

CONFINED SPACE



CONFINED SPACE DEFINITION PER OSHA 1910.146

- Confined space is large enough and configured such that an employee can bodily enter and perform work.
- The space has limited means of entry (access) and exit (egress), which means you need your hands or contort your body to enter the space.
- The space is not designed for continuous employee occupancy.

PERMIT-REQUIRED CONFINED SPACE

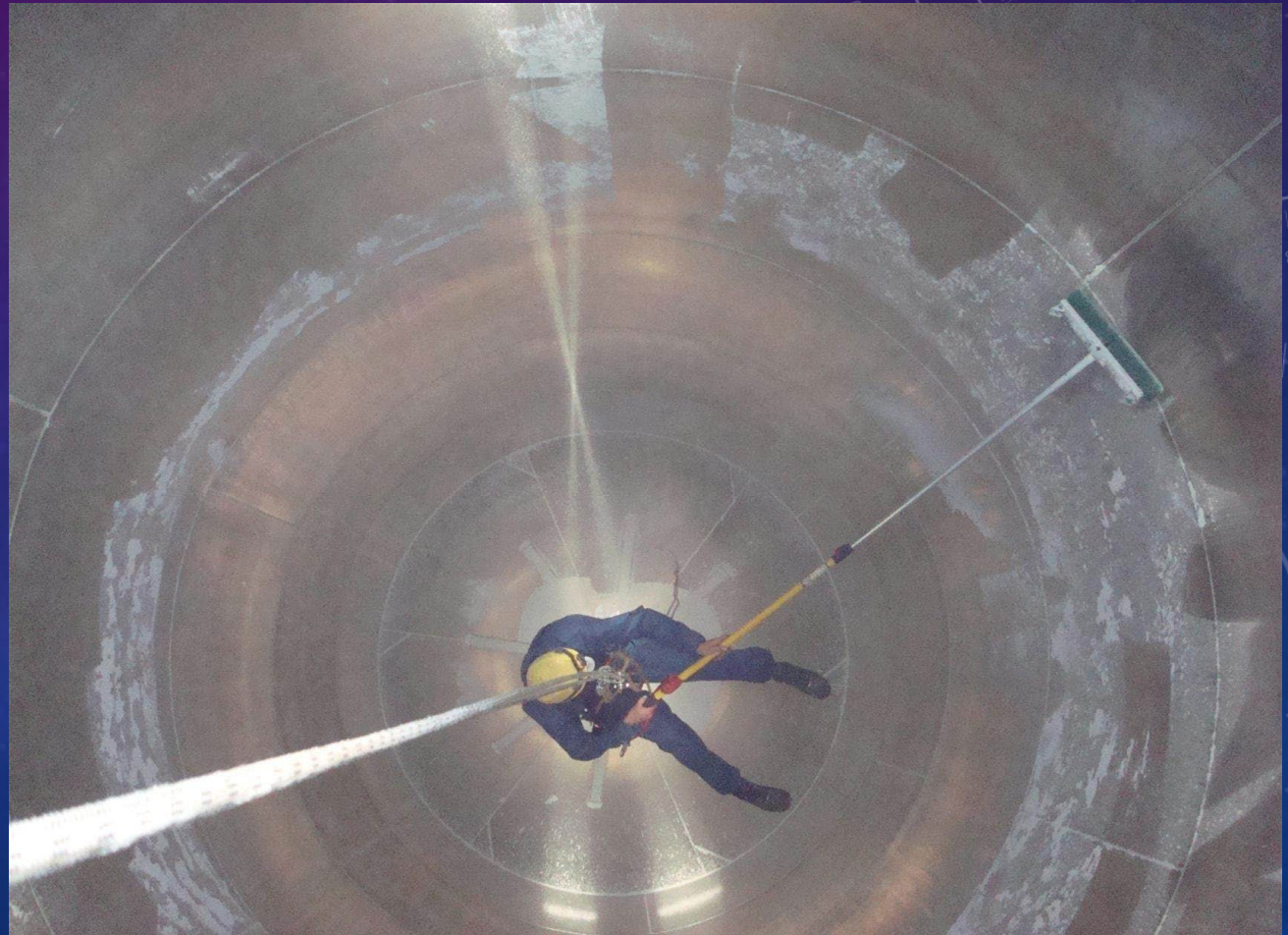
- Contains or has the potential to contain a hazardous atmosphere.
- Contains a material with the potential to engulf someone who enters the space.
- Has an internal configuration that might cause an entrant to be trapped or asphyxiated by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross section.
- Contains any other recognized serious safety or health hazard.

EXAMPLES OF PERMIT-REQUIRED CONFINED SPACES



EXAMPLES OF PERMIT REQUIRED CONFINED SPACES

- Open-topped spaces with and deep and narrow openings.
- Pits
- Wells
- Silos
- Vats
- Pipes
- Hoppers
- Sewers
- Tanks
- Can you think of any at your plant?



WHY CONFINED SPACES ARE HAZARDOUS TO ENTRANTS

- No ventilation (pits and vaults seldom opened).
- Leaking chlorine gas (which is heavier than air) can accumulate in lower spaces.
- Oxygen depletion can be caused by corroding or rusted machinery or rotting vegetation.
- Moving equipment in the confined space can cause crushing or pinch points.
- Electrical hazards in pits or junction boxes.

CONFINED SPACE TERMS YOU NEED TO KNOW AND UNDERSTAND BEFORE YOU ENTER

- **Attendant:** The individual stationed outside one or more permit spaces who monitors the authorized entrants and who performs all attendant duties. Also called hole watch.
- **Authorized entrant:** An employee who is authorized by the employer to enter a permit space.
- **Acceptable entry condition:** The conditions that must exist in a permit space to allow entry for employee.

MORE CONFINED SPACE TERMS

- **Entry:** The action by which a person passes through an opening into a permit-required confined space.
- **Entry permit:** The written or printed document that is provided by the employer to allow and control entry into permit space.
- **Entry supervisor:** The person responsible for determining if acceptable entry conditions are present where entry is planned.

MORE TERMS FOR CONFINED SPACE ENTRY

- **Hazardous atmosphere:** An atmosphere that may expose employees to risk of death, incapacitation, and an impairment of ability to self rescue.
- **Immediately dangerous to life or health (IDLH):** Any condition that poses an immediate or delayed threat to life or cause irreversible adverse health effects.
- **Oxygen deficient atmosphere:** An atmosphere containing less than 19.5% oxygen by volume.
- **Oxygen enriched atmosphere:** An atmosphere containing more than 23.5% oxygen by volume.
- **Testing:** The confined space air must be tested prior to approval for entry. Standard testing, Oxygen concentration, Flammable or explosive limit (LFL) and (LEL), and atmospheric testing of any substance with an acutely toxic effect above its PEL, and any other condition that is IDLH.

CONFINED SPACE ENTRY PERMIT

CONFINED SPACE ENTRY PERMIT Sample 1

Date:					
Site location or description:					
Purpose of entry:					
Supervisor(s) in charge of crews:		Type of crew (welding, plumbing, etc):		Phone #:	
Permit duration:					
Communication procedures (including equipment):					
Rescue procedures (also see emergency contact phone numbers at end of form):					
REQUIREMENTS COMPLETED (Put N/A if item doesn't apply)	DATE	TIME	REQUIREMENTS COMPLETED (Put N/A if item doesn't apply)	DATE	TIME
Lockout/De-energize/Try-out			Supplied Air Respirator (N/A if alternate entry)		
Line(s) Broken-Capped-Blank			Respirator(s) (Air Purifying)		
Purge-Flush and Vent			Protective Clothing		
Ventilation			Full Body Harness w/ "D" ring		
Secure Area (Post and Flag)			Emergency Escape Retrieval Equip.		
Lighting (Explosive Proof)			Lifelines		
Hotwork Permit			Standby safety personnel (N/A if alternate entry)		
Fire Extinguishers			Resuscitator—Inhalator (N/A if alternate entry)		
Add other specific information, if needed, or attach additional instructions or requirements. See the following examples in bold print.					
Line(s) to be bled/blanked:					
Ventilation equipment:					
PPE clothing:					
Respirator(s):					
Fire extinguisher(s):					
Emergency retrieval equipment:					

CONFINED SPACE ENTRY PERMIT Sample 1 (continued)

AIR MONITORING					
Substance Monitored	Permissible Levels		Monitoring Results		
Time monitored (put time)	Record the time				
Percent Oxygen	19.5% to 23.5%				
LEL/LFL	Under 10%				
Toxic 1:	___ PEL	___ STEL			
Toxic 2:	___ PEL	___ STEL			
Toxic 3:	___ PEL	___ STEL			
Toxic 4:	___ PEL	___ STEL			
REMARKS:					
Air Tester Name	ID#	Instrument(s) Used (For example: oxygen meter, combustible gas indicator, etc.)	Model # or Type	Serial# or Unit	
ATTENDANTS AND ENTRANTS					
Attendant(s) (Required for all confined space work except alternate entry)		ID#	Confined Space Entrant(s)		ID#
REMARKS:					
SUPERVISOR AUTHORIZATION - ALL CONDITIONS SATISFIED					
Department or phone number: _____					
EMERGENCY CONTACT PHONE NUMBERS:					
AMBULANCE:	FIRE:	SAFETY:	RESCUE TEAM:	OTHER:	
_____	_____	_____	_____	_____	

CONFINED ENTRY SPACE PERMIT

- When the permit has been filled out completely, post it at the entry of the confined space.
- The Entry attendant will have continue to fill in the air monitoring section of the permit.
- The document is signed by each authorized entrant. The permit is signed on entry and exit of confined space.
- The hole monitor should never enter the confined space. They monitor and call for help if necessary.

DUTIES OF AUTHORIZED ENTRANTS

- Donning the proper PPE for the space
- Locking out if needed
- Sign entrant sheet on Permit required confined space permit
- Following all directions from Attendant

DUTIES OF ATTENDANT

- Air monitoring with four gas monitor and record results
- Communication with entry supervisor and authorized entrants
- Maintain permit for confined space
- Ensure all authorized entrants sign in and out
- Attendant is never to enter confined space unless properly relieved by another attendant

DUTIES OF ENTRY SUPERVISOR

- Evaluate the permit required document that it is filled out properly
- Ensure all lock out is done if needed
- Make arrangements with emergency services
- Evaluate the qualifications of entrants and monitor

CONFINED SPACE PROGRAM

- Identification of confined spaces
- Evaluation of permit spaces and hazards
- Development & implementation of safe entry operations
- Providing and maintaining all necessary equipment (PPE, monitors, etc.)
- Evaluating permit space conditions before & during entry operations
- Confined space entry team duties (authorized entrants, attendants, entry supervisors)
- Confined space entry rescue training, rescue and emergency procedures
- Review & evaluation of entry operations during the year (as needed)

IDENTIFYING PERMIT REQUIRED CONFINED SPACES

- Contains or could contain an atmospheric hazard.
- Contains material that could trap or bury an entrant.
- Is shaped such that an entrant could become trapped or asphyxiated.
- Contains any other safety or health hazard that could harm an entrant.

WARNING SIGNS

- Permit required confined spaces must be posted and labeled.
- When you employees will not enter confined spaces, you must place warning signs that prohibit entry and take other effective measures that prevent them from entering the space.



TESTING, MONITORING, VENTILATING, COMMUNICATIONS



AIR MONITORING

- The atmosphere must be tested before authorized entrants may enter permit required confined space.
- The monitoring should continue at scheduled times while the entrants are in the confined space.
- The atmosphere can change depending on the work taking place (welding, cutting, painting)
- It can become necessary to provide ventilation.
- Should you be un able to make it a safe environment you may need to use self contained breathing units.



COMMUNICATION

- A communication system must be established with the hole monitor and the authorized entrants.
- There must also be communication with the entrant supervisor.
- Test and make sure you have positive communication at all times.
- Should there be any problems or changes in the environment, all entrants must evacuate the space.
- The supervisor will initiate the emergency rescue program. The hole monitor never enters the confined space.

EMERGENCY PROCEDURES

- Emergency rescue will be established prior to any entry into the confined space.
- If the company does not have trained and equipped rescue personnel they will make arrangements with the local fire department in advance. They need to know the location and possible hazards associated with the location.



FINAL WORDS

- The safety of our employees is the most important item.
- Proper planning and execution will make the work go smoothly.

