



# **ACOUSTIC** EMISSION TESTING

# DETECTING AND LOCATING DEFECTS USING ACOUSTIC EMISSION



Acoustic Emission Testing (AET) is a Non-Destructive Testing (NDT) method that is used to analyse emitted sound waves caused by defects or discontinuities. These acoustic waves are induced by small deformations, corrosion or cracking, which occur prior to structure failure. It is therefore possible, with AET, to locate structural defects and to monitor the propagation and development of discontinuities.

## INSPECTION TECHNIQUE

Ultrasonic Testing is one of the well established traditional NDT methods. In contrast to general Ultrasonic Testing, AET is a method which evaluates the elasticity of waves caused by discontinuities formed within the specimen.

In large-sized structures, several sensors are placed on the material surface, leaving a space of some metres in between. The information collected by each of the sensors is monitored through a computer.

If defects exist in some areas, the signal character from the sensor attached nearest to the discontinuity appears in a different way. By analysing the discontinuity's indications, it is possible to ascertain the defect position and suspect area of the structure.

## APPLICATIONS

- Monitoring of pressure vessels during hydrostatic testing
- Leak detection of valves
- In-service loose part monitoring
- Leak detection of a LNG ship's tank (secondary barrier – new and in-service structures)



## ADVANTAGES

- In-service continuous monitoring with alarms is possible
- Entire structures can be monitored from various locations
- Global testing
- Integrated service of AET and pressure control
- Increased sensitivity compared to conventional testing methods
- Shorter testing time than other NDT techniques
- Real time monitoring

## THE SGS EXPERTS

SGS Industrial Services has the knowledge, expertise and experience to perform conventional and advanced NDT inspections around the world using our unique network. Our services offer variations from Guided Wave and the conventional NDT techniques to Risk Based Inspection (RBI/AIM), Time of Flight Diffraction (TOFD), Corroscan, Positive Material Identification (PMI), Magnetic Flux Leakage (MFL), Alternating Current Fields Measurement (ACFM), Leak Testing, Thermography, Electromagnetic Testing (ET), Remote Field Eddy Current (RFEC), Internal Rotary Inspection System (IRIS), Digital Radiography, Radiation Detection, Remote Visual Inspection (RVI) and Endoscopy Inspections.

We are pleased to provide services to any location around the world, pertaining as to how SGS can help you improving the reliability of your processes and assets.

## CONTACT US

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