



Add value.
Inspire trust.

Acoustic Emission Testing

Ensure workplace safety and improve productivity



Your challenges

Technical malfunctions and failure caused by leakage, cracking, corrosion or defects pose serious risks for operators of plants in terms of safety, liability and regulations. The life of assets such as pressure vessels and machines are also adversely affected. In today's competitive world, there is a need to have qualitative technology which can help operators to optimise the costs of inspection.

What is Acoustic Emission Testing?

Acoustic Emission Testing (AET) is a Non-Destructive Test (NDT) method that reliably recognises impending problems and defects before they become serious. AET is not only ideal for localising cracks and leakage but also for identifying corrosion and faults. It can generally be performed using the medium, i.e. fluid or gas stored in the tank. Hence, pressure vessels or tanks need not be opened and drained prior to testing, making AET faster and cost-effective method that involves less organisational effort compared to conventional test methods.

Our services

We provide end-to-end support, from organising and coordinating the tests to documenting the test results in compliance with the relevant laws. We use ATEX certified equipment and our specialists can also advise you on how to best use the available test methods and special procedures.

We provide services for:

- Visual examination of pressure equipment within the scope of internal inspection
- Hydrostatic strength testing by means of AET-verified gas-pressure test
- Localisation of cracking and leakage
- Identification of corrosion and defects
- Organisation and coordination of acoustic emission testing
- Documentation of results in compliance with legal requirements
- Assistance in selecting possible test methods and special procedures

AET is ideal for all type of equipment including the following:

Simple Pressure Vessels

AET can be performed for simple pressure vessels, including Pneumatic systems, Hydraulic tanks and filling systems, LPG storage tanks, Oil separators, Filters.

Complex Pressure Vessels

Complex vessels are the other major type of pressure vessel. Complex pressure vessels can include various fittings and installations, geometries and diameters, many nozzles or an interstitial space, and are generally characterised by complex geometry. We can perform AET on spherical pressure vessels for gas storage (including spherical accumulators), special pressure equipment, such as Natural gas, LPG and H2 pressure vessels, pressure equipment in hydraulic systems (bladder and piston accumulators and cylinders), steam-heated rotating cylinders (paper cylinders, dry cylinders), pressure equipment plus fittings and installations, vessels such as sintering furnaces, autoclaves, curing ovens, heat exchangers, filter tanks and pressure vessels in sub-stations.

Flat-bottom tanks

AET can be used for corrosion testing of single-wall flat-bottom tanks, and leak testing of flat-bottom tanks with interstitial space. The measurement results are presented in a report that is prepared according to the requirements of the DIN EN ISO/IEC 17025 standard; it outlines the general details of the tested equipment, the test results and the required actions.

High pressure gas pipelines

Pipelines are also used to transport pressurised natural gas, biogas, liquefied gas and hydrogen, particularly over longer distances. These pipelines are subjected to mandatory testing and inspection, for which AET is ideal.

Advanced materials

With increasing use of advanced materials, it can offer certain advantages but also involve new challenges. Composite pressure vessels for example, have the advantage of resistance to corrosion. Equipment made from these types of materials are very much suitable for AET.

Structure health monitoring

If a defect or damage has been found on your equipment but delivery of the replacement vessel will take a few months, the defect can be monitored with the help of AET to ensure any propagation of the defect which will be detected immediately.

Why choose TÜV SÜD?

With over 30 years of experience in the field of non-destructive testing, our experts are qualified to carry out AET according to the EN ISO 9712:2012 standard and are part of various Acoustics emission technical committees.

Your business benefits

- No need to fill your equipment with water, no concerns over corrosion, contamination or static loads
- No need to open the tank or vessel for testing
- No need to drain operating fluid. Testing can generally be performed with the operating fluid in place
- Enhanced equipment availability and safety
- Early information about flaws such as cracking or corrosion
- Integral monitoring of complex pressure vessels for incipient cracking and crack propagation
- Tracking methods enable acoustic emission sources to be localised
- Cost savings based on combinations with other NDT methods for targeted verification
- Rely on an expert partner with long-standing experience

Add value. Inspire trust.

TÜV SÜD is a trusted partner of choice for safety, security and sustainability solutions.

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