, the result of a chemical reaction.

(ee) Organic peroxide is an organic compound that has the bivalent -O-O-structure and may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms has been replaced by an organic radical.

(ff) Oxidizer is a chemical other than a blasting agent or explosive as defined in §1910.109(a), that initiates or promotes combustion in other materials, thereby causing fire either of itself or through the release of oxygen or other gases.

(gg) Physical hazard is a chemical for which there is scientifically valid evidence that it is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer, pyrophoric, unstable (reactive) or water-reactive.

(hh) Produce means to manufacture, process, blend, extract, generate, emit, formulate, or repackage.

(ii) Pyrophoric is a chemical that will ignite spontaneously in air at a temperature of 130°F (54.4°C) or below.

(jj) Responsible party is someone who can give additional information on the hazardous chemical and appropriate emergency procedures, if necessary.

(kk) Specific chemical identity is the chemical name, Chemical Abstracts Service (CAS) Registry Number, or any other information that reveals the precise chemical designation of the substance.

(ll) Trade secret is any confidential formula, pattern, process, device, information or compilation of information used in an employer's business, and that gives the employer an opportunity to obtain an advantage over competitors who do not know or use it.

(mm) Unstable (reactive) is a chemical that in the pure state, or as produced or transported, will vigorously polymerize, decompose, condense, or will become self-reactive under conditions of shocks, pressure or temperature.

(nn) Use means to package, handle, react, emit, extract, generate as a by-product, or transfer.

(oo) Water-reactive is a chemical that reacts with water to release a gas that is either flammable or presents a health hazard.

(pp) Work area is a room or defined space in a work place where hazardous chemicals are made or used, and where there are employees.

(qq) Work place is an establishment, job site, or project, at one geographical location with one or more work areas.

(4) Written hazard communication program.

(a) Employers must implement an effective written hazard communication program that describes how they will meet, at least, the criteria in OAR 437-004-9800(4), (5), and (6) for labels and other forms of warning, material safety data sheets, and employee information and training. This program must be specific to each of the employer's work places. It also must have:

(A) A list of the hazardous chemicals in the work place using an identity referenced on the appropriate material safety data sheet (the list may be for the whole work place or for individual work areas); and

(B) The methods the employer will use to inform employees of the hazards of non-routine tasks and the hazards associated with chemicals in unlabeled pipes in their work areas.

(b) Multi-employer work places. Employers who use or store hazardous chemicals in a way that may expose the employees of other employer(s) must also ensure that their hazard communication programs include:

(A) The methods the employer will use to make material safety data sheets for each hazardous chemical available to other employers with employees on the site exposed to the hazards;

(B) The methods the employer will use to inform the other employer(s) of any precautionary measures needed to protect employees during normal operating conditions and foreseeable emergencies; and

(C) The methods the employer will use to inform the other employer(s) of the labeling system in use.

(c) The employer may rely on an existing hazard communication program to comply with these requirements, if it complies with OAR 437-004-9800(4).

(d) The employer must make the written hazard communication program available, on request, to employees, their designated representatives, the Administrator, according to the requirements of OAR 437-002-1910.1020(e).

(e) Where employees work at more than one geographical location, the written hazard communication program may be kept at the primary work place facility.

(5) Labels and other forms of warning.

(a) Chemical manufacturers, importers and distributors have responsibilities for labeling products that you use and for giving those labels to you. Consult OAR 437-002-1910.1200(f), Labels and Other Forms of Warnings, for details.

(b)(A) For solid metal (such as a steel beam or a metal casting), solid wood, or plastic items that are not exempt as articles due to their downstream use, or shipments of whole grain, the label may come with the initial shipment, and need not come with subsequent shipments to the same employer unless the information on the label changes;

(B) The label may come with the initial shipment itself, or with the material safety data sheet that comes prior to or with the first shipment; and

(C) This exception to requiring labels on every container of hazardous chemicals is only for the solid material itself. It does not apply to hazardous chemicals used in conjunction with, or known to be present with, the material and to which employees handling the items in transit may be exposed (for example, cutting fluids or pesticides in grains).

(c) If the hazardous chemical is regulated by OR-OSHA in a substance-specific health standard, the chemical manufacturer, importer, distributor or employer must ensure that the labels or other forms of warning comply with that standard.

(d) Except as in (5)(e) and (5)(f) below, the employer must ensure that each container of hazardous chemicals is labeled, tagged or marked with this information:

(A) Identity of the hazardous chemical(s); and

(B) Appropriate hazard warnings, words, pictures, symbols, or combination of them, that provide at least general information about the hazards of the chemicals, and which, with other information immediately available to employees, will provide employees with the specific information regarding the physical and health hazards of the hazardous chemical.

(e) The employer may use signs, placards, process sheets, batch tickets, operating procedures, or other written materials instead of labels on individual stationary process containers, if the alternative method identifies the containers to which it is applicable and conveys the information required by (5)(d) above to be on a label. The written materials must always be readily accessible to the employees in their work area.

(f) Labels are not necessary on portable containers of hazardous chemicals intended only for use during the work shift by the employee who fills them.

(g) Incoming containers of hazardous chemicals must have labels that are legible and contain the information originally provided by the manufacturer or distributor.

(h) The employer must ensure that labels or other forms of warning are legible, in English, and prominently displayed on the container, or always readily available in the work area. Employers with employees who speak other languages may add the information in their language, as long as it is also in English.

(i) The employer need not affix new labels if existing labels already give the required information.

(j) Chemical manufacturers, importers, distributors, or employers who become newly aware of any significant information about the hazards of a chemical must revise the labels for the chemical within three months of becoming aware of the new information. Labels on containers of hazardous chemicals shipped after that time must have the new information. If the chemical is not currently produced or imported, the chemical manufacturer, importer, distributor, or employer must add the information to the label before the chemical is shipped again.

(6) Material safety data sheets (MSDS).

(a) Employers must have a material safety data sheet (MSDS) for each hazardous chemical they use. These sheets may be kept electronically.

(b) Material safety data sheets must be in English (although the employer may maintain copies in other languages as well), and have at least the following information:

(A) The identity used on the label, and, except as in OAR 437-004-9800(8) on trade secrets:

(i) If the hazardous chemical is a single substance, its chemical and common name(s);

(ii) If the hazardous chemical is a mixture that has been tested as a whole to determine its hazards, the chemical and common name(s) of the ingredients that contribute to these known hazards, and the common name(s) of the mixture itself; or

(iii) If the hazardous chemical is a mixture that has not been tested as a whole:

(I) The chemical and common name(s) of all ingredients known be health hazards, and that are 1% or more of the composition, except that chemicals identified as carcinogens under paragraph (d) must be listed if the concentrations are 0.1% or more; and

(II) The chemical and common name(s) of all ingredients known to be health hazards, and that are less than 1% (0.1% for carcinogens) of the mixture, if there is evidence that the ingredient(s) could be released from the mixture in concentrations more than an established OR-OSHA permissible exposure limit or ACGIH Threshold Limit Value, or could present a health risk to employees; and

(III) The chemical and common name(s) of all ingredients known to present a physical hazard when present in the mixture.

(B) Physical and chemical characteristics of the hazardous chemical (such as vapor pressure, flash point);

(C) The physical hazards of the hazardous chemical, including the potential for fire, explosion, and reactivity;

(D) The health hazards of the hazardous chemical, including signs and symptoms of exposure, and any medical conditions generally recognized as being aggravated by exposure to the chemical;

(E) The primary route(s) of entry;

(F) The OR-OSHA permissible exposure limit, ACGIH Threshold Limit Value, and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the material safety data sheet, where available;

(G) Whether the hazardous chemical is in the National Toxicology Program (NTP) Annual Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest editions), or by OR-OSHA;

(H) Any generally applicable precautions for safe handling and use known to the chemical manufacturer, importer or employer prepar-

ing the material safety data sheet, including appropriate hygienic practices, protective measures during repair and maintenance of contaminated equipment, and procedures for clean-up of spills and leaks;

(I) Any generally applicable control measures known to the chemical manufacturer, importer or employer preparing the material safety data sheet, such as appropriate engineering controls, work practices, or personal protective equipment;

(J) Emergency and first aid procedures;

(K) The date of preparation of the material safety data sheet or the last change to it; and

(L) The name, address and telephone number of the chemical manufacturer, importer, employer or other responsible party preparing or distributing the material safety data sheet, who can provide additional information on the hazardous chemical and appropriate emergency procedures, if necessary.

(c) If no relevant information is found for any given category on the material safety data sheet, it must state that no applicable information was found.

(d) Where complex mixtures have similar hazards and contents (i.e. the chemical ingredients are essentially the same, but the specific composition varies from mixture to mixture), the chemical manufacturer, importer or employer may prepare one material safety data sheet to apply to all of these similar mixtures.

(e) The chemical manufacturer, importer or employer preparing the material safety data sheet must ensure that the information recorded accurately reflects the scientific evidence used in making the hazard determination. If the chemical manufacturer, importer or employer preparing the material safety data sheet becomes newly aware of any significant information regarding the hazards of a chemical, or ways to protect against the hazards, this new information must be added to the material safety data sheet within three months. If the chemical is not currently being produced or imported the chemical manufacturer or importer must add the information to the material safety data sheet before the chemical is distributed again.

NOTE: Chemical manufacturers, importers and distributors have obligations to provide material safety data sheets. Employers also have obligations to get them when the source fails to automatically provide them. There are also requirements for retail distributors. Should you have trouble getting an MSDS, check OAR 437-002-1910.1200 for details on these requirements.

(f) The employer must keep copies of the required material safety data sheets (MSDS) for each hazardous chemical during its use or presence in the work place, even residual chemicals encountered by workers doing field hand-labor. They must always be readily accessible to all employees.

NOTE: Electronic access and other alternatives to paper copies of the material safety data sheets are acceptable if employees have immediate access to them.

(g) Where employees work at more than one geographical location, the material safety data sheets may be kept at the primary work place facility. The employer must ensure that employees can immediately get the required information in an emergency.

(h) Material safety data sheets may be in any form, including operating procedures, and may cover groups of hazardous chemicals when it is better to address the hazards of a process rather than individual hazardous chemicals. However, the employer must ensure that the required information is always provided for each hazardous chemical, and is always readily accessible to employees.

(i) Material safety data sheets must also be readily available, upon request, to designated representatives and to the Administrator, in compliance with OAR 437-002-1910.1020.

(7) Employee information and training.

(a) Give employees effective information and training on hazardous chemicals in their work area at the time of their initial assignment, and when a new physical or health hazard is introduced into their work area. Information and training may cover categories of hazards (e.g., flammability, carcinogenicity) or specific chemicals. Chemical-specific information must always be available through labels and material safety data sheets. Agricultural employees who mix, load, apply, or otherwise handle hazardous chemicals must get all information and training required by this standard.

(b) Inform employees of:

(A) The requirements of this section;

(B) Any operations in their work area where hazardous chemicals are present; and

(C) The location and availability of the written hazard communication program, including the required list(s) of hazardous chemicals, and material safety data sheets.

(c) Employee training must include at least:

(A) Methods and observations to detect the presence or release of a hazardous chemical in the work area (such as monitoring done by the employer, continuous monitoring devices, visual appearance or odor of hazardous chemicals when being released, etc.);

(B) The physical and health hazards of the chemicals in the work area;

(C) The measures employees can take to protect themselves from these hazards, including specific procedures the employer has implemented to protect employees from exposure to hazardous chemicals, such as appropriate work practices, emergency procedures, and personal protective equipment; and

(D) The details of the hazard communication program including an explanation of the labeling system and the material safety data sheet, and how employees can get and use the right hazard information.

(d) Agricultural employers must give all of their employees the OR-OSHA brochure, "Safe Practices When Working Around Hazardous Agricultural Chemicals."

(e) For employees doing only hand-labor where there is potential exposure to pesticides, giving them the brochure, information about the location and availability of Material Safety Data Sheets (MSDS), and assuring employee access to Material Safety Data Sheet information meets the training and information requirements of this standard.

(8) Trade secrets. There are special standards about the relationship of this standard to trade secrets. If those circumstances apply, follow OAR 437-002-1900.1200(i) and its Appendix D.

(9) Subpoenas, citations, penalties.

(a) The Oregon Occupational Safety and Health Division has the authority under ORS Chapter 654 to issue a subpoena or any protective orders.

(b) Agency actions under ORS Chapter 654 and these rules are enforceable by the issuance of additional citations and penalties pursuant to ORS 654.071(4), 654.086(1)(d), or 654.086(3). The Oregon Occupational Safety and Health Division may refer the matter to the Circuit Court in the county in which the proceedings are pending for enforcement of the subpoena.

[ED. NOTE: Appendices referenced are available from the agency.]
[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-9830
Retention of Dot Markings, Placards and Labels

(1) If you receive any container or vehicle containing hazardous material, marked to comply with U.S. Department of Transportation Hazardous Materials Regulations **(49 CFR** Parts **171** through **180),** you must keep those markings in place and legible until the container is empty enough of product, residue or vapors to eliminate all hazards.

(2) Markings, placards and labels must be readily visible.

(3) For non-bulk packages that will not be reshipped, you comply with this section if a label or other acceptable marking is affixed according to the Hazard Communication Standard.

(4) For this section, "hazardous material" and other terms not defined here have the same definition as in the Hazardous Materials Regulations **(49 CFR** Parts **171** through **180).**

[Publications: Publications referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-9850
Pipe Labelling

(1) Scope and application. This applies to all pipes containing hazardous substances or that use asbestos as insulation material. This does not apply to buried pipe.

(2) Definitions.

(a) Hazardous substances: any substance that is a physical or health hazard.

(b) Health hazard: a chemical for which there is statistically significant evidence that acute or chronic health effects may occur in exposed employees. The term "health hazard" includes carcinogens,

toxic or highly toxic agents, reproductive toxins, irritants, corrosive sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents that act on the hematopoietic system, and agents that damage the lungs, skin, eyes or mucous membranes.

(c) Physical hazard: a combustible liquid, compressed gas, explosive, flammable, an organic peroxide, or oxidizer, pyrophoric, unstable (reactive) or water-reactive.

(d) Pipe: includes pipes, valves and pipe coverings.

(3) Labelling.

(a) Label pipes that contain hazardous substances or transport substances in a hazardous state according to (A), (B), (C), and (D) below or otherwise identify them according to (c) below:

(A) Positive identification of the hazardous contents of pipe must be by lettered labels. The label must give the name of the contents in full or abbreviated form.

(B) The label must identify the contents with enough detail to identify the hazard.

(C) Label wording must be brief, informative and simple.

(D) Use stenciling, tape, adhesives, markers or approved alternative means for labels.

(b) Label pipes with asbestos insulation according to (b)(A) below, or otherwise identify them according to (3)(c) below:

(A) The label for pipe insulation containing asbestos must include the following:

DANGER
CONTAINS ASBESTOS FIBER
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD

(c) The employer may use signs, placards, process sheets, batch tickets, operating procedures, or other such written materials instead of affixing labels to individual pipes, if the alternative method identifies the pipe(s) to which it is applicable and conveys the information required by this rule. The written materials must be readily accessible to the employees in their work areas during each shift.

(4) Location of labelling.

(a) Place the labelling where confusion may occur, such as near valves or flanges and adjacent to changes in direction, branches and where pipes pass through walls, floors or ceilings.

(b) Labelling must be, at a minimum, at the beginning and end of continuous pipe runs.

(c) For asbestos insulation, labelling must be at a minimum, on unobstructed continuous pipe runs, every 75 feet. [Illustration not included. See ED. NOTE.]

(5) Visibility.

(a) Where pipes are above or below the normal line of vision, put the lettering below or above the horizontal centerline of the pipe.

(b) If pipes are inaccessible and/or at a distance that precludes clear identification of the letters on labelling, use alternatives to the labelling that meet all other requirements of this rule (i.e., schematics posted on walls in work areas).

[ED. NOTE: Illustrations referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

437-004-9860
Hazardous Chemicals in Laboratories

OAR 437-002-1910.1450 applies to exposure of agricultural employees to hazardous chemicals in laboratories that do work other than quality control or quality assurance.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 4-1998, f. 8-28-98, cert. ef. 10-1-98

DIVISION 5

MARITIME ACTIVITIES

Occupational Safety and Health Standards for Shipyard Employment

437-005-0001
Adoption by Reference

In addition to, and not in lieu of, any other safety and health codes contained in OAR chapter 437, the Department adopts by reference the following federal rules as printed in the Code of Federal Regulations, 29 CFR 1915, revised as of 7/1/03, and any subsequent amendments published in the Federal Register as listed below:

(1) Subdivision A

(a) 29 CFR 1915.1. Purpose and authority, published 4/20/82, Federal Register (FR) vol. 47, p. 16984.

(b) 29 CFR 1915.2. Scope and application, published 4/20/82, FR vol. 47, p. 16984.

(c) 29 CFR 1915.3. Responsibility, published 4/20/82, FR vol. 47, p. 16984.

(d) 29 CFR 1915.4. Definitions, published 4/20/82, FR vol. 47, p. 16984; amended 7/3/02, FR vol. 67, no. 128, p. 44541.

(e) 29 CFR 1915.5. Incorporation by reference, published 5/24/96, FR vol. 61, no. 102, p. 26359; amended 7/3/02, FR vol. 67, no. 128, p. 44541; 9/15/04, FR vol. 69, p. 55667; 10/17/06, FR vol. 71, no. 200, p. 60843.

(f) 29 CFR 1915.6. Commercial diving operations, published 4/20/82, FR vol. 47, p. 16984.

(g) 29 CFR 1915.7. Competent person, published 4/20/82, FR vol. 47, p. 16984; amended 6/7/89, FR vol. 54, p. 24334; 7/25/94, FR vol. 59, p. 37856.

(2) Subdivision B

(a) 29 CFR 1915.11. Scope, application and definitions applicable to this Subpart, published 4/20/82, FR vol. 47, p. 16984; amended 7/25/94, FR vol. 59, p. 37857.

(b) 29 CFR 1915.12. Precautions before entering confined and enclosed spaces and other dangerous atmospheres, published 4/20 /82, FR vol. 47, p. 16984; amended 7/1/93, FR vol. 58, no. 125, p. 35514; amended 7/25/94, FR vol. 59, p. 37858 ; 3/16/95, FR vol. 60, no. 51, p. 14218.

(c) 29 CFR 1915.13. Cleaning and other cold work, published 4/20/82, FR vol. 47, p. 16984; amended 7/25/94, FR vol. 59, p. 37859.

(d) 29 CFR 1915.14. Hot work, published 4/20 /82, FR vol. 47, p. 16984; amended 7/25/94, FR vol. 59, p. 37860; 3/16/95, FR vol. 60, no. 51, p. 14218; amended 7/3/02, FR vol. 67, no. 128, p. 44541.

(e) 29 CFR 1915.15. Maintenance of safe conditions, published 4/20/82, FR vol. 47, p. 16984; amended 7/25/94, FR vol. 59, p. 37860; 3/16/95, FR vol. 60, no. 51, p. 14218; amended 7/3/02, FR vol. 67, no. 128, p. 44541.

(f) 29 CFR 1915.16. Warning signs and labels, published 4/20/82, FR vol. 47, p. 16984; amended 7/25/94, FR vol. 59, p. 37861.

Appendix A to Subpart B published 7/25/94, FR vol. 59, p. 37816; amended 7/3/02, FR vol. 67, no. 128, p. 44541.

Appendix B to Subpart B published 7/25/94, FR vol. 59, p. 37816.

(3) Subdivision C

(a) 29 CFR 1915.31. Scope & application of subdivision, published 4/20/82, FR vol. 47, p. 16984.

(b) 29 CFR 1915.32. Toxic cleaning solvents, published 4/20/82, FR vol. 47, p. 16984; 5/24/96, FR vol. 61, no. 102, p. 26351.

(c) 29 CFR 1915.33. Chemical paint & preservative remover, published 4/20/82, FR vol. 47, p. 16984; 5/24/96, FR vol. 61, no. 102, p. 26351.

(d) 29 CFR 1915.34. Mechanical paint removers, published 4/20/82, FR vol. 47, p. 16984; 5/24/96, FR vol. 61, no. 102, p. 26351.

(e) 29 CFR 1915.35. Painting, published 4/20/82, FR vol. 47, p. 16984; 5/24/96, FR vol. 61, no. 102, p. 26351; amended 7/3/02, FR vol. 67, no. 128, p. 44541.

(f) 29 CFR 1915.36. Flammable liquids, published 4/20/82, FR vol. 47, p. 16984.

(4) Subdivision D

(a) 29 CFR 1915.51. Ventilation & protection in welding, cutting and heating, published 4/20/82, FR vol. 47, p. 16984; amended 7/3/02, FR vol. 67, no. 128, p. 44541.

(b) 29 CFR 1915.52. Fire prevention, published 4/20/82, FR vol. 47, p. 16984; REMOVED 9/15/04, FR vol. 69, p. 55667.

(c) 29 CFR 1915.53. Welding, cutting and heating of hollow metal containers & structure not covered by 1915.12, published 4/20/82, FR vol. 47, p. 16984; amended 7/3/02, FR vol. 67, no. 128, p. 44541.

(d) 29 CFR 1915.55. Gas welding & cutting, published 4/20/82, FR vol. 47, p. 16984.

(e) 29 CFR 1915.56. Arc welding and cutting, published 4/20/82, FR vol. 47, p. 16984.

(f) 29 CFR 1915.57. Uses of fissionable material in ship repairing and shipbuilding, published 4/20/82, FR vol. 47, p. 16984.

(5) Subdivision E

(a) 29 CFR 1915.71. Scaffolds or staging, published 4/20/82, FR vol. 47, p. 16984; amended 7/3/02, FR vol. 67, no. 128, p. 44541.

(b) 29 CFR 1915.72. Ladders, published 4/20/82, FR vol. 47, p. 16984; amended 7/3/02, FR vol. 67, no. 128, p. 44541.

(c) 29 CFR 1915.73. Guarding of deck openings and edges, published 4/20/ 82, FR vol. 47, p. 16984; amended 7/3/02, FR vol. 67, no. 128, p. 44541.

(d) 29 CFR 1915.74. Access to vessels, published 4/20/82, FR vol. 47, p. 16984; amended 7/3/02, FR vol. 67, no. 128, p. 44541.

(e) 29 CFR 1915.75. Access to and guarding of dry docks and marine railways, published 4/20/82, FR vol. 47, p. 16984; amended 7/3/02, FR vol. 67, no. 128, p. 44541.

(f) 29 CFR 1915.76. Access to cargo spaces and confined spaces, published 4/20/82, FR vol. 47, p. 16984.

(g) 29 CFR 1915.77. Working surfaces, published 4/20/82, FR vol. 47, p. 16984; amended 7/3/02, FR vol. 67, no. 128, p. 44541.

(6) Subdivision F

(a) 29 CFR 1915.91. Housekeeping, published 4/ 20/82, FR vol. 47, p. 16984.

(b) 29 CFR 1915.92. Illumination, published 4/20/ 82, FR vol. 47, p. 16984; amended 7/3/02, FR vol. 67, no. 128, p. 44541.

(c) 29 CFR 1915.93. Utilities, published 4/20/82, FR vol. 47, p. 16984.

(d) 29 CFR 1915.94. Work in confined or isolated spaces, published 4/20/82, FR vol. 47, p. 16984.

(e) 29 CFR 1915.95. Ship repairing and shipbuilding work on or in the vicinity of radar and radio, published 4/20/82, FR vol. 47, p. 16984; amended 4/30/ 84, FR vol. 49, p. 18295; 6/7/89, FR vol. 54, p. 24334.

(f) 29 CFR 1915.96. Work in or on lifeboats, published 4/20/82, FR vol. 47, p. 16984; amended 8/24/ 87, FR vol. 52, p. 31886.

(g) 29 CFR 1915.97. Health and sanitation, published 4/20/82, FR vol. 47, p. 16984; amended 8/24/87, FR vol. 52, p. 31886; amended 7/3/02, FR vol. 67, no. 128, p. 44541.

(h) 29 CFR 1915.98. First aid, published 4/20/82, FR vol. 47 p. 16984.

(**NOTE:** 29 CFR 1915.99, Hazard Communication, was redesignated as 1915.1200 on 7/1/93, FR vol. 58, no. 125, p. 35514.)

(i) 29 CFR 1915.100. Retention of DOT markings, placards and labels, published 7/19/94, Federal Register, vol. 59, no. 137, p. 36700.

(7) Subdivision G

(a) 29 CFR 1915.111. Inspection, published 4/20/ 82, FR vol. 47, p. 16984.

(b) 29 CFR 1915.112. Ropes, chains and slings, published 4/20/82, FR vol. 47, p. 16984; amended 7/3/02, FR vol. 67, no. 128, p. 44541.

(c) 29 CFR 1915.113. Shackles and hooks, published 4/20/82, FR vol. 47, p. 16984; amended 9/29/86, FR vol. 51, p. 34562.

(d) 29 CFR 1915.114. Chain falls and pull-lifts, published 4/20/82, FR vol. 47, p. 16984.

(e) 29 CFR 1915.115. Hoisting and hauling equipment, published 4/20/82, FR vol. 47, p. 16984; amended 7/3/02, FR vol. 67, no. 128, p. 44541.

(f) 29 CFR 1915.116. Use of gear, published 4/20/ 82, FR vol. 47, p. 16984; amended 7/3/02, FR vol. 67, no. 128, p. 44541.

(g) 29 CFR 1915.117. Qualifications of operators, published 4/20/82, FR vol. 47, p. 16984.

(h) 29 CFR 1915.118. Tables, published 4/20/82, FR vol. 47, p. 16984; amended 7/3/02, FR vol. 67, no. 128, p. 44541.

(8) Subdivision H

(a) 29 CFR 1915.131. General precautions, published 4/20/82, FR vol. 47, p. 16984; amended 7/3/02, FR vol. 67, no. 128, p. 44541.

(b) 29 CFR 1915.132. Portable electric tools, published 4/20/82, FR vol. 47, p. 16984.

(c) 29 CFR 1915.133. Hand tools, published 4/20/ 82, FR vol. 47, p. 16984.

(d) 29 CFR 1915.134. Abrasive wheels, published 4/20/82, FR vol. 47, p. 16984; 5/24/96, FR vol. 61, no. 102, p. 26351; amended 7/3/02, FR vol. 67, no. 128, p. 44541.

(e) 29 CFR 1915.135. Powder actuated fastening tools, published 4/20/82, FR vol. 47, p. 16984; 5/24/96, FR vol. 61, no. 102, p. 26351.

(f) 29 CFR 1915.136. Internal combustion engines other than ship's equipment, published 4/20/82, FR vol. 47, p. 16984.

(9) Subdivision I

(a) 29 CFR 1915.151. Scope, application and definitions, published 5/24/96, FR vol. 61, no. 102, p. 26352.

(b) 29 CFR 1915.152. General requirements, published 5/24/96, FR vol. 61, no. 102, p. 26352; 6/13/96, FR vol. 61, p. 29957; amended 7/3/02, FR vol. 67, no. 128, p. 44541.

(c) 29 CFR 1915.153. Eye and face protection, published 5/24/96, FR vol. 61, no. 102, p. 26353.

(d) 29 CFR 1915.154. Respiratory protection, published 5/24/96, FR vol. 61, no. 102, p. 26354.

(e) 29 CFR 1915.155. Head protection, published 5/24/96, FR vol. 61, no. 102, p. 26354.

(f) 29 CFR 1915.156. Foot protection, published 5/24/96, FR vol. 61, no. 102, p. 26354.

(g) 29 CFR 1915.157. Hand and body protection, published 5/24/96, FR vol. 61, no. 102, p. 26354.

(h) 29 CFR 1915.158. Lifesaving equipment, published 5/24/96, FR vol. 61, no. 102, p. 26354; amended 7/3/02, FR vol. 67, no. 128, p. 44541.

(i) 29 CFR 1915.159. Personal fall arrest systems (PFAS), published 5/24/96, FR vol. 61, no. 102, p. 26355; amended 7/3/02, FR vol. 67, no. 128, p. 44541.

(j) 29 CFR 1915.160. Positioning device systems, published 5/24/96, FR vol. 61, no. 102, p. 26356; amended 7/3/02, FR vol. 67, no. 128, p. 44541.

Appendix A to Subpart I, published 5/24/96, FR vol. 61, no. 102, p. 26356; amended 7/3/02, FR vol. 67, no. 128, p. 44541.

Appendix B to Subpart I, published 5/24/96, FR vol. 61, no. 102, p. 26358; amended 7/3/02, FR vol. 67, no. 128, p. 44541.

(10) Subdivision J

(a) 29 CFR 1915.161. Scope and application of subdivision, published 4/20/ 82, FR vol. 47, p. 16984.

(b) 29 CFR 1915.162. Ship's boilers, published 4/ 20/82, FR vol. 47, p. 16984.

(c) 29 CFR 1915.163. Ship's piping systems, published 4/20/82, FR vol. 47, p. 16984; amended 7/3/02, FR vol. 67, no. 128, p. 44541.

(d) 29 CFR 1915.164. Ship's propulsion machinery, published 4/20/82, FR vol. 47, p. 16984.

(e) 29 CFR 1915.165. Ship's decking machinery, published 4/20/82, FR vol. 47, p. 16984; amended 7/3/02, FR vol. 67, no. 128, p. 44541.

(11) Subdivision K

(a) 29 CFR 1915.171. Scope and application of subdivision, published 4/20/ 82, FR vol. 47, p. 16984.

(b) 29 CFR 1915.172. Portable air receiver and other unfired pressure vessels, published 4/20/82, FR vol. 47, p. 16984; amended 9/29/86, FR vol. 51, p. 34562; amended 7/3/02, FR vol. 67, no. 128, p. 44541.

(c) 29 CFR 1915.173. Drums and containers, published 4/20/82, FR vol. 47, p. 16984.

(12) Subdivision L

(a) 29 CFR 1915.181. Electrical circuits and distribution boards, published 4/20/82, FR vol. 47, p. 16984; amended 7/3/02, FR vol. 67, no. 128, p. 44541.

(13) Subdivisions M-O (Reserved)

(14) Subdivision P

(a) 29 CFR 1915.501. General provisions, published 9/15/04, FR vol. 69, p. 55667.

(b) 29 CFR 1915.502. Fire safety plan, published 9/15/04, FR vol. 69, p. 55667.

(c) 29 CFR 1915.503. Precautions for hot work, published 9/15/04, FR vol. 69, p. 55667.

(d) 29 CFR 1915.504. Fire watches, published 9/15/04, FR vol. 69, p. 55667.

(e) 29 CFR 1915.505. Fire response, published 9/15/04, FR vol. 69, p. 55667; 10/17/06, FR vol. 71, no. 200, p. 60843.

(f) 29 CFR 1915.506. Hazards of fixed extinguishing systems on board vessels and vessel sections, published 9/15/04, FR vol. 69, p. 55667.

(g) 29 CFR 1915.507. Land-side fire protection systems, published 9/15/04, FR vol. 69, p. 55667; 10/17/06, FR vol. 71, no. 200, p. 60843.

(h) 29 CFR 1915.508. Training, published 9/15/04, FR vol. 69, p. 55667.

(i) 29 CFR 1915.509. Definitions applicable to this subpart, published 9/15/04, FR vol. 69, p. 55667.

Appendix A to Subpart P, published 9/15/04, FR vol. 69, p. 55667.

(15) Subdivision Q-Y (Reserved)

(16) Subdivision Z

(a) 29 CFR 1915.1000, Air Contaminants, published 7/1/93, FR vol. 58, no. 125, p. 35514; 11/4/96, FR vol. 61, p. 56856; 1/10/97, FR vol. 62, p. 1619; amended 7/3/02, FR vol. 67, no. 128, p. 44541.

(b) 29 CFR 1915.1001, Asbestos, published 7/1/93, FR vol. 58, no. 125, p. 35514; 8/10/94, FR vol. 59, no. 153, p. 41080; 6/29/95, FR vol. 60, no. 125, pp. 33974-34002; 7/13/95, FR vol. 60, p. 36043; 9/29/95, FR vol. 60, p. 50411; 8/23/96, FR vol. 61, p. 43454; 6/29/98, FR vol. 63, no. 124, p. 35137; amended 7/3/02, FR vol. 67, no. 128, p. 44541; 1/5/05, FR vol. 69, p. 1111; 4/3/06, FR vol. 71, no. 63, p. 16669; 8/24/06, FR vol. 71, no. 164, p. 50122.

Appendix A to 1915.1001, published 7/1/93, FR vol. 58, p. 35553; amended 8/10/94, FR vol. 59, p. 40964; amended 6/29/95, FR vol. 60, p. 33972.

Appendix B to 1915.1001, published 7/1/93, FR vol. 58, p. 35553; amended 8/10/94, FR vol. 59, p. 40964; amended 6/29/95, FR vol. 60, p. 33972.

Appendix C to 1915.1001, published 7/1/93, FR vol. 58, p. 35553; amended 8/10/94, FR vol. 59, p. 40964; amended 7/3/02, FR vol. 67, no. 128, p. 44541.

Appendix D to 1915.1001, published 7/1/93, FR vol. 58, p. 35553; amended 8/10/94, FR vol. 59, p. 40964.

Appendix E to 1915.1001, published 7/1/93, FR vol. 58, p. 35553; amended 8/10/94, FR vol. 59, p. 40964; amended 6/29/95, FR vol. 60, p. 33972.

Appendix F to 1915.1001, published 7/1/93, FR vol. 58, p. 35553; amended 8/10/94, FR vol. 59, p. 40964; amended 6/29/95, FR vol. 60, p. 33972.

Appendix G to 1915.1001, published 7/1/93, FR vol. 58, p. 35553; amended 8/10/94, FR vol. 59, p. 40964.

Appendix H to 1915.1001, published 7/1/93, FR vol. 58, p. 35553; amended 8/10/94, FR vol. 59, p. 40964; amended 6/29/95, FR vol. 60, p. 33972.

Appendix I to 1915.1001, published 7/1/93, FR vol. 58, p. 35553; amended 8/10/94, FR vol. 59, p. 40964.

Appendix J to 1915.1001, published 8/10/94, FR vol. 59, p. 40964.

Appendix K to 1915.1001, published 8/10/94, FR vol. 59, p. 40964; amended 6/29/95, FR vol. 60, p. 33972.

Appendix L to 1915.1001, published 7/1/93, vol. 58, p. 35553; amended 8/10/94, FR vol. 59, p. 40964; amended 2/21/95, FR vol. 60, p. 9624; amended 6/28/95, FR vol. 60, p. 33343; amended 6/29/95, FR vol. 60, p. 33972; amended 7/13/95, FR vol. 60, p. 36043; amended 9/29/95, FR vol. 60, p. 50411; amended 2/13/96, FR vol. 61, p. 5507; amended 8/23/96, FR vol. 61, p. 43454.

(c) 29 CFR 1915.1002. Coal tar pitch volatiles; interpretation of term, published 7/1/93, FR vol. 58, no. 125, p. 35514; 6/20/96, FR vol. 61, p. 31427.

(d) 29 CFR 1915.1003. 13 Carcinogens (4-Nitrobiphenyl, etc.), published 7/ 1/93, FR vol. 58, no. 125, p. 35514; 3/7/96, FR vol. 61, no. 46, p. 9245; 6/20/96, FR vol. 61, p. 31427.

(e) 29 CFR 1915.1004. alpha-Naphthylamine, published 7/1/93, FR vol. 58, no. 125, p. 35514; 3/7/96, FR vol. 61, no. 46, p. 9245; 6/20/96, FR vol. 61, p. 31427.

(f) 29 CFR 1915.1005. (Reserved)

(g) 29 CFR 1915.1006. Methyl chloromethyl ether, published 7/1/93, FR vol. 58, no. 125, p. 35514; 3/7/96, FR vol. 61, no. 46, p. 9245; 6/20/96, FR vol. 61, p. 31427.

(h) 29 CFR 1915.1007. 3,3'Dichlorobenzidiene (and its salts), published 7/1/93, FR vol. 58, no. 125, p. 35514; 3/7/96, FR vol. 61, no. 46, p. 9245; 6/20/96, FR vol. 61, p. 31427.

(i) 29 CFR 1915.1008. bis-Chloromethyl ether, published 7/1/93, FR vol. 58, no. 125, p. 35514; 3/7/96, FR vol. 61, no. 46, p. 9245; 6/20/96, FR vol. 61, p. 31427.

(j) 29 CFR 1915.1009. beta-Naphthylamine, published 7/1/93, FR vol. 58, no. 125, p. 35514; 3/7/96, FR vol. 61, no. 46, p. 9245; 6/20/96, FR vol. 61, p. 31427.

(k) 29 CFR 1915.1010. Benzidine, published 7/1/93, FR vol. 58, no. 125, p. 35514; 3/7/96, FR vol. 61, no. 46, p. 9245; 6/20/96, FR vol. 61, p. 31427.

(l) 29 CFR 1915.1011. 4-Aminodiphenyl, published 7/1/93, FR vol. 58, no. 125, p. 35514; 3/7/96, FR vol. 61, no. 46, p. 9245; 6/20/96, FR vol. 61, p. 31427.

(m) 29 CFR 1915.1012. Ethyleneimine, published 7/ 1/93, FR vol. 58, no. 125, p. 35514; 3/7/96, FR vol. 61, no. 46, p. 9245; 6/20/96, FR vol. 61, p. 31427.

(n) 29 CFR 1915.1013. beta-Propiolactone, published 7/1/93, FR vol. 58, no. 125, p. 35514; 3/7/96, FR vol. 61, no. 46, p. 9245; 6/20/96, FR vol. 61, p. 31427.

(o) 29 CFR 1915.1014. 2-Acetylaminofluorene, published 7/1/93, FR vol. 58, no. 125, p. 35514; 3/7/96, FR vol. 61, no. 46, p. 9245; 6/20/96, FR vol. 61, p. 31427.

(p) 29 CFR 1915.1015. 4-Dimethylaminoazobenzene, published 7/1/93, FR vol. 58, no. 125, p. 35514; 3/7/96, FR vol. 61, no. 46, p. 9245; 6/20/96, FR vol. 61, p. 31427.

(q) 29 CFR 1915.1016. N-Nitrosodimethylamine, published 7/1/93, FR vol. 58, no. 125, p. 35514; 3/7/96, FR vol. 61, no. 46, p. 9245; 6/20/96, FR vol. 61, p. 31427.

(r) 29 CFR 1915.1017. Vinyl chloride, published 7/1/ 93, FR vol. 58, no. 125, p. 35514; 6/20/96, FR vol. 61, p. 31427.

(s) 29 CFR 1915.1018. Inorganic arsenic, published 7/1/93, FR vol. 58, no. 125, p. 35514; 6/20/96, FR vol. 61, p. 31427.

(t) 29 CFR 1915.1020 Access to employee exposure and medical records, published 7/1/93, FR vol. 58, no. 125, p. 35514; 6/20/96, FR vol. 61, p. 31427.

(u) 29 CFR 1915.1025. Lead, published 7/1/93, FR vol. 58, no. 125, p. 35514; 6/20/96, FR vol. 61, p. 31427.

(v) 29 CFR 1915.1026 Chromium (VI), published 2/28/06, Federal Register, vol. 71, no. 39, p. 10100; 6/23/06, FR vol. 71, no. 121, p. 36008.

(w) 29 CFR 1915.1027. Cadmium, published 9/14/ 92, FR vol. 57, no. 178. pp. 42388-42452; amended 4/23/93, FR vol. 58, no. 177, p. 21778; 1/3/94, FR vol. 59, no. 1, pp. 146-215; 6/20/96, FR vol. 61, p. 31427.

(x) 29 CFR 1915.1028. Benzene, published 7/1/93, FR vol. 58, no. 125, p. 35514; 6/20/96, FR vol. 61, p. 31427.

(y) 29 CFR 1915.1030. Bloodborne pathogens, published 7/1/93, FR vol. 58, no. 125, p. 35514; 6/20/96, FR vol. 61, p. 31427.

(z) 29 CFR 1915.1044. 1,2 dibromo-3-chloropropane, published 7/1/93, FR vol. 58, no. 125, p. 35514; 6/20/96, FR vol. 61, p. 31427.

(aa) 29 CFR 1915.1045. Acrylonitrile, published 7/1/ 93, FR vol. 58, no. 125, p. 35514; 6/20/96, FR vol. 61, p. 31427.

(bb) 29 CFR 1915.1047. Ethylene oxide, published 7/1/ 93, FR vol. 58, no. 125, p. 35514; 6/20/96, FR vol. 61, p. 31427.

(cc) 29 CFR 1915.1048. Formaldehyde, published 7/1/93, FR vol. 58, no. 125, p. 35514; 6/20/96, FR vol. 61, p. 31427.

(dd) 29 CFR 1915.1050. Methylenedianiline, published 7/1/93, FR vol. 58, no. 125, p. 35514; 6/20/96, FR vol. 61, p. 31427.

(ee) 29 CFR 1915.1052 Methylene Chloride, published 1/10/97, Federal Register, vol. 62, no. 7, p. 1619.

(ff) 29 CFR 1915.1120 Access to employee exposure and medical records has been redesignated to §1915.1020.

(**Note:** 29 CFR 1915.99, Hazard Communication was redesignated as 1915.1200 on 7/1/93, FR vol. 58, no. 125, p. 35514.)

(gg) 29 CFR 1915.1200. Hazard communication, published 9/24/87, FR vol. 52, p. 31886; amended 4/27/88, FR vol. 53, p. 15035; 2/15/ 89, FR vol. 54, p. 6888; 6/7/89, FR vol. 54, p. 24334; 7/1/93, FR vol. 58, no. 125, p. 35514; 2/9/94, FR vol. 59, no. 27, pp. 6126-6184; 4/13/ 94, FR vol.59, no.71, pp. 17478-17479; 12/22 /94, FR vol. 59, no. 245, p. 65947; 6/20/96, FR vol. 61, p. 31427.

(hh) 29 CFR 1915.1450. Occupational exposure to hazardous chemicals in laboratories, published 7/1/93, FR vol. 58, no. 125, p. 35514; 6/20/96, FR vol. 61, p. 31427.

[Publications: Publications referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(4)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 10-1992, f. 9-24-92, cert. ef. 11-1-92; OSHA 1-1993, f. & cert. ef. 1-22-93; OSHA 19-1993, f. & cert. ef. 12-29-93; OSHA 4-1994 f. & cert. ef. 8-4-94; OSHA 1-1995, f. & cert. ef. 1-19-95; OSHA 2-1995, f. & cert. ef. 1-25-95; OSHA 4-1995, f. & cert. ef. 3-29-95; OSHA 5-1995, f. & cert. ef. 4-6-95; OSHA 8-1995, f. & cert. ef. 8-25-95; OSHA 5-1996, f. & cert. ef. 11-29-96; OSHA 6-1996, f. & cert. ef. 11-29-96; OSHA 3-1997, f. & cert. ef. 3-28-97; OSHA 4-1997, f. & cert. ef. 4-2-97; OSHA 6-1997, f. & cert. ef. 5-2-97; OSHA 7-1998, f. & cert. ef. 12-18-98; OSHA 6-1999, f. & cert. ef. 5-26-99; OSHA 4-2001, f. & cert. ef. 2-5-01; OSHA 4-2003, f. & cert. ef. 5-6-03; OSHA 8-2004, f. & cert. ef. 12-30-04; OSHA 1-2005, f. & cert. ef. 4-12-05; OSHA 4-2006, f. & cert. ef. 7-24-06; OSHA 6-2006, f. & cert. ef. 8-30-06; OSHA 10-2006, f. & cert. ef. 11-30-06; OSHA 1-2007, f. 1-9-07 cert. ef. 1-16-07

29 CFR 1917 — Marine Terminals

437-005-0002

Adoption by Reference

In addition to, and not in lieu of, any other safety and health codes contained in OAR chapter 437, the Department adopts by reference the following federal rules as printed in the Code of Federal Regulations, 29 CFR 1917, revised as of 7/1/97, and any subsequent amendments published in the Federal Register as listed below:

(1) Subdivision A

(a) 29 CFR 1917.1 Scope and applicability, published 7/5/83, Federal Register (FR) vol. 48, p. 30909; amended 12/31/87, FR vol. 52, p. 36026; 12/31/87, FR vol. 52, p. 49624; 7/25/97, FR vol. 62, no. 143, p. 40196; 2/28/06, FR vol. 71, no. 39, p. 10100.

(b) 29 CFR 1917.2 Definitions, published 7/5/83, FR vol. 48, p. 30909; 7/25/97, FR vol. 62, no. 143, p. 40196.

(c) 29 CFR 1917.3 Incorporation by reference, published 7/25/97, FR vol. 62, no. 143, p. 40196.

(2) Subdivision B:

(a) 29 CFR 1917.11 Housekeeping, published 7/5/83, FR vol. 48, p. 30909; 7/25/97, FR vol. 62, no. 143, p. 40196.

(b) 29 CFR 1917.12 Slippery conditions, published 7/5/83, FR vol. 48, p. 30909.

(c) 29 CFR 1917.13 Slinging, published 7/5/83, FR vol. 48, p. 30909; 7/25/97, FR vol. 62, no. 143, p. 40197.

(d) 29 CFR 1917.14 Stacking of cargo and pallets, published 7/5/83, FR vol. 48, p. 30909.

(e) 29 CFR 1917.15 Coopering, published 7/5/83, FR vol. 48, p. 30909.

(f) 29 CFR 1917.16 Line handling, published 7/5/83, FR vol. 48, p. 30909.

(g) 29 CFR 1917.17 Railroad facilities, published 7/5/83, FR vol. 48, p. 30909; 7/25/97, FR vol. 62, no. 143, p. 40197.

(h) 29 CFR 1917.18 Log handling, published 7/5/83, FR vol. 48, p. 30909.

(i) 29 CFR 1917.19 Movement of barges and rail cars, published 7/5/83, FR vol. 48, p. 30909.

(j) 29 CFR 1917.20 Interference with communications, published 7/5/83, FR vol. 48, p. 30909; 7/25/97, FR vol. 62, no. 143, p. 40197.

(k) 29 CFR 1917.21 Open fires, published 7/5/83, FR vol. 48, p. 30909.

(l) 29 CFR 1917.22 Hazardous cargo (see 1917.2(p)), published 7/5/83, FR vol. 48, p. 30909.

(m) 29 CFR 1917.23 Hazardous atmospheres and substances (see 1917.2(p)), published 7/5/83, FR vol. 48, p. 30909; amended 7/13/84, FR vol. 49, p. 28551; 7/25/97, FR vol. 62, no. 143, p. 40197.

(n) 29 CFR 1917.24 Carbon monoxide, published 7/5/83, FR vol. 48, p. 30909; amended 7/13/84, FR vol. 49, p. 28551; 7/25/97, FR vol. 62, no. 143, p. 40197.

(o) 29 CFR 1917.25 Fumigants, pesticides, insecticides and hazardous preservatives (see 1917.2(p)), published 7/5/83, FR vol. 48, p. 30909; amended 7/13/84, FR vol. 49, p. 28551; 7/25/97, FR vol. 62, no. 143, p. 40197.

(p) 29 CFR 1917.26 First aid and lifesaving facilities, published 7/5/83, FR vol. 48, p. 30909; 7/25/97, FR vol. 62, no. 143, p. 40197.

(q) 29 CFR 1917.27 Personnel, published 7/5/83, FR vol. 48, p. 30909; 7/25/97, FR vol. 62, no. 143, p. 40197.

(r) 29 CFR 1917.28 Hazard communication (see also §1917.1(a)(2)(vi)), published 7/5/83, FR vol. 48, p. 30909; amended 9/24/87, FR vol. 52, p. 31876; 4/27/88, FR vol. 53, p. 15035; 2/15/89, FR vol. 54, p. 6888; 6/7/89, FR vol. 54, p. 24334; 2/9/94, FR vol. 59, no. 27, pp. 6126-6184; 4/13/94, FR vol. 59, no. 71, pp. 17478-17479; 12/22/94, FR vol. 59, no. 245, p. 65947; 7/25/97, FR vol. 62, no. 143, p. 40198.

(s) 29 CFR 1917.29 Retention of DOT markings, placards and labels, published 7/19/94, Federal Register, vol. 59, no. 137, p. 36700.

(t) 29 CFR 1917.30 Emergency action plans, published 7/25/97, FR vol. 62, no. 143, p. 40198.

(3) Subdivision C:

(a) 29 CFR 1917.41 House falls, published 7/5/83, FR vol. 48, p. 30909.

(b) 29 CFR 1917.42 Miscellaneous auxiliary gear, published 7/5/83, FR vol. 48, p. 30909; 7/25/97, FR vol. 62, no. 143, p. 40198.

(c) 29 CFR 1917.43 Powered industrial trucks, published 7/5/83, FR vol. 48, p. 30909; 7/25/97, FR vol. 62, no. 143, p. 40198.

(d) 29 CFR 1917.44 General rules applicable to vehicles, published 7/5/83, FR vol. 48, p. 30909; amended 9/25/87, FR vol. 52, p. 36026; 7/25/97, FR vol. 62, no. 143, p. 40199.

(e) 29 CFR 1917.45 Cranes and derricks (see also §1917.50), published 7/5/83, FR vol. 48, p. 30909; 7/25/97, FR vol. 62, no. 143, p. 40199.

(f) 29 CFR 1917.46 Load indicating devices, published 7/5/83, FR vol. 48, p. 30909; 7/25/97, FR vol. 62, no. 143, p. 40199.

(g) 29 CFR 1917.47 Winches, published 7/5/83, FR vol. 48, p. 30909.

(h) 29 CFR 1917.48 Conveyors, published 7/5/83, FR vol. 48, p. 30909; 7/25/97, FR vol. 62, no. 143, p. 40200.

(i) 29 CFR 1917.49 Spouts, chutes, hoppers, bins, and associated equipment, published 7/5/83, FR vol. 48, p. 30909.

(j) 29 CFR 1917.50 Certification of marine terminal material handling devices (see also Mandatory Appendix IV, Part 1918 of this chapter), published 7/5/83, FR vol. 48, p. 30909; amended 7/13/84, FR vol. 49, p. 28551; 7/25/97, FR vol. 62, no. 143, p. 40200.

(k) 29 CFR 1917.51 Hand tools, published 7/5/83, FR vol. 48, p. 30909.

(4) Subdivision D:

(a) 29 CFR 1917.70 General, published 7/5/83, FR vol. 48, p. 30909.

(b) 29 CFR 1917.71 Terminals handling intermodal container or roll-on roll-off operations, published 7/5/83, FR vol. 48, p. 30909; 7/25/97, FR vol. 62, no. 143, p. 40200.

(c) 29 CFR 1917.72 (Reserved)

(d) 29 CFR 1917.73 Terminal facilities handling menhaden and similar species of fish (see also §1917.2, definition of hazardous cargo, materials, substance, or atmosphere), published 7/5/83, FR vol. 48, p. 30909; 7/25/97, FR vol. 62, no. 143, p. 40201.

(5) Subdivision E:

(a) 29 CFR 1917.91 Eye and face protection, published 7/5/83, FR vol. 48, p. 30909; 7/25/97, FR vol. 62, no. 143, p. 40201.

(b) 29 CFR 1917.92 Respiratory protection, published 7/5/83, FR vol. 48, p. 30909.

(c) 29 CFR 1917.93 Head protection, published 7/5/83, FR vol. 48, p. 30909; 7/25/97, FR vol. 62, no. 143, p. 40201.

(d) 29 CFR 1917.94 Foot protection, published 7/5/83, FR vol. 48, p. 30909; 7/25/97, FR vol. 62, no. 143, p. 40201.

(e) 29 CFR 1917.95 Other protective measures, published 7/5/83, FR vol. 48, p. 30909; 7/25/97, FR vol. 62, no. 143, p. 40201.

(6) Subdivision F

(a) 29 CFR 1917.111 Maintenance and load limits, published 7/5/83, FR vol. 48, p. 30909.

(b) 29 CFR 1917.112 Guarding of edges, published 7/5/83, FR vol. 48, p. 30909; 7/25/97, FR vol. 62, no. 143, p. 40201.

(c) 29 CFR 1917.113 Clearance heights, published 7/5/83, FR vol. 48, p. 30909.

(d) 29 CFR 1917.114 Cargo doors, published 7/5/83, FR vol. 48, p. 30909.

(e) 29 CFR 1917.115 Platforms and skids, published 7/5/83, FR vol. 48, p. 30909.

(f) 29 CFR 1917.116 Elevators and escalators, published 7/5/83, FR vol. 48, p. 30909; amended 7/13/84, FR vol. 49, p. 28551.

(g) 29 CFR 1917.117 Manlifts, published 7/5/83, FR vol. 48, p. 30909.

(h) 29 CFR 1917.118 Fixed ladders, published 7/5/83, FR vol. 48, p. 30909; 7/25/97, FR vol. 62, no. 143, p. 40201.

(i) 29 CFR 1917.119 Portable ladders, published 7/5/83, FR vol. 48, p. 30909; 7/25/97, FR vol. 62, no. 143, p. 40201.

(j) 29 CFR 1917.120 Fixed stairways, published 7/5/83, FR vol. 48, p. 30909.

(k) 29 CFR 1917.121 Spiral stairways, published 7/5/83, FR vol. 48, p. 30909; 7/25/97, FR vol. 62, no. 143, p. 40201.

(l) 29 CFR 1917.122 Employee exits, published 7/5/83, FR vol. 48, p. 30909.

(m) 29 CFR 1917.123 Illumination, published 7/5/83, FR vol. 48, p. 30909; 7/25/97, FR vol. 62, no. 143, p. 40201.

(n) 29 CFR 1917.124 Dockboards (car and bridge plates), published 7/5/83, FR vol. 48, p. 30909; 7/25/97, FR vol. 62, no. 143, p. 40201.

(o) 29 CFR 1917.125 Guarding temporary hazards, published 7/5/83, FR vol. 48, p. 30909.

(p) 29 CFR 1917.126 River banks, published 7/5/83, FR vol. 48, p. 30909; 7/25/97, FR vol. 62, no. 143, p. 40201.

(q) 29 CFR 1917.127 Sanitation, published 7/5/83, FR vol. 48, p. 30909.

(r) 29 CFR 1917.128 Signs and marking, published 7/5/83, FR vol. 48, p. 30909.

(7) Subdivision G:

(a) 29 CFR 1917.151 Machine guarding, published 7/5/83, FR vol. 48, p. 30909.

(b) 29 CFR 1917.152 Welding, cutting and heating (hot work) (see also §1917.2, definition of hazardous cargo, materials, substance, or atmosphere), published 7/5/83, FR vol. 48, p. 30909; 7/25/97, FR vol. 62, no. 143, p. 40202.

(c) 29 CFR 1917.153 Spray painting (see also §1917.2, definition of hazardous cargo, materials, substance, or atmosphere), published 7/5/83, FR vol. 48, p. 30909; 7/25/97, FR vol. 62, no. 143, p. 40202.

(d) 29 CFR 1917.154 Compressed air, published 7/5/83, FR vol. 48, p. 30909.

(e) 29 CFR 1917.155 Air receivers, published 7/5/83, FR vol. 48, p. 30909.

(f) 29 CFR 1917.156 Fuel handling and storage, published 7/5/83, FR vol. 48, p. 30909; 7/25/97, FR vol. 62, no. 143, p. 40202.

(g) 29 CFR 1917.157 Battery charging and changing, published 7/5/83, FR vol. 48, p. 30909; 7/25/97, FR vol. 62, no. 143, p. 40202.

(h) 29 CFR 1917.158 Prohibited operations, published 7/5/83, FR vol. 48, p. 30909.

NOTE: These standards are available at the Department of Consumer and Business Services, Oregon Occupational Safety and Health Division, and the **United States Government Printing Office.**

Stat. Auth.: ORS 654.025(2) & 656.726(3)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 10-1992, f. 9-24-92, cert. ef. 11-1-92; OSHA 4-1994 f. & cert. ef. 8-4-94; OSHA 1-1995, f. & cert. ef. 1-19-95; OSHA 5-1995, f. & cert. ef. 4-6-95; OSHA 9-1997, f. & cert. ef. 12-31-97; OSHA 6-1999, f. & cert. ef. 5-26-99; OSHA 9-2000, f. & cert. ef. 10-10-00; OSHA 6-2006, f. & cert. ef. 8-30-06

29 CFR 1918 — Safety and Health Regulations for Longshoring

437-005-0003
Adoption by Reference.

In addition to, and not in lieu of, any other safety and health codes contained in OAR chapter 437, the Department adopts by reference the following federal rules as printed in the Code of Federal Regulations, 29 CFR 1918, revised as of 7/1/97, and any subsequent amendments published in the Federal Register as listed below:

(1) Subdivision A

(a) 29 CFR 1918.1 Scope and application, published 7/25/97, Federal Register (FR) vol. 62, no. 143, p. 40202; 2/28/06, FR vol. 71, no. 39, p. 10100.

(b) 29 CFR 1918.2 Definitions, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(c) 29 CFR 1918.3 Incorporation by reference, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(2) Subdivision B.

(a) 29 CFR 1918.11 Gear certification (see also §§1918.2 and 1918.51), published 7/25/97, FR vol. 62, no. 143, p. 40202.

(3) Subdivision C.

(a) 29 CFR 1918.21 General requirements, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(b) 29 CFR 1918.22 Gangways, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(c) 29 CFR 1918.23 Jacob's ladders, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(d) 29 CFR 1918.24 Fixed and portable ladders, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(e) 29 CFR 1918.25 Bridge plates and ramps (see also §1918.86), published 7/25/97, FR vol. 62, no. 143, p. 40202.

(f) 29 CFR 1918.26 Access to barges and river towboats, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(4) Subdivision D.

(a) 29 CFR 1918.31 Hatch coverings, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(b) 29 CFR 1918.32 Stowed cargo and temporary landing surfaces, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(c) 29 CFR 1918.33 Deck loads, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(d) 29 CFR 1918.34 Other decks, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(e) 29 CFR 1918.35 Open hatches, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(f) 29 CFR 1918.36 Weather deck rails, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(g) 29 CFR 1918.37 Barges, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(5) Subdivision E.

(a) 29 CFR 1918.41 Coaming clearances, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(b) 29 CFR 1918.42 Hatch beam and pontoon bridles, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(c) 29 CFR 1918.43 Handling hatch beams and covers, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(6) Subdivision F

(a) 29 CFR 1918.51 General requirements (see also §1918.11 and Appendix III of this part), published 7/25/97, FR vol. 62, no. 143, p. 40202.

(b) 29 CFR 1918.52 Specific requirements, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(c) 29 CFR 1918.53 Cargo winches, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(d) 29 CFR 1918.54 Rigging gear, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(e) 29 CFR 1918.55 Cranes (see also §1918.11), published 7/25/97, FR vol. 62, no. 143, p. 40202.

(7) Subdivision G.

(a) 29 CFR 1918.61 General (see also Appendix IV of this part), published 7/25/97, FR vol. 62, no. 143, p. 40202.

(b) 29 CFR 1918.62 Miscellaneous auxiliary gear, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(c) 29 CFR 1918.63 Chutes, gravity conveyors and rollers, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(d) 29 CFR 1918.64 Powered conveyors, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(e) 29 CFR 1918.65 Mechanically-powered vehicles used aboard vessels, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(f) 29 CFR 1918.66 Cranes and derricks other than vessel's gear, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(g) 29 CFR 1918.67 Notifying ship's officers before using certain equipment, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(h) 29 CFR 1918.68 Grounding, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(i) 29 CFR 1918.69 Tools, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(j) 29 CFR 1918.70–1918.80 (Reserved)

(8) Subdivision H.

(a) 29 CFR 1918.81 Slinging, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(b) 29 CFR 1918.82 Building drafts, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(c) 29 CFR 1918.83 Stowed cargo, tiering and breaking down, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(d) 29 CFR 1918.84 Bulling cargo, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(e) 29 CFR 1918.85 Containerized cargo operations, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(f) 29 CFR 1918.86 Roll-on roll-off (Ro-Ro) operations (see also 1918.25), published 7/25/97, FR vol. 62, no. 143, p. 40202.

(g) 29 CFR 1918.87 Ship's cargo elevators, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(h) 29 CFR 1918.88 Log operations, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(i) 29 CFR 1918.89 Handling hazardous cargo (see also 1918.2 and 1918.99), published 7/25/97, FR vol. 62, no. 143, p. 40202.

(9) Subdivision I

(a) 29 CFR 1918.90 Hazard communication (see also 1918.1(b)(4)), published 7/25/97, FR vol. 62, no. 143, p. 40202.

(b) 29 CFR 1918.91 Housekeeping, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(c) 29 CFR 1918.92 Illumination, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(d) 29 CFR 1918.93 Hazardous atmospheres and substances (see also 1918.2(j)), published 7/25/97, FR vol. 62, no. 143, p. 40202.

(e) 29 CFR 1918.94 Ventilation and atmospheric conditions (see also 1918.2), published 7/25/97, FR vol. 62, no. 143, p. 40202.

(f) 29 CFR 1918.95 Sanitation , published 7/25/97, FR vol. 62, no. 143, p. 40202.

(g) 29 CFR 1918.96 Maintenance and repair work in the vicinity of longshoring operations, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(h) 29 CFR 1918.97 First aid and lifesaving facilities (see also Appendix V of this part), published 7/25/97, FR vol. 62, no. 143, p. 40202.

(i) 29 CFR 1918.98 Qualifications of machinery operators and supervisory training, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(j) 29 CFR 1918.99 Retention of DOT markings, placards and labels, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(k) 29 CFR 1918.100 Emergency action plans, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(10) Subdivision J

(a) 29 CFR 1918.101 Eye and face protection, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(b) 29 CFR 1918.102 Respiratory protection, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(c) 29 CFR 1918.103 Head protection, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(d) 29 CFR 1918.104 Foot protection, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(e) 29 CFR 1918.105 Other protective measures, published 7/25/97, FR vol. 62, no. 143, p. 40202.

(11) Appendix I — Cargo Gear Register and Certificates (Non-Mandatory), published 7/25/97, FR vol. 62, no. 143, p. 40202.

(12) Appendix II — Tables for Selected Miscellaneous Auxiliary Gear (Mandatory), published 7/25/97, FR vol. 62, no. 143, p. 40202.

(13) Appendix III — The Mechanics of Conventional Cargo Gear (Non-Mandatory), published 7/25/97, FR vol. 62, no. 143, p. 40202.

(14) Appendix IV — Special Cargo Gear (Mandatory), published 7/25/97, FR vol. 62, no. 143, p. 40202.

(15) Appendix V — Basic Elements of a First Aid Training Program (Non-Mandatory), published 7/25/97, FR vol. 62, no. 143, p. 40202.

NOTE: These standards are available at the Department of Consumer and Business Services, Oregon Occupational Safety and Health Division, and the United States Government Printing Office.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 10-1992, f. 9-24-92, cert. ef. 11-1-92; OSHA 4-1994 f. & cert. ef. 8-4-94; OSHA 1-1995, f. & cert. ef. 1-19-95; OSHA 5-1995, f. & cert. ef. 4-6-95; OSHA 9-1997, f. & cert. ef. 12-31-97; OSHA 6-1999, f. & cert. ef. 5-26-99; OSHA 9-2000, f. & cert. ef. 10-10-00; OSHA 6-2006, f. & cert. ef. 8-30-06

DIVISION 7

FOREST ACTIVITIES

Subdivision A — General Requirements and Definitions

437-007-0001
Authority of Rules

These rules are promulgated under the Director's authority contained in ORS 654.025(2) and 656.726(4).

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0002
Purpose of Rules

The purpose of the rules contained in this division is to prescribe minimum safety and health requirements for all employees employed in forest activities work.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0003
Scope of Rules

The rules in this division apply to all public and private employers who engage in forest activities as listed in OAR 437-007-0004.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0004
Applicability of Rules

(1) The rules in division 7 establish occupational safety and health practices for all forest activity operations including but not limited to:

(a) Chemical application;
(b) Chipping;
(c) Clearing and slash disposal;
(d) Forest road construction, maintenance and decommissioning;
(e) Log dumps, ponds, plantsite log yards and independent sort yards;
(f) Log hauling;
(g) Marking;
(h) Prescribed fire;
(i) Pulpwood and non-pulpwood logging;
(j) Reforestation/vegetation management;
(k) Stream restoration;
(l) Timber cutting and thinning operations;
(m) Timber cruising;
(n) Tree climbing activities;
(o) Wildland fire suppression.

(2) Any situation or condition not specifically addressed will be subject to other applicable provisions of the Oregon Administrative Rules, chapter 437, Oregon Occupational Safety and Health Standards.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03; OSHA 2-2005, f. 5-27-05, cert. ef. 6-1-05

437-007-0010
Worker Protection Standard

Oregon OSHA administers and enforces the Worker Protection Standard (40 CFR 170). All parts apply in addition to, and not instead of, any other part of division 7, Forest Activities. Should any of the parts of these two standards conflict, comply with the part offering the most protection to workers.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0025
Definitions

(1) A-frame — A structure made of two independent columns fastened together at the top and separated by a reasonable width at the bottom to stabilize the unit from tipping sideways.

(2) Alternative communication system — A system by voice, hand or media other than horn or whistle which provides a safe and reliable method of communication between crew members.

(3) Approved container — A metal or polyethylene (plastic) container that can be used to carry flammable liquids in quantities up to 5 gallons. These containers must be accepted as satisfactory to contain flammable liquids by a nationally recognized testing lab, such as Underwriters Lab (UL) or Factory Mutual (FM).

(4) Aramid — The generic name for a high-strength, flame-resistant synthetic fabric used in the shirts and jeans of firefighters. Nomex, a brand name for aramid fabric, is the term commonly used by firefighters.

(5) Arch — Any device attached to the back of a mobile vehicle and used for raising one end of logs to facilitate movement.

(6) Authorized person — See "Designated Person."

(7) Backcut (falling cut) — The cut opposite of the face cut.

(8) Ballistic nylon — A nylon fabric of high tensile properties designed to provide protection from lacerations.

(9) Base of tree — That portion of a tree that is not more than 12 inches above highest ground level.

(10) Bight of the line — A hazardous zone created by one or more lines under tension, or a point on a line where a rigging chain is attached.

(11) Binder — A hinged lever assembly for connecting the ends of a wrapper to tighten the load restraining devices (log trucks, flatbeds, lowboys, etc.).

(12) Brow log — A log placed parallel to any roadway at a landing or dump to protect carriers while loading or unloading.

(13) Buck — To cut a fallen tree into logs.

(14) Butt — The bottom cut or the first log of a fallen tree.

(15) Cable yarding — The movement of trees or logs from the area where they have been fallen to a landing by attaching them to a cable system that is supported by a metal tower (wood spar) and/or intermediate support or tail trees.

(16) Chock — A block, often wedge-shaped, which is used to prevent movement; for example, a log from rolling, a wheel from turning.

(17) Choker — Length of wire rope, chain or synthetic material with attachments for encircling a log to be yarded.

(18) Competent person — A qualified person who has been authorized by the employer or employer representative to:

(a) Identify existing and predictable hazards in the surroundings or working conditions which are hazardous or dangerous to employees; and

(b) Eliminate the hazard or take corrective action.

(19) Confine a fire — To restrict the fire within determined boundaries established either prior to the fire or during the fire.

(20) Contain a fire — To take suppression action as needed, which can reasonably be expected to check the fire's spread under prevailing conditions.

(21) Control a fire — To complete control line around a fire, and spot fires therefrom and any interior islands to be saved; burn out any unburned area adjacent to the fire side of the control lines; and cool down all hot-spots that are immediate threats to the control line, until the lines can reasonably be expected to hold under foreseeable conditions.

(22) Cut-up-tree/snag — A tree/snag, left standing, with the falling cuts started or completed.

(23) Cutter — One whose primary job is to manually fall, buck or limb trees.

(24) Danger tree — A standing tree, alive or dead, that presents a hazard to personnel due to deterioration or physical damage to the root system, trunk (stem), or limbs, and the degree and direction of lean.

(25) DBH — Diameter at breast height.

(26) Deadman — Buried log or other object used as an anchor.

(27) Deck — A stack of trees or logs.

(28) Designated person — An individual who has been assigned by the employer or the employer representative to perform a specific duty or duties.

(29) Direct supervision — Supervision by a competent person who watches over and directs the work of others who are within sight and unassisted natural voice contact.

NOTE: Direct supervision may be achieved by radio contact when an untrained runner is enroute to or from an operational area where there may be exposure to wildland fire hazards, provided there is a competent person at both the pick-up and drop-off points.

(30) Domino falling — The partial cutting of several trees which are left standing and then pushed over with a pusher (driver) tree. This definition of domino falling does not include the falling of:

(a) A single danger tree by falling another single tree into it.

(b) Two or more trees at the same time because their limbs are interlocked.

(31) Double tree intermediate support system — A system for supporting a loaded skyline in a support jack suspended on a single piece of wire rope that is supported by two trees in a manner that provides for sharing the load between the two trees. (See Figure 7-15.)

(32) Dutchman (as used in falling) — A method used to pull a tree against its lean by leaving a section of the undercut on one corner of the face.

(33) Dutchman (as used in yarding) — A block used to change direction of line lead (sideblocking).

(34) Emergency care — Care provided by a person who is first aid and CPR trained.

(35) Emergency medical service — Care provided by a medically trained person such as in a hospital, clinic, ambulance or rescue vehicle.

(36) Emergency scene — The site where the suppression or control of a fire or an emergency exists.

(37) Equipment — See "Vehicle and Machine."

(38) Equipment protection designations — The listing of specific guarding requirements for specific logging machines.

(39) Escape route — A planned and understood route firefighters take to move to a safety zone or other low-risk area.

(40) Experienced person — A person who has sufficient training, experience and skill in a given process to be knowledgeable of all aspects of that process.

(41) Extreme weather conditions — Includes, but not limited to:

(a) Strong winds (applies to timbered areas only) — Wind velocity that reaches sufficient force to blow limbs from standing trees, cause windfalls, or prevent cutters from falling trees in the desired direction;

(b) Impaired vision — Conditions such as falling snow, sleet, mist, fog, rain, dust, or darkness which substantially impairs visibility to the extent that employees cannot clearly see signals, moving vehicles, equipment and lines, falling trees or other hazards;

(c) Hazardous snow or ice conditions — Snow or ice conditions which prevent escape from hazards such as falling trees, moving logs, vehicles, or similar hazards; or

(d) Lightning.

(42) Fairlead — Sheaves, rolls or a combination thereof arranged for receiving a line coming from any direction to minimize the line from burning and aid proper line spooling onto a drum.

(43) Fall — To cut down trees.

(44) Faller — A person who falls (cuts down) trees.

(45) Fire camp — A geographical site(s) equipped and staffed to provide sleeping, food, water and sanitary services to fire personnel.

(46) Fire fighting equipment — All portable and fixed fire suppression and control equipment.

(47) Fire season — That period during the year when the State Forester declares fire season in any part of the state, as required by ORS 477.505.

(48) Fire shelter — A personal protection item carried by firefighters which when deployed unfolds to form a pup-tent shelter of heat reflective materials.

(49) Firefighter — Any employee whose primary duty is fire suppression and control of fires on or around wildland areas.

(50) Flame resistance — The property of material, or combinations of component materials, to retard ignition and restrict the spread of flame.

(51) FOPS (Falling Object Protective Structure) — Structural members arranged in such a way to reasonably protect operators from falling objects such as trees, rocks, etc.

(52) Frequent review or inspection — A review or inspection that is conducted at intervals which are necessary (conducted on daily to monthly intervals) to gain a desired assessment of conditions, practices, policies or procedures.

(53) Grounded (Cutting) — Placement of a tree on the ground.

(54) Grounded (Electrical) — A method to dissipate static or electrical charges.

(55) Grounded (Machines) — The placement of a machine component on the ground or device where it is firmly supported.

(56) Guarded — Covered, shielded, fenced, enclosed, or otherwise protected by means of suitable enclosures, covers, casings, shields, troughs, railings, screens, mats, or platforms, or by location to prevent injury.

(57) Guyline — A standing line used to support or stabilize a spar, tail tree, intermediate support tree, machinery or equipment.

(58) Health care provider — A health care practitioner operating within the scope of their license, certificate, registration, or legally authorized practice.

(59) High lead — A system of logging where the mainline is threaded through the mainline block which is located near the top of the spar or metal tower to obtain a lift of the logs being yarded and is returned to the vicinity of the logs by a haulback line.

(60) High visibility colors — Bright or fluorescent white, lime green, orange, yellow, red, or aqua colors that stand out from the surrounding background color so as to make them easily seen.

(61) In the clear — A position within the work area where the probability of hazardous contact with vehicles, machines, falling trees, moving logs, rootwads, chunks, material, rigging, and equipment is minimized by distance from the hazards and/or use of physical barriers, such as stumps, trees, terrain, or other objects providing protection.

(62) Initial attack — The control efforts taken by all resources which arrive at the fire during the first burning period (first 24 hours).

(63) Kicker (as used in cutting) — A piece of the face, or an equivalent object, placed in one side of a face cut to pull the tree from its lean as it falls.

(64) Landing — Any designated place where logs are laid after being yarded and are awaiting subsequent handling, loading and hauling.

(65) Landing chute — The head of the skid trail or yarding road where the logs are temporarily placed and are awaiting subsequent handling, loading, and hauling.

(66) Lay (cutting) — The desired direction of fall for a tree.

(67) Lay (wire rope) — A unit of measure to describe the straight-line distance in which a strand of wire rope makes one complete spiral around the core of a rope. The way wires have been laid to form strands and the way strands have been laid around the core (i.e., regular, lang lay, etc.).

(68) Limbing — To cut branches off trees.

(69) Lodged tree (hung tree) — A tree leaning against another tree or object which prevents it from falling to the ground.

(70) Log — A segment sawed or split from a fallen tree, such as, but not limited to, a section, bolt, or tree length.

(71) Log dump — An area in which logs are removed from a truck or rail car. May be either dry land or water, parbuckled over a brow log or removed by machine.

(72) Logging — All operations relating to the falling of trees, cutting the fallen trees into suitable lengths, yarding, limbing, debarking, grading, loading, hauling, unloading, storing in decks or ponds until processed from timber to wood products.

(73) Machine — Equipment used or intended for use in forest activities operations such as but not limited to building or maintaining roads; felling trees; processing trees or fiber; yarding, moving or handiling logs, trees, chunks and other material; stream restoration; forest operations for wildlife enhancement or other management objectives; and wildland fire suppression.

(74) Mainline (yarding) — The line that moves the turn of logs toward the yarder in any given system.

(75) Mechanized falling — Falling of standing timber by a self-propelled mobile-wheeled or tracked machine equipped with a shear or other powered cutting device.

(76) Metal tower — A vertical or leaning metal tube or boom used for yarding logs by various methods of cable logging.

(77) NRTL (Nationally Recognized Testing Laboratory) — An organization which is recognized by OSHA in accordance with OAR 437, Division 2/A, §1910.7, Appendix A, OSHA Recognition Process for Nationally Recognized Testing Laboratories.

(78) OPS (Operator Protective Structure) — Structures or enclosures whose primary purpose is to minimize the possibility of operator injury from hazards, such as whipping saplings, branches, jill-poking and snapping winch lines with the least adverse effect on operator visibility, comfort, and protection from other hazards. Specific standards and tests exist and are referenced in many national and state codes.

(79) Pass line — A small line threaded through a block at or near the top of a wood tree or metal tower to assist the high climber.

(80) Periodic review or inspection — A review or inspection that is conducted at predetermined intervals (conducted on 1 to 12 months intervals).

(81) Personal protective equipment — Clothing or equipment worn to protect the head, body, feet and extremities from chemical or physical hazards.

(82) Potential failure zone — An area that could be impacted by the failure of any part of a standing tree anchor, tail or intermediate support tree as the result of forces or loads imposed on the tree by guylines, running lines or skylines. The boundaries of the zone encompass the area into which the tree, or parts of the tree, could fall, slide or roll and all trees, logs, lines and material impacted by the tree failure.

(83) Prescribed Fire — Any fire burning under predetermined conditions to meet specific objectives related to fuels reduction or habitat improvement.

(84) Qualified first aid person — Has evidence to show valid first aid and CPR training within the last 2 years.

(85) Qualified person — A person who has:

(a) A recognized degree, certification, professional standing, knowledge, training or experience.

(b) Successfully demonstrated the ability to perform the work, solve or resolve problems relating to the work, subject matter, or project.

(86) Rated capacity — The load identified by the manufacturer that a system, vehicle, machine or piece of equipment can lift or move.

(87) Reach — Usually a rectangular steel tube which slides in the trailer tunnel and is used as a connection between a log truck and the trailer.

(88) Reforestation — All forest management operations relating to the planting and nurturing of trees. The nurturing of trees includes: fertilization, pre-commercial thinning, mulching, pruning, animal control measures, application of chemicals, and stand inventories.

(89) ROPS (Roll-Over Protective Structure) — Framing and support for machinery that reduces the possibility of a seat belted operator from being crushed should the machine roll over. Specific standards and tests exist and are referenced in many national and state codes.

(90) Root wad — The root ball and dirt that is pulled from the ground when a tree or stump is uprooted.

(91) Rub rails — Guarding on the exposed sides of elevated bridges, ramps or runways to prevent wheeled equipment from going over the edge.

(92) Rub tree — A tree used to guide a turn around a certain area.

(93) Runner — A person who delivers supplies, materials or relays information.

(94) Running line — Any moving line in a cable yarding system.

(95) Safety factor — The ratio of breaking strength to safe working strength or load.

(96) Safety pin (shackle) — A threaded shackle pin secured by a nut that is secured with a cotter key, latchpin or molly.

(97) Safety swede — A device that is designed for the specific purpose of making a positive connection to binders that are being closed (tightened) or opened.

(98) Safety Zone (fire) — A designated area of sufficient size and suitable location that is expected to protect fire personnel from known hazards without using fire shelters, such as but not limited to an already burned area, previously constructed safety area, a meadow that won't burn, manmade or natural rocky area that is large enough and sufficiently devoid of fuels to take refuge without being burned.

(99) Serviceable condition — That quality of a tool, machine, vehicle, equipment, or other device to operate as it was intended to operate by the manufacturer.

(100) Short log (chunks) — Any log or fiber less than 27 feet long.

(101) Single jack — One cutter, in an area or portion of standing timber, who falls and bucks.

(102) Single tree intermediate support system — A system for supporting a loaded skyline in a support jack suspended from a single tree. The tree may be an upright single-rooted tree or a leaning tree severed or partially severed from the stump.

(103) Siwash (intentional) — The use of a natural physical object, such as a tree or stump, that changes the direction of a line rather than with a block.

(104) Siwash (unintentional) — When a line is incorrectly routed through standing timber or other objects or, as often occurs in side-hill yarding, the turn of logs pulls the bight of the line downhill and it hangs up on a stump, root wad or other object, changing the lead and creating a hazardous area.

(105) Skidder — A self-propelled machine, of the wheel or crawler design, or an animal used to move logs or trees to a landing.

(106) Skidding — The movement of logs or fiber on the surface of the ground toward the place where they can be further processed or loaded.

(107) Skyline — The line which is hung between two or more supports on which a carriage or block travels.

(108) Slackline — A system of logging where a carriage travels on a skyline that can be raised or lowered. The carriage is pulled to the landing by the mainline (skidding line) and is returned to the vicinity of the logs by the haulback line or gravity.

(109) Slash burning — The use of prescribed fire as a method of forest management.

(110) Slope (grade) — The increase or decrease in altitude over a horizontal distance expressed as a percentage. For example, change of altitude of 20 feet (6 m) over a horizontal distance of 100 feet (30 m) is expressed as a 20 percent slope.

(111) Snag — Any standing dead tree or portion thereof.

(112) Snubbing — Retarding or controlling the movement of logs or machines by attachment to another vehicle or stationary object.

(113) Spring pole — A tree, segment of a tree, limb, or sapling which is under stress or tension due to the pressure or weight of another object.

(114) Square lead — A horizontal angle of up to 90 degrees formed by the projected lines of the mainline from the drum of the logging machine through the block or fairlead and the yarding road.

(115) Stability (machine or vehicle) — The capacity of a machine or vehicle to return to equilibrium or to its original position after having been displaced.

(116) Strip — A stand of timber or area of fallen and bucked timber in a predetermined location on which employees work in a planned pattern.

(117) Supervisory personnel — Agent of the employer (such as a manager, superintendent, foreperson, hooktender, rigging slinger, or person in charge of all or part of the place of employment) who directs the work activities of one or more employees.

(118) Swede connection — A line configuration consisting of wrapping two choker lines in the same direction around a tree or log and connecting the line nubbins to opposite line bells.

(119) Swing cut — A back cut in which the holding wood on one side is cut through.

(120) Swing radius (machines) — Is that distance equal to actual working radius of machines capable of upper structure rotation plus the length of the attachments, logs, and materials being handled.

(121) Tail hold — An anchor used for making fast any line or block other than a guyline.

(122) Tail tree — The tree at the opposite end from the landing area on which rigging is hung.

(123) Tight line — When a force is exerted on both main line and haulback at the same time.

(124) Timber cutting — The falling and/or bucking of trees by hand or mechanical means.

(125) Topping — Cutting off the top section of a standing tree prior to rigging the tree for a spar or tail tree.

(126) TOPS (Tip-Over Protective Structure) — Framing and support for machinery that reduces the possibility of a seat belted operator from being injured should the machine tip over on its side. Specific standards and tests exist and are referenced in many national and state codes.

(127) Tractor — A self-propelled machine of wheel or crawler design used to exert a push or pull force through mounted equipment to move objects or material.

(128) Tree jack (shoe) (other than for directional falling use) — A grooved saddle of wood, soft metal or rollers contained within two steel side plates attached to a tree with a strap as a guide for a skyline, sail guy or similar static line.

(129) Tree plates — Steel bars sometimes shaped as elongated "J"s which are fastened to a tree to hold the guylines and prevent the rigging from cutting into the tree when tightened. The hook of the "J" is also used to prevent the mainline block strap from sliding.

(130) Turn — Any log or group of logs or other material usually attached by chokers, grapples or other means and moved from a point of rest to the landing or landing chute area.

(131) Undercut (face) — A notch cut in a tree to guide the direction of the tree fall and help prevent splitting or kickback.

(132) V-lead — A horizontal angle of less than 90 degrees formed by the projected lines of the mainline from the drum of the logging machine through the block or fairlead and the yarding road.

(133) Vehicle — A car, bus, truck, trailer or semi-trailer owned, leased or rented by the employer that is used for transportation of employees or movement of material. Any carrier that is not manually propelled.

(134) Watcher/Firewatch — A person who visually observes the area on which operation activity occurred for the out-break of fire.

(135) Wildland Fire — Any non-structure fire, other than prescribed fire, that occurs in the wildland.

(136) Wildlands fire fighting — All activities, operations, and equipment of employers and employees involved in the suppression or control of fires on wildlands. Does not include interior structural fire suppression or control.

(137) Wildlife tree — A live, partially dead, or snag tree in the forest riparian zone, or in a cutting unit that is left for wildlife habitat. May also be a danger tree.

(138) Winching — The winding of cable or rope onto a spool or drum.

(139) Within the stakes — When the log center is below the top of the stakes.

(140) Work area — Any area frequented by employees in the performance of assigned or related duties.

(141) Wrapper (tie down) — A chain, cable, steel banding, synthetic rope or fiber webbing assembly used to contain a load of logs.

(142) Yarder — A machine with a series of drums used to yard logs.

(143) Yarding — Movement of logs or trees from the place they were felled to an area where they can be further processed.

[ED. NOTE: Figures and Appendices referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03; OSHA 2-2005, f. 5-27-05, cert. ef. 6-1-05

Subdivision B — Safety and Health Program

437-007-0100
Safety and Health Program

Every employer must implement a written safety and health program that establishes management commitment, supervisory responsibilities, accident investigation, employee involvement, hazard identification, training, and annual evaluation of the program.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0105
Management Commitment

The employer must:

(1) State the purpose of the safety and health program.

(2) Identify the safety and health personnel and resources that will be used to implement the program.

(3) Establish a labor and management policy that provides for ongoing evaluation of employees' safety performance.

(4) Establish a disciplinary policy to address unsafe work practices.

(5) Assign the responsibility, authority and accountability for worker safety and health to all employees who supervise or direct work activity.

(6) Authorize a competent person(s) for each jobsite who has the authority to:

(a) Supervise all personnel at the site.

(b) Enforce the company's safety and health program.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0110
Supervisory Responsibilities

The employer or their authorized representative must:

(1) Supervise all employees at the site and enforce the company's safety and health program.

(2) Verify that all current and new employees:

(a) Can safely perform assigned work tasks.

(b) Have received adequate job safety instruction and training.

(3) Periodically review the safety performance of each employee.

(4) Provide job safety and health instruction, training or disciplinary action to an employee when the employee is working in an unsafe manner.

NOTE: This training can be limited to the specific information needed to correct the unsafe work practice(s).

(5) Closely supervise each employee who is receiving job safety and health instruction and training.

(6) Require all employees to demonstrate the ability to safely perform their work task before permitting them to work independently.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0125
Accident Investigation

The employer or their authorized representative must:

(1) Investigate every employee fatal and recordable injury/illness to determine the cause(s).

(2) Discuss "near misses" with employees.

(3) Identify the measures to prevent recurrence of the "near misses," fatal and recordable injury/illness.

(4) Inform all employees of the preventive measures resulting from investigations.

(5) Take steps to prevent recurrence of similar "near misses," fatal and recordable injury/illness.

(6) Keep written results of the fatal and recordable injury/illness investigations and corrective measures for 3 years.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0130
Employee Involvement

The employer or their authorized representative must:

(1) Encourage employees to participate in site planning and the pre-work safety meeting to discuss site conditions and known hazards.

(2) Require employees to report safety and health hazards.

(3) Require qualified employees to take corrective action and eliminate hazards.

(4) Conduct monthly safety meetings with all employees.

(a) Keep written minutes and attendance records for 3 years.

(b) Make written minutes and attendance records available to all employees.

NOTE 1: Meetings may be with individuals, separate crews, or larger groups.
NOTE 2: Upon written application, OR-OSHA may approve an innovative method to comply with the requirements for monthly safety meetings.
Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03; OSHA 2-2005, f. 5-27-05, cert. ef. 6-1-05

437-007-0135
Hazard Identification and Control

The employer or their authorized representative must:

(1) Implement a procedure for monthly safety inspections of all worksites, vehicles, machines, equipment, and work practices.

(2) Identify who will complete monthly safety inspections.

(3) Implement procedures that will be used to report and correct hazardous conditions.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0140
Training

The employer or their authorized representative must:

(1) Provide job safety and health instruction and training to current and new employees, including supervisors, that is adequate for the work task. They must receive training before:

(a) Starting their initial work assignment; or

(b) Being assigned new work tasks, tools, equipment, machines, or vehicles.

(2) Evaluate each employee who has previously received job safety and health instruction and training.

NOTE: An employee does not need to be retrained if their prior instruction and training are adequate.

(3) Provide job safety and health instruction and training that includes the:

(a) Safe performance of assigned work tasks.

(b) Procedures, practices and requirements of the employer's work site.

(c) Recognition of safety and health hazards associated with each employee's specific work tasks, including measures and work practices to prevent or control those hazards.

(d) Safe use, operation and maintenance of tools, equipment, machines and vehicles each employee uses or operates, including following the manufacturer's operating and maintenance instructions, warnings and precautions.

(e) Requirements of this standard and hazards of the industry.

(4) Require each employee receiving job safety and health instruction and training to:

(a) Work under the close supervision of a qualified person.

(b) Demonstrate to the employer or his authorized representative the ability to safely perform the work assignment before they are permitted to work independently.

(5) Assure that a qualified person(s) presents the job safety and health instruction and training.

(6) Assure that job safety and health instruction and training is:

(a) Presented in a language and manner that the employee(s) is able to understand.

(b) Appropriate in content for the skill level of the employee(s) being trained.

(7) Keep a current written record of job safety and health instruction and training for each employee that contains the following:

(a) Who was instructed or trained.

(b) The date(s) of the instruction or training.

(c) A description of the training.

(d) The name of the trainer.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0145
Annual Program Evaluation

(1) Each employer must review and evaluate their safety and health program annually.

(2) The program evaluation must include the methods and procedures used to identify and revise program deficiencies.

(3) Written findings of the annual evaluation must be maintained for 3 years from the date of issue.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

Subdivision C — Planning, First Aid and Work Conditions

437-007-0200
Site Planning and Implementation

(1) Before the start of any forest activities of more than one day duration, the employer must:

(a) Conduct an onsite safety survey.

(b) Hold a pre-work safety meeting with employees to discuss:

(A) The emergency medical evacuation plan.

(B) Site conditions and known hazards.

(c) Document the pre-work safety meeting.

NOTE: The pre-work safety meeting can be used to meet the monthly safety meeting requirement 437-007-0130(d).

(2) Before work starts, a competent person must evaluate any danger tree(s) or snag(s) within reach of a work area to determine if it poses a hazard to personnel. If the tree(s) or snag(s) poses a hazard, it must be felled or the work arranged to minimize danger to workers.

(3) Workers must be placed and their activities arranged so they are in the clear and the actions of one worker will not create a hazard for any other worker(s).

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0205
Hazard Identification

(1) The employer must ensure that identified hazards are marked with hazard identification ribbon. The hazard identification ribbon must be bright orange, at least 1 1/2 inches wide, and marked in black with "skull and crossbones" and/or the word "Danger."

(2) The employer must notify employees of existing marked hazards in their work area.

(3) The employer must instruct all employees in the recognition and use of hazard identification ribbon.

(4) Hazard Identification ribbon must be available for employee use and carried by all cutters.

(5) Hazard identification ribbon must not be used for any other purpose than identifying hazards and must be removed when the hazard is abated.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0210
Checking System

(1) The employer must implement a checking system to account for all employees at the end of each work shift. Employees must be knowledgeable about the checking system.

(2) The employer must implement a system to check the well-being of those workers whose jobs may be single employee assignments, as provided for in OAR 437-007-0215(3). The system must include:

(a) The time interval between checks and the procedures to be followed if the employee cannot be contacted, including provisions for emergency medical care and treatment.

(b) A specific person must be assigned for:

(A) Contacting the lone employee.

(B) Verifying when contacts were made.

(c) The time intervals for checking the single employee's well-being must be understood and agreed to by all parties. Intervals should reflect the hazardous nature of the work and the methods available for checking.

(d) The system for checking an employee's well-being must be reviewed at least annually, or more frequently if there is a change in work arrangements/assignments which could adversely affect an employee's well-being, or a report that the system is not working effectively.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0215
Working Alone

(1) The employer must not assign workers to a task or location so isolated as to be without visual, audible, or radio contact with another person who can summon or provide aid in an emergency.

(2) Unless otherwise specified in division 7, in any operations where fire suppression, prescribed fire, tree climbing, power chain saw operation, yarding, loading or a combination of these duties is carried on, there must be a minimum crew of two employees who must work as a team and must be in visual or natural unassisted voice communication with one another.

(3) Workers are not prohibited from working alone when performing certain jobs which by their nature may be single employee assignments, such as: mechanics, watchers, the operation of motor vehicles, self-loading log trucks, mechanized logging machines, feller bunchers, forwarders, processors, harvesters or excavator-based machines, provided the employer complies with the requirements of 437-007-0210(2), Checking System; 437-007-0775, Protective Structures for Operators; and 437-007-0220, Medical Services and First Aid.

(4) Mechanics or other employees must not be assigned to work on machines by themselves when there is a probability of a fall from elevated work locations or machines. When the work is of such nature that heavy parts require moving, or there is a probability that anything heavy could fall on the person, there must be another person in the area who can render immediate assistance or emergency care.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03; OSHA 2-2005, f. 5-27-05, cert. ef. 6-1-05

437-007-0220
Medical Services and First Aid

(1) The employer must develop and implement an emergency medical plan to ensure emergency medical service to employees with major illnesses and injuries.

(2) All employees must be knowledgeable concerning the emergency care and emergency medical treatment plan.

(3) All personnel employed in forest activities must be trained in first aid and CPR as follows:

(a) In a language they understand.

(b) At least every 2 years or as required by a nationally recognized first aid training provider.

(c) All supervisors and all cutters must be first aid and CPR trained prior to their initial assignment.

(d) All new employees, other than supervisors and cutters, that are not first aid and CPR trained prior to their initial assignment must receive a first aid and CPR briefing.

(e) All new employees must receive first aid and CPR training within 6 months of being hired.

(f) For the initial start-up of a side or operation where new employees are assigned, at least one out of every five crew members must be first aid and CPR trained before work starts.

NOTE 1: Log truck drivers and watchers are not required to receive first aid and CPR training if they are not involved with falling, yarding or processing logs.
NOTE 2: See the Oregon OSHA Division 2, Subdivision 2/Z, Toxic and Hazardous Substances, §1910.1030, Bloodborne Pathogens, if an employee comes into contact with blood or other potentially infectious material as the result of providing first aid.

(4) Each worksite must have at least one serviceable and operable two-way radio, phone or radio/phone combination available to reach ambulance service. Citizens' band radios are permitted only as a secondary means of communication.

NOTE: This rule does not apply to road graders, log and dump trucks, crew buses and similar mobile equipment that service locations where a communication unit is already available (e.g., yarders, loaders).

(5) Each operating site or crew in a communication "dead" area must have a mobile communication unit or advance plans to relay emergency calls through another site operating in the vicinity.

(6) At worksites of more than one day duration, the employer must have available near the worksite communication device(s):

(a) Written land directions to the worksite.

(b) The worksite location by Township, Range and Section.

(7) When air evacuation is available to any worksite of more than one day duration, the employer must have available, near the worksite communication device(s), the:

(a) Name and phone number of the air evacuation service.

(b) Worksite location by latitude and longitude or township, range and section as required by the air service.

(8) The employer must assure that transportation is always available to:

(a) A point where an ambulance can be met; or

(b) The nearest suitable medical facility.

(9) Vehicles used for the transportation of personnel must carry a first aid kit:

(a) Suitable for the number of passengers customarily transported.

(b) Suitable for the types of injuries that could occur.

(c) Located where they are readily available to the driver or crew.

(10) First aid kits must be provided at each worksite.

(11) Worksite first aid kits must contain the following minimum supplies at all times:

(a) Eight gauze pads individually wrapped (at least 4 inches by 4 inches in size);

(b) Two large gauze pads that are or can be folded to an approximate size of 8 inches by 10 inches or the equivalent;

(c) One box adhesive bandages;

(d) One package gauze roller bandage at least 2 inches wide or the equivalent;

(e) Two triangular bandages;

(f) Wound-cleaning agent, such as sealed, moistened towelettes, or soap and water;

(g) Scissors;

(h) One stretcher or equivalent weatherproof litter at any three or more person worksite, and at all logging sites;

(i) Two blankets, one of which must provide the strength and insulation equivalent to a wool blanket;

(j) Latex gloves;

(k) Mouth barrier;

(l) Tweezers;

(m) Adhesive tape;

(n) Two elastic wraps; and

(o) Splint material.

NOTE: The quantities of each item are minimum amounts. Bulk pack or unit pack supplies are acceptable. First aid supplies from other states may be acceptable if such supplies are the reasonable equivalent of those required by this rule.

(12) The employer also may have the number and content of first aid kits reviewed and approved annually by a health care provider.

(13) First aid supplies must be regularly inspected and replenished as needed.

(14) First aid supplies must be stored in containers adequate to protect the contents from damage, deterioration or contamination.

(a) The containers must be clearly marked "First Aid."

(b) The container must not be locked, but may be sealed.

(c) Soap and water, stretcher, or basket and blankets may be stored separately, but must be near or with the first aid supplies.

(15) All employees must be informed of the location of first aid supplies.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03; OSHA 3-2004, f. & cert. ef. 6-7-04

437-007-0225
Working Near Unstable Objects and Danger Trees

(1) Each day in the course of forest activities, a general inspection must be conducted of the areas to be worked that day to identify trees, logs, rootwads, rocks, chunks or other objects that may roll, slide or fall towards personnel. If any object is likely to move during work activity, it must be removed, stabilized, or the work activities modified so that the unstable objects are no longer a hazard.

NOTE: Consideration must be given to rain, snow, other weather conditions, or working below felled and bucked timber that may increase the likelihood that objects may roll, slide or fall.

(2) On a daily basis, a competent person must evaluate any danger tree(s) or snag(s) within reach of a work area to determine if it poses a hazard to personnel. If the tree(s) or snag(s) poses a hazard it must be fell or the work arranged to minimize danger to workers.

(3) Personnel must be alert at all time for logs, trees, rootwads, rocks or other objects that could roll or slide towards them or others as a result of any work activity.

(4) Trees must not be fell or bucked within a unit of standing timber prior to any cutting operation if such falling or bucking creates a hazardous condition for subsequent cutters or cutting operations.

(5) During road building and maintenance operations, right-of-way log decks, rootwads, slash and rocks must be placed on stable locations so that personnel are not exposed to the hazards of working near unstable objects.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0230
Power Line Safeguards

(1) Forest activities operations near overhead electric lines must be done in accordance with the requirements of OAR 437, Division 2/S, Electrical, §1910.333(c)(3), Selection and Use of Work Practices.

(2) When any machinery is being moved or operated in the vicinity of an overhead power line, a minimum clearance of 15 feet must be maintained between the overhead power lines and all elements of the machine, including logs, trees, or other material being handled by the machine.

NOTE: Any overhead power line must be considered to be an energized line until the person owning the line or the electrical utility authorities indicate that it is not energized.

(3) While falling trees, the minimum distance required by this section applies when a tree could fall within 15 feet of an overhead power line.

(4) The minimum distance required when cable yarding must not be reduced by line whip or breakage.

(5) A person must be designated to observe clearance and give timely warning for all operations where it is difficult for the operator to maintain the required distance by visual means.

(6) If work activities could encroach upon the minimum clearance required by this section, the employer or person responsible for the work to be done must promptly notify the power company in accordance with ORS 757.805, Oregon's Overhead Line Safety Act. The responsible party and the power company must complete mutually satisfactory safety measures as required before proceeding with any work which would impair the aforesaid clearance.

(7) If contact is made with a power line by a tree, rigging, machinery, or the structure supporting the overhead powerline is damaged by forest activities, the power company must be notified immediately and all employees must remain clear of the area until power company personnel advise that conditions are safe.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03; OSHA 2-2005, f. 5-27-05, cert. ef. 6-1-05

437-007-0235
Working Conditions

Working Conditions. A competent person must determine if work activities can be safely conducted during inclement weather conditions or darkness. When weather conditions or darkness pose a hazard to workers, the activity must be discontinued until the work is arranged to mitigate the hazard.

NOTE: This rule does not prohibit logging or wildland fire suppression activities at night, but it requires an assessment of conditions so work can be done safely.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03; OSHA 2-2005, f. 5-27-05, cert. ef. 6-1-05

437-007-0240
Night Logging

(1) Where work is conducted during the hours of darkness, the work area must be provided with illumination which will allow employees to safely perform their duties. The sources of illumination must be located and directed so as to create a minimum of shadows and glare.

(2) Where it is not practical to provide illumination for the work area, other means, such as local sources of illumination or headlamps, must be used by all personnel.

(3) If using a portable tailhold, lights must be directed on the equipment to permit the employee to visually ascertain that the tailhold equipment remains stabilized.

(4) Personnel working at night must wear reflective stripes at least 1-inch wide visible from all directions on upper body cover or hard hats.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0245
Field Sanitation For Reforestation Activities

(1) Toilet and hand washing facilities must be provided by the employer when it is feasible for employees to use them.

(2) Where it is not feasible to use toilet and hand washing facilities, the employer must provide, at no cost to employees, suitable substitutes such as sanitary kits.

NOTE: Sanitary kits would include moist towelettes and hand towels for hand washing.

(3) The employer must provide, at no cost to employees, potable water and the means to carry it.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

Subdivision D — Personal Protective Equipment and Programs

437-007-0300
General Requirements

(1) Personal protective equipment, including any personal protective equipment provided by an employee, must be maintained in a safe and effective condition, or removed from service or use.

(2) Personal protective equipment must be inspected before initial use during each workshift.

(3) Defective or damaged personal protective equipment must be repaired or replaced before it is put into service.

(4) When the employer is required to provide personal protective equipment, it must be at no cost to the employee, unless a specific exception is noted.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0305
Head Protection

(1) Where there is potential for head injury from falling or flying objects, the employer must provide and require the use of head protection (hard hats) that complies with American National Standard, ANSI Z89.1-1997, Protective Headwear for Industrial Workers — Requirements.

EXCEPTION: Employees working in or under a vehicle cab or canopy are excluded from wearing a hard hat while in, or under, a vehicle.

(2) The employer must replace, at no cost to the employee, head protection (hard hat) that is no longer serviceable because of reasonable wear and tear.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0310
High-Visibility Color

All employees exposed to the potential hazard of moving lines, falling timber, logs, vehicles, machines and other moving equipment

or materials must wear upper body cover and/or hard hats of a high-visibility color, that contrasts with the background color(s).

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0315
Eye and Face Protection

Where chips, sawdust or flying particles present a hazard, the employer must provide and require personnel to wear eye and face protection meeting the requirement of Division 2/I.

NOTE: Logger-type mesh screen may be used for chain saw operators.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0320
Hand Protection

The employer must provide and require employees to use hand protection:

(1) Such as cotton gloves or other suitable hand protection whenever employees handle lines, rough material or when the nature of the work requires protection for the hands.

(2) When the employees' hands are exposed to hazards such as those from skin absorption of harmful substances, chemical and thermal burns.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0325
Leg Protection

The employer must provide and require each employee who operates a chain saw to wear flexible ballistic nylon pads, chaps or other equivalent protection in a manner that protects their legs from the top of the thigh to the top of the boot from contact with the moving saw chain.

EXCEPTION: This does not apply to an employee working aloft in trees when supported by climbing spurs and climbing belt.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0330
Foot Protection

(1) All personnel must wear foot protection, such as heavy-duty boots, that:

(a) Are waterproof or water-repellant where wet conditions exist.

(b) Cover and support the ankle.

NOTE: The employer is not required to provide logging boots for employees. The cost of logging boots may be borne by employees. The employer must assure, however, that logging boots, as well as all PPE provided by the employer, are worn by employees and are in serviceable condition and meet the requirements of Subdivision 7/D.

(2) Personnel who operate chain saws must wear cut resistant foot protection that will protect against contact with running saw chains.

(3) Personnel whose duties require them to walk on trees, logs or boomsticks, must wear sharp caulked boots, or the equivalent.

(4) When conditions such as ice, snow, mud, rocky terrain, etc., render caulks ineffective, heavy duty slip-resistant type work boots that provide ankle support must be worn.

(5) When nonslip-type shoes or boots afford a greater degree of employee protection than caulk shoes, such as at scaling stations, log sorting yards, etc., then this type footwear may be worn in lieu of caulk shoes providing firm ankle support and secure footing are maintained.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0335
Hearing Protection

(1) Personnel must be protected from the effects of noise exposures in accordance with OAR chapter 437, division 2/G, Occupational Health and Environmental Control.

(2) Personnel must wear hearing protection unless monitored under typical work conditions and found to be exposed to a noise level of less than an 8-hour time-weighted average (TWA) of 85 db when:

(a) Operating chain saws, other noise producing equipment, or machines.

(b) Working on landings.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0340
Personal Floatation Devices

When working on or over water, personnel must be provided with and must wear approved buoyant protective equipment as required by Division 2/I, OAR 437-002-0139.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0345
Respiratory Protection

(1) When employees are exposed to air contaminants that exceed applicable permissible exposure limits (PEL) as required by Division 2/Z, OAR 437-002-0382, Oregon Rules for Air Contaminants, the employer must provide and enforce the use of respiratory protective equipment as required in Division 2/I, §1910.134.

(2) Employees must be provided protection from dust when exposed to total dust levels of 10 milligrams per cubic meter of air per 8-hour time-weighted average (TWA).

(3) If respirators are used for protection from dust, created by the operation of machines, the employer must follow the requirements of Division 2/I, §1910.134, or the requirements of 437-007-0350.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0350
Respiratory Protection When Machines Are Operated

(1) When the operation of machines expose any employee to dusty conditions and an air-purifying respirator or filtering facepiece is used for personal protection, the respirator must have a N-95 filter rating unless employees are monitored under typical work conditions and found to be exposed to total dust levels less than 10 milligrams per cubic meter of air per 8-hour time-weighted average (TWA).

(2) When the use of a respirator is required by the standard, the employer must provide respirators, medical evaluations and training, at no cost to the employee.

(3) Before any employee is permitted to use an air-purifying respirator, they must complete a medical evaluation performed by a physician or other licensed health care professional.

NOTE 1: This evaluation can be performed by using:
(a) A medical questionnaire, or
(b) An initial medical examination that obtains the same information as the medical questionnaire.
(c) A medical evaluation is not required if the employee is voluntarily using an approved respirator.

NOTE 2: Use Appendix 7-G, Respiratory Medical Evaluation Questionnaire (Mandatory).

(4) The employer must train employees:

(a) About the respiratory hazards to which they are potentially exposed during routine work.

(b) In the proper use of respirators, including putting on and removing them, any limitations on their use, maintenance and storage.

(5) Respirators must be clean and maintained in good working order.

(6) Respirators must be stored in a dry and sanitary place.

(7) Respiratory protection must be:

(a) NIOSH-certified.

(b) Used in compliance with the conditions of its certification.

(8) When wearing air purifying respirators for personal protection:

(a) Facial hair must not come between the sealing surface on the facepiece and the face.

(b) Facial hair must not interfere with valve function.

(c) Conditions must not interfere with the face-to-facepiece seal or valve function (facial characteristic, glasses, etc.).

(9) A qualitative fit test (QLFT) must be performed before employees use a tight fitting air purifying respirator.

NOTE: This is a pass/fail fit test to assess the adequacy of respirator fit that relies on the individual's response to the test agent.

(10) Employees using a tight fitting air-purifying respirator must perform a user seal check to ensure that an adequate seal is achieved each time the respirator is put on.

(11) Employees must use either the positive and negative pressure check method, or follow the respirator manufacturer's recommended user seal check method.

(12) Positive pressure checks must be performed by closing off the exhalation valve and exhale gently into the facepiece.

NOTE 1: The face fit is considered to be satisfactory if a slight positive pressure can be built up inside the facepiece without any evidence of outward leakage of air at the seal.

NOTE 2: For most respirators this method of leak testing requires the wearer to first remove the exhalation valve cover before closing off the exhalation valve and then carefully replacing it after the test.

(13) Negative pressure checks must be performed by closing off the inlet opening of the canister or cartridge(s) by covering with the palm of the hand(s) or by replacing the filter seal(s), and then inhaling gently so that the facepiece collapses slightly.

NOTE 1: If the facepiece remains in its slightly collapsed condition and no inward leakage of air is detected, the tightness of the respirator is considered satisfactory.

NOTE 2: The design of the inlet opening of some cartridges cannot be effectively covered with the palm of the hand. The test can be performed by covering the inlet opening of the cartridge with a thin latex or nitrile glove.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

Subdivision E — Tools, Fire Extinguishers and Explosives

437-007-0400
Hand and Portable Power-Driven Tools

(1) The employer is responsible for the safe condition of hand and portable power tools used in forest activities regardless of tool ownership.

(2) All safety devices and controls must be in place and function properly.

(3) The employer must require personnel to:

(a) Inspect each tool before use to assure its safe condition.

(b) Report any unsafe tool condition to the employer.

(c) Remove or repair tools if the condition affects the safe operation.

(4) If a slick or slippery axe or hammer handle cannot be firmly gripped, the tool must not be used.

(5) Tools must be:

(a) Appropriate for their use.

(b) Used in a safe manner.

(6) Wooden handles must be sound, straight-grained and tight-fitting.

(7) Heads of shock or impact-driven and driving tools must be dressed or ground to remove any mushrooming.

(8) When the heads of shock or impact-driven tools show a tendency to chip, they must be removed from service.

(9) Cutting edges of tools must be sharp and properly shaped.

(10) When tools are not being used, they must be stored in a location where they will not create a hazard.

(11) Racks, boxes, holsters, barriers or equivalent means must be provided and used so the passengers and/or driver will not be endangered by tools, equipment or materials being transported, loaded or removed.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0405
Chain Saws

(1) Chain saws must be inspected before use.

(2) Chain saws must not be used if they have cracked or loose handle bars or defective vital parts.

(3) Chain saws must be operated and adjusted in accordance with the manufacturer's instructions.

(4) Chain saws must not be fueled with the engine running.

(5) Chain saws must be fueled at least 10 feet (3 m) from open flames or other source of ignition.

(6) Chain saws must not be started within 10 feet (3 m) of the fueling area.

(7) Chain saws must have an operable chain brake, if originally designed and equipped with a chain brake.

(8) Chain brakes and other manufacturer's safety features must be operational at all times.

(9) Chain saws must be equipped with an automatic throttle control which will return the engine to idling speed upon release of the throttle.

NOTE: "Idling" is when the chain is not moving while the engine is running.

(10) Each chain saw must meet all applicable requirements of American National Standard, ANSI B175.1-1991, Safety Requirements for Gasoline-Powered Chain Saws, except where exempt by these rules.

(11) Chain saws must be started on the ground if they are not otherwise firmly supported.

NOTE: This does not apply to personnel working aloft in trees when supported by climbing spurs and climbing belt.

(12) Chain brakes must be engaged when feasible, while chain saws are being started, unless the manufacturer recommends otherwise.

(13) Chain saw operators must be certain of footing before starting to cut.

(14) Chain saws must be held with the thumbs and fingers of both hands encircling the handles during operation unless the employer demonstrates that a greater hazard is posed by keeping both hands on the chain saw in that particular situation.

(15) Personnel must not use a chain saw:

(a) To cut directly overhead in a manner that would cause limbs, chunks of bark or pieces of wood to fall on the operator.

(b) At a distance that would require them to relinquish a safe grip on the saw.

(c) In a position or at a distance that could cause them to:

(A) Become off balance, or

(B) Have insecure footing.

(16) Chain saws must be carried in a manner that will not create a hazard for the operator.

(17) Where terrain or brush creates a hazardous condition, the chain saw engine must be shut off while the operator is walking.

(18) The chain saw must be shut down or the chain brake must be engaged whenever a saw is carried farther than 50 feet.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0410
Fire Extinguishers

(1) Portable fire extinguisher use, training and maintenance must be in accordance with OAR chapter 437, division 2, subdivision L, Fire Protection.

(2) Fire extinguishers or protection systems must be of a type approved by a nationally recognized testing laboratory (NRTL) (see OAR 437, division 2/A, §1910.7, for definition of NRTL).

(3) There must be an approved fire extinguisher with a minimum rating of 1A:10BC (or equivalent) on each vehicle and machine, or the area where the vehicles and machines are operated.

(4) After July 1, 2007, fire extinguishers provided on each vehicle and machine must be 2A:10BC or provide equivalent protection.

(5) Fire extinguishers must be fully charged and maintained in operable condition.

(6) Portable extinguishers must be visually inspected monthly.

(7) Portable extinguishers must have an annual maintenance check.

NOTE: Stored pressure extinguishers do not require an internal examination.

(8) The annual maintenance check date must be recorded and this record must be retained for one year.

(9) Each motor vehicle used for transporting explosive materials must be equipped with fire extinguishers as follows:

(a) Vehicle less than 14,000 pounds must have at least two extinguishers having a combined capacity of 4A:20BC.

(b) Vehicle 14,000 pounds or greater and tractor/semi-trailer units must have at least two extinguishers having a combined capacity of 4A:70BC.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0415
Explosives and Blasting Agents

(1) The storage, transportation, handling, and use of explosives and blasting agents must be in accordance with OAR chapter 437, division 3, subdivision U, Blasting and The Use of Explosives.

(2) Explosives and blasting agents must be handled only by qualified, designated personnel.

(3) Explosives and blasting agents must not be transported in:

(a) The driver's compartment.

(b) Any passenger-occupied area of a machine or vehicle.

(4) Explosives must not be hauled on any vehicle while it is engaged in transporting workers.

EXCEPTION: This rule does not prohibit the driver and one qualified person from riding in a vehicle in which explosives are being hauled.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

Subdivision F — Roads, Flagging, Vehicles and Flammables

437-007-0500
Roads

(1) Haul roads must be of sufficient width and evenness for safe operation of vehicles and machines.

(2) Haul roads and bridges must be constructed and maintained to accommodate the safe movement of vehicles and machines.

(3) Vehicles and machines must not be moved on any access roadway or grade that will not accommodate the safe movement of vehicles and machines.

(4) When haul road grades exceed 20 percent slope:

(a) The vehicle or machine must be approved by the manufacturer for operation on the steeper grades.

(b) Additional precautions must be taken, such as assisting or snubbing the vehicle or machine down the slope.

(5) Deep holes, large rocks, logs, or other dangerous surface defects on roads must be corrected before starting logging operations.

(6) On those portions of roads under the direct control of the employer:

(a) All danger trees that can fall or slide onto roadways must be felled.

(b) Loose rocks, stumps and other materials which present a hazard must be secured or cleared from banks.

(7) Root wads, logs, and other unstable debris must not be placed against standing timber in a manner that creates a hazard for timber falling, logging operations or other forest activities.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0505
Bridges

(1) All bridge structures and surfaces must be:

(a) Adequate to support the maximum imposed loads.

(b) Maintained in good repair.

(2) All bridges must have rub rails constructed of wood, concrete or equivalent materials that:

(a) Have a minimum height of 9 inches (6-inch by 6-inch timbers set on 4-inch by 6-inch blocks).

(b) Are secured to the bridge deck.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0510
Flagging

(1) Warning signs and a flagger(s) must be placed in advance of active operations, or other equivalent protection must be used on roads to control traffic where hazardous conditions are created from forest activities, such as, but not limited to:

(a) Skylines and running lines or rigging across road grades, excluding tightened guylines.

(b) The movement of logs, chunks or debris across or suspended over road grades.

(c) Timber cutting operations.

(d) Helicopter logging operations.

NOTE: Where there is no through traffic, such as on a dead end road or where the property owner's permission or proper authority is granted to close a section of road, warning signs and barricades may be used instead of flagger(s).

(2) Flaggers must wear vests of a high-visibility color and use a minimum 18-inch x 18-inch "STOP/SLOW" paddle to control traffic.

(3) Warning signs and flagging activities along state and county roads must comply with the requirements of the Millennium Edition of the (FHWA) Manual of Uniform Traffic Control Devices (MUTCD), December 2000.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0515
Signs

(1) Warning signs must be prominently displayed a minimum of 300 feet in advance of forest activities which create hazardous conditions for road traffic.

(2) Warning signs must be removed or covered when forest activity operations are interrupted for an extended period.

(3) Warning signs must be worded to describe the hazard, type of operation or action to be taken.

NOTE: Samples of operation specific sign wording:
Lines Across Road
Contact Operator On Channel
Stop Do Not Proceed Without Contacting
Timber Falling Ahead
Blasting
Logging Operations Ahead
Heavy Truck Traffic
CB Channel

(4) Warning signs must:

(a) Be a minimum dimension of 24-inch x 24-inch diamond.

(b) Have an orange background.

(c) Have 4-inch black letters.

(5) When stop signs are used they must:

(a) Be eight sided.

(b) Have a minimum height and width of 24 inches.

(c) Have a red background with 6-inch white letters for the "STOP" side.

(6) The "STOP/SLOW" paddle must:

(a) Be eight sided.

(b) Have a minimum height and width of 18 inches.

(c) Have a red background with 6-inch white letters for the "STOP" side.

(d) Have an orange background with 6-inch black letters for the "SLOW" side.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0520
Vehicle General Requirements

(1) A positive engine shut-off must be provided within reach of the operator when in normal operating position.

(2) Vehicles must be equipped with adequate steps, ladders, handholds, or grab bars to provide safe access and egress.

(3) Steps must be constructed or treated with slip-resistant materials.

(4) Vehicle seats must be securely fastened.

(5) Doors must open easily.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0525
Vehicle Warning Devices

All vehicles must be equipped with a horn or audible warning device which can be clearly heard above the surrounding noise in the vicinity of the vehicle.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0530
Vehicle Windshields, Windows and Mirrors

(1) Vehicle windshields must be equipped with powered wipers.

(2) Vehicles must be equipped with operable windshield defogging or defrosting equipment.

(3) Defective or broken glass in a vehicle which impairs the vision of the operator or could cause injury to occupants of a vehicle must be replaced.

(4) Deposits on glass which impair the vision of the operator must be removed.

(5) Windshield and windows installed on vehicles must be safety glass which meets the requirements for safety glazing material used in motor vehicles, as defined in the American National Standards Institute, Safety Glazing Materials for Glazing Motor Vehicles Operating on Land Highways, Z26.1-1996, or a material which will furnish equivalent safety.

(6) Vehicles must be equipped with an adjustable sun visor.

(7) Vehicles must be equipped with outside-mounted rear view mirrors on each side when the load or passengers obstruct the use of the rear view mirror located in the cab.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0535
Vehicle Passenger Compartments

(1) Floors and decks must be suitable for safe footing.

(2) All openings between enclosed passenger compartments and engine or exhaust from which fumes or gases may enter must be effectively sealed.

(3) Enclosed passenger compartments must be reasonably dustproof and watertight.

(4) Floors and interior surfaces of passenger compartments must be free of protruding nails, screws, splinters or other objects which might cause injury.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0540
Vehicle Brakes

(1) All vehicles must have brakes which are capable of stopping the vehicle while fully loaded on any grade over which they are to be operated.

(2) All vehicles must have a parking brake that will hold the loaded vehicle on any grade which it is operated.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0545
Vehicle Exhaust Systems

(1) Vehicles must have an exhaust system that is maintained in good repair.

(2) Vehicles must be equipped with a muffler of the type recommended by the vehicle manufacturer.

(3) Exhaust pipes must be located to direct the exhaust gases away from the operator and any passengers.

(4) Any exhaust pipe which is exposed to contact must be insulated or isolated to protect workers from contact burns.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0550
Vehicle Guards and Controls

(1) Vehicles with dump bodies must be equipped with a permanently attached, positive means of support that is capable of being secured in position to prevent the accidental lowering of the dump body.

(2) Devices for supporting dump bodies must be used when:

(a) The dump body is raised and left unattended.

(b) Maintenance or inspection work is being done.

(3) Operating levers controlling hoisting or dumping devices on haulage bodies must be equipped with a latch or other device which will prevent accidental starting or tripping of the mechanism.

(4) Trip handles for tailgates and belly dump trailers must be located so personnel are in the clear when dumping.

(5) All vehicles whose payload is loaded by means of cranes, power shovels, loaders or similar equipment must have a cab shield or canopy adequate to protect the operator from shifting or falling materials.

(6) The backs of vehicle cabs which are exposed to shifting loads must be provided with a substantial bulkhead or similar device.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0555
Vehicle Safety Chains

Safety chains or cables must:

(1) Have a tensile strength equivalent to the gross weight of the towed vehicle.

(2) Prevent the tow bar from dropping to the ground in the event the tow bar or coupling device fails.

(3) Be attached in a manner that provides sufficient strength to control the towed vehicle in event the tow bar or coupling device fails.

(4) Have no more slack than necessary to permit proper turning.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0560
Vehicle Seat Belts

(1) All vehicles (except those that were not originally equipped with seat belts) designed or used primarily to transport personnel or material over private or public roads must have seat belts.

(2) For each vehicle equipped with a seat belt(s), the employer must:

(a) Require all personnel to use seat belts when the vehicle is being operated.

(b) Require all personnel to tightly fasten seat belts when the vehicle is being operated.

(c) Maintain each seat belt in a serviceable condition.

(d) Replace each seat belt which has been removed from any vehicle that was equipped with seat belts at the time of manufacture.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0565
Vehicle Inspection, Maintenance and Repair

(1) Vehicles must be checked at the beginning of each shift to assure that they are in safe operating condition.

NOTE: Pay particular attention to components such as tires, steering apparatus, lights and reflectors, brakes, boosters, brake hoses and connections, reaches, bunks, stakes, bunk blocks and couplings.

(2) Any defects found during inspection, which affect the safe operation of the vehicle, must be corrected before the vehicle is placed in service.

(3) Any vehicle which develops defects in parts vital to safe operation during a work shift must be removed from service until necessary repairs are made.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0570
Vehicle Operation

(1) Vehicle operators must be knowledgeable of the manufacturer's recommendations for operation, maintenance, safe work practices, and operating procedures.

(2) Vehicles must be started and operated only by trained and authorized personnel.

(3) Vehicles must not be moved until all personnel, other vehicles and machines are in the clear.

(4) Vehicles must not be driven or backed up to anyone standing in between the vehicle and a stationary object.

(5) When vehicle operators do not have a clear view of the surface being traveled, they must be guided by a signal person.

(6) Any operator who has an obstructed view to the rear of a vehicle must sound an audible warning, that can be heard over the surrounding noise, before backing up unless the:

(a) Vehicle is backed up only when an observer signals the driver that it is safe to do so; or

(b) Operator verifies that nobody is behind the vehicle.

(7) When vehicles are parked, the parking brakes must be set before the operator leaves the operator's station.

NOTE: When it is not feasible to apply or release parking brakes because of freezing conditions, chocking or blocking of the wheels or using other precautions is permissible.

(8) Vehicles must not be loaded beyond the designed capacity.

(9) Vehicle loads must be stable, well-balanced and secured.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0575
Transportation of Personnel

(1) Workers riding in motor vehicles must not stand while the vehicle is in motion.

(2) Flatbed and dump trucks must not be used to transport workers.

(3) Passengers must wait for the vehicle to come to a complete stop before boarding or leaving.

(4) When materials, equipment and tools of any type are transported in the same compartment with workers, the workers and driver must be protected from the hazards of materials, equipment or tools by substantial partitions or the securing of the load.

(5) Transported materials must not prevent doors of vehicle cabs from being opened.

(6) Compartments for workers must be kept in a clean and sanitary condition. Workers should assist in maintaining such conditions.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0580
Flammable and Combustible Liquids

(1) Flammable and combustible liquids must be stored in accordance with OAR 437, 2/H, Hazardous Materials, §1910.106, Flammable and Combustible Liquids.

(2) Containers of flammable and combustible liquids must be marked in accordance with OAR 437, 2/Z, §1910.1200, Hazard Communication.

(3) Smoking within 35 feet of vehicles being fueled is prohibited.

(4) Fueling of vehicles within 35 feet of any open fires, flame or other sources of ignition is prohibited.

(5) Vehicle engines, except diesel engines, must be shut off while being fueled.

(6) Refilling tanks using liquefied petroleum gases must:

(a) Only be done out-of-doors.

(b) Not exceed the maximum quantity of fuel recommended by the manufacturer.

(7) Tanks, barrels or containers of gasoline, aviation fuels or diesel must not be hauled on vehicles transporting workers except when:

(a) Carried in a suitable location outside the driver and passenger compartment or placed in a well-ventilated vapor-proof compartment.

(b) Secured to prevent shifting.

(8) When fuels are hauled in containers of 5-gallon capacity or less, the container must be approved by a nationally-recognized testing lab, such as Underwriters Laboratory (UL), or Factory Mutual (FM).

(9) Vehicles must be kept free of accumulated fuel and combustible liquids which may create a fire or other hazard.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

Subdivision G — Rigging and Rigging Practices

437-007-0600
Inspection and General Requirements for Rigging

(1) A competent person must thoroughly inspect all:

(a) Blocks, butt rigging, shackles and other rigging for damaged, cracked or worn parts, loose nuts and bolts, and the need for lubrication before they are used.

(b) Wire rope (running lines), skylines, chokers, straps and guylines before they are used.

(2) Repairs or replacements must be made before the blocks, butt rigging, shackles, other rigging, guylines, or straps are used.

(3) Rigging and loads must not foul or saw against lines, straps, blocks, or other equipment when in use.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03; OSHA 3-2004, f. & cert. ef. 6-7-04

437-007-0605
Out-of-Service Requirements for Wire Rope

(1) Wire rope must be repaired (spliced), re-socketed, or taken out of service when there is:

(a) Evidence of chafing, sawing, crushing, kinking, crystallization, bird-caging, corrosion, heat damage, or other damage that has weakened the rope structure, or

(b) One or more broken wire(s) at the base of a poured nubbin or end fitting, or

(c) Corroded, damaged, or improperly applied end connections, or

(d) 12 1/2 percent of the wires are broken within a distance of one lay.

EXCEPTION: Out-of-service requirements do not apply to chokers, grapple opening lines, tag lines, cat and skidder winch lines, and droplines that are not used to move the carriage. However, in accordance with 437-007-0600, a competent person must inspect these cables daily and remove from service any that are unsafe.

Figure 7-1 — Wire Rope Out-of-Service

EXAMPLE 1: A 6 x 19 Independent Wire Rope Core (IWRC) wire rope must be removed from service when 14 broken wires are found within the distance of one wire rope lay. [6 strands with 19 wires = 114 x 0.125 (12 1/2%) = 14.25]

EXAMPLE 2: A 6 x 25 IWRC wire rope must be removed from service when 19 broken wires are found within the distance of one wire rope lay. [6 strands with 25 wires = 150 x 0.125 (12 1/2%) = 18.75]

(2) Oversized trailer lift straps must be removed from service when the strap no longer has a breaking strength equal to five times the load to be lifted.

[ED. NOTE: Figures referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03; OSHA 3-2004, f. & cert. ef. 6-7-04

437-007-0610
Line Cutting and Splicing

(1) Hard hammers must not be used when splicing or cutting wire rope with a wire axe.

(2) Eye protection must be used when cutting lines.

(3) Marlin spikes (needles) must be used when splicing.

(4) Short splices, eye-to-eye splices, cat's paws, and knots are prohibited except when used to move nonload-bearing lines.

(5) Knots may be used on single drum tractor winch lines, grapple pickup lines and carriage droplines when the knot is tied on the end of the dropline/pickup line. The knot must be pulled as tight as possible and the ends trimmed in accordance with Table 7-2.

(6) Eye splices in wire rope 1/2-inch or less in diameter must be tucked at least two times when used as haywire (strawline).

(7) Eye splices in all regular lay lines and straps must be tucked at least three times.

(8) Eye splices in lang lay lines must be tucked at least four times.

(9) When flemish (rolled) eye splices are used on load bearing lines, the strand ends must be secured by:

(a) Hand tucking each strand three times; or

(b) Applying a compression fitting (pressed eye fittings).

(10) Log splices must be used for permanently joining regular lay running line.

EXCEPTION: When using mechanical slack pulling carriages, jump splices may be used to connect the main and slack pulling lines, and tucked splices may be used to attach drop lines to main lines only if the:

1. Crew members are notified of the splices being used.
2. Yarder boom sheaves are of the Tommy Moore type.
3. Splices are on the yarder side of the carriage.
4. Lines are arranged so splices do not go through the carriage.
5. Spliced strands are trimmed at 6 inches.
6. Splices are inspected at least once daily for signs of excessive wear or failure.
7. Defective splices are immediately repaired (spliced) or removed from service.
8. Jump splices connecting main and slack pulling lines are between 30 inches and 48 inches long and tucked at least three times.
9. Splices attaching drop lines to main lines are tucked at least three times.

(11) Follow Table 7-1 for the length of line strand to unravel to make a long splice in wire rope. The full length of the splice must be twice the length of the unraveled rope.

Table 7-1 — Length of Wire Rope to Unravel When Long Splicing [Table not included. See ED. NOTE.]

(12) Wire strand ends must be trimmed to the length shown in Table 7-2.

Table 7-2 — Trimmed Length For Wire Rope Strand Ends [Table not included. See ED. NOTE.]

[ED. NOTE: Tables referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0615
Pressed Eyes and End Fittings

(1) Pressed eyes must not be used for skyline eyes that will be crossed with loaded carriages.

(2) Quick nubbins must not be used as guyline and skyline end fittings.

(3) For rigging made up after December 1, 2003, standard sized ferrules must be used when nubbins are poured on wire rope that exceeds the rated breaking strength of 1 1/8-inch diameter extra improved plow steel.

(4) Poured nubbin ferrules must be stamped with the date they were poured.

(5) The recommendations of the manufacturer must be followed in attaching sockets and similar end fastenings.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03; OSHA 3-2004, f. & cert. ef. 6-7-04

437-007-0620
Cable Clamps

(1) The use of cable clips or clamps for joining lines is prohibited, except where used for transferring slack lines from one place to another.

Figure 7-2 — Wire Rope U-Bolt Clip
Figure 7-3 — Wire Rope Fist Grip Clip [Figures not included. See ED. NOTE.]

(2) When U-bolt wire rope clips are used, the following requirements apply:

(a) When used for eye splices, the U-bolt wire rope clip must be attached so that the "U" section is in contact with the dead or short end of the rope;

Figure 7-4 — U-Bolt Clip Installation [Figure not included. See ED. NOTE.]

(b) U-bolt wire rope clips must be spaced at least six rope diameters apart to obtain the maximum holding power. Nuts must be tightened evenly and tightened again after application of the first sustained load. After the rope has been used and is under tension, the clips must be tightened again to take up any looseness caused by the tension reducing the rope diameter;

(c) When high strength wire rope is used, one more U-bolt wire rope clip must be added for each grade above improved plow steel; and

(d) U-bolt wire rope clips must not be used to form eyes on running lines, skylines, or straps.

(3) When U-bolt wire rope clips are used to form eyes, Table 7-3 must be used to determine the number and spacing of clips.

Table 7-3 — Number and Spacing of U-Bolt Wire Rope Clips [Table not included. See ED. NOTE.]
[ED. NOTE: Figures and Tables referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0625
Mollies

(1) Mollies must not be used to connect eyes of load-bearing lines.

(2) Mollies or cold shuts must not be used in butt rigging as a load-bearing connection.

(3) The use of mollies for attaching guylines is prohibited.

(4) Mollies must be rolled in with the lay of the line.

(5) Mollies, latchpins, or cotterkeys must be large enough to retain the shackle pin.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0630
Connectors

(1) Guyline extensions must be connected by:

(a) A shackle using a safety pin connecting spliced and/or pressed eyes; or

(b) Poured nubbins and a double-end hook.

Figure 7-5 — Guyline Connectors — Spliced Eyes
Figure 7-6 — Guyline Connectors — Poured Nubbins [Figures not included. See ED. NOTE.]

(2) Guyline extension connectors must have at least 1 1/2 times the strength of the guyline.

[ED. NOTE: Figures referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0635
Shackles

(1) Shackle pin diameter must be:

(a) 1/8- inch larger than the indicated shackle size for shackles up to 1 3/4 inches.

(b) 1/4- inch larger than the indicated shackle size for shackles 1 3/4-inch up through 3 inches.

(2) Replacement shackle pins must meet the manufacturer's original specifications for strength and design for the size of shackle being used.

(3) Shackle pins and nuts must be replaced when the threads are worn or stripped.

(4) Worn shackle pins must be replaced when the original diameter is reduced by 15 percent.

(5) The opening size between the jaws of shackles used to hang blocks, jacks, rigging, and join or attach lines, cannot be more than 1-inch greater than the size of the line, swivel, shackle, or similar device to which it is attached.

(6) Safety pins must secure shackles used to hang blocks, jacks, or rigging on trees, anchor guylines and join guyline or deadman strap eyes.

Figure 7-7 — Shackle — Safety Pin [Figure not included. See ED. NOTE.]

(7) When skylines are attached with a shackle using a knockout pin, the pin must be one size larger than the skyline and secured with a molly, latchpin, or cotterkey. (See Figures 7-8 and 7-9.)

(8) Sleeve shackles or choker bells must be used where choked lines are permitted.

Figure 7-8 — Shackle — Sleeve with Knockout Pin
Figure 7-9 — Shackle — Bell with Knockout Pin
Figure 7-10 — Skyline Attachments with Knockout Pins
Figure 7-11 — Shackle — Sleeve with Safety Pin [Figures not included. See ED. NOTE.]

(9) When a line is passed around an anchor without the use of a strap, the shackle pin must be inserted through the line eye and the "U" part of the shackle placed around the bight of the line.

(10) Sleeve shackles must not be used to join two or more eyes together.

(11) A flush pin, straight-sided shackle must be used to connect the eyes of lines if:

(a) The shackle will be crossed by a sheave; or

(b) A sheave will be crossed by the shackle.

Figure 7-12 — Shackle — Flush Pin, Straight Side [Figure not included. See ED. NOTE.]

(12) When shackles are crossed by carriages, the pin must be facing the landing.

(13) Shackles used to join three or more lines must be hung with the:

(a) Pin through the single eye.

(b) "U" part through two or more line eyes.

(14) When attaching a guyline, mainline, or skyline eye to two or more strap eyes, the:

(a) Shackle pin must be placed through the guyline, mainline, or skyline eye.

(b) "U" part of the shackle must be placed through the strap eyes.

(15) After a strap is passed around an anchor and the two eyes are contained in the "U" part of the shackle, the angle created by the strap eyes must not be greater than 90 degrees.

Figure 7-13 — Shackle — Straps within 90 Degrees [Figure not included. See ED. NOTE.]
NOTE: If the angle created by the strap eyes is greater than 90 degrees, the strap is too short. The shackle containing the strap eyes should be hung at least half the diameter of the anchor away from the anchor.

(16) Shackles used to connect tipping plate anchor lines to the eye of a guyline, mainline, or skyline must be:

(a) 1/8-inch larger than the largest line.

(b) Rated for a load equal to or greater than the expected working load.

(c) Large enough to accommodate all line eyes.

(17) Shackles attached to tipping plate anchors must have the shackle pins inserted through the anchor pad-eyes.

(18) A shackle must have a rated breaking strength greater than the rated breaking strength of the line that they are used with.

(19) The manufacturer's rated breaking strength of shackles must be used in determining oversize requirements when the make, size and steel classification of the shackle can be identified.

(20) Shackles listed in Tables 7-4, 7-5 and 7-6 must be made of alloy steel which develops 120,000 PSI ultimate tensile strength or better.

NOTE: Shackles sizes are listed for extra improved plow steel wire rope.

(21) The minimum size of shackles required to hang or attach single sheave blocks or jacks are shown in Table 7-4.

Table 7- 4 — Bell Shaped and Sleeve Shackles Used to Hang or Attach Single Sheave Blocks or Jacks [Table not included. See ED. NOTE.]

(22) The minimum size of shackles required for joining or attaching lines are shown in Table 7-5.

Table 7-5 — Bell Shaped and Sleeve Shackles Used to Join or Attach Lines [Table not included. See ED. NOTE.]

(23) The minimum size of flush pin straight-sided shackles for joining or attaching skyline extensions are shown in Table 7-6.

Table 7-6 — Flush Pin Straight-Sided Shackles Used for Attaching Skyline Extensions [Table not included. See ED. NOTE.]

[ED. NOTE: Figures and Tables referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(4)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0640

Metal Spar Guyline Safety Straps

(1) A guyline safety strap or equivalent device must be installed at the top of metal spars to prevent guylines from falling vertically more than 5 feet in case of structural or mechanical failure of the guyline attachment.

(2) Metal spar guyline safety straps or equivalent devices must be equal to the individual strength of any guyline being used.

(3) The ends of metal spar guyline safety straps must be connected to each other, or installed per manufactuerers' instructions.

NOTE: Two eyes secured with a shackle or two poured nubbins secured in a connector are acceptable for the connections.

(4) The use of cable clips or clamps for joining the ends of metal spar guyline safety straps is prohibited.

Stat. Auth.: ORS 654.025(2) & 656.726(4)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03; OSHA 2-2005, f. 5-27-05, cert. ef. 6-1-05

437-007-0645

Chokers and Straps

(1) In highlead logging, chokers must be at least one size smaller than the mainline.

(2) Straps must be equivalently sized for the line they support, e.g., Extra Improved Plow Steel (EIPS) line requires EIPS straps or equivalent strength material.

Figure 7-14 — Straps — Line Tension [Figure not included. See ED. NOTE.]

(3) Straps or chokers used at or near the ground to hang or support blocks, jacks, tree shoes, or rigging must be sized in accordance with Table 7-7.

Table 7-7 — Strap Sizes For Rigging At Or Near The Ground [Table not included. See ED. NOTE.]

(4) Straps or chokers used to hang or support blocks, jacks, tree shoes, or rigging in tail and intermediate trees must be sized in accordance with Table 7-8.

Table 7-8 — Strap Sizes For Rigging Hung In Tail and Intermediate Support Trees [Table not included. See ED. NOTE.]

(5) When a two part strap or two chokers are used to hang a block, jack, tree shoe, or rigging both eyes or ends must be under approximately equal tension.

Figure 7-15 — Straps — Line Tension Bridal [Figure not included. See ED. NOTE.]

(6) When two equal length chokers are used to hang a block, jack, tree shoe, or rigging in lieu of one choker to gain extra breaking strength, they must be:

(a) Arranged as a swede-type connection.

(b) Considered as a block hung in two eyes for Table 7-8.

(7) For straps hung in trees where the interior angle or angles create excessive loading on the strap as shown in Figure 7-14 additional precautions must be taken, such as using a larger strap, lightening loads, moving the carriage ahead on the line, and so forth to reduce the load on the strap.

(8) Straps made of synthetic materials must be arranged so the straps cannot ride up or down from their intended position.

(9) Straps made of synthetic materials must be used and replaced in accordance with the manufacturer's recommendations.

[ED. NOTE: Figures and Tables referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(4)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0650

Guylines — General Requirements

(1) Splicing of guylines is prohibited except to make an eye.

(2) Guylines used to stabilize logging machines must be at least of the size, strength and number recommended by the machine manufacturer.

(3) Load-bearing guyline angles must not be greater than 50 degrees measured horizontally or that recommended by the machine manufacturer. If suitable anchors are not available or the terrain is so steep that the guyline angle exceeds 50 degrees or the machine manufacturer's recommendation, additional precautions must be taken, such as rearranging guylines to oppose the load, adding an additional guyline to oppose the load, or narrowing yarding roads.

(4) Tail and intermediate support tree guylines must be:

(a) Arranged and adjusted so they share the load when lines are tensioned.

(b) Kept securely tightened during the yarding process.

(c) Made of the same strength material as the line hung in the tree or larger size guylines must be used to provide the same relative strength.

EXAMPLE: In 437-007-0650(4)(c), a 1-inch swaged skyline requires guylines equivalent in strength to 5/8-inch swaged guylines.

(5) When using tail or intermediate support trees and the line hung in the tree is:

(a) 5/8-inch or less, guylines must be at least 3/8-inch.

(b) Greater than 5/8-inch and less than 1-inch, guylines must be at least 1/2-inch.

(c) 1-inch and larger, guylines must be at least 5/8-inch.

(6) A skyline must not be considered a guyline.

(7) Machines and equipment used for yarding that are specifically designed to be self-stabilizing during operation may be used without guyline(s).

NOTE: Hydraulic excavator-based log loading machines may yard logs without using guylines.

(8) Guylines made of synthetic materials, including the end connectors, must have the equivalent strength capacities of wire rope.

(9) The manufacturer's recommendations for out-of-service requirements of synthetic materials must be followed.

(10) When guylines are required for towers they must be positioned according to Appendix 7-I, Figure 7-39 through Figure 7-50.

(11) Tail or intermediate support tree guylines must not be pretensioned beyond the point of tree stability before the load is applied. (See Figure 7-18.)

(12) Trees and unintentional siwashes must not interfere with the proper alignment, placement, or tightening of guylines.

(13) Guylines must be hung in a manner to prevent a bight or fouling when they are tightened.

[ED. NOTE: Figures and Appendices are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(4)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03; OSHA 3-2004, f. & cert. ef. 6-7-04; OSHA 2-2005, f. 5-27-05, cert. ef. 6-1-05

437-007-0655

Guylines — Tail Tree Guying

(1) Except as provided for in rule (2) and (5) of this section, a minimum of two guylines must be used on tail trees and located within guying zones to oppose the forces as shown in Figure 7-16 (azimuths 130-150 and 210-230 degrees).

Figure 7-16 — Guylines — Tail Trees

(2) When the angle of the lines between the tail tree and a tail hold produces an offset of more than 8 degrees between the lines as they enter and leave the tail tree, then at least three guylines are required.

(3) If a suitable anchor is not available within a specified guying zone, two guylines may be used in lieu of one guyline for that zone, provided a guyline is placed on both sides of, and as near as possible, to the affected guying zone.

(4) When additional guylines are needed in a tree, they must be placed to oppose the yarding forces.

(5) Guylines are not required when at the point of rigging attachment the tail tree does not move more than its diameter in the direction of load as shown in Figure 7-18 and the:

(a) Tail tree is not within reach of workers.

(b) Resulting line movement would not pose a hazard to workers if the tail tree failed.

[ED. NOTE: Figures referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03; OSHA 3-2004, f. & cert. ef. 6-7-04

437-007-0660
Intermediate Support Trees

(1) Intermediate support trees must be rigged so:

(a) Horizontal carriage clearance at the base of the intermediate support tree(s) is sufficient for the turn of logs to pass the support tree(s).

(b) The jackline is a single piece of line that provides strength equal to a line 1/8-inch larger than the tong or skidding line. (Figures 7-17, 7-19 and 7-20.) Extensions may be attached to the anchor end of the jack-line.

(2) Vertical support trees must be firmly rooted.

(3) The base of all leaning tree supports must be prevented from moving by:

(a) Retaining 20 percent of the stump diameter in holding wood; or

(b) Other suitable rigging arrangements.

(4) Single tree intermediate supports must be guyed as follows:

(a) For skylines 1-inch and smaller use the rigging configuration in Figure 7-17:

(A) No guylines are required when at the point of rigging attachment the tree does not move more than its diameter in the direction of load as shown in Figure 7-18.

(B) If the tree moves more than one diameter at the point of rigging attachment, then a guyline of the size called for in 437-007-0650(4) must be rigged to oppose the yarding forces.

Figure 7-18 — Tail and Intermediate Support Tree Stability [Figure not included. See ED. NOTE.]

(b) For all skylines larger than 1-inch and for skylines rigged as in Figure 7-17.

(A) Two guylines are needed of the sizes called for in 437-007-0650(4)(c).

(B) The guylines must be rigged according to 437-007-0655(4) if the tree is not stable according to Figure 7-18.

(c) For all leaning tree intermediate supports using the rigging configuration of Figure 7-19, a minimum of three guylines must be used.

(A) Two guylines of the sizes called for in 437-007-0650(4)(c) must be rigged according to Appendix 7-I, Figure 7-42.

(B) A snap guyline of at least 3/8-inch diameter must be placed opposite the two load-bearing guylines.

Figure 7-19 — Intermediate Support Tree — Leaning [Figure not included. See ED. NOTE.]

(5) Double tree supports must be rigged (see Figure 7-20) so the:

(a) Angle of the block to the center of the support line:

(A) Is 10 degrees in any direction when skylines 1 1/8-inch and smaller are used; or

(B) Has deflection in the direction of the jack which does not exceed 10 degrees when skylines larger than 1 1/8-inch are used.

(b) Loaded support trees do not displace more than 2 feet at the point of rigging attachment.

(c) Minimum and maximum heights of the jack relative to the height of the block is as shown below for double tree intermediate support systems.

Figure 7-20 — Intermediate Support — Double Tree [Figure not included. See ED. NOTE.]

(6) Double tree supports must be guyed as follows:

(a) For skyline sizes equivalent to 1 1/8-inch improved plow steel (IPS) and less, no guys are required;

(b) For skyline sizes equivalent to those larger than 1 1/8-inch IPS as shown in Appendix 7-I, Figure 7-39.

[ED. NOTE: Figures and Appendices referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03; OSHA 3-2004, f. & cert. ef. 6-7-04; OSHA 2-2005, f. 5-27-05, cert. ef. 6-1-05

437-007-0665
Anchoring

(1) A competent person must carefully choose skyline, guyline and running line anchors for position and strength.

Figure 7-21 — Stump Tie Back Anchor [Figure not included. See ED. NOTE.]

(2) A competent person must inspect anchors while the operation is in progress. When necessary, anchors must be tied back or changed.

Figure 7-22 — Stump Twister Anchor [Figure not included. See ED. NOTE.]

(3) Unstable yarder guyline anchors must be immediately corrected.

(4) Stump anchors must be notched to a depth not greater than is necessary to safely secure the line to the stump.

(5) Deadman anchors must have:

(a) Straps or lines equal in strength to the guyline, skyline, or mainline to attach the line to a deadman.

(b) Deadman anchor strap or line connectors visible for inspection.

Figure 7-23 — Deadman Anchor [Figure not included. See ED. NOTE.]

(6) When a standing tree is used as an anchor:

(a) The line or strap must be attached to the base of the tree.

Figure 7-24 — Tree Tie Back Anchor [Figure not included. See ED. NOTE.]

(b) The tree must be tied back if it is within reach of any worker, the landing area, or haul road.

NOTE: In some cases, the base of a standing tree(s) that is used as an anchor may also need to be tied-back.

(c) Affected personnel must be notified of the standing tree anchor and the potential failure zone.

NOTE: See the potential failure zone requirements listed in 437-007-0927(1) through (7)

(7) The use of machines for anchoring guylines, skylines, or corner blocks must be done only under the supervision of a competent person.

Figure 7-25 — Log Loader Anchor [Figure not included. See ED. NOTE.]

(a) When determining if the machine is a suitable anchor, the competent person must consider:

(A) The size and weight of the machine.

(B) The size of the line to be attached.

(C) The type of logging system to be used.

(D) The condition of the soil and slope of the ground.

(E) The availability of holding aids, such as road embankments or stumps.

(F) The skyline, guyline, or running line angle from the horizontal and vertical.

(G) Any other factors which would affect the stability of the machine anchor.

(b) Line attachment points on the machine must be determined by a qualified person.

(c) Machines that are used as mobile tail anchors and are stabilized with a guyline(s) must be guyed in accordance with OAR 437-007-0650(1), (2) and (3).

Figure 7-26 — Tailhold Cat Anchor [Figure not included. See ED. NOTE.]

(8) Rock bolt anchors must be installed, grouted, tested and maintained in accordance with the manufacturer's recommendations.

(9) Artificial earth anchors must be installed and used in accordance with their design specifications and manufacturer's recommendations.

(10) When using tipping plate anchors:

(a) Guylines, skylines, or mainlines must not be directly attached to the anchors.

(b) The combined strength of straps or lines attached to multiple anchors must be equal in strength to the guyline, skyline, or mainline.

Figure 7-27 — Tipping Plate Anchor [Figure not included. See ED. NOTE.]

(c) Shackles used to connect straps to the anchors must be secured with a safety pin.

NOTE: This connection will not be visible for inspection.

[ED. NOTE: Figures referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03; OSHA 2-2005, f. 5-27-05, cert. ef. 6-1-05

437-007-0670
Spiking and Releasing Spiked Guylines or Skylines

(1) Spiked guylines or skylines must be anchored with at least two and one-half wraps around the stump. The first wrap must be secured with at least eight spikes or six staples. The second wrap must be secured with at least three spikes. The last, or top wrap, must be secured with eight spikes or six staples. (See Figure 7-28.)

Figure 7-28 — Spiked Guylines and Skylines Anchor [Figure not included. See ED. NOTE.]

(2) All the bark must be removed from the stump where the line is wrapped and spiked.

(3) Employees must not stand close to the stump or tree or in the bight of the lines as the guyline or skyline wraps are being tightened.

(4) When removing spiked guylines or spiked skylines from stumps or trees, a reverse safety wrap (Figure 7-29) must be put on and secured before loosening the last wrap, or the skyline or guyline must be held while the spikes are removed from the last wrap, and snubbed until the tension is relieved.

Figure 7-29 — Spiked Guyline Safety Wrap Anchor [Figure not included. See ED. NOTE.]

(5) A competent person must be in charge of loosening spiked guylines or skylines, using all precautions and giving warning before lines are released. Safety holdbacks must be used when necessary.

[ED. NOTE: Figures referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0675
Selecting, Preparing and Rigging Trees

(1) Tail and intermediate support trees must be carefully chosen by a competent person based on position and strength necessary to support the imposed loads.

(2) Raised trees must be identified and marked as such.

(3) Trees must not be topped during windy weather.

(4) At no time must topping, rigging up, or stripping work be done when visibility is impaired.

Figure 7-30 — Topping Trees [Figure not included. See ED. NOTE.]

(5) Loose equipment, rigging, or material must either be removed from the tree or securely fastened.

(6) Skylines with breaking strengths greater than 1-inch IPS (or equivalent) must not be hung in trees where the tree diameter at the point of attachment is less than 12 inches unless precautions are taken to prevent the tree from pinching off.

(7) A skyline must not make an angle greater than 50 degrees measured from the horizontal as it leaves the tail tree unless additional precautions are taken to prevent the tree from failing.

[ED. NOTE: Figures referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0680
Blocks and Hanging Blocks.

(1) Load-bearing blocks must:

(a) Not be used for lines other than those for which they are constructed.

(b) Be fitted with line guards and be designed and used in a manner that prevents fouling.

(c) Be kept in proper alignment when in use.

(d) Have bearing and yoke pins of a material that will safely withstand the strains imposed and be securely fastened.

(e) Have sheaves of a size designed for the size of the wire rope used.

EXCEPTION: 437-007-0680(b) and (e) do not apply to small rig-up (Tommy Moore) blocks.

(2) Block bearings must be kept well-lubricated.

(3) Sufficient corner or tail blocks to distribute the stress on anchors and attachments must be used on all logging systems.

(4) Tail, side, or corner blocks used in yarding must be hung in both eyes of straps or in the single eye of a strap or choker that meets the requirements OAR 437-007-0645, Tables 7-7 and 7-8.

(5) The yoke pin of haulback blocks must be inserted with the head facing the direction from which the rigging approaches, when the rigging can reach the block.

[ED. NOTE: Tables referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0685
Climbing Equipment and Climbing

(1) Defective climbing equipment must be immediately removed from service.

(2) The climber must be equipped with a climbing equipment assembly having a breaking strength of not less than 5,000 pounds. The equipment must include:

(a) A safety belt with double "D" rings; and

(b) Steel spurs long and sharp enough to hold in any tree in which they are used; and

(c) A high-quality steel safety chain of 3/16-inch size or larger or a wire rope core climbing rope.

(3) A wire rope core climbing rope or chain must be attached to both of the "D" rings at the side of the belt or passed through the "D" rings and around the body. A secondary safety device must be used when snap hooks are used.

(4) All climbers must be trained in safe rigging procedures for each applicable climbing duty.

(5) Personnel with climbing experience and an extra set of climbing equipment must be available at the worksite to render assistance to the climber in an emergency.

(6) Climbers must select the place for hanging rigging before topping a tree, with no more than 16 feet nor less than 6 feet of the topped tree above the top guylines.

(7) Yarding of any type must not be conducted within reach of the tree or guylines of a tree in which a climber is working.

(8) When machines are used to hoist rigging:

(a) A person must be assigned to transmit the climber's signals.

(b) The signal person and machine operator must not perform other duties when the climber is in the tree.

(9) Noisy equipment, such as power saws, tractors and other logging machines, must not be operated around the area where a climber is working when such noise will interfere with the climber's signals.

(10) Lines attached to a tree in which a climber is working must not be moved except on a signal from the climber.

(11) A climber's rope (chain) must encircle the tree before the climber leaves the ground.

(12) While the climber is working in the tree, employees must keep a sufficient distance from the tree to be clear of falling objects.

(13) The climber must give warning when any equipment or material is in danger of dropping, or is dropped deliberately.

(14) Loose equipment, rigging, or material must either be removed from the tree or securely fastened.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03; OSHA 2-2005, f. 5-27-05, cert. ef. 6-1-05

437-007-0690
Metal Towers

(1) A competent person must direct the raising and lowering of each metal tower.

(2) All employees not engaged in the actual raising or lowering of metal towers must stay in the clear during these operations.

(3) Metal towers must be level to provide proper line spooling and avoid excessive stress on component parts.

(4) Each metal tower must have an identification plate permanently attached to its base or on the yarder in a position that can be easily read by a person standing on the ground or on the base platform.

(5) All plates must contain the following information:

(a) Name and address of manufacturer and model number; and

(b) The maximum and minimum inclination at which the metal tower is designed to operate.

(6) In addition, all identification plates on metal towers manufactured after July 1, 1980, must contain the following information:

(a) The maximum breaking strength and size of mainline for which the metal tower is designed;

(b) The maximum breaking strength and size of haulback line for which the metal tower is designed;

(c) The number, minimum breaking strength and size of guylines or any other lines required; and

(d) If the metal tower is designed for a skyline, slackline, or modified slackline system, the maximum breaking strength and size of skyline, mainline and haulback line that can be used.

(7) All metal towers must be operated within the manufacturer's capacity:

(a) As specified on the identification plate; or

(b) As modified by the manufacturer; or

(c) As designed and specified by a registered professional engineer.

(8) If wire rope dimensionally larger in size or of a greater breaking strength than that specified by the yarder manufacturer is used for

skyline, mainline, skidding line and/or haulback line, one of the following methods for limiting the load on the spar must be used:

(a) A tamper-proof tension limiting device that automatically slacks the line loads (pull) on the metal tower to below its maximum identification plate rating.

(b) A line fuse system installed in the skyline or mainline; or

(c) Established operating procedures that limit line loads (pull) on the metal tower to below the maximum identification plate rating for the metal tower.

(9) When a line fuse system is used to limit line loads (pull) on the metal tower:

(a) The line fuse must have a designed breaking strength equal to or less than the maximum line rating of the metal tower as listed on its identification plate.

(b) The line fuse must be certified and stamped as to the breaking strength.

(c) The skyline or mainline must be hung in a single eye of the fuse link.

(d) Notice must be given to crew personnel that line fuses are in use.

(10) When operating procedures are used to limit line loads (pull) on the metal tower:

(a) They must be observable or verifiable.

(b) Any locking or dogging device on the brake or elsewhere must be removed or deactivated.

(c) Personnel must be knowledgeable about the operating procedures that are in use to limit line loads.

(11) Metal towers and their appurtenances must be inspected by a competent person each time the tower is lowered and at any time its safe condition is in doubt.

(12) When damage from overstress or any other source is noted or suspected, the part in question must be inspected by a suitable method and found to be safe or the part repaired by a qualified person or replaced before the tower is again used.

(13) Structural modifications or additions which affect the capacity or safe operation of metal towers must be made only under the direction of the manufacturer or a registered professional engineer. If such modifications or additions are made, the identification plate required in OAR 437-007-0690(4), (5) and (6) must reflect such changes.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03; OSHA 3-2004, f. & cert. ef. 6-7-04

Subdivision H — Machines Used in Forest Activities

437-007-0700
General Work Practices

(1) Machines must be operated a sufficient distance from personnel and other machines to not create a hazard for any person.

(2) An unimpaired horizontal clearance of not less than 3 feet must be maintained between the rotating superstructure of any machine and any adjacent object or surface. If this clearance cannot be maintained, personnel must be warned of the pinch point area. Measures taken to warn personnel of the pinch point area may consist of a warning line constructed of rope or ribbon supported on stanchions, barriers, cones, flags, etc.

(3) Items of personal property, tools or other miscellaneous materials must not be stored on or within 3 feet of any machine if such items would expose personnel to hazards caused by the rotation of the machine's superstructure.

EXCEPTION: These items may be stored within 3 feet when in a locked box or otherwise secured and under the exclusive control of the equipment operator.

(4) Personnel must not approach to within 3 feet of a machine when a hazardous area is created by the rotation of the machine's superstructure without:

(a) Informing the operator of their intent.

(b) Receiving acknowledgment from the operator that the operator understands their intention.

(c) Stopping the machine while personnel are in the hazardous area.

(5) No person, other than the operator, may ride on a machine unless seating, seat belts and other protection equivalent to that provided for the operator are provided.

(6) Operators must not permit workers to ride on arches, reaches or turns of logs.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0705
General Machine Operator Requirements

(1) Machines must be started and operated only by authorized personnel.

(2) Operators must be instructed about and comply with the manufacturer's recommendations for machine operation, maintenance, safe work practices, and site operating procedures.

(3) Before starting or moving any machine, the operator must determine that personnel are in the clear.

(4) Operators must inspect their machines each day before starting work.

(5) All machine engines must be off during inspection or repair except where necessary for adjustment or checking fluids.

(6) Machines must not be operated with defective steering, braking, other parts or components that are necessary for safe operation.

(7) Defective hydraulic hoses, lines and fittings that affect the safe operation of the machine must be immediately replaced.

(8) All repairs and adjustments necessary for safe operation must be made before any strain or load is placed upon any machine.

(9) Machines must not be operated until all guards are reinstalled, safety devices reactivated, and maintenance equipment removed after adjustments or repairs are made.

(10) Operators must start and operate machines only from the operator's station or from a safe area recommended by the manufacturer.

(11) At the start of each shift, machine operators must test all drum brakes before taking a load.

(12) Machines must be operated within their stability limits.

(13) Loads on forklift-type log handling machines must be transported:

(a) As low as safely possible.

(b) In a manner that minimizes obstructing the operator's view.

(14) The machine operator must apply the parking brake, brake locks or other equivalent means to hold the machine stationary before dismounting.

(15) Blades must be lowered to the ground or other stable surfaces while the operator is out of the normal operating work station.

(16) Grapples, delimber masts, feller buncher attachments, forks and other similar devices must be stable and pose no hazard to others while the operator is out of the normal operating work station.

(17) If a hydraulic or pneumatic storage device can move machine elements, such as, but not limited to, blades, buckets, saws and shears, after the machine is shut down, the pressure or stored energy from the element must be discharged as specified by the manufacturer.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0710
General Machine Requirements

(1) Machine seats must be securely attached.

(2) Operating foot controls must be constructed of or covered with a non-slip material suitable for the footwear worn.

(3) Machine decks, drums and other surfaces where workers walk or stand must be constructed of or covered with a non-slip material suitable for the footwear worn.

(4) Catwalks or platforms must be provided on machines where personnel perform routine operation, maintenance or rigging work.

(5) A safe and adequate means of access and egress such as, steps, ladders, handholds and railings must be provided and maintained to all parts of vehicles and machines where employees must go. Machine access must comply with the Society of Automotive Engineers' (SAE)-J185-1988 or ISO 2867:1994, Access Systems for Off-Road Machines.

NOTE: See the mandatory requirements in Appendix 7-D for accessing metal towers.

(6) Guards must be provided on machines to protect employees from flying chunks, logs, chips, bark, limbs and other material.

(7) Guards must be in place at all times when machines are in use.

(8) All exposed moving parts, such as shafts, pulleys, belts, conveyers and gears on machinery and equipment must be guarded in accordance with OAR 437, division 2, subdivision O, Machinery and Machine Guarding.

(9) Hydraulic hose, tubing or fittings must be arranged to eliminate abrasive contacts.

(10) Machines must be free of excess flammable and combustible material that may create a fire.

(11) Machine sleds, bases or frames must be strong enough to withstand any imposed stresses.

(12) Machines and their components must be securely anchored or otherwise stabilized to prevent unintended movement during operation.

EXCEPTION: This does not apply to tractors or skidders.

(13) A limit switch must be installed on electric-powered log loaders to limit lift arms travel in the event the control switch is not released in time.

(14) When forklift type machines are used to load, unload or handle trailers, a positive means of holding the lifting attachment on the fork must be installed and used.

(15) Guyline drum controls and outrigger controls must be separated and clearly identified to prevent engaging the wrong control.

(16) Boom-type machines must have a boom stop to prevent over-topping of the boom.

[ED. NOTE: Appendices referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0715
Attaching and Spooling Line (Wire or Synthetic Rope)

(1) Ends of lines attached to drums on machines must be secured by end attachments that develop the ultimate strength of the line unless three wraps of line are maintained on the drum at all times.

NOTE: This does not apply to tractors or skidders.

(2) Winch lines on tractors or skidders must be attached to the drums with a breakaway device.

(3) Wire rope must be wound on drum spools in a manner to prevent excessive wear, kinking, chafing, or fouling.

(4) A guide pulley, tool, stick, iron bar, or other manual or mechanical means must be used when guiding lines onto drums.

Figure 7-31 — Spooling Lines — Least Risky [Figure not included. See ED. NOTE.]

(5) Personnel must never allow line to slide through their gloved hands or place any part of their body in direct contact with the line.

Figure 7-32 — Spooling Lines — Risky [Figure not included. See ED. NOTE.]

(6) When it is necessary for personnel to stand on a drum to spool line or perform machine maintenance, precautions must be taken to prevent unintentional activation of the drum.

(7) Personnel must not stand on a bare drum or lines spooled on a drum when wearing caulk boots unless a non-slip material covers the standing surface.

[ED. NOTE: Figures referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0720
Fairleads

(1) Properly align fairleads at all times.

(2) Fairleads must be of a design that will prevent line damage.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0725
Securing Machines.

(1) Before the operator leaves the operator's work station, procedures must be implemented to prevent the release of stored energy, accidental start up, or movement of the machine.

(2) The employer must instruct all authorized employees how to use shut down procedures.

(3) Authorized employees must demonstrate a working knowledge of the specific shut down procedures they are required to use.

(4) Locks, tags and other devices used to control hazardous energy must be durable.

(5) The words "DO NOT START," "DO NOT OPERATE," or other appropriate warning must be displayed on tags used to control energy.

(6) Tags used to control hazardous energy must be placed so they are obvious to anyone attempting to operate the machinery.

(7) Blades must be lowered to the ground or other stable surfaces to secure the blade and machine from movement while maintenance or repair activities are performed.

(8) Grapples, delimber masts, feller buncher attachments, forks and other similar devices must be stable and not pose a hazard to personnel while maintenance or repair activities are performed.

(9) If a hydraulic or pneumatic storage device can move machine elements, such as blades, buckets, saws, shears, etc., after the machine is shut down for maintenance or repair, the pressure or stored energy that can activate the movable elements must be discharged.

(10) Before locks, tags and other devices that are used to control hazardous energy are removed and machinery or equipment is started, the work area must be inspected to ensure that:

(a) All tools have been removed.

(b) Personnel are in the clear.

(11) Guards must be replaced after necessary adjustments are made.

(12) Follow the requirements of Division 2/J, 1910.147 when it is necessary to control hazardous energy for servicing and maintenance of machines.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03; OSHA 3-2004, f. & cert. ef. 6-7-04

437-007-0730
Loading Machines

(1) Grapple arms or other positive means of keeping logs on the forks must be used on forklift type log handling and loading machines.

(2) Log loading machines must be equipped with an audible signaling device of a different tone than other signaling devices in the area.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0735
Chippers

(1) Access covers and doors to chippers must remain closed until the drum or disk is at a complete stop.

(2) Infeed and discharge ports on chippers must prevent contact with discs, knives, or blower blades.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0740
Machine Exhaust Systems

(1) Machines must have an exhaust system maintained in good working order.

(2) Machines must be equipped with a muffler of the type recommended by the machine manufacturer.

(3) Exhaust pipes must direct the exhaust gases away from the operator.

(4) Exhaust pipes must be insulated or located to protect employees from accidental contact with the pipes and must permit spark arrester clean out.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0745
Windows and Windshields on Machines

(1) Windows and windshields must:

(a) Be free of deposits or defects that could endanger the operator or other personnel.

(b) Be safety glass or a type of material that provides equal protection.

(c) Not impair the vision of the operator.

(d) Have an additional metal screen or guard where windows and windshields do not provide adequate operator protection.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0750
Drum Brakes

(1) Brakes or dogs must be installed on all machine drums and maintained in effective working condition.

(2) Machine drum brakes must have an independent locking device that will hold the drum when the operator leaves the machine and the machine is not operating.

(3) Machine drum brakes must be protected from direct exposure to the elements or must be of a design or construction which will render them impervious to such exposure.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0755
Machine Travel Brakes

(1) Self-propelled machines built on or after July 1, 1985, must have braking systems as follows:

(a) A service braking system that is the primary means of stopping and holding the equipment.

(b) An emergency stopping system that is a secondary means of stopping the equipment in the event of any single failure of the service system.

(c) A parking brake system that will continuously hold a stopped machine stationary within the limits of traction so the operator may leave the vehicle without the vehicle moving, and to prevent movement of the vehicle while unattended.

(2) The braking systems in this section (OAR 437-007-0755) must comply with Society of Automotive Engineers' (SAE) or International Organization for Standards (ISO) Recom- mended Practices:

(a) ISO 11512 MAR95 — Braking Performance — In-Service Crawler Tractors and Crawler Loaders.

(b) J/ISO 3450 JAN98 — Earthmoving Machinery — Braking Systems of Rubber-Tired Machines — Systems and Performance Requirements and Test Procedures.

(c) J/ISO 11169 FEB99 — Machinery for Forestry — Wheeled Special Machines — Vocabulary, Performance Test Methods, and Criteria for Brake Systems.

(3) Self-propelled logging machines manufactured prior to July 1, 1985, must have braking systems installed, tested and maintained in as effective a condition as originally installed by the manufacturer.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0760
Outriggers

(1) All outriggers must be placed on a stable base or cribbing.

(2) Hydraulic outriggers must have a positive holding device (velocity fuse, load check valve, manually operated valve, or equivalent) to prevent movement of the piston in the event of a hose, hose fitting or other failure in the hydraulic system.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0765
Hauling or Moving Machines

(1) The weight of any machine being hauled must not exceed the designed capacity of the transporting vehicle.

(2) Machines must be loaded, secured and unloaded so they do not create a hazard for personnel.

(3) Machines must not be moved or operated until all personnel are in the clear.

(4) A signal person must guide operators who do not have a clear and unobstructed view of the direction of travel and the surface being traveled.

(5) When an operator does not have a clear and unobstructed view of the direction of travel, an audible alarm or horn must be sounded before the machine, equipment or vehicle is moved.

(6) Track-mounted machines with manual transmissions must be equipped with a ratchet or other device which will prevent unintended disengagement or reversing of the machine, and the operator must be informed of the proper technique.

(7) When moving machines equipped with metal towers, the tower must be lowered. When needed for mobility, the tower may be raised provided that it is adequately supported so that the stability of the machine is not impaired during movement.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0770
Protective Structure for Operators, General Requirements

(1) Cabs and protective structures for machine operators must be:

(a) Provided when machine use exposes an operator to hazardous conditions.

(b) Sufficient in strength and dimension to withstand the impact of materials handled.

(2) Operator controlled skidding machines manufactured after April 1, 1992, must have adequate operator protection of 1/4-inch woven wire mesh with openings no greater than 2 inches in size or other materials providing equivalent or greater protection.

(3) Every tractor, skidder, front-end loader (other than high mast forklifts), scraper, grader and dozer manufactured on or after July 1, 1969, must be equipped with Roll-Over Protective Structures (ROPS) installed, tested and maintained in accordance with Division 2/N, OAR 437-002-0223, as amended through January 30, 2003.

EXCEPTION: This rule does not apply to log stackers used exclusively to lift, transport or stack logs in sorting yards or transfer stations.

(4) Every tractor, skidder, front-end loader (other than high mast forklifts), scraper, grader and dozer manufactured on or after July 1, 1980, must be equipped with ROPS meeting the Society of Automotive Engineers' SAE 1040 April 1980, Performance Criteria for Roll-Over Protective Structures (ROPS) for Construction, Earthmoving, Forestry and Mining Machines.

EXCEPTION: This rule does not apply to log stackers used exclusively to lift, transport or stack logs in sorting yards or transfer stations.

(5) Every tractor, skidder, front-end loader, scraper, grader and dozer manufactured on or after July 1, 1980, must be equipped with a falling object protective structure (FOPS) for overhead protection installed, tested and maintained in accordance with the Society of Automotive Engineers' SAE J231-1981, Minimum Performance Criteria for Falling Object Protective Structures (FOPS).

(6) Machines equipped with ROPS or FOPS as required in OAR 437-007-0770(3), (4) and (5) must comply with the Society of Automotive Engineers' SAE J397April-1988, Deflection Limiting Volume (DLV) for Laboratory Evaluation of Roll-Over Protective Structures (ROPS), and Falling Object Protective Structures (FOPS) for Construction and Industrial Vehicles.

(7) The ROPS structure must have a shear or deflecting guard extending from the leading edge of the forward arch to the front part of the tractor frame. If longitudinal arches are used, they must extend from the rear of the tractor to the front frame of the tractor with each arch having an intermediate support located approximately at the dash so that operator access or egress is not impeded.

EXCEPTION: This rule does not apply to rubber-tired loaders, scrapers and graders.

(8) The opening in the rear of the ROPS structure must be covered with 1/4-inch woven wire having not less than 1 1/2-inch or more than 2-inch openings, or other material providing equivalent or greater protection. Affix this covering to the structural members so that ample clearance is provided between the screen and the back of the operator.

(9) ROPS structures must have side screens of the same strength as the back screen or vertical barrier bars spaced at intervals not greater than 6 inches on center and constructed of not less than 1-inch double strength pipe installed on all logging machines equipped with ROPS in addition to the back screen.

(10) Side barriers must extend forward to the front edge of the operator's seat or as far forward as possible from the rear corners of the canopy sides to a structural member behind the front edge of the seat.

(11) Protective structures must be of sufficient height and width so they:

(a) Do not impair the movement of the operator or prevent immediate escape from the machine in emergencies.

(b) Allow the operator as much visibility as possible.

(12) Clearance between the deck and the protective structures of the machines at points of egress must not be less than 52 inches.

(13) There must be a second means of egress from all logging machines.

(14) Structural members of the ROPS must have smooth, rounded edges and coverings free from projections which could puncture or tear flesh or clothing.

(15) Rollover protective systems must be maintained in a manner that will preserve their original strength. Welding may only be performed by qualified welders.

(16) Certified roll-over protective structures must be identified by a metal tag:

(a) Permanently attached to the ROPS in a position where it can be easily read.

(b) Permanently and clearly stamped, etched or embossed with the:

(A) Name and address of the certifying manufacturer or registered professional engineer.

(B) ROPS model number (if any).

(C) Vehicle make, model or series number that the ROPS is designed to fit.

(D) Maximum weight of the machine for which the structure is certified.

(E) SAE tag criteria number.

(17) Tractors and skidders manufactured prior to 1969 that cannot be fitted with complete ROPS may be used for cleaning debris off landings, snubbing vehicles and machines or as an anchor, provided no clearing, road construction or yarding is performed off a road or landing surface.

(18) Seat belts must be provided and used on all machines with ROPS/FOPS and have quick release buckles designed to minimize the possibility of accidental release.

(19) Seat belts must be maintained in an effective condition and comply with SAE Standard J386-1985.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0775
Protective Structure For Operators, Machines Manufactured On Or After July 1, 2004

NOTE: The scope of coverage in the SAE and ISO standards referenced in OAR 437-007-0775(11) and (14) are not intended to exclude any machines included in the scope of this Division.

(1) Machines manufactured on or after July 1, 2004, that permit the operator to stand on the ground adjacent to the machine while operating the machine:

(a) Are not required to have a fully enclosed cab.

(b) Must have overhead and landing chute side protection meeting the requirements of SAE J1084 April 80.

(2) Cabs and protective structures on forest activities machines manufactured on or after July 1, 2004, must have smooth, rounded edges and coverings free from projections which could puncture or tear flesh and clothing.

(3) Any machine operator cab, protective structure or attached guarding manufactured on or after July 1, 2004, that is damaged or weakened, to a strength less than that required by certified performance criteria must be replaced or immediately repaired.

(4) Repairs or modifications to major structural members of any operator cab, protective structure or attached guarding on machines manufactured on or after July 1, 2004, certified to performance criteria, must comply with the specific instructions of the original equipment manufacturer or be certified by a professional engineer.

(5) An operator restraint system must be provided and used on all machines manufactured on or after July 1, 2004, and equipped with ROPS, FOPS, reinforced cabs or overhead guards. The operator restraint system must:

(a) Comply with SAE J386 NOV97 or ISO 6683 Amended 1:1990.

(b) Be maintained in an effective condition.

EXCEPTION: Use of the operator restraint system is not required when operating yarders that are stationary.

(6) The level of protection provided by any machine operator cab, protective structure or attached guarding manufactured on or after July 1, 2004, must be identified by a label. The label must:

(a) Comply with the labeling requirements of ISO 3471:1994 or ISO 12117:1997 as applicable.

(b) Not claim that exclusion from a standard is equivalent to compliance with that standard.

NOTE: Machines capable of 360-degree upper structure rotation are excluded from the SAE J1040 MAY94 and ISO 8082:1994 standards for ROPS. In this case, the exclusion from these standards does not allow the label on a machine capable of 360-degree upper structure rotation to state compliance with SAE J1040 MAY94 or ISO 8082:1994.

(7) Each machine used in forest activities that is manufactured on or after July 1, 2004, must have a fully enclosed cab for the operator which prevents objects from entering the cab. The fully enclosed cab must have:

(a) The upper portion enclosed with materials that allow for maximum visibility and meets the Operator Protective Structure (OPS) requirements of SAE J1084 APR80 or ISO 8084:1993.

(b) Transparent material must not have defects, such as, but not limited to, scratches, cracks, or broken safety glass which could create a hazard for the operator.

(c) The lower portion enclosed with solid material meeting the requirements of SAE J1084: APR80 or ISO 8084:1993.

(d) The overhead covering enclosed with solid material meeting the FOPS requirements of ISO 8083:1989 (11,600 Joules).

EXCEPTION 1: 437-007-0775(7)(a) is not required for the front window in machines operating in sort yards, on landings and similar prepared surfaces which are equipped with front guards meeting the SAE J1356 FEB88 requirements.
EXCEPTION 2: 437-007-0775(7)(a) and (7)(c) are not required on machines operating in mill yards.

(8) The machine operator space in cabs and protective structures manufactured on or after July 1, 2004, must comply with ISO 3411:1995.

(9) Access to machine operator cabs and protective structures manufactured on or after July 1, 2004, must comply with SAE J185-1988 or ISO 2867:1994.

(10) Each fully enclosed cab installed on machines manufactured on or after July 1, 2004, must have a second means of egress which can be opened from both the inside and outside without tools.

(11) Machines capable of handling material in front of or above the deflection limiting volume (DLV), as defined by SAE J397 APR98, including yarders with cabs mounted next to the tower (boom), manufactured on or after July 1, 2004, must have a front and top guard meeting the requirements of SAE J1356:FEB88.

EXCEPTION: The rule does not apply to rubber-tired or tracked front-end loaders when equipped with buckets or forks with hold down grapple arm(s).

(12) Machines used for forest activities and those identified by SAE J1116 MAR99 that are manufactured on or after July 1, 2004, must:

(a) Be equipped with ROPS which meet the criteria in SAE J1040-1994 or ISO 8082:1994.

(b) Comply with the requirements of OAR 437-007-0775(2) through (11).

EXCEPTION 1: This rule does not apply to high mast log stackers used exclusively to lift, transport or stack logs in sorting yards or transfer stations.
EXCEPTION 2: This rule does not apply to machines capable of 360-degree upper structure rotation that are excluded from SAE J1040:May 94 and ISO 8082:1994 standards for ROPS.

(13) Shear or deflector guarding must be:

(a) Installed in front of each cab to deflect whipping saplings and branches.

(b) Located so they do not impede visibility and access to the cab.

EXCEPTION: This rule does not apply to rubber-tired loaders, scrapers and graders.

(14) Machines used for forest activities manufactured on or after July 1, 2004, that are excluded from the ROPS, SAE J1040:1994 or ISO 8082:1994 requirements because they are capable of 360 degree upper structure rotation must be equipped with fully enclosed cabs that meet the requirements of 437-007-0775(2) through (11). These machines must be limited to use on surfaces that are prepared, excavated or constructed of solid material with a slope of less than 20 percent unless the operator's cab is equipped with the following additional protection:

(a) A Tip Over Protective Structure (TOPS) that meets the requirements of ISO 12117 1997:(E) with the exception of the "Formulae for the determination of energy required" in section 6.1.4 Table 1. The "Formulae for the determination of energy required" in Table 1 is changed as follows:

(A) The lateral energy equation is replaced with 7300(M/10,000)0.9 or 20,000 Joules, whichever is greater where M is the machine mass in kilograms.

(B) The longitudinal energy equation is replaced with 4300(M/10,000)0.9 or 12,000 Joules, whichever is greater where M is the machine mass in kilograms.

(b) An "Off-Boom Side Cab Guard" that complies with the "Front Guard" requirements of SAE J1356: FEB88.

(c) An "Off-Boom Side Cab Guard" that complies with 437-007-0775(14)(b) when the following modifications are made to SAE J1356:FEB88:

(A) Section 3.2. Each occurrence of the term "Front Guard" in this section is replaced with "Off Boom Side Cab Guard."

(B) Section 3.2.4.1. The term "front of the DLV" on line 3 is replaced with "off boom side of the DLV."

(C) Section 5.2. Each occurrence of the term "Front Guard" in this section is replaced with "Off Boom Side Cab Guard."

(D) Section 5.2.3. The term "front of the DLV" on line 2 is replaced with "off boom side of the DLV."

(E) Section 6.2. The term "Front Guard" on line 1 is replaced with "Off Boom Side Cab Guard."

[ED. NOTE: Tables referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(4)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0780

Protective Structures for Operators, Machines Used On Or After July 1, 2009

Each machine used in forest activities on or after July 1, 2009, that is excluded from the ROPS, SAE J1040 MAY94 or ISO 8084:1994 requirements, because it is capable of 360 degree upper structure rotation, must:

(1) Meet the same requirements as those machines manufactured on or after July 1, 2004; or

(2) Be limited to use on surfaces that are prepared, excavated or constructed of solid materials with a slope of less than 20 percent when handling logs or other materials; or

(3) Have a clear path of travel and be limited to slopes of 40 percent or less when used only as anchors for cable yarding systems.

Stat. Auth.: ORS 654.025(2) & 656.726(4)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

Subdivision I — Cutting Trees, Pre-Commercial Thinning and Slashing

437-007-0800

General Requirements

(1) Any worker falling a tree or bucking a log must be located so their work will not endanger others.

Figure 7-33 — Falling — Too Close [Figure not included. See ED. NOTE.]

(2) Personnel must not approach within two tree lengths of a tree being felled without receiving a signal from the person falling the tree that it is safe to approach.

(3) The minimum distance between any worker(s) manually falling trees and any other personnel must be twice the height of the trees being felled.

EXCEPTION: This does not apply to a team of two or more working on the same tree.

Figure 7-34 — Falling — Two Tree Lengths [Figure not included. See ED. NOTE.]

(4) Workers who are single jacking must be positioned so they are close enough to render assistance to each other in case of an emergency. They must be:

(a) Within sight of each other; or

(b) Able to talk to each other by natural unassisted voice communication.

(5) Workers who are single jacking must work in compliance with 437-007-0215, Working Alone, and 437-007-0220, Medical Service and First Aid requirements.

(6) Workers whose primary job is to manually operate a chain saw for activities such as, falling and bucking trees, pre-commercial thinning, brush clearing and slashing must carry a shrill sounding whistle, such as a police whistle. The whistle must be used only to summon help in case of an emergency.

NOTE: This does not include chasers on active landings.

(7) Workers must not fall or buck trees within a unit of standing timber prior to any cutting operation if such falling or bucking creates a hazardous condition for subsequent cutters or operations.

(8) When hazardous conditions are created from tree cutting operation(s) next to roads, the requirements of OAR 437-007-0510 and 0515 apply.

(9) OAR 437-007-0230 applies when a tree could fall within 15 feet of a power line.

(10) An inexperienced worker must not fall trees or buck logs unless they are working under the direct supervision of a qualified person.

(11) When a worker is not sure how to safely fall or buck a tree, the tree must not be cut until the:

(a) Worker confers with a supervisor or qualified person.

(b) Safest possible work method or procedure is identified to complete the job.

(12) Workers must check for overhead hazards while falling, bucking or limbing trees.

(13) Workers must not fall and buck trees when their vision is impaired by weather or darkness.

(14) Spring poles and limbs under stress must be cut in a way that releases the tension and other personnel must be in the clear as the cut is being completed.

(15) Workers must not operate a chain saw:

(a) To cut directly overhead in a manner that would cause limbs, chunks of bark, or pieces of wood to fall on the operator.

(b) At a distance that would require them to lose a safe grip on the saw.

[ED. NOTE: Figures referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(4)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0805

Mechanical Falling

(1) The minimum distance between mechanical falling machines or personnel must be twice the height of the trees being felled.

NOTE: Increase this distance where the operation of mechanical falling machines creates the possibility of thrown or flying objects.

(2) Mobile tree falling machines must be designed or have attachments installed to cause the tree to fall in the intended direction.

Stat. Auth.: ORS 654.025(2) & 656.726(4)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0810

Manual Falling

(1) Falling cuts must not be made in a standing tree while anybody is in the area where the tree could fall.

(2) Trees must not be felled if the wind is strong enough to prevent the tree from falling in the desired direction.

(3) Domino falling is prohibited.

EXCEPTION: A lodged tree can be dislodged by falling another tree into it.

(4) A worker must not:

(a) Work under a lodged tree.

(b) Cut a tree that another tree is lodged in.

(5) When any lodged or standing tree with undercuts or back cuts is left unattended, the hazardous area must be distinctly marked by hazard identification ribbon as specified in OAR 437-007-0205.

(6) Only qualified workers may fall danger trees.

(7) When falling danger trees:

(a) Use extra caution.

(b) Remove loose bark within reach from the ground before starting to fall the tree.

(c) Use a deep undercut with a wide face opening, and fall the danger tree in the direction of lean whenever possible to avoid vibration caused by wedging.

(8) One worker must not fall a tree or danger tree when the assistance of another worker is necessary to minimize the risk of injury caused by overhead hazards, loose bark, loose or interlocked limbs, conditions of the tree, terrain or cutting conditions.

(9) An escape route must be determined and arranged before a tree is fallen so the worker(s) falling the tree can move at least 25 feet away from and to the side of the base of the tree.

(10) The escape route must be clear of brush, snow, tools and other material that would impede a quick escape.

(11) Workers must not remain at the stump as the tree falls unless it is necessary to complete the backcut. Once the backcut is completed, the worker must immediately release the throttle and move a safe distance away from the tree.

(12) Trees must be felled into the open whenever practical.

(13) When manual falling or tree jacking, trees must not be felled directly uphill when the probability of the tree sliding back past the stump is likely.

(14) When manual falling or tree jacking, trees felled uphill must be quartered to the slope, to minimize exposure to sliding or rolling trees.

(15) When trees or snags are over 6 inches DBH:

(a) Undercuts must not be less than 1/4 the diameter of the tree.

(b) Face openings must not be less than 1/5 the diameter of the tree.

EXAMPLE: Acceptable undercuts:

A. Conventional undercut. Can be made with parallel saw cut and axe diagonal cut or both cuts with the saw. Generally used on trees of small diameter.

Figure 7-35 — Falling — Conventional Face

B. Humbolt cut. Both cuts made with the saw. Same as "A" except that waste is put on the stump.

Figure 7-36 — Falling — Humbolt Face

C. Open face cut. Both cuts made with the saw. The top and bottom face cuts generally form a 90 degree angle when completed. Works best on small diameter trees.

Figure 7-37 — Falling — Open Face [Figures not included. See ED. NOTE.]

(16) Undercuts must be completely removed and cleaned out unless it is necessary to use a Dutchman on either side of the cut.

(17) Undercuts and back cuts must be made at a sufficient height above the highest ground level to enable the person falling the tree to:

(a) Safely make the cut.

(b) Control the tree.

(c) Have freedom of movement for a quick escape.

(18) Back cuts must be made above and on a horizontal plane with the face cut.

(19) Holding wood must not be completely cut through.

NOTE: When completing a swing cut, sufficient holding wood must be maintained to guide the tree during most of its fall.

[ED. NOTE: Figures referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0815
Wedges

(1) Wedges must be driven with a hammer or other suitable tool.

(2) Two wedges must be immediately available when falling trees over 15 inches DBH.

(3) Wedges must be used when falling trees that:

(a) Are over 15 inches DBH.

(b) Do not have a predictable lean.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0820
Bucking Trees/Logs

(1) Fallers and buckers working as a team must keep each other informed of their location.

(2) When a worker is bucking, they must give a timely warning to others within range of any log that may move after being cut off.

(3) Only qualified workers must buck windfalls.

(4) Before workers start bucking, they must carefully examine the tree or log to determine which way logs will roll, drop or swing.

(5) A worker must not buck a tree or log on the downhill side unless they:

(a) Are in a safe location.

(b) Block or secure the tree to prevent rolling.

(6) Before a worker starts to buck a tree or log they must:

(a) Clear away brush and other material which might interfere with a quick escape.

(b) Establish firm footing.

(7) Logs that are not completely bucked through must be conspicuously marked with hazard identification ribbon as required by 437-007-0205(1) through (5).

(8) Two or more persons must not buck the same tree or log at the same time.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0825
Tree Jacking

(1) Hydraulic tree jacks must have:

(a) An internal operable load check valve, velocity fuse or equivalent device. When using hoses with a jack, the device must be installed between the ram and the first piece of hose out from the jack.

(b) An operable pressure gauge.

(2) If two or more tree jacks are used and operated with one pump, a one-way flow valve must be used to isolate the hydraulic fluid from one jack to another jack should a failure in the system occur.

(3) A qualified person must determine if it is safe to jack a tree.

(4) Hydraulic tree jacks must have enough lift power for the trees to be jacked and felled.

(5) Two workers, one of whom must be qualified in the use of jacks, must be present at the tree when using hydraulic tree jacks.

(6) The jack seat of hydraulic tree jacks must be level.

(7) A metal plate or pad must be placed between the ram and the saw cuts when using a hydraulic tree jack. The metal plate or pad must be of sufficient area and have a surface design to prevent the plate or pad from sinking into the wood or from slipping.

(8) The hydraulic tree jack seat must be on solid wood inside the bark ring.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0830
Tree Pulling

(1) A qualified person must determine if it is safe to pull a tree.

(2) Positive communications must be maintained at all times between the tree-pulling machine operator and the person falling the tree. Citizens' band radios are not considered positive communications.

(3) An audible signal must be sounded when the initial pull is made on the tree and the line is tightened.

(4) A choker, choker bell or a line with a sleeve shackle must be used as the means of attachment around the tree when tree-pulling. The bight on the line must be only that necessary to hold the choker or line around the tree.

(5) The tree-pulling machine must be equipped with a torque converter, fluid coupler or an equivalent device to ensure a steady, even pull on the line attached around the tree.

(6) The tree-pulling line must have as straight and direct a path from the machine to the tree as possible. Physical obstructions which prevent a steady, even pull on the tree-pulling line must be removed or the line must be rerouted.

(7) The use of a siwash, in lieu of using a block and strap for the purpose of changing the tree-pulling lead, is prohibited.

(8) In tree pulling operations, the back cut may be below and on a horizontal plane with the face cut.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

Subdivision J — Yarding, Processing, Signaling and Communications

437-007-0900
General Landing Work Practices

(1) Before starting or moving any machine, the operator must determine that personnel are in the clear.

(2) When vehicles or machines are moved within the landing area all personnel must:

(a) Stay in the clear of the vehicle(s) or machine(s).

(b) Inform the operator of the intent to approach or be near the vehicle(s) or machine(s).

(c) Wait for the operator's permission to approach or be near the vehicle(s) or machine(s).

(3) Personnel must not approach the hazardous pinch point area created by the rotation of the machine's superstructure without:

(a) Informing the operator of that intent.

(b) Receiving acknowledgment from the operator that the person's intention is understood.

(c) The machine being stopped while personnel are within the hazardous area.

NOTE: OAR 437-007-0700 General Work Practices, paragraphs (1) through (3) from Division 7/H, are reprinted here.

(4) Any tool or rigging that is not being used must be stored in a location where it will not create a hazard.

(5) Materials must not be pushed, thrown or dumped off the landing in a manner or at a time that will endanger personnel.

(6) Personnel must not brand, mark, buck, limb or trim logs in a location that will expose them to contact with moving lines, logs, rigging, machines, equipment or vehicles.

(7) Logs must not be placed in, moved about, or removed from the bucking area of the landing unless all personnel are in the clear.

(8) Tongs must not be carried over both shoulders with the tong points around the neck.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0905
Landings

(1) Landing areas must be:

(a) Large and level enough to land, heel, tail/swing or process logs without striking standing timber, rigging, trucks, vehicles, equipment, other machines or objects.

NOTE: This is not intended to restrict the occasional yarding or loading of logs for poles, piling or an infrequent long break or tree length, provided the log is stabilized before unhooking the choker.

(b) Large enough for safe movement of all machinery.

(c) Kept chunked out and have an even surface.

(2) Outrigger pads, tracks or wheels must be on firm, stable ground, cribbing or prepared surface.

(3) During road side thinning, logs stacked on the road side must be placed in a stable position.

(4) Roadside or continuous landings must be wide enough to safely operate the yarding and loading equipment.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03; OSHA 2-2005, f. 5-27-05, cert. ef. 6-1-05

437-007-0910
Landing Logs

(1) Logs must not be landed until all personnel, trucks, machines, or vehicles are in the clear.

(2) After a turn is landed, all rigging must be completely stopped and logs must be stable before:

(a) Being approached by personnel.

(b) Chokers are unhooked.

(3) When chokers are manually unhooked, the yarder operator must receive a signal from the chaser before any lines are moved.

(4) Logs must not be permitted to accumulate in the landing chute to the point where they become a hazard.

(5) When yarding uphill, the landing chute must be cleared of logs before the next turn of logs is landed unless:

(a) The logs are fully contained in the landing chute; or

(b) There is no possibility that personnel working below the landing may be struck by sliding or rolling logs or materials coming off the landing.

(6) Logs must not be disturbed or moved from the chute when personnel working below could be struck by logs, chunks or other material sliding or rolling off the landing.

(7) The following apply when logs are landed. When the landing slope is:

(a) Twenty percent or less, logs may be landed and decked in the chute provided the logs can be left in a stable position.

(b) More than 20 percent, decking is not permitted in the chute if:

(A) A chaser is required to unhook the rigging from the logs.

(B) Personnel are working below the landing chute.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0915
Log Decks

(1) Logs must be placed in and removed from decks in an orderly manner to minimize rolling or shifting.

(2) Logs must not be decked in a location where they will slide or roll in the direction of personnel, vehicles, equipment or machines.

(3) Logs must be rearranged or decked at a different location if the landing process or weather conditions (rain, snow, ice, mud) prevent log stability and personnel are exposed to the hazard of rolling or sliding logs.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0920
General Cable Yarding and Ground Skidding Work Practice

(1) The requirements of OAR 437-007-0225(1) and (2) (working near unstable objects and danger trees) apply to all cable yarding and ground skidding operations, especially when yarding downhill.

(2) Choker holes must be dug from the uphill side of the log when there is danger of the log rolling or moving.

(3) Chokers must be placed near the end of logs.

NOTE: Chokers may be placed in the middle of the log ("gut shot") if it will provide greater control when the turn is yarded or landed.

(4) Personnel must not stand on or near logs, root wads, or other objects which may be moved by the turn of logs.

(5) Before the go-ahead signal is given personnel must:

(a) Move to the side and behind all logs in the turn and be in the clear.

(b) Remain on their feet and face the turn.

(c) Stay in the clear until it is safe to return to the area where chokers are being set.

(6) When approaching or working around hang-ups, personnel must:

(a) Approach from above the hang-up.

(b) Be alert to the danger of logs rolling or sliding, siwashes, widow makers and danger trees.

(c) Workers must not ride on arches, reaches and turns of logs.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0925
Cable Yarding Work Practices

(1) Personnel must not ride hooks, lines, rigging, logs suspended in the air or being moved.

(2) Personnel must not hold onto haywire, running lines, drop lines or chokers as an assist when walking uphill.

(3) Personnel must not work in the bight of lines under tension.

EXCEPTIONS: Personnel may be in the bight of lines when:
(a) Minor positioning of the rigging is needed to set chokers.
(b) They are protected by standing timber, terrain, or other objects of sufficient size to assure their safety.

NOTE: "Lines under tension" means when:
(a) Logs are being moved or suspended.
(b) The rigging or carriage is moving to the landing or returning to the brush.
(c) Lines are tight-lined to clear up the road.
(d) Any movement or tightening of the line(s) other than that needed for minor positioning of the rigging or carriage to set chokers.

(4) Personnel must be in the clear of all lines, rigging and chokers until movement has stopped. Swinging chokers, hooks and rigging must be lowered to the ground.

(5) Personnel must be in the clear of trees, logs, root wads, chunks, rolling material, all lines and rigging before any lines are moved.

(6) Personnel must not stand next to skyline or running line anchor straps under tension.

(7) A minimum of one choker setter in each crew must be a qualified choker setter.

(8) Only one employee in any crew can give signals or voice communication at the point where chokers are being set.

NOTE: Any person is authorized to give a stop signal when an employee is in danger or any other emergency condition is apparent.

(9) At least two members of the rigging crew must carry transmitters for each signal and control system being operated where chokers are being set.

(10) When only one person is setting chokers on any cable yarding system, they must:

(a) Carry transmitters for each signal and control system being operated where chokers are being set.

(b) Be in clear view of the yarder operator or another person with transmitters for each signal and control system being operated where chokers are being set.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0927
Working Near Standing Tree Anchors, and Tail/Intermediate Support Trees

(1) Affected personnel must be notified of the potential failure zone of any tail tree, intermediate support tree and standing tree anchor.

NOTE: The potential failure zone is that area which could be impacted by the failure of any part of a tail tree, intermediate support tree or standing tree anchor as the result of forces or loads imposed on the tree by guylines, running lines or skylines.

(2) The boundaries of the potential failure zone must be determined by a competent person.

(3) The boundaries of the potential failure zone must encompass the area into which the tree or parts of the tree could fall, slide or roll and all trees, logs, lines and material that could be impacted by the tree failure.

(4) Personnel must be in the clear of the turn and out of the potential failure zone of a standing tree skyline or running line anchor before lines are tensioned.

NOTE: Personnel may be in the potential failure zone when minor positioning of the rigging is needed or to set chokers.

NOTE: "Before lines are tensioned" means before:

(a) Logs are moved or suspended.

(b) The rigging or carriage is moved to the landing or returned to the brush.

(c) Lines are tight-lined to clear up the road.

(d) Any movement or tightening of the line(s) other than that needed for minor positioning of the rigging or carriage to set chokers.

(5) Personnel working around tail and intermediate support trees must be in the clear of the turn and out of the potential failure zone before lines are tensioned.

NOTE: Personnel may be in the potential failure zone when minor positioning of the rigging is needed or to set chokers.

(6) If the potential failure zone cannot be determined, personnel must move at least 1 1/2 tree lengths from the base of tail and intermediate support trees, and in the clear before lines are tensioned.

(7) A competent person must instruct affected personnel in the safe work practices required for work activity in any potential failure zone. This instruction must identify the:

(a) Boundaries of the potential failure zone

(b) Potential for the boundaries of the failure zone to change when line pull and line angles change.

(c) Limitations or restrictions for entering or working in the potential failure zone.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0930
Grapple Yarding

(1) An audible signal does not need to be sounded before lines are moved while grapple yarding if employees are not exposed to logs or rigging movement.

(2) Chokers must not be set when using a grapple yarding system during:

(a) Hours of darkness.

(b) Periods when visibility is reduced to such an extent that the yarder operator cannot clearly see the person setting the choker.

(3) One person carrying a whistle signaling device may use voice communications to transmit instructions and directions to the yarder operator when picking up an occasional log with a choker on a grapple yarding system only:

(a) During daylight hours.

(b) When the choker setter is in clear view of the yarder operator at all times.

(c) When all lines are slacked to the ground prior to the choker setter approaching the rigging.

(d) When all lines remain stable until the choker setter returns to a safe location away from any running lines.

(4) Standard yarding system whistle signals must be used when the choker setter is not in clear view of the yarder operator when chokers are set on grapple yarding systems. (See Appendix 7-A.)

[ED. NOTE: Appendices referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0935
Operation of Ground Skidding Machines and Vehicles

(1) Machines must not be operated on slopes in excess of the following limits unless specified by the manufacturer of the equipment.

(a) Rubber-tired skidders — 30 percent.

(b) Crawler tractors, tracked feller bunchers, tracked excavators and loaders — 40 percent.

(c) Other forestry equipment designed for steep slopes — 50 percent.

(2) Operation in excess of the above limits may be permitted for specific limited application or in identified small areas provided the operator and the competent person plan how to safely operate on the steep slopes considering:

(a) Experience of the operator.

(b) Limitations of the machine and the soil conditions.

(c) Direction of travel (traveling straight up and down the slope).

(d) Requirements for turning the machine or vehicle on the slope.

(e) Weather.

(f) Load sizes.

(g) Any other adverse conditions.

(3) Turnarounds must be provided on all skidding roads so operators do not have to backup more than 250 feet.

(4) Towed equipment, such as skid pans, pallets, arches, and trailers, must be attached in a manner which will prevent overrunning of the towing vehicle, equipment or machine.

(5) Tractors, skidders, arches, or logs being yarded must not run over or rub against anchored lines, tailhold stumps, or other rigging.

(6) The yarding machine or vehicle, including its load, must be operated with safe clearance from trees, snags, logs, or other objects that may create a hazard for an employee.

(7) Each machine must be positioned during winching so the machine and winch are operated within their design limits.

(8) No load can exceed the rated capacity of the pallet, trailer, or other carrier.

(9) Arches must be equipped with line guards.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03; OSHA 2-2005, f. 5-27-05, cert. ef. 6-1-05

437-007-0940
Signaling and Communications

(1) Hand signals or audible contact, such as, but not limited to, whistles, horns, or radios, must be used whenever noise, distance, restricted visibility, or other factors prevent clear understanding of natural unassisted voice communications between employees.

(2) A whistle or horn, clearly audible and distinguishable to all personnel in the affected area, must be installed and used on all machines operating as yarders, loaders or tree pullers.

(3) All radio-controlled carriages and motorized skycars must have a warning horn which is sounded when any carriage function is activated.

(4) Standard yarding system whistle signals identified in Appendix 7-A must be used at cable logging operations.

(5) A new yarding system whistle signal may be adopted for an unusual or new situation not covered in the standard whistle signals provided:

(a) The new signal is used only for that specific situation.

(b) All employees are informed of the new signal.

(6) A list of the standard yarding whistles, any new yarding system whistle(s) and control system signals used to activate cable logging systems, machinery and equipment functions must be available at the work site.

(7) Affected personnel must understand the control system signals, hand signals and whistles used to activate equipment and machines.

(8) All audible signal systems, equipment and machinery activation signals must be tested and be fully functional prior to beginning the operation.

(9) Spare transmitters must be guarded against accidental activation.

(10) All personnel must be in the clear before any signal is given to move any log, load, rigging, or turn.

(11) Machine operators must not move any lines, logs, loads or rigging unless the signal received is clear and distinct. If in doubt, the operator must repeat the signal as understood and wait for confirmation.

(12) An audible signal must always be sounded before any line is moved.

(13) Voice communication, except as required by 437-007-0950(1), may be used to transmit instruction and direction to the yarder operator to move rigging and control the movement of logs provided that an audible signal is sounded before any line is moved.

(14) An audible signal does not need to be sounded when yarding logs with grapples if personnel are not exposed to line, log or rigging movement.

(15) When hand signals are used, an audible signal does not need to be sounded when personnel are aware of and not exposed to line, log or rigging movement.

(16) Hand signals may only be used:

(a) In plain sight of the machine operator.

(b) Within 300 feet of the machine operator.

NOTE: Hand signals may be used at any time as an emergency stop signal.

(17) Throwing of any type of material as a signal is prohibited.

(18) Citizens' band (CB) radios cannot be used to activate any signal, machine or process either automatically or by voice.

[ED. NOTE: Appendices referenced are available from the agency.]

Stat. Auth.: ORS 654.025(2) & 656.726(4)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0945

Electrical Signal Systems

(1) All electrical signal system wires and attachments must be weatherproof.

(2) Electrical signal systems must be:

(a) Installed and adjusted to protect against accidental signaling.

(b) Maintained in good operating condition.

(3) Electrical signal system bugs (transmitter) must be designed so they cannot be accidentally tripped.

Stat. Auth.: ORS 654.025(2) & 656.726(4)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-0950

Voice Communication on Combined Signal/Voice Transmitters

(1) Voice communication on the same radio frequencies used to transmit skyline, high-lead, slackline or skidder whistle signals (154.57 and 154.60 MHz channels), is limited to the reporting of injuries, or fire and emergency situations where special tools or precautions are needed to prevent or alleviate a hazardous situation. In addition:

(2) Voice transmissions must not be used to move the rigging and only used when the rigging is standing still.

(3) The rigging crew must call the yarder engineer by name to ensure that proper contact is established.

(4) The yarder engineer must acknowledge the call with a whistle "STOP" signal before the caller starts transmitting the voice message.

(5) Voice transmission must be kept as brief and to the point as possible.

(6) After receiving the voice message, the yarder engineer must again acknowledge with a whistle "STOP" signal that the message has been received and is clearly understood.

Stat. Auth.: ORS 654.025(2) & 656.726(4)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

Subdivision K — Loading and Transportation of Logs/Wood Fiber

437-007-1000

General Requirements

(1) Trucks or rail cars must not be moved unless all personnel are in the clear.

(2) When the operator's vision is impaired, trucks or rail cars must not be moved without a signal from a spotter who has a clear view of the direction of travel.

(3) Trucks must not approach a landing while there is danger from incoming logs, logging machines, lines, or rigging.

Stat. Auth.: ORS 654.025(2) & 656.726(4)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-1005

Loading

(1) It is the responsibility of the employer who has control of the actual loading operation to ensure compliance with OAR 437-007-1005(2) through (18) and 437-007-1010(1) through (13) which are applicable to log loading, securing loads and to the requirement for hard hats.

(2) The truck driver and personnel loading logs must use positive means of communication to control the movement of the truck being loaded.

(3) Citizens' band (CB) radios may be used for communication between the loader operator and the log truck driver during the loading process.

(4) Standing underneath a suspended trailer or its reach is prohibited.

(5) Only the driver and driver-trainee are permitted to be in the truck cab while logs are being loaded.

(6) Logs being moved or loaded must not pass over any personnel, occupied vehicles, machines, or truck cab.

(7) Personnel must not enter any hazardous area near a log truck being loaded without:

(a) Determining that it is safe to enter the area.

(b) Receiving permission from the loading machine operator and truck driver.

(c) The centers of all logs are below the top of the stakes or secured by the log loader.

NOTE: Hazardous areas include the areas:

(A) Between the deck or decks from which the logs are being removed.

(B) Over which the logs are carried to place them on the log truck.

(C) Along both sides of the log truck behind the cab guard.

(D) Underneath the load.

(8) Logs must not be lowered to the bunk while bunk or block adjustments are being made.

(9) Standing between a truck cab and a log being loaded or unloaded is prohibited.

(10) Bunk and wing logs must extend at least 6 inches beyond the front and rear bunk or stake.

(11) Loads must be built up or loaded so they are stable without the use of wrappers.

NOTE: Wrappers are considered to be a precautionary measure to ensure stability of the load during transit.

(12) Logs must be loaded in a manner to prevent excessive strain on wrappers, binders, bunk stakes, bunk chains, or straps.

(13) When there is danger of a log slipping out of the grapples, a strap of sufficient size and length must be used to hold the log.

(14) The closing line must be securely attached to the grapple in accordance with the manufacturer's recommendations.

(15) Double-ended logs must not be loaded above the stakes on the side of the load from which the binders or wrappers are intended to be applied or released.

(16) Logs must be loaded so no more than 1/3 of the length of the logs extends beyond the:

(a) Trailer bunks.

(b) Ends of supporting logs.

(17) Log loads must not impair full and free movement of the truck.

(18) Loads or logs must not be moved or shifted while binders are being applied or adjusted.

Stat. Auth.: ORS 654.025(2) & 656.726(4)

Stats. Implemented: ORS 654.001 - 654.295

Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-1010

Securing Loads for Transport

(1) Wrappers must not be thrown until personnel are in the clear.

(2) When logs are loaded at different locations or decks, log trucks must not be moved until the requirements for securing loads are met unless:

(a) The centers of all logs are below the top of the stakes; or

(b) Ground personnel and machines are not exposed to the hazard of falling logs or wood fiber.

(3) A fully loaded truck must not be moved more than 1 1/2 truck and trailer lengths in front of the loading area unless:

(a) The centers of all logs are below the top of the stakes; or

(b) The load is secured with at least two wrappers.

(4) All wrappers that are required to transport the load must be put on the load within sight of the loading area.

(5) Required wrappers and binders must be in place and hooked prior to tightening any of the binders.

(6) When drivers cannot safely throw wrappers over loads, alternate methods must be used, such as, pulling the wrappers over the load with the loading grapples. If the loaded truck is moved, the movement must comply with the requirements of OAR 437-007-1010(3).

(7) Loads must be secured as follows:

(a) Any long logs (27 feet or more in length) must be secured with not less than four evenly spaced wrappers.

EXCEPTION: Loads consisting of only four long logs or less may be secured with one wrapper at or near each bunk.

(b) All short logs (less than 27 feet in length) must be secured with at least two evenly spaced wrappers.

(8) Wrappers must be evenly spaced over the length of the logs.

(9) A wrapper must be placed near each bunk stake.

(10) Trucks and trailers used for off highway hauling on private haul roads where traffic controls are enforced:

(a) Must meet the requirements of 437-007-1010(7); or

(b) All perimeter logs must be contained by no less than two wrappers.

(c) Wrappers must be placed near each end of the logs.

(d) The two binders, chains, cables, fasteners, wrappers or other wrapper attachments must each have a minimum breaking strength of 20,000 pounds.

(11) Logs loaded crosswise on a truck or trailer without solid ends or stakes high enough to restrain the logs must be secured with at least two wrapper cables which are firmly attached to the ends of the truck or trailer.

(12) All wrappers, except for gut wrappers or a one-log load wrapper, must surround the entire load.

(13) Unless otherwise required, arrange binders so that they can only be released from the side of the vehicle away from the brow log or dumping side.

(14) Grab hooks must not be directly attached to the wrapper wire rope.

(15) All required wrappers must be kept tight during transit.

(16) Loose ends of wrappers must be secured to prevent the wrapper end from swinging and creating a hazard.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-1015
Binders and Wrappers

(1) Each log truck must carry at least five binders and five wrappers.

(2) Binders, chains, cables, synthetic materials, fasteners, wrappers, or other wrapper attachments must each have a minimum breaking strength of not less than 15,000 pounds. The following components meet the 15,000-pound requirement:

(a) Chain of welded link construction:

(A) 5/16-inch alloy steel chain; or

(B) 3/8-inch high-test steel chain; or

(b) 7/16-inch IPS wire rope of 6 x 19 or 6 x 37 construction.

(3) Binders must have the manufacturer's name and minimum breaking strength stamped on the binder.

(4) Wrappers used to secure loads must not be used for any other purpose.

(5) Wrappers must be removed from service when:

(a) Wear has reduced the original chain link diameter by 15 percent.

(b) Chain links are deformed, stretched or cracked.

(c) Wire rope is frayed, stranded, knotted or otherwise defective.

(d) Wire rope has 12 1/2 percent of the wires broken within the distance of one lay.

(6) Binders must be removed from service when:

(a) Wear has reduced the original pin diameter by 15 percent.

(b) The yoke is spread.

(c) Handles are bent or broken.

(d) Hooks are bent or broken.

(e) Chain links are deformed, stretched or cracked.

(f) Swivels are defective.

(7) Defective binders, tighteners or other securing devices on binder chain or cable must be removed from service.

(8) Tighteners and other means of securing or attaching binder chain or cable must be used only in the manner for which they were intended.

(9) Welding on binders is prohibited.

(10) Knots must not be tied in wrappers.

(11) Binders for securing wrapper chain must have hooks of the correct size and design for the chain.

(12) Extension handles (swedes) for tightening or securing binders must not be longer than 36 inches.

(13) Extension handles (swedes) used to tighten binders must be of the safety swede type.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-1020
Log Truck General Requirements

(1) Manufacturers' handholds and steps provided on trucks must be maintained.

(2) The area between the truck frame rails, from the cab rearward as far as necessary to provide a safe work area, must have a walking surface of suitable non-slip material.

(3) Log trucks, with loads that are scaled at ramps, must have a personnel platform that:

(a) Extends outward from the side of each frame rail 18 inches.

(b) Is 18 inches long or as near 18 inches as the design of the truck will permit.

(c) Is capable of safely supporting a 500-pound load.

(d) Have a nonslip surface.

(4) There must be a step or other safe access for the driver to reach the space behind the cab.

(5) Log trucks must have a bulkhead meeting PUC requirements located between the load and cab. This bulkhead must extend to the top of the cab.

(6) All riders must be in the cab and use a seat and seat belt.

(7) Tire chain hooks must not present a hazard to workers. The arrangement and location of the tire chain hooks may include, but are not limited to:

(a) Under the scaler platform with the hook tips toward the center of the truck; or

(b) Inside an enclosure, such as a bottomless box attached to the truck frame, or

(c) Shielded with guards (such as hinged metal covers).

(8) Empty spare tire racks must be removed from bulkheads when there is no tire in them unless the lower part of the rack folds back against the upper part.

(9) Additional vehicle requirements that apply to log trucks are contained in Subdivision F, Roads and Vehicles, OAR 437-007-0520 through 437-007-0570.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-1025
Log Truck Safety Chains or Cables

(1) Each log truck and trailer combination, and each independent trailer (mule train) hooked to a log truck and trailer combination must have one or more safety chains or cables with a rated breaking strength of not less than the gross weight of the towed trailer(s).

(2) The means of attachment for safety chains or cables must:

(a) Be securely attached to the truck frame or to the truck frame extension.

(b) Form a separate continuous connection between the truck frame or truck frame extension and the reach.

(c) Be attached within 12 inches of the reach eye.

(d) Provide strength equivalent to the chain or cable.

(3) Safety chains or cables must:

(a) Prevent the trailer reach from contacting the ground in the event of disengagement from the truck.

(b) Provide a positive connection that cannot become inoperative by any condition of use or exposure.

(4) Safety chains must be replaced when they have cuts, cracks or wear has reduced the chain diameter by 15 percent.

(5) Safety cables must be replaced when the wire rope is frayed, stranded, 12 1/2 percent of the wires are broken within the distance of one lay or is otherwise defective.

(6) Safety chain links must not be welded except to close cold-shut links.

(7) Use cold-shut links only if they are:
(a) Welded.
(b) One size larger than the chain being used.
Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-1030
Log Truck and Trailer Hitches (Couplings)

(1) All log truck and trailer combinations must be equipped with couplings (hitches) that:
(a) Will withstand, in any direction, the potential stresses imposed.
(b) Have two independent locking devices that will continue working despite dirt and debris.
(c) Remain securely locked.
(d) Are attached to the truck frame or extension with at least four machine bolts (120,000 PSI or stronger), 3/4-inch or larger in diameter and secured with lock nuts.
(2) Hitches (couplings) having parts that are broken, cracked, worn, deformed more than 1/4-inch or are otherwise defective must be removed from service until repaired to comply with the manufacturer's specifications.
Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-1035
Log Truck and Trailer Brakes

(1) Truck and trailer brakes must be tested before moving any load.
(2) Brake slack adjusters must be adjusted to meet DOT specifications.
(3) Vehicles with defective brakes must not be operated.
(4) Brake drums must not be welded.
(5) Engine-type brakes must be considered auxiliary controls, not a substitute for the primary braking systems.
(6) Air or vacuum brake lines and fittings must be approved for brake line systems and not be interchangeable with water or other lines.
(7) Splices in air brake lines must:
(a) Be made with fittings approved for air brake line service.
(b) Not restrict air flow below the minimum required for the line size.
(8) If disconnected trailers are not equipped with effective brakes, wheels must be chocked, blocked or the trailer must be otherwise secured.
Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-1040
Log Truck Trailer Reaches and Drawbars

(1) The reaches of unloaded trailers being towed must have and use a 1-inch pin near the end or an equally effective means to prevent pulling or stripping through the tunnel.
(2) Reach locks or tighteners must be the type that securely locks the reach in the tunnel.
(3) A reach smaller than the largest size usable in the tunnel must not be used.
(4) Trailer reach tunnels must not be altered to accommodate a smaller reach.
(5) A grab iron or an adequate handhold must be on both sides near the coupling end of trailer reaches and be in good repair.
(6) Inspect the entire length of extendable reaches monthly, including the portion that is normally in the tunnel.
(7) Bent, defective, cracked or excessively worn reaches must be removed from service.
(8) Reaches must not be welded without approval from the manufacturer.
(9) Pup trailer drawbar eyes must not be build up or rings inserted.
(10) Eyes in compensating reaches must have insert rings secured to the eyes by welding.
Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-1045
Log Truck Trailers

(1) Trailer hoisting straps must:
(a) Be fastened securely to the trailer frame.
(b) Be used when hoisting the trailer.
(c) Be maintained in good condition.
(d) Enable the unloading machine to engage the strap without placing personnel in danger.
(e) Comply with the out-of-service requirements for wire rope in OAR 437-007-0605(5).
(2) At least one binder or an equivalent method must be used to secure a trailer loaded on a truck for transport.
(3) When unloading a trailer from a truck:
(a) Hoist it clear.
(b) Drive the truck forward until clear.
(c) Lower the trailer to within 1-foot of the ground before approaching it.
Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-1050
Log Truck and Trailer Bunks and Stakes

(1) Every truck or trailer transporting logs loaded lengthwise must have bunks and bunk blocks, or stakes.
(2) All stakes, stake extensions and bunks and their securing hardware must be designed and constructed to withstand their anticipated loads.
(3) Defective stakes, stake extensions, bunks or means provided for securing or locking the stakes in hauling position must be removed from service.
(4) Stakes or blocks that release must have the releasing mechanism at the opposite side of the bunk.
(5) All swivel-type bunks must have locks or another method for keeping bunks perpendicular to the reach until the first full bunk tier of logs is loaded.
(6) Bunk locks must be disengaged before starting to haul the load.
(7) Bunk blocks must extend at least 8 inches above the top edge of the bunk.
(8) Bunk blocks and stakes must not extend beyond the end of the bunk.
(9) Stake extensions must be secured to the stake.
(10) Bunks or bolsters must be either straight or curve upward. Bunks with ends lower than their center must not be used.
(11) Log bunks on trucks and trailers must keep the logs from slipping endways.
Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-1055
Log Truck and Trailer Bunk Chains and Cables

(1) Chains or cables used to secure bunk blocks or stakes must have a manufacturer's rating for a safe working load of not less than 6,600 pounds. The following chain and wire rope meet the 6,600 pound requirement:
(a) Chain of welded link construction:
(A) 3/8-inch alloy steel chain, or
(B) 7/16-inch high-test steel chain, and
(b) 5/8-inch IPS wire rope in 6 x 19 or 6 x 37 construction.
(2) Bunk chains must be immediately removed from service when they contain cuts, cracks, other defects or when wear has reduced the original chain diameter by 15 percent.
(3) Wire rope used for stake straps must meet the requirements of OAR 437-007-0605(4).
(4) Only repair links with strength equivalent to the chain are permissible for repairs or attachments for chains.
Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-1060
Additional Requirements for Log Trucks Equipped With Self-Loaders

(1) Self-loaders built for log trucks after July 1, 1980, must have a:

(a) Load check valve (velocity fuse) or similar device on the jib boom.

(b) Seat offset from the point of attachment of the boom.

(c) Seat and boom structure that rotate concurrently.

(2) The operators of self-loading log trucks must:

(a) Not heel logs over their heads.

(b) Avoid heeling logs on the operator side of the boom.

(3) There must be a safe and adequate means of access to and exit from the loading work station on self-loading log trucks.

(4) A self-loading log truck must not load itself or another truck when the loading process is:

(a) Under or within an active spar guyline circle or similar overhead hazard.

(b) Out of a deck when yarding or skidding pose a hazard to the loader operator.

(5) When loading around powerlines the requirements of OAR 437-007-0230 must be complied with.

(6) Self-loading log truck operators must not unload their own load unless they use a positive means of securing the logs when wrappers and binders are removed.

NOTE: The loading boom, when placed alongside the load, may serve this purpose when no other means are available.

(7) Self-loading log truck operators must not operate chain saws or yard logs when working alone.

(8) Self-loading log truck operators must comply with OAR 437-007-0210, Checking System, and 437-007-0215, Working Alone requirements.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

Subdivision L — Log Dumps, Ponds and Yards

437-007-1100
General Work Practices

(1) It is the responsibility of the employer who has actual control of the log or wood fiber unloading, handling or storage activities to develop, post and enforce yard rules.

(2) Unauthorized foot and vehicle traffic is prohibited in the log or wood fiber unloading, handling or storage areas.

(3) No person is permitted to approach the immediate vicinity of a log or wood fiber handling machine without:

(a) Notifying the operator of the intention to approach the machine; and

(b) Receiving an acknowledgment from the operator.

(4) No person may enter the area next to a loaded log truck unless:

(a) They are protected by a barrier or log handling machine; or

(b) The centers of all logs are below the top of the stakes; or

(c) The load is secured with tight wrapper(s).

(5) Unauthorized persons must not operate vehicle(s), equipment or machines in log or wood fiber unloading, handling and storage areas.

(6) Before starting or moving any machine, the operator must determine that no personnel are in the path of the machine.

(7) All persons must be in the clear and plain view of the operator before the log or wood fiber unloading machine is moved.

(8) Logs must not be swung over ground personnel, occupied machinery, equipment or vehicles.

(9) The operator's attention must not be distracted from duties while engaged in operating a log-handling machine.

(10) Loads on forklift-type log handling machines must be transported as low as safely operable without obstructing visibility.

(11) Riding on any part of a log handling machine, other than the operator's seat, is prohibited.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-1105
General Requirements for Log and Wood Fiber Unloading, Handling and Storage Areas

(1) It is the responsibility of the employer who has actual control of the log or wood fiber unloading, handling operations or storage activities to insure that road beds are:

(a) Hard-packed material.

(b) Of sufficient width and evenness to provide for safe operation of vehicles and mobile machinery.

(2) Log or wood fiber handling operations must be arranged so that ground personnel, buildings, machines and vehicles are not exposed to the hazards associated with the movement of logs and log handling machines.

(3) A clear space, free of obstructions, not less than 10 feet wide must be maintained the length of and parallel to the log or wood fiber load on the side opposite the unloader.

(4) Roadways and traffic lanes must be kept clear of protruding log ends and debris.

(5) Log or wood fiber unloading, handling and storage areas must be maintained in a condition which is conducive to safe operation of mobile equipment.

(6) Logs or wood fiber in decks or piles must be placed in a orderly manner which will eliminate as far as possible the hazards from rolling or shifting logs.

(7) Do not allow bark, chunks, mud and other debris to accumulate enough to become a hazard.

(8) The employer must implement an effective method to control dust at log unloading, handling and storage areas.

(9) All forklift-type log handling machines must be equipped with a grapple system and the arms must be closed whenever logs or wood fiber are being carried.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-1110
Wrappers Removal General

(1) Yard rules for removing wrappers, binders and loads must be posted.

(2) Loads with logs or wood fiber above the stakes must be secured before all wrappers and binders are removed.

(3) Personnel must inspect log or wood fiber loads for potential hazards that could be created when binders are released and wrappers are removed.

(4) An extra wrapper or metal band of equal strength must be in place to hold the logs or wood fiber in place when it becomes necessary to remove a wrapper from fouled or dislodged logs.

(5) Wrappers must not be removed at weigh stations or other points of transit unless requirements for securing loads are met.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-1115
Barriers For Securing Log Loads

(1) Barriers used to secure loads must:

(a) Be at least 15 feet high.

(b) Be designed to prevent logs from striking personnel as binders and wrappers are being removed.

(c) Have the barrier controls, if any, on the release side of the unloading station and forward of the truck cab guard.

(2) Barriers and the area surrounding the barrier structure must be free of accumulations of bark, mud and other debris.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03; OSHA 2-2005, f. 5-27-05, cert. ef. 6-1-05

437-007-1120
Removing Wrappers From Barrier Secured Loads

(1) Any person releasing binders and removing wrappers at a barrier, must not extend their upper body beyond the front of the protective structures.

(2) After binders and wrappers have been removed at a barrier, loaded log or wood fiber trucks must not move through areas where ground personnel are present unless:

(a) The centers of all logs are below the top of the stakes; or

(b) Ground personnel and machines are not exposed to the hazard of falling logs or wood fiber.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-1125
Removing Wrappers From Machine Secured Loads

(1) When a log handling machine is used to secure a load, binders should be released and wrappers removed from the side of the load on which the unloader operates.

(2) If binders and wrappers must be removed from log loads on the side opposite the unloading machine, all logs must be secured from displacement before binders and wrappers are removed.

(3) Any person removing binders and wrappers must be in the clear and in full view of the unloading operator before giving a signal to move the unloading machine or the load of logs.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-1130
Removing Center Wrappers From Unsecured Loads

When any binder and wrapper is removed before a log load is secured by a barrier or log handling machine:

(1) There must not be double-ended logs loaded above the stakes on the side of the load from which the binders and wrappers are being released.

(2) All short logs (27 feet or less) above the stakes or bunk blocks must be secured by a minimum of one tight binder and wrapper prior to the placement of the unloading grapple arms.

(3) All long logs (more than 27 feet) above the stakes or bunk blocks must be secured by a minimum of two tight binders and wrappers prior to the placement of the unloading grapple arms.

NOTE: The wrappers nearest the truck and trailer bunks should be retained to allow clearance for the unloading device.

(4) The remaining binders and wrappers must not be removed before the load is secured by a barrier or log handling machine.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-1135
Unloading Logs

(1) The truck driver must be in front of the truck or in the truck cab when logs are unloaded.

(2) When logs are unloaded, the loads must not be passed over the truck cab or personnel.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-1140
Split Loads

When logs are to be unloaded at different destinations within the log handling or storage areas, vehicles must not be moved after each partial unloading until the requirements for securing loads are met unless:

(1) The centers of all logs are below the top of the stakes; or

(2) There are no ground personnel and machines exposed to the hazard of falling logs.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-1145
Loading or Unloading Trailers

(1) When forklift-type machines are used to load, unload, or handle trailers, a secure means of holding the lifting attachment on the fork must be installed and used.

(2) When trailers are to be loaded after dark, sufficient lights must be provided for a safe operation.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-1150
Trailer Hoists

(1) All trailer loading devices must be designed, constructed and maintained so as to have a five-to-one safety factor for the rated load capacity.

(2) Trailer loading hoists must be high and wide enough so they can safely load the maximum-sized trailers they are expected to handle without hanging up or striking the equipment.

(3) Trailer-loading-hoist controls (buttons) must have clear marking to indicating the "up" and "down" directions of travel.

(4) Trailer loading hoists must have an upper limit switch installed and maintained to prevent the hook or other end fittings from contacting the upper sheaves. In addition:

(a) The upper limit switch must not be used as an operating control.

(b) If the upper limit switch does not function properly, the hoist must not be used until repairs are made.

(5) Electric-powered trailer loading hoist controls (buttons) connected to flexible cords (pendant lines) must be secured with devices or fittings that prevents pull from being directly transmitted to joints or terminal screws.

(6) Pendants must be installed so that the control switch does not touch the ground when retracted.

(7) All electrical equipment must be weatherproof-type or adequately protected from the weather, and must meet or exceed the requirements of the National Electrical Code.

(8) Electric-powered hoists using handheld cord remote controls in grounded locations must be actuated by circuits operating at less than 50 volts to ground.

(9) Trailer loading hoists, except A-frames or bridge cranes, must be equipped with reach guides or devices that will keep the reach in proper alignment.

(10) A tag rope or other safe guidance device must be used to guide trailers being loaded by A-frame loaders.

(11) The maximum capacity that can be lifted by the trailer loader hoist must be posted in a conspicuous location where it can be easily seen by any person operating the hoist.

(12) Trailer loading hoists must be inspected at least every 30 days and must be maintained in good repair.

(13) A written trailer loading hoist inspection report signed by the person making the inspection must be kept on file by the company for 12 months.

(14) The employer must do an annual lifting test on each loading device and keep a written record of the tests.

(a) The written record must contain the:

(A) Date of the test.

(B) Name of person conducting the test.

(C) Amount of weight lifted.

(b) The written record of test results must be kept in the office of the employer or at the site.

(c) The test weight must not be:

(A) Less than 125 percent of the maximum rated load.

(B) More than 130 percent of the maximum rated load.

(15) Each trailer loading hoist drum must be designed and arranged so the hoisting line will maintain lead and spool evenly without chafing, crossing, or kinking.

(16) A braking system must be installed on trailer loading hoists that has the ability to safely brake and hold 1 1/2 times the weight of the full rated load.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-1155
Dry Land Log and Fiber Handling and Processing

(1) Identification tags must not be applied or pulled unless logs are resting in a stationary place, such as bunks, cradles, skids, or sorting tables.

(2) When personnel are required to work on logs unloaded onto skids (bay logs), sufficient space must be maintained between the top of the skids (bay logs) and the ground or deck so logs will clear the prone body of a person.

(3) Logs placed onto skids (bay logs) for processing must be laid out so that the person bucking them has enough room to operate the chain saw safely. The diameter of the logs must be taken into consideration.

(4) Logs placed in bays or onto skids (bay logs) for processing or scaling must not be moved until the ground personnel have finished their tasks, or unless ground personnel request assistance to move a log to complete the task (i.e., extracting a pinched saw).

(5) Machines and ground personnel must not enter the swing radius of a machine without permission of the operator. The swing

radius is determined by combining the working radius of the machine and the length of logs being handled.

(6) Ground personnel must not walk or work behind front-end loaders and forklift-type log handling machines without contacting the operator.

(7) Log handling machines must not carry logs over an active processing bay.

(8) Loads on forklift-type log handling machines must be transported as low as safely operable without obstructing visibility.

(9) The requirements of OAR 437, division 2/N, Materials Handling and Storage, apply to Overhead and Gantry Cranes used to unload, process and deck logs.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-1160
Water Dumps, Log Ponds and Booms

(1) A minimum of two people must work at water dumps when logs are being unloaded. At least one person must be an experienced unloading machine operator.

(2) At least two people must be present for stowing, sorting or boom work of any kind except when one person is feeding the slip (hot lane) from a designated area.

(3) All water dumps must have brow logs except when logs are lifted from the truck or rail car.

(4) If mobile log handling machines are used to dump loads, adequate stops must be provided to prevent the machines from running off the edge of the dump.

(5) When a brow log is used with a parbuckle system, all personnel are prohibited from going between the brow log and the load of logs at any time.

(6) Unloading lines must be arranged so that it is not necessary for a person to attach them on the water or dump side of the load.

(7) The unloading machine operator must:

(a) Have an unobstructed view of the dump and the logs being unloaded; or

(b) Receive a signal before dumping the logs.

(8) All personnel must be in the clear and a signal given before logs are dumped.

(9) When dry land log dumps use unloading methods similar to those of water dumps, OAR 437-007-1160(5) through (8) will apply.

(10) All personnel working on logs or around boom sticks in water must wear sharp-caulked shoes or slip-on sharp-caulked shoes.

(11) Metal or conductive pike poles must not be used around exposed electrical conductors.

(12) Defective poles, blunt or dull pikes must not be used.

(13) Sufficient walkways and floats must be installed and securely anchored to provide safe passage for personnel.

(14) Decks, floats or other walkways must be kept above the waterline at all times, and they must be capable of supporting four times the imposed load.

(15) Pond rafts must be removed from service when they are no longer capable of remaining above water while supporting a 500-pound load on any edge.

(16) All regular boom sticks and foot logs must be:

(a) Reasonably straight, free of protruding knots and have the bark removed, and

(b) Capable of supporting any necessary weight of personnel and equipment above the waterline at either end.

(17) Gaps between ends of boom sticks must not exceed 24 inches.

(18) All wire must be removed from booms and chains before they are reused or hung in rafting stalls.

(19) Permanent cable swifters must be arranged so it will not be necessary to roll boom sticks in order to attach or detach them.

(20) When cable swifters or dogging lines become hazardous from an excessive amount of jaggers, they must be discarded.

(21) Stiff booms must be constructed of not less than two float logs or equivalent timbers and must have a minimum width of 36 inches.

(22) Float logs or equivalent timbers must be securely joined together by not less than 4-inch by 6-inch cross ties.

(23) Stiff booms must be planked over with not less than 2-inch planking, securely fastened and kept in good repair, at all sorting gaps or locations where mechanical devices are operated.

(24) Walkways along sorting gaps must be at least 4 feet wide. Other planked walkways must be at least 22 inches wide.

(25) Life rings attached to 90 feet of 1/4-inch line with a minimum breaking strength of 500 pounds, must be provided at convenient points adjacent to water that is 5 feet or more in depth.

(26) Life rings must have a minimum of 30 inches outside diameter and 17 inches inside diameter.

(27) Life rings must be maintained so as to retain a 32-pound positive buoyancy.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-1165
Boats

(1) Gasoline-powered inboard motorboats must be equipped with a mechanical exhaust system for ventilating the engine compartment and bilges.

(2) Mechanical exhaust systems must be powered by non-sparking fans or the fan motor must be located outside the bilge and engine compartment.

(3) Gasoline-powered inboard motorboats must not be started until the bilges and engine compartment have been mechanically vented of combustible fumes that may have accumulated.

(4) Decks of boats must be covered with a slip-resistant material.

(5) Boats must be provided with:

(a) At least one 3A-40B:C fire extinguisher.

(b) A life ring or equivalent with line attached.

EXCEPTION: A life ring is not required on small pond boats designed to transport only one employee.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

Subdivision M — Aircraft Used in Forest Activities

437-007-1200
Helicopter Operation.

(1) Prior to daily operations, a briefing must be conducted. This briefing must set forth the plan of operation for the pilot(s) and ground personnel. Anytime a change in operating procedure is necessary, affected personnel must be notified in advance.

(2) There must be reliable radio communications available between the helicopter service areas, woods, landing and ground crews. In the absence of radio communication there must be a designated signal person.

(3) Personnel must get the pilot's attention and permission before approaching a helicopter that has the rotor blades turning.

(4) When approaching or leaving a helicopter that has the rotor blades turning, personnel must follow the specific company procedures established for the type and make of aircraft.

(5) Personnel must wear high-visibility hard hats. When personnel are exposed to rotor wash, the hard hats must be secured by a chin strap.

(6) Personnel are not required to wear hard hats when:

(a) Working in helicopter service areas to perform activities, such as refueling or maintenance.

(b) Filling buckets from dip-tanks or tankers.

(c) Loading seed, fertilizer or chemicals.

(7) The flagging and signing requirements of OAR 437-007-0510 and 437-007-0515 must be complied with when the helicopter flight path crosses a road(s).

(8) Riding the hook of a helicopter is prohibited, except in a life-threatening emergency.

(9) The drop zone must be large enough for the load(s) to be landed without endangering the landing crew.

(10) The landing crew must be in the clear until the:

(a) Load is placed on the ground.

(b) Chokers are released from the hook.

(11) The landing must be kept as free of debris as possible.

(12) Before any load is moved, personnel must be in the clear.

(13) When the helicopter is carrying a load or chokers, personnel must remain in the clear. Under no circumstances may personnel and occupied machines or vehicles be under a suspended load.

(14) If ground personnel need to lighten a load, they must remain in the clear until the load is stabilized.

(15) If a load must be aborted or lightened by the pilot, ground personnel must be in the clear before the pilot releases the hook.

(16) The yarding helicopter must be equipped with a siren to warn personnel of any hazardous situation.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-1205
Aircraft Refueling/Maintenance Area

(1) The helicopter refueling and maintenance area must be located so personnel are not exposed to the hazards created by yarding and log handling activities.

(2) Unauthorized personnel are not allowed to be within 50 feet of an active refueling operation or fueling equipment.

(3) The refueling area must be posted with "NO SMOKING" signs.

(4) The following are prohibited within 50 feet of the refueling area or refueling equipment:

(a) Smoking.

(b) Open flames.

(c) Exposed flame heaters.

(d) Flare pots.

(e) Open flame lights.

(f) Operating pre-heaters.

(5) At least one or a combination of portable fire extinguishers must be provided for each refueling and maintenance area. The minimum ratings of portable fire extinguishers must be equivalent to: [Table not included. See ED. NOTE.]

NOTE: Helicopter overall length, includes the tail boom and the rotors fully extended.

(6) Personnel in the refueling area must be trained to effectively use fire extinguishers.

(7) All refueling personnel must be knowledgeable about the specific procedure to be followed for the aircraft being fueled.

(8) Before starting the refueling operation:

(a) Refueling equipment and the refueling nozzle must be electrically bonded to the helicopter.

(b) All bonding connections must be electrically and mechanically firm to clean unpainted metal parts.

NOTE: The use of conductive hose is not acceptable to accomplish this bonding.

(9) Helicopters using Jet A type fuel may be fueled with the engine(s) running.

(10) Helicopters using Jet B type fuel or aviation gasoline must not be fueled with the engine(s) running.

(11) To control spills:

(a) Self-closing nozzles or deadman controls must be used and they must not be blocked open.

(b) Nozzles must not be dragged along the ground.

(c) Pouring or gravity flow of fuel is not permitted from containers with a capacity of more than 5 gallons.

(12) When a spill creates a fire hazard, the refueling operation must be immediately stopped until a competent or authorized person determines that it is safe to resume the refueling operation.

[ED. NOTE: Tables referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

Subdivision N — Fire Protection/Suppression and Prescribed Burning

437-007-1300
Scope of Rules

The purpose of the rules in Subdivision N is to provide minimum safety and health requirements for all public and private employers who engage in wildland fire prevention, wildland fire suppression or prescribed fire that includes activities such as, but not limited to:

(1) Fire line construction;

(2) Engine (fire truck) operation;

(3) Dozer, skidgine and pumper-cat operation;

(4) Snag felling;

(5) Fire detection;

(6) Forest patrols;

(7) Helicopter operation;

(8) Slash burning;

(9) Mop-up;

(10) Laying hose lines;

(11) Tending dip-tanks;

(12) Handling, mixing and applying fire suppression chemicals.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 2-2005, f. 5-27-05, cert. ef. 6-1-05

437-007-1303
Application of Rules

(1) Except as otherwise specified, the rules in Subdivision N apply to all personnel engaged in wildland fire prevention, wildland fire suppression or prescribed fire activities when there is potential for exposure to wildland fire hazards such as, but not limited to:

(a) Burn injuries;

(b) Burning embers;

(c) Extreme fire behavior;

(d) Entrapment;

(e) Falling snags;

(f) Rolling materials;

(g) Smoke inhalation.

(2) The rules in Subdivision N do not limit the use of other applicable safety and health rules.

(3) The rules in Subdivision N do not apply to personnel assigned to wildland fire suppression support activities, such as fire camp support positions which will not expose them to wildland fire hazards.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 2-2005, f. 5-27-05, cert. ef. 6-1-05

437-007-1305
General Requirements

(1) Tactical and command fire suppression communications must provide a clear line of communication to all affected personnel.

(2) When employees are required to handle, mix and/or apply hazardous chemicals, the employer must develop, implement and maintain a written hazard communication program meeting the requirements of Division 2, Subdivision 2/Z, Toxic and Hazardous Substances, 1910.1200, Hazard Communication.

(3) During the initial attack on a wildland fire, when the fire and/or the fire suppression activity creates a hazardous condition for traffic and warning signs and/or flaggers are not controlling traffic, a vehicle with emergency flashing lights must be used to warn traffic.

NOTE: See Division 7 Subdivision F, 437-007-0510 Roads, Vehicles, Flagging and Flammables.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 2-2005, f. 5-27-05, cert. ef. 6-1-05

437-007-1310
Personnel Assignments

(1) The employer and/or their authorized representative must take into account the physical capability of each employee to safely perform assigned tasks:

(a) Prior to job assignment; and

(b) While the employee performs those tasks.

(2) Personnel performing wildland fire suppression or prescribed fire activities except as provided for in OAR 437-007-1315(1) and (2), must:

(a) Work in teams of two or more; and

(b) Be positioned so they are close enough to render assistance to one another in case of an emergency.

NOTE: This rule does not prohibit the ignition and monitoring of burn piles and landings by one employee when a competent person has determined that conditions are such that the fire(s) will not spread beyond the fuels intended to be burned.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 2-2005, f. 5-27-05, cert. ef. 6-1-05

437-007-1315
Single Personnel Assignments

(1) Single employee assignments such as watchers, security and forest patrol personnel may take appropriate action to contain, control or extinguish a fire upon discovery only when:

(a) They have first reported the fire, described their intended fire suppression activities, and agreed on a checking system as required by OAR 437-007-0210; and

(b) Their fire suppression activities are consistent with firefighter training and safety; and

(c) There is an escape route to a safety zone that will not be cut off if the fire increases in size or changes direction.

(2) A competent person must ensure that watchers, security and forest patrol personnel, and other single employee assignment personnel who are expected to perform fire suppression activities:

(a) Have received Basic Wildland Fire Safety Training as required by OAR 437-007-1325; and

(b) Are qualified in the operation of assigned fire suppression machines, equipment, and use of fire fighting tools; and

(c) Are advised of the requirements of OAR 437-007-1315(1) and other job site conditions, known by the employer, which could affect the extent of their fire suppression activities; and

(d) Are physically capable of performing assigned fire suppression activities as required by OAR 437-007-1310(1).

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 2-2005, f. 5-27-05, cert. ef. 6-1-05

437-007-1320
Personal Protective Equipment

Personnel performing wildland fire suppression or prescribed fire activities must wear:

(1) Pants and a long-sleeved shirt made of cotton, wool, denim or other fire resistant materials.

NOTE: The employer is not required to provide the clothing listed in OAR 437-007-1320(1).

(a) Clothing made from common permanent-press materials or synthetic fibers that melt when exposed to flame or heat must not be worn.

(b) When special protective clothing made of aramid or other fire resistant materials is required by the employer, the employer must provide it at no cost to the personnel.

(2) Footwear that:

(a) Covers and provides protection and support for the foot and ankle, such as heavy duty leather lace-up boots with an 8-inch high top.

(b) Provides for secure footing and traction for the assigned task.

NOTE: Caulked boots, in accordance with the requirement of OAR 437-007-0330, may be required for some fire suppression or prescribed fire duties.

(c) Is fire and melt resistant.

(d) Is made of or covered with chain saw cut resistant material when operating a chain saw.

NOTE: The employer is not required to provide the minimum basic footwear listed in OAR 437-007-1320(2).

(3) Head protection in accordance with the requirement of OAR 437-007-0305(1) and (2). When wearing hard hats around helicopters, the hats must be secured by a chin strap.

NOTE: To reduce the possibility of blowing objects when working around helicopters, hard hats need not be worn when a competent person has determined there is no danger from falling or flying objects.

(4) Upper body cover and/or hard hats of a high-visibility color in accordance with the requirement of OAR 437-007-0310.

(5) Eye and face protection in accordance with the requirements of OAR 437-007-0315.

(6) Hand protection in accordance with the requirements of OAR 437-007-0320(1) and (2).

(7) Leg protection in accordance with the requirements of OAR 437-007-0325 when operating chain saws.

(8) Hearing protection in accordance with the requirements of OAR 437-007-0335.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 2-2005, f. 5-27-05, cert. ef. 6-1-05

437-007-1325
Training

The following requirements are in addition to the training requirements of OAR 437-007-0140.

(1) The employer and/or their authorized representative must ensure that all personnel who may be called upon to do wildland fire suppression and/or prescribed fire activities receive Basic Wildland Fire Safety Training as follows:

(a) Once a year, between January 1 and the legal declaration of fire season, for personnel who are employed at the time training is presented.

NOTE 1: Personnel who have previously received Basic Wildland Fire Safety Training need only receive refresher training on those portions of the curriculum outlined in Appendix 7-C that are relevant to the fire suppression activities to which they may be assigned.

NOTE 2: Basic Wildland Fire Safety Training is not required for personnel who are assigned to fire support positions that will not expose them to wildland fire hazards.

(b) Newly hired and/or reassigned personnel who have not received Basic Wildland Fire Safety Training must be trained within 17 days of being assigned or dispatched to wildland fire suppression or prescribed fire activities. In the interim, they may perform wildland fire suppression, or prescribed fire activities provided they work under the direct supervision of a competent person who must:

(A) Brief personnel (prior to starting fire suppression or prescribed fire activities) about the escape route(s), safety zone(s), anticipated fire activity, and what to do if they get separated from the competent person; and

(B) Provide continuous on-the-job supervision; and

(C) Provide on-the-job fire safety training; and

(D) Supervise no more than 5 untrained personnel.

NOTE: When an untrained runner is enroute, direct supervision may be achieved by radio contact provided there is a competent person providing direct supervision at both the pick-up and drop-off points.

(2) Basic Wildland Fire Safety Training must:

(a) Be presented by a qualified person; and

(b) Provide instruction and training on the curriculum outline in Appendix 7-C; and

(c) Be presented in a language and manner that the employee(s) is able to understand.

(3) The employer must keep a current written record of Basic Wildland Fire Safety Training for each employee.

(4) Personnel who are issued fire shelters must receive instructions from a qualified person prior to issue, and at least once a year thereafter, on:

(a) How to inspect and care for the shelter; and

(b) How, when and where to deploy the shelter; and

(c) What a person needs to do in the deployed shelter.

NOTE: When fire shelters are required, an orderly transition for employee training must be consistent with fire suppression needs and employee safety.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 2-2005, f. 5-27-05, cert. ef. 6-1-05

437-007-1330
Equipment, Vehicles and Machines, General Requirements

(1) Fire fighting equipment, vehicles and machines must be:

(a) Inspected for defects prior to the start of each shift.

(b) Maintained in accordance with the appropriate manufacturers' recommendations.

(2) Fire fighting equipment, vehicles, and machines that are defective or damaged so as to render them hazardous to operate, must be removed from service and not returned to service until repairs are completed.

(3) A safe and adequate means of access and egress such as steps, ladders, and handholds must be provided and maintained to all parts of vehicles and machines where employees must go.

(4) Machine and vehicle access must comply with the Society of Automotive Engineers' SAE J185-1988 or ISO 2867:1994, Access Systems for Off-Road Machines.

(5) An effective means of communication must be established when it is necessary for personnel to communicate with the operator of a vehicle, equipment or machine.

(6) When military vehicles are used to transport personnel, they must be equipped with standard military seating, backrests and endgates or equivalent.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 2-2005, f. 5-27-05, cert. ef. 6-1-05

437-007-1335
Vehicle Operation

(1) The operation of vehicles must comply with the requirements of OAR 437-007-0520 through 437-007-0570.

(2) All equipment hauled on a vehicle must be adequately secured when the vehicle is in motion.

(3) Vehicles must be brought to a full stop before personnel disembark.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 2-2005, f. 5-27-05, cert. ef. 6-1-05

437-007-1340
Machine Operation

(1) When machines used for fire trail construction or fire fighting are operated on slopes in excess of the limitations for machine operation as defined in OAR 437-007-0935(1) and (2), a competent person must ensure that measures are taken to provide stability such as:

(a) Using the blade; or

(b) Tying to stumps, anchors, or other machines; or

(c) Using materials to limit the slope under the machine; or

(d) Limiting the operating range of movement and/or the machine loading to maintain stability.

(2) The machine operator and a competent person must agree how to safely operate on all steep slopes taking into consideration the:

(a) Experience of the operator.

(b) Limitations of the machine.

(c) The soil conditions.

(d) Direction of travel (traveling straight up and down the slope).

(e) Hazards of turning the machine on the slope.

(f) Weather.

(g) Load size.

(h) Any other adverse condition(s).

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 2-2005, f. 5-27-05, cert. ef. 6-1-05

437-007-1345
Helicopter Operations

(1) Helicopter facilities must be kept clear of loose objects and unauthorized personnel.

(2) Personnel must not smoke within 50 feet of a helicopter, fuel storage, or fueling equipment.

(3) Unless authorized by the pilot or helicopter ground crew, personnel must stay at least:

(a) 50 feet away from small helicopters (50 feet or less overall length); and

(b) 100 feet away from large helicopters.

NOTE: Helicopter overall length, includes the tail boom and the rotors fully extended.

(4) A competent person must provide a detailed briefing on helicopter safety procedures to all passengers prior to loading.

(5) Personnel assigned to ride in helicopters must:

(a) Be briefed in the correct approach, riding and off-loading procedures for the particular type of helicopter.

(b) Follow instructions of helicopter personnel at all times when around helicopter.

(c) Carry all tools at their side (not slung over their shoulder) when around helicopters.

(6) Unless told otherwise by a competent person, personnel must approach and leave the helicopter in full view of the pilot.

(7) Personnel must stay away from turning tail rotors at all times.

(8) Personnel must not stand directly beneath a hovering helicopter unless they have been trained or are being trained in performing sling load hookup or bucket filling operations.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 2-2005, f. 5-27-05, cert. ef. 6-1-05

Subdivision O — Signaling Systems

437-007-1400
Jerk Wire Whistle System

The use of a jerk wire whistle system for any type of yarding operation is prohibited.

Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

437-007-1405
Radio Signal Systems

(1) When space transmission of radio signals is used to initiate any whistle, horn, bell, or other audible signaling device, or when such transmission of radio signals is used to activate or control any machine, material-handling device or other equipment hazardous to employees, the following must apply:

(a) An operational whistle signal must be maintained.

(b) A permit assigning tone frequencies and area of use for each radio unit to be used for the control and activation of any signal, machine or equipment, must be obtained from Department of Consumer and Business Services, Oregon Occupational Safety and Health Division (Oregon OSHA), by an owner prior to placing the unit in operation. Permits must be issued on the basis of compliance with the criteria contained in Appendix 7-F.

(c) Radio equipment must not be used without displaying a permit as required by this rule. The permit must be prominently displayed on the receiver of the unit or on the transmitter in the yarder for radio-controlled carriages.

(d) Applicants for permits must submit the following information concerning the equipment to the Department of Consumer and Business Services, Oregon OSHA:

(A) Name and address of applicant;

(B) The assigned radio frequency;

(C) The manufacturer of the unit;

(D) The serial number of the receiver;

(E) The tone frequencies upon which the unit operates;

(F) The intended use or function of the unit; and

(G) The designated area in which the equipment will be used. (See the Radio Signal Permit Area Map in Appendix 7-F.)

(e) Before moving any unit from one assigned area to another, a new permit must be secured from the Department of Consumer and Business Services, Oregon OSHA. (See the Radio Signal Permit Area Map in Appendix 7-F.)

(f) Users shall notify the Department of Consumer and Business Services, Oregon OSHA, within 15 days after the radio signaling device is:

(A) Permanently retired (in what manner);

(B) Sold (to whom); or

(C) Stolen.

(g) Upon receipt and approval of a properly completed application, OR-OSHA must issue a permit within 30 days; or if OR-OSHA is unable to issue a permit within 30 days of receipt and approval of a properly completed application, the applicant must be notified of the proposed date of issuance.

(2) Additional systems must be certified in advance as spares, providing they are used only as replacements for malfunctioning systems during the time required to repair the original equipment.

(3) Each radio receiver must have its tone frequencies in hertz (cycles per second), the manufacturer's name and serial number, and the assigned radio frequency clearly and permanently indicated on the outside of the case. When the duration or width of the tone frequencies performs a function, the duration or width must also be permanently indicated on the outside of the case.

(4) Single tone frequency must not be used on radio equipment designed to initiate whistle or other audible signal, or to activate or control any machine, material-handling device, or other equipment hazardous to employees.

(5) All adjustment, repair or alteration of radio signaling devices must be done only by or under the immediate supervision and responsibility of a person holding a first or second class commercial radio operator's license (for either radio telephone or radio telegraph) issued by the Federal Communications Commission. All replacement parts must be of such quality as to cause the unit to meet the minimum performance specifications outlined in Appendix 7-F.

(6) At least one model of each radio system must be tested and certified that it meets or exceeds the minimum requirements for performance as specified in Appendix 7-F of this standard. This model must be a random selection from stock. A copy of such performance report must be signed by the person or persons who tested the unit and submitted to Department of Consumer and Business Services, Oregon OSHA.

(7) Radio-controlled devices must be tested each day before work begins. If, at any time, any part of the equipment fails to function prop-

erly, or if interference, overlap, fadeout or blackout of radio signals is encountered, the system shall not be used until the source of trouble is detected and corrected.

(8) Two or more whistle signal receivers on the same tone frequency is prohibited.

[ED. NOTE: Appendices referenced are available from the agency.]
Stat. Auth.: ORS 654.025(2) & 656.726(4)
Stats. Implemented: ORS 654.001 - 654.295
Hist.: OSHA 5-2003, f. 6-2-03, cert. ef. 12-1-03

DIVISION 81

AGRICULTURAL OPERATIONS AND FARMING

Hand Tools and Hand-Held Power Driven Tools

437-081-0879
General

Tools shall be appropriate for the purpose for which they are used; they shall be of proper size or capacity, and shall be safely used.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist: WCB 1-1975, f. 1-24-75, cert. ef. 3-31-75; WCB (Safety) 3-1976, f. 3-1-76, cert. ef. 3-15-76; WCD 5-1977, f. 4-20-77, cert. ef. 6-1-77, Renumbered from 33-6-4

Hand-Held Power Driven Tools

437-081-0985
Pneumatic Powered Tools (Safety Line)

A safety line or chain shall be attached to the hose and to the tool housing to keep the hose from whipping should the coupling break. A safety check valve shall be installed in the air line at the manifold to automatically shut off the air supply should a fracture occur anywhere in the line.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist: WCB 1-1975, f. 1-24-75, cert. ef. 3-31-75; WCB (Safety) 3-1976, f. 3-1-76, cert. ef. 3-15-76; WCD 5-1977, f. 4-20-77, cert. ef. 6-1-77, Renumbered from 33-6-36

Storage, Handling and Use of Cylinders

437-081-2305
Storage, Handling, Use of Cylinders (Valve Opening Location)

Always stand to one side of the outlet when opening the valve.

Stat. Auth.: ORS 654.025(2) & 656.726(3)
Stats. Implemented: ORS 654.001 - 654.295
Hist: WCB 1-1975, f. 1-24-75, cert. ef. 3-31-75; WCB (Safety) 3-1976, f. 3-1-76, cert. ef. 3-15-76; WCD 5-1977, f. 4-20-77, cert. ef. 6-1-77, Renumbered from 33-17-71