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OSHA REGULATIONS:

CONFINED SPACE ENTRY: GENERAL INDUSTRY VS. CONSTRUCTION

Dr. Scott Smith CSP

Safety & Health Director
Tighe & Bond

Professor in Applied Safety
Keene State College

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Discussion Outline

- Fundamentals of Confined Spaces
- Confined Spaces in General Industry
- Confined Spaces in Construction
- Similarities and Differences
- Photo Examples
- Hazards

Fundamentals

OSHA Confined Space Regulations: 1910.146 – 1926.1202

The Three Requirements for a Confined Space:

- Is large enough and so configured that an employee can bodily enter and perform assigned work (and)
- Has limited or restricted means for entry or exit (and)
- Is not designed for continuous occupancy.

Is it Permitted??

Fundamentals

OSHA Confined Space Regulations: 1910.146 – 1926.1202

To be classified as a permit-required confined space, the confined space must also have one or more of the following characteristics:

- It contains or has the potential to contain a hazardous atmosphere.
- It contains a material that has the potential for engulfing an entrant.
- It has an internal configuration that can trap or asphyxiate an entrant.
- It contains any other recognized serious safety or health hazard.

Entry: action by which a person passes through an opening into a permit-required confined space. Entry is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space.

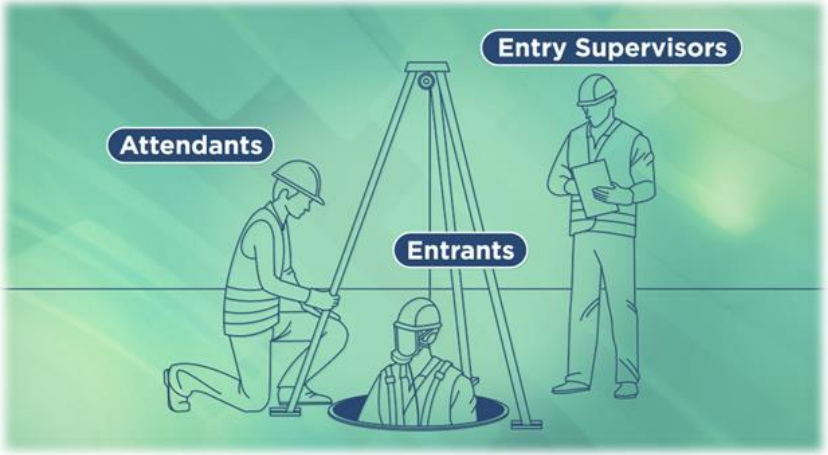
Who does the work?

Fundamentals

Attendant: an individual stationed outside one or more permit spaces who monitors the authorized entrants and who performs all attendant's duties assigned in the employer's permit space program.

Authorized Entrant: an employee who is authorized by the employer to enter a permit space.

Entry Supervisor: Person (i.e., foreman, or crew chief) responsible to determine acceptable entry conditions, authorizes entry, oversees entry operations, and terminates entry.



Fundamentals

Contextual Considerations:

1910.146: Focuses on a broader range of industries, considering a variety of general industry scenarios.

1926.1203: Tailored to the unique hazards and practices associated with construction work, which can involve different types of equipment, procedures, and hazards compared to general industry.

Additional Considerations:

While both standards share core objectives of protecting workers, the construction standard incorporates more explicit references to issues like temporary worksite conditions, which are more common in construction.

Fundamentals – Assess 1910

Assess spaces: 1910.146(c)(2)

The employer shall evaluate the workplace to determine if any spaces are permit-required confined spaces.

(2) If the workplace contains permit spaces, the employer shall 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 the permit spaces.

(3) If the employer decides that its employees will not enter permit spaces, the employer shall take effective measures to prevent its employees from entering the permit spaces and shall comply with paragraphs (c)(1), (c)(2), (c)(6), and (c)(8) of this section.

(4) If the employer decides that its employees will enter permit spaces, the employer shall develop and implement a written permit space program that complies with this section. The written program shall be available for inspection by employees and their authorized representatives.

Fundamentals – Assess 1926

Assess spaces: 1926.1203

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.

1926.1203(b)If the workplace contains one or more permit spaces, the employer who identifies, or who receives notice of, a permit space must:

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 to paragraph (b)(1). A sign reading "DANGER—PERMIT-REQUIRED CONFINED SPACE, DO NOT ENTER" or using other similar language would satisfy the requirement for a sign.

Fundamentals

Assess spaces: 1910.146 – 1926.1203

Scope and Applicability

1910.146(c)(2): This standard applies to general industry workplaces and sets requirements for evaluating all confined spaces in those environments.

1926.1203: This standard specifically applies to the construction industry and requires the assessment of confined spaces in construction settings.

Assessment Requirements

1910.146(c)(2): Requires employers to evaluate all confined spaces to determine if they are permit-required confined spaces and to assess hazards, including any potential atmospheric hazards.

1926.1203: Requires employers to evaluate all confined spaces on a construction site to determine if they are permit-required confined spaces, but includes specifics for construction-related hazards, which may differ due to the nature of construction work.

Fundamentals – Rescue 1910

29 CFR 1910.146(k): Rescue and emergency services

1910.146(k)(1)

An employer who designates rescue and emergency services, pursuant to paragraph (d)(9) of this section, shall:

1910.146(k)(1)(i)

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

1910.146(k)(2)

An employer whose employees have been designated to provide permit space rescue and emergency services shall take the following measures:

1910.146(k)(2)(i)Provide affected employees with the personal protective equipment (PPE) needed to conduct permit space rescues safely and train affected employees, so they are proficient in the use of that PPE, at no cost to those employees;

Fundamentals – Rescue 1926

29 CFR 1926.1211(a): Rescue and emergency services

An employer who designates rescue and emergency services, pursuant to § 1926.1204(i), must:

1926.1211(a)(1)

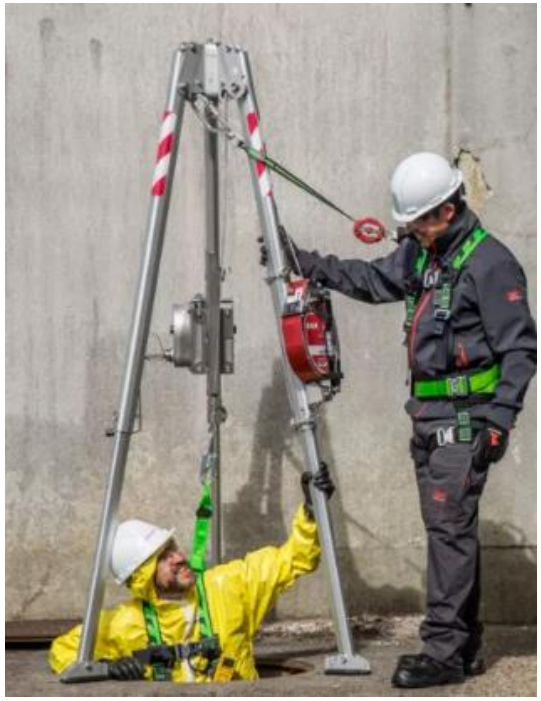
Evaluate a prospective rescuer's ability to respond to a rescue summons in a timely manner, considering the hazard(s) identified;

1926.1211(b)An employer whose employees have been designated to provide permit space rescue and/or emergency services must take the following measures and provide all equipment and training at no cost to those employees:

1926.1211(b)(1)Provide each affected employee with the personal protective equipment (PPE) needed to conduct permit space rescues safely and train each affected employee so the employee is proficient in the use of that PPE;

Fundamentals

Retrieval System: equipment (including a retrieval line, chest or full-body harness, and a lifting device or anchor) used for non-entry rescue of persons from permit spaces.



How are they different?

Differences: GI and Construction

General Industry (29 CFR 1910.146)

Maintenance and Routine Operations:

Activities typically considered maintenance or ongoing operational tasks within an existing facility come under this category. This includes repairing, cleaning, or maintaining equipment such as tanks, silos, and underground utility vaults.

Non-Construction-related Work:

Work in facilities like manufacturing plants, refineries, and warehouses where the tasks are part of the company's standard operational processes.

Construction (29 CFR 1926 Subpart AA)

Construction-related Tasks:

Includes building, altering, repairing, renovating, and demolishing structures or structural components. This encompasses activities from new builds to significant renovations.

Dynamic and Temporary Environments:

Construction sites often involve rapidly changing conditions, such as the construction of new tanks or modification of existing utility systems, which require temporary or ad-hoc safety measures.

Differences: GI and Construction

General Industry:
Involves maintaining or servicing existing systems.

Work Environment:
General industry settings are more controlled and established.

Compliance Approach:
General Industry focuses on ongoing safety procedures within known environments.

Construction:
Involves creating new structures or substantial modifications to existing structures.

Construction environments are more dynamic and variable.

Construction requires flexibility to adapt to rapidly shifting circumstances and potential interactions with multiple teams.

Standards within Standards 1910

- Respiratory Protection: 29 CFR 1910.134
- Hazard Communication: 29 CFR 1910.1200
- Personal Protective Equipment (PPE): 29 CFR 1910 Subpart I
- Electrical Safety: 29 CFR 1910 Subpart S
- Fall Protection: 29 CFR 1910 Subpart D.
- Fire Protection: 29 CFR 1910 Subpart L
- Emergency Action Plans: 29 CFR 1910.38
- Training Requirements: 1910.146

Standards within Standards 1926

- General Industry Confined Space Standard (implicitly): 29 CFR 1910.146 – all requirements that are not explicitly superseded or modified by 1926.1200 remain applicable.
- Respiratory Protection: 29 CFR 1926.103
- Hazard Communication: 29 CFR 1926.59 – Construction-specific
- Personal Protective Equipment (PPE): 29 CFR 1926 Subpart E
- Electrical Safety: 29 CFR 1926 Subpart K – Covers electrical safety regulations for construction, aligning with aspects of 1910 Subpart S but tailored to construction sites.
- Fall Protection: 29 CFR 1926 Subpart M – Crucial when involving trenches or excavations.
- Excavation and Trenching: 29 CFR 1926 Subpart P
- Fire Protection: While not a single, dedicated Subpart, various sections within 29 CFR 1926 address fire prevention and protection in construction, implicitly relating to the fire hazards in confined spaces.
- Emergency Action Plans: 29 CFR 1926.350

Permitting the Entry: Differences in Documentation

General Industry:

Focuses on comprehensive hazard analysis, control measures, and emergency procedures.

Construction:

Includes similar information but also addresses site-specific construction risks (e.g., potential for ground collapse, equipment proximity).

Key Difference:

Construction permits might need more frequent updates due to changing site conditions. Both require authorized signatures.

Non-Permitted vs. Permitted Spaces

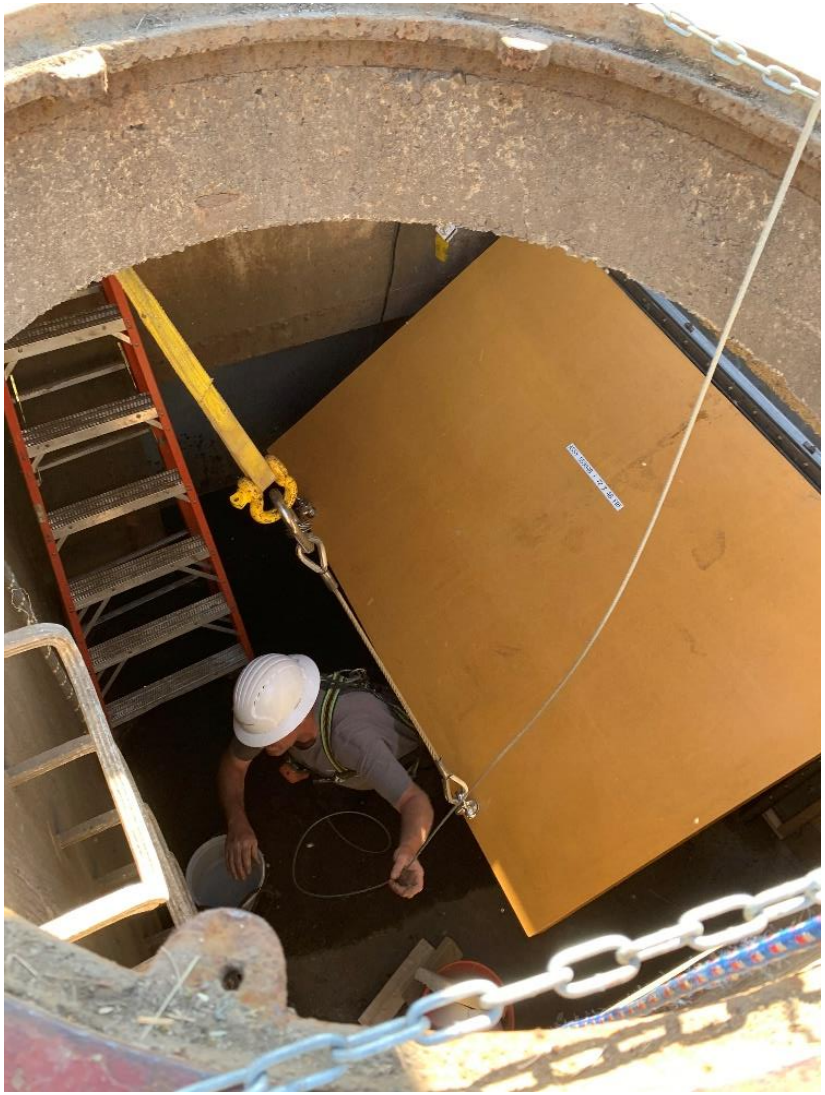
Non-Permit Confined Space:

1. Atmosphere test prior to entry
   - Oxygen = 19.5% to 23.5%
   - LEL, CO, H2S = 0.0
2. Retest atmosphere periodically and/or when conditions change
3. Any other hazard must be removed w/o entry
   - Entry required to remove hazards = Permit
   - Blower required to clear atmosphere = Permit
4. LOTO, Block/Blind all energy sources prior to entry
5. Set up safety/retrieval equipment.
6. Record all testing & activities on CSE checklist/form

Permit-Required Confined Space:

1. Atmosphere test prior to entry
   - Oxygen = 19.5% to 23.5%
   - LEL <10%, CO <35ppm, H2S <10ppm
2. Retest atmosphere at regular intervals & when conditions change
3. Set up entry & rescue equipment.
4. Complete Permit form, establish supervisor, entrant, attendee
5. Mitigate other hazards:
   - Entry may be needed to remove hazards
   - Blower to clear atmosphere, lighting, etc.
6. LOTO, Block/Blind all energy sources prior to entry
7. Record all testing & activities on permit form

Examples



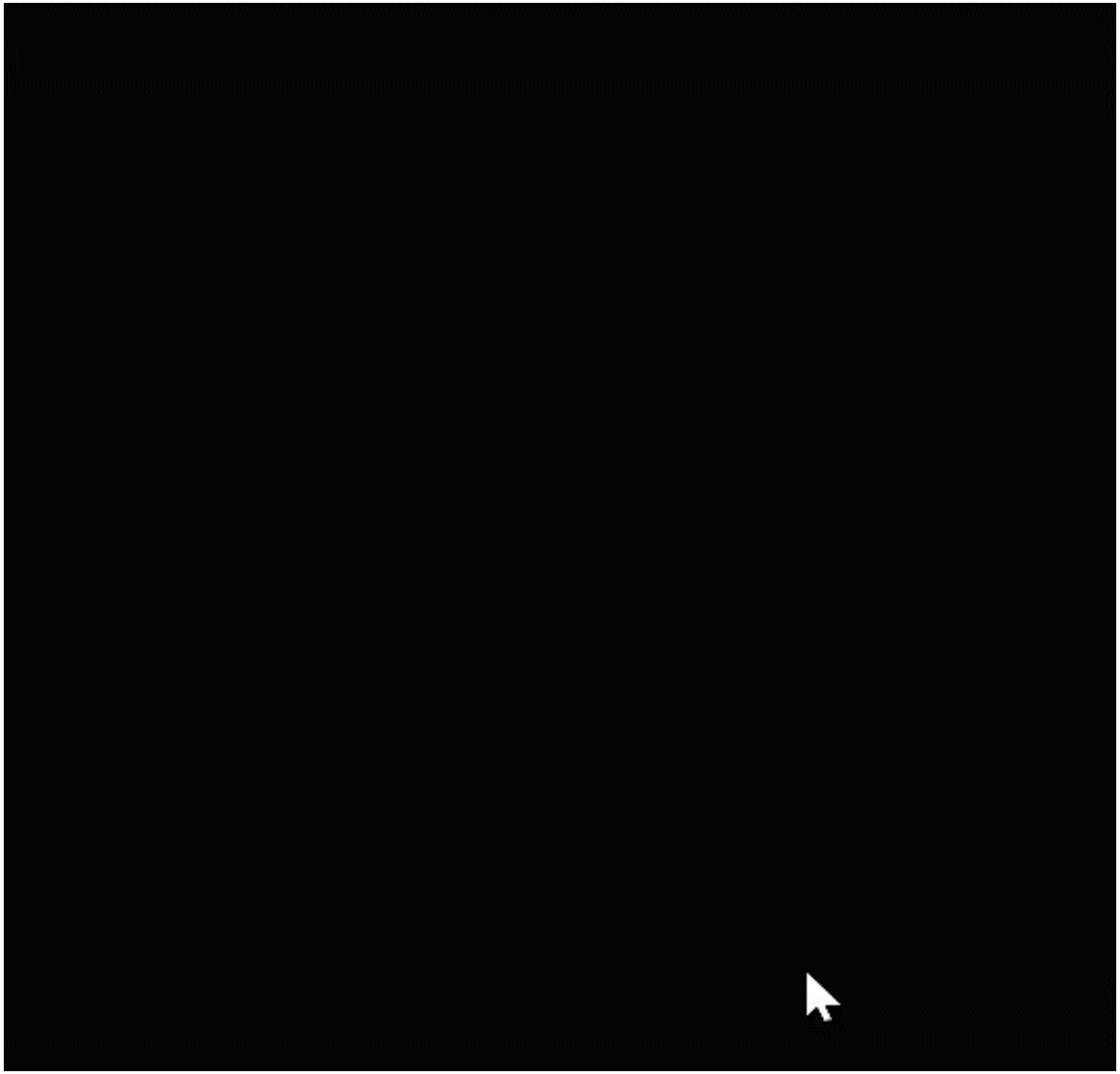
Examples

Examples

Examples

Examples

Examples – video shows injury



Comparing the Standards: Key Distinctions

Feature	General Industry (1910.146)	Construction (1926.1200)
Permit Required Confined Space (PRCS) Definition	More general definition, focuses on hazards.	Similar, but emphasizes construction-specific hazards (e.g., excavation collapse).
Hazard Identification	Thorough assessment required, emphasizing all potential hazards	Thorough assessment emphasizing construction hazards like unstable ground, falling objects.
Atmospheric Monitoring	Specific requirements for testing and frequency.	Similar, but may need more frequent monitoring due to changing conditions.
Ventilation	Procedures for controlling atmospheric hazards.	Procedures often incorporate construction-specific methods, like exhaust fans.
Rescue Planning	Detailed rescue plan including equipment and training.	Plan considers construction site-specific challenges and rescue equipment readily available.
Training	Detailed training requirements for entrants, attendants, and supervisors.	Similar, but training needs to account for construction-specific hazards.

10K Foot Review

General Industry: 29 CFR 1910.146

Focuses on hazard identification, control measures, and permits

Construction: 29 CFR 1926.1200

Incorporates many aspects of 1910.146 but with construction-specific considerations.

Key Difference:

While both standards aim for worker safety, the construction standard acknowledges the dynamic and often less controlled nature of construction sites.

Safety Issues?

Key Safety Issues in Confined Spaces

Atmospheric Hazards

Toxic Fumes: Exposure to hazardous gases such as carbon monoxide, hydrogen sulfide, or solvents from materials used in construction.

Lack of Oxygen: Entering spaces where oxygen levels are low due to displacement by other gases or where ventilation is limited.

Engulfment Hazards

Soil or Gravel: Digging in trenches or pits where soil may collapse or shift, posing a risk of engulfment for workers.

Liquid Hazards: Working in areas where liquids (e.g., concrete, water) may accumulate and pose a risk of drowning or engulfment.

Key Safety Issues in Confined Spaces

Physical Hazards

Working at Heights: Confined spaces that require workers to be at elevation (e.g., tanks, silos) may present fall hazards, especially when accessing or exiting the space.

Moving Equipment: The presence of machinery or moving parts nearby, which can create risks of being struck or caught.

Slips/Trips/Falls: The use of equipment, rescue system tool, liquids, and low light levels creates serious risks to fall injuries.

Thermal Hazards

Heat Stress: Workers may experience heat stress in confined spaces, especially during construction activities that generate heat or in warm weather.

Cold Stress: In colder environments, workers may be exposed to extreme temperatures in confined spaces lacking adequate heating.

Key Safety Issues in Confined Spaces

Chemical Hazards

Potential exposure to hazardous chemicals present within the confined space, including corrosive substances. Cleaning Agents, Grouting, Sealants, Concrete Piping repair – PVC cleaner/cement, pipe dope, etc. Residual chemical or compounds in tank after emptied, vapors.

Noise Hazards

Potentially hazardous noise levels from machinery or equipment that can impair communication and awareness.

Drowning

Risk of drowning or near-drowning in spaces with standing water or other liquids.

OSHA Regulations: General Industry vs. Construction

Questions???

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Dr. Scott Smith CSP
ssmith@tighebond.com

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