

Atmospheric testing is required to evaluate the hazards of a confined space and verify that acceptable entry conditions for entry into that space exist.

Evaluation Testing

Evaluation testing shall be conducted as part of the work planning process for entry into a confined space. The atmosphere of a confined space should be analyzed using equipment of sufficient sensitivity and specificity to identify and evaluate any hazardous atmospheres that may exist or arise, so that appropriate permit entry procedures can be developed and acceptable entry conditions stipulated for that space.

Evaluation and interpretation of the evaluation data and development of the entry procedure shall be conducted by a Confined Space Competent Person based on evaluation of all serious hazards.

Verification Testing

Verification testing shall be conducted prior to entry and continuously throughout the entry. The atmosphere of a permit space which may contain a hazardous atmosphere shall be tested for residues of all contaminants identified by evaluation testing using permit specified equipment to determine that residual concentrations at the time of testing and entry are within the range of acceptable entry conditions. Results of testing (i.e., actual concentration, etc.) shall be recorded on the permit in the space provided at least every hour during entry operations and before re-entry following scheduled breaks and evacuation of a space due to conditions that are not compliant acceptable entry conditions.

Duration of Testing

Measurement of values for each atmospheric parameter shall be made for at least the minimum response time of the test instrument specified by the manufacturer.

Testing Stratified Atmospheres

When monitoring for entries involving a descent into atmospheres that may be stratified (in layers of gases), the atmosphere should be tested in increments of approximately 4 feet (1.22 m) in the direction of travel and to each side. If a sampling probe is used, the entrant's rate of progress should be slowed to accommodate the sampling speed and detector response.

Order of Testing

Testing shall be done in the following order:

- Oxygen testing is performed first because most combustible gas meters are oxygen dependent and will not provide reliable readings in an oxygen deficient atmosphere;
- Combustible gases are tested next because the threat of fire or explosion is both more immediate and more life threatening, in most cases, than exposure to toxic gases and vapors; and
- Tests for toxic gases and vapors are performed last.