

The importance of precise vibration testing in construction



Syscom Instruments is a leading supplier of high-quality vibration and seismic monitoring equipment for the construction, ground and structural vibration, and safety industries.

Geophones and seismometers play a critical role in vibration monitoring, whether in civil engineering, tunnel construction, mining, ground evaluation or specific vibration measurements. Accurate and timely measurement of these movements is critical to the safety of large structures and the protection of people.



Large construction sites are monitored for strong vibrations

This also includes vibration meters according to DIN 45669-1, which are used to measure vibration immission, e.g. in the vicinity of construction sites, and for which detailed requirements for their calibration are defined in DIN 45669-3. Regular and traceable calibration of these highly sensitive sensors and measurement equipment is therefore of great importance.

Quality assurance and calibration as key safety elements

During the development of sensors, Syscom requires test solutions to check and ensure their correct function and quality. Syscom delivers all its instruments with a calibration certificate. Precise calibration technology must therefore be used for the initial calibration of the equipment at the Syscom factory.

For certain markets (e.g. Germany), a comprehensive accredited calibration of the vibration meters, specifically for the measurement of vibration immission, is required prior to sale. Calibration services are offered in cooperation with the local distributors of Syscom equipment.

The sensors must be recalibrated on a regular basis. These services are also carried out by accredited laboratories or by laboratories recommended by the distributors in the respective markets.

What solutions does SPEKTRA offer?

With our worldwide [SPEKTRA LABS network](#), we support Syscom devices throughout their entire lifecycle:

- **from the development process** ... with characterization as well as performance and load tests
- **through delivery** ... with a certificate for the initial calibration of Syscom devices in the factory
- **to application** ... e.g. regular calibration of Syscom sensors and measuring instruments in the field

With [calibration solutions and systems](#) developed in-house, including the CS Q-LEAP™ with APS 129 or SE-13 exciters, we provide comprehensive and flexible solutions for all customers and Syscom users.

Benefits for Syscom users:

SPEKTRA has acquired extensive expertise in the calibration of seismometers and geophones. In addition to sensors, we can also calibrate complete vibration measurement systems. Even complex calibrations according to DIN 45669-3 can be performed efficiently in our SPEKTRA LABS.

With our worldwide network of accredited laboratories, we offer reliable and traceable calibrations at the highest level. Upon request, we offer factory calibration and verification of sensors in accordance with all international and local standards.

Due to the growing demand for calibration services for Syscom products, we have expanded our laboratory capabilities in Germany (for European customers) and in the USA. 30 years of experience in vibration and measurement technology at SPEKTRA ensure quality and a reliable service worldwide.



Geophone calibration on an SE-13 in the SPEKTRA laboratory

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Conclusion

We do not only provide support for Syscom devices throughout their entire life cycle, from development and delivery to regular calibration. But this example shows how a partnership-based cooperation can help ensure the quality of measurement equipment.

The core elements are a worldwide laboratory network, special know-how and innovative calibration systems, which make SPEKTRA a reliable partner for these challenges.

