



New York State  
Department of Transportation

# Safety Bulletin

**Subject:**

**PERMIT REQUIRED  
CONFINED SPACES**

**Code:** SB-12-30

**Supersedes:** SB 04-3, SB99-3, SB 91-4

**Approved by:**

**/s/ Brian Gibney**

**12/26/12**

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Brian Gibney,  
Acting Director  
Employee Safety and Health

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Date

**Organization Responsible for Interpretation:**

**Operations Division/  
Employee Safety & Health Section**

## INTRODUCTION

Working in a Permit Required Confined Space (PRCS) involves significant risks. Fatalities and injuries have resulted from causes including:

- Atmospheric (flammable gas, vapor, mist, combustible dust, oxygen deficiency)
- Mechanical (impeller, rotating shaft, moving linkage)
- Engulfment (capture by liquid or flowable solid)
- Electrical
- Inadequate Training

## POLICY

The N.Y.S. Department of Transportation shall conform to appropriate PRCS requirements in the Occupational Safety and Health Administration (OSHA) Standard 29CFR1910.146. Nothing in this Safety Bulletin is intended to add additional requirements, change definitions, or abridge OSHA requirements.

This Safety Bulletin does not satisfy OSHA requirements for a written plan. Model written programs are available from the Regional Safety and Health Representative.

Confined spaces have the following properties:

- Large enough for a person to bodily enter and perform work;
- Limited or restricted means of entry or exit;
- Not designed for continuous occupancy.

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These three factors alone can exist in a benign environment, such as a home attic or crawl space. However, when the following factors are present, a potentially hazardous condition exists:

- Hazardous atmosphere;
- Engulfment;
- Internal configuration that could trap or asphyxiate by progressively smaller areas;
- Serious electrical or mechanical hazard.

**Oil water separators, catch basins, pits, manholes, silos, tanks, vessels, drop inlets, and bridge compartments are, unless otherwise classified, to be regarded as a PRCS.** Culverts depending upon diameter, length, internal configuration and ventilation may also be a PRCS (see Safety Bulletin on Culvert/Subsurface Entry). Entry into a PRCS occurs when any part of the entrant's body breaks the plane of the opening into the space.

Department management shall identify all PRCSs at their facility. Management must mark all spaces, using stenciling, signs or a list in a conspicuous location. All facilities where Department employees enter a PRCS shall maintain a written PRCS plan. Management shall notify employees or contractors of the existence of PRCS and requirements for working in them. Only employees or contractors who are trained and provided with appropriate personal protection and atmospheric monitoring equipment may enter a PRCS.

Facilities with an oil water separator must (as a minimum) mark or sign the opening as a PRCS and include it on a written list with any other facility PRCSs. In addition, where management has decided to have Department employees enter the oil water separator; entries must meet all requirements of this Safety Bulletin. Contractors working on oil water separators must be provided with at least this Safety Bulletin and any other appropriate procedure or policy.

By using tools like a shepherd's crook, it may be possible to work in a PRCS without entering it. In such instances, only this Safety Bulletin's provisions for marking the opening, listing the PRCS, and basic instruction not to enter would be applicable.

The Regional Safety and Health Representative shall: assist in identification of PRCSs; conduct appropriate training; review written PRCSs; recommend personal protective equipment and rescue procedures; and provide other assistance as necessary.

## **PROCEDURE**

### **Requirements necessary to be in place before entry by Department employees:**

- **Written PRCS Plan** addresses prevention of unauthorized entry, type of hazard, work practices, monitoring, provision for attendant, duties of employees, rescue and emergency medical services, multi-employer operations, and provisions for review

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procedures. Unless specifically prohibited, hazardous operations in PRCS's (such as hot work and painting) require special procedures and permits.

- **Written Entry Permit** (attached) or permit meeting requirements of 29CFR1910.146(f).
- **Entry Supervisor** verifies requirements of permit and ensures means of rescue are readily available. Cancels or terminates entry as required and removes unauthorized personnel. Periodically monitors operation for conformance. When appropriate, reclassifies PRCS to non permit-required confined space in accordance with 29CFR1910.146(c)(7).
- **Attendant(s)** maintains accurate account of authorized entrants and remains at entry site until relieved by another attendant or until work is complete. Monitors conditions around space and maintains communication with entrant(s). Performs non-entry rescue or summons rescue and medical services, as needed. One person may assume the duties of Entry Supervisor and Attendant.
- **Entrant(s)** shall properly use required equipment, maintain communication with attendant, and evacuate if emergency occurs.
- **Monitoring.** PRCSs shall be monitored for oxygen and flammable gases **before** and **during** entry. When organic material is present, hydrogen sulfide levels will be tested. (A four gas meter for oxygen, flammable gases, hydrogen sulfide and carbon monoxide is recommended.) Testing shall be conducted from top down as space allows at various levels. Testing equipment shall be calibrated as required by manufacturer and must be in proper working condition. Test results shall be recorded on the permit. When oxygen levels are less than 19.5% or greater than 23.5%; or when combustible gases are greater than 10% of lower explosion limit; or toxic gases greater than permissible exposure limits, entry shall not be made or the space shall be vacated. Mechanical ventilation (portable blower with flexible duct work) is not required by the Standard, but is strongly recommended to purge the PRCS and provide continuous ventilation.
- **Personal Protective Equipment.** Hard hats and atmospheric monitoring device(s) are mandatory when working in PRCSs. Hearing protection, boots for wetness, safety footwear, flashlights, gloves, protective garments, low voltage and/or explosion-proof lighting and ladders should be available. Communication equipment is mandatory when normal voice contact is not possible. Respiratory protection is generally not required to enter PRCSs. However, in certain instances, e.g. dust and odor control, respiratory protection may be appropriate. Escape respirators are appropriate when exit time is lengthy.
- **Mechanical Retrieval Equipment.** Required for entry into vertical PRCS greater than 5 feet deep. At a minimum, chest or full-body harness (attached at center of back or above

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head to a mechanical lifting device) shall be provided. Rescue by non-entry mechanical retrieval is preferred. If a PRCS has obstructions or turns such that mechanical retrieval equipment is not practical or creates more of a hazard, on-site rescue shall be immediately available prior to entry. On-site rescue shall be made by rescue personnel, properly trained and equipped, who have practiced rescue in this confined space.

- **Medical Services** shall be provided by local emergency responder. Means to summon medical services shall be immediately available and detailed on the permit.

**TRAINING**

**PRCS training shall be conducted before entry; when there is a change in operations; or when deviation in policy occurs. Training shall be documented and address:**

- Types of hazards.
- Components of written plan and permit.
- Entrant, Attendant, Entry Supervisor and Rescuer responsibilities.
- Atmospheric testing equipment: use, calibration, and maintenance.
- Acceptable entry conditions: oxygen, combustibles, carbon monoxide, and hydrogen sulfide.
- Methods to control or eliminate hazards.
- Procedures for hazard detection.
- Health symptoms: narcosis, hypoxia, and other health effects.
- Personal protective and other equipment: full body harness, life line, tripod, respiratory protection, chemical protective clothing, eye/face/hearing protection, communication equipment and ladders.
- Rescue plan and practice.

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Permit No. \_\_\_\_\_

Supervisor's Signature \_\_\_\_\_

**Location and Hazard**

Location:		
Purpose of Entry:		
Entry Permit Valid for:	From date:	To date:
Name and Model of Meter: (Meter must be calibrated and calibration records available)		
Atmospheric Testing: Enter meter readings	Prior to entry	During entry
Oxygen		
<b>Entry not permitted oxygen less than 19.5% or greater than 23.5%.</b>		
Explosive (Gas/Vapor)		
<b>Entry not permitted if LEL greater than 10%.</b>		
Carbon Monoxide		
<b>Entry not permitted if carbon monoxide greater than 35 ppm.</b>		
Hydrogen Sulfide		
<b>Entry not permitted if hydrogen sulfide greater than 10 parts ppm.</b>		
Dust (Some dusts such as wood, coal, grain, sugar are explosive)		
<b>Entry not permitted if visibility less than 5 feet.</b>		
Other Hazards	Check	Yes / No /
Electrical Hazards		
Mechanical Hazards		
<b>Entry not permitted in confined spaces with serious hazards.</b>		
Identify controls for electrical and mechanical hazards, (if applicable).		
Isolation		
Inerting		

**Equipment**

Personal Protective Equipment	Check /
Hard Hat	
Gloves	
Hearing protection (if needed)	
Coveralls (if needed)	
Respiratory protection (if needed)	
Foot protection (rubber boots if needed)	
Other equipment	
Lighting (intrinsically safe electrical lighting or equipment)	
Ladders	
Meter (oxygen, combustible gas, carbon monoxide and hydrogen sulfide)	
<b>Entry not permitted without meter.</b>	
Communication equipment (if needed)	
<b>Entry not permitted without communication</b>	

**Rescue**

<b>Entry not permitted without rescue provisions</b>	
Type of rescue provided	Check /
Non entry retrieval by attendant (preferred)	
Rescue by on-site rescue personnel. Indicate rescue provider.	
Mechanical retrieval equipment harness, lifeline, tripod and winch.	
<b>Mechanical retrieval required for vertical entries over 5 feet.</b>	

**First Aid**

For non-entry retrieval indicate first aid provider and means for summoning.	Provider:	Summoned by:
For on-site rescue verify rescue personnel are currently certified and equipped.	On-site rescue will provide first aid. If not, identify other provider:	
<b>DOT is not equipped and trained and will not provide rescue other than non-entry attendant retrieval.</b>		

**Employees**

Entrants:			
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