

**5207.0304 ENTRY INTO AND WORK WITHIN CONFINED SPACES.**

Subpart 1. **Class I; confined spaces where an atmosphere with dangerous air contamination, oxygen deficiency, or oxygen enrichment is unlikely to develop.**

A. Employers whose operations require workers to perform routine repetitive entry into low hazard chambers such as boilers, vaults, vessels, tanks, bins, and vats, where no risk of engulfment can exist, and where the atmosphere cannot develop a dangerous air contaminant or oxygen enrichment, and where all known sources of hazard are positively controlled, may issue an annual permit for this type of entry instead of separate permits for each space, if established entry practices and procedures are in effect as outlined below. The employer may, at its discretion, allow entry by one or more workers without a standby person when work under the following conditions is performed:

(1) Establish specific entry practices and procedures as required in part 5207.0302, subpart 3, items A, B, and D to I, that must be followed for entry by annual permit before any worker may be authorized to make an entry.

(2) Train workers in the practices and procedures required for such entries.

(3) Ensure that one or more of the following requirements are met:

(a) the space has been ventilated before entry using a mechanically powered ventilator for not less than is specified in the ventilation nomograph prepared for that ventilator, and that ventilation continues throughout the entry;

(b) all areas of the confined space are continuously and effectively ventilated; such ventilation shall provide positive ventilation of clean air at a rate of at least 200 cubic feet per minute per occupant, or in confined spaces larger than 2,000 cubic feet, six air changes of the confined space volume per hour; or

(c) there is no effective ventilation, but appropriate continuous oxygen monitoring is performed to ensure that permit conditions are maintained.

(4) Revoke the permit whenever any tests performed during confined space occupancy show deviation from acceptable conditions to a hazardous condition. In these circumstances, entry may be made only by an entry procedure as outlined in subpart 2 or 3.

B. Employers whose operations require workers to perform routine repetitive entry into confined spaces where entry permits are required and that are unlikely to develop a dangerous air contaminant, oxygen deficiency, or oxygen enrichment and have no potential for an engulfment condition, may issue an annual permit for this type of entry instead of separate permits for each space if established entry practices and procedures are in effect

as outlined below. The employer may, at its discretion, allow entry by one or more workers without a standby person when work under the following conditions is performed:

(1) Establish specific entry practices and procedures as required in part 5207.0302, subpart 3, items A, B, and D to I, that must be followed for entry by annual permit before any worker may be authorized to make an entry.

(2) Train workers in the practices and procedures required for such entries.

(3) Ensure that whenever entry into a confined space is to be made, workers test the atmosphere before entry using an appropriate direct reading instrument (or other device capable of quantitatively identifying anticipated contaminants) with a remote sampling probe, testing for the following conditions and in the following order: oxygen concentration, combustible gas, and suspected toxic material, if any. While occupied, additional continuous monitoring for these gases or vapors shall be done during the entry period to ensure that a potentially dangerous atmosphere does not develop in the confined space.

(4) Ensure that continuous and effective positive ventilation is provided to the confined space at a minimum rate of 200 cubic feet per minute of clean air per occupant or, in confined spaces larger than 2,000 cubic feet, an exchange of six air changes of the confined space volume per hour.

(5) Revoke the permit whenever any tests performed during confined space occupancy show deviation from acceptable conditions to a hazardous condition. In these circumstances, entry may be made only by an entry procedure as outlined in subpart 2 or 3.

**Subp. 2. Class II; confined spaces where an atmosphere free of dangerous air contamination, oxygen deficiency, or oxygen enrichment has been verified.**

A. At least one person shall stand by on the outside of the confined space ready to give assistance in case of emergency.

B. Visual, voice, or signal line communications shall be maintained between all individuals in the confined space and the standby person.

C. An approved safety belt or harness with an attached line shall be used where practical and feasible. The free end of the line shall be secured outside the entry opening. The line shall be at least 2,000 pounds test.

D. The standby person shall not enter the confined space without alerting an emergency response team such as the fire department or other trained rescue workers of the intent to enter the confined space. Entry shall only occur after proper tests have been performed to show that a dangerous air contamination, oxygen deficiency, or oxygen enrichment does not exist or the standby person is protected as prescribed in subpart 3, items C and D, subitem (1).

Subp. 3. **Class III; confined spaces where an atmosphere free of dangerous air contamination, oxygen deficiency, or oxygen enrichment cannot be verified.** The requirements of this part apply to entry into and work within a confined space whenever an atmosphere free of dangerous air contamination, oxygen deficiency, or oxygen enrichment cannot be verified through the implementation of the applicable provisions of part 5207.0303, or whenever due to an emergency, dangerous air contamination, oxygen deficiency, or oxygen enrichment cannot be prevented through the implementation of the applicable provisions of part 5207.0303.

A. Tanks, vessels, or other confined spaces with side and top openings shall be entered from side openings when practicable. For the purposes of this part, side openings are those within 42 inches of the bottom.

B. Appropriate, approved respiratory protective equipment, in accordance with Code of Federal Regulations, title 29, section 1910.134, shall be provided and worn.

C. An approved safety belt or harness with an attached line must be used. The free end of the line shall be secured outside the entry opening. The line shall be at least 2,000 pounds test.

D. At least one person shall stand by on the outside of the confined space ready to give assistance in case of emergency.

(1) The standby person shall have appropriate, approved, respiratory protective equipment, including an independent source of breathing air that conforms with Code of Federal Regulations, title 29, section 1910.134(d), available for immediate use.

(2) A standby person protected as prescribed by items C and D may enter the confined space, but only in case of emergency and only after donning the required personal protective equipment and alerting an emergency response team such as the fire department or other trained rescue workers of their intention to enter the confined space.

(3) Visual, voice, or single line communications shall be maintained between all individuals in the confined space and the standby person.

E. When entry must be made through a top opening, the requirements in subitems (1) and (2) also apply.

(1) The safety harness shall be of the type that suspends a person in an upright position.

(2) An approved hoisting device or other effective means shall be provided for lifting workers out of the space.

F. Work involving the use of flame, arc, spark, or other source of ignition is prohibited within a confined space (or any adjacent space having common walls, floor,

or ceiling with the confined space) that contains, or is likely to develop, dangerous air contamination due to flammable or explosive substances.

G. Whenever gases such as nitrogen are used to provide an inert atmosphere for preventing the ignition of flammable gases or vapors, no flame, arc, spark, or other source of ignition may be permitted unless the oxygen concentration is maintained at less than 20 percent of the concentration that will support combustion.

(1) Testing of the oxygen content shall be conducted with sufficient frequency to ensure conformance with this requirement.

(2) A written record of the results of such testing shall be made and kept at the work site for the duration of the work.

H. Only approved lighting and electrical equipment may be used in confined spaces subject to dangerous air contamination by flammable or explosive substances.

Subp. 4. **Precautions for emergencies involving work in confined spaces.** At least one person trained in first aid and cardiopulmonary resuscitation (CPR) shall be immediately available whenever the use of respiratory protective equipment is required by this part. Standards for CPR training shall follow the principles of the American Heart Association or the American Red Cross.

**Statutory Authority:** *MS s 182.655*

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