

Sewer System Entry

Use with the Confined Spaces book, Chapter 296-809 WAC

This helpful tool provides additional information on sewer system entries because these entries differ from other confined space entries in the following ways:

- The space usually can't be isolated.
- The atmosphere may suddenly become lethally hazardous, for example toxic, flammable, or explosive atmospheres may enter the work area from another portion of the system.
- Unlike other types of work where entry is rare, a sewer worker's usual work environment is a permit-required confined space.

Entrants

Your designated entrants should be employees who:

- Are thoroughly trained in your sewer entry procedures
and
- Can demonstrate that they follow entry procedures when entering sewers

Monitoring the Atmosphere

Consider the unique circumstances of your sewer system when preparing for entry, including the unpredictability of the atmosphere. Only you can decide, based upon knowledge and experience, what are the best types of testing instruments for any specific entry operation.

- Make sure entrants are equipped with, and trained to use, atmospheric testing equipment that is capable of identifying at least the following:
 - Oxygen concentrations of less than 19.5%
 - Flammable gas or vapor of 10% or more of the lower flammable limit (LFL)
 - Hydrogen sulfide of 10 parts per million (ppm) or more
 - Carbon monoxide of 35 ppm or more
- The selected testing instruments should be carried and used by the entrants to:
 - Continuously monitor the atmosphere
and
 - Warn the entrants of any potential atmospheric hazards, in the direction of travel.



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- If several entrants are working together in the same immediate location, you will need to decide how many test instruments are required.
- Calibrate atmospheric testing equipment according to the manufacturer's instructions.
- Oxygen or broad range tests are best suited when actual or potential contaminants **have not yet** been identified.
 - Unlike substance-specific tests, these enable overall reading of the hydrocarbons (flammables) present in the space.
 - They don't measure the levels of specific substance contamination.
- Substance-specific tests, which measure levels of specific substances, are important when actual and potential contaminants have been identified. They:
 - Are vitally important when deciding on appropriate entry conditions and proper protection for entrants (for example, with ventilation and personal protective equipment)
 - May not detect other potentially lethal atmospheric hazards when the sewer environment suddenly and unpredictably changes.

Protecting Against Surge Flow and Flooding

To the extent possible, sewer crews should develop and maintain a relationship with the local weather bureau and fire and emergency services. In this way, sewer work may be delayed, or interrupted and entrants withdrawn, whenever the following occur:

- Sewer lines are suddenly flooded by rain or fire suppression activities
- Flammable or other hazardous materials are released into sewers due to industrial emergencies or transportation accidents.

Large Bore Sewers

You may need to use special equipment when entering large bore sewers. This equipment could include the following:

- Self-contained breathing apparatus (SCBA) for escape purposes
- Waterproof flashlights
- Boats, rafts, and personal flotation devices (PFDs)
- Radios
- Rope stand-offs for pulling around bends and corners