

CONFINED SPACE DEFINITION EXPLAINED

Determining if spaces under the control or ownership of employers are permit-required confined spaces is a required task under OSHA's 29 CFR 1910.146. The first step is determining if the space is even a confined space. OSHA's 29 CFR 1910.146 Confined Space Standard for General Industry provides a three-part definition for determining if a space is a 'confined space'. This bulletin will detail each element of the three-part definition to assist members in accurately classifying spaces as confined spaces.

29 CFR 1910.146(b) defines a confined space as a space that:

1. Is large enough and so configured that an employee can bodily enter and perform work, and
2. Has limited or restricted means for entry or exit, and
3. Is not designed for continuous employee occupancy.

For a space to be classified as a confined space, all three conditions must be met. If even one condition is not present, the space is not a confined space.

The conditions must be continually evaluated. Conditions may change during a task. For example, a worker stands in a 3-foot-deep pit to inspect a pipe. Since the worker can simply step out of the pit, there is no restriction to exiting. However, at one point, the worker must lie on his back in the pit, under the pipe, to inspect a connection. Since the worker now cannot immediately exit in the event of an emergency, all three conditions currently exist, and the pit would become a confined space.

There is also an element of interpretation when using the definition to evaluate a space. OSHA's Letters of Interpretation provide insights into how regulators apply the definition to particular circumstances posed by employers. The letters do not create additional obligations on the employer. However, OSHA cautions that their guidance may be affected by subsequent changes to the standards. This bulletin and its contents are accurate as of November 1, 2022.

Two letters specifically examine [dock levelers](#) and [elevator pits](#), and OSHA determined these areas typically meet the definition of a confined space.

Is Large Enough and So Configured That an Employee Can Bodily Enter and Perform Work?

A [Letter of Interpretation dated March 5, 2008](#), asks about aircraft fuel cells (tanks) which are approximately 12 inches wide but many feet in length. Workers remain outside the tank but have their upper extremities and, on occasion, their heads extending into the tank to perform the required tasks. OSHA replies that if it is possible for the employee to fit their entire body within the tanks, they would be confined spaces. On the other hand, if an employee cannot enter the tanks with their entire body due to the tanks' diameters, then the tanks would not be considered confined spaces.

A [July 13, 1993 Letter](#) asks about a similar circumstance with work in various sizes of insulated water piping enclosures. OSHA responds that when the enclosures (large or small) are removed, the work area would not be considered a confined space. [Since the] normal access to the water pipe for inspection and testing purposes is from the outside by reaching into the enclosure with no whole-body entry, this type of activity is not covered by the standard. [If] it may be possible to get into one of the larger enclosures, it could technically be considered a confined space,

Has Limited or Restricted Means for Entry or Exit?

A manufacturer who uses natural gas-fired furnaces in the manufacturing process asked if stepping up 22-29 inches from the factory floor would constitute a restriction in a [letter dated May 20, 2019](#). They ask if using an access stool qualifies as a restriction. OSHA's response, if some special means of access, such as ladders and temporary, movable, spiral, or articulated stairs, are needed to enter the space, they may be considered a limited or restricted means of egress, making the space confined under the standard. Stepping into furnaces, which would require more than one step (9.5 inches) to climb up, may be considered a limited or restricted means of entry or exit.

The manufacturer also mentions that the furnace doors are operated remotely. OSHA points out that remotely controlled doors create a restriction to the worker's free entry or exit.

An [October 27, 1995 letter](#) asks about several spaces in a multi-family and commercial building, such as attics, crawl spaces, and soffits. OSHA provides the following response. The preamble to the standard discusses drop ceiling areas; that guidance should be followed for ascertaining whether a crawl space, soffit, and attic are confined spaces.

If an employee must bend down to avoid striking the top of an opening or stepping over a raised threshold, OSHA would consider the opening restrictive to entry or exit. The intent of the standard is to ensure that workers can exit a space quickly in emergency-type situations. How easily a worker can enter and exit a space is affected by both the size and type of ingress/egress point (if there is a full doorway or only a small portal) and the actual transition (stairs, ladder, or nothing) into the space. To determine if a trap door renders a space as a confined space, you would look at considerations such as the weight and swing of the trap door to see if they inhibit an employee from exiting the space. Even if the trap door itself does not impede entry/exit, if it is difficult to reach the trap door due to physical constraints such as piping, duct work, and conduits, then the space would be a confined space.

The same letter asks if fan chambers and return air shafts, served either by standard-size doors or smaller openings, are confined spaces when the heating, ventilating, and air-conditioning unit that serves these fan chambers and air shafts are operating and when they are not. OSHA opines for the purposes of this response, we assume that fan chambers and return air shafts are components of heating/ventilating/air conditioning (HVAC) equipment and not architectural spaces. A standard door is one in which a person, passing through the plane of the door, is not forced to enter or exit in a posture that might slow self-rescue or makes rescue more difficult (i.e., stoop or bend over and/or step over a raised threshold). HVAC equipment with a standard door would not normally be considered a confined space. HVAC equipment with access other than through a standard door would be considered a confined space.

An environmental clean-up company representative asks about truck components in an [October 23, 1995 letter](#). OSHA responses:

- An open-top roll-off refuse container would be considered a confined space when the second element in the standard's definition ("has limited or restricted means for entry and exit") applies. When the doors are in a secured open position, the containers described above would not be considered a confined space either on or off the transport vehicle.
- The bed of a dump truck or trailer is similar to the roll-off container. The question is whether a 4-to-5-foot tailgate door with the hinge point at the top of the side rails, in a raised position constitutes a restriction to entry or exit. We believe that it does constitute a restriction if it is secured in the open position.
- The typical tractor/trailer as described (40 ft. length x 8 ft. wide x 8 ft. high and equipped with two doors at the rear of the unit) with the doors in the open position would not be considered a confined space. When the doors are in the (secured) closed position, it would be considered a confined space since the trailer doors typically cannot be opened from the inside.
- Based on the literature provided, the baghouse and tank compartment of a high-velocity vacuum (Vactor, Guzzler, Supersucker) are confined spaces if the entry/exit points are restrictive.

OSHA also states they do not consider the typical box van or box truck to be a confined space in a [March 8, 2005 letter](#).

In an [October 27, 1995 letter](#), OSHA discusses under what circumstances a containment dike should be classified as a confined space. OSHA says the design of a dike will determine whether it falls within the definition of the standard. A dike formed of mounded or sloped earth to a height of 4 to 6 feet would not usually represent a restricted means for entry or exit. Conversely, a dike formed of a vertical block or concrete wall of the same height would constitute a restricted means of entry or exit.

Is Not Designed for Continuous Employee Occupancy?

The preamble of the Permit-Required Confined Space Standard reflects OSHA's position. OSHA believes that the rule's definition properly places the focus on the design of the space, which is the key to whether a human can occupy the space under normal operating conditions. If, when the space was originally designed or subsequently redesigned, i.e., the designer took into consideration that humans would be entering the space and provided for human occupancy (such as: provided ventilation, lighting, sufficient room to accomplish the anticipated task, etc.), then the space would be designed for employee occupancy. OSHA comments in the standard's preamble on the slight difference between its use of the design of the space as opposed to the American National Standard Institute's (ANSI), focus on the space's primary function. OSHA states if a space is truly designed for human occupancy, then the primary function of the space is irrelevant.

In an [October 27, 1995 letter](#), an attorney asks if a sewer lift station with a built-in power ventilation system is considered designed for human occupancy and, thereby, NOT a confined space. OSHA replies the third component in the definition is very clear for those spaces where a known or suspect hazard is considered and eliminated or controlled in the design of a workplace. When hazards are eliminated or managed through engineering controls for the safety and health of the humans who will be occupying the space, the standard's employee protective measures have been met.

As in the literature provided, the manufacturer has considered the hazards of sewage and its by-products in the design of their pump station so humans can work in the space. Design measures such as barrier separation from the sewage, powered ventilation providing a minimum of 20 air changes an hour, automatic-on and timed (ventilation) control, lighting, and even optional heating or air conditioning demonstrate that this unit was designed to accommodate the worker who will enter it.

An [October 22, 1993 letter](#) from Disney World gives similar advice for a fountain's pump room. In the letter, OSHA states the pump room does not appear to be a confined space as it lacks all three elements necessary to meet the definition of a confined space. The two fixed industrial ladders at the separate points of entry/exit would be considered as 'limited or restricted means for entry and exit'. However, it is apparently designed for continuous human occupancy since: it has two points of entry and exit separate and remote from one another; has a provision for fresh air in connection with the pump room's air conditioning equipment, and the space was designed to house equipment requiring regularly scheduled maintenance.

Employers are reminded even though a space may not be a confined space, the employer is still responsible for identifying the hazards and potential hazards of a task, including the location of the task, and instituting the necessary safeguards to protect the worker. For example, suppose a space that is not a confined space could contain a hazardous atmosphere. In that case, the employer still must remove the contaminant or protect the worker before entering the space.