

NON-DESTRUCTIVE TESTING

NDT TECHNIQUES HELP ASSURE SAFETY AND RELIABILITY THROUGH DETECTION OF ANY FLAWS OR DEFECTS IN PRODUCT OR INDUSTRIAL COMPONENTS

A diverse range of industries use non-destructive testing or examination (NDT) to detect defects and irregularities and assess safety in equipment and assets. One of the key advantages of using NDT techniques is the ability to test or analyze products and components without destroying or impacting the integrity of the items.



Our NDT Solutions

Regulatory changes coupled with the need to extend the life of equipment, plant facilities and assets has meant that demand for NDT has increased and Intertek's Total Quality Assurance approach combined with our global network of expertise is meeting the growing market for these services.

At Intertek, our tailored NDT solutions are second to none to satisfy each of our customer's needs across a wide variety of industries including oil and gas, power generation, petrochemical, aerospace, defence, marine, rail, submarine, foundries and general engineering.

We offer both conventional and advanced NDT methods to provide a complete examination of components, equipment and assets.

Our on-going commitment to providing the best in NDT means we invest in the latest innovative technology and training for our expert staff.

With a legacy of experience, our experts and global resources are equipped to meet your testing needs.

Radiography is one of many valuable nondestructive testing methods utilized for inspecting both working parts (mechanical integrity) for wear, any newly fabricated parts or components for acceptability to applicable codes and specifications. This method of inspection utilizes electromagnetic radiation from either an x-ray machine or from a gamma ray source and an imaging media such as a specialty formulated industrial film or imaging plates.

Digital Radiography is a form of x-ray imaging where digital x-ray sensors are used instead of traditional film for standard radiography. Advantages include time efficiency achieved by bypassing chemical processing and the ability to digitally transfer and enhance images.

Ultrasonic Testing Non-Destructive Testing also known as Ultrasonic NDT or simply UT, is a method of characterizing the internal structure of welded material or the thickness of material. This NDT application uses high frequency sound waves in the inspection of various types of material. One advantage of UT is the fact that the material to be inspected

does not have to be cut, sectioned or exposed. Other advantages include highly repeatable results, reliable evaluation of the piece, no health hazards, the ability to inspect hard to reach areas and real time results.

Rope Access is a form of work positioning which was initially derived from techniques in climbing and caving. It involves the application of practical rope work to allow workers to access difficult to reach locations without the use of scaffolding or mobile elevated work platforms.

Mechanical Integrity is an effective program that calculates the rate of metal loss, maximum allowable operating pressure, remaining life of process piping and pressure vessels in the oil, gas and petrochemical industry.

The utilization of Mechanical Integrity Inspection will determine factors affecting retirement dates and scheduling maintenance activities for facilities, offshore platforms, etc. Once field evaluations are completed, field data is then provided to engineering to produce a formal report for the client. This report can be either web-based or in book form.



C-MOS Inspection is a test where a C-MOS tool is used to detect corrosion under insulation in real time. This tool has a specialized x-ray tube which emits radiation through the insulation in order to project an image of the component's external surfaces. It is capable of inspecting components that have pipe diameters of 1" OD to 32" OD inclusive of insulation.

Eddy Current Testing is based on the principles of electricity and magnetism and is used to detect surface and subsurface defects in conductive materials.

Intertek commonly applies Eddy Current Testing in major industrial manufacturing processing including aerospace structures and engines, in addition to tubing, pipe, wire, rod and bar stock processing and production.

Magnetic Flux Leakage is commonly used to detect corrosion and pitting in large inaccessible steel structures, and is mostly used on large infrastructure pipelines and storage tanks. It works by magnetizing the steel where corrosion or pitting is present. The resulting magnetic flux leakage is then recorded using a magnetic detector, which is then interpreted to estimate the depth or extent of metal loss.

Phased Array Ultrasonic Testing provides flaw data in a more accurate and precise way with regard to flaw location, shape and size. The Olympus HydroFORM system,

brought to the marketplace by Intertek, uses semi-automated phased array probes able to manually travel across larger surface areas, whilst collecting high-resolution data.

The HydroFORM system offers the best inspection solution for the detection of wall-thickness reductions due to corrosion, abrasion and erosion. It also has the ability to detect mid-wall damage such as hydrogen-induced blistering or manufacturing-induced laminations, easily differentiating these anomalies from loss of wall thickness.

Time-Of-Flight Diffraction (TOFD) is another advanced and highly accurate form of ultrasonic testing used to test welds for defects. TOFD originated from tip diffraction techniques using the time of flight of an ultrasonic pulse to determine the position of a reflector.

This method is particularly useful in measuring the depth of cracks and flaws, and is widely considered more reliable than some of the more traditional NDT testing methods.

Gamma Ray Radiographic Testing is used on a variety of metals and welding procedures, and we specialize in the external evaluation of structural/process piping and pipeline construction. Utilizing Iridium 192 and Selenium 75, we follow all state and federal regulations to maintain radiation safety when using ionizing radiation.

Portable X-Ray Betatron is a test where the betatron produces radiographs high in contrast, sensitivity and resolution which meets the toughest inspection standards. It replaces Cobalt-60 Gamma Isotope Source. The Betatron x-ray unit can penetrate 1.2" of steel or 36" of concrete and only requires a single phase AC supply.

Post Weld Heat Treatment (PWHT) or **Stress Relief**, as it is sometimes known, is a method for reducing and redistributing the residual stresses in the material that have been introduced by welding. The various types of stress relieving can be performed by permanent ovens and portable units that can be brought onto the jobsite both on land and over water.

Additional NDT Services

Additional NDT services we offer include Magnetic Particle Inspection (MPI), Dye Penetrant Inspection, Internal X-Ray Crawlers and Hardness Testing.

FOR MORE INFORMATION

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