

- b) Temperature Extremes. Extremely hot or cold temperatures in a confined space can adversely affect or even injure workers. For example, if the space has been steamed, it shall be allowed to cool before entry.
- c) Noise. A confined space can amplify noise because of its design and acoustic properties. Excessive noise may damage hearing and impair communication so that a shouted warning cannot be heard.
- d) Slick or wet surfaces. Slips and falls can occur on a wet surface, causing injury or death. Also, a wet surface will increase the likelihood and effect of electrical shock where electrical circuits, equipment, and tools are used.
- e) Falling Objects. Workers in confined spaces shall recognize and guard against the possibility of falling objects, particularly in spaces that have top- side openings for entry, and in spaces with activities on more than one level.

### **9.17.2 Confined Space Procedure**

The precautions listed below comprise the standardized confine space entry procedure:

- a) Testing and Monitoring: Confined space entry shall be prohibited until testing with a properly calibrated gas-monitoring device ensures that the confined space atmosphere is safe. Testing parameters shall include oxygen content, flammability of atmosphere, and toxic gases.
- b) Ventilation: The space shall have continuous general ventilation or local exhaust ventilation (depending on the potential hazards, suspected contaminants, work to be performed, or type of confined space) before entry and during occupancy of the confined space.
- c) Personal Protective Equipment: Respiratory protection is essential for safe confined space entry. If an oxygen-deficient atmosphere exists, the worker shall use an SCBA approved by NIOSH and the Mine Safety and Health Administration. Where confined space openings restrict entrance with an SCBA, a supplied-air respirator with an auxiliary self-contained unit (escape SCBA) can be used. Workers authorized to use SCBAs shall not have a beard because it could hinder the proper fitting of an SCBA.
- d) Labeling and Posting: Warning labels shall be posted near the entrances of all confined spaces. Labels shall be clearly marked in a way that is recognizable to all employees.
- e) Personnel Training: Personnel who will be working in confined spaces shall be trained to identify confined spaces and their hazards and in the use of respirators, first aid, lockout and tag out procedures, ventilation, rescue procedures, and the use of permits for the type of confined space the worker will be exposed to, such as manholes and pump stations. Training of workers for confined space entry needs to be evaluated periodically to determine if it is effective.
- f) Medical Surveillance: Employees who are required to enter confined spaces shall receive periodic medical examinations and certification that they can work while using an SCBA. Workers with respiratory problems shall not work in areas that may require use of SCBAs.
- g) Entry by Permit Only: Entry into a confined space shall be authorized by permit only. The permit, explicitly identify the work to be done, associated hazards, isolation checklists, special clothing and equipment, atmospheric test readings, atmospheric monitoring, standby persons, and emergency procedures.
- h) Isolation: Where appropriate, confined spaces shall be completely isolated from all other systems. Locking circuit breakers in the open (off) position with a key-type padlock achieves electrical isolation of the confined space. Disconnecting linkages or removing drive belts can mechanically isolate moving parts. Pipe valves shall be locked and tagged in the closed position, or the pipe blanked off.