

# Grain Handling

## Safety Meeting Packet

### Protect Your Workforce



Working with or around grain includes some unique but dangerous hazards. Workers are exposed to numerous hazards such as suffocation, engulfment, grain dust exposures, and possible explosions. It is important to be aware of the hazards present in grain handling operations and the steps that can be taken to reduce the likelihood of injury. The requirements listed in this document apply to grain handling facilities.

The OSHA Grain Handling Facilities standard considers the following operations to be grain handling facilities:

- Dust pelletizing plants
- Grain elevators
- Feed mills
- Flour mills
- Rice mills
- Dry corn mills
- Soybean flaking
- Dry soybean grinding



### Engulfment Hazards

It can be easy to underestimate the power of flowing grain within a grain storage structure. A worker standing on moving grain can be pulled in to his or her waist in seconds and quickly suffocated.

### Permits

Prior to allowing workers to enter a grain bin, silo, or tank, the employer must issue a permit certifying that precautions have been taken. However, a permit is not necessary if the employer or employer's representative, who would have authorized the permit, is present during the entire operation. The permit shall be maintained on file until operations involving bin, silo, or tank entry are complete.

### Safety Procedures

OSHA requires that safety equipment must be provided if a worker enters a grain storage structure at or above the stored grain level, or if the worker must stand on grain that poses an engulfment hazard. The worker shall be given a body harness with a lifeline or a boatswain's chair (also known as a bosun's chair) that is set so the length does not allow the worker to sink further than waist-deep.

A second person must be stationed outside of the grain storage bin, silo, or tank. This person shall be trained in rescue procedures, equipped to provide assistance, and shall maintain communication with the worker.

A worker may not enter a grain storage bin, silo, or tank when a bridging condition exists, or when grain built up on the sides of the structure could fall and bury the worker.

Any grain transport equipment must be deenergized and effectively prevented from operation, whether it be by lockout/tagout, disconnection, blocked-off or other similar methods.

### Combustible Dust and Vapors

The accumulation of grain dust can create an explosion hazard and leave devastating results. According to OSHA, between 1976 and 2011 grain dust explosions alone caused more than 180 deaths and 675 injuries.

### Testing

Before workers enter a bin, silo, or tank, the atmosphere must be tested for combustible gases, vapors, and toxic agents. The oxygen content shall also be tested, unless there is continuous air movement, either by natural movement or forced-air ventilation.

If the testing indicates that any of the following are present, the employer is required to provide ventilation or respirators if ventilation does not resolve the issue.

- Oxygen level is less than 19.5%
- Combustible gas or vapor exceeds 10% of the lower flammable limit
- Toxic agents exceed limits in 29 CFR 1910, Subpart Z
- Toxic agents are in concentrations that cause health effects that prevent workers from self-rescue or communication

## Hot Work

'Hot work' is a term that includes electric or gas welding, cutting, brazing, or similar flame-producing operations. Any work producing a flame or spark can be hazardous when performed near combustible dust. If hot work is needed, the employer must issue a permit certifying that the requirements in the OSHA Welding, Cutting and Brazing Standard, 29 CFR 1910.252(a) have been implemented.



A hot work permit is not required when:

- The employer or employer representative, who is authorized to issue the permit, is present during the hot work
- Hot work is performed in employer-authorized welding shops
- Hot work is performed in authorized hot work areas located outside of the grain handling structure

## Housekeeping

Employers are required to implement a housekeeping program to reduce and maintain dust accumulation. The program must include procedures to immediately remove accumulations over 1/8 of an inch on any priority areas, which are:

- Floor areas within 35 feet of inside bucket elevators
- Floors of enclosed areas containing grinding equipment
- Floors of enclosed areas containing grain dryers located inside the facility

## Emergency Action Plan

Every grain handling facility must have an emergency action plan. The plan shall be in writing and available to all employees. If there are 10 or fewer employees, the plan may be communicated orally. The plan must include (at minimum):

- Procedures for reporting a fire or other emergency
- Procedures for emergency evacuation, including type of evacuation and exit route assignments
- Procedures for employees who remain to operate critical plant operations before they evacuate
- Procedures to account for employees after evacuation
- Procedures for employees performing rescue or medical duties
- The name or job title of every employee who may be contacted for additional plan information

## Worker Training

- Review engulfment risks present in the workplace.
- Discuss the permit process that must be followed before allowing employees to enter a grain structure.
- Review the safety equipment that must be used when a worker is inside of a grain structure.
- Explain the role of the secondary worker stationed outside of the grain structure.
- Identify bridging and grain build up on side walls.
- Review procedures to power down and lock out grain transportation equipment.
- Review atmosphere testing that must occur prior to work, including test thresholds.
- Identify ventilation and respirator options.
- Review hazards related to hot work and identify the appropriate location or procedure when hot work is required.
- Review housekeeping program requirements.
- Review the procedures included within the action plan.
- Inform employees where the plan can be found.
- Identify individual(s) responsible for providing plan information.

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For additional information, please review the following OSHA standards:

- Emergency Action Plans Standard 29 CFR 1910.38
  - Grain Handling Facilities Standard 29 CFR 1910.272
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# Grain Handling Safety Meeting Attendance Acknowledgement

Company Name \_\_\_\_\_  
 Department / Division \_\_\_\_\_  
 Meeting Date & Time \_\_\_\_\_  AM  PM  
 Meeting Location \_\_\_\_\_  
 Name & Title of Individual Conducting Meeting \_\_\_\_\_

### Key Meeting Discussion Points / Important Reminders:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

### Internal Procedures Reviewed:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

**By signing this document, you confirm your attendance at the meeting and acknowledge the issues addressed above!**

Employees in Attendance		
(Print): _____	(Print): _____	(Print): _____
(Sign): _____	(Sign): _____	(Sign): _____
(Print): _____	(Print): _____	(Print): _____
(Sign): _____	(Sign): _____	(Sign): _____
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(Sign): _____	(Sign): _____	(Sign): _____
(Print): _____	(Print): _____	(Print): _____
(Sign): _____	(Sign): _____	(Sign): _____

Employees not present: \_\_\_\_\_

Suggestions/Recommendations to improve workplace safety and health: \_\_\_\_\_

Actions Taken: \_\_\_\_\_

Manager/Supervisor: \_\_\_\_\_ Date: \_\_\_\_\_

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**Disclaimer:**

The information provided above was assembled using multiple resources. However, these materials do not contain ALL the information available regarding the required safety standards under local, provincial, state, or federal law for your industry.

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