Confined Spaces in Construction: Air Monitoring

Handout

Overview

Air monitoring is a critical part of any confined space work environment. A confined space is an enclosed space with limited access, such as a storage tank, manhole, tunnel, or ditches more than four feet deep. Air monitoring is required to evaluate the hazards of the space and verify that conditions for entry are acceptable and remain acceptable during entry.

When do you monitor the air?

OSHA says you must monitor the air after draining an open surface tank previously filled with hazardous materials, e.g., cleaning fluids. The air must be tested before a worker enters it. During excavation operations, you must test the air when a hazardous atmosphere exists or could reasonably be expected to exist.

Many construction site situations may pose a "confined space" hazard for which you must monitor the air. You should:

1. Evaluate confined space conditions before entry is authorized, and
2. as necessary to ensure they are acceptable during work.
3. Monitor the air using the following guidelines:
    - Test for oxygen first because most gas meters are oxygen dependent and will not provide reliable readings in oxygen deficient atmospheres.
    - Test for flammable gases and vapors second because the threat of fire or explosion is both more immediate and life threatening (in most cases).
    - Finally, test for toxic air contaminants.

Who monitors the air?

The *person in charge* must know the proper use and calibration of monitoring equipment, and supervise its use. Recently, the permit-required confined space rule was modified to permit employees entering the space to observe the initial monitoring of the space. Authorized entrants, those who will go in and do the work, must know how to use the testing and monitoring equipment.

Testing the air

You should use equipment that is sensitive and specific enough to identify and evaluate any hazardous atmosphere that may exist or arise, so that proper procedures can be developed, and acceptable entry conditions be established. When monitoring the air, you should follow the instrument manufacturer's instructions.

Confined spaces can be life threatening but can be rendered harmless by correct procedures. Air testing and monitoring is one of the tools by which we obtain information to render confined spaces safe to enter.