

**National Grain
and Feed Association**



INTERWEST
INSURANCE SERVICES, INC.

Calif. Specific – Confined Space Bin Entry and Permit Required Confined Space

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Permit Required Confined Space – §5157

§5157. Permit-Required Confined Spaces

- **Limited entrance and exit + potential atmospheric hazard or other hazards = “Permit Required Confined Space”**
- Applies to:
 - Boilers, vats, kilns, vaults, silos, storage bins -
 - Tunnels, tanks, wastewater wetwells -
 - Marine terminals, crawl spaces, reservoirs, holding tanks -
 - Telecommunication manholes and unvented vaults -
 - Grain handling facilities -

Cal-OSHA Confined Space Special Emphasis Program

- In place February 2012
- All Cal-OSHA units
 - Enforcement
 - Consultation
 - Every inspection will include an evaluation of confined spaces
- Goal: Zero confined space fatalities in 2012

Presentation Goals:

Increase awareness of:

- How to identify confined spaces
- How to evaluate hazards
- Confined space requirements and compliance
- Resources available for program assistance



Confined Space – U.S. Fatalities

- There were 431 confined space incidents with 530 fatalities in the US due to oxygen deficient and/or toxic atmospheres from 1992-2005
- From 08/18/2009 to 12/31/2009, there were 36 worker fatalities and 6 worker hospitalizations related to confined spaces.
- In 2010, there were 63 worker fatalities and 28 hospitalizations related to confined spaces.
- From 01/01/2011 to 08/01/2011, there were 22 worker fatalities and 3 worker hospitalizations related to confined spaces.
- Repair & Maintenance and cleaning & inspection activities account for almost one-quarter of confined space-related fatalities.
- Construction and manufacturing industries experience the most fatalities.



Compliance -

- Are You Compliant?
- Confined spaces present very special work requirements and preparations
- Safety incidents involving confined spaces may result in fatalities; many have multiple serious injuries



The Basics

If confined spaces exist in your workplace

- Post the space
- Warn “**all**” employees of the hazard
- Prevent employees from entering until an effective and fully implemented confined space program is in place
- Train and document training



What is a Permit Required Confined Space?

Definition -

Limited entrance and exit + potential atmospheric hazard or other hazards
= “Permit Required Confined Space”



Look for spaces that are...

- Large enough and configured so that they can be entered
- Have restricted means for entry or exit
- Are not designed for continuous employee occupancy



Confined Space?



Confined Space?

- Confined? Yes or No?



Permit Required Confined Space Entry

- The employer shall issue a permit for entering bins, silos, or tanks except..... The permit shall certify that the precautions contained in this paragraph have been implemented prior to the employees entering bins, silos, or tanks. The permit shall be kept on file until completion of the entry procedures



Permit Required Confined Space Entry cont.

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

Entry Into Grain Storage Structures

- Body harness with lifeline or a boatswain chair required if engulfment hazard exists*
- Observer stationed outside. Communication with the entrant shall be maintained. (Optional methods and frequency)
- Employer shall provide equipment for rescue operations suited for the bin, silo or tank
- Observer shall be trained in rescue procedures, including notification methods for obtaining additional assistance
- Employees shall not enter bins, silos, tanks underneath a bridging condition or where a buildup of grain products on the sides could fall and bury them



Entry into Flat Storage

- Employees are permitted to walk or stand on grain for purposes of inspection or testing with the following provisions required
- Whenever an employee walks or stands on grain at a depth that poses an engulfment hazard, a harness with a lifeline, or an alternate means of protection must be provided to prevent the employee from sinking further than waist deep in the grain



Hazardous Atmospheres

- If a confined space has a hazardous atmosphere, or has the potential for a hazardous atmosphere, special confined space procedures must be taken
- Hazardous atmosphere includes:
 - Oxygen deficiency or enrichment
 - Flammable atmosphere
 - Acutely toxic (Immediately Dangerous to Life or Health, or impairs ability to self-rescue)



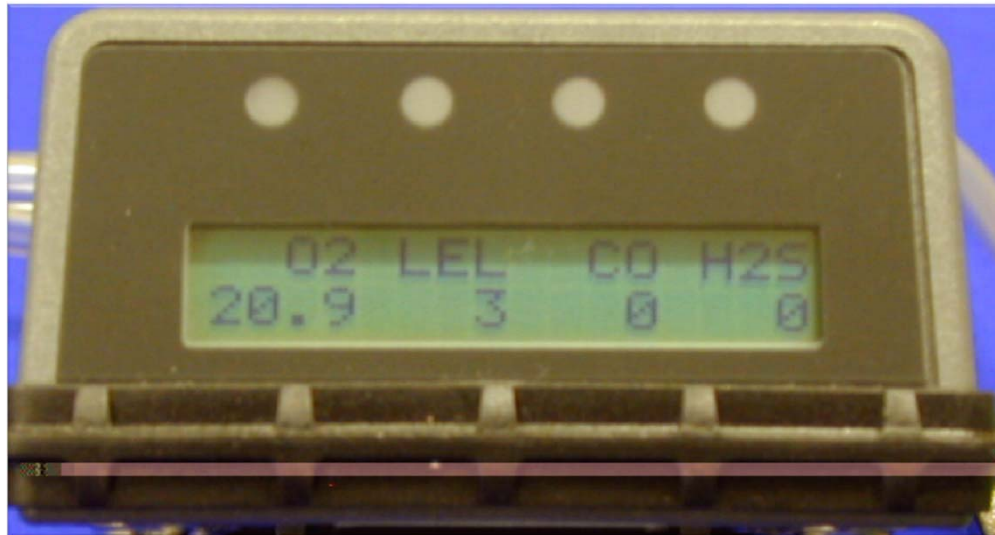
Causes of Hazardous Atmosphere

- Product stored in a confined space:
 - Gases released when cleaning.
 - Materials absorbed into walls of confined space, even if space has been emptied or cleaned.
 - Rotting organic materials and other decomposition
- **Inerting** of the space - Inerting Definition
- An **inerting** system decreases the probability of combustion of flammable materials stored in a confined space, especially a fuel tank, by maintaining a chemically non-reactive or "**inert**" gas, such as nitrogen, in such a space



Before Entry -

- Air Monitoring -
 - Calibration
 - Sample Locations



Confined Space Precautions Must Be Taken If:

- Water or other materials in the space, such as rice, corn or sugar, are an **“engulfment”** hazard
- A person may be trapped in the space due to sloping floor, converging walls, or piping or other obstacles
- Any other recognized serious safety hazard such as energy sources, mechanical hazards, steam, or heat



Rescue & Emergency Services

- ▶ Non-entry rescue is preferred! You must utilize retrieval systems unless they would not be effective in the space
- ▶ In addition to the attendant, there must be at least one standby person at the site who is trained and immediately available to perform rescue and emergency services.
- ▶ Practice simulated rescue operations at least every 12 months in actual space or representative spaces based on opening size, configuration, and accessibility....
- ▶ **“CALL 911” IS NOT A RESCUE PLAN!!!**



Cal/OSHA - Consultation

- For help on working safely in Confined Spaces
- Toll-free Number: **1-800-963-9424**

- **Onsite Assistance Program Area Offices**
- Central Valley: 559-454-1295 - San Diego/Imperial: 619-767-2060
- No. California: 916 263-0704 - San Bernardino: 909-383-4567
- SF/Bay Area: 510-622-2891 - San Fernando Valley: 818-901-5754
- Santa Fe Springs/LA/Orange: 714-562-5525

Consultation Programs:

<http://www.dir.ca.gov/dosh/consultation.html>

Review -

Questions?

- How to identify confined spaces
- How to evaluate hazards
- Confined space program requirements
- Resources available for program assistance

Thank You!

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