

CONFINED SPACE

An Inadequate Plan Won't Cut It

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Confined Space

Confined space is space that:

- Is large enough & so configured that employee can bodily enter & perform assigned work
- Has limited or restricted means for entry or exit (i.e. tanks, vessels, silos, pits, vaults or hoppers)
- Is not designed for continuous employee occupancy

TYPES OF CONFINED SPACE...

- **Non-Permitted**

- ... does **NOT** contain physical, chemical or atmospheric hazards capable of causing death or serious physical harm

- **Permitted**

- ... **DOES** contain physical, chemical or atmospheric hazards capable of causing death or serious physical harm

Permit-Required Confined Space

- Has internal configuration such that entrant could be trapped or asphyxiated by inwardly converging walls or by floor which slopes downward & tapers to smaller cross-section
- Contains any other serious safety or health hazard

29 CFR 1910.146

Permit-Required Confined Space Policy

- Scope & application
- Definitions
- General requirements (to include deviation of written plan)
- Permit-required confined spaces
- Permit system
- Entry permit
- Training
- Duties of authorized entrants
- Duties of attendants
- Duties of entry supervisors
- Rescue & emergency services
- Employee participation

Appendices

- **Appendix A** - Permit-Required Confined Space Decision Flow Chart
- **Appendix B** - Procedures for Atmospheric Testing
- **Appendix C** - Examples of Permit-Required Confined Space Programs
- **Appendix D** - Confined Space Pre-Entry Check List
- **Appendix E (If Applicable)** - Sewer System Entry
- **Appendix F** - Rescue Team or Rescue Service Evaluation Criteria

Definitions

- **Attendant**
 - Individual stationed outside one or more permit spaces who monitors authorized entrants & performs all attendant's duties assigned in employer's permit space program



Duties of Attendants

- Knows hazards that may be faced during entry
- Aware of possible behavioral effects of hazard exposure in authorized entrants
- Continuously maintains accurate count of authorized entrants
- Remains outside permit space during entry operations until relieved by another attendant

Duties of Attendants

- Communicates with authorized entrants
- Monitors activities inside & outside space
- Summons rescue & other emergency services
- Performs non-entry rescues as specified by employer's rescue procedure
- Performs no duties that might interfere with primary duty to monitor & protect authorized entrants

Duties of Authorized Entrants

- Know hazards that may be faced during entry, including information on mode, signs or symptoms & consequences of exposure
- Properly use equipment as required by paragraph (d)(4)
- Communicate with attendant as necessary to enable attendant to monitor entrant status & enable attendant to alert entrants of need to evacuate space as required by paragraph (i)(6)

Duties of Authorized Entrants

Alert attendant whenever:

- Entrant recognizes any warning sign or symptom of exposure to dangerous situation
- Entrant detects prohibited condition
- Exit from permit space as quickly as possible whenever:

Duties of Authorized Entrants

Exit from permit space...

- Order to evacuate is given by attendant or entry supervisor
- Entrant recognizes any warning sign or symptom of exposure to a dangerous situation
- Entrant detects prohibited condition
- Evacuation alarm activated

Definitions

Engulfment

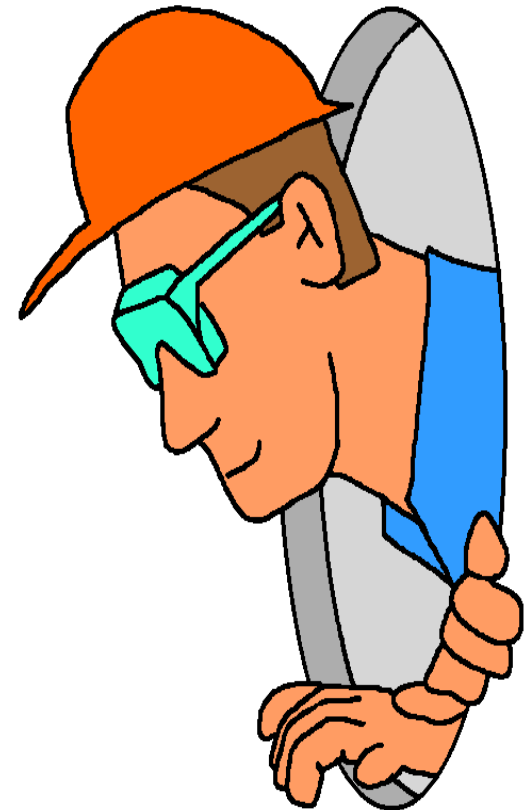


- Surrounding & effective capture of person by liquid or finely divided (flowable) solid substance that can be aspirated to cause death by filling or plugging respiratory system
- Can exert enough force on body to cause death by strangulation, constriction or crushing

Definitions

Entry

- Action by which person passes through opening into permit-required confined space
- Entry includes ensuing work activities in space and is considered to have occurred as soon as *any* part of entrant's body breaks plane of opening into space



Definitions

Entry Supervisor

- Person (such as employer, foreman or crew chief) responsible for determining if acceptable entry conditions are present at permit space where entry is planned, for authorizing entry & overseeing entry operations & for terminating entry
- Note: entry supervisor *may* serve as attendant or authorized entrant, as long as that person is trained & equipped as required for each role filled
 - Duties of entry supervisor may be passed from one individual to another during entry operations



Duties of Entry Supervisor

- Knows hazards that may be faced during entry, including information on mode, signs or symptoms & consequences of exposure
- Verifies, by checking that appropriate entries have been made on permit, all tests specified by permit have been conducted & all procedures & equipment specified by permit are in place before endorsing permit & allowing entry to begin
- Terminates entry & cancels permit as required by paragraph (e)(5)

Duties of Entry Supervisor

- Verifies that rescue services are available & means for summoning are operable
- Removes unauthorized individuals who enter or attempt to enter permit space during entry operations
- Determines, whenever responsibility for permit space entry operation is transferred & at intervals dictated by hazards & operations performed within space, that entry operations remain consistent with terms of entry permit & acceptable entry conditions are maintained

Definitions

Hazardous atmosphere

- Atmosphere that may expose employees to risk of death, incapacitation, impairment of ability to self-rescue (i.e. unaided escape from permit space), injury or acute illness from one or more following causes:
 - Flammable gas, vapor or mist in excess of 10% of Lower Flammable Limit (LFL)



Definitions

Hazardous atmosphere

- Atmospheric concentration of any substance for which dose or PEL could result in employee exposure in excess of dose or PEL
- Note: atmospheric concentration of any substance not capable of causing death, incapacitation, impairment of ability to self-rescue, injury or acute illness due to health effects is not covered

Definitions

Hazardous atmosphere

- Any other atmospheric condition that is an immediate danger to life and health.
- Note: for air contaminants which OSHA has no dose or PEL, other sources of information, such as MSDSs that comply with 29 CFR 1910.1200, published information & internal documents can provide guidance in establishing acceptable atmospheric conditions

Definitions

Rescue service

- Personnel designated to rescue employees from permit spaces
- Note: rescue personnel may be industry emergency personnel, outside rescue service or combination of teams



Rescue & Emergency Services

- **Rescue and emergency services**
 - Employer who designates rescue & emergency services, pursuant to paragraph (d)(9) shall:
 - Evaluate prospective rescuer's ability to respond to rescue summons in timely manner, considering hazard(s) identified

Definitions

- **Testing**
 - Process by which hazards that may confront entrants are identified & evaluated
 - Testing includes specifying tests to be performed in permit space
 - Note: testing enables employers to devise & implement adequate control measures for protection of authorized entrants & determine if acceptable entry conditions are present immediately prior to & during entry

Testing Protocol

- **Before employee enters space, internal atmosphere shall be tested, with calibrated direct-reading instrument, for following conditions in order given**
 - Oxygen content
 - Flammable gases & vapors
 - Potential toxic air contaminants

PRCS Written Plan Outline

- **Introduction - company policy**
- **Definitions**
- **Identification of confined spaces**
- **Notification and warning**
- **Hazard identification**
- **Equipment for entry & rescue**
- **Evaluation of confined spaces**
- **Permits**
- **Authorized entrants**
- **Authorized attendants**

PRCS Written Plan Outline

- **Entry supervisors**
- **Entry procedures**
- **Communications procedures**
- **Rescue procedures**
- **Closure procedures**
- **Coordination of work with contractors**
- **Program review and update (required annually)**
- **Training requirements and documentation**

Thank You!

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