



MIOSHA Fact Sheet

Construction Safety & Health Division

Confined Spaces in Construction

Fatalities and injuries frequently occur among construction workers who, during the course of their jobs, are required to enter confined spaces. In some circumstances, these workers are exposed to a variety of hazardous atmospheric factors and physical agents.

What is a Confined Space?

For the construction industry, “confined space” is defined in Construction Safety Standards, [Part 1 General Rules](#) and [Part 7 Welding and Cutting](#).

“**Confined space**” means a space that, because of its physical construction, could be subject to the accumulation of loose materials or explosive, toxic, or flammable contaminants or could have an oxygen deficient atmosphere.

All of the following are examples of confined spaces:

- Storage tanks
- Process vessels
- Bins
- Boilers
- Ventilation ducts
- Sewers
- Underground utility vaults
- Tunnels (after construction is completed)
- Pipelines
- Open top spaces more than four feet in depth, such as pits, tubs, vaults, and vessels

Employer Responsibilities

Employers are required to address confined space entry in their accident prevention program. Each employee who is required to enter a confined space must be instructed regarding all of the following:

- The hazards involved
- The necessary precautions to be taken

- The use of required personal protective equipment
- Emergency equipment

Before an employee enters a confined space where the atmosphere might be hazardous, or before the employee starts a welding operation, **the atmosphere must be tested and the results recorded and kept at the jobsite.**

If an atmosphere is found to be explosive, sparks, flame, and other sources of ignition must be prohibited, and ventilation must be provided to reduce and maintain the hazard at a safe level. The atmosphere within the space must be periodically tested as necessary to ensure that the ventilation is preventing the accumulation of a hazardous atmosphere.

When working in a confined space during a welding operation, the torch valves and the gas supply valve and oxygen valve outside the confined space must be shut off during the lunch period, overnight, or during any other prolonged period and the torch and hose must be removed from the confined space. Open-end fuel gas and oxygen hoses must be immediately removed from enclosed spaces when they are disconnected from the torch or other gas-consuming device.

During a welding operation, when electrodes are used in a confined space and welding is suspended during the lunch period, overnight, or during any other prolonged period, the electrode must be removed from the holder and the machine must be shut off. The holders must be placed or protected so that they cannot make electrical contact with employees or conducting objects.

A gas cylinder or a welding machine used for welding operations in a confined space must be placed on the outside of the space where work is being performed.

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If an employee must enter a confined space through a small opening to perform welding operations, another employee trained in rescue procedures and equipped with the means necessary to effect a rescue must be stationed outside the confined space in position to watch the welder. When a safety harness and lifeline are used, they must be provided for as prescribed in Construction Safety Standard [Part 45 Fall Protection](#), and must be attached to the welder's body so that his or her body cannot be jammed in a small exit opening.

Working in a Permit-required Confined Space

What if a facility falling within the scope of the general industry standards retains a contractor to make physical changes to their facility and the work involves activity in a permit space? Which standards apply to the activity in this permit space, General Industry Safety Standard [Part 90 Permit-Required Confined Spaces](#) or the construction confined space standards?

"Permit-required confined space (permit space)" is defined in Part 90 and means a confined space that has one or more of the following characteristics:

1. Contains or has a potential to contain a hazardous atmosphere;
2. Contains a material that has the potential for engulfing an entrant;
3. Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or
4. Contains any other recognized serious safety or health hazard.

If the work involves maintenance activity, then Part 90 applies. If the work involves construction activity, then the construction confined space standards apply.

Maintenance activity is work to keep a structure, fixture/equipment or foundation (substrates) in proper condition in a routine, scheduled, or anticipated fashion.

"Construction Operations" is defined in R408.1004 as "work activity" designated in major groups 15, 16, and 17 of the standard industrial classification (SIC) manual. Construction activity is work to construct, alter, and/or repair a structure, including painting and decorating.

In cases where it is too difficult to decide whether the activity is construction or maintenance, the most protective standards will be applied.

For a more comprehensive clarification of maintenance vs. construction activities refer to OSHA letters of interpretation: [Stanley, 1994](#); [Ellis, 1999](#); [Tindell, 1999](#); [Knobbs, 2003](#).

If a contractor performs a maintenance operation in a general industry facility, Part 90 requires the contractor to:

- Obtain any available information regarding permit space hazards and entry operations from the host employer;
- Coordinate entry operations with the host employer, when both host employer personnel and contractor personnel will be working in or near permit spaces; and
- Inform the host employer of the permit space program that the contractor will follow and of any hazards confronted or created in permit spaces, either through a debriefing or during the entry operation.

How can I get more information?

For additional information regarding the hazards of confined spaces in construction, please contact the Construction Safety and Health Division at 517284-7680, or the Consultation Education and Training Division at 517-284-7720. MIOSHA Standards can be viewed on the MIOSHA website at www.michigan.gov/mioshastandards.