

Permit Required in Confined Space

Scope and Application - This section contains requirements for entry into permit-required confined spaces. OSHA's regulations for permit-required confined spaces are found in 29 CFR 1910.146. These regulations do not apply to construction activities or to any activity covered by a specific OSHA regulation.

Entry Permit - A confined space entry permit must be completed and signed or initialed by an entry supervisor prior to entry into any permit space. The entry-permit documents compliance with OSHA's regulations and this program must contain the following:

1. The permit space to be entered
2. The purpose of the entry
3. The date and the authorized duration of the entry permit
4. The names of the authorized entrants, attendants, and the name and signature or initials of the entry supervisor
5. The hazards of the space about to be entered
6. The measures, such as lockout/tagout, purging, inerting, or ventilating, used to isolate the permit space and to eliminate or control permit space hazards before entry
7. The acceptable entry conditions
8. The results of initial and periodic atmospheric tests, as well as the names or initials of the testers and the date and times of the tests
9. The rescue and emergency services that can be summoned and procedures for summoning those services
10. The communication procedures to be used by authorized entrants and attendants during entry
11. Equipment including personal protective equipment, special tools, testing equipment, and rescue equipment to be provided during the entry
12. Any other information which is necessary, given a particular permit space, to ensure employee safety

Entry Procedures - Prior to entering a permit space, conditions within the space must be tested to determine if acceptable entry conditions as determined during the permit space evaluation exist. Testing or monitoring of the permit space must be done as necessary to ensure that acceptable entry conditions are being maintained during the course of the entry operations.

If isolation of the permit space is infeasible because the space is large or is part of a continuous system (such as a sewer), pre-entry testing must be performed to the extent possible before entry is allowed and, if entry is authorized, entry conditions must be continuously monitored. When testing for atmospheric hazards, test first for oxygen, then for combustible gases and vapors, and then for toxic gases and vapor.

At least one attendant must be provided outside the permit space for the duration of the entry operation. Attendants may be assigned to monitor more than one space so long as they can effectively perform the duties described in **Duties of Attendants**. The entry permit must reflect the procedures to be followed by the attendant if he/she is called to respond to an emergency affecting one or more sites so as not to be distracted from his/her duties at the remaining unaffected sites.

The completed entry permit must be made available to authorized entrants at the time entry begins by posting the permit at the entry portal or by some other equally effective means, such as a pre-entry meeting. The authorized entrants must confirm that the pre-entry preparations have been completed and must perform other duties as described in Duties of Authorized Entrants.

The duration of the permit may not exceed the time required to complete the assigned job or task identified in the permit. The entry supervisor must terminate the entry and cancel the permit when work has been completed, or when a condition that is not allowed under the entry permit arises in or near the permit space. The entry supervisor must also perform other duties as described in Duties of Entry Supervisor.

Canceled entry permits must be retained for at least one (1) year. An annual review of all entry permits will be conducted jointly by EHS and the supervisor to ensure that the procedures of the permit-required confined space entry program are adhered to. Reviews of entry procedures must also take place whenever any of the following occur:

1. Any unauthorized entry into a confined space
2. The detection of a permit space hazard not covered by the permit
3. The detection of a condition prohibited by the permit
4. The occurrence of an injury or near-miss during entry
5. A change in the use or configuration of a permit space
6. An employee complaint about the effectiveness of the program
7. Any time the steps taken under the permit do not adequately protect entrants

Emergency Preparedness - To facilitate non-entry rescue retrieval systems or methods must be used whenever an authorized entrant enters a permit space unless the retrieval equipment increases the overall risk of entry or would not contribute to the rescue of an entrant. Each authorize entrant must use a chest or full body harness with a retrieval line attached centered in the entrant's back near shoulder level or above the entrant's head. Wristlets may be used if a chest or full body harness is infeasible or presents a greater risk and wristlets are the safest and most effective alternative. The other end of the retrieval line must be attached to a mechanical device or fixed point outside the permit space in such a manner that rescue can begin immediately when needed. A mechanical device must be available to retrieve entrants from vertical type permit spaces more than five (5) feet deep.

If an injured entrant is exposed to a substance for which a Material Safety Data Sheet (MSDS) or other similar written information is required to be kept at the worksite, that MSDS or written information must be made available to the emergency personnel treating the exposed entrant.

Duties of Attendants

1. Know the hazards that may be faced during entry including information on the mode, signs or symptoms, and consequences of the exposure.
2. Be conscious of possible behavioral effects of hazard exposure in authorized entrants.
3. Continuously maintain an accurate count of authorized entrants in the permit space and ensure that the identities of all entrants are recorded.
4. Remain outside the permit space during the entry operation unit relieved by another attendant.

5. Communicate with authorized entrants as necessary to monitor entrant status and to alert entrants to the need to evacuate from the space.
6. Monitor activities inside and outside the space to determine if it is safe for entrants to remain in the space. Order the entrants to evacuate under any of the following situations:
 - a. the attendant detects a prohibited condition
 - b. the attendant detects the behavioral affects of hazard exposure in an authorized entrant
 - c. the attendant detects a situation outside the space that could endanger the authorized entrants
 - d. the attendant cannot effectively and safely perform all duties described in this section
7. Summon rescue and other emergency services as soon as the attendant determines that authorized entrants may need assistance to escape from permit space hazards.
8. Take the following actions when unauthorized persons approach or enter a permit space while entry is underway:
 - a. Warn the unauthorized persons that they must stay away from the permit space;
 - b. Advise the unauthorized persons that they must exit immediately if they have entered the permit space; and
 - c. Inform the authorized entrants and the entry supervisor if unauthorized persons have entered the permit space.
9. Perform non-entry rescue using retrieval equipment.
10. Perform no duties that might interfere with the attendant's primary duty to monitor and protect the authorized entrants.

Duties of Authorized Entrants

1. Know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure.
2. Properly use all equipment necessary for the entry.
3. Communicate with the attendant as necessary to enable the attendant to monitor status and to enable the attendant to alert entrants of the need to evacuate the space.
4. Alert the attendant whenever:
 - a. The entrant recognizes any warning sign or symptom of exposure to a dangerous situation
 - b. The entrant detects a prohibited condition
5. Exit from the permit space as quickly as possible whenever:
 - a. An order to evacuate is given by the attendant or the entry supervisor
 - b. The entrant recognizes any warning sign or symptom of exposure to a dangerous situation
 - c. The entrant detects a prohibited condition

Duties of Entry Supervisors

1. Know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure.
2. Verify that all pre-entry tests are completed and that all necessary equipment is available prior to endorsing the permit and allowing entry.
3. Terminate the entry and cancel permits as necessary.
4. Verify that rescue services are available and that the means for summoning them are operable.
5. Remove unauthorized individuals who enter or attempt to enter the permit space during entry operations.
6. Determine, whenever responsibility for a permit space operation is transferred and at intervals dictated by the hazards and operations performed in the space, that entry operations remain consistent with the terms of the entry permit and that acceptable entry conditions are maintained.

Alternate Procedures for Permit Space Entry - Alternate procedures for permit space entry are allowed for spaces whose only hazard is an actual or potential hazardous atmosphere that can be rendered safe by continuous forced air ventilation. If any other hazard is present then these alternate procedures cannot be utilized. Before alternate procedures may be used, monitoring and inspection data regarding the permit space must be obtained and documented. If an initial entry of the permit space is necessary to obtain data, the entry must be performed in compliance with permit-required confined space entry procedures.

After it has been established that only atmospheric hazards that can be controlled by continuous forced air ventilation are present in the permit space, the following alternate procedures may be used:

1. A written certification containing the date, the location of the space, and the signature of the person providing the certification must be provided prior to entry to all employees entering the space. This certification must verify that the space is safe for entry and that all necessary tests and inspections have been accomplished.
2. Any condition making it unsafe to remove an entrance cover must be eliminated before the cover is removed.
3. When entrance covers are removed, the opening must be guarded by a railing, temporary cover, or other 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.
4. Before any employee enters the space, the internal atmosphere must be tested using a calibrated direct-reading instrument for the following conditions in the order given:
 - a. Oxygen content
 - b. Flammable gases and vapors
 - c. Potential toxic air contaminants

5. There may be no hazardous atmosphere within the space whenever an employee is inside the space. Continuous forced air ventilation must be used as follows:
 - a. An employee may not enter the space until the forced air ventilation has eliminated any hazardous atmosphere
 - b. The forced air ventilation must be so directed as to ventilate the immediate areas where an employee is or will be working and must continue until all employees have left the space
 - c. The air supply for the forced air ventilation must be from a clean source and may not increase the hazard in the space
6. The atmosphere must be periodically tested, in the manner listed above, to ensure that no hazardous atmosphere has accumulated.
7. If a hazardous atmosphere is detected during entry, then all employees must leave the space immediately. The space must then be reevaluated to determine how the hazardous atmosphere developed and measures must be implemented to protect employees during any subsequent entry.

When changes in the use or configuration of the space are made that might increase the hazards faced by entrants, then that space must be reevaluated to determine if alternate procedures can still be effectively used or if permit-require confined space entry procedures are to be instituted.

Non-Permit Confined Spaces - A confined space that poses no actual or potential atmospheric hazard and in which all internal hazards are eliminated without entry into the space, may be classified as a non-permit confined space. A permit-required confined space may be reclassified as a non-permit confined space if atmospheric and other internal hazards are eliminated. The control of atmospheric hazards through forced air ventilation does not constitute elimination of such hazards. If no other hazards were present in such cases, then alternate procedures for permit space entry would still apply.

A certification must be prepared for permit-required confined spaces that are reclassified as non-permit confined spaces which contain the date, the location of the space, and the signature of the person making the determination that the space should be reclassified. This certification must be made available to each employee entering the space.

If changes in the use or configuration of a non-permit space occur, the space must be reevaluated and reclassified, if necessary. If hazards arise within the space, all employees must immediately leave the space and it must be reevaluated and, if necessary, reclassified as a permit-required confined space.

Work Performed by Contractors - Whenever work that involves a permit-required confined space is performed by outside contractors, the Project Manager must ensure that the following procedures are used:

1. The contractor must be informed that the workplace contains permit spaces and that permit space entry is allowed only through compliance with a permit space program meeting OSHA's requirements in 29 CFR 1910-146
2. The contractor must be apprised of the elements that make the space in question a permit space, including the hazards identified and the University's experience with the space
3. The contractor must be apprised of any precautions or procedures that the University has implemented for the protection of employees in or near the permit spaces where the contractor's personnel will be working
4. Operations must be coordinated with the contractor whenever both University and contractor employees will be working in or near the same permit spaces
5. The contractor must be debriefed at the conclusion of the entry operations regarding the permit space program followed and regarding any hazards confronted or created in the permit space during the contractor's operations