

## Confined Spaces in Construction: Crawl Spaces and Attics

Confined spaces can present conditions that are immediately dangerous to workers if not properly identified, evaluated, tested, and controlled. This fact sheet highlights many of the confined space hazards associated with crawl spaces and attics and how employers can protect their workers in these environments.

OSHA has developed a new construction standard for Confined Spaces (29 CFR 1926 Subpart AA) — any space that meets the following three criteria:

- Is large enough for a worker to enter it;
- Has limited means of entry or exit; and
- Is not designed for continuous occupancy.

A space may also be a **permit-required** confined space if it has a hazardous atmosphere, the potential for engulfment or suffocation, a layout that might trap a worker through converging walls or a sloped floor, or any other serious safety or health hazard.

### Fatal Incidents

Confined space hazards in crawl spaces and attics have led to worker deaths. Several tragic incidents in crawl spaces and attics have included:

- Two workers died while applying primer to floor joists in a crawl space. They were burned when an incandescent work lamp ignited vapors from the primer.
- A flash fire killed a worker who was spraying foam insulation in an enclosed attic. The fire was caused by poor ventilation.

### Training

The new Confined Spaces standard requires employers to ensure that their workers know about the existence, location, and dangers posed by each permit-required confined space, and that they may not enter such spaces without authorization.

Employers must train workers involved in permit-required confined space operations so that they can perform their duties safely and understand

the hazards in permit spaces and the methods used to isolate, control or protect workers from these hazards. Workers not authorized to perform entry rescues must be trained on the dangers of attempting such measures.

### Safe Entry Requirements

The new Confined Spaces standard includes several requirements for safe entry.

**Preparation:** Before workers can enter a confined space, employers must provide pre-entry planning. This includes:

- Having a competent person evaluate the work site for the presence of confined spaces, including permit-required confined spaces.
- Once the space is classified as a permit-required confined space, identifying the means of entry and exit, proper ventilation methods, and elimination or control of all potential hazards in the space.
- Ensuring that the air in a confined space is tested, before workers enter, for oxygen levels, flammable and toxic substances, and stratified atmospheres.
- If a permit is required for the space, removing or controlling hazards in the space and determining rescue procedures and necessary equipment.
- If the air in a space is not safe for workers, ventilating or using whatever controls or protections are necessary so that employees can safely work in the space.

**Ongoing practices:** After pre-entry planning, employers must ensure that the space is monitored for hazards, especially atmospheric hazards. Effective communication is important

because there can be multiple contractors operating on a site, each with its own workers needing to enter the confined space. Attendants outside confined spaces must also make sure that unauthorized workers do not enter them. Rescue attempts by untrained personnel can lead to multiple deaths.

### Crawl Spaces and Attics as Confined Spaces

Crawl spaces and attics can be both confined spaces and permit-required confined spaces under the new standard. For instance, working in an attic and applying a large amount of spray foam (or another chemical) in a short period of time can expose a worker to low oxygen levels or a hazardous atmosphere.



In addition, changes to the entry/exit, the ease of exit, and

air flow could create a confined space or cause the space to become permit-required.

### Hazards in Crawl Spaces and Attics

Crawl spaces can present many confined space hazards, including:

- Atmospheric hazards (e.g., flammable vapors, low oxygen levels)
- Electrocutation (e.g., using electrical equipment in wet conditions, unprotected energized wires)
- Standing water
- Poor lighting
- Structural collapse
- Asbestos insulation

Working in attics can also present confined space hazards, such as:

- Atmospheric hazards (e.g., poor ventilation)
- Heat stress

- Mechanical hazards (e.g., attic ventilators, whole house fans)
- Electrical hazards (e.g., damaged or frayed wires, open electrical boxes)
- Slip, trip and fall hazards
- Asbestos insulation

**Personal protective equipment:** Employers should assess the work site to determine what personal protective equipment (PPE) is needed to protect workers. Employers should provide workers with the required PPE and proper training on its use and about any related hazards before the work starts.

### How to Contact OSHA

For questions or to get information or advice, to find out how to contact OSHA's free on-site consultation program, order publications, report a fatality or severe injury, or to file a confidential complaint, visit [www.osha.gov](http://www.osha.gov) or call 1-800-321-OSHA (6742).

#### Additional Information

[OSHA's Confined Spaces in Construction Standard \(29 CFR 1926 Subpart AA\)](#)

[Confined Spaces: OSHA Construction Industry Topics by Standard](#)

[OSHA Fact Sheet: Procedures for Atmospheric Testing in Confined Spaces](#)

[Confined Spaces: NIOSH Workplace Safety and Health Topics Page](#)

[State Plan Guidance:](#) States with OSHA-approved state plans may have additional requirements for confined space safety.

[Help for Small and Medium-Sized Employers:](#) OSHA's On-site Consultation Program offers free and confidential advice to businesses nationwide.

**This is one in a series of informational fact sheets highlighting OSHA programs, policies or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory-impaired individuals upon request. The voice phone is (202) 693-1999; teletypewriter (TTY) number: 1-877-889-5627.**

**For assistance, contact us. We can help. It's confidential.**



[www.osha.gov](http://www.osha.gov) (800) 321-OSHA (6742)



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