

(4) Portable cargo lights furnished by the employer for use aboard vessels shall be listed as approved for marine use by the U.S. Coast Guard or by a nationally recognized testing laboratory (see § 1910.7).

(e) *Entry into darkened areas.* Employees shall not be permitted to enter dark holds, compartments, decks or other spaces without a flashlight or other portable light. The use of matches or open flames is prohibited.

**§ 1918.93 Hazardous atmospheres and substances (See also § 1918.2).**

(a) *Purpose and scope.* This section covers areas in which the employer knows, or has reason to believe, that a hazardous atmosphere or substance may exist, except where one or more of the following sections apply: § 1918.94(a), Carbon monoxide; § 1918.94(b), Fumigated grains; § 1918.94(c), Fumigated tobacco; § 1918.94(d), Other fumigated cargoes; § 1918.94(e), Catch of menhaden and similar species of fish.

(b) *Determination of the hazard.* When the employer knows, or has reason to believe, that a space on a vessel contains or has contained a hazardous atmosphere, a designated and appropriately equipped person shall test the atmosphere prior to employee entry to detect whether a hazardous atmosphere exists.

(c) *Testing during ventilation.* When mechanical ventilation is used to maintain a safe atmosphere, tests shall be made by a designated person to ensure that the atmosphere is not hazardous.

(d) *Entry into hazardous atmospheres.* Only designated persons shall enter hazardous atmospheres, in which case the following provisions shall apply:

(1) Persons entering a space containing a hazardous atmosphere shall be protected by respiratory and emergency protective equipment meeting the requirements of subpart J of this part;

(2) Persons entering a space containing a hazardous atmosphere shall be instructed about the hazards, precautions to be taken, and the use of protective and emergency equipment. Standby observers, similarly equipped and instructed, shall continuously

monitor the activity of employees within such space;

(3) Except in emergency or rescue operations, employees shall not enter any atmosphere identified as flammable or oxygen-deficient (less than 19.5% oxygen). Persons who may be required to enter flammable or oxygen-deficient atmospheres in emergency operations shall be instructed in the dangers attendant to those atmospheres and be instructed in the use of self-contained breathing apparatus which shall be used for entry.

(4) To prevent inadvertent employee entry into spaces identified as having hazardous, flammable or oxygen-deficient atmospheres, appropriate warning signs or equivalent means shall be posted at all means of access to those spaces.

(e) *Asbestos cargo leak.* When the packaging of asbestos cargo leaks, spillage shall be cleaned up by designated employees protected from the harmful effects of asbestos as required by § 1910.1001 of this chapter.

**§ 1918.94 Ventilation and atmospheric conditions (See also § 1918.2, definitions of Hazardous cargo, materials, substance or atmosphere and Ro-Ro operations).**

(a) *Ventilation with respect to carbon monoxide.* (1) When internal combustion engines exhaust into a hold, intermediate deck, or any other compartment, the employer shall ensure that the atmosphere is tested as frequently as needed to prevent carbon monoxide (CO) concentrations from exceeding allowable limits. Such tests shall be made in the area in which employees are working by persons competent in the use of the test equipment and procedures. If operations are in a deep tank or refrigerated compartment, the first test shall be made within one half hour of the time the engine starts. To decide the need for further testing, the initial test in all other cargo handling areas shall be taken no later than one hour after the time the engine starts.

(i) The CO content of the atmosphere in a compartment, hold, or any enclosed space shall be maintained at not more than 50 parts per million (ppm) (0.005%) as an eight hour average area level and employees shall be removed

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from the enclosed space if the CO concentration exceeds a ceiling of 100 ppm (0.01%). Exception: The ceiling shall be 200 ppm (0.02%) instead of 100 ppm (0.01%) for Ro-Ro operations.

NOTE TO PARAGRAPH (a)(1)(i): The term eight hour average area level means that for any period in which the concentration exceeds 50 parts per million, the concentration shall be maintained for a corresponding period below 50 parts per million.

(ii) When both natural ventilation and the vessel's ventilation system are inadequate to keep the CO concentration within the allowable limits, the employer shall use supplementary means to bring such concentration within allowable limits, as determined by monitoring.

(2) The intakes of portable blowers and any exposed belt drives shall be guarded to prevent injury to employees.

(3) The frames of portable blowers shall be grounded at the source of the current by means of an equipment grounding conductor run with or enclosing the circuit conductors. When the vessel is the source of the current, the equipment grounding conductor shall be bonded to the structure of the vessel. Electric cords shall be free from visible defects.

(b) *Fumigated grains.* (1) Before commencing to handle bulk grain in any compartment of a vessel in which employees will or may be present, the employer shall:

(i) Determine whether the grain has been or will be fumigated at the elevator; and

(ii) Determine whether that compartment, or any cargo within it loaded at a prior berth, has been treated with a fumigant or any other chemical.

(2) If fumigant or chemical treatment has been carried out, or if there is reason to suspect that such treatment has been carried out, it shall be determined by atmospheric testing that the compartment's atmosphere is within allowable limits. (See paragraph (b)(3) of this section.)

(3) A test of the fumigant concentration in the atmosphere of the compartment shall be made after loading begins and before employees enter the

compartment. Additional tests shall be made as often as necessary to ensure that hazardous concentrations do not develop.

(i) Tests for fumigant concentration shall be conducted by a designated person, who shall be thoroughly familiar with the characteristics of the fumigant being used, the correct procedure for measurement, the proper measuring equipment to be used, the fumigant manufacturers' recommendations and warnings, and the proper use of personal protective equipment to guard against the specific hazard.

(ii) If the concentration in any compartment reaches the level specified as hazardous by the fumigant manufacturer, or exceeds the permissible exposure limits of part 1910, subpart Z of this chapter, whichever is lower, all employees shall be removed from such compartments and shall not be permitted to reenter until tests prove that the atmosphere is within allowable limits.

(iii) No employee shall be permitted to enter any compartment in which grain fumigation has been carried out, or any compartment immediately next to such a compartment, until it has been determined by testing that the atmosphere in the compartment to be entered is within allowable limits for entry.

(iv) In the event a compartment containing a hazardous or unknown concentration of fumigants must be entered for testing of the atmosphere, or for emergency purposes, each employee entering shall be protected by respiratory protective equipment following the provisions of § 1918.102, and by any protective clothing and other personal protective equipment recommended by the fumigant manufacturer for protection against the particular hazard. At least two other employees shall be stationed outside the compartment as observers, to provide rescue services in case of emergency. The observers shall be equipped with similar personal protective equipment.

(v) One or more employees on duty shall be equipped and trained to provide any specific emergency medical treatment stipulated for the particular fumigant.

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(vi) Emergency equipment required by this paragraph shall be readily accessible wherever fumigated grains are being handled.

(4) If a compartment is treated for local infestation before loading grain by a chemical other than a fumigant, the employee applying the treatment, and any other employees entering the compartment, shall be provided with and required to use any personal protective equipment recommended by the manufacturer of the product to protect them against the effects of exposure.

(c) *Fumigated tobacco.* The employer shall not load break-bulk tobacco until the carrier has provided written notification about whether or not the cargo has been fumigated. If break-bulk tobacco cargo has been treated with any toxic fumigant, loading shall not commence until a written warranty has been received from the fumigation facility that the aeration of the cargo has been such as to reduce the concentration of the fumigant to within the level specified as hazardous by the fumigant manufacturer, or does not exceed the permissible exposure limits of part 1910, subpart Z of this chapter, whichever is lower. Such notification and warranty shall be maintained for at least 30 days after the loading of the tobacco has been completed, and shall be available for inspection.

(d) *Other fumigated cargoes.* Before commencing to load or discharge fumigated cargo other than the cargo specifically addressed in paragraphs (b) and (c) of this section, the employer shall determine that the concentration of fumigants is within the level specified as hazardous by the fumigant manufacturer, or does not exceed the permissible exposure limits of part 1910, subpart Z of this chapter, whichever is lower.

(e) *Grain dust.* When employees are exposed to concentrations of grain dust greater than the allowable limit found in subpart Z of part 1910 of this chapter, they shall be protected by suitable respiratory protective equipment as required by § 1918.102.

(f) *Catch of menhaden and similar species of fish.* (1) The provisions of this paragraph shall not apply to vessels having and utilizing refrigerated holds for the carriage of all cargo.

(2) After a vessel has arrived at berth for discharge of menhaden, but before personnel enter the hold, and as frequently thereafter as tests show to be necessary, tests shall be made of the atmosphere in the vessel's hold to ensure a safe work space. The tests shall be done for the presence of hydrogen sulfide and for oxygen deficiency.

(3) Tests required by paragraph (f)(2) of this section shall be made by designated supervisory personnel, trained and competent in the nature of hazards and the use of test equipment and procedures.

(4) Before employees enter a hold it shall be tested for hydrogen sulfide and oxygen deficiency. Employees shall not enter the hold when the hydrogen sulfide level exceeds 20 ppm ceiling or when the oxygen content is less than 19.5 percent, except in emergencies.

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#### § 1918.95 Sanitation.

(a) *Washing and toilet facilities.* (1) Accessible washing and toilet facilities sufficient for the sanitary requirements of employees shall be readily accessible at the worksite. The facilities shall have:

(i) Running water, including hot and cold or tepid water, at a minimum of one accessible location (when longshoring operations are conducted at locations without permanent facilities, potable water may be provided instead of running water);

(ii) Soap;

(iii) Individual hand towels, clean individual sections of continuous towel, or air blowers; and

(iv) Fixed or portable toilets in separate compartments with latch-equipped doors. Separate toilet facilities shall be provided for male and female employees unless toilet rooms will be occupied by only one person at a time.

(2) Washing and toilet facilities shall be regularly cleaned and maintained in good order.

(b) *Drinking water.* (1) Potable drinking water shall be accessible to employees at all times.

(2) Potable drinking water containers shall be clean, containing only water and ice, and shall be fitted with covers.