

WHAT ARE ENTRY PERMITS?

Safety procedures for confined spaces may include permits for entering the space. These should be considered required reading, and they include the following information:

- Details about the confined space and its potential hazards
- Guidelines for eliminating or reducing hazards while working in the space
- Safety and rescue procedures
- A list of required personal protective equipment (PPE)
- Authorized number of people who can be inside and how long they can stay
- Emergency contact information
- Rescue procedures



The permit also requires you to list information such as your name, position, purpose and time of entry, and the attendants and supervisors responsible for safety in the space.

Familiarize yourself with entry permit details before you begin work in a confined space, and be sure to attend any rescue trainings your employer provides.

The bottom line: Confined spaces can be safe spaces when safety regulations are followed.

ARE YOU WEARING THE RIGHT EQUIPMENT?

The following PPE is recommended for work in confined spaces:

- Safety shoes with nonskid soles
- Hardhats
- Safety glasses or goggles

Don't forget: Consult material safety data sheets (MSDS) for the substances you are working with to determine what other PPE may be needed, such as a chemical-resistant suit, shoe coverings, gloves or respiratory protection.

Signs to Get Help Fast

The most common confined-space injury is oxygen deprivation. **Watch for these signs:**

- Rapid breathing
- Difficulty catching breath
- Rapid heartbeat
- Poor muscle coordination
- Fatigue

Get yourself or your co-worker out of the space quickly and into fresh air, and alert rescue personnel. Allowed to progress, oxygen deprivation will lead to nausea, vomiting, confusion, unconsciousness and even death. **DON'T WAIT** — get help at the first sign of symptoms.

Operation Rescue: Be Ready!

It doesn't take long for a seemingly safe situation to turn deadly. When you're about to begin working in a confined space, be sure you and your co-workers know which rescue procedures apply before you enter the space. The course of action will be specific for the type of confined space you'll be working in.

- ✓ A person should be posted at each entry where warranted and equipped with rescue equipment, including a safety line attached to the worker in the confined space, a self-contained breathing apparatus, protective clothing, boots, etc.
- ✓ Workers should practice rescue procedures frequently enough to ensure an efficient and calm response to any emergency.

Confined Spaces



Make Room for Safety

Working in a confined space poses safety and health hazards. A confined space is difficult to enter, work in and exit.

In some incidents where injuries and fatalities have occurred, investigation concluded that workers did not recognize they were working in a confined space ... that they encountered unforeseen hazards ... that there was a lack of testing and evaluation of the atmosphere upon entry into the space ... and that rescues were undertaken as spontaneous reactions rather than well-thought-out plans, according to the National Institute for Occupational Safety and Health (NIOSH). **Lives are on the line:** Never take your safety for granted.

Test for hazards, such as poor air quality. Know how to use the testing equipment and interpret the results.

Leave immediately if you experience dizziness, light-headedness or difficulty thinking clearly.

Stay alert. If you feel tired, take a break.

Wear protective equipment at all times.

Have fire extinguishers, resuscitation equipment and other emergency gear available and in good working order.

Keep in constant communication with someone outside of the confined space. In case of an emergency, that person may save your life.

Finally, follow all instructions and safety procedures before and while you spend time in a confined space. You never want to wind up in a tight situation.

Watch Out!

Awareness of the hazards can be a matter of life and death when working in a confined space. Typical hazards:

Noise. Sounds are amplified in a confined space due to reverberation. Noise can also make you unable to hear an attendant or co-worker outside the space. Use hearing protection whenever you work in a confined space, and use hand signals or a visual alarm system for communication.

Vibration. Vibration from tools can also be amplified in a confined space. Use the lowest-vibration tool possible for the job, and use PPE such as padded gloves and grips.

Physical Dangers. Hazards such as scaffolding, greasy residues and structural elements that may be easily avoidable in an open area can become big hazards in a confined space. Know your safety precautions and rescue procedures, and always be on guard when working in a tight spot.

Heat. Temperatures can rise rapidly in a confined space, and special clothing that keeps body temperature at a safe level isn't always wearable because it restricts movement. Keeping fresh, cool air circulating through the space can help you avoid heat injury.



A Breath of Fresh Air

Low oxygen levels and a buildup of flammable or toxic fumes are common hazards in confined spaces. Safety tips:

- Open bottom and top "man-ways" if possible to naturally ventilate the space.
- Use a blower or fan to pull fresh air into the space and blow potentially toxic vapors out.
- Don't vent toxic exhaust into another work area.
- Make sure all mechanical air movers are properly grounded and located away from an ignition source.
- Conduct frequent air sampling to check for toxic or flammable vapors — be sure to sample in different areas such as behind bulkheads or beams, around pipes, in corners and at the top and bottom of the space.
- Wear respiratory protection when needed.

Potential Hazards

- Lack of natural ventilation
- Oxygen deficient atmosphere
- Flammable/explosive material
- Unexpected release of hazardous energy
- Limited entry and exit
- Dangerous contaminants in the air
- Physical barriers or limitations to movement
- Instability of stored products

Keeping Communication Open

When working in a confined space, you may be cut off from sights and sounds outside, meaning that you can't easily communicate with co-workers or call for help if something goes wrong. **Solutions:**

ALARM SYSTEM. Either mechanical or voice-activated, an alarm allows you to alert others in case of an emergency inside the confined space.

ATTENDANT. A colleague should be stationed outside who is in constant contact with you, either visually, verbally or through a mechanical communications system.

SAFETY LINE. The line connects you to an outside point and can be used to help extricate you from the space in an emergency.