

29 C.F.R. § 1910.272

Grain handling facilities.

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

Note to paragraph (a):

For grain-handling facilities in the marine-terminal industry only, 29 CFR 1910.272 is to be enforced consistent with the interpretations in OSHA Compliance Directive 02-00-066, which is available on OSHA's Web page at www.osha.gov.

(b) *Application.* (1) Paragraphs (a) through (n) of this section apply to grain elevators, feed mills, flour mills, rice mills, dust pelletizing plants, dry corn mills, soybean flaking operations, and the dry grinding operations of soycake.

(2) Paragraphs (o), (p), and (q) of this section apply only to grain elevators.

(c) *Definitions.*

Choked leg means a condition of material buildup in the bucket elevator that results in the stoppage of material flow and bucket movement. A bucket elevator is not considered choked that has the up-leg partially or fully loaded and has the boot and discharge cleared allowing bucket movement.

Flat storage structure means a grain storage building or structure that will not empty completely by gravity, has an unrestricted ground level opening for entry, and must be entered to reclaim the residual grain using powered equipment or manual means.

Fugitive grain dust means combustible dust particles, emitted from the stock handling system, of such size as will pass through a U.S. Standard 40 mesh sieve (425 microns or less).

Grain elevator means a facility engaged in the receipt, handling, storage, and shipment of bulk raw agricultural commodities such as corn, wheat, oats, barley, sunflower seeds, and soybeans.

Hot work means work involving electric or gas welding, cutting, brazing, or similar flame producing operations.

Inside bucket elevator means a bucket elevator that has the boot and more than 20 percent of the total leg height (above grade or ground level) inside the grain elevator structure. Bucket elevators with leg casings that are inside (and pass through the roofs) of rail or truck dump sheds with the remainder of the leg outside of the grain elevator structure, are not considered inside bucket elevators.

Jogging means repeated starting and stopping of drive motors in an attempt to clear choked legs.

Lagging means a covering on drive pulleys used to increase the coefficient of friction between the pulley and the belt.

Permit means the written certification by the employer authorizing employees to perform identified work operations subject to specified precautions.

(d) *Emergency action plan.* The employer shall develop and implement an emergency action plan meeting the requirements contained in 29 CFR 1910.38.

(e) *Training.* (1) The employer shall provide training to employees at least annually and when changes in job assignment will expose them to new hazards. Current employees, and new employees prior to starting work, shall be trained in at least the following:

(i) General safety precautions associated with the facility, including recognition and preventive measures for the hazards related to dust accumulations and common ignition sources such as smoking; and,

(ii) Specific procedures and safety practices applicable to their job tasks including but not limited to, cleaning procedures for grinding equipment, clearing procedures for choked legs, housekeeping procedures, hot work procedures, preventive maintenance procedures and lock-out/tag-out procedures.

(2) Employees assigned special tasks, such as bin entry and handling of flammable or toxic substances, shall be provided training to perform these tasks safely.

Note to paragraph (e)(2):

Training for an employee who enters grain storage structures includes training about engulfment and mechanical hazards and how to avoid them.

(f) *Hot work permit.* (1) The employer shall issue a permit for all hot work, with the following exceptions:

(i) Where the employer or the employer's representative (who would otherwise authorize the permit) is present while the hot work is being performed;

(ii) In welding shops authorized by the employer;

(iii) In hot work areas authorized by the employer which are located outside of the grain handling structure.

(2) The permit shall certify that the requirements contained in § 1910.252(a) have been implemented prior to beginning the hot work operations. The permit shall be kept on file until completion of the hot work operations.

(g) *Entry into grain storage structures.* This paragraph applies to employee entry into bins, silos, tanks, and other grain storage structures. *Exception:* Entry through unrestricted ground level openings into flat storage structures in which there are no toxicity, flammability, oxygen-deficiency, or other atmospheric hazards is covered by paragraph (h) of this section. For the purposes of this paragraph (g), the term "grain" includes raw and processed grain and grain products in facilities within the scope of paragraph (b) (1) of this section.

(1) The following actions shall be taken before employees enter bins, silos, or tanks:

(i) The employer shall issue a permit for entering bins, silos, or tanks unless the employer or the employer's representative (who would otherwise authorize the permit) is present during the entire operation. The permit shall certify that the precautions contained in this paragraph (§ 1910.272(g)) have been implemented prior to

employees entering bins, silos or tanks. The permit shall be kept on file until completion of the entry operations.

(ii) All mechanical, electrical, hydraulic, and pneumatic equipment which presents a danger to employees inside grain storage structures shall be deenergized and shall be disconnected, locked-out and tagged, blocked-off, or otherwise prevented from operating by other equally effective means or methods.

(iii) The atmosphere within a bin, silo, or tank shall be tested for the presence of combustible gases, vapors, and toxic agents when the employer has reason to believe they may be present. Additionally, the atmosphere within a bin, silo, or tank shall be tested for oxygen content unless there is continuous natural air movement or continuous forced-air ventilation before and during the period employees are inside. If the oxygen level is less than 19.5%, or if combustible gas or vapor is detected in excess of 10% of the lower flammable limit, or if toxic agents are present in excess of the ceiling values listed in subpart Z of 29 CFR part 1910, or if toxic agents are present in concentrations that will cause health effects which prevent employees from effecting self-rescue or communication to obtain assistance, the following provisions apply.

(A) Ventilation shall be provided until the unsafe condition or conditions are eliminated, and the ventilation shall be continued as long as there is a possibility of recurrence of the unsafe condition while the bin, silo, or tank is occupied by employees.

(B) If toxicity or oxygen deficiency cannot be eliminated by ventilation, employees entering the bin, silo, or tank shall wear an appropriate respirator. Respirator use shall be in accordance with the requirements of § 1910.134.

(iv) "Walking down grain" and similar practices where an employee walks on grain to make it flow within or out from a grain storage structure, or where an employee is on moving grain, are prohibited.

(2) Whenever an employee enters a grain storage structure from a level at or above the level of the stored grain or grain products, or whenever an employee walks or stands on or in stored grain of a depth which poses an engulfment hazard, the employer shall equip the employee with a body harness with lifeline, or a boatswain's chair that meets the requirements of subpart D of this part. The lifeline shall be so positioned, and of sufficient length, to prevent the employee from sinking further than waist-deep in the grain. *Exception:* Where the employer can demonstrate that the protection required by this paragraph is not feasible or creates a greater hazard, the employer shall provide an alternative means of protection which is demonstrated to prevent the employee from sinking further than waist-deep in the grain.

Note to paragraph (g)(2):

When the employee is standing or walking on a surface which the employer demonstrates is free from engulfment hazards, the lifeline or alternative means may be disconnected or removed.

(3) An observer, equipped to provide assistance, shall be stationed outside the bin, silo, or tank being entered by an employee. Communications (visual, voice, or signal line) shall be maintained between the observer and employee entering the bin, silo, or tank.

(4) The employer shall provide equipment for rescue operations which is specifically suited for the bin, silo, or tank being entered.

(5) The employee acting as observer shall be trained in rescue procedures, including notification methods for obtaining additional assistance.

(6) Employees shall not enter bins, silos, or tanks underneath a bridging condition, or where a buildup of grain products on the sides could fall and bury them.

(h) *Entry into flat storage structures.* For the purposes of this paragraph (h), the term “grain” means raw and processed grain and grain products in facilities within the scope of paragraph (b)(1) of this section.

(1) Each employee who walks or stands on or in stored grain, where the depth of the grain poses an engulfment hazard, shall be equipped with a lifeline or alternative means which the employer demonstrates will prevent the employee from sinking further than waist-deep into the grain.

Note to paragraph (h)(1):

When the employee is standing or walking on a surface which the employer demonstrates is free from engulfment hazards, the lifeline or alternative means may be disconnected or removed.

(2)

(i) Whenever an employee walks or stands on or in stored grain or grain products of a depth which poses an engulfment hazard, all equipment which presents a danger to that employee (such as an auger or other grain transport equipment) shall be deenergized, and shall be disconnected, locked-out and tagged, blocked-off, or otherwise prevented from operating by other equally effective means or methods.

(ii) “Walking down grain” and similar practices where an employee walks on grain to make it flow within or out from a grain storage structure, or where an employee is on moving grain, are prohibited.

This document is only available to subscribers. Please [log in](#) or [purchase access](#).

[Purchase Login](#)