

Job Name: \_\_\_\_\_ Job Site Location: \_\_\_\_\_

Date: \_\_\_\_\_ Start Time: \_\_\_\_\_ Finish Time: \_\_\_\_\_ Foreman/Supervisor: \_\_\_\_\_

## Topic 288: Permit Required Confined Spaces

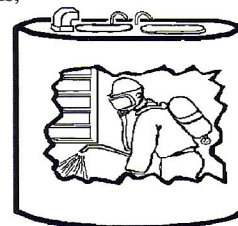
**Introduction:** What is a permit required confined space? A "permit space" is a confined space that may contain life-threatening hazards. No one can enter without first completing a written entry permit. Workers can die in permit spaces because they don't know about hazards or because they use the wrong procedures to control hazards. In fact, many of those who have died in permit spaces were trying to rescue others. Though they come in many sizes and shapes, most confined spaces can be classified in one of two ways: those with depth and open tops and those with narrow openings. Open-topped and deep spaces include trenches, pits, wells, vats, hoppers, bins, degreasers, and kettles. Spaces with narrow openings include tanks, man-holes, compartments, silos, pipes, tunnels, utility vaults, casings, and sewer or drainage pipes.

**"Permit Required" confined space** means that anyone who enters a permit space must first fill out a written permit that verifies that the hazards in the space have been eliminated or controlled, and that the space is safe to enter. A competent person must sign the permit and post it on the space so that workers can see it, then cancel it when work in the space is finished. Only trained/certified employees may enter a permit required confined space.

**Those who enter a permit space** face two kinds of hazards: **atmospheric** and **non-atmospheric**. Atmospheric hazards affect the air in the space and can be flammable, toxic, corrosive, or asphyxiating. Non-atmospheric hazards, on the other hand, include many different conditions, including mechanical dangers, loose materials, excessive noise, extreme temperatures, low light, and difficult access.

### Common "Atmospheric" hazards:

- **Oxygen deficiency (less than 19.5 percent oxygen)** — Chemical or biological reactions consume oxygen. Oxygen-deficient atmospheres affect heart rate, muscle coordination, and breathing. Eventually, these effects can lead to death.
- **Oxygen enrichment (greater than 23.6 percent)** — results from gas welding tasks and from the improper use of supplied-oxygen respirators. Oxygen-enriched atmospheres increase the risk of fire or explosions.
- **Flammable atmospheres** — Fuel, oxygen, and a source of ignition cause fires and explosions. Flammable gasses such as acetylene, butane, propane, hydrogen, and methane are common sources of fuel in permit spaces.
- **Toxic atmospheres** — accumulate through various manufacturing, biological, or chemical reactions. These reactions are released during tasks such as welding and cleaning. Many manufacturing processes, stored materials, and work tasks may also produce toxic gases, vapors, or dusts.
- **Corrosive atmospheres** — accumulate from some manufacturing processes and biological or chemical reactions. Some corrosive substances cause immediate damage to the skin and eyes; some have no immediate effect, but cause cancer with prolonged exposure.



### Common "Non-atmospheric" hazards:

- **Engulfment** — Loose material can suffocate or bury an entrant. If liquids or materials are suddenly released into the confined space, they can trap or bury a worker in seconds.
- **Mechanical and hydraulic energy** — Mechanical and hydraulic equipment start or move unexpectedly. Entrants servicing mechanical and hydraulic equipment can be seriously injured or killed if the energy isn't properly controlled.
- **Falling objects** — Objects fall into the permit space because topside openings are unguarded or improperly guarded.
- **Extreme temperatures** — The permit space's location and the equipment it contains may make it very hot or cold. Hot environments put workers at risk for heat stress, especially if doing strenuous work or wearing protective clothing — cold environments make tasks difficult to accomplish and may cause hyperthermia.
- **Slippery surfaces** — Leaks, spills, and condensation make walking surfaces slippery and increase the risk of falls.
- **Corrosive chemicals** — Corrosive chemicals stored in the permit space or being used by entrants may cause severe eye or skin irritation if exposed workers are not wearing protective clothing.
- **Noise** — Permit spaces amplify sounds produced by tools and equipment. Noise interferes with communication and may cause hearing damage.
- **Access problems** — Confined spaces are difficult to enter and exit. In an emergency, entrants may not be able to exit quickly.
- **Illumination problems** — Most permit spaces are dark places. Poor lighting makes it difficult to enter, exit, and work in a permit space.



**Conclusion:** If a particular workplace has a permit space, all employees must know where it is located, that it is hazardous, and that it is a permit required confined space. Most permit space accidents happen because workers have not been properly trained to recognize permit-space hazards and hazards aren't eliminated or controlled before workers enter the space. Follow these guidelines for safe permit required confined space operations.

## Work Site Review

Work-Site Hazards and Safety Suggestions: \_\_\_\_\_

Personnel Safety Violations: \_\_\_\_\_

### Employee Signatures:

(My signature attests and verifies my understanding of and agreement to comply with, all company safety policies and regulations, and that I have not suffered, experienced, or sustained any recent job-related injury or illness.)

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These guidelines do not supercede local, state, or federal regulations and must not be construed as a substitute for, or legal interpretation of, any OSHA regulations.