

Toolbox Safety Topic

Confined Spaces

What is a confined space? A confined space is any space that is:

1. large enough and shaped in such a way that an employee can enter it to perform work,
2. has limited or restricted means of entering and exiting the space, and
3. is not designed to be occupied continuously.

Examples may include, silos, bins, hoppers, tunnels, vessels, tanks, pits, etc. Confined spaces pose some unique hazards that everyone needs to be aware of. The presence, or potential for presence, of any of these hazards generally warrants that the space become a permit-required confined space.

1. Lack of oxygen – Confined spaces usually are not well ventilated. There may not be enough oxygen in the space for you to breathe; this can cause illness or death by asphyxiation. A recent fire or excessive rust in the space may have consumed some or all of the oxygen. In addition, the oxygen can be displaced (or replaced) by gases such as carbon dioxide, methane, or nitrogen.
2. Fires and explosions – Confined spaces can contain residues of flammable and combustible chemicals, oil, solvents, as well as dust or other natural materials that can ignite. Sparks from using metal tools, electrical equipment, welding equipment, or smoking could ignite these materials, causing a tragedy.
3. Toxins – Confined spaces may contain toxic fumes, vapors, or residues that can cause illness or even death, especially if inhaled. Examples are vapors from carbon monoxide, sulfur dioxide, and hydrogen sulfide.
4. Physical hazards – Confined spaces are usually dark, making it hard to see objects that might cause you to trip and fall. Other physical hazards include extreme heat, moving mechanical parts, live electrical equipment, pipes that carry hazardous liquid or gas, and noise that reverberates loudly enough to impair hearing. Additional hazards include engulfment (becoming trapped and suffocated in fine material such as dust, grain, or liquid), and becoming disoriented or trapped if the space is oddly shaped or tapers down to a narrow area.

All confined spaces must be evaluated by a competent person (usually a supervisor who has had additional training and experience) to determine if entry is permissible. If there are no hazards present, the space may be entered without a permit. If any of the hazards listed earlier are present, or are likely to become present, entry into the space should only occur with a Confined Space Entry Permit. This permit ensures that appropriate monitoring and testing has occurred prior to an employee entering the space, that all necessary precautions have been taken, and that all required equipment is available and ready for use. Each employee who enters a confined space must receive appropriate training prior to entry. Each employee who serves as an attendant must receive appropriate training prior to being assigned this responsibility. Each supervisor who oversees confined space work must receive appropriate training prior to assigning employees to confined space work.

Suppose you walk past a tank or vessel and see a coworker lying face down on the floor of the tank. If you reach into the tank with your upper body (waist up will be inside the tank), you can probably pull your coworker to the exit. What would you do? *(Give employees an opportunity to respond, then discuss the procedure below.)*

If your answer indicated that you would attempt this rescue, be aware that you may have become the second victim. Once any part of your body passes the entrance to the confined space, you are exposed to the same hazard that impaired your coworker, and at this point, you do not know what happened to your coworker. NEVER attempt to rescue someone in a confined space unless you can do so from OUTSIDE the confined space (ex. pull them out by their lifeline)! Even then, you could be doing more harm than good. Rescue personnel must be on “standby” for permit-required confined space entry. They must have appropriate training and equipment to perform confined space rescue. Some examples are wearing self-contained breathing apparatus, full body harnesses, body suits, and lifelines. Confined spaces can be dangerous! **Any questions?**

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Date: _____

Meeting Conducted By: _____ Title: _____

Attendees

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