



# Hazards of Confined Space Entry

Confined space entry is a hazard which should be considered in all types of facilities. Several incidents recently occurred which resulted in illness or injury. In one processing plant, workers using high pressure sprayers inside an evaporator tank became ill after breathing aerosolized wastewater containing high levels of endotoxin. Another situation involved the use of a propane torch to defrost the inside of a walk in freezer.

**How does OSHA define a confined space and what are some of the possible hazards?**

“Confined space,” means a space that:

- Is large enough and so configured that an employee can bodily enter and perform assigned work; and
- Has limited or restricted means for entry or exit; and
- Is not designed for continuous employee occupancy.

Some examples of confined spaces are food and chemical processing tanks and vats, walk-in freezers and coolers, fuel tanks, boilers, manure pits, sewers (including lift stations), hoppers, mixers, well pits, and containment pits for heavy gases such as ammonia.

**Confined spaces may contain one or more chemical, physical, biological and/or fire hazards:**

- Oxygen deficiency is a common cause of deaths in confined spaces. Bacterial decomposition of organic matter and/or dead animals in the bottom of a pit may consume oxygen. Gases such as carbon dioxide or methane, produced from decomposition, may displace oxygen in a confined space. An improperly vented heating device may consume oxygen and cause a buildup of hazardous fumes.
- Toxic gases such as hydrogen sulfide may be generated during decomposition of organic matter.
- Fires and explosions may occur when flammable vapors, gases, or dust have entered confined spaces.
- Employees could be caught by mixer blades or screw conveyers in confined spaces or become engulfed by such materials as grain, sand, and other flowing materials.
- Bacterial endotoxin, common in our environment, may cause severe illness when it becomes aerosolized by a high-pressure sprayer and then inhaled in high concentrations.
- Fumes from cleaning solvents, caustics, sanitizers, etc. can build to toxic levels in poorly ventilated rooms, enclosures, and tanker trucks.

Confined space entry plans, required by OSHA, should address all possible hazards that are likely to be present. Employees of the facility should not enter the confined space without proper supervision and safety equipment, which may include self-contained breathing apparatus, if necessary.

Life-threatening situations or confined space hazards should be brought to the attention of the firm’s management. Individuals may also call 1-800-321-OSHA or the nearest OSHA area or state office for assistance.

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