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OSHA Safety and Health Review

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Coverage of the OSHA Act

- Extends to all employers / employees in all 50 states, District of Columbia, Puerto Rico and other territories
- Applies to every employer with 1 or more employees (state, and local government employees excluded)
- *Note: Some state plan jurisdictions*



OSH Act: Key Provisions

- Duty of Employers to Provide Safe Workplaces
- Occupational Safety and Health Standards
- Inspections, Investigations, Recordkeeping
- State Jurisdiction and State Plans
- Training and Education
- State Consultation Programs
- Federal Agency Safety and Health Programs and Responsibilities

Employer / Employee Duties

OSHA's main goal is to maintain the safety and health of every worker every day at the workplace.

- Employers

- Furnish each employee with employment and places of employment free from recognized hazards.
- Comply with safety and health standards

- Employees

- Comply with safety and health standards

OSHA DOES NOT FINE EMPLOYEES

Employer Rights

- Comment on standards and regulations
- Apply for temporary or permanent variance
- Be present during an inspection
- Informal Conference or File a Notice of Contest
- Have confidentiality of trade secrets
- Obtain assistance in compliance efforts

Employee Rights

- ▶ Work in safe environment
- ▶ Complain to OSHA
- ▶ Comment on standards/regulations in formative process
- ▶ Review OSHA 300 Log, medical or monitoring records
- ▶ Be informed of variance
- ▶ Testify at a hearing
- ▶ Review citations
- ▶ Have employee representative present during inspection
- ▶ Observe monitoring or measuring of toxic substances

INSPECTION PRIORITIES

- Imminent Danger
- Fatalities and Catastrophes
- Complaints
 - Formal
 - Non-formal
- Referrals
- Programmed
- Follow Up



Inspection Tour



- Observe construction process and work practices.
- Interview employees.
- Take photos, videos, instrument readings, air samples.
- CSHO will note and discuss unsafe conditions observed.
- Recommend feasible abatement methods.

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THE WHISTLEBLOWER Protection Programs



Know Your
RIGHTS

Worker
PROTECTIONS

File a
COMPLAINT

Confine Space Definition

Not Designed for Continuous Worker Occupancy

OSHA has developed a construction standard for Confined Spaces (29 CFR 1926 Subpart AA) — that applies to any space that meets the following three criteria:

- Is large enough for a worker to enter it;
- Has limited or restricted means of entry or exit; and
- Is not designed for continuous occupancy.



Confined spaces include but are not limited to:

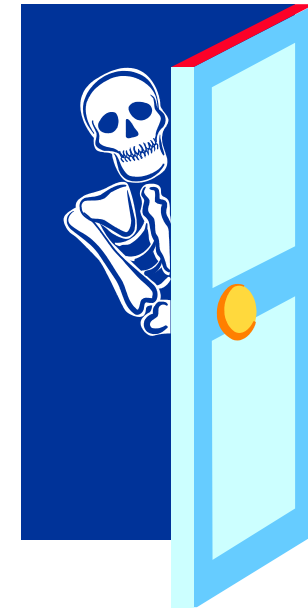
- Storage tanks
- Compartments of ships
- Process vessels
- Pits
- Silos
- Vats
- Degreasers
- Reaction vessels
- Boilers
- Ventilation and exhaust ducts
- Sewers
- Tunnels
- Underground utility vaults
- Pipelines



Census of Fatal Occupational Injuries

U.S. Department of Labor (USDOL), Bureau of Labor Statistics (BLS) Census of Fatal Occupational Injuries (CFOI) program, fatal injuries in confined spaces **averages 92 fatalities** per year, **about two fatalities per week**, with **over 11,000 injuries**

<https://www.bls.gov/iif/home.htm>



How many people die or get hurt seriously in confined space accidents?

About 2.1 million workers enter permit confined spaces annually. **According to the National Institute for Occupational Safety and Health (NIOSH), approximately 60 percent of confined-space fatalities are rescuers.**

The Occupational Safety and Health Administration reported that when multiple deaths occur during a rescue, the majority of the victims are "would-be" rescuers.



What are the hazards associated with confined spaces?

- Toxic Atmosphere. A toxic atmosphere may cause various acute effects, including impairment of judgement, unconsciousness and death. ...
- Oxygen Deficiency. ...
- Oxygen Enrichment. ...
- Flammable or Explosive Atmospheres. ...
- Flowing Liquid or Free Flowing Solids. ...
- Excessive Heat.

Engulfment Hazards

- Loose, granular materials stored in bins and hoppers - grain, sand, coal, etc.
- Crusting and bridging below a worker.
- Flooding of confined space.
- Water or sewage flow.



OSHA Investigating After Westmont
Public Works Employee Killed
Repairing Water Main Break – NBC
Chicago

Other Fatal Incidents

Confined space hazards in sewer systems have led to worker deaths. Several tragic incidents in sewers have included:

- A worker who lost consciousness and died when he climbed into a sewer vault to retrieve a tool. His co-worker also died when he attempted a rescue.
- While repairing a natural gas leak, a worker entered a drainage pipe to retrieve survey equipment. The natural gas ignited, killing the worker





OSHA Barge Marine Accident Investigation -

**Two workers overcome
from Oxygen deficient
atmosphere when
entering the water
compartment, however
fortunately rescued and
survived.**

Double Fatality: August 28, 2014



Double Fatality: August 28, 2014

- Worker entered a manhole at a construction site to apply aerosol sealant to a juncture approximately 5-7 feet down from the top of the space. This was his second entry to perform this task that day.
- He had previously noted the strong fumes from the sealant.
- He was overcome by fumes and fell face first into 3 feet of water at the bottom.

Double Fatality: August 28, 2014

- The site superintendent who is worker's uncle, entered the manhole to attempt rescue. He became unconscious and fell on top of worker.
- Another worker left the site in order to call emergency services. He returned with a volunteer who had his own SCBA.

19-Year-Old North Dakota Man Dies Rescuing Puppy From Uncovered Septic June 22, 2017 -

- The importance of properly secured septic tank lids and safety equipment can't be overestimated
- A recent tragedy in North Dakota again highlights the need to properly secure septic tank lids and is a sad reminder of how dangerous it is to enter septic tanks without the appropriate equipment.
- A 19-year-old man from Jud died trying to save a puppy that had fallen into an uncovered septic tank, according to a news release from LaMoure County sheriff Bob Fernandes.
- Source: KFGO

Other Hazards

- Noise
 - Amplified due to acoustics within the space.
 - Damaged hearing, affect communication.
- Slick / Wet Surfaces
 - Slips and falls.
 - Increased chance of electric shock
- Falling Objects
 - Topside openings expose workers inside confined space to falling objects

Permit-Required Confined Space

Potential to contain a **hazardous atmosphere**

Potential for **engulfment**

Internal **configuration** - trapped or asphyxiated by inwardly converging walls, sloped or tapered floors

Any **other serious** safety or health **hazard**



Preparation: Before workers can enter a confined space, employers must provide pre-entry planning.

- This includes:
 - Having a competent person evaluate the work site for the presence of confined spaces and hazards, including designating permit-required confined spaces.



Unfavorable Natural Ventilation

- Lack of air movement in and out of the space can create an atmosphere much different than the outside atmosphere.
- Deadly gases can be trapped inside.
- Organic materials can decompose.
- May not be enough oxygen due to presence of other gases or chemical reactions such as rusting.

Oxygen Deficient Atmospheres

19.5 %

Minimum acceptable oxygen level.

15 - 19%

Decreased ability to work strenuously.
Impair coordination. Early symptoms.

12-14%

Respiration increases. Poor judgment.

10-12%

Respiration increases. Lips blue.

8-10%

Mental failure. Fainting. Nausea
Unconsciousness. Vomiting.

6-8%

8 mins - fatal, 6 mins - 50% fatal
4-5 mins - possible recovery.

4-6%

Coma in 40 seconds. Death

Testing The Atmosphere

- Verify presence of safe work atmosphere.
- Test all areas of a confined space.
 - Top, Middle, Bottom
- Methane is lighter than air.
- Carbon Monoxide is the same as air.
- Hydrogen Sulfide is heavier than air.
- Oxygen Deficiency.



Confined Space Testing

- **FOUR-GAS DETECTOR**
 - Oxygen content
 - Flammability / explosion potential
 - Carbon monoxide
 - Hydrogen sulfide
- **Critical issues**
 - Training
 - Procedures
 - Calibration



Ventilation

- First option to correct problems.
- Must be aware of hazards you are trying to correct in the confined space.
- Air intake in a safe location to draw fresh air only.
- Continuous ventilation whenever possible.
- Retest the confined space before entry.



Key Confine Space Septic Safety Practices

- Never enter or stick your head into a septic tank. In addition to harboring infectious agents, decomposing wastes in the septic tank produce hazardous gases that can displace oxygen, creating a dangerous atmosphere with very little oxygen to breathe.
- Methane and Hydrogen Sulfide produced in the septic tank are explosive. Make sure the work area is ventilated, use caution when operating electrical devices, and never smoke or light a flame near a septic tank.



All employees required to enter confined or enclosed spaces shall be instructed:

- Nature of the hazards involved, the necessary precautions to be taken.
- Use of protective and emergency equipment required.
- Employer shall comply with any specific regulations that apply to work in dangerous or potentially dangerous areas.
- Rescue plan, procedures, equipment and team required for

Permit Confine Space Entry



Confine Space Entry Quiz

Is this safe entry, PPE and rescue system?

Information and Outreach

- <http://www.osha.gov/confinedspaces/index.html#>
 - Fact Sheets and FAQs
 - Small Entity Guide forthcoming
 - Additional outreach documents forthcoming
 - Webinars and presentations
 - AGC 6-23-2015
 - AGC 6-30-2015

Protecting Construction Workers in Confined Spaces: Small Entity Compliance Guide



OSHA 3825-09 2015

<https://www.osha.gov/sites/default/files/publications/OSHA3825.pdf>

<https://www.osha.gov/sites/default/files/publications/OSHA3789.pdf>

Reporting Fatalities and Severe Injuries

- All employers are required to notify OSHA when an employee is **killed** on the job or suffers a work-related **hospitalization, amputation, or loss of an eye**.
- A fatality must be reported **within 8 hours**.
- An in-patient hospitalization, amputation, or eye loss must be reported **within 24 hours**.



www.osha.gov/report.html



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