

OSHA COMPLIANCE FOR Construction Activities

FROM UNDERSTANDING TO IMPLEMENTATION



J. J. Keller
& Associates, Inc.
Since 1953


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This publication updates in
February/August

(47291)



OSHA Compliance for Construction Activities

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Library of Congress Catalog Card Number: 2015951826

ISBN: 978-1-68008-090-2

Canadian Goods and Services Tax (GST) Number: R123-317687

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Printed in the U.S.A.

OSHA Compliance for Construction Activities

Introduction

This publication takes you beyond what the regulations are and provides you with information on how to comply with them and implement them, as well as providing relevant information based on OSHA's own interpretations of the regulations. Used in conjunction with the OSHA regulations, this publication serves as an effective guide to implementing safety and health requirements in your workplace.

Each topic in the manual is designed to allow you to quickly assess the important information you need to get, and stay, in compliance. Each topic starts out with our ez Explanation™ which consists of a scope statement, the regulatory citation(s) associated with the topic, key definitions, and a summary of requirements. The In Depth section provides details about how to comply with the requirements, along with best practices and other relevant information. We then provide frequently asked questions (FAQs) along with applicable written plans and checklists to keep you on track.

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**The Editors & Publisher
J. J. Keller & Associates, Inc.**

OSHA Compliance for Construction Activities

Published & Printed by

J. J. Keller & Associates, Inc.

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Confined Spaces



ez Explanations™

summaries from the J. J. Keller® subject-matter experts

A confined space is a space whose configuration and/or contents may present special dangers not found in normal work areas. Confined spaces may be poorly ventilated and, as a result, contain insufficient oxygen or hazardous levels of toxic gases. Working in a tight space can prevent a worker from keeping a safe distance from mechanical and electrical hazards in the space. Fumes from a flammable liquid that is used in a poorly ventilated area can reach explosive levels.

Such hazards endanger both the workers in the confined space and others who become exposed to the hazards when they attempt to rescue injured workers. In a number of cases, rescue workers have themselves died or been injured because they did not have the training and equipment necessary to conduct the rescue safely.

Because confined spaces are potentially dangerous, employers must evaluate all confined spaces in which their employees work to determine whether hazards exist or whether the work to be done in the space can create hazards. If a confined space contains an actual or potential hazard that can cause death, injury or acute illness, incapacitation, entrapment, or otherwise interfere with a worker's ability to leave the space in an emergency, it is a permit-required confined space, or permit space.

Employers must take certain precautions whenever workers enter a permit space. These include:

1. Specifying the precautions to be taken to protect the workers in the space;
2. Training the workers who are covered by the standard to give them the knowledge to protect themselves and others; and
3. Planning how to rescue injured workers promptly and safely.

Scope

The Confined Spaces in Construction standard protects employees engaged in construction activities at a worksite with one or more confined spaces. All employers engaged in construction activities have a duty under the standard to make sure their employees do not enter a confined space except when following the requirements of the standard.

The presence of a confined space on the worksite triggers this duty. The focus is on the type of work performed, and whether that work could produce, and expose employees to, confined space hazards.

The standard applies to construction work performed in confined spaces, except for certain construction activities that are subject to confined space provisions in other OSHA construction standards.

The following Subparts are exempt from the Confined Spaces in Construction standard:

- Diving: 29 CFR 1926, Subpart Y
- Excavation: 29 CFR 1926, Subpart P
- Underground Construction, Caissons, Cofferdams and Compressed Air: 29 CFR 1926, Subpart S

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Note, however, that employers engaged in these activities must comply with this standard if their workers are exposed to confined space hazards that are not addressed by the standards listed above. For example, the Excavation standard (Subpart P) protects workers in a trench (a type of confined space) against the hazards associated with the trench itself. However, the Excavation standard would not protect workers inside a sewer line that is installed in an open trench from confined space hazards associated with the sewer line. The employer must comply with the Excavation standard to protect workers in the trench and with the Confined Spaces standard to protect workers in the sewer line.

Where Subpart AA applies and there is a provision that addresses a confined space hazard in another applicable OSHA standard, the employer must comply with both that requirement and the applicable provisions of Subpart AA.

For example, employers engaged in the following activities in confined spaces must also comply with other applicable OSHA standards, such as:

- Process Safety Management: 29 CFR 1926.64
- Hazardous Waste Operations: 29 CFR 1926.65
- Welding and Cutting: 29 CFR 1926, Subpart J



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Regulatory Citation

29 CFR Subpart AA, 1926.1200 through 1926.1213 — *Confined Spaces in Construction*.

Key Definitions

- **Attendant:** is an individual stationed outside one or more permit spaces who monitors conditions within the space(s) and prevents unauthorized entry.
- **Authorized entrant:** is a worker who is authorized by the entry supervisor to enter a permit 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 who has the authorization to take prompt corrective measures to eliminate them.
- **Controlling contractor:** is the employer with overall responsibility for construction at the worksite. The controlling contractor is responsible for coordinating entry operations when there is more than one entry employer and when other activities on the site could foreseeably result in a hazard in the permit space. In addition, controlling contractors must provide any information they have about any permit space hazards and precautions previously used in the space.
- **Confined space:** a space that:
 - Is large enough and so configured that an employee can bodily enter it,
 - Has limited or restricted means for entry and exit, and
 - Is not designed for continuous employee occupancy.
- **Entry employer:** is an employer who decides that an employee it directs will enter a permit space. There may be more than one entry employer if the employees of multiple employers must enter the space. Each entry employer is responsible for complying with all provisions in the Confined Spaces standard except those specifically imposed on the controlling contractor and host employer.
- **Entry supervisor:** is a qualified person (such as the employer, foreman, or crew chief) responsible for overseeing entry operations. 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. The duties of entry supervisor may be passed from one individual to another during the course of an entry operation.
- **Host employer:** is the employer that owns or manages the property where the construction work is taking place. Where the host employer has information about permit space hazards on the site, it must share that information with the controlling contractor, who is then responsible for sharing it with the other employers on the site.

In no case will there be more than one host employer. If the owner of the property on which the construction activity occurs has contracted with another employer to manage the property and provided any relevant information it has about permit spaces on the property to the managing entity, the



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managing entity is the host employer. Absent such a contract and exchange of information, the owner of the property is the host employer. If the controlling contractor owns or manages the property, it is both the controlling contractor and the host employer.

- **Permit-required confined space (permit space):** means a confined space that has one or more of the following characteristics:
 - Contains or has a potential to contain a hazardous atmosphere,
 - Contains a material that has the potential for engulfing an entrant,
 - 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
 - Contains any other recognized serious safety or health hazard.

Summary of Requirements

The following table summarizes the responsibilities of the various categories of employer.

Duties of employers under the Confined Spaces in Construction

Category of Employer	Employer Responsibilities
All Employers	<ul style="list-style-type: none">• Identify all confined spaces in which their workers may work and determine whether any are permit spaces. If its workers are supposed to enter permit spaces, the employer is an “entry employer.”• Employers who are not “entry employers” must make sure their workers stay out of any permit spaces present on the site, unless the workers are authorized for entry.
Entry Employers	<ul style="list-style-type: none">• Protect workers against permit space hazards by complying with the standard.• Inform controlling contractor of the program followed and hazards encountered in permit spaces.
Controlling Contractors	<ul style="list-style-type: none">• Share information it has about permit space hazards with entry employers and other employers whose activities may create hazards in the permit space.• Coordinate entry operations when there is more than one entry employer.• Coordinate operations when permit space entry occurs during other activities at the site that might create a hazard in the space.
Host Employers	<ul style="list-style-type: none">• Share information it has about permit space hazards with the controlling contractor.

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In Depth

Protections Tailored to Construction Work

The Confined Spaces in Construction standard provides employees performing construction activities with protections similar to those general industry employees have had, but with some differences tailored to employers performing construction work.



Historical Note

History of the Standard

After more than 20 years in the development process, the Confined Spaces in Construction standard was released by OSHA and took effect August 3, 2015.

Before promulgating this final rule, OSHA had one existing provision in its construction standards that included a general training requirement for employers working in confined spaces. A broad “safety and training” requirement in 29 CFR 1926.21(b)(6), adopted by the Agency in 1979, provided limited guidance: Under this provision, employers were only required to instruct employees required to enter into confined or enclosed spaces as to the nature of the hazards involved, the necessary precautions to be taken, and in the use of protective and emergency equipment required. Fatality and injury data, OSHA enforcement experience, and advice from ACCSH indicate that §1926.21(b)(6) did not adequately protect construction employees in confined spaces from atmospheric, physical, and other hazards.

Even when §1926.21(b)(6) applied, it required employers only to train employees who work in confined spaces—it did not address how to protect trained employees while they are working in such spaces, nor did it address the actions of employers outside the spaces engaged in activities that might harm employees inside the spaces. For situations in which none of the construction standards apply, the employer was still required to comply with the general-duty requirement of the OSH Act to “furnish to each of [its] employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to [its] employees” (29 U.S.C. 654); but this “general duty” is often more difficult for OSHA to enforce and does not provide the same level of guidance and safety information provided in a standard.

Hazards

Employers must take the following steps to protect workers against confined space hazards:

- Have a competent person identify all confined spaces in which its employees may work.
- If confined spaces are present, the employer must have the competent person determine whether the confined spaces are “permit spaces.”
- If the workplace contains a permit space, the entry employer must protect its workers against the hazards in the permit space. The protection that is required depends on the type and severity of the hazards present in the permit space. The following table

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lists the three categories of permit spaces for which different levels of protection are specified.

Characteristics of Space	Protective Action
Permit spaces that do not qualify for one of the following two exceptions.	<p>If the employer’s workers will enter the space, develop and follow a written permit required confined space program, or permit space program. The permit space program specifies, among other things, how the employer will</p> <ul style="list-style-type: none"> – Regulate worker entry into permit spaces, and – Control permit space hazards. <p>All employers must inform their workers about the locations and dangers of each permit space (e.g., post signs), and take additional steps to ensure that workers do not enter permit spaces if they are not authorized to do so.</p>
Exception 1: Spaces that contain only physical (non-atmospheric) hazards.	If the physical hazards are eliminated or isolated so that they no longer present a hazard, the space may be reclassified as a non-permit space, with no further precautions required.
Exception 2: Spaces containing an atmospheric hazard that can be controlled by continuous forced air ventilation.	As long as the atmospheric hazard is controlled by continuous forced air ventilation and any physical hazards are eliminated or isolated, the alternate procedures may be used instead of full permit space procedures, although the space is still classified as a permit space.

- The entry employer must train workers who work in a permit space:
 - The worker(s) authorized to enter the space,
 - An attendant who must remain outside the space and monitor the workers within, and
 - An entry supervisor with overall responsibility for seeing that the program is followed.
- All workers covered by the permit space program, including entrants, attendants, entry supervisors, and rescue workers, must be trained to have the knowledge and skills needed to recognize confined space hazards and protect themselves and their co-workers against permit space hazards.
- The entry employer must plan to rescue entrants who cannot exit the space under their own power. The entry employer must ensure that a worker who becomes sick or injured in a permit space can be rescued in a safe and timely manner. Its permit space program must specify whether the employer plans to use its own workers, a rescue team of another on-site employer, or an outside rescue service if the need for a rescue arises.

Identifying Permit Spaces

Identification of permit spaces is critical because it determines whether precautions are required before employees enter the space. Failure to take those precautions can result in death or serious injury to workers.

Each employer engaged in construction work must ensure that a competent person identifies all confined spaces in which its workers may work on its worksite and evaluates each confined space to determine whether it is a permit-required confined space (permit space). The competent person must answer the following four questions to determine whether a confined space is a permit space. If the answer to one or more of the questions is “yes,” the space is a permit space.

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Did You Know

Oxygen-Deficient Spaces

Asphyxiation due to insufficient oxygen is one of the leading causes of death during construction work in confined spaces. An oxygen-deficient atmosphere endangers both the workers assigned to enter the space and others who may attempt a rescue without proper equipment and training. Therefore, in evaluating a confined space to determine whether it is a permit space, particular consideration should be given to whether it contains or has the potential to contain an oxygen concentration of less than 19.5 percent.

Any space that is to be entered after being isolated from the atmosphere for a period of time could be oxygen-deficient, and the oxygen concentration should be measured to determine whether the space must be classified as a permit space. Direct reading instruments that measure the concentration of oxygen in the air are available for this purpose. Such instruments must be properly calibrated and used to give reliable results.

1. Does the space contain or have the potential to contain a hazardous atmosphere?

Most deaths and injuries in confined spaces result from atmospheric hazards. Such hazards include insufficient oxygen and toxic or flammable chemicals. The competent person must evaluate, including testing as necessary, whether the following hazards are or may be present, before workers enter the space:

- Oxygen deficiency (concentration less than 19.5 percent) or excess (concentration above 23.5 percent).
- Concentration of any flammable gas, vapor, or mist in excess of 10 percent of its lower explosive limit.
- Airborne combustible dust at a concentration equal to or greater than its lower explosive limit.
- Atmospheric concentration of any substance that can cause death, incapacitation, impairment of ability to self rescue, injury, or acute illness.

In evaluating atmospheric hazards, the competent person must consider:

1. The hazards present in the space before any workers enter; and
2. Whether the work that will be performed can introduce toxic, flammable, or combustible air contaminants or lead to an excess or deficiency of oxygen.

To perform the second part of this evaluation, the competent person must be familiar with the work to be done in the space and the potential for that work to introduce atmospheric hazards. For example, a confined space that is safe when entered can become deadly if inert gas welding inside the space leads to the inert gas displacing oxygen in the worker's breathing zone.

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The competent person must also evaluate chemicals for which no PEL is set by OSHA. For example, if a product's label or the product manufacturer's safety data sheet warns that a product is harmful if inhaled and should not be used without adequate ventilation, the competent person must evaluate whether use of that product in a confined space requires the space to be classified as a permit space.

2. Does the space contain a material with the potential to engulf an entrant?

Engulfment means the surrounding and effective capture of a person by a liquid or finely divided (flowable) solid substance that can be aspirated to cause death by filling or plugging the respiratory system or that can exert enough force on the body to cause death by strangulation, constriction, or crushing, or the substance suffocates the individual.

The competent person must consider whether any liquid or flowable solid (such as sand) could enter the space. Any pipe or manhole in an operating water or sewer system in which a worker works is a confined space that could potentially engulf an entrant and must be treated as a permit space.

3. Does the space have an internal configuration such that an entrant could be trapped by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross section?

An area of a confined space with a small cross section can develop a hazardous atmosphere if ventilation is inadequate. In addition, a space of this configuration could prevent an injured worker from escaping the space and add to the difficulty of rescuing the worker.

4. Does the space contain any other recognized serious safety or health hazard(s) that pose an immediate danger to a worker's life or health or would impair the worker's ability to escape from the space in the event of injury?

Hazards that the competent person should consider include fire and explosion hazards, the presence of mechanical, electrical, hydraulic and pneumatic energy, temperature extremes, radiation, noise, corrosive chemicals, and biological hazards (such as venomous animals or insects).

If a workplace contains a permit space or spaces, the employer must inform workers in the vicinity of the location of the danger posed by each space. This can be done by posting warning signs at each possible point of entry, or by other equally effective means.

In addition to posting warning signs, an employer who learns about a permit space must also notify its employees' authorized representative and the controlling contractor of the location and danger of the space. The controlling contractor must then notify other employers on the site, whose activities could create a hazard in the permit space, of the presence and location of such spaces and the hazards associated with them before workers enter the space.

An employer whose workers will not be authorized to enter a permit space must take steps in addition to posting the warnings above, to prevent workers from entering the space. An employer might accomplish this by providing effective training on, and enforcement of, a work rule against entry.

If an employer's workers will enter a permit space, the employer must develop a written permit space program, and entry is only permitted under the terms of the program. That employer, who is an "entry employer" under the standard, must keep any unauthorized persons from entering the permit space, and remove any unauthorized persons who do enter the space.

Confined Spaces



Compliance Point

Toxic Chemicals Regulated By OSHA

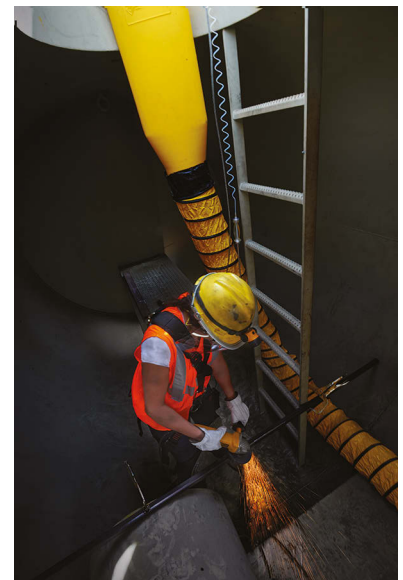
Subparts D and Z of Part 1926 list chemicals for which OSHA has established airborne permissible exposure limits (PELs). The presence in a confined space of a substance listed in Subpart D or Subpart Z in a concentration exceeding a PEL does not necessarily require the space to be classified as a permit space.

The space must only be classified as a permit space if the concentration of that substance can cause death, incapacitation, impairment of ability to self-rescue, injury, or acute illness. However, worker exposure exceeding a PEL would violate Subpart D or Z even if it does not violate the Confined Spaces standard.

Content of Permit Space Program

The permit space program must establish a system for preparing, using, and canceling entry permits, which are written or printed documents that allow and control entry into permit spaces. A permit space program must:

- Implement measures to prevent unauthorized entry;
- Identify and evaluate permit space hazards before allowing employee entry;
- Provide for the atmospheric conditions in the permit space to be tested before entry operations and for the space to be monitored during entry;
- Require appropriate testing for the following atmospheric hazards in this sequence: oxygen, combustible gases or vapors, and toxic gases or vapors;
- Establish and implement the means, procedures and practices to eliminate or control hazards necessary for safe permit space entry operations;
- Identify employee job duties;
- Provide and maintain, at no cost to the employee, personal protective equipment and any other equipment necessary for safe entry, and require employees to use the equipment properly;
- Ensure that at least one attendant is stationed outside the permit space during entry operations;
- Implement the procedures that any attendant who is required to monitor multiple spaces will follow during an emergency in one or more of those spaces;
- Coordinate entry operations (in consultation with the controlling contractor) when employees of more than one employer are working in the permit space; and



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- Establish procedures for summoning rescue and emergency services and preventing unauthorized personnel from attempting rescue.

The employer must review the program and correct any deficiencies whenever it learns that the program may not be protecting employees adequately. Circumstances requiring such review include:

- An injury or near-miss during entry,
- Unauthorized entry,
- Detection of a new hazard or a condition prohibited by the permit, or
- An employee complaint about the program's effectiveness.

In addition, the employer must annually review the program using the cancelled permits, and revise the program as necessary to ensure that employees are protected.

The permit space program must provide that entry is only permitted with a written entry permit. The permit must include:

- Name of the permit space to be entered, authorized entrant(s), current attendants, and current entry supervisors;
- Purpose of entry;
- Date and authorized duration of entry;
- Means of detecting an increase in atmospheric hazard levels;
- Name and signature of supervisor who authorizes entry;
- Known hazards in the space;
- Measures to be taken to isolate permit spaces and to eliminate or control space hazards;
- Acceptable entry conditions;
- Test results, date and time of test(s), and tester's initials or signature;
- Name and telephone numbers of rescue and emergency services and means to be used to contact them;
- Communication procedures and equipment to maintain contact during entry;
- Special equipment and procedures, including personal protective equipment and alarm systems;
- Any other information needed to ensure employee safety; and
- Additional permits, such as for hot work, that have been issued authorizing work in the permit space.

The permit must be posted at the entrance to the space or be otherwise made available to authorized entrants and their authorized representatives at the time of entry.

Canceling Entry Permits

The employer must make sure that the entry supervisor cancels entry permits when an assignment is completed or when new conditions exist. Once a permit is canceled, entry under it is no longer permitted. New conditions must be noted on the canceled permit and used in revising the permit space program. The employer must keep all canceled entry permits for at least one year.

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