

# Meeting Guidelines for December

## goals:

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This safety session should teach employees to know the characteristics and hazards of confined spaces and to understand how to follow confined space rules and regulations to protect themselves.

### 1. OSHA defines confined spaces as work areas with certain features

- large enough to enter and work in
- limited entry and exit areas
- not designed to be occupied for extended periods
- examples include: tanks, silos, storage bins, hoppers, vaults, pits, furnaces, tunnels, sewers, pipelines, crawl spaces, process vessels, or underground areas
- confined space tasks include: cleaning, painting, welding, scraping, performing repairs or maintenance
- It becomes a permit required confined space if, in addition, it presents or has the potential for any recognized serious hazard.

### 2. Employers must test confined spaces to determine if they're hazardous

Failing to identify hazards and take precautions causes thousands of serious injuries, and sometimes deaths, in confined spaces.

Certain hazards should raise concern for employers:

- hazardous atmosphere, or potential for one
- material that could potentially engulf a person in the space
- slanting walls or sloped and tapering floor that could trap or asphyxiate an entrant any other recognized serious safety or health hazard

### 3. A confined space's atmosphere may make it hazardous

Employees could risk death or serious illness, become incapacitated, or have trouble escaping if the confined space's atmosphere contains:

- levels of flammable gas, vapor, or mist in excess of 10 percent of their lower flammable limits
- airborne dust levels at or above their flammable limits or permissible exposure limits (PELs) or that prevent visibility of fewer than 5 feet
- Oxygen concentration above 23.5 percent or below 19.5 percent
- Any condition immediately dangerous to life or health that could threaten life, cause irreversible health problems, or make it difficult to escape the space without help

### 4. A confined space's atmosphere may pose fire, explosion, and toxicity risks

Anything that could burn or explode (e.g., gasoline, methane, dust) is more likely to do so in a confined space.

- Smoking, grinding, or welding sparks, unapproved electrical equipment, or metal friction (even from nails in shoes) can ignite these substances.
- Inhaling toxic substances above their PELs can cause illness, suffocation, or even death (e.g., from carbon monoxide, hydrogen sulfide, or sulfur dioxide).

### 5. Too much or too little oxygen is a major confined space hazard

- Oxygen levels over 23.5 percent create a serious fire or explosion risk.
- Oxygen levels below 19.5 percent are a dangerous health risk:
  - Sixteen percent can cause drowsiness and nausea; 12 percent, unconsciousness; 6 percent, death.
  - Methane, carbon dioxide, nitrogen, corrosion, or rust can displace oxygen.

**6. A confined space may be hazardous because of engulfment potential**

A person could be covered, buried, or smothered in a space that contains a liquid, or a flowing solid such as sand or grain.

**7. A confined space may be hazardous because of an entrapping design**

If a space's walls curve in or its floors slope and taper down, you could:

- slip or fall into a space that is too tight to escape from
- get pushed into machinery in the space

**8. Confined spaces may have physical hazards**

- Heat can build up and create the danger of exhaustion or heat stroke.
- Falls can be fatal if you're trapped with a serious injury, are in a toxic or low oxygen area, or you can't get a foothold on floors or a grip on handholds to get out.
- Noise bounces off walls in a space, making it hard to hear directions or warnings and creating a risk of hearing damage.
- Power equipment creates injury, electrocution, fire, and explosion risks: that's why power is turned off, equipment locked out, and pipes and valves turned off, blocked and bled before spaces are entered.

**Discussion Points:**

Ask participants to name hazards of particular confined spaces in your workplace.

**Conclusion: take confined space permits and precautions seriously**

A hazardous confined space can be deadly unless the testing, entry limits, and safety precautions spelled out on the permit are followed.

**Test Your Knowledge:**

Have your employees take the confined spaces hazards quiz. By testing their knowledge, you can judge their ability to understand confined space hazards and whether they need to review this important topic again soon.



Quiz

**1. Which is not a feature of a confined space?**

- a. limited entry and exit areas
- b. more than 100 feet from a first aid station
- c. not designed for extended occupancy periods

**2. A confined space atmosphere may be hazardous if flammable gas, vapor, or mist levels top their flammable limits by more than 10 percent**

- a. true
- b. false

**3. An ignition source like grinding or welding sparks could cause a fire in a confined space**

- a. true
- b. false

**4. The worst that can happen if you inhale toxic substances in a protection confined space is:**

- a. skin irritation
- b. suffocation or death
- c. dizziness

**5. A confined space is hazardous if oxygen levels are below**

- a. 19.5 percent
- b. 24.5 percent
- c. 5 percent

**6. You could be smothered or buried in a confined space if it contains liquid or:**

- a. high levels of oxygen
- b. a damp atmosphere
- c. sand, grain, or any flowing solid

**7. Entrapping design means a space that's very deep or dark**

- a. true
- b. false

**8. Heat stroke or heat-related exhaustion is hazardous because it limits your ability to get out of a confined space.**

- a. true
- b. false

**9. Noise is a hazard in confined spaces because you may not be able to:**

- a. wear earmuffs or other hearing
- b. hear warning or directions
- c. get out of the space quickly

**10. Confined space conditions that could pose a threat to life, cause irreversible health problems, or hinder ability to escape without help are called:**

- a. immediately dangerous to life or health
- b. atmospheric hazards
- c. physical hazards



## Confined Spaces

On  
the  
Job

### Answers to Quiz

1. b. More than 100 feet from a first aid station.
2. a. True.
3. a. True.
4. b. Suffocation or death.
5. a. 19.5 percent.
6. c. Sand, grain or any flowing solid.
7. b. False. Entrapping design means a space whose walls curve in or whose floors slope and taper down.
8. a. True.
9. b. Hear warnings or directions.
- 10.a. Immediately dangerous to life or health.

# Confined Spaces *Your Role*

When it comes to confined spaces, several roles share top billing: entrant, attendant, rescue team and supervisor. Each role is important and has carefully defined tasks. Use this checklist to make sure you understand the role you play.

## ***As an ENTRANT my job is to work inside the confined space. I need to:***



- follow company procedures at all times.
- know the hazards of the space. wear protective clothing and equipment such as harnesses, retrieval lines and respirators.
- stay in communication with the attendant.
- alert the attendant to any danger.
- check my escape route and be ready to get out if ordered to do so.
- lockout/tagout all energy sources.
- make sure the area is tested and well-ventilated.

## ***As an ATTENDANT my job is to make sure the person inside the confined space is safe and in communication with the outside. I need to:***



- know all emergency procedures.
- monitor conditions in and around the confined space.
- know all hazards of the space.
- stay in constant touch with the workers in the confined space.
- recognize signs that the entrant is in trouble.
- assist the entrant as required.
- be prepared to order an evacuation if necessary.
- never go inside to rescue anyone—call rescue personnel instead.

## ***As a SUPERVISOR I am responsible for the planning and completion of the permit-space entry. I need to:***



- know the hazards of the space.
- remove unauthorized persons from the space.
- authorize the beginning and end of the permit-space entry.
- decide on all control measures, such as lockout/tagout, isolation and ventilation.
- arrange for rescue services.

## ***If I'm on the RESCUE TEAM, the safety of the entrant may depend on me knowing my job. I need to:***



- have the same level of training as entrants.
- be able to use all necessary rescue equipment and rescue techniques.
- be able to understand the information given to entrants.
- know first aid and CPR.



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## Payroll Stuffer

Air Quality in the workplace directly impacts the health of workers, particularly those who suffer from asthma.

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### Assessing the Situation

When building occupants express concern about indoor air quality, a proactive evaluation can start with a few basic issues, including:

- An evaluation of temperature and relative humidity. Make sure the air supply is neither drafty nor stagnant.
- A comparison of the building's outside air supply to the American Society of Heating, Refrigeration and Air Conditioning Engineers' Standard 62. Make adjustments as needed. Outside air supply can be estimated using carbon dioxide measurements.
- Looking for obvious moisture damage and mold growth. A moisture meter can help detect hidden sources in wallboard, ceiling tiles and other materials.

When there are specific asthma complaints, the evaluation should include an interview with the affected person who may be able to provide information on what is triggering the asthma. For allergens, such as mold dust mites, pet dander and cockroach fragments, tests can be conducted on suspect materials such as carpet and hair fabric. The results can be helpful in either finding or ruling out potential sources.

Asthma sufferers can benefit from buildings that incorporate more natural materials, such as stone floors and eliminate extensive use of carpets and fabrics that can harbor dust mites and other allergens.

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### Cleaning up the Air

The first step is to identify, remove, isolate and/or replace the source of pollutants.

The most common recommendations are:

1. **improve cleaning methods**
2. **improve outside ventilation**
3. **control humidity and mold growth**
4. **remove triggers (pets, mold, cigarette smoke) from the indoor environment**

# Safety Topic Handout

## ***How Healthy is the Air in Your Kitchen?***

- **Household Cleaners** - Unhealthy or irritating vapors may be released from chemicals in products. **Remedy:** Select non-aerosol and non-toxic products. Use, apply, store and dispose according to manufacturer's directions. Never mix products together. If products are concentrated, properly label storage container with dilution instructions. Use up product completely.
- **Moisture from Cooking & Dishwasher Use** - Encourages biological pollutants (mold, mildew, cockroaches, dust mites) which can trigger asthma. **Remedy:** Install and use exhaust fan.

## ***How Healthy is the Air in Your Bathroom and Laundry?***

- **Moisture from Bathing, Clothes Washing, etc.** - Encourages biological pollutants (mold, mildew, cockroaches, dust mites) which can trigger asthma. Also creates potentially damaging condensation. **Remedy:** Install and use exhaust fan. Fix plumbing leaks promptly.
- **Air Freshener** - Organic gases are released from chemicals in products. **Remedy:** Open window or use exhaust fan instead. If using air fresheners, follow manufacturer's directions.

## ***How Healthy is the Air in Your Living Areas?***

- **Carpets** - Biological pollutants can grow on water-damaged carpet; organic gases are released from new carpet. **Remedy:** Clean and dry or remove water-damaged carpets promptly. If installing new carpet, air it out before installation. Ask for low-emitting adhesives, if adhesives are needed. During installation open doors and windows; use window fans or room air conditioners. Vacuum regularly.
- **House Dust Mites** - Biological allergens can trigger asthma. **Remedy:** Clean house and vacuum regularly. Wash bedding in hot water above 1300 F.
- **Air Conditioner** - Biological allergens. **Remedy:** Empty and clean water tray often. Follow all service and maintenance procedures, including changing filter.
- **Fireplaces** - Carbon monoxide and combustion pollutants. **Remedy:** Open flue when fireplace is in use. Have flue and chimney inspected annually for exhaust backdrafting, flue obstructions or cracks, excess creosote, or other damage. Install smoke and carbon monoxide detectors.
- **Secondhand Smoke (Environmental Tobacco Smoke)** - Contains harmful combustion and particulate pollutants including carbon monoxide and combustion by-products. **Remedy:** Do not smoke in your home or permit others to do so (especially near children). If smoking cannot be avoided indoors, open windows or use exhaust fans.
- **Draperies** - New draperies may be treated with a formaldehyde-based finish and emit odors for a short time. **Remedy:** Before hanging, air out draperies to ventilate odors. After hanging, ventilate the area. Maintain moderate temperature and humidity.
- **Animals** - Leave allergens such as dander; hair, feathers, or skin in the air. **Remedy:** Keep pets outdoors as often as possible. Clean entire house regularly; "deep" clean areas where pets are permitted.
- **Smoke and Carbon Monoxide Detectors** - Install a smoke detector in the hallway adjacent to or located in each bedroom. If you have gas or other fossil-fuel burning appliances in the house, install carbon monoxide detectors in these locations as well. Combination smoke and carbon monoxide detectors are available. (Remember to check the batteries frequently.)