

# Oregon OSHA – Adopted Changes

## Federal OSHA Corrections and Technical Amendments to General Industry, Construction, and Shipyard Employment, and Oregon-initiated Rule Reference Changes

Oregon OSHA Administrative Order 1-2012,  
Adopted and effective April 10, 2012

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Text removed is in [~~brackets with line through~~].

Text added is in **bold and underlined**.

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### Division 2/G, 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 regulations printed as part of the Code of Federal Regulations, 29 CFR 1910, in the Federal Register:

(1) 29 CFR 1910.94 Ventilation, published 9/9/09, FR vol. 74, no. 173, pp. 46350-46361; **amended with OR-OSHA Admin. Order 1-2012, f. and ef. 4/10/12.**

(2) 29 CFR 1910.95 Occupational Noise Exposure, published 12/12/08. FR vol. 73, no. 240, pp. 75568-75589.

NOTE: 29 CFR 1910.96 Ionizing radiation, has been redesignated to 29 CFR 1910.1096.

(3) 29 CFR 1910.97 Nonionizing radiation, published 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 3/7/96, FR vol. 61, no. 46, p. 9236.

(6) 29 CFR 1910.100 Standards organization, published 3/7/96, FR vol. 61, no. 46, p. 9236.

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) and 656.726(4).

Stats. Implemented: ORS 654.001 through 654.295.  
Hist: OR-OSHA Admin. Order 2-1992, f. 2/6/92, ef. 5/1/92 (all except .95).  
OR-OSHA Admin. Order 8-1999, f. 8/6/99, ef. 8/6/99.  
OR-OSHA Admin. Order 4-1993, f. 4/1/93, ef. 5/1/93 (Noise).  
OR-OSHA Admin. Order 3-2003, f. 4/21/03, ef. 4/21/03.  
OR-OSHA Admin. Order 4-1997, f. 4/2/97, ef. 4/2/97.  
OR-OSHA Admin. Order 4-2006, f. 7/24/06, ef. 7/24/06.  
OR-OSHA Admin. Order 3-1998, f. 7/7/98, ef. 7/7/98.  
OR-OSHA Admin. Order 7-2008, f. 5/30/08, ef. 5/30/08.  
OR-OSHA Admin. Order 5-2009, f. 5/29/09, ef. 5/29/09.  
OR-OSHA Admin. Order 2-2010, f. 2/25/10, ef. 2/25/10.  
**OR-OSHA Admin. Order 1-2012, f. 4/10/12, ef. 4/10/12.**

## 2/G 1910.94(a)(5)(v)

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(v) Operators shall be equipped with heavy canvas or leather gloves and aprons or equivalent protection to protect them from the impact of abrasives. Safety shoes shall be worn to protect against foot injury where heavy pieces of work are handled.

(A) Protective footwear must comply with the requirements specified by ~~[29 CFR 1910.136(b)(4)]~~ **OAR 437-002-0134(10)**.

(B) Equipment for protection of the eyes and face shall be supplied to the operator when the respirator design does not provide such protection and to any other personnel working in the vicinity of abrasive blasting operations. This equipment shall conform to the requirements of ~~[§1910.133]~~ **OAR 437-002-0134(8)**.

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## Division 2/H, 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 regulations printed as part of the Code of Federal Regulations, 29 CFR 1910, in the Federal Register:

- (1) 29 CFR 1910.101 Compressed gases (General requirements), published 3/7/96, FR vol. 61, no. 46, p. 9236.
- (2) 29 CFR 1910.102 Acetylene. Repealed. Oregon OSHA Admin. Order 1-2010, f. 2/19/10, ef. 2/19/10. In Oregon, OAR 437-002-2102 applies.
- (3) 29 CFR 1910.103 Hydrogen, published 12/14/07, FR vol. 72, no. 240, p. 71061.
- (4) 29 CFR 1910.104 Oxygen, published 3/7/96, FR vol. 61, no. 46, p. 9237.
- (5) 29 CFR 1910.105 Nitrous oxide, published 3/7/96, FR vol. 61, no. 46, p. 9237.
- (6) 29 CFR 1910.106 Flammable and combustible liquids, published 9/13/05, FR vol. 70, no. 176, p. 53925.
- (7) 29 CFR 1910.107 Spray finishing using flammable and combustible materials, 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 6/18/98, FR vol. 63, no. 117, p. 33466.
- (10) 29 CFR 1910.110 Storage and handling of liquefied petroleum gases, published 12/14/07, FR vol. 72, no. 240, p. 71061.
- (11) 29 CFR 1910.111 Storage and handling of anhydrous ammonia, published amended with AO 12-2001, Oregon note added, f. and ef. 10/26/01; 12/14/07, FR vol. 72, no. 240, p. 71061.
- (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, ~~{(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}~~ **published 12/27/11, FR vol. 76, no. 248, p. 80735.**
- (18) 29 CFR 1910.120 Hazardous waste operations and emergency response, ~~[Interim Final Rules, 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]~~ **published 12/27/11, FR vol. 76, no. 248, p. 80735.**
- (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. Repealed with OR-OSHA Admin. Order 9-2007, f. and ef. 12/3/07.
- (21) 29 CFR 1910.123 Dipping and coating operations: Coverage and definitions. Repealed with OR-OSHA Admin. Order 9-2007, f. and ef. 12/3/07.
- (22) 29 CFR 1910.124 General requirements for dipping and coating operations. Repealed with OR-OSHA Admin. Order 9-2007, f. and ef. 12/3/07.
- (23) 29 CFR 1910.125 Additional requirements for dipping and coating operations that use flammable or combustible liquids. Repealed with OR-OSHA Admin. Order 9-2007, f. and ef. 12/3/07.
- (24) 29 CFR 1910.126 Additional requirements for special dipping and coating applications. Repealed with OR-OSHA Admin. Order 9-2007, f. and ef. 12/3/07.

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) and ORS 656.726(4).

Stats. Implemented: ORS 654.001 through 654.295.

Hist: APD Admin. Order 19-1988, f. 11/17/88, ef. 11/17/88 (Hazardous Wastes – Interim).  
 APD Admin. Order 12-1989, f. 7/14/89, ef. 7/14/90 (Hazardous Wastes – Final).  
 OR-OSHA Admin. Order 22-1990, f. 9/28/90, ef. 10/1/90 (Hazwaste).  
 OR-OSHA Admin. Order 2-1992, f. 2/6/92, ef. 5/1/92 (all except Hazwaste).  
 OR-OSHA Admin. Order 3-1992, f. 2/6/92, ef. 2/6/92 (Hazwaste).  
 OR-OSHA Admin. Order 8-1992, f. 8/13/92, ef. 11/24/92 (PSM).  
 OR-OSHA Admin. Order 6-1994, f. 9/30/94, ef. 9/30/94 (PSM).  
 OR-OSHA Admin. Order 3-1995, f. 2/22/95, ef. 2/22/95 (Haz Wst/Emg Rsp).  
 OR-OSHA Admin. Order 4-1997, f. 4/2/97, ef. 4/2/97.  
 OR-OSHA Admin. Order 3-1998, f. 7/7/98, ef. 7/7/98.

OR-OSHA Admin. Order 4-1999, f. 4/30/99, ef. 4/30/99.  
 OR-OSHA Admin. Order 8-1999, f. 8/6/99, ef. 8/6/99.  
 OR-OSHA Admin. Order 12-2001, f. 10/26/01, ef. 10/26/01.  
 OR-OSHA Admin. Order 4-2002, f. 5/30/02, ef. 5/30/02.  
 OR-OSHA Admin. Order 3-2003, f. 4/21/03, ef. 4/21/03.  
 OR-OSHA Admin. Order 4-2004, f. 9/15/04, ef. 9/15/04.  
 OR-OSHA Admin. Order 4-2005, f. 12/14/05, ef. 12/14/05.  
 OR-OSHA Admin. Order 4-2006, f. 7/24/06, ef. 7/24/06.  
 OR-OSHA Admin. Order 9-2007, f. 12/3/07, ef. 12/3/07.  
 OR-OSHA Admin. Order 7-2008, f. 5/30/08, ef. 5/30/08.  
 OR-OSHA Admin. Order 1-2010, f. 2/19/10, ef. 2/19/10.  
**OR-OSHA Admin. Order 1-2012, f. 4/10/12, ef. 4/10/12.**

## 2/H 1910.119 Ap A

| CHEMICAL NAME   | CAS*         | TQ**  |
|---|--------------|-------|
| Oleum (65% to 80% by weight; also called Fuming Sulfuric Acid)                  | 8014-9[4]5-7 | 1000  |
| Osmium Tetroxide  | 20816-12-0   | 100   |
| Oxygen Difluoride (Fluorine Monoxide)   | 7783-41-7    | 100   |
| Ozone   | 10028-15-6   | 100   |
| Pentaborane   | 19624-22-7   | 100   |
| Peracetic Acid (concentration > 60% Acetic Acid; also called Peroxyacetic Acid) | 79-21-0      | 1000  |
| Perchloric Acid (concentration > 60% by weight)                                 | 7601-90-3    | 5000  |
| Perchloromethyl Mercaptan   | 594-42-3     | 150   |
| Perchloryl Fluoride   | 7616-94-6    | 5000  |
| Peroxyacetic Acid (concentration > 60% Acetic Acid; also called Peracetic Acid) | 7616-94-6    | 5000  |
| Phosgene (also called Carbonyl Chloride)  | 79-21-0      | 1000  |
| Phosphine (Hydrogen Phosphide)  | 75-44-5      | 100   |
| Phosphorus Oxychloride (also called Phosphoryl Chloride)                        | 7803-51-2    | 100   |
| Phosphorus Trichloride  | 10025-87-3   | 1000  |
| Phosphoryl Chloride (also called Phosphorus Oxychloride)                        | 10025-87-3   | 1000  |
| Propargyl Bromide   | 7719-12-2    | 1000  |
| Propyl Nitrate  | 10025-87-3   | 1000  |
| Sarin   | 106-96-7     | 100   |
| Selenium Hexafluoride   | 627-3-4      | 2500  |
| Stibine (Antimony Hydride)  | 107-44-8     | 100   |
| Sulfur Dioxide (liquid)   | 7783-79-1    | 1000  |
| Sulfur Pentafluoride  | 7803-52-3    | 500   |
| Sulfur Tetrafluoride  | 7446-09-5    | 1000  |
| Sulfur Trioxide (also called Sulfuric Anhydride)                                | 5714-22-7    | 250   |
| Sulfuric Anhydride (also called Sulfur Trioxide)                                | 7783-60-0    | 250   |
| Tellurium Hexafluoride  | 7446-11-9    | 1000  |
| Tetrafluoroethylene   | 7446-11-9    | 1000  |
| Tetrafluorohydrazine  | 7783-80-4    | 250   |
| Tetramethyl Lead  | 116-14-3     | 5000  |
| Thionyl Chloride  | 10036-47-2   | 5000  |
| Trichloro (chloromethyl) Silane   | 75-74-1      | 1000  |
| Trichloro (dichlorophenyl) Silane   | 7719-09-7    | 250   |
| Trichlorosilane   | 1558-25-4    | 100   |
| Trifluorochloroethylene   | 27137-85-5   | 2500  |
| Trimethoxysilane  | 10025-78-2   | 5000  |
|   | 79-38-9      | 10000 |
|   | 2487-90-3    | 1500  |

## 2/H 1910.120(a)(3) Haz Sub (A)

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Hazardous substance means any substance designated or listed under paragraphs (A) through (D) of this definition, exposure to which results or may result in adverse affects on the health or safety of employees:

(A) Any substance defined under section 10[4]3(14) of **the Comprehensive Environmental Response Compensation and Liability Act (CERCLA)[;] (42 U.S.C. 9601).**

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## Division 2/I, 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 regulations printed as part of the Code of Federal Regulations, 29 CFR 1910, in the Federal Register:

- (1) 29 CFR 1910.132 General requirements. Repealed with Oregon OSHA Admin. Order 4-2011, filed and effective 12/8/11. In Oregon, OAR 437-002-0134 applies.
- (2) 29 CFR 1910.133 Eye and face protection. Repealed with Oregon OSHA Admin. Order 4-2011, filed and effective 12/8/11. In Oregon, OAR 437-002-0134 applies.
- (3) 29 CFR 1910.134 Respiratory protection, published 6/8/11, Federal Register vol 76, no. 110, p. 33590.
- (4) 29 CFR 1910.135 Occupational head protection. Repealed with Oregon OSHA Admin. Order 4-2011, filed and effective 12/8/11. In Oregon, OAR 437-002-0134 applies.
- (5) 29 CFR 1910.136 Occupational foot protection. Repealed with Oregon OSHA Admin. Order 4-2011, filed and effective 12/8/11. In Oregon, OAR 437-002-0134 applies.
- (6) 29 CFR 1910.137 Electrical protective equipment, published 1/31/94, FR vol. 59, no. 20, pp. 4435-7.
- (7) 29 CFR 1910.138 Hand Protection. Repealed with Oregon OSHA Admin. Order 4-2011, filed and effective 12/8/11. In Oregon, OAR 437-002-0134 applies.
- (8) 29 CFR 1910.139 Respiratory protection for M. tuberculosis. 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; **amended with OR-OSHA Admin. Order 1-2012, f. and ef. 4/10/12.**

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) and 656.726(4).

Stats. Implemented: ORS 654.001 through 654.295

Hist: OR-OSHA Admin. Order 9-1993, f. 7/29/93, ef. 9/15/93.

OR-OSHA Admin. Order 3-1994, f. 8/1/94, ef. 8/1/94.

OR-OSHA Admin. Order 5-1994, f. 9/30/94 ef. 9/30/94.

OR-OSHA Admin. Order 3-1997, f. 3/28/97 ef. 3/28/97.

OR-OSHA Admin. Order 4-1997, f. 4/2/97, ef. 4/2/97.  
 OR-OSHA Admin. Order 3-1998, f. 7/7/98, ef. 7/7/98.  
 OR-OSHA Admin. Order 12-2001, f. 10/26/01, ef. 10/26/01.  
 OR-OSHA Admin. Order 1-2004, f. 3/26/04, ef. 7/1/04.  
 OR-OSHA Admin. Order 5-2004, f. 11/19/04, ef. 11/19/04.  
 OR-OSHA Admin. Order 10-2006, f. 11/30/06, ef. 11/30/06.  
 OR-OSHA Admin. Order 5-2008, f. 5/1/08, ef. 5/15/08.  
 OR-OSHA Admin. Order 5-2009, f. 5/29/09, ef. 5/29/09.  
 OR-OSHA Admin. Order 2-2010, f. 2/25/10, ef. 2/25/10.  
 OR-OSHA Admin. Order 4-2011, f. 12/8/11, ef. 12/8/11.  
**OR-OSHA Admin. Order 1-2012, f. 4/10/12, ef. 4/10/12.**

## 2/I Ap B to Sub I

**Eye and Face Protection Selection Chart**

| <b>Source</b>  | <b>Assessment of Hazard</b>  | <b>Protection</b>  |
|--|--|--|
| IMPACT – Chipping, grinding machining, masonry work, woodworking, sawing, drilling, chiseling, powered fastening, riveting, and sanding. | Flying fragments, objects, large chips, particles sand, dirt, etc. | Spectacles with side protection, goggles, face shields. See notes (1), (3), (5), (6), (10). For severe exposure, use faceshield. |
| HEAT – Furnace operations, pouring, casting, hot dipping, and welding.   | Hot sparks   | Faceshields, goggles, spectacles with side protection. For severe exposure use faceshield. See notes (1), (2), (3).              |
|  | Splash from molten metals  | Faceshields worn over goggles. See notes (1), (2), (3).  |
|  | High temperature exposure  | Screen face shields, reflective face shields. See notes (1), (2), (3).   |
| CHEMICALS – Acid and chemicals handling, degreasing plating.   | Splash   | Goggles, eyecup and cover types. For severe exposure, use face shield. See notes (3), (11).                                      |
|  | Irritating mists   | Special-purpose goggles.   |
| DUST – Woodworking, buffing, general dusty conditions.   | Nuisance dust  | Goggles, eyecup and cover types. See note (8).   |
| LIGHT and/or RADIATION –<br>Welding: Electric Arc  | Optical radiation  | Welding helmets or welding shields. Typical shades: 10-14. See notes (9), (12).  |
| Welding: Gas   | Optical radiation  | Welding goggles or welding face shield. Typical shades: gas welding 4-8, cutting 3-6, brazing 3-4. See note (9).                 |
| Cutting, Torch brazing, Torch soldering  | Optical radiation  | Spectacles or welding face-shield. Typical shades, 1.5-3. See notes (3), (9).  |
| Glare  | Poor vision  | Spectacles with shaded or special-purpose lenses, as suitable. See notes (9), (10).  |

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Notes to Eye and Face Protection Selection Chart:

- (1) Care should be taken to recognize the possibility of multiple and simultaneous exposure to a variety of hazards. Adequate protection against the highest level of each of the hazards should be provided. Protective devices do not provide unlimited protection.
  - (2) Operations involving heat may also involve light radiation. As required by the standard, protection from both hazards must be provided.
  - (3) Faceshields should only be worn over primary eye protection (spectacles or goggles).
  - (4) As required by the standard, filter lenses must meet the requirements for shade designations in ~~§1910.133(a)(5)~~ **OAR 437-002-0134(8)(e)**. Tinted and shaded lenses are *not* filter lenses unless they are marked or identified as such.
  - (5) As required by the standard, persons whose vision requires the use of prescription lenses must wear either protective devices fitted with prescription lenses or protective devices designed to be worn over regular prescription eyewear.
  - (6) Wearers of contact lenses must also wear appropriate eye and face protection devices in a hazardous environment. It should be recognized that dusty and/or chemical environments may represent an additional hazard to contact lens wearers.
  - (7) Caution should be exercised in the use of metal frame protective devices in electrical hazard areas.
  - (8) Atmospheric conditions and the restricted ventilation of the protector can cause lenses to fog. Frequent cleansing may be necessary.
  - (9) Welding helmets or faceshields should be used only over primary eye protection (spectacles or goggles).
  - (10) Nonsideshield spectacles are available for frontal protection only, but are not acceptable eye protection for the sources and operations listed for "impact."
  - (11) Ventilation should be adequate, but well protected from splash entry. Eye and face protection should be designed and used so that it provides both adequate ventilation and protects the wearer from splash entry.
  - (12) Protection from light radiation is directly related to filter lens density. See note (4). Select the darkest shade that allows task performance.
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## SUBDIVISION K - 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~~ **OAR 437-002-0134** 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.

Stat. Auth.: ORS 654.025(2) and 656.726(4).

Stats. Implemented: ORS 654.001 through 654.295.

Hist: WCB Admin. Order, Safety 3-1975, f. 10/6/75, ef. 11/1/75.

WCD Admin. Order, Safety 4-1979, f. 5/21/79, ef. 7/15/79.

OR-OSHA Admin. Order 2-1993, f. 2/3/93, ef. 2/3/93.

OR-OSHA Admin. Order 1-2000, f. 1/28/00, ef. 1/28/00.

**OR-OSHA Admin. Order 1-2012, f. 4/10/12, ef. 4/10/12.**

#### Appendix A to 437-002-0161 – First aid kits (Nonmandatory)

First aid supplies are required to be readily available under paragraph 437-002-0161(2)(c). By not listing specific first aid kit contents, the rule allows for compliance flexibility by emphasizing performance-based requirements. Employers need to evaluate both the potential injuries as well as injuries that have occurred in the workplace and stock first aid items to treat those injuries.

As an example, but in no way a specific requirement, the minimal contents of a generic first aid kit is described in American National Standard (ANSI) Z308.1-1998 "Minimum Requirements for Workplace First-aid Kits." The contents of the kit listed in the ANSI standard should be adequate for small worksites. When larger operations or multiple operations are being conducted at the same location, employers should determine the need for additional first aid kits at the worksite, additional types of first aid equipment and supplies and additional quantities and types of supplies and equipment in the first aid kits.

In a similar fashion, employers who have unique or changing first-aid needs in their workplace may need to enhance their first-aid kits. The employer can use the OSHA 300 log, worker compensation 801 forms or other reports to identify unique problems. Some of the basic contents may include disinfect and wound cover or include special items for treating burns. Consultation from the local fire/rescue department, appropriate medical professional, or local emergency room may be helpful to employers in these circumstances. By assessing the specific needs of their workplace, employers can ensure that reasonably anticipated supplies are available. Employers should assess the specific needs of their worksite periodically and augment the first aid kit appropriately.

Employers are required to provide appropriate personal protective equipment (PPE) in compliance with the provisions of the Occupational Exposure to Bloodborne Pathogens standard, 1910.1030(d)(3) for employees who are expected to render first aid and have exposure to blood or other potentially infectious materials while using first aid supplies. This

standard lists appropriate PPE for this type of exposure, such as gloves, gowns, face shields, masks, and eye protection. PPE requirements outside of the bloodborne pathogens rule are regulated by ~~[1910.132]~~**OAR 437-002-0134**, Division 2, Subdivision I, Personal Protective Equipment.

Stat. Auth.: ORS 654.025(2) and 656.726(4).

Stats. Implemented: ORS 654.001 through 654.295.

Hist.: OR-OSHA Admin. Order 1-2005, f. 4/12/05, ef. 4/12/05.

**OR-OSHA Admin. Order 1-2012, f. 4/10/12, ef. 4/10/12.**

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## Subdivision L, 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 **regulations**~~[rules as]~~ printed~~[in]~~**as part of** 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;] 12/12/08, FR vol. 73, no. 240, pp. 75568-75589; **amended with OR-OSHA Admin. Order 1-2012, f. and ef. 4/10/12.**
- (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; **amended with OR-OSHA Admin. Order 1-2012, f. and ef. 4/10/12.**
- (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.

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) and 656.726(4).

Stat. Implemented: ORS 654.001 through 654.295.

Hist: OR-OSHA Admin. Order 14-1993, f. 8/27/93, ef. 11/1/93.  
OR-OSHA Admin. Order 4-1997, f. 4/2/97, ef. 4/2/97.  
OR-OSHA Admin. Order 3-1998, f. 7/7/98, ef. 7/7/98.  
OR-OSHA Admin. Order 4-1999, f. 4/30/99, ef. 4/30/99.  
OR-OSHA Admin. Order 12-2001, f. 10/26/01, ef. 10/26/01.  
OR-OSHA Admin. Order 7-2007, f. 11/8/07, ef. 11/8/07.  
OR-OSHA Admin. Order 5-2009, f. 5/29/09, ef. 5/29/09.  
**OR-OSHA Admin. Order 1-2012, f. 4/10/12, ef. 4/10/12.**

#### **437-002-0182**

##### **Oregon Rules for Fire Fighters.**

(1) Scope and Application.

(a) These rules apply to all activities, operations and equipment of employers and employees providing fire protection services, emergency first response, and related activities that are subject to the provisions of the Oregon Safe Employment Act. These rules do 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 must comply with all of the provisions of OAR 437-002-0182.

(b) The provisions of OAR 437-002-0182 must be supplemented by the provisions of other applicable safety and health rules of Oregon OSHA.

(2) Definitions.

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.

Afterflame: The time a test specimen continues to flame after the flame source has been removed.

ANSI: American National Standards Institute.

Apparatus: A mobile piece of fire fighting equipment such as pumper, water tender, etc.

Confined space means a space that:

Is large enough and so configured that a person can bodily enter and perform assigned work; and

Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry); and

Is not designed for continuous occupancy.

**Drill tower:** A structure, which may or may not be attached to the station that is over two stories high and primarily used for nonclassroom training of the fire fighters in fire service techniques.

**Emergency incident:** Any situation where the fire department delivers emergency services, rescue, fire suppression, medical treatment, and other forms of hazard control and mitigation.

**Emergency scene:** The site where the suppression of a fire or the emergency exists.

**Fire chief:** An employer representative responsible for managing the fire department's operation.

**Fire fighter:**

A person involved in performing fire department duties and responsibilities, including fire suppression.

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.

**Fire retardant:** A material to reduce, stop or prevent flame spread.

**Fire training:** Training received by fire fighters to maintain proficiency in performing their assigned duties.

**Flame-resistance:** The property of materials, or combinations of component materials, to retard ignition and restrict the spread of flame.

**Hazardous material incident:** The accidental release of hazardous materials from their containers.

**Helmet:** A head protective device consisting of a rigid shell, energy absorption system, and chin strap intended to protect the head against impact, flying or falling objects, electric shock, penetration, heat, and flame.

**Hose tower:** A vertical structure where a hose is hung to dry.

**Immediately dangerous to life or health (IDLH):** Any condition that poses a threat to life, could cause irreversible adverse health effects, or could interfere with an individual's ability to escape unaided from a confined space.

**IFSTA:** International Fire Service Training Association.

**Lifeline:** The rope that secures employees when in extremely hazardous areas.

**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.

**MSHA:** Mine Safety and Health Administration.

**NFPA:** National Fire Protection Association.

**Nondestructive testing:** A test to determine the characteristics or properties of a material or substance that does not involve its destruction or deterioration.

**Private Industry Fire Brigades:** A group of employees within an industry who are required to fight interior structural fires at their place of employment.

**Protective clothing:** The clothing or equipment worn to protect the head, body, and extremities from chemical, physical, and health hazards.

**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.

**Respirators:**

Atmosphere-supplying respirator is a respirator that supplies the respirator user with air from a source independent of the ambient atmosphere, and includes supplied-air respirators (SARs) and self-contained breathing apparatus (SCBA) units.

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.

Positive Pressure demand respirator is a respirator in which the pressure inside the respiratory inlet covering exceeds the ambient air pressure outside the respirator.

Pressure demand respirator is a positive pressure atmosphere-supplying respirator that admits air to the facepiece when the positive pressure is reduced inside the facepiece by inhalation.

SCBA is a self-contained breathing apparatus designed to provide the wearer with a supply of respirable air carried in and generated by the breathing apparatus. This apparatus requires no intake of oxygen from the outside atmosphere, and can be designed to be a demand or pressure demand type respirator.

Supplied-air respirator (SAR) or airline respirator is an atmosphere-supplying respirator for which the source of breathing air is not designed to be carried by the user.

Responding: Answering an emergency call or other alarm.

Scabbard: A guard that prevents injury and covers the blade and pick of an axe or other sharp instrument when worn by the fire fighter.

Station (Fire station): Structure to house the fire service apparatus and personnel.

Tailboard: Standing space at rear of an engine or pumper apparatus where fire fighters ride.

Training: Instruction with 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.

Warning light: A flashing or rotating light.

#### GENERAL REQUIREMENTS

(3) Organizational statement. The employer must prepare and maintain a statement or written policy that 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 must be made available for inspection by the administrator and by employees or their designated representatives.

(4) Personnel.

(a) The employer must review and evaluate the physical capability of each employee annually to determine their ability to perform duties that may be assigned. The review and evaluation will be accomplished through physical examination, stress testing, or satisfactory performance demonstrated during the performance of their assigned duties.

(b) The employer must not permit an employee with known medical condition that 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 will not limit the employer's ability to assign personnel to support activities (versus fire suppression activities).

(5) Employer's Responsibility.

(a) Each employer must comply with the provisions of this division to protect the life, safety, and health of employees.

(b) It is 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.

(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 must maintain all equipment in a safe condition.

(d) The employer must 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.

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 on 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 must comply with the sections of OAR 437-002-0182 that are applicable to their own actions and conduct in the course of their employment.

(b) Fire fighters must notify the appropriate employer or safety committee representative of unsafe practices, equipment, or workplaces.

(c) All fire fighters, at regularly scheduled times, must attend required training and orientation programs designed to increase their competency in occupational safety and health.

(d) Fire fighters and other employees must apply the principles of accident prevention in their work. They must use all required safety devices and protective equipment.

(e) Each fire fighter must take proper care of their protective equipment.

(f) Fire fighters who are expected to perform fire fighting operations must notify their employer when health conditions arise that will limit their capability of performing those duties.

(7) Safety Committee.

(a) Fire departments must have a separate safety committee or hold safety meetings according to the requirements of OAR 437-001-0765 in Division 1, General Administrative Rules.

(b) When applicable, the representation on the safety committee must 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, must be established with written standard operating procedures, applying to all members involved in emergency operations. All members involved in emergency operations must be familiar with the system.

(9) Accountability.

(a) The fire department must establish written standard operating procedures for a personnel accountability system according to Section 2-6, 1995 of NFPA 1561, standard on Fire Department Incident Management System, that provides for the tracking and inventory of all members operating at an emergency incident.

(b) It is 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 must establish and implement a policy for educating and training throughout the fire fighting classifications (ranks). Such education and training must 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 must 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 must wear the protective equipment normally required for that type of fire fighting.

(e) When rope rescue training occurs, it must be conducted under the direction of the fire department training officer or department-designated authority according to the equipment manufacturers' recommendations. The training officer must keep records of the manufacturers' training requirements, and must comply with all such requirements.

(f) All fire hoses used by fire departments for training and fire combat must meet the service testing requirements noted in Chapter 5 of NFPA 1962, 1993 edition.

(g) The employer must provide training for the purpose, proper selection, fitting, and limitations of personal protective equipment.

(h) The employer must ensure that each employee is informed of the procedure of reporting unsafe work conditions or equipment.

(11) General Requirements for Protective Clothing.

(a) The employer must provide employees all required protective clothing, except that an employee may opt to supply protective clothing. The employer must 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 must ensure that new protective clothing intended for structural fire fighting that 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 must ensure that fire fighters wear this clothing when performing structural fire fighting.

(c) In situations other than structural fire fighting, the employer must ensure that protective clothing appropriate for the known hazards of that particular emergency operation is worn.

(d) The employer must ensure that appropriate protective clothing protects the head, body, and extremities. It must consist of at least the following components: foot and leg protection, hand protection, body protection, and eye, face, and head protection.

(12) Body Protection. To ensure full body protection for the wearer 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 must 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 must be supplied for each helmet.

(c) Care, maintenance, and alteration of helmets must conform to the manufacturer's recommendations.

(d) During structural fire fighting helmet accessories designed to provide or maintain protection from health and safety hazards must be worn in the manufacturer's recommended position.

(See also Appendix A.)

(e) A flame-resistant protective hood that will not adversely affect the seal of a respirator facepiece and meeting the requirements of NFPA Standard 1971, 1996 edition, must be worn during interior structural fire fighting operations to protect the sides of the face and hair.

(14) Hand Protection. Hand protection for fire fighting activities must consist of protective gloves or glove system that will provide protection against cut, puncture, and heat penetration. Gloves or glove system must 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 must 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 must meet the requirements of NAPA Standard 1971, 1996 edition, titled "Protective Ensembles for Structural Fire Fighting and Proximity 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 must comply with the following regulations:
- (a) General requirements. Face protection must 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 must be provided.
- (b) When self-contained respiratory equipment is being used by fire fighters, additional eye and face protection will not be required. Employers must make conveniently available a type of protection suitable for the work performed, and employees must use such protectors. Protectors must meet the following minimum requirements.
- (A) They must provide adequate protection against the particular hazards for which they are designed.
- (B) They must be reasonably comfortable when worn under the designated conditions.
- (C) They must be durable.
- (D) They must be capable of being disinfected.
- (E) They must be easy to clean.
- (F) Protectors that can be worn over corrective lenses must be available for those who need them, and should be kept clean and in good repair.
- (c) Face shields.
- (A) Face shields must be clear transparent or colored transparent.
- (B) Disinfection. When a person is assigned protective equipment, this equipment must 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 a breathing apparatus within a face mask is being used, the face mask will be considered an acceptable face shield.
- (d) Goggles, flexible, or cushioned fitting. Goggles must consist of a fully flexible frame, a lens holder or a rigid frame with integral lens or lenses, and a separate cushioned fitting surface on the full periphery of the facial contact area.
- (A) Materials used must be chemical-resistant, nontoxic, nonirritating and slow-burning.
- (B) There must be support on the face, such as an adjustable headband of suitable material or other appropriate support to hold the frame comfortably and snugly in front of the eyes.
- (e) Design, construction, testing, and use of eye and face protection must be according to ANSI Z87.1, Occupational Eye and Face Protection (1979).
- NOTE: Fire fighters must be protected from noise that exceeds the levels deemed safe 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) All compressed air cylinders used with self-contained breathing apparatus must meet Department Of Transportation and NIOSH criteria. In emergency and lifesaving situations, 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. Once the emergency is over, return SCBA's to their original approved condition.



(b) Self-contained breathing apparatus must be provided with an indicator that automatically sounds an 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, must be provided with and must use a PASS device in the hazardous area when self-contained breathing apparatus is in use. PASS devices must meet the requirements of NFPA 1982, Standard on Personal Alert Safety Systems for Fire Fighters. Each PASS device must be tested at least monthly and must be maintained according to 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 must be taken every six months from the compressor and analyzed by the employer or an independent laboratory for Grade D breathing air. Air samples must also be tested when the system is installed or repaired. Analysis must be conducted according to ANSI/CGA Standard G7.1-1989 edition, Commodity Specification for Air.

(25) Identification of Hazardous Material Locations.

(a) A means must be provided for identifying nonresidential premises where hazardous materials are stored, as defined in the Uniform Fire Code, 1991 edition, 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 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 departments that expect or plan to respond to hazardous material incidents must 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 must be responsible for:

(A) Identifying the hazardous substance and condition,

(B) Implementing emergency operations,

(C) Ensuring personal protective equipment is worn,

(D) Limiting access of hot zone to those with a specific mission assignment,

(E) Implementing decontamination procedures,

(F) Designating a safety officer,

(G) Using appropriately trained personnel,

(H) Providing on-scene medical surveillance for emergency responders.

FIRE FIGHTING APPARATUS

(27) Fire Apparatus Area.

- (a) Walkways around apparatus must be kept free of obstructions.
- (b) The station's apparatus floors must be kept free of grease, oil, and tripping hazards.
- (c) Class I or II flammable liquids must not be used to remove grease or dirt from apparatus.
- (d) Exhaust gases from diesel or gasoline apparatus within buildings must 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 must conform to OAR 437, Division 2/N, Oregon Rules for Commercial and Industrial Vehicles.
- (b) Employers who have purchased used fire apparatus or used military equipment prior to the effective date of this division are not 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 is regarding 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 must not project out of the vehicle sides or fenders and must be designed to provide safe footing.
- (d) Exhaust systems must be installed and properly maintained and must be designed to minimize the exposure of exhaust gases by the fire fighter.
- (e) The loaded gross weight and empty height of the vehicle must be posted in the vehicle such that it can be clearly read by the driver.
- (f) Roll bars must be in place on all open top off-road vehicles for rollover protection.

(29) Automotive Fire Apparatus Equipment.

- (a) All equipment on a vehicle must be adequately secured when the vehicle is in motion.
- (b) Workers being transported by fire department vehicles must ride only in designated secure positions. Safety restraints must be provided for fire fighters riding the tailboard. (See also OAR 437, Division 2/N, Oregon Rules for Commercial and Industrial Vehicles.)
- (c) Vehicles with obstructed view to the rear of the vehicle when backing, must be equipped with:
  - (A) An automatic back-up alarm that must sound when backing; or
  - (B) A fire fighter, who is visible in the driver's left-side mirror, must stand to the rear of the truck to guide the driver while backing.
- (d) Fire fighting vehicles must come to a full stop before workers disembark.
- (e) If workers are required to ride the tailboard, an electrical signal system or voice communication system must be installed between the tailboard and the driver's compartment. A code of signals must be used for controlling the movement of the vehicle.
- (f) When traffic flow is inhibited, vehicles equipped with emergency warning lights must be used to control traffic at emergency scenes. The use of traffic cones, fire department personnel, police, or other traffic control measures must be used as soon as practical.

(30) Automotive Apparatus Maintenance and Repair. Each employer must 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 following an emergency response, drill, or test drive.

(31) Tires. Tires that are excessively worn, cracked, deteriorated or damaged in any way must not be used. All tires must have a minimum tread depth of 2/32-inch.

(32) Aerial Devices.

- (a) Aerial devices used for fire fighting must be inspected and tested by a person competent in performing such tests and inspections according to 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 must be tested and certified according to 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 must be maintained for each unit.

#### HOSE DRYING AND DRILL TOWERS

##### (33) Hose Drying Towers.

- (a) Floor openings on hose tower platforms must 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 must not apply unless hand tools or objects other than hoses are carried onto the platforms.
- (c) The requirements for ladders must meet the requirements of OAR 437, Division 2/D, 437-002-0027, Fixed Ladders.
- (d) Ropes used to hoist hose in the hose towers must 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.

#### FIRE SERVICE EQUIPMENT

(35) Testing, Maintenance and Inspection of Fire Service Equipment. The employer must 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.

##### (36) Confined Space Rescue

- (a) Employers subject to this section must comply with 1910.146 for their own confined spaces.
- (b) Employers subject to this section must comply with 1910.146(k)(2) when they agree to serve as a designated rescue service provider.
- (c) Employers subject to this section that will respond to emergency calls for rescue from confined spaces must:
  - (A) Train responders to recognize inherent confined space hazards before assigning or attempting any related duties in confined space rescues.
    - (i) Provide responders with understanding, knowledge, and skills necessary for safe performance of confined space rescues.
    - (ii) Practice a confined space rescue operation at least once every year from a real or simulated confined space.
  - (B) Certify responders in writing to Department of Public Safety Standards and Training (DPSST) Fire Fighter 1 levels or equivalent.
  - (C) Use the Incident Management System during confined space rescue incidents that meet the requirements of the NFPA Standard 1561, Fire Department Incident Management.
  - (D) Assess the situation and determine if it qualifies as a confined space incident.
    - (i) Classify the operation as a rescue or body recovery.
    - (ii) Assess and secure physical hazards related to the incident or rescue.
    - (iii) Assess atmospheric hazards.
  - (I) Use calibrated direct-reading instruments to test the atmosphere in confined spaces for oxygen content, flammable gases and vapors, and toxic air contaminants.
  - (II) When calibrated direct-reading instruments are not available, the Incident Commander must assume the situation is immediately dangerous to life and health (IDLH) and assure that responders who enter are equipped with appropriate respiratory protective equipment.
  - (iv) Determine if the space should be ventilated.
  - (E) Provide the appropriate rescue, emergency, and personal protective equipment for safe entry into and rescue from confined spaces.
  - (F) Provide necessary equipment to facilitate non-entry retrieval for responders, unless the retrieval equipment would increase the overall risk or would not contribute to the rescue operations.

Stat. Auth.: ORS 654.025(2) and 656.726(4).  
Stats. Implemented: ORS 654.001 through 654.295.  
Hist: OR-OSHA Admin. Order 14-1993, f. 8/27/93, ef. 11/1/93.  
OR-OSHA Admin. Order 2-1998, f. 3/11/98, ef. 3/11/98.  
OR-OSHA Admin. Order 2-2000, f. 1/28/00, ef. 1/28/00.  
OR-OSHA Admin. Order 12-2001, f. 10/26/01, ef. 10/26/01.  
OR-OSHA Admin. Order 3-2005, f. 6/10/05, ef. 6/10/05.  
OR-OSHA Admin. Order 9-2008, f. 9/19/08, ef. 1/1/09.  
OR-OSHA Admin. Order 8-2009, f. 7/9/09, ef. 10/1/09.  
**OR-OSHA Admin. Order 1-2012, f. 4/10/12, ef. 4/10/12.**

#### Appendix A – Protective Apparel and Respirators (Nonmandatory)

This appendix is for the code user's information; it is not mandatory.

##### 1. Protective clothing.

OAR 437-002-0182(11) does not require all fire fighters to wear protective clothing. It is not the intention of these rules to require employers to provide a full ensemble of protective clothing for every fire fighter without considering the types of hazardous environments where the fire fighter might be exposed. These rules are intended to require adequate protection for those fire fighters who might be exposed to smoke, toxic gases, high temperatures, and fires in an advanced state. Therefore, the protective clothing requirements only apply to those fire fighters who perform structural fire fighting operation.

2. Additionally, the protective clothing requirements do not apply to the protective clothing worn during outside fire fighting operations (brush and forest fires, crash crew operations) or other special fire fighting activities. It is important that the protective clothing worn during these types of fire fighting operations reflect the hazards that are expected to be encountered by fire fighters.

3. Head protective devices are required to be provided with ear flaps so that the ear flaps will be available if need. It is recommended that ear protection always be used while fighting interior structural fires.

4. Many head protective devices are equipped with face shields to protect the eyes and face. These face shields meet the eye and face protection requirements of this rule as long as such face shields meet the requirements of OAR 437, Division 2/I, Personal Protective Equipment and ANSI Z87.1-1968, Eye and Face Protection.

5. Additionally, full facepieces, helmets, or hoods of approved breathing apparatus that meet the requirements of OAR 437, Division 2/I, 1910.134, Respiratory Protection, and 437-002-0182 (11), (12), and (16), also meet the eye and face protection requirements.

6. It is recommended that protective clothing be thoroughly cleaned or washed every six months or as needed, following the recommendations of the clothing manufacturer and the cleaning requirements of NFPA Standard 1500 and 1571, 1996 editions.

7. Respiratory protective devices. See OAR 437, Division 2/I, 1910.134, Respiratory Protection.

Stat. Auth.: ORS 654.025(2) and 656.726(4).  
Stats. Implemented: ORS 654.001 through 654.295.  
Hist: OR-OSHA Admin. Order 14-1993, f. 8/27/93, ef. 11/1/93.  
OR-OSHA Admin. Order 2-1998, f. 3/11/98, ef. 3/11/98.  
OR-OSHA Admin. Order 2-2000, f. 1/28/00, ef. 1/28/00.  
OR-OSHA Admin. Order 8-2009, f. 7/9/09, ef. 10/1/09.

## Appendix B – Apparatus Operation Signal Communication (Nonmandatory)

This is not a mandatory appendix. The signal system described here is only an example.

The following set of signals could be used for communication between the driver and a tiller or between the driver and fire fighters riding the tailboard:

One long buzz means “Stop.”

Two buzzes means “Forward.”

Three buzzes means “Reverse.”

Before any of the above functions are undertaken, with the exception of stopping, the same appropriate signal must be received from the tailboard. Example: If driver is responding to an alarm before starting out, two beeps is responding to an alarm before starting out, two beeps on the horn will be sounded. Driver will not advance, however, until the same signal is sounded from the tailboard or tiller.

Stat. Auth.: ORS 654.025(2) and 656.726(4).

Stats. Implemented: ORS 654.001 through 654.295.

Hist: WCD Admin. Order, Safety 11-1985, f. 7/10/85, ef. 10/1/85.

OR-OSHA Admin. Order 14-1993, f. 8/27/93, ef. 11/1/93.

## Appendix C – Minimum Requirements for Live Fire Training

This is a mandatory appendix as required by OAR 437-002-0182(10)(c).

The following requirements must be met prior to live fire training:

Training:

All personnel are trained to the requirements of DPSST Entry level firefighter or the educational requirements of the assigned position;

or

Participants who have received training from another department or jurisdiction has provided written documentation that they meet the requirements of DPSST.

Instructors are adequately trained to appropriately perform their tasks.

Pre-Burn planning for acquired structure:

A written plan:

Is prepared by the Chief or their designee.

Will be maintained and available for review by Oregon OSHA until the next live fire training exercise.

A pre-burn briefing has been conducted with all personnel involved in the exercise including:

A walk through of the structure, with an emphasis on exits.

A discussion of the evacuation plan, including any signals for evacuation.

Methods of communication e.g., radio channels.

Location for medical treatment, rehabilitation, and the safety officer or Incident Command (IC).

Limitations of the exercise or hazards that cannot be removed, but are protected.

Personal protective equipment that is required.

Personal protective equipment that is available (must include all required PPE).

Adequate first aid treatment is available for injuries.

No personnel will be allowed to simulate a victim in live fire exercises.

No fire will be set that will intentionally block an exit.

Adequate food and fluids are available, as well as protection from extreme weather conditions.

Acquired Structures:

Remove or contain all hazardous materials.

Remove combustible material not intended for use in the training.  
Remove oil tanks or similar containers, or protect them from exploding or becoming over-pressurized.  
Only one fire is allowed inside a structure at a time.  
Remove or repair hazardous structural conditions to prevent a hazard to personnel.  
Disconnect all utilities to the training structure.  
Remove or protect utilities adjacent to the training structure prior to live fire training.  
Remove extraordinary weight overhead and debris in the training area that poses a hazard to personnel.  
Protect or remove adjacent buildings and property.  
All forms of asbestos have been addressed according to Division 2, Subdivision Z, OAR 1910.1001.  
Remove all environmental hazards, such as toxic weeds, insects, or vermin that could be a hazard to personnel.  
Remove vegetation that is a threat.  
Personnel exposed to on-road vehicle traffic will wear highly visible upper body garments that comply with OAR 437-002-~~0128~~**0134(7)**.  
An inspection has been made by the Chief or their designee prior to the live fire exercise to ensure the provisions of this and all applicable standards are met.  
Permanent Burn Structures:  
Buildings used for training burns have been visually inspected by a qualified person prior to training activities.  
Any damage that is a hazard has been corrected.  
All equipment used in live fire training buildings has been inspected, and repaired if necessary, prior to use.  
All equipment is operated by a qualified person.  
A designated parking area is established for apparatus not used in the training.  
Follow traffic control requirements of OAR 437-002-2224(12) if personnel are exposed to on-road vehicle traffic.  
Keep persons not directly involved with the training behind designated fire lines.  
Exterior Props:  
Areas around props are free of obstructions or vegetation that are a hazard.  
Props have been visually inspected by the Chief or their designee prior to the live fire exercise.  
Defects have been repaired prior to use.  
Vehicles used for live fire training:  
All containers on or in the vehicle that contain flammables, oxidizers, or other gases are emptied or ventilated to prevent explosion or unexpected burning.  
All batteries are removed.  
Equipment and material is secured to prevent unexpected movement.  
All split rims have been removed prior to ignition.  
Water Supply:  
The Chief or their designee has documented the minimum water supply necessary based on the criteria identified in NFPA 1142 Standard on Water Supplies, 2001 edition.  
A reserve of 50 percent of the documented fire flow is available to protect surrounding structures.  
Separate sources of water will be maintained for attack lines and backup lines.  
Hydrants that will supply backup lines are identified and gated.  
Areas around the structure will be maintained clear of non essential equipment or personnel to allow for ease of deployment of hose lines.  
Fuels:

Use only fuels with known burning characteristics that are readily identifiable.  
Maintain fuel load at a level that is controllable and readily predictable.  
Do not use flammable or combustible liquids unless the structure has been specifically designed to use those liquids as fuel.  
The Chief or their designee has certified the fuel load and any factors that would affect growth, development, or spread of fire in each room of the structure being burned prior to live fire evolutions.  
Immediately halt training if any hazard is noted.  
Ignition Sources:  
Use a match, fusee, or drip torch to ignite an acquired structure.  
Use a match, fusee, drip torch, or flammable gas to ignite a permanent burn structure.  
Other ignition/fuel sources (with known characteristics) are used only for arson investigation and fire-cause determination training when:  
The attack and back-up plans take into consideration the ignition/fuel source in providing for continued safety of all personnel.  
Live fire training activities are limited to back-up, control, and extinguishing the fire.  
Incident Command Station (ICS):  
Establish and maintain an ICS in accordance with OAR 437-002-0182(8).  
Establish and maintain accountability according to OAR 437-002-0182(9).  
Establish and maintain a safety officer, independent from the IC (and not given other assignments) until the training is concluded.  
Authorize the safety officer to halt the exercise at any time and for any reason.  
Investigate all injuries by the Chief or their designee.  
Halt training in cases of extreme weather.  
Adequately train the safety officer for the position.  
The safety officer may assign additional personnel in and around the structure to ensure the safety of personnel.  
Only one ignition officer is designated who reports directly to the safety officer.  
The ignition officer has a charged hose line when igniting the structure.  
Ignition takes place under the direct supervision of the safety officer.  
Personal Protective Equipment:  
Appropriate PPE, according to OAR 437-002-0182, is worn by all participants, including instructors.  
Inspect all PPE for proper fit and maintenance prior to entering the structure.  
Wear SCBA according to OAR Division 2, Subdivision I, 1910.134.  
Use hearing protection according to OAR Division 2, Subdivision G, 1910.95.

Stat. Auth.: ORS 654.025(2) and 656.726(4).  
Stats. Implemented: ORS 654.001 through 654.295.  
Hist: OR-OSHA Admin. Order 3-2005, f. 6/10/05, ef. 6/10/05.  
OR-OSHA Admin. Order 8-2009, f. 7/9/09, ef. 10/1/09.  
**OR-OSHA Admin. Order 1-2012, f. 4/10/12, ef. 4/10/12.**

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## 2/L 1910.156(e)(2)(ii)

...

(ii) Protective footwear shall meet the requirements of ~~§1910.136~~**OAR 437-002-0134(10)** for Class 75 footwear. In addition, protective footwear shall be water-resistant for at least 5 inches (12.7 cm) above the bottom of the heel and shall be equipped with slip-resistant outer soles.

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## 2/L 1910.156(e)(5)(ii)

(ii) Protective eye and face devices which comply with [~~§1910.133~~]**OAR 437-002-0134(8)** shall be used by fire brigade members when performing operations where the hazards of flying or falling materials which may cause eye and face injuries are present. Protective eye and face devices provided as accessories to protective head devices (face shields) are permitted when such devices meet the requirements of [~~§1910.133~~]**OAR 437-002-0134(8)**.

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## 2/L Ap A to Sub L

Many head protective devices are equipped with face shields to protect the eyes and face. These face shields are permissible as meeting the eye and face protection requirements of this paragraph as long as such face shields meet the requirements of [~~§1910.133~~]**OAR 437-002-0134(8)** of the General Industry Standards.

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## SUBDIVISION N – 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 regulations printed as part of the Code of Federal Regulations, 29 CFR 1910, in the Federal Register:

- (1) 29 CFR 1910.176 Handling materials - general, published 10/24/78, FR vol. 43, p. 49749.
- (2) 29 CFR 1910.177 Servicing of multi-piece and single piece rim wheels; published [~~5/2/44~~, Federal Register vol. 76, no. 84, p. 24576]**12/27/11, FR vol. 76, no. 248, p. 80735**.
- (3) 29 CFR 1910.178 Powered industrial trucks, published 4/3/06, FR vol. 71, no. 63, p. 16669.
- (4) 29 CFR 1910.179 Overhead and gantry cranes, published 3/7/96, FR vol. 61, no. 46, p. 9239.
- (5) 29 CFR 1910.180 Crawler, locomotive and truck cranes, published 3/7/96, FR vol. 61, no. 46, p. 9239.
- (6) 29 CFR 1910.181 Derricks, published 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 6/18/98, FR vol. 63, no. 117, p. 33467.
- (9) 29 CFR 1910.184 Slings, published 6/8/11, Federal Register, vol. 76, no. 110, p. 33590.
- (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.

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) and 656.726(4).

Stats. Implemented: ORS 654.001 through 654.295.

Hist: APD Admin. Order 2-1989, f. 3/1/89, ef. 3/1/89 (Single & Multi).  
OR-OSHA Admin. Order 13-1993, f. 8/20/93, ef. 11/1/93 (Remainder of 2/N).  
OR-OSHA Admin. Order 4-1997, f. 4/2/97, ef. 4/2/97.  
OR-OSHA Admin. Order 4-1999, f. 4/30/99, ef. 4/30/99.  
OR-OSHA Admin. Order 6-1999, f. 5/26/99, ef. 5/26/99.



OR-OSHA Admin. Order 12-2001, f. 10/26/01, ef. 10/26/01.  
OR-OSHA Admin. Order 7-2003, f. 12/5/03, ef. 12/5/03.  
OR-OSHA Admin. Order 4-2006, f. 7/24/06, ef. 7/24/06.  
OR-OSHA Admin. Order 3-2011, f. 11/1/11, ef. 11/1/11.  
OR-OSHA Admin. Order 4-2011, f. 12/8/11, ef. 12/8/11.  
**OR-OSHA Admin. Order 1-2012, f. 4/10/12, ef. 4/10/12.**

## 2/N 1910.177(b) charts

~~[Charts means the U.S. Department of Labor, Occupational Safety and Health Administration publications entitled “Demounting and Mounting Procedures for Truck/Bus Tires” and “Multi-piece Rim Matching Chart”, the National Highway Traffic Safety Administration (NHTSA) publications entitled “Demounting and Mounting Procedures Truck/Bus Tires” and “Multi-piece Rim Matching Chart”, or any other poster which contains at least the same instructions, safety precautions and other information contained in the charts that is applicable to the types of wheels being serviced.]~~

**Charts means the U.S. Department of Labor, Occupational Safety and Health Administration publications entitled “Demounting and Mounting Procedures for Tube-Type Truck and Bus Tires,” “Demounting and Mounting Procedures for Tubeless Truck and Bus Tires,” and “Multi-Piece Rim Matching Chart.” These charts may be in manual or poster form. OSHA also will accept any other manual or poster that provides at least the same instructions, safety precautions, and other information contained in these publications, which is applicable to the types of wheels the employer is servicing.**

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## 2/N 1910.177 Ap B

### Appendix B – Ordering Information for the OSHA Charts

~~[OSHA has printed two charts entitled “Demounting and Mounting Procedures for Truck/Bus Tires” and “Multi-piece Rim Matching Chart,” as part of a continuing campaign to reduce accidents among employees who service large vehicle rim wheels.~~

~~Reprints of the charts are available through the Occupational Safety and Health Administration (OSHA) Area and Regional Offices. The address and telephone number of the nearest OSHA office can be obtained by looking in the local telephone directory under U.S. Government, U.S. Department of Labor, Occupational Safety and Health Administration. Single copies are available without charge.~~

~~Individuals, establishments and other organizations desiring single or multiple copies of these charts may order them from the OSHA Publications Office, U.S. Department of Labor, Room N-3101, Washington, DC 20210, Telephone (202) 693-1888.]~~

**The information on the OSHA charts is available on three posters, or in a manual containing the three charts, entitled “Demounting and Mounting Procedures for Tubeless Truck and Bus Tires,” “Demounting and Mounting Procedures for Tube-Type Truck and Bus Tires,” and “Multi-piece Rim Matching Chart.” Interested parties can download and print both the manuals and posters from OSHA’s Web site at <http://www.osha.gov/publications> (and type “tire chart” in the search field). However, when used by the employer at a worksite to provide information to employees, the printed posters must be, at a minimum, 2 feet wide and 3 feet long. Copies of the manual also are available from the Occupational Safety and Health Administration (OSHA Office of Publications, Room N-3101, U.S. Department of Labor, 200 Constitution Avenue NW, Washington, DC 20210; telephone: (202) 693-1888; or fax: (202) 693-2498).**

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## SUBDIVISION O – 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 **regulations**~~[rules as ]~~ printed **as part of** ~~[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. 48295; 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] **12/27/11, FR vol. 76, no. 248, p. 80735.**
- (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.

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) and 656.726(4).  
 Stats. Implemented: ORS 654.001 to 654.295.  
 Hist: APD Admin. Order 22-1988, f. 12/30/88, ef. 1/1/89.  
 OR-OSHA Admin. Order 4-1997, f. 4/2/97, ef. 4/2/97.  
 OR-OSHA Admin. Order 4-2004, f. 9/15/04, ef. 9/15/04.  
**OR-OSHA Admin. Order 1-2012, f. 4/10/12, ef. 4/10/12.**

## 2/O 1910.217(g)(1)

- ...
- (g) Reports of injuries to employees operating mechanical power presses.  
~~[(1) The employer shall, within 30 days of the occurrence, report to either the Director of the Directorate of Safety Standards Programs, OSHA, U.S. Department of Labor, Washington, D.C. 20210, or the State agency administering a plan approved by the Assistant Secretary of Labor for Occupational Safety and Health, all point of operation injuries to operators or other employees. The following information shall be included in the report:~~
- ~~(i) Employer's name, address and location of the workplace (establishment).~~
  - ~~(ii) Employee's name, injury sustained, and the task being performed (operation, set-up, maintenance, or other).~~
  - ~~(iii) Type of clutch used on the press (full revolution, part revolution, or direct drive).~~
  - ~~(iv) Type of safeguard(s) being used (two hand control, two hand trip, pull-outs, sweeps, or other). If the safeguard is not described in this section, give a complete description.~~
  - ~~(v) Cause of the accident (repeat of press, safeguard failure, removing stuck part or scrap, no safeguard provided, no safeguard in use, or other).~~
  - ~~(vi) Type of feeding (manual with hands in dies or with hands out of dies, semiautomatic, automatic, or other).~~
  - ~~(vii) Means used to actuate press stroke (foot trip, foot control, hand trip, hand control, or other).~~
  - ~~(viii) Number of operators required for the operation and the number of operators provided with controls and safeguards.]~~

**(1) The employer shall report, within 30 days of the occurrence, all point-of-operation injuries to operators or other employees to either (1) the Director of the Directorate of Standards and Guidance at OSHA, U.S. Department of Labor, Washington, DC 20210 (<http://www.osha.gov/pls/oshaweb/mechanical.html>), or**

**(2) The State agency administering a plan approved by the Assistant Secretary of Labor for Occupational Safety and Health.**

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## Division 2/Q, 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 regulations printed as part of the Code of Federal Regulations, 29 CFR 1910, in the Federal Register:

- (1) 29 CFR 1910.251 Definitions, published 12/14/07, FR vol. 72, no. 240, p. 71061.
- (2) 29 CFR 1910.252 General Requirements, published 9/9/09, FR vol. 74, no. 173, pp. 46350-46361; **amended with OR-OSHA Admin. Order 1-2012, f. and ef. 4/10/12.**
- (3) 29 CFR 1910.253 Oxygen-Fuel Gas Welding and Cutting, published 12/14/07, FR vol. 72, no. 240, p. 71061.
- (4) 29 CFR 1910.254 Arc Welding and Cutting, published 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.

These rules 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) and ORS 656.726(4).

Stats. Implemented: ORS 654.001 through 654.295.

Hist: OR-OSHA Admin. Order 23-1990, f. 9/28/90, ef. 12/1/90.

OR-OSHA Admin. Order 4-1997, f. 4/2/97, ef. 4/2/97.

OR-OSHA Admin. Order 3-1998, f. 7/7/98, ef. 7/7/98.

OR-OSHA Admin. Order 4-2005, f. 12/14/05, ef. 12/14/05.

OR-OSHA Admin. Order 7-2008, f. 5/30/08, ef. 5/30/08.

OR-OSHA Admin. Order 2-2010, f. 2/25/10, ef. 2/25/10.

**OR-OSHA Admin. Order 1-2012, f. 4/10/12, ef. 4/10/12.**

### 2/Q 1910.252(b)(2)(ii)(I)

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(I) Filter lenses must meet the test for transmission of radiant energy prescribed by any of the consensus standards listed in ~~[29 CFR 1910.133(b)(1)]~~ **OAR 437-002-0134(8)(f).**

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### 2/Q 1910.252(b)(3)

...

(3) Protective clothing – General requirements. Employees exposed to the hazards created by welding, cutting, or brazing operations shall be protected by personal protective equipment in accordance with the requirements of ~~[§1910.132 of this part]~~ **OAR 437-002-0134.** Appropriate protective clothing required for any welding operation will vary with the size, nature and location of the work to be performed.

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## SUBDIVISION R – 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 regulations~~rules as~~ printed as part of~~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]~~**12/27/11, FR vol. 76, no. 248, p. 80735.**
- (6) Reserved for 29 CFR 1910.266 Pulpwood Logging. (NOTE: In Oregon, Pulpwood Logging rules are Oregon-initiated rules provided in Division ~~[6]~~**7**, 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; **amended with OR-OSHA Admin. Order 1-2012, f. and ef. 4/10/12.**
- (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]~~**12/27/11, FR vol. 76, no. 248, p. 80735.**
- (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. 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) and 656.726(4).

Stats. Implemented: ORS 654.001 through 654.295.

Hist: APD Admin. Order 10-1988, f. 7/7/88, ef. 7/7/88 (Grain Handling).

OR-OSHA Admin. Order 23-1990, f. 9/28/90, ef. 12/1/90 (Grain Handling).

OR-OSHA Admin. Order 27-1990, f. 12/12/90, ef. 2/1/91 (Tree and Shrub Services).

OR-OSHA Admin. Order 14-1991, f. 10/10/91, ef. 11/1/91 (Textiles, Bakeries, Laundries).

OR-OSHA Admin. Order 7-1993, f. 6/8/93, ef. 8/1/93 (Sawmills).  
OR-OSHA Admin. Order 11-1993, f. 8/4/93, ef. 10/1/93 (Telecommunications).  
OR-OSHA Admin. Order 3-1994, f. 8/1/94, ef. 8/1/94.  
OR-OSHA Admin. Order 3-1996, f. 7/22/96, ef. 7/22/96 (Grain Handling Facilities).  
OR-OSHA Admin. Order 4-1997, f. 4/2/97, ef. 4/2/97.  
OR-OSHA Admin. Order 3-1998, f. 7/7/98, ef. 7/7/98.  
OR-OSHA Admin. Order 3-1999, f. 4/30/99, ef. 4/30/99 (Telecommunications).  
OR-OSHA Admin. Order 4-1999, f. 4/30/99, ef. 4/30/99.  
OR-OSHA Admin. Order 5-2001, f. 4/6/01, ef. 4/6/01 (Elec. Power Gen., Trans. & Dist.).  
OR-OSHA Admin. Order 4-2005, f. 12/14/05, ef. 12/14/05.  
**OR-OSHA Admin. Order 1-2012, f. 4/10/12, ef. 4/10/12.**

## 2/R 1910.268(i)(2)

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(2) Eye protection. Eye protection meeting the requirements of ~~§1910.133(a)(2) through (a)(6)~~ **OAR 437-002-0134(8)(b)** shall be provided and the employer shall ensure its use by employees where foreign objects may enter the eyes due to work operations such as but not limited to:

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## 2/R 1910.272(a)

(a) Scope. This section contains requirements for the control of grain dust fires and explosions, and certain other safety hazards associated with grain handling facilities. It applies in addition to all other relevant provisions of Part 1910 (or Part 1917 at marine terminals).

**Note to paragraph (a): For grain-handling facilities in the marine-terminal industry only, 29 CFR 1910.262 is to be enforced consistent with the interpretations in OSHA Compliance Directive 02-00-066, which is available on OSHA's Web page at [www.osha.gov](http://www.osha.gov).**

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## 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.
- ([4]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);
- ([2]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
- ([3]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
- ([4]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
- ([5]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 aiseways 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 jiggers 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-energized, 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.

(I) 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 cross-tiered 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 off-bearers. 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 unpling 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 over-loading 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~~ **OAR 437-002-0134**, 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.

(A) 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.
- Stat. Auth.: ORS 654.025(2) and ORS 656.726(4).  
 Stats. Implemented: ORS 654.001 to 654.295.  
 Hist: OR-OSHA Admin. Order 7-1994, f. 11/4/94, ef. 1/3/95.  
 OR-OSHA Admin. Order 3-1998, f. 7/7/98, ef. 7/7/98.  
 OR-OSHA Admin. Order 2-2001, f. 2/5/01, ef. 2/5/01.  
**OR-OSHA Admin. Order 1-2012, f. 4/10/12, ef. 4/10/12.**

## SUBDIVISION T – 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 regulations printed as part of the Code of Federal Regulations, 29 CFR 1910, in the Federal Register:

- (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 ~~6/8/11, Federal Register, vol. 76, no. 110, p. 33590~~ **12/27/11, FR vol. 76, no. 248, p. 80735.**
- (14) 29 CFR 1910.441 Effective date, published 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 §1910.401(a)(3) for Recreational Diving Instructors and Diving Guides (Mandatory), published 2/17/04, Federal Register, vol. 69, p. 7351.

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) and 656.726(4).

Stats. Implemented: ORS 654.001 through 654.295.

- Hist: OR-OSHA Admin. Order 5-1993, f. 5/3/93, ef. 6/1/93.  
 OR-OSHA Admin. Order 4-1997, f. 4/2/97, ef. 4/2/97.  
 OR-OSHA Admin. Order 2-2004, f. 5/20/04, ef. 5/20/04.  
 OR-OSHA Admin. Order 4-2006, f. 7/24/06, ef. 7/24/06.  
 OR-OSHA Admin. Order 4-2011, f. 12/8/11, ef. 12/8/11.  
**OR-OSHA Admin. Order 1-2012, f. 4/10/12, ef. 4/10/12.**

## 2/T 1910.440(b)(4)

- ...
- (4) ~~[After the expiration of the retention period of any record required to be kept for five (5) years, the employer shall forward such records to the National Institute for Occupational Safety and Health, Department of Health and Human Services.]~~ The employer shall ~~[also]~~ comply with any additional requirements set forth at 29 CFR 1910.1020~~[(h)]~~.
- ...

## Subdivision Z – 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 regulations printed as part of the Code of Federal Regulations, 29 CFR 1910, in the Federal Register:

- (1) (Reserved) 29 CFR 1910.1000 Air contaminants. 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 6/8/11, Federal Register, vol. 76, no. 110, p. 33590; amended with OR-OSHA Admin. Order 5-2011, f. 12/8/11, ef. 7/1/12; **amended with OR-OSHA Admin. Order 1-2012, f. and ef. 4/10/12.**
- (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 ~~6/8/11, Federal Register, vol. 76, no. 110, p. 33590~~ **12/27/11, FR vol. 76, no. 248, p. 80735.**

- (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 6/8/11, Federal Register, vol. 76, no. 110, p. 33590; amended with OR-OSHA Admin. Order 5-2011, f. 12/8/11, ef. 7/1/12.
- (19) 29 CFR 1910.1018 Inorganic arsenic, published 6/8/11, Federal Register, vol. 76, no. 110, p. 33590; amended with OR-OSHA Admin. Order 5-2011, f. 12/8/11, ef. 7/1/12; **amended with OR-OSHA Admin. Order 1-2012, f. and ef. 4/10/12.**
- (20) 29 CFR 1910.1020 Access to Employee Exposure and Medical Records, published 6/8/11, Federal Register, vol. 76, no. 110, p. 33590.
- Appendix A - Sample Authorization Letter.
- Appendix B - Availability of NIOSH RTECS.
- (21) 29 CFR 1910.1025 Lead, published 6/8/11, Federal Register, vol. 76, no. 110, p. 33590; amended with OR-OSHA Admin. Order 5-2011, f. 12/8/11, ef. 7/1/12; **12/27/11, FR vol. 76, no. 248, p. 80735; amended with OR-OSHA Admin. Order 1-2012, f. and ef. 4/10/12.**
- (22) 29 CFR 1910.1026 Chromium (VI), published 3/17/10, FR vol. 75, no. 51, pp. 12681-12686.
- (23) 29 CFR 1910.1027 Cadmium, published 6/8/11, Federal Register, vol. 76, no. 110, p. 33590; amended with OR-OSHA Admin. Order 5-2011, f. 12/8/11, ef. 7/1/12; **amended with OR-OSHA Admin. Order 1-2012, f. and ef. 4/10/12.**
- (24) 29 CFR 1910.1028 Benzene, and Appendices A, B, C, D, and E, published 6/8/11, Federal Register, vol. 76, no. 110, p. 33590; amended with OR-OSHA Admin. Order 5-2011, f. 12/8/11, ef. 7/1/12; **amended with OR-OSHA Admin. Order 1-2012, f. and ef. 4/10/12.**
- (25) 29 CFR 1910.1029 Coke oven emissions, published 6/8/11, Federal Register, vol. 76, no. 110, p. 33590; amended with OR-OSHA Admin. Order 5-2011, f. 12/8/11, ef. 7/1/12; **amended with OR-OSHA Admin. Order 1-2012, f. and ef. 4/10/12.**
- (26) 29 CFR 1910.1030 Bloodborne pathogens, published 6/8/11, Federal Register, vol. 76, no. 110, P. 33590.
- (27) 29 CFR 1910.1043 Cotton dust, published 6/8/11, Federal Register, vol. 76, no. 110, p. 33590; amended with OR-OSHA Admin. Order 5-2011, f. 12/8/11, ef. 7/1/12.
- (28) 29 CFR 1910.1044 1,2-dibromo-3-chloropropane, published 6/8/11, Federal Register, vol. 76, no. 110, p. 33590; amended with OR-OSHA Admin. Order 5-2011, f. 12/8/11, ef. 7/1/12; **amended with OR-OSHA Admin. Order 1-2012, f. and ef. 4/10/12.**
- (29) 29 CFR 1910.1045 Acrylonitrile, published 6/8/11, Federal Register, vol. 76, no. 110, p. 33590; amended with OR-OSHA Admin. Order 5-2011, f. 12/8/11, ef. 7/1/12; **amended with OR-OSHA Admin. Order 1-2012, f. and ef. 4/10/12.**
- (30) 29 CFR 1910.1047 Ethylene oxide, published 6/8/11, Federal Register, vol. 76, no. 110, p. 33590; amended with OR-OSHA Admin. Order 5-2011, f. 12/8/11, ef. 7/1/12; **amended with OR-OSHA Admin. Order 1-2012, f. and ef. 4/10/12.**

(31) 29 CFR 1910.1048 Formaldehyde, and Appendices A, B, C, D and E, published 12/12/08, FR vol. 73, no. 240, pp. 75568-75589; amended with AO 5-2011, f. 12/8/11, ef. 7/1/12; **amended with OR-OSHA Admin. Order 1-2012, f. and ef. 4/10/12.**

(32) 29 CFR 1910.1050 Methylenedianiline (MDA), published 6/8/11, Federal Register, vol. 76, no. 110, p. 33590; amended with OR-OSHA Admin. Order 5-2011, f. 12/8/11, ef. 7/1/12; **amended with OR-OSHA Admin. Order 1-2012, f. and ef. 4/10/12.**

(33) 29 CFR 1910.1051 1,3-Butadiene, published 6/8/11, Federal Register, vol. 76, no. 110, p. 33590; amended with OR-OSHA Admin. Order 5-2011, f. 12/8/11, ef. 7/1/12; **amended with OR-OSHA Admin. Order 1-2012, f. and ef. 4/10/12.**

(34) 29 CFR 1910.1052 Methylene Chloride, published 12/12/08, FR vol. 73, no. 240, pp. 75568-75589; amended with AO 5-2011, f. 12/8/11, ef. 7/1/12; **amended with OR-OSHA Admin. Order 1-2012, f. and ef. 4/10/12.**

(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 6/20/96, FR vol. 61, no. 46, p. 31427.

(36) 29 CFR 1910.1200 Hazard communication, published 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 6/8/11, Federal Register, vol. 76, no. 110, p. 33590.

(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) and 656.726(4).

Stats. Implemented: ORS 654.001 through 654.295.

Hist: APD Admin. Order 13-1988, f. 8/2/88, ef. 8/2/88 (Benzene).

APD Admin. Order 14-1988, f. 9/12/88, ef. 9/12/88 (Formaldehyde).

APD Admin. Order 18-1988, f. 11/17/88, ef. 11/17/88 (Ethylene Oxide).

APD Admin. Order 4-1989, f. 3/31/89, ef. 5/1/89 (Asbestos-Temp).

APD Admin. Order 6-1989, f. 4/20/89, ef. 5/1/89 (Non-Asbestiforms-Temp).

APD Admin. Order 9-1989, f. 7/7/89, ef. 7/7/89 (Asbestos & Non-Asbestiforms-Perm).

APD Admin. Order 11-1989, f. 7/14/89, ef. 8/14/89 (Lead).

APD Admin. Order 13-1989, f. 7/17/89, ef. 7/17/89 (Air Contaminants).

OR-OSHA Admin. Order 1-1990, f. 1/11/90, ef. 1/11/90 (Formaldehyde-Temp).

OR-OSHA Admin. Order 3-1990, f. 1/19/90, ef. 1/19/90 (Asbestos & Non-Asbestiforms-Temp).

OR-OSHA Admin. Order 6-1990, f. 3/2/90, ef. 3/2/90 (Formaldehyde-Perm).

OR-OSHA Admin. Order 7-1990, f. 3/2/90, ef. 3/2/90 (Asbestos & Non-Asbestiforms-Perm).

OR-OSHA Admin. Order 9-1990, f. 5/8/90, ef. 8/8/90 (Labs).

OR-OSHA Admin. Order 11-1990, f. 6/7/90, ef. 7/1/90 (Air Contaminants).

OR-OSHA Admin. Order 13-1990, f. 6/28/90, ef. 8/1/90 (Asbestos-Temp).

OR-OSHA Admin. Order 14-1990, f. 6/28/90, ef. 8/1/90 (Lead).

OR-OSHA Admin. Order 19-1990, f. 8/31/90, ef. 8/31/90 (Asbestos-Perm).

OR-OSHA Admin. Order 20-1990, f. 9/18/90, ef. 9/18/90 (Lead).

OR-OSHA Admin. Order 21-1990, f. 9/18/90, ef. 9/18/90 (Air Contaminants).

OR-OSHA Admin. Order 7-1991, f. 4/25/91, ef. 4/25/91 (Air Contaminants, Asbestos, Formaldehyde).

OR-OSHA Admin. Order 13-1991, f. 10/10/91, ef. 10/10/91 (Lead, Formaldehyde).

OR-OSHA Admin. Order 15-1991, f. 12/13/91, ef. 12/13/91 (Asbestos).

OR-OSHA Admin. Order 1-1992, f. 1/22/92, ef. 1/22/92 (Formaldehyde).

OR-OSHA Admin. Order 4-1992, f. 4/16/92, ef. 4/16/92 (Formaldehyde).

OR-OSHA Admin. Order 5-1992, f. 4/24/92, ef. 7/1/92 (Bloodborne Pathogens).  
 OR-OSHA Admin. Order 6-1992, f. 5/18/92, ef. 5/18/92 (Asbestos).  
 OR-OSHA Admin. Order 10-1992, f. 9/24/92, ef. 9/24/92 (Lead-temp).  
 OR-OSHA Admin. Order 11-1992, f. 10/9/92, ef. 10/9/92 (Asbestos).  
 OR-OSHA Admin. Order 12-1992, f. 10/13/92, ef. 10/13/92 (Formaldehyde).  
 OR-OSHA Admin. Order 15-1992, f. 12/30/92, ef. 12/30/92 (Air Contaminants, BBP, Labs).  
 OR-OSHA Admin. Order 1-1993, f. 1/22/93, ef. 1/22/93 (Cadmium, MDA).  
 OR-OSHA Admin. Order 6-1993, f. 5/17/93, ef. 5/17/93 (Air Contaminants-Temp).  
 OR-OSHA Admin. Order 12-1993, f. 8/20/93, ef. 11/1/93 (remainder of 2/Z).  
 OR-OSHA Admin. Order 17-1993, f. 11/15/93, ef. 11/15/93 (Air Contaminants-Perm).  
 OR-OSHA Admin. Order 4-1995, f. 3/29/95, ef. 3/29/95 (Asbestos).  
 OR-OSHA Admin. Order 8-1995, f. 8/25/95, ef. 8/25/95 (Asbestos).  
 OR-OSHA Admin. Order 4-1996, f. 9/13/96, ef. 9/13/96 (Lead).  
 OR-OSHA Admin. Order 6-1996, f. 11/29/96, ef. 11/29/96 (Asbestos).  
 OR-OSHA Admin. Order 4-1997, f. 4/2/97, ef. 4/2/97.  
 OR-OSHA Admin. Order 6-1997, f. 5/2/97, ef. 5/2/97.  
 OR-OSHA Admin. Order 8-1997, f. 11/14/97, ef. 11/14/97 (Methylene Chloride).  
 OR-OSHA Admin. Order 1-1998, f. 2/13/98, ef. 2/13/98 (Methylene Chloride).  
 OR-OSHA Admin. Order 3-1998, f. 7/7/98, ef. 7/7/98.  
 OR-OSHA Admin. Order 1-1999, f. 3/22/99, ef. 3/22/99.  
 OR-OSHA Admin. Order 6-2001, f. 5/15/01, ef. 5/15/01 (Cotton Dust).  
 OR-OSHA Admin. Order 10-2001, f. 9/14/01, ef. 10/18/01 (Bloodborne Pathogens).  
 OR-OSHA Admin. Order 12-2001, f. 10/26/01, ef. 10/26/01 (Methylene Chloride).  
 OR-OSHA Admin. Order 1-2005, f. 4/12/05, ef. 4/12/05.  
 OR-OSHA Admin. Order 4-2006, f. 4/24/06, ef. 4/24/06.  
 OR-OSHA Admin. Order 6-2006, f. 8/30/06, ef. 8/30/06.  
 OR-OSHA Admin. Order 10-2006, f. 11/30/06, ef. 11/30/06.  
 OR-OSHA Admin. Order 5-2009, f. 5/29/09, ef. 5/29/09.  
 OR-OSHA Admin. Order 3-2010, f. 6/10/10, ef. 6/15/10.  
 OR-OSHA Admin. Order 4-2011, f. 12/8/11, ef. 12/8/11.  
 OR-OSHA Admin. Order 5-2011, f. 12/8/11, ef. 7/1/12.  
**OR-OSHA Admin. Order 1-2012, f. 4/10/12, ef. 4/10/12.**

2/Z 1910.1001(h)(1)(iii)

...  
 (iii) Face shields, vented goggles, or other appropriate protective equipment which complies with ~~§1910.133 of this Part~~ **OAR 437-002-0134(8)**.  
 ...

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2/Z 1910.1003(d)(2)(iii)

...  
 (iii) 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 paragraph (f)(2) of this section.]~~  
 ...

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2/Z 1910.1018(j)(1)(iii)

...  
 (ix) Face shields or vented goggles when necessary to prevent eye irritation, which comply with the requirements of ~~§1910.133(a)(2) through (6)~~ **OAR 437-002-0134(8)(b) through (e)**; and  
 ...

## 2/Z 1910.1025(g)(1)(iii)

...  
(iii) Face shields, vented goggles, or other appropriate protective equipment which complies with [§1910.133 of this Part] **OAR 437-002-0134(8)**.  
...

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## 2/Z 1910.1025(j)(2)(iv)(B)

...  
(B) That the standard requires temporary medical removal with Medical Removal Protection benefits when an employee's blood lead level [~~exceeds~~ **is at or above**] the numerical criterion for medical removal under paragraph (k)(1)(i) of this section.  
...

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## Lead appendices

...  
Appendix B to §1910.1025 – Employee Standard Summary

### II. Exposure Monitoring – Paragraph (d)

If lead is present in the workplace where you work in any quantity, your employer is required to make an initial determination of whether the action level is **met or** exceeded for any employee. This initial determination must include instrument monitoring of the air for the presence of lead and must cover the exposure of a representative number of employees who are reasonably believed to have the highest exposure levels. If your employer has conducted appropriate air sampling for lead in the past year he may use these results. If there have been any employee complaints of symptoms which may be attributable to exposure to lead or if there is any other information or observations which would indicate employee exposure to lead, this must also be considered as part of the initial determination. This initial determination must have been completed by March 31, 1979. If this initial determination shows that a reasonable possibility exists that any employee may be exposed, without regard to respirators, over the action level (30 µg/m<sup>3</sup>) your employer must set up an air monitoring program to determine the exposure level of every employee exposed to lead at your workplace.

### IV. Respiratory Protection – Paragraph (f)

...  
\*\*\* note at end of (f) \*\*\*

**NOTE: Consult paragraph (f) and OAR 437-002-1025 for the current respiratory protection requirements in Oregon.**

### VIII. Medical Surveillance – Paragraph (j)

Biological monitoring under the standard consists of blood lead level (PbB) and zinc protoporphyrin tests at least every 6 months after the initial PbB test. A zinc proto- porphyrin



(ZPP) test is a very useful blood test which measures an effect of lead on your body. If a worker's PbB **[exceeds]is at or above** 40 µg/100g the monitoring frequency must be increased from every 6 months to at least every 2 months and not reduced until two consecutive PbBs indicate a blood lead level below 40 µg/100g. Each time your PbB is determined to be **[ever]at or above** 40 µg/100g, your employer must notify you of this in writing within five working days of his receipt of the test results. The employer must also inform you that the standard requires temporary medical removal with economic protection when your PbB **[exceeds]is at or above** certain criteria. (See Discussion of Medical Removal Protection – Paragraph (k).) During the first year of the standard, this removal criterion is 80 µg/100g. Anytime your PbB exceeds 80 µg/100g your employer must make available to you a prompt follow-up PbB test to ascertain your PbB. If the two tests both exceed 80 µg/100g and you are temporarily removed, then your employer must make successive PbB tests available to you on a monthly basis during the period of your removal.

Medical examinations beyond the initial one must be made available on an annual basis if your blood lead level **[exceeds]is at or above** 40 µg/100g at any time during the preceding year. The initial examination will provide information to establish a baseline to which subsequent data can be compared. An initial medical examination must also be made available (prior to assignment) for each employee being assigned for the first time to an area where the airborne concentration of lead equals or exceeds the action level. In addition, a medical examination or consultation must be made available as soon as possible if you notify your employer that you are experiencing signs or symptoms commonly associated with lead poisoning or that you have difficulty breathing while wearing a respirator or during a respirator fit test. You must also be provided a medical examination or consultation if you notify your employer that you desire medical advice concerning the effects of current or past exposure to lead on your ability to procreate a healthy child.

...

#### X. Employee Information and Training – Paragraph (l)

Your employer is required to provide an information and training program for all employees exposed to lead **at or** above the action level or who may suffer skin or eye irritation from lead. This program must inform these employees of the specific hazards associated with their work environment, protective measures which can be taken, the danger of lead to their bodies (including their reproductive systems), and their rights under the standard. In addition your employer must make readily available to all employees, including those exposed below the action level, a copy of the standard and its appendices and must distribute to all employees any materials provided to the employer by the Occupational Safety and Health Administration (OSHA).

...

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### Appendix C to §1910.1025 – Medical Surveillance Guidelines

#### Introduction

The standard also provides for a program of biological monitoring and medical surveillance for all employees exposed to levels of inorganic lead **at or** above the action level of 30 µg/m<sup>3</sup> (TWA) for more than 30 days per year.

#### I. Medical Surveillance and Monitoring Requirements for Workers Exposed to Inorganic Lead

Under the standard's ultimate worker removal criteria, a worker is to be removed from any work having any eight hour TWA exposure to lead of 30 µg/m<sup>3</sup> or more whenever either of the following circumstances apply: (1) a blood lead level of 60 µg/100 g or greater is obtained and confirmed by a second follow-up blood lead level performed within two weeks after the employer receives the results of the first blood sampling test, or (2) the average of the previous three blood lead determinations or the average of all blood lead determinations conducted during the previous six months, whichever encompasses the longest time period, equals or exceeds 50 µg/100 g, unless the last blood sample indicates a blood lead level ~~at or~~ below 40 µg/100 g in which case the employee need not be removed. Medical removal is to continue until two consecutive blood lead levels are **less than** 40 µg/100 g or less.

During the first two years that the ultimate removal criteria are being phased in, the return criteria have been set to assure that a worker's blood lead level has substantially declined during the period of removal. From March 1, 1979 to March 1, 1980, the blood lead level requiring employee medical removal is 80 µg/100 g. Workers found to have a confirmed blood lead at this level or greater need only be removed from work having a daily 8 hour TWA exposure to lead at or above 100 µg/m<sup>3</sup>. Workers so removed are to be returned to work when their blood lead levels are at or below 60 µg/100 g of whole blood. From March 1, 1980 to March 1, 1981, the blood lead level requiring medical removal is 70 µg/100 g. During this period workers need only be removed from jobs having a daily 8 hour TWA exposure to lead at or above 50 µg/m<sup>3</sup> and are to be returned to work when a level of 50 µg/100 g is achieved. Beginning March 1, 1981, return depends on a worker's blood lead level declining to **below** 40 µg/100 g of whole blood.

As part of the standard, the employer is required to notify in writing each employee whose blood lead level ~~exceeds~~ **is at or above** 40 µg/100 g. In addition each such employee is to be informed that the standard requires medical removal with MRP benefits, discussed below, when an employee's blood lead level ~~exceeds the~~ **is at or** above defined limits.

|  | Effective date  |                 |                 |                 |   |
|--|-----------------|-----------------|-----------------|-----------------|---|
|  | Mar. 1,<br>1979 | Mar. 1,<br>1980 | Mar. 1,<br>1981 | Mar. 1,<br>1982 | Mar. 1, 1983<br>(final)   |
| A. Blood lead level requiring employee medical removal. (Level must be confirmed with second follow-up blood lead level within two weeks of first report). | ≥80 µg/<br>10 g | ≥70 µg/<br>10 g | ≥60 µg/<br>10 g | ≥60 µg/<br>10 g | ≥60 µg/100 g or average of last three blood samples or all blood samples over a longer time period) is 50 µg/100 g or greater unless last blood sample is <b>less than</b> 40 µg/100 g <del>[or less]</del> . |

|  |                   |                  |                  |                  |                               |
|--|-------------------|------------------|------------------|------------------|-------------------------------|
| B. Frequency which employees exposed to action level of lead (30 µg/m <sup>3</sup> TWA) must have blood level checked (ZPP is also required in each occasion that a blood lead is obtained):<br>1. Last blood lead level less than 40 µg/100 g<br>2. Last blood lead level between 40 µg/100 g and level requiring medical removal (see A above).<br>3. Employees removed from exposure to lead because of an elevated blood lead level. | Every 6 months    | Every 6 months   | Every 6 months   | Every 6 months   | Every 6 months                |
|  | Every 2 months    | Every 2 months   | Every 2 months   | Every 2 months   | Every 2 months                |
|  | Every 1 month     | Every 1 month    | Every 1 month    | Every 1 month    | Every 1 month                 |
| C. Permissible airborne exposure limit for workers removed from work due to an elevated blood lead level (without regard to respirator protection).  | 100 µg/m 8 hr TWA | 50 µg/m 8 hr TWA | 30 µg/m 8 hr TWA | 30 µg/m 8 hr TWA | 30 µg/m 8 hr TWA              |
| D. Blood lead level confirmed with a second blood analysis, at which employee may return to work. Permissible exposure without regard to respirator protection is listed by industry in Table 1.   | .60 µg/100 g      | .50 µg/100 g     | .40 µg/100 g     | .40 µg/100 g     | <u>Less than</u> .40 µg/100 g |

**NOTE:** When medical opinion indicates that an employee is at risk of material impairment from exposure to lead, the physician can remove an employee from exposure [~~exceeding~~ **at or above** the action level (or less) or recommend special protective measures as deemed appropriate and necessary. Medical monitoring during the medical removal period can be more stringent than noted in the table above if the physician so specifies. Return to work or removal of limitations and special protections is permitted when the physician indicates that the worker is no longer at risk of material impairment.

...  
II. Adverse Health Effects of Inorganic Lead

Although the toxicity of lead has been known for 2,000 years, the knowledge of the complex relationship between lead exposure and human response is still being refined. Significant research into the toxic properties of lead continues throughout the world, and it should be anticipated that our understanding of thresholds of effects and margins of safety will be improved in future years. The provisions of the lead standard are founded on two prime medical judgments: first, the prevention of adverse health effects from exposure to lead throughout a working lifetime requires that worker blood lead levels be maintained [~~at or~~ ]below 40 µg/100 g and second, the blood lead levels of workers, male or female, who intend to parent in the near future should be maintained below 30 µg/100 g to minimize adverse reproductive health effects to the parents and developing fetus. The adverse effects of lead on reproduction are being actively researched and OSHA encourages the physician to remain abreast of recent developments in the area to best advise pregnant workers or workers planning to conceive children.

**Summary.** The Occupational Safety and Health Administration's standard for inorganic lead places significant emphasis on the medical surveillance of all workers exposed to levels of inorganic lead **at or** above the action level of 30 µg/m<sup>3</sup> TWA. The physician has a fundamental role in this surveillance program, and in the operation of the medical removal protection program.

...

## 2/Z 1910.1027(i)(1)(iii)

...  
(iii) Face shields, vented goggles, or other appropriate protective equipment that complies with [~~29 CFR 1910.133~~]**OAR 437-002-0134(8)**.  
...

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## 2/Z 1910.1028(h)

...  
(h) Protective clothing and equipment. Personal protective clothing and equipment shall be worn where appropriate to prevent eye contact and limit dermal exposure to liquid benzene. Protective clothing and equipment shall be provided by the employer at no cost to the employee and the employer shall assure its use where appropriate. Eye and face protection shall meet the requirements of [~~29 CFR 1910.133~~]**OAR 437-002-0134(8)**.  
...

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## 2/Z 1910.1029(h)(1)(iii), (v) and (vi)

...  
(iii) Face shields or vented goggles which comply with [~~§1910.133(a)(2) of this part~~]**OAR 437-002-0134(8)**;

...  
(v) Safety shoes which comply with [~~§1910.136 of this part~~]**OAR 437-002-0134(10)**; and  
(vi) Protective helmets which comply with [~~§1910.135 of this part~~]**OAR 437-002-0134(9)**.  
...

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## 2/Z 1910.1044(j)(1)

...  
(1) Provision and use. Where there is any possibility of eye or dermal contact with liquid or solid DBCP, the employer shall provide, at no cost to the employee, and assure that the employee wears impermeable protective clothing and equipment to protect the area of the body which may come in contact with DBCP. Eye and face protection shall meet the requirements of [~~§1910.133 of this part~~]**OAR 437-002-0134(8)**.  
...

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## 2/Z 1910.1045(j)(1)

...  
(1) Provision and use. Where eye or skin contact with liquid AN may occur, the employer shall provide at no cost to the employee, and assure that employees wear, impermeable protective clothing or other equipment to protect any area of the body which may come in contact with liquid AN. The provision of [~~§§1910.132 and 1910.133~~]**OAR 437-002-0134** shall be complied with.  
...

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## 2/Z 1910.1047(g)(4)

...

(4) Protective clothing and equipment. When employees could have eye or skin contact with EtO or EtO solutions, the employer must select and provide, at no cost to the employee, appropriate protective clothing or other equipment in accordance with [~~29 CFR 1910.132 and 1910.133~~]**OAR 437-002-0134** to protect any area of the employee's body that may come in contact with the EtO or EtO solution, and must ensure that the employee wears the protective clothing and equipment provided.

...

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## 2/Z 1910.1048(h)

...

(h) Protective equipment and clothing. Employers shall comply with the provisions of [~~29 CFR 1910.132 and 29 CFR 1910.133~~]**OAR 437-002-0134**. When protective equipment or clothing is provided under these provisions, the employer shall provide these protective devices at no cost to the employee and assure that the employee wears them.

...

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## 2/Z 1910.1050(i)(1)(iv)

...

(iv) Other appropriate protective equipment which comply with [~~§1910.133~~]**OAR 437-002-0134(8)**.

...

---

## 2/Z 1910.1051(i)

...

(i) Protective clothing and equipment. Where appropriate to prevent eye contact and limit dermal exposure to BD, the employer shall provide protective clothing and equipment at no cost to the employee and shall ensure its use. Eye and face protection shall meet the requirements of [~~29 CFR 1910.133~~]**OAR 437-002-0134(8)**.

...

---

## 2/Z 1910.1052(h)(1)

...

(1) Where needed to prevent MC-induced skin or eye irritation, the employer shall provide clean protective clothing and equipment which is resistant to MC, at no cost to the employee, and shall ensure that each affected employee uses it. Eye and face protection shall meet the requirements of [~~29 CFR 1910.133~~]**OAR 437-002-0134(8)** or 29 CFR 1915.153, as applicable.

...

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## 437-002-0373 Oregon Rules for Thiram.

Scope and Application.

These rules include requirements for the control of worker exposure to thiram (Tetramethylthiuram disulfide).

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.

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.

Definitions.

The following definitions shall apply in the application of the thiram rules:

Clean – The absence of dirt or materials which may be harmful to a worker's health.

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.

General Requirements. The following rules shall be applicable to thiram:

Permissible Exposure Limits.

No employee may be exposed to thiram at atmospheric concentrations greater than 0.15 mg/m<sup>3</sup> over any 8-hour period; and

No employee may be exposed to thiram at atmospheric concentrations greater than 0.30 mg/m<sup>3</sup> averaged over any period not exceeding 15 minutes.

Workers shall not be allowed to work more than five days in any seven day period with or around thiram or thiram treated seedlings.

OAR 437-002-0373(3)(a)(C) above is not applicable if a specific thiram control program in addition to these rules and approved by the Administrator has been implemented.

Washing and Worker Hygiene.

Workers shall wash their hands prior to eating or smoking and at the close of work.

Warm (at least 85°F, 29.4°C) wash water and single use hand wiping materials shall be provided for washing.

The warm water and hand wiping materials shall be at fixed work locations or at the planting unit.

Where warm water is not available within 15 minutes travel time, non-alcoholic based waterless hand cleaner shall also be provided.

Every planter or nursery worker shall be advised to bathe or shower daily.

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.

Personal Protective Measures.

Clothing shall be worn by workers to reduce skin contact with thiram to the legs, arms and torso. For those workers who have thiram skin irritations, exposed areas of the body shall be protected by a suitable barrier cream.

Only impervious gloves may be worn by workers.

Workers' hands should be clean of thiram before placing them into gloves.

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.

Reserved.

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 437, Division 2/J, 1910.141, Sanitation, have been provided and are used.

Eye protection according to OAR 437, Division 2/I, ~~1910.133~~ **437-002-0134(8)**, 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.

Respiratory Protection.

Only certified respiratory protection which is applicable and approved by NIOSH shall be provided to workers.

All respirators shall be used and maintained in accordance with OAR 437, Division 2/I, 1010.134, Respiratory Protection.

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.

#### Food Handling.

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.

Crummies or other worker carrying vehicles shall have a clean area for carrying lunches.

The clean area of the vehicle shall be elevated from the floor and not used to carry other than food or other consumable items.

The carrying of lunches, food or other consumable items in tree planting bags is prohibited.

Care shall be taken to ensure that worker exposure to thiram spray, including downwind driftings, is minimized or eliminated.

Workers shall stand upwind when bags that contained thiram or thiram treated seedlings are burned.

#### Thiram Use and Handling.

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.

Thiram treated seedlings shall be allowed to set between the time of spraying and packing.

Seedlings shall be kept moist during packing and whenever possible during planting operations.

Floors where thiram is used shall not be dry swept but instead vacuumed, washed or otherwise cleaned at least daily.

Silica chips used to cover seedling plugs shall be removed at the nursery.

#### Labeling.

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.

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 of 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 (Tetramethylthiuram 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 planting 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 substancia Thiram (Tetramethylthiuram 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. Lave se 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.

Other containers or thiram handling areas shall be signed and labeled in accordance with OAR 437, Division 2/J, General Environmental Controls, 1910.144 and 1910.145.

#### Training.

Each worker engaged in operations where exposure to thiram may occur shall be provided training relating to the hazards of thiram and precautions for its safe use and handling.

The training shall be approved by the Administrator.

The training shall include instruction in:

The nature of the health hazard(s) from chronic exposure to thiram including specifically the potential for birth defects, alcohol intolerance, and drug interaction.

The specific nature of operations which could result in exposure to thiram and the necessary protective steps;

The purpose for, proper use, and limitations of protective devices including respirators and clothing;

The acute toxicity and skin irritation effects of thiram, and the necessary protective steps;

The necessity for and requirements of excellent personal hygiene;

A review of the thiram rules at the worker's first training and indoctrination, and annually thereafter.

A copy of these thiram rules shall be provided to each worker who may be exposed to thiram.

Stat. Auth.: ORS 654.025(2) and 656.726(3).



Hist: WCB Admin. Order, Safety 13-1977 (temp), f. 11/7/77, ef. 11/7/77.  
WCD Admin. Order, Safety 2-1978 (perm), f. 3/6/78 ef. 3/6/78.  
OR-OSHA Admin. Order 12-1993, f. 8/20/93, ef. 11/1/93.  
**OR-OSHA Admin. Order 1-2012, f. 4/10/12, ef. 4/10/12.**

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## 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 regulations printed as part of the Code of Federal Regulations, in the Federal Register:

(1) Subdivision A – GENERAL

- (a) 29 CFR 1926.1 Purpose and Scope, published 4/6/79, FR vol. 44, p. 20940.
- (b) 29 CFR 1926.2 Variances from safety and health standards, published 4/6/79, FR vol. 44, p. 20940.
- (c) 29 CFR 1926.3 Inspections – right of entry, published 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 4/6/79, FR vol. 44, p. 20940.
- (e) 29 CFR 1926.6 Incorporation by reference, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(2) Subdivision B – GENERAL INTERPRETATIONS

- (a) 29 CFR 1926.10 Scope of subpart, published 4/6/79, FR vol. 44, p. 20940.
- (b) 29 CFR 1926.11 Coverage under section 103 of the act distinguished, published 4/6/79, FR vol. 44, p. 20940.
- (c) 29 CFR 1926.12 Reorganization plan No. 14 of 1950, published 4/6/79, FR vol. 44, p. 20940.
- (d) 29 CFR 1926.13 Interpretation of statutory terms, published 4/6/79, FR vol. 44, p. 20940.
- (e) 29 CFR 1926.14 Federal contracts for 'mixed' types of performance, published 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 4/6/79, FR vol. 44, p. 20940.
- (g) 29 CFR 1926.16 Rules of construction, published 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 12/12/08, FR vol. 73, no. 240, pp. 75568-75589.
- (b) 29 CFR 1926.21 Safety training and education, published 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 4/6/79, FR vol. 44, p. 20940.
- (e) 29 CFR 1926.24 Fire protection and prevention, published 4/6/79, FR vol. 44, p. 20940.
- (f) 29 CFR 1926.25 Housekeeping, published 4/6/79, FR vol. 44, p. 20940.
- (g) 29 CFR 1926.26 Illumination, published 4/6/79, FR vol. 44, p. 20940.
- (h) 29 CFR 1926.27 Sanitation, published 4/6/79, FR vol. 44, p. 20940.
- (i) 29 CFR 1926.28 Personal protective equipment, published 4/6/79, FR vol. 44, p. 20940.
- (j) 29 CFR 1926.29 Acceptable certifications, published 4/6/79, FR vol. 44, p. 20940.
- (k) 29 CFR 1926.30 Shipbuilding and ship repairing, published 3/7/96, FR vol. 61, no. 46, p. 9249.
- (l) 29 CFR 1926.31 (Reserved).
- (m) 29 CFR 1926.32 Definitions, published 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 ~~[6/18/98, FR vol. 63, no. 117, p. 33469]~~**12/27/11, FR vol. 76, no. 248, p. 80735.**
- (b) 29 CFR 1926.51 Sanitation, published 6/8/11, Federal Register, vol. 76, no. 110, p. 33590.
- (c) 29 CFR 1926.52 Occupational noise exposure, published 4/6/79, FR vol. 44, p. 20940.
- (d) 29 CFR 1926.53 Ionizing radiation, published 4/6/79, FR vol. 44, p. 20940.
- (e) 29 CFR 1926.54 Nonionizing radiation, published 4/6/79, FR vol. 44, p. 20940.
- (f) 29 CFR 1926.55 Gases, vapors, fumes, dusts, and mists, published 1/10/97, FR vol. 62, no. 7, p. 1619.
- (g) 29 CFR 1926.56 Illumination, published 4/6/79, FR vol. 44, p. 20940.
- (h) 29 CFR 1926.57 Ventilation, published 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 6/20/96, FR vol. 61, p. 31427.
- (k) 29 CFR 1926.60 Methylenedianiline (MDA), published 6/8/11, Federal Register, vol. 76, no. 110, p. 33590; amended with OR-OSHA Admin. Order 5-2011, f. 12/8/11, ef. 7/1/12; **amended with OR-OSHA Admin. Order 1-2012, f. and ef. 4/10/12.**
- (l) 29 CFR 1926.61 Retention of DOT markings, placards and labels, published 6/20/96, FR vol. 61, p. 31427.
- (m) 29 CFR 1926.62 Lead, published 6/8/11, Federal Register, no. 76, no. 110, p. 33590; amended with OR-OSHA Admin. Order 5-2011, f. 12/8/11, ef. 7/1/12; **12/27/11, FR vol. 76, no. 248, p. 80735; amended with OR-OSHA Admin. Order 1-2012, f. and ef. 4/10/12.**
- 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 11/15/07, FR vol. 72, no. 220, p. 64342.
- (b) 29 CFR 1926.100 Head protection, published 4/6/79, FR vol. 44, p. 20940.
- (c) 29 CFR 1926.101 Hearing protection, published 4/6/79, FR vol. 44, p. 20940.
- (d) 29 CFR 1926.102 Eye and face protection, published 6/30/93, FR vol. 58, no. 124, p. 35160.
- (e) 29 CFR 1926.103 Respiratory protection, published 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 4/6/79, FR vol. 44, p. 20940.
- (h) 29 CFR 1926.107 Definitions applicable to this subpart, published 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 4/6/79, FR vol. 44, p. 20940.
- (b) 29 CFR 1926.151 Fire prevention, published 7/11/86, FR vol. 51, p. 25318.
- (c) 29 CFR 1926.152 Flammable and combustible liquids, published 6/30/93, FR vol. 58, no. 124, p. 35162.
- (d) 29 CFR 1926.153 Liquefied petroleum gas (LP-Gas), published 6/30/93, FR vol. 58, no. 124, p. 35170.
- (e) 29 CFR 1926.154 Temporary heating devices, published 4/6/79, FR vol. 44, p. 20940.

- (f) 29 CFR 1926.155 Definitions applicable to this subpart, published 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 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, REPEALED with OR-OSHA Admin. Order 2-2003, f. 1/30/03, ef. 1/30/03.
- (c) 29 CFR 1926.202 Barricades, 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 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 6/30/93, FR vol. 58, no. 124, p. 35173.
- (b) 29 CFR 1926.251 Rigging equipment for material handling, published 6/8/11, Federal Register, vol. 74, no. 110, p. 33590.
- (c) 29 CFR 1926.252 Disposal of waste materials, published 4/6/79, FR vol. 44, p. 20940.
- (9) Subdivision I – TOOLS – HAND AND POWER
- (a) 29 CFR 1926.300 General requirements, published 3/7/96, FR vol. 61, no. 46, p. 9250.
- (b) 29 CFR 1926.301 Hand tools, published 4/6/79, FR vol. 44, p. 20940.
- (c) 29 CFR 1926.302 Power operated hand tools, published 6/30/93, FR vol. 58, no. 124, p. 35175.
- (d) 29 CFR 1926.303 Abrasive wheels and tools, published 6/30/93, FR vol. 58, no. 124, p. 35175.
- (e) 29 CFR 1926.304 Woodworking tools, published 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 6/30/93, FR vol. 58, no. 124, p. 35179.
- (b) 29 CFR 1926.351 Arc welding and cutting, published 7/11/86, FR vol. 51, p. 25318.
- (c) 29 CFR 1926.352 Fire prevention, published 4/6/79, FR vol. 44, p. 20940.
- (d) 29 CFR 1926.353 Ventilation and protection in welding, cutting, and heating, published 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 4/6/79, FR vol. 44, p. 20940.
- (11) Subdivision K – ELECTRICAL
- (a) 29 CFR 1926.400 Introduction, published 7/11/86, FR vol. 51, no. 133, pp. 25294-25335.
- (b) 29 CFR 1926.401 (Reserved)
- (c) 29 CFR 1926.402 Applicability, published 7/11/86, FR vol. 51, no. 133, pp. 25294-25335.
- (d) 29 CFR 1926.403 General requirements, published 7/11/86, FR vol. 51, no. 133, pp. 25294-25335.
- (e) 29 CFR 1926.404 Wiring design and protection, published 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 7/11/86, FR vol. 51, no. 133, pp. 25294-25335.
- (g) 29 CFR 1926.406 Specific purpose equipment and installations, published 7/11/86, FR vol. 51, no. 133, pp. 25294-25335.
- (h) 29 CFR 1926.407 Hazardous (classified) locations, published 7/11/86, FR vol. 51, no. 133, pp. 25294-25335.
- (i) 29 CFR 1926.408 Special systems, published 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 8/12/96, FR vol. 61, no. 156, p. 41738.
- (m) 29 CFR 1926.417 Lockout and tagging of circuits, published 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 7/11/86, FR vol. 51, no. 133, pp. 25294-25335.
- (q) 29 CFR 1926.432 Environmental deterioration of equipment, published 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 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 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 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
  - (b) 29 CFR 1926.451 General requirements, published 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 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 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, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
  - (b) 29 CFR 1926.501 Duty to have fall protection, published 8/9/94, FR vol. 59, no. 152, p. 40732-40733; amended with AO 6-2002, f. and ef. 7/19/02.
  - (c) 29 CFR 1926.502 Fall protection systems criteria and practices, published 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. REPEALED with AO 6-2002, f. and ef. 7/19/02, replaced with OI.
  - (e) Appendix A to Subpart M Determining Roof Widths, published 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 – HELICOPTERS, HOISTS, ELEVATORS, AND CONVEYORS

(a) 29 CFR 1926.550 (Reserved).

(b) 29 CFR 1926.551 Helicopters, published 4/6/79, FR vol. 44, p. 20940.

(c) 29 CFR 1926.552 Material hoists, personnel hoists, and elevators, published 4/6/79, FR vol. 44, p. 20940.

(d) 29 CFR 1926.553 Base-mounted drum hoist, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(e) 29 CFR 1926.554 Overhead hoists, published 4/6/79, FR vol. 44, p. 20940.

(f) 29 CFR 1926.555 Conveyors, published 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 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(b) 29 CFR 1926.601 Motor vehicles, REPEALED by OR-OSHA Admin. Order 6-2007, f. 9/26/07, ef. 9/26/07.

(c) 29 CFR 1926.602 Material handling equipment, published 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 4/6/79, FR vol. 44, p. 20940.

(e) 29 CFR 1926.604 Site clearing, published 7/22/77, FR vol. 42, p. 37674.

(f) 29 CFR 1926.605 Marine operations and equipment, published 4/6/79, FR vol. 44, p. 20940.

(g) 29 CFR 1926.606 Definitions applicable to this subpart, published 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 10/31/89, FR vol. 54, no. 209, pp. 45959-45961.

(b) 29 CFR 1926.651 General requirements, published 8/9/94, FR vol. 59, no. 152, p. 40730.

(c) 29 CFR 1926.652 Requirements for protective systems, published 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 10/18/90, FR vol. 55, no. 202, p. 42326.

(b) 29 CFR 1926.701 General requirements, published 8/9/94, FR vol. 59, no. 152, p. 40730.

(c) 29 CFR 1926.702 Requirements for equipment and tools, published 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 10/5/89, FR vol. 54, no. 192, p. 41088.

(f) 29 CFR 1926.705 Requirements for lift-slab construction operations, published 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 7/17/01, FR vol. 66, no. 137, p. 37137.

(b) 29 CFR 1926.751 Definitions, published 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 7/17/01, FR vol. 66, no. 137, p. 37137.

- (d) 29 CFR 1926.753 Hoisting and rigging, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (e) 29 CFR 1926.754 Structural steel assembly, published 4/3/06, FR vol. 71, no. 63, p. 16669.
- (f) 29 CFR 1926.755 Column anchorage, published 7/17/01, FR vol. 66, no. 137, p. 37137.
- (g) 29 CFR 1926.756 Beams and columns, published 7/17/01, FR vol. 66, no. 137, p. 37137.
- (h) 29 CFR 1926.757 Open web steel joists, published 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 7/17/01, FR vol. 66, no. 137, p. 37137.
- (j) 29 CFR 1926.759 Falling object protection, published 7/17/01, FR vol. 66, no. 137, p. 37137.
- (k) 29 CFR 1926.760 Fall protection, published 7/17/01, FR vol. 66, no. 137, p. 37137; amended with AO 8-2003, f. 12/30/03, ef. 1/1/04.
- (l) 29 CFR 1926.761 Training, published 12/12/08, FR vol. 73, no. 240, pp. 75568-75589.
- (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 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 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), 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 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 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 §1926.760(d), 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 §1926.756(c)(1), published 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 8/9/10, FR vol. 75, no. 152, pp.47906-48177.
  - (b) 29 CFR 1926.801 Caissons, published 4/6/79, FR vol. 44, p. 20940.
  - (c) 29 CFR 1926.802 Cofferdams, published 4/6/79, FR vol. 44, p. 20940.
  - (d) 29 CFR 1926.803 Compressed air, published 7/11/86, FR vol. 51, p. 25318.
  - (e) 29 CFR 1926.804 Definitions applicable to this subpart, published 4/6/79, FR vol. 44, p. 20940.
  - (f) Appendix A to Subpart S Decompression Tables, published 4/6/79, FR vol. 44, p. 20940.
- (20) Subdivision T – DEMOLITION
  - (a) 29 CFR 1926.850 Preparatory operations, published 4/6/79, FR vol. 44, p. 20940.
  - (b) 29 CFR 1926.851 Stairs, passageways, and ladders, published 4/6/79, FR vol. 44, p. 20940.
  - (c) 29 CFR 1926.852 Chutes, published 4/6/79, FR vol. 44, p. 20940.
  - (d) 29 CFR 1926.853 Removal of materials through floor openings, published 4/6/79, FR vol. 44, p. 20940.

- (e) 29 CFR 1926.854 Removal of walls, masonry sections, and chimneys, published 4/6/79, FR vol. 44, p. 20940.
- (f) 29 CFR 1926.855 Manual removal of floors, published 4/6/79, FR vol. 44, p. 20940.
- (g) 29 CFR 1926.856 Removal of walls, floors, and materials with equipment, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (h) 29 CFR 1926.857 Storage, published 4/6/79, FR vol. 44, p. 20940.
- (i) 29 CFR 1926.858 Removal of steel construction, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (j) 29 CFR 1926.859 Mechanical demolition, published 4/6/79, FR vol. 44, p. 20940.
- (k) 29 CFR 1926.860 Selective demolition by explosives, published 4/6/79, FR vol. 44, p. 20940.
- (21) Subdivision U – BLASTING AND USE OF EXPLOSIVES
- (a) 29 CFR 1926.900 General provisions, published 4/6/79, FR vol. 44, p. 20940.
- (b) 29 CFR 1926.901 Blaster qualifications, published 4/6/79, FR vol. 44, p. 20940.
- (c) 29 CFR 1926.902 Surface transportation of explosives, published 6/30/93, FR vol. 58, no. 124, p. 35311.
- (d) 29 CFR 1926.903 Underground transportation of explosives, published 4/6/79, FR vol. 44, p. 20940.
- (e) 29 CFR 1926.904 Storage of explosives and blasting agents, published 6/30/93, FR vol. 58, no. 124, p. 35311.
- (f) 29 CFR 1926.905 Loading of explosives or blasting agents, published 6/30/93, FR vol. 58, no. 124, p. 35184.
- (g) 29 CFR 1926.906 Initiation of explosive charges – electric blasting, published 6/18/98, FR vol. 63, no. 117, p. 33469.
- (h) 29 CFR 1926.907 Use of safety fuse, published 4/6/79, FR vol. 44, p. 20940.
- (i) 29 CFR 1926.908 Use of detonating cord, published 4/6/79, FR vol. 44, p. 20940.
- (j) 29 CFR 1926.909 Firing the blast, published 4/6/79, FR vol. 44, p. 20940.
- (k) 29 CFR 1926.910 Inspection after blasting, published 4/6/79, FR vol. 44, p. 20940.
- (l) 29 CFR 1926.911 Misfires, published 4/6/79, FR vol. 44, p. 20940.
- (m) 29 CFR 1926.912 Underwater blasting, published 4/6/79, FR vol. 44, p. 20940.
- (n) 29 CFR 1926.913 Blasting in excavation work under compressed air, published 4/6/79, FR vol. 44, p. 20940.
- (o) 29 CFR 1926.914 Definitions applicable to this subpart, published 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 4/6/79, FR vol. 44, p. 20940.
- (b) 29 CFR 1926.951 Tools and protective equipment, published 8/9/94, FR vol. 59, no. 152, p. 40730.
- (c) 29 CFR 1926.952 Mechanical equipment, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (d) 29 CFR 1926.953 Material handling, published 4/6/79, FR vol. 44, p. 20940.
- (e) 29 CFR 1926.954 Grounding for protection of employees, published 4/6/79, FR vol. 44, p. 20940.
- (f) 29 CFR 1926.955 Overhead lines, published 4/6/79, FR vol. 44, p. 20940.
- (g) 29 CFR 1926.956 Underground lines, published 4/6/79, FR vol. 44, p. 20940.
- (h) 29 CFR 1926.957 Construction in energized substations, published 4/6/79, FR vol. 44, p. 20940.
- (i) 29 CFR 1926.958 External load helicopters, published 4/6/79, FR vol. 44, p. 20940.
- (j) 29 CFR 1926.959 Lineman’s body belts, safety straps, and lanyards, published 4/6/79, FR vol. 44, p. 20940.
- (k) 29 CFR 1926.960 Definitions applicable to this subpart, published 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 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 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 7/20/06, FR vol. 71, no. 139, p. 41127..

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(24) Subdivision X – STAIRWAYS AND LADDERS

(a) 29 CFR 1926.1050 Scope, application and definitions applicable to this Subdivision, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(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 8/23/91, FR vol. 56, no. 164, pp. 41793-41794.

(d) 29 CFR 1926.1053 Ladders, published 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 6/8/11, Federal Register, vol. 76, no. 110, p. 33590; amended with OR-OSHA Admin. Order 5-2011, f. 12/8/11, ef. 7/1/12.

(b) 29 CFR 1926.1126 Chromium (VI), published; 3/17/10, FR vol. 75, no. 51, pp. 12681-12686.

(c) 29 CFR 1926.1127 Cadmium, published 6/8/11, Federal Register, vol. 76, no. 110, p. 33590; amended with OR-OSHA Admin. Order 5-2011, f. 12/8/11, ef. 7/1/12; **amended with OR-OSHA Admin. Order 1-2012, f. and ef. 4/10/12.**

(d) 29 CFR 1926.1152 Methylene Chloride, published 12/18/97, FR vol. 62, no. 243, p. 66275.

(26) Subdivision AA – (Reserved)

(27) Subdivision BB – (Reserved)

(28) Subdivision CC – Cranes and Derricks in Construction

(a) 29 CFR 1926.1400 Scope, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(b) 29 CFR 1926.1401 Definitions, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(c) 29 CFR 1926.1402 Ground conditions, published 8/9/10, FR vol. 75, no. 152. Pp. 47906-48177.

(d) 29 CFR 1926.1403 Assembly/Disassembly – selection of manufacturer or employer procedures, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(e) 29 CFR 1926.1404 Assembly/Disassembly – general requirements (applies to all assembly and disassembly operations), published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(f) 29 CFR 1926.1405 Disassembly – additional requirements for dismantling of booms and jibs (applies to both the use of manufacturer procedures and employer procedures), published 8/9/10, FR vol. 75, no. 152. Pp. 47906-48177.

(g) 29 CFR 1926.1406 Assembly/Disassembly – employer procedures – general requirements, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.



- (h) 29 CFR 1926.1407 Power line safety (up to 350 kV) – assembly and disassembly, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (i) 29 CFR 1926.1408 Power line safety (up to 350 kV) – equipment operations, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (j) 29 CFR 1926.1409 Power line safety (over 35 kV), published 8/9/10, FR vol. 75, vol. 152, pp. 47906-48177.
- (k) 29 CFR 1926.1410 Power line safety (all voltages) – equipment operations closer than the Table A zone, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (l) 29 CFR 1926.1411 Power line safety – while traveling, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (m) 29 CFR 1926.1412 Inspections, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (n) 29 CFR 1926.1413 Wire rope – inspection, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (o) 29 CFR 1926.1414 Wire rope – selection and installation criteria, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (p) 29 CFR 1926.1415 Safety devices, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (q) 29 CFR 1926.1416 Operational aids, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (r) 29 CFR 1926.1417 Operation, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (s) 29 CFR 1926.1418 Authority to stop operation, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (t) 29 CFR 1926.1419 Signals – general requirements, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (u) 29 CFR 1926.1420 Signals – radio, telephone or other electronic transmission of signals, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (v) 29 CFR 1926.1421 Signals – voice signals – additional requirements, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (w) 29 CFR 1926.1422 Signals – hand signal chart, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (x) 29 CFR 1926.1423 Fall protection, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (y) 29 CFR 1926.1424 Work area control, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (z) 29 CFR 1926.1425 Keeping clear of the load, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (aa) 29 CFR 1926.1426 Free fall and controlled load lowering, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (bb) 29 CFR 1926.1427 Operator qualification and certification, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (cc) 29 CFR 1926.1428 Signal person qualifications, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (dd) 29 CFR 1926.1429 Qualifications of maintenance & repair employees, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (ee) 29 CFR 1926.1430 Training, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (ff) 29 CFR 1926.1431 Hoisting personnel, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (gg) 29 CFR 1926.1432 Multiple-crane/derrick lifts – supplemental requirements, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (hh) 29 CFR 1926.1433 Design, construction and testing, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (ii) 29 CFR 1926.1434 Equipment modifications, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

- (jj) 29 CFR 1926.1435 Tower cranes, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (kk) 29 CFR 1926.1436 Derricks, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (ll) 29 CFR 1926.1437 Floating cranes/derricks and land cranes/derricks on barges, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (mm) 29 CFR 1926.1438 Overhead & gantry cranes, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (nn) 29 CFR 1926.1439 Dedicated pile drivers, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (oo) 29 CFR 1926.1440 Sideboom cranes, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (pp) 29 CFR 1926.1441 Equipment with a rated hoisting/lifting capacity of 2,000 pounds or less, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (qq) 29 CFR 1926.1442 Severability, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
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- (ss) Appendix B to Subdivision CC of 1926 – Assembly/Disassembly – Sample Procedures for Minimizing the Risk of Unintended Dangerous Boom Movement, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (tt) Appendix C to Subdivision CC of 1926 – Operator Certification – Written Examination – Technical Knowledge Criteria, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (29) Subdivision DD – Cranes and Derricks Used in Demolition and Underground Construction, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (a) 29 CFR 1926.1500 Scope, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.
- (b) 29 CFR 1926.1501 Cranes and Derricks, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

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) and 656.726(4).
- Stats. Implemented: ORS 654.001 through 654.295.
- Hist: APD Admin. Order 5-1989, f. 3/31/89, ef. 5/1/89 (temp).
- APD Admin. Order 8-1989, f. 7/7/89, ef. 7/7/89 (perm).
- APD Admin. Order 14-1989, f. 7/20/89, ef. 8/1/89 (temp).
- APD Admin. Order 15-1989, f. 9/13/89, ef. 9/13/89 (perm).
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- OR-OSHA Admin. Order 2-1989, f. 10/17/89, ef. 10/17/89.
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**OR-OSHA Admin. Order 1-2012, f. 4/10/12, ef. 4/10/12.**

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## 3/D 1926.50 Ap A

### Appendix A to §1926.50 – First Aid Kits (Non-mandatory)

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In a similar fashion, employers who have unique or changing first-aid needs in their workplace, may need to enhance their first-aid kits. The employer can use the OSHA [200]300 log, OSHA [404's]301 log, or other reports to identify these unique problems. Consultation from the local fire/rescue department, appropriate medical professional, or local emergency room may be

helpful to employers in these circumstances. By assessing the specific needs of their workplace, employers can ensure that reasonably anticipated supplies are available. Employers should assess the specific needs of their worksite periodically and augment the first-aid kit appropriately.

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### 3/D 1926.60(j)(1)(iv)

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(iv) Other appropriate protective equipment which comply with ~~[29 CFR 1910.133]~~**OAR 437-002-0134(8)**.

...

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### 3/D 1926.62(g)(1)(iii)

...

(iii) Face shields, vented goggles, or other appropriate protective equipment which complies with ~~[\S1910.133 of this chapter]~~**OAR 437-002-0134(8)**.

...

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### 3/D 1926.62(j)(2)(B)

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(B) the employer shall notify each employee whose blood lead level ~~[exceeds]~~**is at or above** 40 µg/dl that the standard requires temporary medical removal with Medical Removal Protection benefits when an employee's blood lead level ~~[exceeds]~~**is at or above** the numerical criterion for medical removal under paragraph (k)(1)(i) of this section.

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## 3/D Lead appendices

### **Appendix A to §1926.62 Substance Data Sheet For Occupational Exposure to Lead**

Once your blood lead level climbs ~~[above]~~**to** 40 µg/dl, your risk of disease increases. There is a wide variability of individual response to lead, thus it is difficult to say that a particular BLL in a given person will cause a particular effect. Studies have associated fatal encephalopathy with BLLs as low as 150 µg/dl. Other studies have shown other forms of diseases in some workers with BLLs well below 80 µg/dl. Your BLL is a crucial indicator of the risks to your health, but one other factor is also extremely important. This factor is the length of time you have had elevated BLLs. The longer you have an elevated BLL, the greater the risk that large quantities of lead are being gradually stored in your organs and tissues (body burden). The greater your overall body burden, the greater the chances of substantial permanent damage. The best way to prevent all forms of lead-related impairments and diseases – both short term and long term – is to maintain your BLL below 40 µg/dl. The provisions of the standard are designed with this end in mind.

## Appendix B to §1926.62 Employee Standard Summary

### II. Exposure Assessment – Paragraph (D)

If this initial determination shows that a reasonable possibility exists that any employee may be exposed, without regard to respirators, at or over the action level, your employer must set up an air monitoring program to determine the exposure level representative of each employee exposed to lead at your workplace. In carrying out this air monitoring program, your employer is not required to monitor the exposure of every employee, but he or she must monitor a representative number of employees and job types. Enough sampling must be done to enable each employee's exposure level to be reasonably represent full shift exposure. In addition, these air samples must be taken under conditions which represent each employee's regular, daily exposure to lead. Sampling performed in the past 12 months may be used to determine exposures at or above the action level if such sampling was conducted during work activities essentially similar to present work conditions.

Your exposure must be rechecked by monitoring, at least every six months if your exposure is at or over the action level but below the PEL. Your employer may discontinue monitoring for you if 2 consecutive measurements, taken at least 7 days apart, are ~~[at or]~~ below the action level. Air monitoring must be repeated every 3 months if you are exposed over the PEL. Your employer must continue monitoring for you at this frequency until 2 consecutive measurements, taken at least 7 days apart, are at or below the PEL but at or above the action level, at which time your employer must repeat monitoring of your exposure every six months and may discontinue monitoring only after your exposure drops ~~[to or]~~ below the action level. However, whenever there is a change of equipment, process, control, or personnel or a new type of job is added at your workplace which may result in new or additional exposure to lead, your employer must perform additional monitoring.

### VIII. Medical Surveillance – Paragraph (J)

All medical surveillance required by the interim final standard must be performed by or under the supervision of a licensed physician. The employer must provide required medical surveillance without cost to employees and at a reasonable time and place. The standard's medical surveillance program has two parts – periodic biological monitoring and medical examinations. Your employer's obligation to offer you medical surveillance is triggered by the results of the air monitoring program. Full medical surveillance must be made available to all employees who are or may be exposed to lead ~~[in excess of]~~ at or above the action level for more than 30 days a year and whose blood lead level ~~[exceeds]~~ is at or above 40 µg/dl. Initial medical surveillance consisting of blood sampling and analysis for lead and zinc protoporphyrin must be provided to all employees exposed at any time (1 day) at or above the action level.

If your BLL ~~[exceeds]~~ is at or above 40 µg/dl the monitoring frequency must be increased from every 6 months to at least every 2 months and not reduced until two consecutive BLLs indicate a blood lead level below 40 µg/dl. Each time your BLL is determined to be ~~[over]~~ at or above 40 µg/dl, your employer must notify you of this in writing within five working days of his or her receipt of the test results. The employer must also inform you that the standard requires temporary medical removal with economic protection when your BLL ~~[exceeds]~~ is at or above 50 µg/dl. (See Discussion of Medical Removal Protection – Paragraph (k).) Anytime your BLL ~~[exceeds]~~ is at or above 50 µg/dl your employer must make available to you within two weeks of receipt of these test results a second follow-up BLL test to confirm your BLL. If the two tests both ~~[exceed]~~ are at or above 50 µg/dl, and you are temporarily removed, then your employer

must make successive BLL tests available to you on a monthly basis during the period of your removal.

Medical examinations beyond the initial one must be made available on an annual basis if your blood lead level [~~exceeds~~ **is at or above** 40 µg/dl at any time during the preceding year and you are being exposed **at or** above the airborne action level of 30 µg/m<sup>3</sup> for 30 or more days per year. The initial examination will provide information to establish a baseline to which subsequent data can be compared.

#### **X. Employee Information and Training – Paragraph (L)**

Your employer is required to provide an information and training program for all employees exposed to lead **at or** above the action level or who may suffer skin or eye irritation from lead compounds such as lead arsenate or lead azide. The program must train these employees regarding the specific hazards associated with their work environment, protective measures which can be taken, including the contents of any compliance plan in effect, the danger of lead to their bodies (including their reproductive systems), and their rights under the standard. All employees must be trained prior to initial assignment to areas where there is a possibility of exposure [~~over~~ **at or above** the action level.

This training program must also be provided at least annually thereafter unless further exposure **at or** above the action level will not occur.

### **Appendix C to §1926.62 Medical Surveillance Guidelines**

#### **Introduction**

The standard also provides for a program of biological monitoring for employees exposed to lead **at or** above the action level at any time, and additional medical surveillance for all employees exposed to levels of inorganic lead **at or** above 30 µg/m<sup>3</sup> (TWA) for more than 30 days per year and whose BLL [~~exceeds~~ **is at or above** 40 µg/dl. The purpose of this document is to outline the medical surveillance provisions of the interim standard for inorganic lead in construction, and to provide further information to the physician regarding the examination and evaluation of workers exposed to inorganic lead.

#### **I. Medical Surveillance and Monitoring Requirements for Workers Exposed to Inorganic Lead**

Under the interim final standard for inorganic lead in the construction industry, initial medical surveillance consisting of biological monitoring to include blood lead and ZPP level determination shall be provided to employees exposed to lead at or above the action level on any one day. In addition, a program of biological monitoring is to be made available to all employees exposed **at or** above the action level at any time and additional medical surveillance is to be made available to all employees exposed to lead **at or** above 30 µg/m<sup>3</sup> TWA for more than 30 days each year and whose BLL [~~exceeds~~ **is at or above** 40 µg/dl. This program consists of periodic blood sampling and medical evaluation to be performed on a schedule which is defined by previous laboratory results, worker complaints or concerns, and the clinical assessment of the examining physician.

Under this program, the blood lead level (BLL) of all employees who are exposed to lead **at or** above 30 µg/m<sup>3</sup> for more than 30 days per year or whose blood lead is **at or** above 40 µg/dl but exposed for no more than 30 days per year is to be determined at least every two months for

the first six months of exposure and every six months thereafter. The frequency is increased to every two months for employees whose last blood lead level was 40 µg/dl or above. For employees who are removed from exposure to lead due to an elevated blood lead, a new blood lead level must be measured monthly. A zinc protoporphyrin (ZPP) measurement is strongly recommended on each occasion that a blood lead level measurement is made.

An annual medical examination and consultation performed under the guidelines discussed in Section 3 is to be made available to each employee exposed **at or above** 30 µg/m<sup>3</sup> for more than 30 days per year for whom a blood test conducted at any time during the preceding 12 months indicated a blood lead level at or above 40 µg/dl. Also, an examination is to be given to all employees prior to their assignment to an area in which airborne lead concentrations reach or exceed the 30 µg/m<sup>3</sup> for more than 30 days per year. In addition, a medical examination must be provided as soon as possible after notification by an employee that the employee has developed signs or symptoms commonly associated with lead intoxication, that the employee desires medical advice regarding lead exposure and the ability to procreate a healthy child, or that the employee has demonstrated difficulty in breathing during a respirator fitting test or during respirator use. An examination is also to be made available to each employee removed from exposure to lead due to a risk of sustaining material impairment to health, or otherwise limited or specially protected pursuant to medical recommendations.

Under the standard's ultimate worker removal criteria, a worker is to be removed from any work having an eight hour TWA exposure to lead ~~of~~ **at or above** 30 µg/m<sup>3</sup> when his or her blood lead level reaches 50 µg/dl and is confirmed by a second follow-up blood lead level performed within two weeks after the employer receives the results of the first blood sampling test. Return of the employee to his or her job status depends on a worker's blood lead level declining ~~to~~ **below** 40 µg/dl.

As part of the interim standard, the employer is required to notify in writing each employee whose blood lead level ~~exceeds~~ **is at or above** 40 µg/dl. In addition each such employee is to be informed that the standard requires medical removal with MRP benefits, discussed below, when an employee's blood lead level exceeds the above defined limit.

## **II. Adverse Health Effects of Inorganic Lead**

Although the toxicity of lead has been known for 2,000 years, the knowledge of the complex relationship between lead exposure and human response is still being refined. Significant research into the toxic properties of lead continues throughout the world, and it should be anticipated that our understanding of thresholds of effects and margins of safety will be improved in future years. The provisions of the lead standard are founded on two prime medical judgments: First, the prevention of adverse health effects from exposure to lead throughout a working lifetime requires that worker blood lead levels be maintained ~~at or~~ below 40 µg/dl and second, the blood lead levels of workers, male or female, who intend to parent in the near future should be maintained below 30 µg/dl to minimize adverse reproductive health effects to the parents and developing fetus. The adverse effects of lead on reproduction are being actively researched and OSHA encourages the physician to remain abreast of recent developments in the area to best advise pregnant workers or workers planning to conceive children.

## **5. Reproductive effects.**

There is little direct data on damage to the fetus from exposure to lead but it is generally assumed that the fetus and newborn would be at least as susceptible to neurological damage as young children. Blood lead levels of 50-60 µg/dl in children can cause significant neurobehavioral impairments and there is evidence of hyper~~act~~ivity at blood levels as low as 25

µg/dl. Given the overall body of literature concerning the adverse health effects of lead in children, OSHA feels that the blood lead level in children should be maintained below 30 µg/dl with a population mean of 15 µg/dl. Blood lead levels in the fetus and newborn likewise should not exceed 30 µg/dl.

Summary. The Occupational Safety and Health Administration's interim standard for inorganic lead in the construction industry places significant emphasis on the medical surveillance of all workers exposed to levels of inorganic lead **at or** above 30 µg/m<sup>3</sup> TWA. The physician has a fundamental role in this surveillance program, and in the operation of the medical removal protection program.

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**437-003-0875 Additional Rules.** Life lines and lanyards shall comply with the requirements of OAR 437-002-~~0425~~**0134(5)** in Division 2/I, Personal Protective Equipment.

Stat. Auth.: ORS 654.025(2) and 656.726(~~3~~**4**).

**Stats. Implemented: ORS 654.001 through 654.295.**

Hist: APD Admin. Order 8-1989, f. 7/7/89, ef. 7/7/89.

**OR-OSHA Admin. Order 1-2012, f. 4/10/12, ef. 4/10/12.**

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3/Z 1926.1127(i)(1)(iii)

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(iii) Face shields, vented goggles, or other appropriate protective equipment that complies with ~~29 CFR 1910.133~~**OAR 437-002-0134(8)**.

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## DIVISION 5, MARITIME ACTIVITIES

### PART 1915 – 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 regulations printed as part of the Code of Federal Regulations, 29 CFR 1915, in the Federal Register:

(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 7/3/02, FR vol. 67, no. 128, p. 44541.

(e) 29 CFR 1915.5. Incorporation by reference, published 5/2/11, Federal Register vol. 76, no. 84, p. 24576.

(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 7/25/94, FR vol. 59, p. 37856.

(h) 29 CFR 1915.9. Compliance duties owed to each employee, published 12/12/08, FR vol. 73, no. 240, pp. 75568-75589.

(2) Subdivision B

(a) 29 CFR 1915.11. Scope, application and definitions applicable to this Subpart, published 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 3/16/95, FR vol. 60, no. 51, p. 14218.

(c) 29 CFR 1915.13. Cleaning and other cold work, published 7/25/94, FR vol. 59, p. 37859.

(d) 29 CFR 1915.14. Hot work, published 7/3/02, FR vol. 67, no. 128, p. 44541.

(e) 29 CFR 1915.15. Maintenance of safe conditions, published 7/3/02, FR vol. 67, no. 128, p. 44541.

(f) 29 CFR 1915.16. Warning signs and labels, published 7/25/94, FR vol. 59, p. 37861.

Appendix A to Subpart B published 6/8/11, Federal Register, vol. 76, no. 110, p. 33590.

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 5/24/96, FR vol. 61, no. 102, p. 26351.

(c) 29 CFR 1915.33. Chemical paint & preservative remover, published 5/24/96, FR vol. 61, no. 102, p. 26351.

(d) 29 CFR 1915.34. Mechanical paint removers, published 5/24/96, FR vol. 61, no. 102, p. 26351.

(e) 29 CFR 1915.35. Painting, published 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 7/3/02, FR vol. 67, no. 128, p. 44541.

(b) 29 CFR 1915.52. Fire prevention. 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 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 7/3/02, FR vol. 67, no. 128, p. 44541.
  - (b) 29 CFR 1915.72. Ladders, published 7/3/02, FR vol. 67, no. 128, p. 44541.
  - (c) 29 CFR 1915.73. Guarding of deck openings and edges, published 7/3/02, FR vol. 67, no. 128, p. 44541.
  - (d) 29 CFR 1915.74. Access to vessels, published 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 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 amended 7/3/02, FR vol. 67, no. 128, p. 44541.
- (6) Subdivision F
  - (a) 29 CFR 1915.80 Scope, application, definitions and effective dates, published 5/2/11, Federal Register vol. 76, no. 84, p. 24576.
  - (b) 29 CFR 1915.81 Housekeeping, published 5/2/11, Federal Register vol. 76, no. 84, p. 24576.
  - (c) 29 CFR 1915.82 Lighting, published 5/2/11, Federal Register vol. 76, no. 84, p. 24576.
  - (d) 29 CFR 1915.83 Utilities, published 5/2/11, Federal Register vol. 76, no. 84, p. 24576.
  - (e) 29 CFR 1915.84 Working alone, published 5/2/11, Federal Register vol. 76, no. 84, p. 24576.
  - (f) 29 CFR 1915.85 Vessel radar and communication systems, published 5/2/11, Federal Register vol. 76, no. 84, p. 24576.
  - (g) 29 CFR 1915.86 Lifeboats, published 5/2/11, Federal Register vol. 76, no. 84, p. 24576.
  - (h) 29 CFR 1915.87 Medical services and first aid, published 5/2/11, Federal Register vol. 76, no. 84, p. 24576.
  - (i) 29 CFR 1915.88 Sanitation, published 5/2/11, Federal Register vol. 76, no. 84, p. 24576.
  - (j) 29 CFR 1915.89 Control of hazardous energy (lockout/tagout), published 5/2/11, Federal Register vol. 76, no. 84, p. 24576.
  - (k) 29 CFR 1915.90 Safety color code for marking physical hazards, published 5/2/11, Federal Register vol. 76, no. 84, p. 24576.
  - (l) 29 CFR 1915.91. Accident prevention signs and tags, published 5/2/11, Federal Register vol. 76, no. 84, p. 24576.
  - (m) 29 CFR 1915.92. Retention of DOT markings, placards, and labels, published 5/2/11, Federal Register vol. 76, no. 84, p. 24576.
  - (n) 29 CFR 1915.93. Motor vehicle safety equipment, operation, and maintenance, published 5/2/11, Federal Register vol. 76, no. 84, p. 24576.
  - (o) 29 CFR 1915.94. Servicing of multi-piece and single-piece rim wheels, published 5/2/11, Federal Register vol. 76, no. 84, p. 24576.
- (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 6/8/11, Federal Register, vol. 76, no. 110, p. 33590.
  - (c) 29 CFR 1915.113. Shackles and hooks, published 6/8/11, Federal Register, vol. 76, no. 110, p. 33590.

- (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 7/3/02, FR vol. 67, no. 128, p. 44541.
- (f) 29 CFR 1915.116. Use of gear, published 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 7/3/02, FR vol. 67, no. 128, p. 44541.
- (8) Subdivision H
  - (a) 29 CFR 1915.131. General precautions, published 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 7/3/02, FR vol. 67, no. 128, p. 44541.
  - (e) 29 CFR 1915.135. Powder actuated fastening tools, published 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 6/8/11, Federal Register, vol. 76, no. 110, p. 33590.
  - (c) 29 CFR 1915.153. Eye and face protection, published 9/9/09, FR vol. 74, no. 173, pp. 46350-46361.
  - (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 9/9/09, FR vol. 74, no. 173, pp. 46350-46361.
  - (f) 29 CFR 1915.156. Foot protection, published 9/9/09, FR vol. 74, no. 173, pp. 46350-46361.
  - (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 7/3/02, FR vol. 67, no. 128, p. 44541.
  - (i) 29 CFR 1915.159. Personal fall arrest systems (PFAS), published 7/3/02, FR vol. 67, no. 128, p. 44541.
  - (j) 29 CFR 1915.160. Positioning device systems, published 7/3/02, FR vol. 67, no. 128, p. 44541.
- Appendix A to Subpart I, published 7/3/02, FR vol. 67, no. 128, p. 44541.
- Appendix B to Subpart I, published 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 5/2/11, Federal Register vol. 76, no. 84, p. 24576.
  - (c) 29 CFR 1915.163. Ship's piping systems, published 5/2/11, Federal Register vol. 76, no. 84, p. 24576.
  - (d) 29 CFR 1915.164. Ship's propulsion machinery, published 5/2/11, Federal Register vol. 76, no. 84, p. 24576.
  - (e) 29 CFR 1915.165. Ship's decking machinery, published 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 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 5/2/11, Federal Register vol. 76, no. 84, p. 24576.

(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 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 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 ~~[7/3/02, FR vol. 67, no. 128, p. 44544]~~ **12/27/11, FR vol. 76, no. 248, p. 80735.**

(b) 29 CFR 1915.1001, Asbestos, published 6/8/11, Federal Register, vol. 76, no. 110, p. 33590.

Appendix A to 1915.1001, published 6/29/95, FR vol. 60, p. 33972.

Appendix B to 1915.1001, published 6/29/95, FR vol. 60, p. 33972.

Appendix C to 1915.1001, published 6/8/11, Federal Register, vol. 76, no. 110, p. 33590.

Appendix D to 1915.1001, published 8/10/94, FR vol. 59, p. 40964.

Appendix E to 1915.1001, published 6/29/95, FR vol. 60, p. 33972.

Appendix F to 1915.1001, published 6/29/95, FR vol. 60, p. 33972.

Appendix G to 1915.1001, published 8/10/94, FR vol. 59, p. 40964.

Appendix H to 1915.1001, published 6/29/95, FR vol. 60, p. 33972.

Appendix I to 1915.1001, published 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 6/29/95, FR vol. 60, p. 33972.

Appendix L to 1915.1001, published 8/23/96, FR vol. 61, p. 43454.

(c) 29 CFR 1915.1002. Coal tar pitch volatiles; interpretation of term, published 6/20/96, FR vol. 61, p. 31427.

(d) 29 CFR 1915.1003. 13 Carcinogens (4-Nitrobiphenyl, etc.), published 6/20/96, FR vol. 61, p. 31427.

(e) 29 CFR 1915.1004. alpha-Naphthylamine, published 6/20/96, FR vol. 61, p. 31427.

(f) 29 CFR 1915.1005. (Reserved)

(g) 29 CFR 1915.1006. Methyl chloromethyl ether, published 6/20/96, FR vol. 61, p. 31427.

(h) 29 CFR 1915.1007. 3,3'Dichlorobenzidene (and its salts), published 6/20/96, FR vol. 61, p. 31427.

(i) 29 CFR 1915.1008. bis-Chloromethyl ether, published 6/20/96, FR vol. 61, p. 31427.

(j) 29 CFR 1915.1009. beta-Naphthylamine, published 6/20/96, FR vol. 61, p. 31427.

(k) 29 CFR 1915.1010. Benzidine, published 6/20/96, FR vol. 61, p. 31427.

(l) 29 CFR 1915.1011. 4-Aminodiphenyl, published 6/20/96, FR vol. 61, p. 31427.

(m) 29 CFR 1915.1012. Ethyleneimine, published 6/20/96, FR vol. 61, p. 31427.

(n) 29 CFR 1915.1013. beta-Propiolactone, published 6/20/96, FR vol. 61, p. 31427.

- (o) 29 CFR 1915.1014. 2-Acetylaminofluorene, published 6/20/96, FR vol. 61, p. 31427.
  - (p) 29 CFR 1915.1015. 4-Dimethylaminoazobenzene, published 6/20/96, FR vol. 61, p. 31427.
  - (q) 29 CFR 1915.1016. N-Nitrosodimethylamine, published 6/20/96, FR vol. 61, p. 31427.
  - (r) 29 CFR 1915.1017. Vinyl chloride, published 6/20/96, FR vol. 61, p. 31427.
  - (s) 29 CFR 1915.1018. Inorganic arsenic, published 6/20/96, FR vol. 61, p. 31427.
  - (t) 29 CFR 1915.1020 Access to employee exposure and medical records, published 6/20/96, FR vol. 61, p. 31427.
  - (u) 29 CFR 1915.1025. Lead, published 6/20/96, FR vol. 61, p. 31427.
  - (v) 29 CFR 1915.1026 Chromium (VI), published 3/17/10, FR vol. 75, no. 51, pp. 12681-12686.
  - (w) 29 CFR 1915.1027. Cadmium, published 6/20/96, FR vol. 61, p. 31427.
  - (x) 29 CFR 1915.1028. Benzene, published 6/20/96, FR vol. 61, p. 31427.
  - (y) 29 CFR 1915.1030. Bloodborne pathogens, published 6/20/96, FR vol. 61, p. 31427.
  - (z) 29 CFR 1915.1044. 1,2 dibromo-3-chloropropane, published 6/20/96, FR vol. 61, p. 31427.
  - (aa) 29 CFR 1915.1045. Acrylonitrile, published 6/20/96, FR vol. 61, p. 31427.
  - (bb) 29 CFR 1915.1047. Ethylene oxide, published 6/20/96, FR vol. 61, p. 31427.
  - (cc) 29 CFR 1915.1048. Formaldehyde, published 6/20/96, FR vol. 61, p. 31427.
  - (dd) 29 CFR 1915.1050. Methylenedianiline, published 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 6/20/96, FR vol. 61, p. 31427.
  - (hh) 29 CFR 1915.1450. Occupational exposure to hazardous chemicals in laboratories, published 6/20/96, FR vol. 61, p. 31427.

Stat. Auth.: ORS 654.025(2) and 656.726(4).

Stats. Implemented: ORS 654.001 to 654.295.

Hist: OR-OSHA Admin. Order 9-1992, f. 9/24/92, ef. 11/1/92.

OR-OSHA Admin. Order 1-1993, f. 1/22/93, ef. 1/22/93.

OR-OSHA Admin. Order 19-1993, f. 12/29/93, ef. 12/29/93.

OR-OSHA Admin. Order 4-1994, f. 8/4/94, ef. 8/4/94.

OR-OSHA Admin. Order 1-1995, f. 1/19/95, ef. 1/19/95.

OR-OSHA Admin. Order 2-1995, f. 1/25/95, ef. 1/25/95.

OR-OSHA Admin. Order 4-1995, f. 3/29/95, ef. 3/29/95.

OR-OSHA Admin. Order 5-1995, f. 4/6/95, ef. 4/6/95.

OR-OSHA Admin. Order 8-1995, f. 8/25/95, ef. 8/25/95.

OR-OSHA Admin. Order 5-1996, f. 11/29/96, ef. 18/29/96.

OR-OSHA Admin. Order 6-1996, f. 11/29/96, ef. 11/29/96.

OR-OSHA Admin. Order 3-1997, f. 3/28/97, ef. 3/28/97.

OR-OSHA Admin. Order 4-1997, f. 4/2/97, ef. 4/2/97.

OR-OSHA Admin. Order 6-1997, f. 5/2/97, ef. 5/2/97.

OR-OSHA Admin. Order 7-1998, f. 12/28/98, ef. 12/28/98.

OR-OSHA Admin. Order 4-2001, f. 2/5/01, ef. 2/5/01.

OR-OSHA Admin. Order 4-2003, f. 5/6/03, ef. 5/6/03.

OR-OSHA Admin. Order 8-2004, f. 12/30/04, ef. 12/30/04.

OR-OSHA Admin. Order 1-2005, f. 4/12/05, ef. 4/12/05.

OR-OSHA Admin. Order 4-2006, f. 7/24/06, ef. 7/24/06.

OR-OSHA Admin. Order 6-2006, f. 8/30/06, ef. 8/30/06.

OR-OSHA Admin. Order 10-2006, f. 11/30/06, ef. 11/30/06.

OR-OSHA Admin. Order 1-2007, f. 1/9/07, ef. 1/16/07.

OR-OSHA Admin. Order 5-2008, f. 5/1/08, ef. 5/15/08.

OR-OSHA Admin. Order 5-2009, f. 5/29/09, ef. 5/29/09.  
OR-OSHA Admin. Order 2-2010, f. 2/25/10, ef. 2/25/10.  
OR-OSHA Admin. Order 3-2010, f. 6/10/10, ef. 6/15/10.  
OR-OSHA Admin. Order 3-2011, f. 11/1/11, ef. 11/1/11.  
OR-OSHA Admin. Order 4-2011, f. 12/8/11, ef. 12/8/11.  
**OR-OSHA Admin. Order 1-2012, f. 4/10/12, ef. 4/10/12.**