

Calibration and Bump Testing of Portable Gas Monitors

Why are bump testing and instrument calibration important?

Portable gas monitors detect unseen hazards and measure the levels of hazardous gases. These instruments detect the presence of oxygen-deficient, explosive and/or toxic gases. Exposure to these conditions can have serious health effects, and even result in death. Properly maintaining your equipment can save lives.

What is the difference between full calibration, calibration check and bump testing?

Full Calibration – Adjusting the sensor’s response to match the desired value compared to a known traceable concentration of test gas

Calibration Check – Using a known traceable concentration of test gas to show that the sensors and alarms respond to the gas within manufacturer’s acceptable limits

Bump Test (Function Check) – Passing a known concentration of gas over the sensors at a level and exposure time strong enough to activate all alarms

What is the ISEA?

The International Safety Equipment Association (ISEA) is a leading national trade association for manufacturers of safety and health equipment, including portable gas monitors.

When did the ISEA update their calibration guidelines?

In 2010, the ISEA updated and clarified their guidelines on the frequency and types of tests and checks needed to make sure these monitors function properly at all times.

These revisions include:

- Expanding the scope of the guideline to include all workplace settings (not just confined spaces)
- Emphasizing to users, employers and regulatory agencies the importance of making sure that portable gas monitors function properly

How often does the ISEA recommend performing calibration and bump testing?

Conduct a **full calibration** at regular intervals, according to the manufacturer’s instructions.

Conduct a **bump test or calibration check** of portable gas monitors before each day’s use, according to the manufacturer’s instructions.

NOTE: If any portable gas monitor fails a bump test or a calibration check, you must fully calibrate the monitor before further use. Otherwise you must remove it from service.



Can an employer be cited for not following recommendations for calibration and bump testing?

Failure to follow the manufacturer's instructions on use and maintenance of the monitor may result in the issuance of a violation. This is determined on a case by case basis.

Where can I go for more details?

Always follow the manufacturer's recommendations in the monitor's user manual or on the manufacturer's website. You can also find important calibration information at: https://safetyequipment.org/wp-content/uploads/2015/09/calibration_statement-2010-Mar4.pdf and <https://www.osha.gov/dts/shib/shib093013.html>