

Confined Space in Construction

1926.1201 – 1926.1213

Confined space means a space that:

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

Limited or restricted means for entry or exit

- means a condition that has a potential to impede an employee's movement into or out of a confined space.
- Such conditions include, but are not limited to, trip hazards, poor illumination, slippery floors, inclining surfaces and ladders.

Permit-required confined space has one or more of the following characteristics:

- potential to contain a hazardous atmosphere;
- Contains a material that has the potential for engulfing an entrant;
- internal configuration that could trap or asphyxiate and entrant by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross section
- Contains any other recognized serious safety or health hazard

confined space examples

- pits (elevator, pump, valve, etc.)
- **manholes** (sewer, storm drain, electrical, communication, or other utilities);
- tanks (fuel, chemical, water, etc.)
- incinerators;
- scrubbers;
- concrete pier columns;
- sewers; storm drains
- transformer vaults;
- HVAC ducts;
- water mains;
- precast concrete and other pre-formed manhole units;
- drilled shafts;
- enclosed beams;
- vessels; digesters; lift stations;
- cesspools;
- bins, silos;
- air receivers;
- sludge gates;
- boilers; air preheaters;
- step up transformers;
- turbines;
- chillers;
- bag houses;
- mixers/reactors.

This standard does not apply to...

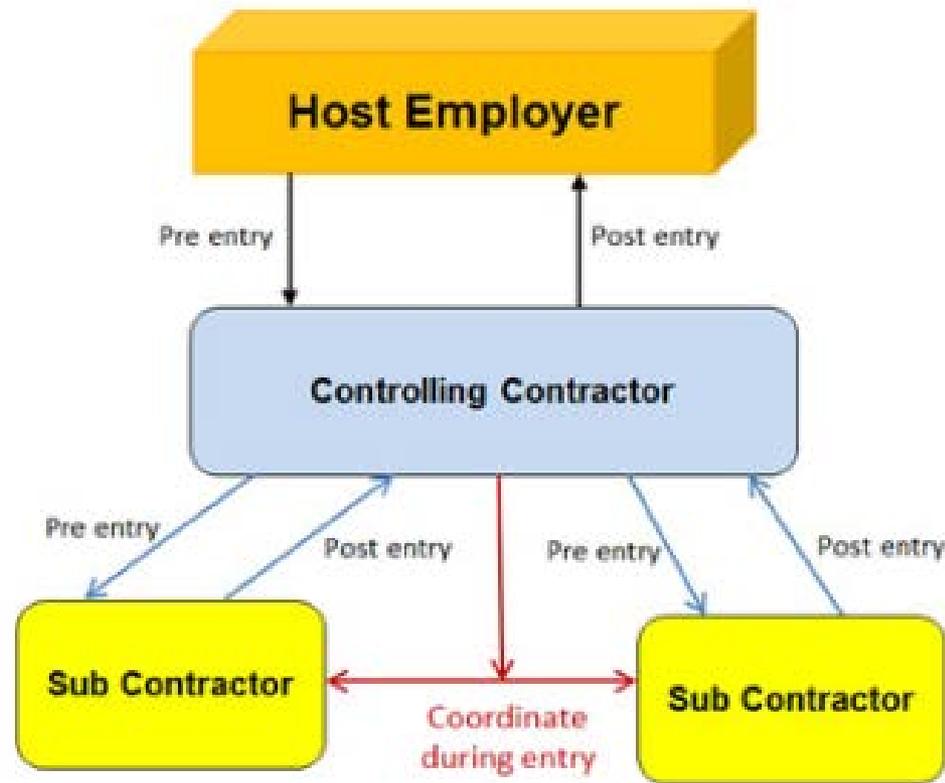
- Construction work regulated by subpart P
 - Excavations
- Construction work regulated by subpart S
 - Underground Construction, Caissons, Cofferdams
- Construction work regulated by subpart Y
 - Diving.

Roles for entry

- Host Employer
- Controlling Contractor
- Entry supervisor
- Entrant
- Attendant
- Rescue and emergency services

Controlling Contractor

- is the employer that has overall responsibility for construction at the worksite.
- If the controlling contractor owns or manages the property, then it is both a controlling employer and a host employer.



- the controlling contractor is responsible for making sure employers outside a space know not to create hazards in the space, and that entry employers working in a space at the same time do not create hazards for one another's workers.

Entry supervisor

- the qualified person (such as the employer, foreman, or crew chief) responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry as required by this standard.
- **Note:** An entry supervisor also may serve as an attendant or as an authorized entrant, as long as that person is trained and equipped as required by this standard for each role he or she fills. Also, the duties of entry supervisor may be passed from one individual to another during the course of an entry operation.

Entry Employer

- any employer who decides that an employee it directs will enter a permit space
- **Note:** An employer cannot avoid the duties of the standard merely by refusing to decide whether its employees will enter a permit space, and OSHA will consider the failure to so decide to be an implicit decision to allow employees to enter those spaces if they are working in the proximity of the space.

Competent person

- means one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and
- has the authorization to take prompt corrective measures to eliminate them

Step one - 1926.1203(a)

- Before it begins work at a worksite, each employer must ensure that a **competent person identifies all confined spaces** in which one or more of the employees it directs may work, and identifies each space that is a permit space, through consideration and evaluation of the elements of that space, including testing as necessary.

Keeping unauthorized workers out!

- **1926.1203(b)(1)** Inform exposed employees by posting danger signs or by any other equally effective means, of the existence and location of, and the danger posed by, each permit space; and

Note: A sign reading "DANGER-PERMIT-REQUIRED CONFINED SPACE, DO NOT ENTER" or using other similar language would satisfy the requirement.

- **1926.1203(b)(2)** Inform, in a timely manner and in a manner other than posting, its employees' authorized representatives and the controlling contractor of the existence and location of, and the danger posed by, each permit space.

The alternate procedures

- An employer whose employees enter a permit space need not comply with 1926.1204-1206 & 1208-1211, provided that all of the following conditions are met:
- **1926.1203(e)(1)(i)** - The employer can demonstrate that all **physical hazards in the space are eliminated or isolated** through engineering controls so that the only hazard posed by the permit space is an actual or potential hazardous atmosphere;
- **1926.1203(e)(1)(ii)** - The employer can demonstrate that continuous forced air ventilation alone is sufficient to maintain that permit space safe for entry, and that, in the event the ventilation system stops working, entrants can exit the space safely;

The alternate procedures

- **1926.1203(e)(1)(iii)** - The employer develops monitoring and inspection data that supports the demonstrations required by paragraphs (e)(1)(i) and (ii) of this section;
- **1926.1203(e)(1)(v)** -the determinations and supporting data required by paragraphs (e)(1)(i), (ii), and (iii) of this section are documented by the employer and are made available to each employee who enters the permit space under the terms of paragraph (e) of this section or to that employee's authorized representative; and

Documentation

- The employer must verify that the space is safe for entry and that the pre-entry measures required have been taken, through a written certification that contains the
 - date,
 - the location of the space, and
 - the signature of the person providing the certification.

Entry under the Alternate procedures

- Before an employee enters the space, the internal atmosphere must be tested, with a calibrated direct-reading instrument, for oxygen content, for flammable gases and vapors, and for potential toxic air contaminants, in that order.
- Any employee who enters the space, or that employee's authorized representative, must be provided an opportunity to observe the pre-entry testing required by this paragraph.

More to know...

- The air supply for the forced air ventilation must be from a clean source and must not increase the hazards in the space
- The atmosphere within the space must be continuously monitored unless the entry employer can demonstrate that equipment for continuous monitoring is not commercially available or periodic monitoring is sufficient.
- If continuous monitoring is used, the employer must ensure that the monitoring equipment has an alarm that will notify all entrants if a specified atmospheric threshold is achieved.

Fall hazard 101

- Any conditions making it unsafe to remove an entrance cover must be eliminated before the cover is removed.
- When entrance covers are removed, the opening must be immediately guarded by a railing, temporary cover, or other temporary barrier that will prevent an accidental fall through the opening and that will protect each employee working in the space from foreign objects entering the space.

People die in confined spaces because...

- Do not recognize the hazards
- Do not eliminate the hazards
- Overcome by emotion

the host employer must provide to the controlling contractor

- The location of each known permit space;
- The **hazards** or potential hazards in each space or the reason it is a permit space; and
- Any precautions that the host employer or any previous controlling contractor or entry employer implemented for the protection of employees in the permit space.

the controlling contractor must

- Obtain the host employer's information about the permit space hazards and previous entry operations
- Provide the following information to each entity entering a permit space and any other entity at the worksite whose activities could foreseeably result in a hazard in the permit space:
 - The information received from the host employer;
 - Any additional information the controlling contractor has about the subjects listed in paragraph 1926.1203(h)(1) and
 - The precautions that the host employer, controlling contractor, or other entry employers implemented for the protection of employees in the permit spaces.

The entry employer must ensure that each entry supervisor

- Understands the hazards that may be faced during entry
- Verifies, by checking that the appropriate entries have been made on the permit, that all tests specified by the permit have been conducted and that all procedures and equipment specified by the permit are in place before endorsing the permit and allowing entry to begin
- Verifies that rescue services are available

Each entry employer must document the completion of measures by preparing an entry permit.

- The entry supervisor must sign the entry permit.
- The completed permit must be at the entry portal or equivalent so that it can be confirmed that pre-entry preparations have been completed.
- The duration of the permit may not exceed the time required to complete the task

The entry permit must identify

- The permit space to be entered;
- The purpose of the entry;
- The date and the authorized duration of the entry permit;
- The authorized entrants within the permit space, by name or by such other means (for example, through the use of rosters or tracking systems) as will enable the attendant to determine quickly and accurately, for the duration of the permit, which authorized entrants are inside the permit space;
- Means of detecting an increase in atmospheric hazard levels in the event the ventilation system stops working;
- Each person, by name, currently serving as an attendant;
- The individual, by name, currently serving as entry supervisor, and the signature or initials of each entry supervisor who authorizes entry

The entry permit must identify

- The hazards of the permit space to be entered;
- The measures used to isolate the space and eliminate or control hazards
- The acceptable entry conditions;
- The results of tests and monitoring, accompanied by the names or initials of the testers and when the tests were performed;

The entry permit must identify

- The rescue and emergency services that can be summoned and the means (such as the equipment to use and the numbers to call) for summoning those services;
- The communication procedures used by entrants and attendants to maintain contact during the entry;
- Equipment, such as personal protective equipment, testing equipment, communications equipment, alarm systems, and rescue equipment, to be provided for compliance with this standard;
- Any other information necessary, given the circumstances, to ensure employee safety; and
- Any additional permits, such as for hot work, that have been issued

Entry permit

- The entry employer must retain each canceled entry permit for at least 1 year to facilitate the review of the permit-required confined space program required by § 1926.1204(n).
- Any problems encountered during an entry operation must be noted on the pertinent permit so that appropriate revisions to the permit space program can be made.

An employer who designates rescue and emergency services must:

- Evaluate a prospective rescuer's ability to respond in a timely manner, considering the hazard(s) identified;

Note to paragraph (a)(1). What will be considered timely will vary according to the specific hazards involved in each entry. For example, § 1926.103 (Respiratory protection) requires that employers provide a standby person or persons capable of immediate action to rescue employee(s) wearing respiratory protection while in work areas defined as IDLH atmospheres.

- Evaluate a prospective rescue service's ability, in terms of proficiency with rescue-related tasks and equipment, to function appropriately while rescuing entrants from the particular permit space or types of spaces

Select a rescue team or service from those evaluated that:

- Has the capability to reach the victim(s) within a time frame that is appropriate for the permit space hazard(s) identified;
- Is equipped for, and proficient in, performing the needed rescue services;
- Agrees to notify the employer immediately in the event that the rescue service becomes unavailable

rescue team or service

- Inform each rescue team or service of the hazards they may confront when called on to perform rescue
- Provide the rescue team or service selected with access to all permit spaces from which rescue may be necessary so that the rescue team or service can develop appropriate rescue plans and practice rescue operations.
- An employer must provide all equipment and training at no cost to employees
- The employer must ensure that at least one member of the rescue team or service holding a current certification in basic first aid and CPR is available

rescue team or service

- Ensure that affected employees practice making permit space rescues before attempting an actual rescue, and at least once every 12 months, by means of simulated rescue operations in which they remove dummies, manikins, or actual persons from the actual permit spaces or from representative permit spaces
- Representative permit spaces must, with respect to opening size, configuration, and accessibility, simulate the types of permit spaces from which rescue is to be performed

rescue team or service

- Non-entry rescue is required unless the retrieval equipment would increase the overall risk of entry or not contribute to rescue
- Each entrant must use a chest or full body harness, with a retrieval line attached at the center of the entrant's back near shoulder level, above the entrant's head, or at another point which the employer can establish presents a profile small enough for the successful removal of the entrant.

rescue team or service

- The other end of the retrieval line must be attached to a mechanical device or fixed point outside the space.
- A mechanical device must be available to retrieve personnel from vertical spaces more than 5 feet (1.52 meters) deep.

Training

- The employer must provide training at no cost to the employee, and ensure that the employee possesses the understanding, knowledge, and skills necessary for the safe performance of the duties assigned.
- This training must result in an understanding of the hazards in the space and the methods used to isolate, control or in other ways protect employees from these hazards, and for those employees not authorized to perform entry rescues, in the dangers of attempting such rescues
- Training required by this section must be provided in both a language and vocabulary that the employee can understand

Training

- The training must establish employee proficiency in the duties required by this standard and must introduce new or revised procedures, as necessary, for compliance with this standard.
- The employer must maintain training records and contain
 - each employee's name,
 - name of the trainers, and
 - dates of training.
- The documentation must be available for inspection by employees and their authorized representatives, for the period of time the employee is employed by that employer.

Employee involvement

- Employers must consult with affected employees and their authorized representatives on the development and implementation of all aspects of the permit space program required by § 1926.1203.
- Employers must make available to each affected employee and his/her authorized representatives all information required to be developed by this standard

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