

Chapter ILHR 32

PUBLIC EMPLOYE SAFETY AND HEALTH

Subchapter I — Scope, Application and Definitions

ILHR 32.001 Purpose
ILHR 32.002 Scope
ILHR 32.003 Application
ILHR 32.01 Definitions

Subchapter II — Administration and Enforcement

ILHR 32.05 Inspections
ILHR 32.06 Posting department order
ILHR 32.07 Variances
ILHR 32.08 Notices
ILHR 32.09 Penalties

Subchapter III — General Requirements

ILHR 32.15 OSHA safety and health standards
ILHR 32.16 Wisconsin administrative codes
ILHR 32.17 ACGIH standards

Subchapter IV — Amendments to OSHA Standards

ILHR 32.20 Amendments to OSHA standards
ILHR 32.21 General requirements
ILHR 32.22 Guarding floor and wall openings and holes
ILHR 32.23 Portable wood ladders
ILHR 32.24 Portable metal ladders
ILHR 32.25 Fixed ladders
ILHR 32.26 Means of egress, general
ILHR 32.27 Ventilation
ILHR 32.28 Compressed gases
ILHR 32.29 Spray finishing
ILHR 32.293 Process safety management of highly hazardous chemicals
ILHR 32.295 Permit-required confined spaces
ILHR 32.297 Medical services and first aid

ILHR 32.30 Fire brigades
ILHR 32.31 Handling materials, general
ILHR 32.32 Overhead and gantry cranes
ILHR 32.33 General requirements for all machines
ILHR 32.34 Woodworking machinery
ILHR 32.35 Mechanical power-transmission apparatus
ILHR 32.36 Logging
ILHR 32.361 Air contaminants
ILHR 32.363 Benzene
ILHR 32.37 General safety and health provisions
ILHR 32.38 Scaffolding
ILHR 32.39 Motor vehicles
ILHR 32.40 General protection requirements for excavation
ILHR 32.41 Compressed air
ILHR 32.42 Exposure to traffic
ILHR 32.43 Riding on motor vehicles

Subchapter V — Incorporation of Standards by Reference

ILHR 32.50 Incorporation of standards by reference

Subchapter VI — Confined Spaces

ILHR 32.61 Definitions
ILHR 32.62 General employer responsibilities
ILHR 32.63 Sampling
ILHR 32.64 Air quality
ILHR 32.65 Entry procedures
ILHR 32.66 Rescue
ILHR 32.67 General safety requirements
ILHR 32.68 Duties of authorized entrants
ILHR 32.69 Duties of attendants
ILHR 32.70 Duties of entry supervisors

Note: Chapters Ind 1, 6, 11, 12, 35, 200, 220, 221, 225, 226, 1000 to 2000 and ILHR 32 as they existed on March 31, 1991 were repealed and a new chapter ILHR 32 was created effective April 1, 1991. Chapter ILHR 31 as it existed on August 31, 1995 was repealed and sections ILHR 32.61 to 32.70 were created effective September 1, 1995.

Subchapter I — Scope, Application and Definitions

ILHR 32.001 Purpose. This chapter establishes minimum occupational safety and health standards for public employees.

History: Cr. Register, March, 1991, No. 423, eff 4-1-91.

ILHR 32.002 Scope. The provisions of this chapter apply to all places of employment and public buildings of a public employer.

History: Cr. Register, March, 1991, No. 423, eff 4-1-91.

ILHR 32.003 Application. (1) **RETROACTIVITY.** The provisions of this chapter shall apply to all places of employment and public buildings of a public employer whether existing prior to the effective date of this chapter or subsequently established or built, unless otherwise specified in this chapter.

(2) **CONFLICTS.** If requirements of the Statutes, this chapter or other Wisconsin Administrative Code chapters specify varying requirements, the most restrictive requirement shall govern.

History: Cr. Register, March, 1991, No. 423, eff 4-1-91.

ILHR 32.01 Definitions. In this chapter:

(1) "Agency", as defined in s. 101.055 (2) (a), Stats., means an office, department, independent agency, authority, institution, association, society or other body in state government created or authorized to be created by the constitution or any law, and includes the legislature and the courts.

(2) "Approved" means acceptable to the department.

(3) "Department" means the department of industry, labor and human relations unless otherwise specified.

(4) "Place of employment" means any place as defined in s. 101.01 (2) (f), Stats., and includes farms of a public employer where research or education takes place.

(5) "Public employe" or "employe", as defined in s. 101.055 (2) (b), Stats., means any employe of the state, of any state agency or of any political subdivision of the state.

(6) "Public employe representative" or "employe representative", as defined in s. 101.055 (2) (c), Stats., means an authorized collective bargaining agent, an employe who is a member of a workplace safety committee or any person chosen by one or more public employes to represent those employes.

(7) "Public employer" or "employer", as defined in s. 101.055 (2) (d), Stats., means the state, any state agency or any political subdivision of the state.

ILHR 32.01

(8) "Secretary" means the secretary of the department of industry, labor and human relations or appointed representative, unless otherwise specified. For the purpose of this chapter, the term secretary shall be substituted for the following titles referenced in the adopted standards of s. ILHR 32.50:

- (a) Secretary of labor;
- (b) Assistant secretary of labor for occupational safety and health, U.S. department of labor;
- (c) Director of the office of standards development, occupational safety and health administration, U.S. department of labor;
- (d) Area director, occupational safety and health administration; and
- (e) Director of the national institute for occupational safety and health, U.S. department of health and human services.

History: Cr. Register, March, 1991, No. 423, eff. 4-1-91.

Subchapter II — Administration and Enforcement

ILHR 32.05 Inspections. (1) RIGHT OF ENTRY TO INVESTIGATE OR INSPECT. The authorized representatives of the department, upon presentation of the appropriate credentials to an employer, may:

- (a) Enter without delay and at reasonable times any building, place of employment or workplace of a public employer, or an environment where work is performed by an employe of an employer; and
- (b) Inspect and investigate during regular working hours and at other reasonable times, and within reasonable limits and in a reasonable manner, any such place of employment and all pertinent conditions, structures, machines, apparatus, devices, equipment, and materials therein, and to question privately any employer or employe.

(2) **PARTICIPATION IN INSPECTIONS.** Pursuant to s. 101.055 (5), Stats., a representative of the employer, an employe, or an employe representative shall be provided an opportunity to accompany a department inspector on any inspection made under this chapter.

(3) **REQUESTS FOR INSPECTIONS (a)** Any person who believes a safety or health standard or variance is being violated, or that a situation exists which poses a recognized hazard likely to cause death or serious physical harm, may request the department to conduct an inspection.

(b) If an employe or employe representative requesting an inspection so designates, that person's name may not be disclosed to the employer or any other person, including any state agency except the department.

(c) When determined necessary by the department, a request for inspection shall be made on a form provided by the department.

Note: Copies of the request for inspection form (SBD-5907) may be obtained from the Safety and Buildings Division, P.O. Box 7969, Madison, Wisconsin 53707, telephone 608/266-3151.

Register, August, 1995, No. 476

(4) **ORDERS.** The department shall issue orders for violation of this chapter in accordance with s. 101.055 (6), Stats.

History: Cr. Register, March, 1991, No. 423, eff. 4-1-91.

ILHR 32.06 Posting department order. (1) Upon issuance of an order of noncompliance, the employer shall post a copy of the order at or near the site of the violation.

(2) An order issued shall be posted for a period of 3 days, or until the violation is abated, whichever is longer.

(3) The employer shall ensure that the order is not altered, defaced or covered by other materials.

(4) An order issued shall be posted regardless of whether there has been a petition for variance or hearing.

History: Cr. Register, March, 1991, No. 423, eff. 4-1-91.

ILHR 32.07 Variances. Pursuant to s. 101.055 (4), Stats., the department shall consider and may grant a temporary variance, an experimental variance or a permanent variance in accordance with s. ILHR 3.04 for a safety and health issue affecting public employes.

History: Cr. Register, March, 1991, No. 423, eff. 4-1-91.

ILHR 32.08 Notices. Every employer shall post a notice which summarizes the employe's protections and rights as granted under s. 101.055, Stats.

History: Cr. Register, March, 1991, No. 423, eff. 4-1-91.

ILHR 32.09 Penalties. Penalties for violations of this chapter may be assessed in accordance with s. 101.02, Stats.

Note 1: Section 101.02 (13) (a), Stats., indicates penalties will be assessed against any employer, employe, owner or other person who fails or refuses to perform any duty lawfully enjoined, within the time prescribed by the department, for which no penalty has been specifically provided, or who fails, neglects or refuses to comply with any lawful order made by the department, or any judgment or decree made by any court in connection with ss. 101.01 to 101.25, Stats. For each such violation, failure or refusal, such employe, owner or other person must forfeit and pay into the state treasury a sum not less than \$10 nor more than \$100 for each violation.

Note 2: Section 101.02 (12), Stats., indicates that every day during which any person, persons, corporation or any officer, agent or employe thereof, fails to observe and comply with an order of the department will constitute a separate and distinct violation of such order.

History: Cr. Register, March, 1991, No. 423, eff. 4-1-91.

Subchapter III — General Requirements

ILHR 32.15 OSHA Safety and health standards. Except as provided in s. ILHR 32.16 and subch. IV, all places of employment and public buildings of an employer shall comply with the federal Occupational Safety and Health Administration (OSHA) requirements adopted under s. ILHR 32.50 (4). The OSHA regulations for construction shall apply where the OSHA general occupational safety and health standards do not cover the activity involved.

History: Cr. Register, March, 1991, No. 423, eff. 4-1-91; cr. (13) and (14), Register, December, 1992, No. 444, eff. 7-1-93; am. (intro.), r. (1) to (14), Register, August, 1995, No. 476, eff. 9-1-95.

ILHR 32.16 Wisconsin administrative codes. The following Wisconsin Administrative Codes shall supercede the standards specified in s. ILHR 32.15 for those safety and

health issues which fall within the scope of the respective codes.

- (1) Chapter ILHR 7, Explosive Materials;
- (2) Chapter ILHR 8, Mines, Pits and Quarries;
- (3) Chapter ILHR 9, Manufacture of Fireworks;
- (4) Chapter ILHR 10, Flammable and Combustible Liquids;
- (5) Chapter ILHR 11, Liquefied Petroleum Gases;
- (6) Chapter ILHR 12, Liquefied Natural Gas;
- (7) Chapter ILHR 13, Compressed Natural Gas;
- (8) Chapter ILHR 14, Fire Prevention;
- (9) Chapter ILHR 15, Cleaning and Dyeing;
- (10) Chapter ILHR 16, Electrical, Volume 2;
- (11) Chapter ILHR 18, Elevator;
- (12) Chapter ILHR 30, Fire Department Health and Safety;
- (13) Chapter ILHR 33, Tramways, Lifts and Tows;
- (14) Chapter ILHR 34, Amusement Rides and Attractions;
- (15) Chapter ILHR 35, Infectious Agents;
- (16) Chapters ILHR 41 and 42, Boiler and Pressure Vessel;
- (17) Chapter ILHR 43, Anhydrous Ammonia;
- (18) Chapter ILHR 45, Mechanical Refrigeration;
- (19) Chapters ILHR 50 to 64, Building and Heating, Ventilating and Air Conditioning;
- (20) Chapters ILHR 81 to 87, Plumbing;
- (21) Chapter ILHR 73, Illumination.

History: Cr. Register, March, 1991, No. 423, eff. 4-1-91; **renum.** (4) to (11) to be (5) to (12), (15) to (18) to be (16) to (19), (19) to be (20), cr. (4) and (15), r. (12) and (20), Register, August, 1995, No. 476, eff. 9-1-95; **correction in** (21) made under s. 13.93 (2m) (b) 7., Stats., Register, August, 1995, No. 476.

ILHR 32.17 ACGIH standards. All places of employment and public buildings of a public employer shall comply with the American Conference of Governmental Industrial Hygienists (ACGIH) threshold limit values and biological exposure indices adopted under s. ILHR 32.50 (4). The ACGIH standards apply only to substances not covered by the OSHA standards specified in s. ILHR 32.15.

History: Cr. Register, August, 1995, No. 476, eff. 9-1-95.

Subchapter IV — Amendments to OSHA Standards

ILHR 32.20 Amendments to OSHA standards. The substitutions, additions or omissions to the adopted OSHA standards as specified in this subchapter are rules of the department and not federal standards of OSHA.

Note: The referenced or corresponding OSHA section or subsection is located in the brackets following the ILHR designation and preceding the text of the rule. Example: ILHR 32.21 [29 CFR 1910.22].

History: Cr. Register, March, 1991, No. 423, eff. 4-1-91.

ILHR 32.21 General requirements. [29 CFR 1910.22] (1) HOUSEKEEPING. This department rule is in addition to the requirements of 29 CFR 1910.22 (a):

(a) Insofar as the nature of the work will permit, floors, passageways, gangways and areas around machinery shall be even, kept in good repair, free from obstructions over which persons may trip, and provide secure footing.

(2) **DOUBLE-SWINGING DOORS; WINDOWS.** This department rule is in addition to the requirements of 29 CFR 1910.22:

(a) Every double-swinging door shall be equipped with a window the bottom of which shall be not more than 54 inches above the floor. The windows shall be kept free from dust or other obstruction. One window shall be provided for each section of double-swinging doors. Each side of every double-swinging door shall be illuminated in accordance with ch. ILHR 73. The area of the window shall be not less than 200 square inches.

Note: Effective July 6, 1977, requirements for safety glazing are under the jurisdiction of the Consumer Products Safety Commission (CPSC) and are contained in the CPSC Standard for Architectural Glazing Material. Copies of this standard are available from: Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

History: Cr. Register, March, 1991, No. 423, eff. 4-1-91; **correction in** (2) (a) made under s. 13.93 (2m) (b) 7., Stats., Register, August, 1995, No. 476.

ILHR 32.22 Guarding floor and wall openings and holes. [29 CFR 1910.23] This department rule is in addition to the requirements of 29 CFR 1910.23 (d) (1):

(1) Exterior stairways or steps having 4 or more risers shall be equipped with standard railings or standard handrails on each side. Exterior stairways or steps more than 50 feet wide shall be provided with one or more intermediate handrails.

History: Cr. Register, March, 1991, No. 423, eff. 4-1-91.

ILHR 32.23 Portable wood ladders. [29 CFR 1910.25] (1) USE. (a) Substitute the following wording for 29 CFR 1910.25 (d) (2) (xv):

1. No portable ladder may be used to gain access to a roof, floor, or platform, unless the top of the ladder extends at least 3 feet above the point of support.

(b) Substitute the following wording for 29 CFR 1910.25 (d) (2) (xix):

1. All portable rung ladders shall be equipped with non-slip bases when there is a hazard of slipping.

Note: Non-slip bases are not intended as a substitute for care in safely placing, lashing or holding a ladder that is being used upon oily, metal, concrete, or other slippery surfaces.

(2) **CARE AND USE OF LADDERS.** This department rule is in addition to 29 CFR 1910.25 (d):

(a) An attendant shall hold the stepladder when it is in use if the ladder is more than 10 feet in height, unless it is securely lashed or blocked.

History: Cr. Register, March, 1991, No. 423, eff. 4-1-91.

Register, August, 1995, No. 476

ILHR 32.24

ILHR 32.24 Portable metal ladders. [29 CFR 1910.26] (1) USE OF LADDERS. Substitute the following wording for 29 CFR 1910.26 (c) (3) (iii):

(a) The ladder base section shall be placed with a secure footing. Safety shoes shall be installed on all ladders. Where ladders are used on hard, slick surfaces, a foot-ladder board shall be employed.

(2) CARE AND MAINTENANCE OF LADDERS. This department rule is in addition to 29 CFR 1910.26 (c):

(a) An attendant shall hold the stepladder when it is in use if the ladder is more than 10 feet in height, unless it is securely lashed or blocked.

History: Cr Register, March, 1991, No. 423, eff 4-1-91

ILHR 32.25 Fixed ladders. [29 CFR 1910.27] This department rule is in addition to 29 CFR 1910.27 (e) (2):

(1) Fixed ladders of a substandard pitch shall be equipped with handrails on both sides. The handrails shall be installed 30 to 34 inches vertically above the rung or the nose of the tread.

History: Cr Register, March, 1991, No. 423, eff 4-1-91

ILHR 32.26 Means of egress, general. [29 CFR 1910.37] These department rules are in addition to 29 CFR 1910.37 (h):

(1) When a doorway or corner of a building is located near a railway, trolley track or driveway, so that a person is likely to walk into the path of any moving vehicle, a barrier shall be installed as follows:

(a) A swinging barrier located at the door opening or corner, extending across the doorway or from the corner;

(b) A fixed barrier situated outside the building parallel to the door opening and not less than 36 inches away from it;

(c) A fixed barrier situated at the corner parallel to the tracks or driveway and extending for a distance of not less than 6 feet outward from the corner; or

(d) Any other device approved by the department.

History: Cr Register, March, 1991, No. 423, eff 4-1-91

ILHR 32.27 Ventilation. [29 CFR 1910.94] These department rules are in addition to 29 CFR 1910.94:

(1) APPROVAL OF PLANS (a) Plans and specifications for exhaust ventilation equipment installed, remodeled or moved under this chapter shall be submitted to the department in quadruplicate for approval before the affected work is commenced, and all work shall be executed according to the approved plans and specifications.

(b) A complete set of plans bearing the stamp of approval shall be kept at the building at all times.

Note 1: Extra copies of the plans may be filed for the approval stamp, but they should accompany the quadruplicate plans.

Note 2: Section 101.19, Stats., authorizes the department to fix and collect fees for the approval of plans.

(2) EXHAUST VENTILATION AT SOURCE OF CONTAMINATION AND MAKE-UP AIR (a) Exhaust ventilation shall be provided in connection with all equipment and processes which create harmful exposure of dusts, fumes, vapors or

Register, August, 1995, No. 476

gases that equal or exceed the permissible exposure limits in 29 CFR 1910.1000.

(b) The exhaust ventilation shall be designed and installed to remove the harmful dusts, fumes, vapors and gases at the source to prevent their entrance into the breathing zone of an operator or other persons in the vicinity. Laboratory fume hoods shall be operated with a minimum 100 feet per minute face velocity at full open or sash stop position.

Note: A tolerance of plus or minus 10% is allowed on the face velocity measurement. Also, the department will accept fume hood operation that meets ASHRAE standard 110.

(c) A volume of tempered outside air shall be supplied to replace the air exhausted if the total volume of air exhausted exceeds one air change per hour. The quantity of make-up air shall equal at least 90% of the air exhausted.

(d) Tempered make-up air shall be installed to insure the flow of air effectively picks up dusts, fumes, vapors and gases prior to being exhausted.

(e) Local exhaust ventilation ductwork specifically designed for the removal of toxic dusts, fumes, vapors and gases shall be maintained at a negative pressure through occupied areas.

(3) SEPARATION OF EXHAUST SYSTEMS. There shall be no connection between exhaust systems or ducts which convey different materials from separate operations, the combination of which may produce explosive, heat generating, corrosive, poisonous or otherwise dangerous mixtures.

(4) PROTECTION AGAINST INTERFERENCE OF EXHAUST SYSTEMS. Where 2 or more local exhaust systems operating at different branch duct velocities are installed in the same room or ventilated area, and any system is affected by this arrangement, tempered outside air shall be supplied to the room in a volume not less than that exhausted under simultaneous operation of all the exhaust systems in the room except where the separate exhaust systems are so arranged that they cannot be operated simultaneously.

(5) CAPACITY OF LOCAL EXHAUST VENTILATION SYSTEMS. (a) Exhaust systems for the control of dusts from woodworking operations shall be designed and operated to maintain a velocity of not less than 4000 feet per minute in the branch ducts and not less than 3500 feet per minute in the main ducts. Branch duct connections of exhaust systems serving woodworking machines shall provide air volumes not less than that specified in Table 32.27.

Table 32.27

MINIMUM AIR VOLUMES FOR BRANCH DUCT CONNECTIONS (in cubic feet per minute [cfm])

TABLE SAWS - RIP, MITER & VARIETY

Saw Diameter	Exhaust Volume
Up to 16 inches	350 cfm
Over 16 to 24 inches	440 cfm
Over 24 inches	550 cfm
Variety saw with dado head	550 cfm

BAND SAWS

<u>Blade Width</u>	<u>Exhaust Volume</u>	
	<u>Top Run</u>	<u>Bottom Run</u>
Up to 2 inches	350 cfm	350 cfm
Over 2 to 3 inches	550 cfm	350 cfm
Over 3 to 4 inches	790 cfm	550 cfm
Over 4 to 6 inches	1070 cfm	550 cfm
Over 6 to 8 inches	1400 cfm	550 cfm

JOINTERS

<u>Knife Size</u>	<u>Exhaust Volume</u>
Up to 6 inches	350 cfm
Over 6 to 12 inches	440 cfm
Over 12 to 20 inches	550 cfm
Over 20 inches	800 cfm

SINGLE PLANERS

<u>Knife Size</u>	<u>Exhaust Volume</u>
Up to 20 inches	785 cfm
Over 20 to 26 inches	1100 cfm
Over 26 to 32 inches	1400 cfm
Over 32 to 38 inches	1765 cfm
Over 38 inches	2200 cfm

DISC SANDERS

<u>Size</u>	<u>Exhaust Volume</u>
Up to 12 inches	350 cfm
Over 12 in. to 18 in.	440 cfm
Over 18 in. to 26 in.	550 cfm
Over 26 in. to 32 in.	700 cfm 2 Bottom Branches
Over 32 in. to 38 in.	900 cfm 2 Bottom Branches
Over 38 in. to 48 in.	1250 cfm 1 Top and 2 Bottom Branches

**HORIZONTAL BELT SANDERS
(When Bottom Run of Belt is Used)**

<u>Size</u>	<u>Exhaust Volume</u>	
	<u>Tail End</u>	<u>Head End</u>
Up to 6 in. wide	350 cfm	440 cfm
Over 6 in. to 9 in.	350 cfm	550 cfm
Over 9 in. to 14 in.	440 cfm	800 cfm
Over 14 inches wide	550 cfm	1100 cfm

OTHER WOODWORKING MACHINES

Woodshapers and variety machines ...	400 cfm to 1400 cfm
--------------------------------------	------------------------

(b) Exhaust systems shall be provided for the control of dust from the following operations and shall maintain the specified air movements and velocities:

1. Abrasive blasting rooms. a. An abrasive blasting room shall be exhausted at a rate of at least 80 cubic feet per minute per square foot of the room's floor area for a

down draft exhaust system or 80 cubic feet per minute per square foot of cross sectional area for a cross draft exhaust system.

b. Exhaust systems for abrasive blasting rooms shall have a minimum duct velocity of at least 4500 feet per minute.

c. All air inlets provided for an abrasive blasting room shall provide a minimum air velocity of at least 500 feet per minute.

2. Mixer and muller. Mixer and muller operations shall be provided with an exhaust system that will operate at a velocity of not less than 150 feet per minute through all openings. Mixer and muller operations shall be housed in a complete enclosure.

(6) VENTILATION FOR KILNS (a) *General*. 1. Local exhaust ventilation shall be provided for all fuel-fired and electric kilns. Ventilation systems shall be designed in accordance with the best practices of the industry and are subject to acceptability by the department.

2. Local exhaust ventilation need not be provided where the kilns can be isolated in a separate room and the room is ventilated by means of a dedicated system at the rate of 10 air changes per hour.

Note 1: Ventilation capacity for 10 air changes per hour can be calculated as follows:

$$\frac{\text{Room volume (cu. ft.)} \times 10}{60} = \text{cfm needed}$$

Note 2: Reduced atmosphere firing produces high concentrations of carbon monoxide and caution should be exercised when entering the kiln room.

3. Canopy hood exhaust systems shall be designed in accordance with the requirements specified in par. (b) and Figure 32.27.

4. Movable kilns shall be positioned under an exhaust hood during the firing cycle.

(b) *Canopy hood ventilation*. 1. The height of a canopy hood above the top surface of a top-loading kiln shall be limited to that which is necessary for loading of the kiln. Canopy hoods over side- or front-loading kilns shall be located as close to the top edge of the kiln as possible, and side curtains shall not be required.

2. Canopy hoods over top-loading kilns shall be provided with noncombustible side curtains on 3 sides. If the kiln is located against a wall, only 2 side curtains shall be required. Side curtains shall extend down from the bottom edge of the canopy hood to the top edge of the kiln. Side curtains shall not be required for retractable hoods which can be positioned directly over the top of the kiln after loading.

(c) *Location of kilns*. 1. All fuel-fired kilns located inside of a building shall be enclosed in a fire-resistive enclosure as specified in s. ILHR 56.15.

2. Kilns shall not be located in boiler or furnace rooms.

3. Fuel-fired kilns located outside of buildings shall be exempt from the ventilation requirements of this subsection. They shall be located to minimize the products of combustion from entering the building, but in no case

ILHR 32.27

shall the distance be less than 10 feet measured in any direction from a wall opening or air intake.

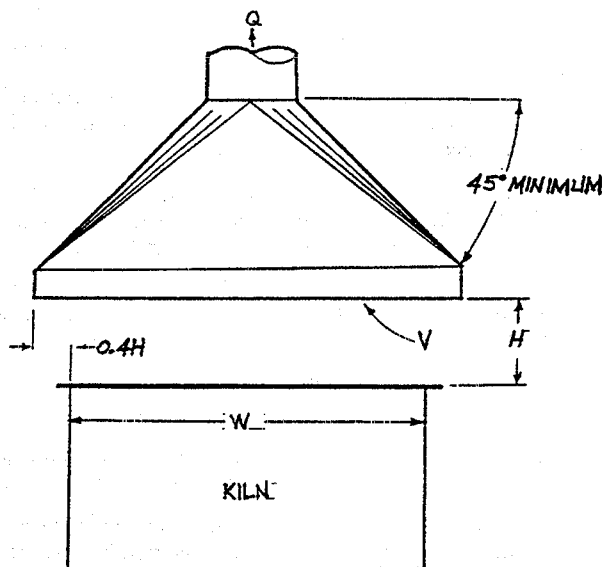
4. Kilns shall be installed in accordance with the manufacturer's specifications for distance to walls.

Note: Wall-to-kiln distance may vary from 12 to 18 inches, depending on the type of kilns.

5. Kilns shall be located to minimize the possibility of burns.

Note: The outside temperature of kilns may vary from approximately 250 to 450° F, depending on the type of kiln.

**FIGURE 32.27
CANOPY HOOD**



$$Q = W \times H \times V$$

Where Q = Volume, in cubic feet per minute
 W = Width of kiln, in feet
 H = Height of canopy hood above kiln, in feet
 V = Velocity through area between source and canopy, in feet per minute
 100 fpm min - 500 fpm max

Entry loss = 25 duct velocity pressure
 Duct velocity = 1000 - 3000 fpm

(7) **DISPOSAL OF EXHAUST MATERIAL.** (a) All dusts, fumes, vapors and gases from exhaust systems installed under this section shall be disposed of in a manner to eliminate the health hazards from occupied areas. Dust collecting systems shall be provided with dust separators, arresters, collectors or precipitators to separate the dust from the air before the air is discharged from the exhaust system.

(b) All exhaust systems shall discharge to the outside atmosphere, except as provided in par. (c).

(c) Recirculation of contaminated air may be permitted where the exhaust system washes, scrubs or filters the air. Systems of this type shall be designed in accordance with the criteria established in part 2 of the national institute for occupational safety and health (NIOSH) standard "Recirculation of Exhaust Air", HEW Publication (NIOSH) #76-186.

Register, August, 1995, No. 476

Note: "A Recommended Approach to Recirculation of Exhaust Air", HEW Publication (NIOSH) #78-124 may be used as a guideline in designing the exhaust systems.

(d) Combustible solids or fluids, including gases, unless immediately destroyed, shall be delivered to containers which will isolate the fire and explosion hazard from all occupied areas and structures. Collectors, or settling chambers, for combustible solids or fluids shall not be placed within an occupied building, or at any point where the ignition of the contents will be a direct life or fire hazard unless the collector or settling chamber is housed in a room or enclosure of 2-hour fire-resistive construction or better.

(8) **MAINTENANCE AND OPERATION OF EQUIPMENT.** (a) Every exhaust ventilation system and other protective equipment installed under this chapter shall be maintained in working order and shall be operated to provide the results required by this chapter.

(b) All power equipment, ducts, housing and other parts of an exhaust ventilation system shall be kept clean.

(9) **DARKROOM VENTILATION.** Exhaust ventilation shall be provided for all darkroom facilities. The capacity of the exhaust ventilation shall equal at least 12 air changes per hour, or an engineered local exhaust system shall be provided.

History: Cr. Register, March, 1991, No. 423, eff. 4-1-91; am. (2) (b), cr. (2) (d), (e) and (9), Register, August, 1995, No. 476, eff. 9-1-95.

ILHR 32.28 Compressed gases. [29 CFR 1910.101] This department rule is in addition to 29 CFR 1910.101:

(1) All compressed gas cylinders shall be secured to prevent falling.

History: Cr. Register, March, 1991, No. 423, eff. 4-1-91.

ILHR 32.29 Spray finishing. [29 CFR 1910.107] These department rules are in addition to 29 CFR 1910.107:

(1) **PLAN SUBMITTAL.** Plans in quadruplicate and one set of specifications shall be submitted to the department for approval before installing any spray booth in all places of employment and public buildings.

Note 1: Extra copies of the plans may be filed for the approval stamp, but they should accompany the quadruplicate plans.

Note 2: Section 101.19, Stats., authorizes the department to fix and collect fees for the approval of plans.

(2) **DEFINITIONS.** In this section:

(a) "Atomizing pressure" means the force of the air used to atomize or break up the paint or other coating material.

(b) "Booth" means an enclosure with an exhaust system and is of the following types:

1. 'Cabinet booth' means an enclosure open on one side only and equipped with an independent exhaust system.

2. 'Canopy booth' means an overhead dome enclosure open on all sides at the bottom and equipped with an independent exhaust system.

3. 'Room booth' means a room or enclosure equipped with an independent exhaust system.

4. 'Tunnel booth' means an enclosure with both ends open equipped with an independent exhaust system.

(c) "Chemical cartridge respirator" means a respirator which is equipped with a chemical cartridge or canister which mechanically removes solid particles and chemically removes vapors from air being breathed.

(d) "Exhaust system" means all equipment connected with the removal of air from the spray zone.

(e) "Paint pressure" means the force in a closed tank bearing on the paint or other coating material to raise it to the spray gun level.

(f) "Pressure regulator" means an instrument or device for regulating or controlling air pressure.

(g) "Spray gun" means a mechanical device employing pressure for the application of paints, varnishes, lacquers and similar coating materials.

(h) "Vacuum type spray gun" means a type of spray gun with a materials container in which the liquid is drawn into the atomizing air stream by a partial vacuum created by the flow of air over the paint chamber outlet opening.

(3) **OUTDOOR SPRAYING.** (a) *Scope.* The requirements of this subsection shall apply to all spray coating operations on buildings, ships and structures of any kind or nature, and to all outdoor spray coating operations, but these requirements do not apply to spray coating operations in approved booths.

(b) *Equipment.* 1. Type of equipment. Any type of equipment may be used except the vacuum type spray gun of more than one quart capacity.

2. Character of equipment. All spraying equipment shall be complete in all details essential to the operation and prevention of excessive mist.

(c) *Operation.* 1. Nozzle distance from surface. During operation, the nozzle of the spray gun shall not at any time be more than 13 inches from the surface being spray coated.

2. Maximum allowable paint pressure. The paint pressure shall at no time exceed that necessary to produce a free flow of paint at the nozzle when the gun is operated independent of atomizing pressure.

Note: During exterior spray coating, the operator should at all times take advantage of draft and wind conditions, spraying with the air current whenever possible.

3. Operation at different levels. At no time shall 2 or more operators working at elevations differing more than 8 feet use paint from the same supply tank unless spray guns are equipped with paint pressure regulators.

Note: If this maximum allowable difference in working elevations were exceeded, the operators working at the lower levels would be subjected to excessive mist.

4. Exclusion of others. No one but spray operators and their helpers shall be permitted within a zone where a mist or deposit is apparent, unless such a person is protected the same as operators and helpers.

5. Contamination of adjacent areas. Precautionary measures shall be taken to prevent contamination of the atmosphere in adjacent occupied areas.

(d) *Personal protection.* 1. Nose and mouth protection.
a. The nose and mouth of each operator and of any other

person in the area contaminated by spray, shall be protected with an approved respirator or other approved device furnished and maintained in a clean and efficient condition by the employer.

b. Where air is supplied from outside the contaminated area, such air shall be supplied and conveyed as specified in 29 CFR 1910.134 (d) (2) (ii) so as to prevent the introduction of any hazardous gases, dusts, fumes or vapors into the respirator.

2. Cleansing of respirators. Every respirator shall be cleansed at least once each day. Where the filter type respirator is used, the filter shall be replaced not less than twice each working day, or as often as necessary. In case of intermittent use of a filter type respirator, it shall be cleansed and the filter replaced at least once each calendar day of use, unless sterilized provisions shall be made to insure that the cleansed respirators are returned to the same individuals who used them prior to the cleansing.

3. Approval of respirators. Every respirator or other such device used shall meet the approval of the department.

Note: The chemical cartridge respirator is the only one of the filter type that will be approved for use in spray coating.

4. Head protection. The head shall be covered with a low fitting cap with visor.

5. Body protection. The body shall be covered with clothing as close fitting as possible consistent with comfort, paying particular attention to the fit at neck and wrists.

6. Hand protection. The hands shall be protected by gloves, preferably of the gauntlet type.

7. Responsibility and maintenance. All protective clothing shall be furnished and maintained in a sanitary condition by the employer. A complete change shall be furnished at least once a week or as often as necessary.

8. Face and neck anointed. All exposed parts of the body shall be kept anointed with nonirritating, protective oil, grease or cream during spray coating operations.

9. Washing facilities. Clean rags shall be furnished by the employer and washing facilities shall be provided in compliance with chs. ILHR 50 to 64.

Note: The purpose of this is to eliminate the necessity of washing with turpentine or naphtha, the continued use of which is extremely irritating to the skin.

(4) **SPRAY COATING OPERATIONS INSIDE OF BUILDINGS.** All spray coating operations inside of buildings, except the spray coating of walls, structural members and fixtures of a building or other structure, shall comply with the regulations of 29 CFR 1910.94 (c).

History: Cr. Register, March, 1991, No. 423, eff. 4-1-91.

ILHR 32.293 Process safety management of highly hazardous chemicals. [29 CFR 1910.119] Substitute the following wording for 29 CFR 1910.119 (e) (1) (i) to (iv):

(1) No less than 25% of the initial process hazards analyses shall be completed by September 1, 1997.

(2) No less than 50% of the initial process hazards analyses shall be completed by September 1, 1998.

ILHR 32.293

(3) No less than 75% of the initial process hazards analyses shall be completed by September 1, 1999.

(4) All initial process hazards analyses shall be completed by September 1, 2000.

History: Cr., Register, August, 1995, No. 476, eff. 9-1-95.

ILHR 32.295 Permit-required confined spaces. [29 CFR 1910.146] Section 29 CFR 1910.146 is not included as part of this chapter.

Note: See subch. VI for requirements relating to confined spaces.

History: Cr., Register, August, 1995, No. 476, eff. 9-1-95.

ILHR 32.297 Medical services and first aid. [29 CFR 1910.151] Substitute the following wording for 29 CFR 1910.151 (c):

Whenever the eyes or body of any person may be exposed to materials that are corrosive or can cause irreversible eye or bodily injury, suitable facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use.

Note: The department will accept facilities that comply with ANSI standard Z358.1, Emergency Eyewash and Shower Equipment.

History: Cr., Register, August, 1995, No. 476, eff. 9-1-95.

ILHR 32.30 Fire brigades. [29 CFR 1910.156] Section 29 CFR 1910.156 is not included as part of this chapter.

History: Cr. Register, March, 1991, No. 423, eff. 4-1-91.

ILHR 32.31 Handling materials, general. [29 CFR 1910.176] These department rules are in addition to 29 CFR 1910.176:

(1) **CONVEYORS** (a) The nipping and shearing points of conveyors, when exposed to contact, shall be guarded as specified in 29 CFR 1910.212 and Table O-10 of 29 CFR 1910.217.

(b) The tops of screw conveyor troughs, where the screw is exposed to contact, shall be kept covered. Openings into which persons may step, reach or fall shall be protected by standard guardrails as required by 29 CFR 1910.23, or other approved protection.

(c) Conveyor systems passing through more than one room, or from one working level to another, shall be provided in each room, or working level, where exposed to contact, with means to disconnect the power.

(d) When a conveyor passes over passageways, aisles or working areas and is so constructed that it is reasonable to expect materials on the conveyor to be dislodged and be hazardous to persons in such areas, guards shall be provided.

(2) **STAKES AND BINDERS** Stakes or binders used on logging cars or trucks to hold the load of logs in place when being transported, shall be so designed as to make it possible for the operator to loosen or disengage the stakes and binders when standing in a safe position.

(3) **INCOMPATIBLE MATERIALS** Incompatible materials shall be segregated to prevent accidental contact with each other that may result in fire, explosion or toxic gas emission.

Register, August, 1995, No. 476

Note: Guidance in the storage of incompatible materials can be obtained in publications from the National Fire Protection Association, such as NFPA 49 and 491M.

History: Cr. Register, March, 1991, No. 423, eff. 4-1-91; cr. (3), Register, August, 1995, No. 476, eff. 9-1-95.

ILHR 32.32 Overhead and gantry cranes. [29 CFR 1910.179] These department rules are in addition to 29 CFR 1910.179:

(1) **DESIGN** (a) Every overhead trolley and every mono-rail crane operating with a load on a horizontal track, or on a track having a slope less than 15°, shall be constructed and maintained so as to prevent its leaving the track.

(b) Where trolleys are operated without a load, and in all cases where the slope of the track is 15° or more, a guard rail shall be installed which will prevent the trolley from falling if it leaves the track.

Note: No guard rail is required on overhead trolley tracks operating with a load on the trolley unless the slope of the track is 15° or more.

(2) **SAFETY STOP** In all installations, a safety stop shall be provided and maintained at all switches and at the ends of all rails to prevent the trolley from leaving the rail at these points.

History: Cr. Register, March, 1991, No. 423, eff. 4-1-91.

ILHR 32.33 General requirements for all machines. [29 CFR 1910.212] These department rules are in addition to 29 CFR 1910.212 (a):

(1) **MACHINE CONTROL** (a) *Disconnection from source of power.* 1. Every machine shall be equipped with a loose pulley, clutch, switch or other adequate means within reaching distance of the normal operating positions of the operator for the purpose of disconnecting the machine from the source of power.

2. Machines on which 2 or more persons work shall be equipped with one or more controls so located that more than one of these persons can quickly disconnect the machine from the source of power.

(b) *Tripping device.* Every machine set in motion by a tripping device shall be guarded against accidental tripping. Where a cover guard is used it shall completely protect the treadle bar and its linkage. A treadle that will automatically lock may be used in lieu of a cover.

(c) *Lockouts.* Machines shut down for oiling or maintenance shall be so locked out or otherwise protected so as to prevent starting the machine while such work is in progress.

(d) *Guarding of moving parts.* Any moving part of a machine which at any time leaves a space of less than 18 inches between it and any fixed object not a part of the machine, or between it and a moving or stationary part of the machine or of any other machine, shall be guarded.

(e) *Quick stopping devices.* Where it is impractical to install fixed guards in the case of revolving machine parts, a positive quick stopping device shall be provided which can be operated from any work position of the machine.

(f) *Food grinders.* All power driven food grinders of the worm type shall be so constructed that meat or other foods

can be safely fed to the worm by one of the following methods:

1. By a mechanical method of feeding the worm;
2. By the use of a permanently attached feed throat to the cylinder enclosing the worm which shall have an opening not exceeding 2 inches in diameter at a distance of at least 6 inches above the worm; or
3. By other approved means which shall make it impossible for any operator to reach the worm while it is in motion.

(g) *Counterweights, tension weights and springs.* 1. Every counterweight, where exposed to contact, shall be enclosed or be equipped with a safety chain attached independent of the counterweight support, that shall prevent the weight from falling to a point of less than 7 feet from the floor or working level.

2. Every tension weight exposed to contact shall be enclosed or securely fastened to the tension bar.

3. All springs shall be guarded or otherwise equipped to eliminate any hazard due to breakage of spring or failure of the mounting.

(h) *Revolving stock.* All revolving stock projecting from machines shall be guarded by a pipe enclosure or other approved means to prevent contact with the stock.

(i) *Prevention of automatic restarting.* On applications where injury to the operator might result if motors were to restart after power failures, provision shall be made to prevent machines from automatically restarting upon restoration of power.

(2) **GUARDING OF PIPES; HOT MATERIALS.** All pipes carrying steam or other hot materials within 7 feet of the floor or working platform, that are exposed to contact, shall be covered with an insulating material, or guarded so that contact will not cause personal injury.

(3) **MAINTENANCE.** All equipment, machine tools, guards and power-driven machinery shall be maintained in safe condition.

History: Cr. Register, March, 1991, No. 423, eff. 4-1-91.

ILHR 32.34 Woodworking machinery. [29 CFR 1910.213]
(1) **RADIAL ARM SAWS.** These department rules are in addition to 29 CFR 1910.213 (h):

(a) *Limit stop.* A stop shall be provided to prevent the forward travel of the blade beyond the front of the table.

(b) *Return device.* Every radial arm saw shall be equipped with a device to return the saw automatically to the back of the table when released at any point of its travel; the device shall prevent the saw from rebounding and shall not depend on fibre rope or cord for this function.

(2) **TILTED EQUIPMENT.** Subsection 29 CFR 1910.213 (h) (4) is not included as part of this chapter.

(3) **JOINTERS.** This department rule is in addition to 29 CFR 1910.213 (j):

(a) Jointers used for surfacing work shall be equipped with an automatic floating guard over the knives.

History: Cr. Register, March, 1991, No. 423, eff. 4-1-91.

ILHR 32.35 Mechanical power-transmission apparatus. [29 CFR 1910.219] This department rule is in addition to 29 CFR 1910.219:

(1) All machines lubricated while in motion and having lubricating devices so located as to make it hazardous to reach them shall be equipped with an automatic lubricating device or other approved means to protect the employee.

History: Cr. Register, March, 1991, No. 423, eff. 4-1-91.

ILHR 32.36 Logging. [29 CFR 1910.266] This department rule is in addition to 29 CFR 1910.266:

(1) The regulations of 29 CFR 1910.266 shall apply to all logging operations and not just to those involving pulpwood timber.

History: Cr. Register, March, 1991, No. 423, eff. 4-1-91.

ILHR 32.361 Air contaminants. [29 CFR 1910.1000] (1) **SUBSTITUTION.** In lieu of 29 CFR 1910.1000, July 1, 1994 edition, an employee's exposure to air contaminants shall be in accordance with the requirements of 29 CFR 1910.1000, July 1, 1992 edition.

Note: The requirements of 29 CFR 1910.1000, July 1, 1992 edition were first adopted by OSHA in 1989. Those requirements have been in effect under this chapter since April 1, 1991.

(2) **ADDITION.** In addition to the requirements of 29 CFR 1910.1000, the employer shall implement the monitoring or measuring of any substance listed in Table Z-1-A where exposure at or above the time weighted average, short term exposure limit or ceiling limit is reasonably likely to occur.

History: Cr., Register, August, 1995, No. 476, eff. 9-1-95.

ILHR 32.363 Benzene. [29 CFR 1910.1028] Section 29 CFR 1910.1028 (a) (2) (v) is not included as part of this chapter.

History: Cr., Register, August, 1995, No. 476, eff. 9-1-95.

ILHR 32.37 General safety and health provisions. [29 CFR 1926.20] This department rule is in addition to 29 CFR 1926.20:

(1) No person may work on the surface of any structural member, floor, or other working platform which has become slippery from ice, snow, frost, paint or other cause, unless such surface is cleaned, sprinkled with sand or made nonslippery insofar as the nature of the work will permit.

History: Cr. Register, March, 1991, No. 423, eff. 4-1-91.

ILHR 32.38 Scaffolding. [29 CFR 1926.451] This department rule is in addition to 29 CFR 1926.451 (u):

(1) Support shall be provided for all workers who are required to work on inclined surfaces having a slope of more than 4 inches rise in 12 inches of horizontal run.

History: Cr. Register, March, 1991, No. 423, eff. 4-1-91.

ILHR 32.39 Motor vehicles. [29 CFR 1926.601] Substitute the following wording for 29 CFR 1926.601 (b) (10):

Register, August, 1995, No. 476

ILHR 32.39

(1) Trucks with dump bodies shall be equipped with positive means of support, permanently attached, and capable of being locked in position to prevent accidental lowering of the body while maintenance or inspection work is being done or when the vehicle is left unattended.

History: Cr. Register, March, 1991, No. 423, eff. 4-1-91.

ILHR 32.40 General protection requirements for excavation. [29 CFR 1926.650] These department rules are in addition to 29 CFR 1926.650:

(1) **GUARDING.** A standard railing as specified in 29 CFR 1926.500 (f) or other approved guard or barricade shall be provided at or near the edge of an excavation as soon as possible, except where the installation of the safeguard will interfere with the excavation or other work.

(2) **NIGHT GUARDING.** All excavations to which persons may be exposed at night shall be provided with yellow warning lights placed at unbarricaded points and along the exposed side where the excavation adjoins a public thoroughfare or sidewalk.

(3) **SOLITARY EMPLOYMENT.** No person may work in any trench, shaft, tunnel, caisson or appurtenance over 5 feet in depth without another person being present at the surface.

Note: Any casual entrance into an excavation such as retrieving fallen objects will not be construed as work under this subsection.

History: Cr. Register, March, 1991, No. 423, eff. 4-1-91.

ILHR 32.41 Compressed air. [29 CFR 1926.803] (1) **MEDICAL LOCK READINESS.** Substitute the following wording for 29 CFR 1926.803 (b) (10) (iii):

(a) Be kept ready for immediate use for at least 8 hours subsequent to the emergence of any person from the working chamber.

(2) **COMMUNICATIONS.** Substitute the following wording for 29 CFR 1926.803 (c) (1):

(a) There shall be effective voice communication at all times between the following locations:

1. The working chamber face;
2. The working chamber side of the man lock near the door;
3. The interior of the man lock;
4. Lock attendant's station;
5. The compressor plant;
6. At the surface or shaft opening;
7. The first-aid station;
8. The emergency lock, if one is required; and

9. The special decompression chamber, if one is required.

(3) **LOCK DOORS.** Substitute the following wording for 29 CFR 1926.803 (g) (1) (xv):

(a) When locks are not in use and persons are in the working chamber, lock doors shall be kept closed to the working chamber except where there are separate man and muck locks. In this case at least one door to the working chamber shall be closed.

History: Cr. Register, March, 1991, No. 423, eff. 4-1-91.

ILHR 32.42 Exposure to traffic. (1) **SAFETY VESTS.** Employees who work on highways, roads, streets or their easements shall wear traffic safety vests or use clothing or equipment that provides equivalent protection.

(2) **TRAFFIC CONTROL DEVICES.** Pursuant to s. 349.065, Stats., traffic control devices to warn traffic and protect employees shall be placed and maintained in accordance with the uniform traffic control devices manual.

Note: The uniform traffic control devices manual may be obtained from the Department of Transportation, Division of Highways, 4802 Sheboygan Avenue, Madison, Wisconsin 53702, telephone 608/266-8417.

History: Cr., Register, August, 1995, No. 476, eff. 9-1-95.

ILHR 32.43 Riding on motor vehicles. Employees may ride on motor vehicles in other than factory installed passenger seats equipped with seatbelts only when the speed of the motor vehicle is less than 10 miles per hour.

History: Cr., Register, August, 1995, No. 476, eff. 9-1-95.

Subchapter V —

Incorporation of Standards by Reference

ILHR 32.50 Incorporation of standards by reference. (1) **AUTHORITY.** Section 101.055 (3) (a), Stats., permits the department to incorporate by reference the standards adopted in sub. (4).

(2) **COPIES.** Copies of the adopted standards are on file in the offices of the department, the secretary of state and the revisor of statutes. Copies also may be purchased through the respective organizations.

Note: Some OSHA standards are available from the Commerce Clearing House, Inc., 4025 West Peterson Avenue, Chicago, IL 60646 and the Construction Bookstore, P.O. Box 2959, Gainesville, FL 32602.

(3) **INTERIM AMENDMENTS.** Interim amendments of the adopted standards shall have no effect in the state until the time that this section is correspondingly revised to reflect the changes.

(4) **STANDARDS.** The standards listed in the following tables are hereby incorporated by reference into this chapter.

Table 32.50-1

OSHA Occupational Safety and Health Administration
Superintendent of Documents
310 West Wisconsin Avenue, Suite 150
Milwaukee, WI 53203
Telephone: 414/297-1304

1. Recording and Reporting Occupational Injuries and Illnesses, Title 29 CFR Part 1904, July 1, 1994.
2. Occupational Safety and Health Standards, Title 29 CFR Part 1910, July 1, 1994.
3. Occupational Safety and Health Regulations for Construction, Title 29 CFR Part 1926, July 1, 1994.
4. Occupational Safety and Health Standards for Shipyard Employment, 29 CFR Part 1915, May, 1982.
5. Occupational Safety and Health Standards for Agriculture, 29 CFR Part 1928, June, 1981.
6. Occupational Safety and Health Standards for Marine Terminals, 29 CFR Part 1917, Federal Register, Vol. 48, No. 129, Tuesday, July 5, 1983.

Table 32.50-2

NIOSH U.S. Department of Commerce
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161
Telephone: 703/487-4650

1. Recirculation of Exhaust Air, HEW (NIOSH) Publication #76-186.

Table 32.50-3

ACGIH American Conference of Governmental Industrial Hygienists
Technical Affairs Office
1330 Kemper Meadow Drive
Cincinnati, OH 45240
Telephone: 513/742-2020

1. Threshold Limit Values for Chemical Substances and Physical Agents, and Biological Exposure Indices, 1994-1995 edition.

History: Cr. Register, March, 1991, No. 423, eff. 4-1-91; am. Table 1, Register, December, 1992, No. 444, eff. 7-1-93; am. Table 1, cr. Table 3, Register, August, 1995, No. 476, eff. 9-1-95.

Subchapter VI — Confined Spaces

ILHR 32.61 Definitions. In this subchapter:

(1) "Attendant" means an individual stationed outside one or more confined spaces who monitors the authorized entrants and who performs all attendant's duties assigned in the employer's entry program.

(2) "Authorized entrant" means an employe who is authorized by the employer to enter a confined space.

(3) "Confined space" means a space that:

(a) Is large enough and so configured that an employe can enter and perform assigned work;

(b) Has limited or restricted means for entry or exit, such as a tank, vessel, silo, storage bin, hopper, vault and pit; and

(c) Is not designed for continuous employe occupancy.

(4) "Engulfment" means the surrounding and effective capture of a person by a liquid or finely divided flowable solid substance that can be aspirated to cause death by filling or plugging the respiratory system or that can exert enough force on the body to cause death by strangulation, constriction or crushing.

(5) "Entry" means the action by which a person passes through an opening into a confined space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space.

(6) "Entry supervisor" means the person, such as the employer, foreman or crew chief, responsible for determining if acceptable entry conditions are present at a confined space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry.

Note: An entry supervisor also may serve as an attendant or as an authorized entrant, as long as that person is trained and equipped as required for each role he or she fills. Also, the duties of entry supervisor may be passed from one individual to another during the course of an entry operation.

(7) "Full body harness" means a harness having a waist belt, shoulder straps, leg straps, and "D" ring or shoulder ring attached no lower than the shoulder blades.

(8) "Hazardous atmosphere" means an atmosphere that may expose employes to the risk of death, incapacitation, impairment of ability to self-rescue, injury, or acute illness from one or more of the following causes:

(a) Flammable gas, vapor, or mist in excess of 10% of its lower explosive limit;

(b) Airborne combustible dust at a concentration that meets or exceeds its lower explosive limit;

(c) Atmospheric oxygen concentrations below 19.5% or above 23.5%;

(d) Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in Subpart G, Occupational Health and Environment Control, or in Subpart Z, Toxic and Hazardous Substances, of title 29 CFR part 1910 and which could result in the

ILHR 32.61

employee exposure in excess of its dose or permissible exposure limit; or

(e) Any other atmospheric condition that is immediately dangerous to life or health.

(9) "Immediately dangerous to life or health" means any condition that poses an immediate or delayed threat to life or that would cause irreversible adverse health effects or that would interfere with an individual's ability to escape unaided from a confined space.

(10) "Lower explosive limit" means the lower limit of flammability of a gas or vapor at ordinary ambient temperatures expressed as a percentage of the gas or vapor in air by volume.

(11) "Rescue service" means the personnel designated and trained to rescue employees from confined spaces.

History: Cr. Register, August, 1995, No. 476, eff. 9-1-95.

ILHR 32.62 General employer responsibilities. (1) ENTRY REQUIREMENTS. No employer may require an employee to enter or work in a confined space, unless it is in accordance with the requirements of this subchapter.

(2) **WORK PLACE EVALUATION.** The employer shall evaluate the work place to determine if any confined spaces are present. If the work place contains confined spaces, the employer shall inform employees by posting legible signs at the entrances to the confined spaces. Signs are not required at manholes located in sewer systems or in public areas.

Note: To inform employees, a sign could read "DANGER-CONFINED SPACE-DO NOT ENTER", or other similar language.

(3) **ALTERNATIVE PROCEDURE** (a) An employer may use the alternative entry procedure specified in par. (b) for a heating system tunnel or heating system vault, provided that:

1. The employer can demonstrate that the only hazard posed by the tunnel or vault is an actual or potential hazardous atmosphere;

2. The employer can demonstrate that continuous forced air ventilation alone is sufficient to maintain the tunnel or vault safe for entry; and

3. The employer develops monitoring and inspection data that supports the demonstrations required by subs. 1. and 2.

(b) An employer need not comply with the continuous monitoring requirements under s. ILHR 32.65 provided that the atmosphere within the heating system tunnel or heating system vault is periodically tested as necessary to ensure that the continuous forced air ventilation is preventing the accumulation of a hazardous atmosphere.

(4) **ENTRY PROGRAM.** If the employer determines that its employees will enter confined spaces, the employer shall develop and implement a written entry program. Under the written entry program, the employer shall designate the employees who have active roles in entry operations, identify the duties of each employee and provide each employee with the training required. The written entry program shall include checklists for entry into confined spaces and be available for inspection by employees and their representatives.

Register, August, 1995, No. 476

Note 1: See Appendix for a copy of a sample checklist. A sample checklist is available from the department at the Division of Safety and Buildings, Bureau of Integrated Services, P.O. Box 7969, Madison, Wisconsin 53707, telephone 608/266-2780.

Note 2: The checklist is intended to be a hazard assessment tool to determine compliance with the written entry program and to protect employees before entering a confined space.

(5) **ENTRY PREVENTION.** If the employer determines that its employees will not enter confined spaces, the employer shall take effective measures to prevent its employees from entering the confined spaces.

History: Cr. Register, August, 1995, No. 476, eff. 9-1-95.

ILHR 32.63 Sampling. (1) SAMPLING BEFORE ENTRY. No person may enter a confined space until the atmosphere of the confined space is sampled and air quality is determined for all levels and all areas of the confined space.

(2) **SUBSTANCES SAMPLED FOR.** The atmosphere of the confined space shall be sampled for:

(a) Oxygen;

(b) Hydrogen sulfide or carbon monoxide, depending on the hazard present;

(c) Combustible gas; and

(d) Any hazardous substance which an employee may work with or be exposed to and which the employer has reason to believe may be present.

(3) **SAMPLING DEVICE.** (a) A direct readout sampling device which can simultaneously test for oxygen, hydrogen sulfide or carbon monoxide, and combustible gas without manual switching shall be used to sample the atmosphere of a confined space.

(b) The sampling device shall be equipped with audible and visible warning devices which indicate when an atmosphere of a confined space has:

1. An oxygen content of less than 19.5% or greater than 23.5%;

2. A hydrogen sulfide content of 10 parts per million or more, or a carbon monoxide content of 35 parts per million or more; or

3. A combustible gas content of 10% or more of the lower explosive limit.

(c) The sampling device shall be calibrated relative to the oxygen content of the ambient air at the time of sampling. Calibration of the sampling device relative to the oxygen content shall be performed where the 20.9% natural content of oxygen in the air is most likely to occur.

Note: Oxygen calibration should not be performed near a confined space opening.

(d) A sampling device which has a zero set shall be zeroed in a clean atmosphere before each sampling. Calibration of a sampling device shall be conducted as often as recommended by the manufacturer, but at least once every 6 months.

(e) The sampling device or a non-sparking probe attached to the sampling device shall be used to sample the atmosphere of a confined space. When entry to a confined space is by means of a manhole, a probe shall be inserted through the pick-hole of the manhole cover, or the man-

hole cover shall be pried open on the downwind side to allow just enough room for insertion of the probe or device.

(4) **DETECTOR FOR HAZARDOUS SUBSTANCES.** The sampling of the atmosphere of a confined space for hazardous substances shall be by the use of a testing device capable of detecting and measuring the concentrations of hazardous substances likely to be present.

History: Cr. Register, August, 1995, No. 476, eff. 9-1-95.

ILHR 32.64 Air quality. (1) ATMOSPHERE LIMITS. Except as provided in sub. (3), a confined space may not be entered, unless the atmosphere of the confined space has:

(a) An oxygen content of at least 19.5% or more but not more than 23.5%;

(b) A hydrogen sulfide content of less than 10 parts per million or a carbon monoxide content of less than 35 parts per million;

(c) A combustible gas content less than 10% of the lower explosive limit; and

(d) An exposure level, for any hazardous substance determined to be present, which is at or below the threshold limit value - short term exposure limit for any substance specified by the American Conference of Governmental Industrial Hygienists in the publication adopted under s. ILHR 32.50 (4), or the short term exposure limits found in 29 CFR 1910.1000.

(2) **VENTILATION.** A confined space with an atmosphere which is not within the limits specified in sub. (1) may be ventilated and may be entered when sampling indicates an atmosphere within the limits specified in sub. (1).

(3) **SUPPLIED AIR.** A confined space with an atmosphere which cannot be brought within the limits specified in sub. (1) (a), (b) and (d) may be entered if a self-contained positive pressure breathing apparatus or a Type C air line respirator is used. An approved air purifying respirator may be used in atmospheres that do not have the potential to be immediately dangerous to life or health.

(4) **ENTRY PROHIBITED.** A confined space with an atmosphere which is not within the limit specified in sub. (1) (c) may not be entered even if a breathing apparatus or respirator is used.

(5) **CONFINED SPACE CLASSIFICATION.** To determine the specific entry procedures to be followed, a confined space which may be entered shall be classified as either a level 1 or a level 2 space based upon the air quality and the sources of possible hazards, as follows:

(a) A level 1 space is a confined space with an atmosphere within the limits specified in sub. (1) and the only source of contamination expected or likely to affect the atmosphere is the employee's presence or the employee's activities.

(b) A level 2 space is a confined space that has one or more of the following characteristics:

1. Contains a hazardous atmosphere;
2. Contains a material that has the potential for engulfment of an authorized entrant;

3. Has an internal configuration that could cause an authorized entrant to be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or

4. Contains any other serious safety or health hazard.

(6) **CONFINED SPACE RECLASSIFICATION.** A confined space may be reclassified from a level 2 space to a level 1 space under the following conditions:

(a) If the confined space poses no atmospheric hazards and if all hazards within the space are eliminated without entry into the space, the level 2 space may be reclassified as level 1 for as long as the non-atmospheric hazards remain eliminated.

(b) If it is necessary to enter the level 2 space to eliminate hazards, other than explosive atmospheres, such entry shall follow the level 2 entry requirements. If testing and inspection during that entry demonstrate that the hazards within the level 2 space have been eliminated, the space may be reclassified as level 1 for as long as the hazards remain eliminated.

History: Cr. Register, August, 1995, No. 476, eff. 9-1-95.

ILHR 32.65 Entry procedures. (1) LEVEL 1 SPACES. Entry into or work in a level 1 space shall be performed in accordance with the following:

(a) The atmosphere within the authorized entrant's immediate area shall be continuously monitored for oxygen, hydrogen sulfide or carbon monoxide, and combustible gas while in the confined space.

(b) Signals from the monitoring device shall immediately indicate when the atmosphere falls outside any of the air quality limits specified in s. ILHR 32.64 (1) (a) to (c).

(c) While in a confined space, if the air quality falls outside any of the limits specified in s. ILHR 32.64 (1) (a) to (d), the authorized entrant shall exit the confined space and the confined space shall be reclassified as a level 2 space.

(d) Ventilation may not be used in lieu of monitoring devices.

(2) **LEVEL 2 SPACES.** Entry into or work in a level 2 space shall be performed in accordance with the following:

(a) The atmosphere within the authorized entrant's immediate area shall be continuously monitored for oxygen, hydrogen sulfide or carbon monoxide, combustible gas and any other hazardous substance which the employer has reason to believe may be present in the confined space.

(b) Signals from the monitoring device shall immediately indicate when the atmosphere is not within any of the limits specified in s. ILHR 32.64 (1) (a) to (d).

(c) While in the confined space, if the air quality falls outside any of the limits specified in s. ILHR 32.64 (1) (a) to (d), the authorized entrant shall exit the confined space.

(d) Ventilation may not be used in lieu of monitoring devices. An employee may not enter the space until forced ventilation has eliminated any hazardous atmosphere. If forced air ventilation is used, it shall be so directed as to

ILHR 32.65

ventilate the immediate areas where an authorized entrant is or will be present within the space and shall continue until all entrants have left the confined space. The air supply for the forced air ventilation shall be from a clean source and may not increase the hazards in the confined space.

Note 1: A clean source would be one within the limits of s. ILHR 32.64 (1) (a) to (d).

Note 2: When using forced air ventilation, consideration should be given to the possibility of static discharge which could be a source of ignition.

(e) No employe may enter the confined space without at least one attendant stationed at the entrance of the confined space. A flagman who is directing traffic may not serve as the attendant. The employer shall provide at least one attendant outside the confined space for the duration of entry operations.

(f) Where entry into the confined space is by means of a manhole or a top opening, a mechanical retrieval device shall be set up for rescue attempts prior to entry.

(g) While in the confined space, an authorized entrant shall have voice or other means of communication with the attendant.

(h) An authorized entrant entering vertically into the confined space shall wear a full body harness secured to a retrieval line.

(i) An authorized entrant who makes horizontal movement into the confined space, such as a sewer, or who descends in such a manner that renders a mechanical retrieval device useless for a rescue attempt, shall wear:

1. A self-contained positive pressure breathing apparatus or a Type C air line respirator; and
2. A full body harness.

(3) WORK INVOLVING MULTIPLE EMPLOYERS. When 2 employers arrange to have employes perform work that involves confined space entry, each employer shall:

(a) Apprise the other employer of the elements, including the hazards identified and each employer's experience with the space, that make the space in question a confined space; and

(b) Coordinate entry operations with the other employer when personnel from both employers will be working together in or near confined spaces.

History: Cr. Register, August, 1995, No. 476, eff. 9-1-95.

ILHR 32.66 Rescue. (1) ADDITIONAL HELP. Prior to entering a confined space, procedures shall be established for acquiring additional help in the event of an emergency. Communication shall be made for additional help before a rescue attempt is made into any confined space.

(2) DEVELOPMENT OF PROCEDURES. The employer shall develop and implement procedures for summoning rescue and emergency services, for rescuing entrants from confined spaces, for providing necessary emergency services to rescued employes, and for preventing unauthorized personnel from attempting a rescue.

(3) PERFORMING RESCUE SERVICES. The following requirements apply to employers who have employes enter confined spaces to perform rescue services:

(a) The employer shall ensure that each member of the rescue service is provided with, and is trained to use properly, the personal protective and rescue equipment necessary for making rescues from confined spaces.

(b) Each member of the rescue service shall be trained to perform the assigned rescue duties. Each member of the rescue service shall also receive the training required of authorized entrants under s. ILHR 32.67 (1).

(c) Each member of the rescue service shall practice making confined space rescues at least once every 12 months by means of simulated rescue operations in which they remove dummies, manikins or actual persons from the actual confined spaces or from representative confined spaces. Representative confined spaces shall, with respect to opening size, configuration and accessibility, simulate the types of confined spaces from which rescue is to be performed.

(d) Each member of the rescue service shall be trained and certified in basic first aid and adult cardio pulmonary resuscitation.

(4) HOST EMPLOYER DUTIES. When a host employer arranges to have persons other than the host employer's employes perform confined space rescue, the host employer shall:

(a) Inform the rescue service of the hazards they may confront when called on to perform rescue at the host employer's facility; and

(b) Provide the rescue service with access to all confined spaces from which rescue may be necessary so that the rescue service can develop the rescue plans and practice rescue operations.

(5) NON-ENTRY RESCUE. To facilitate non-entry rescue, retrieval systems or methods shall be used whenever an authorized entrant enters a confined space, unless the retrieval equipment would increase overall risk of entry or would not contribute to the rescue of the entrant. Retrieval systems shall meet the following requirements:

(a) Each authorized entrant shall use a full body harness, with a retrieval line attached at the center of the entrant's back near shoulder level, or above the entrant's head. Wristlets may be used in lieu of the full body harness if the employer can demonstrate that the use of a full body harness is infeasible or creates a greater hazard and that the use of wristlets is the safest and most effective alternative.

(b) The other end of the retrieval line shall be attached to a mechanical device or fixed point outside the confined space in such a manner that rescue can begin as soon as the rescuer becomes aware that rescue is necessary. A mechanical device shall be available to retrieve personnel from vertical type confined spaces more than 5 feet deep.

(6) SUBSTANCE INFORMATION. If an injured entrant is exposed to a substance for which a Material Safety Data Sheet (MSDS) or similar written information is required to be kept at the worksite, that MSDS or written information shall be made available to the medical facility treating the exposed entrant.

History: Cr. Register, August, 1995, No. 476, eff. 9-1-95.

ILHR 32.67 General safety requirements. (1) TRAINING AND EQUIPMENT. (a) Authorized entrants shall be trained and equipped to recognize, understand and control the hazards that may be encountered in confined spaces.

(b) An employer shall provide all authorized entrants with a written confined space entry procedure, and the entrants shall be trained according to the established procedure.

(c) An employer shall provide a written standard operating procedure on the selection, use and care of required breathing apparatus, with proper employe training and fitting according to 29 CFR 1910.134.

(d) An employer shall provide training in basic first aid and adult cardio pulmonary resuscitation for all authorized entrants and attendants.

(e) Training shall establish employe proficiency in the duties required by this subchapter and shall introduce new or revised procedures, as necessary, for compliance with this subchapter. Training shall be provided to each affected employe:

1. Before the employe is first assigned duties under this subchapter;

2. Before there is a change in assigned duties under this subchapter; and

3. Whenever there is a change in confined space operations that presents a hazard about which an employe has not previously been trained.

(f) Personal protective equipment required for safe confined space entry shall be provided by the employer and worn by authorized entrants.

(g) No employe may smoke within 10 feet of a confined space.

(h) When entrance covers are removed, the opening shall be promptly guarded by a railing, temporary cover or other temporary barrier that will prevent an accidental fall through the opening and that will protect each employe working in the space from foreign objects entering the space.

(i) Sampling devices used in confined spaces shall be intrinsically safe for use in combustible atmospheres.

(j) Self-contained positive pressure breathing apparatus used in confined spaces shall have at least a 30-minute air supply rating. A Type C air line respirator used in confined spaces shall be equipped with an escape air tank with an adequate supply of air to exit the confined space and a maximum of 300 feet of air line hose.

(2) WORKING IN STREETS. Work at confined spaces which are located in streets shall be performed in accordance with the following:

(a) A vehicle's beacon and 4-way flashers shall be activated upon approach to an entrance of a confined space.

(b) A vehicle shall be parked to permit traffic to flow in an unobstructed manner and, where possible, to provide protection for the employes.

(c) A vehicle shall be parked so vehicle exhaust cannot accumulate in the confined space. If this is not possible,

the vehicle's exhaust pipe shall be extended away from the confined space.

Note: See s ILHR 32.42 also.

History: Cr. Register, August, 1995, No. 476, eff. 9-1-95.

ILHR 32.68 Duties of authorized entrants. The employer shall ensure that all authorized entrants:

(1) Know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure;

(2) Properly use equipment;

(3) Communicate with the attendant as necessary to enable the attendant to monitor entrant status and to enable the attendant to alert entrants of the need to evacuate the space;

(4) Alert the attendant whenever:

(a) The entrant recognizes any warning sign or symptom of exposure to a dangerous situation; or

(b) The entrant detects a prohibited condition; and

(5) Exit from the confined space as quickly as possible whenever:

(a) An order to evacuate is given by the attendant or the entry supervisor;

(b) The entrant recognizes any warning sign or symptom of exposure to a dangerous situation;

(c) The entrant detects a prohibited condition; or

(d) An evacuation alarm is activated.

History: Cr. Register, August, 1995, No. 476, eff. 9-1-95.

ILHR 32.69 Duties of attendants. The employer shall ensure that each attendant:

(1) Knows the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure;

(2) Is aware of possible behavioral effects of hazard exposure in authorized entrants;

(3) Continuously maintains an accurate count of authorized entrants in the confined space and ensures that the means used to identify authorized entrants accurately identifies who is in the space;

(4) Remains outside the confined space during entry operations until relieved by another attendant;

Note: When the employer's entry program allows attendant entry for rescue, attendants may enter a confined space to attempt a rescue if they have been trained and equipped for rescue operations and if they have been properly relieved.

(5) Communicates with authorized entrants as necessary to monitor entrant status and to alert entrants of the need to evacuate the confined space;

(6) Monitors activities inside and outside the confined space to determine if it is safe for authorized entrants to remain in the space and orders the entrants to evacuate the space immediately under any of the following conditions:

ILHR 32.69

- (a) If the attendant detects a prohibited condition;
 - (b) If the attendant detects the behavioral effects of hazard exposure in an authorized entrant;
 - (c) If the attendant detects a situation outside the confined space that could endanger the authorized entrants; or
 - (d) If the attendant cannot effectively and safely perform all the duties required;
- (7) Summon rescue and other emergency services as soon as the attendant determines that authorized entrants need assistance to escape from confined space hazards;
- (8) Takes the following actions when unauthorized persons approach or enter a confined space while entry is underway:
- (a) Warn the unauthorized persons that they must stay away from the confined space;
 - (b) Advise the unauthorized persons that they must exit immediately if they have entered the confined space; and
 - (c) Inform the authorized entrants and the entry supervisor if unauthorized persons have entered the confined space;
- (9) Performs non-entry rescues as specified by the employer's rescue procedure; and
- (10) Performs no duties that might interfere with the attendant's primary duty to monitor and protect the authorized entrants.

History: Cr. Register, August, 1995, No. 476, eff. 9-1-95.

ILHR 32.70 Duties of entry supervisors. The employer shall ensure that each entry supervisor:

- (1) Knows the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure;
- (2) Verifies that all required tests have been conducted and that all required procedures and equipment are in place before allowing entry to begin;
- (3) Terminates the entry when the entry operations have been completed or when a condition that is not allowed arises in or near the confined space;
- (4) Verifies that rescue services are available and that the means for summoning them are operable;
- (5) Removes unauthorized individuals who enter or attempt to enter the confined space during entry operations; and
- (6) Determines, whenever responsibility for entry operation is transferred and at intervals dictated by the hazards and operations performed within the space, that entry operations remain consistent with terms of the entry program.

History: Cr. Register, August, 1995, No. 476, eff. 9-1-95.