



Specialised Non-Destructive Testing

Integral to our range of services, VELOSI offers Specialised Non-Destructive Testing (NDT) and inspection to complement our other traditional Quality Assurance and Quality Control Services. These services help our clients to improve plant reliability, reduce operational and maintenance costs, enhance safety, extend plant life and meet regulatory requirements.

We believe our personnel are our greatest assets. Besides state of the art equipment for best results, we have highly trained and certified inspectors to perform your inspection. Our inspectors are experienced and have technical expertise to conduct the inspection surveys to international standard. Our reputation within all industries is not only known for our quality of personnel and equipment but equally our professionalism and knowledge.

VELOSI's comprehensive range of inspection techniques ensures that we remain at the forefront of Specialised Non-Destructive Testing. Our services include;

Advanced UT (manual and automated):

Corrosion mapping

Ultrasonic imaging of complex geometries, pipes, plates and curved surface for remaining wall thickness measurement with different sectional viewing; side, plan and end view.

Time Of Flight Diffraction (TOFD)

An ultrasonic technique that can be used to examine welds in pressure vessels and pipes.

A & B scan enhancement Imaging (ABI Scan)

ABI scan imaging technique provides inspection of welds located in difficult access areas and complicated geometries. Graphical records are kept for hard copy evidence and post processing.

Floor map imaging

Flaw detection and corrosion screening using guided and surface waves for inspecting annular plates and corrosion under pipe supports.

Electro Magnetic Array testing (EMA)

EMA is an electromagnetic technique for detecting and sizing surface breaking defects in metals, and is particularly suited for inspecting painted and/or welded structures.

Computed radiography

CR uses an imaging plate (IP) to create the image, which contains critical and precise details far greater than film. The digital image can then be viewed and enhanced using software that has functions very similar to other conventional digital image-processing software, such as contrast, brightness, filtration and zoom. CR is capable of measuring thickness and lengths of parts and defects accurately electronically.

MFL tank floor scanning:

The technique is designed to detect and size under floor corrosion for above ground storage tanks.

Incotest

Incotest is a unique corrosion survey method that allows ferrous pipes and vessels to be surveyed through thermal insulation without disturbing the insulation or coating.

Phased Array

Ultrasonic phased array systems can potentially be employed in almost any test where conventional ultrasonic flaw detectors have traditionally been used. Weld inspection and crack detection are the most important applications. Phased array produces accurate, detailed cross-sectional pictures of internal structures at fast inspection speeds. The benefits of phased array technology over conventional UT come from its ability to use multiple elements and electronic time delays to create beams that can be steered, scanned, swept, and focused electronically for fast inspection, full data storage, and multiple angle inspections.

Tube Inspection Services

There is no single non-destructive testing (NDT) technique that can be applied to inspect all of the tube materials. Selection of an NDT technique depends on the tube material and also on defect types expected.

The Tube Inspection techniques we offer for inspection include Eddy Current Testing (ECT), Remote Field Testing (RFT), ultrasonic IRIS, and Magnetic Flux Leakage (MFL) as well as laser optics. Each of the NDT techniques has its advantages and limitations. For example, conventional eddy current is very sensitive to pits and cracks but it is mostly limited to non-ferromagnetic materials. IRIS is accurate in measuring wall thickness, but it will miss small defects such as pinholes and cracks. Optical techniques are limited to ID defects. Proper selection of the NDT techniques is therefore a key to inspection of heat exchangers.

Electro Magnetic Acoustic Testing (EMAT)

The big advantage of EMAT testing is the ability to produce accurate readings on scaled surfaces. This is because the probes induce ultrasound in the steel itself rather than by transmitting it via a coupling medium. In fact the probes will work at a small distance from the material surface. This allows the probe to function when the test surface is heavily corroded, has a large oxide scale build up or during high temperature operation. A major cost benefit of these probes is that expensive and time-consuming cleaning and surface preparation is no longer necessary.

Long Range UT Guided Wave inspection

Long-Range Guided Wave UT pipe screening system is used for testing long lengths of pipe to rapidly identify areas of internal/external corrosion and other defects. With minimal surface preparation and only removing a small section of insulation, the transducer collar placed around the pipe have a typical test range of up to 50 meters in each direction along the pipe.

Remote Visual Inspection Services (CCTV)

Visual Inspection with the use of high tech video camera systems, of confined spaces or hazardous locations where human entry is impractical, physically impossible or unsafe. Remote visual inspection has a lot of applications and is ideal for preventive maintenance checks.

