

CONFINED SPACE HAZARD ALERT

January 2012

This hazard alert can help employers and employees prevent deaths and injuries in confined spaces. Since confined spaces may be encountered in virtually any industry their recognition is the first step in preventing fatalities and injuries.

Confined Spaces Can Be Deadly

- October 2011: Two brothers, aged 16 and 22, died in an underground drainage system at a recycling center when the younger brother was overcome by hydrogen sulfide and his brother rushed to the rescue and was overcome as well.
- July 2011: One worker at a commercial laundry died of traumatic asphyxia when he was unloading a large horizontal washer and was pulled into the space and crushed when the washer was inadvertently activated while the worker reached in to unload the machine.
- January 2011: One worker died and two co-workers seriously injured at a pharmaceutical plant. The first worker died when he entered a large reactor vessel in which nitrogen had displaced oxygen. Two other workers were injured when they attempted to rescue the first worker.



Entering a confined space without following all required procedures and having an effective emergency rescue plan can result in serious injuries or death. More than 60% of confined space fatalities occur among would-be rescuers.

What Is A Confined Space?

For all employers and employees a confined space exhibits these types of characteristics:

- Is large enough and configured such that an employee can bodily enter and perform work;
- Has limited openings for entry and exit;
- Is not designed for continuous employee occupancy;
- Has the potential for a hazardous atmosphere that may include the lack of or too much oxygen, and/or the presence of toxic or explosive vapors or gases such as hydrogen sulfide and methane; and/or
- Has physical safety hazards such as machinery, sources of electrical shocks, liquids (drowning or fires), steam (burn hazard), or loose, unstable materials that can cause employees to be trapped, crushed, or buried.

Examples of confined spaces include but are not limited to: water and sewer pipes, pumping stations, manholes, boilers, vats, kilns, vaults, silos, storage bins, meter vaults, tunnels, tanks, wastewater wetwells, grit chambers, utility tunnels, crawl spaces under floors, water reservoirs, holding tanks, pits, and sumps.



Why Are Confined Spaces Deadly?

Confined spaces are deceiving and often appear to be harmless. Danger signs (such as dead animals, rusting walls, odors) are often not apparent and the space may have been entered before without incident. **Never** assume that conditions have not changed and that the space is safe for entry at all times.

How Can Work Be Done Safely In Confined Spaces?

When possible, avoid entering these spaces by using devices or equipment that allows work to be done from the outside. If they must be entered, Cal/OSHA has regulations for working safely in confined spaces. **Please refer to the specific standard for your industry and operations.** For general industries such as manufacturing facilities, T8CCR 5157, "Permit-Required Confined Spaces" requirements apply. For employers and employees in Construction, Agriculture, Marine Terminals, Grain Handling, Telecommunications, Natural Gas and Electric Utilities, and Shipyard Operations, the regulations in T8CCR 5158, "Other Confined Space Operations" and other regulations apply.

In general, confined space regulations **require** all employers to have:

- A written confined space plan, including recognizing and marking all confined spaces on site;
- Procedures to test and monitor the air inside confined spaces before and during all employee entries;
- Procedures to prevent unauthorized entries and to have an attendant outside the space at all times;
- Effective controls of all existing atmospheric or safety hazards inside the confined space;
- Employee and supervisor training on safe work procedures, hazard controls, and rescue procedures; and
- Effective rescue procedures which are immediately available on site.

Employees should never enter the space until all the safety precautions are in place and they have been authorized to enter. Emergency procedures must be in place and ready before any employee enters a confined space.

Cal/OSHA Consultation Service

For more help on working safely in confined spaces, contact Cal/OSHA Consultation Service.
Toll-free Number: **1-800-963-9424**

Onsite Assistance Program Area Offices

Central Valley: 559-454-1295

No. California: 916 263-0704

SF/Bay Area: 510-622-2891

Santa Fe Springs/LA/Orange: 714-562-5525

San Diego/Imperial: 619-767-2060

San Bernardino: 909-383-4567

San Fernando Valley: 818-901-5754

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

Publications: <http://www.dir.ca.gov/dosh/puborder.asp>