

Are you already familiar with our industry-standard services?

- Accredited testing laboratory in accordance with DIN EN ISO/IEC 17025 for various NDT methods
- Certificate of competence of the accredited laboratory to qualify and validate (new) nondestructive testing methods for industrial testing practice in the field of ultrasonic testing
- Rapid transfer to market readiness for qualified, standard-compliant use in industrial applications, both for new developments (in-house developments) or for adaptations
- Our associated quality management system is certified in accordance with DIN EN ISO 9001

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Sensor and Data Systems for Safety,
Sustainability and Efficiency

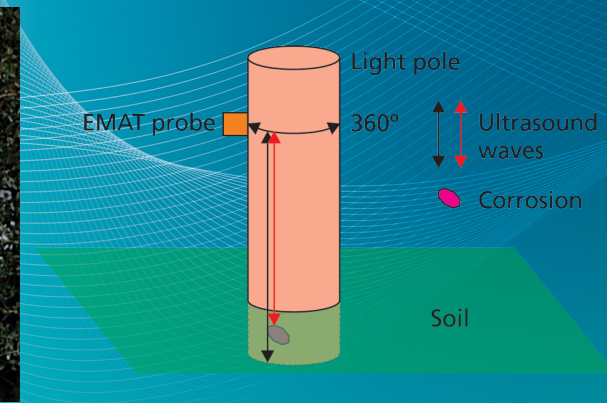


Nondestructive corrosion inspection on pipes and light poles

LIMAtest®



Left: LIMAtest® inspection system; right: Corrosion below soil level



Left: EMAT probe with manipulator in the field; right: Schematic drawing

LIMAtest® – Nondestructive corrosion inspection on pipes and light poles

Uprightly anchored poles carrying lamps, traffic lights, or traffic signs are affected by corrosion due to environmental stress factors such as soil moisture, humidity inside the pipe, air pollution, or dog urine. The emerging attenuation of the pole wall thickness has the potential to harm the structural safety of the poles.

The area critical for corrosion damage is located immediately above and below the soil level. The remaining residual wall thickness is a relevant parameter for the assessment of the structural stability and the bending strength of the affected pole. However, conventional piezo-electrical ultrasound inspection allows but inspecting only the above-ground part of the pole, while critical corrosion areas below the soil

level remain hidden.

The underlying inspection technology exploits the capability of guided ultrasound waves for spreading over long distances and for detecting corrosion-induced wall abrasion. An electromagnetical probe (EMAT) generates a horizontally polarized, guided wave that spreads longitudinally within the pipe wall. In case of corrosive wall abrasion part of the ultrasound energy will be reflected back to the probe and registered as an echo signal. The choice of the deployed ultrasound modes and the chosen frequency range effectuate the reduction of signal attenuation by anti-corrosive coating, soil and concrete to a degree that even hidden and inaccessible areas can be inspected.

The use of electromagnetical ultrasound probes enables dry measurements without need for any couplants. Moreover, there is no need for special preparation of the pole surface such as removing color or rust layers. While the probe is moved around the outer sheath of the pole manually or by manipulator, the software captures the echo signals and visualizes them as a so-called ultrasonic B-scan. Only minutes from the start of the inspection, reliable information on the corrosion condition of the pole are available for assessment and archiving.

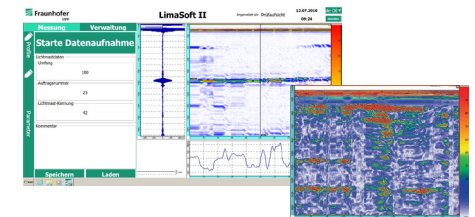
LIMAtest® inspection system was developed in cooperation with ZWP Anlagenrevision GmbH.

Application

- Fast and complete exterior inspection of light poles for corrosion in areas inaccessible from the outside

Features

- Compact inspection system with EMAT receiver/transmitter electronics
- Fast data pre-processing
- Laptop for device control, data recording and visualization
- Automated archiving of measured data and generating of inspection sheets
- Integrated user and inspection profile management
- Optional: manipulator für motorized 360° scans of light masts
- Expandable modular language options



Inspection software LimaSoft II with corrosion display