



Confined Space Entry Program

1. Purpose

The purpose of the DU Confined Space Entry Program (CSEP) is to protect DU employees, students, and contract workers during entry into confined spaces and to ensure regulatory compliance.

2. Authority

The DU CSEP is written in accordance with the Occupational Safety and Health Administration (OSHA) Permit-required Confined Space regulation, 29 CFR 1910.146.

3. Responsibilities

Department Heads

- properly identifying confined spaces under the auspices of its department, including a distinct identifier, location, type of confined space, and information on the physical characteristics relevant to confined space entry safety, i.e. “30 foot tunnel, crawlspace only 4 feet high, dirt floor, high voltage electrical lines, or only one means of egress”
- providing an inventory of its confined spaces, including the information above, to the EH&S Director
- physically securing confined spaces at all times to prevent unauthorized access.

Department Supervisors

- making sure employees understand and adhere to the requirements of this Program
- making sure employees have received classroom training on confined space, practical on-site training, and instruction on the proper use of monitoring equipment
- performing hazard assessments for scheduled work in Permit-Required Confined Spaces (PRCS) to implement adequate controls
- making sure employees follow procedures for entry into a PRCS, including air monitoring and emergency response.

Program Managers

- confirming contract employees comply with the DU CSEP, as applicable.

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EH&S Director

- revising the CSEP, as needed
- providing classroom training to DU employees
- determining whether confined spaces that have been identified by the departments are PRCS or non-permitted spaces
- providing technical assistance in the support of confined space entries
- maintaining records of all DU confined spaces, as provided by departments

Entry Supervisors

- determining if acceptable conditions exist for confined space entries
- overseeing entry operations for the duration of confined space entry work
- implementing the use of an appropriate retrieval (harness, retrieval line) equipment
- performing air monitoring as required
- verifying rescue services are available and the means for summoning them are operable
- delivering copy of permit to Campus Safety prior to entry
- completing Confined Space Entry Permits and submitting to the EH&S Director

Entrants & Attendants

- ensuring the associated hazards of PRCS are understood
- complying with the CSEP and specific entry procedures of the department

4. Definitions

Confined space – a space that is (1) large enough for bodily entry AND (2) has limited or restricted means of entry or exit AND (3) is not designed for continuous occupancy.

Permit-required confined space (PRCS) – a confined space that contains or has the potential to contain any of the following:

- a hazardous atmosphere

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- an engulfment hazard
- an entrapment hazard
- any other recognized serious safety hazard

Acceptable entry conditions - the conditions that must exist in a permit space to allow entry and to ensure that employees involved with a permit-required confined space entry can safely enter into and work within the space. Acceptable atmospheric conditions are as follows:

- oxygen concentration between 19.5 % and 23.5%
- combustible level below 10% of the Lower Explosive Limit (LEL)
- carbon monoxide concentration less than 25 parts per million (ppm)
- hydrogen sulfide concentration less than 10 ppm

Additional relevant definitions can be found at the OSHA web site:

http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9797

5. Requirements

All confined spaces on the University of Denver property shall be identified and evaluated to determine if they are permit required confined spaces. The following information will be maintained for all confined spaces: unique identification number, type of confined space, the responsible department, relevant physical characteristics, detailed description of the location, whether or not it's a PRCS, potential hazards, date of last entry, and general comments.

All PRCS entries shall be performed by using a permit system, in accordance with the OSHA Confined Space regulation. The permit system shall be used to identify and control hazards within the PRCS. The permit shall document the following information:

- the permit space to be entered
- the purpose of the entry
- the date and the authorized duration of the entry permit
- the authorized entrants within the permit space
- the authorized attendants
- the entry supervisor
- the hazards of the permit space to be entered
- the measures used to isolate the permit space and to eliminate or control permit space hazards

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before entry

- the acceptable entry conditions
- the results of initial and periodic tests performed, accompanied by the names or initials of the testers
- the rescue and emergency services that can be summoned and the means (such as the equipment to use and the numbers to call) for summoning those services
- the communication procedures used by authorized entrants and attendants to maintain contact during the entry
- equipment, such as personal protective equipment, testing equipment, communications equipment, alarm systems, and rescue equipment, to be provided for compliance with this section
- any other information whose inclusion is necessary, given the circumstances of the particular confined space, in order to ensure employee safety.

University of Denver contractors who enter DU confined spaces must have an established confined space entry program that includes the use of its own permit system. Contractors must be trained in accordance with OSHA, must supply their own monitoring and retrieval equipment, and must provide their own rescue and emergency services.

6. Rescue and Emergency response

The City of Denver Fire Department (DFD) will provide rescue and emergency services, as needed, for DU employees. In the event of an emergency, the authorized attendant shall immediately call 911. Campus Safety should also be called, at 303-871-3000, to assist.

Prior to entry, the Entry Supervisor will notify Campus Safety of the planned confined space work and will also fax a copy of the confined space permit to Campus Safety.

No DU employees, including the attendant or the entry supervisor, are authorized to enter a PRCS to perform rescue. To facilitate non-entry rescue, retrieval systems or methods shall be used whenever an authorized entrant enters a permit space, unless the retrieval equipment would increase the overall risk of entry or would not contribute to the rescue of the entrant. Documentation must be provided on the permit form explaining why any retrieval equipment is not used.

For the use of retrieval equipment, each authorized entrant shall use a chest or full body harness, with a retrieval line attached at the center of the entrant's back near shoulder level, above the entrant's head.

7. Training

All DU employees who will be attendants or entrants shall receive the following training and instruction

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on permit-required confined spaces, prior to performing their duties:

- classroom training in accordance with the OSHA Standard
- individual instruction on the proper use of monitoring equipment, including calibration and the recording of calibration data
- practical on-site training at a confined space.

8. Procedures

The following steps for confined space entry shall be followed:

1. Verify whether the confined space is PRCS or a non-permit space.
2. Initiate a permit for entry into a PRCS. Note: for non-permit confined spaces, where a permit is not required, entrants must still have confined space training.
3. Evaluate the potential hazards of the PRCS.
4. Identify any hazards that may be introduced in the confined space. The EH&S Director must be notified, prior to entry of Hot Work or lockout/tagout (LOTO) that will be performed.
5. Calibrate monitoring instrument and record readings in logbook.
6. Provide retrieval system and adequate mechanical ventilation. Justification must be provided on the permit where these items are not used.
7. Isolate and cordon off the area to preclude unauthorized entry.
8. Notify Campus Safety of the specific confined space that will be entered.
9. With ventilation into the PRCS, check the entire atmosphere in the following sequence. See **acceptable entry conditions** defined above.
10. Complete the entry permit.
11. Enter the space and perform work.
12. Secure area upon completion.
13. Perform a post-job evaluation to identify and correct any anomalies.
14. Submit copy of completed permit to EH&S Director.



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University of Denver Permit-Required Confined Space Entry Permit

A. Confined Space & Work Description

Type of confined space _____ ID # _____

Location _____

Work description: _____

Permit # _____
Start Date _____ Start Time _____
Scheduled Expiration _____ a.m./p.m.

B. Personnel

The following trained person(s) are assigned work in connection with a confined space entry, in accordance with this permit:

Entrants: Name (Printed) _____ Name (Printed) _____

Attendants: Name (Printed) _____ Name (Printed) _____

C. Types of Hazards

Circle potential hazards associated with the confined space

- Oxygen-deficient atmosphere
- Oxygen-enriched atmosphere
- Flammable Atmosphere
- Toxic Atmosphere (i.e., carbon monoxide, hydron sulfide),
- Entrapment
- Engulfment

Additional hazards: For hot work or LOTO, the EH&S Director must be notified: date _____ time _____

D. Atmospheric Testing

Equip. Model & Serial Number _____ Date/time of equipment calibration _____ Initials _____

Commodity measured	Acceptance criteria	Results
Oxygen (O ₂)	19.5 – 23.5%	_____ %
Flammable concentrations (% LEL)	less than 10%	_____ %
Carbon monoxide (parts per million)	less than 25 ppm	_____ ppm
Hydrogen sulfide (parts per million)	less than 10 ppm	_____ ppm

E. Condition of area and equipment (provide explanation for items not used or in place or items circled "N")

Campus Safety notified prior to entry: Date _____ Time: _____ PPE to be worn _____

Rescue plan (Y / N); Barricades (Y / N); Safety harness (Y / N); Ventilation (Y / N); Fire extinguisher (Y / N); Emergency communication (Y / N)

Comments _____

Pre-Entry Briefing: All entrants & attendants must sign below acknowledging that they (1) have attended confined space classroom and on-site training, (2) have reviewed this permit and (3) are aware of the hazards and precautions necessary for performing the designated work in the confined space.

I certify that existing and potential hazards have been evaluated, necessary protective measures have been taken, & acceptable entry conditions exist:

Printed Name: _____ Signed: _____ Date: _____
(Entry Supervisor)

Permit Cancelled/Closed on: _____ by: _____
(Entry Supervisor)

Emergencies – dial 911 & 303-871-3000