

Non Destructive Testing (NDT)

Nondestructive testing (NDT) and inspection services are a core capability of Phoenix and serve as the fundamental constant to determine and maintain quality of an asset. Our vast expertise and knowledge, seasoned Level II Inspectors, in-house Level III Examiner, proven solutions, and international reach mean you can count on Phoenix for all your NDT needs.

Non Destructive Testing (NDT)

Detection and Evaluation of Flaws

NDT is a non-invasive testing and analysis technique to evaluate the properties of materials, components, or systems to detect in-service, production, and inherent material flaws. NDT is a highly valuable technique because NDT does not permanently alter the specimen being inspected. With proper execution NDT will save time, save money, and improve product quality. The most common NDT methods are visual inspection (VT), magnetic particle (MT), dye penetrant (PT), and ultrasonic (UT). NDT is also known as non-destructive examination (NDE), non-destructive inspection (NDI), and non-destructive evaluation (NDE).

Visual Testing (VT)

Detects Surface Flaws

Visual Testing is the first inspection technique employed on any inspection and could be the most critical. This technique is used solely or in conjunction with the other NDT methods. VT includes unaided visual inspections, which are direct visual inspections without visual or mechanical aides. VT also includes aided visual inspections, which use visual aids such as microscopes, borescopes, and video cameras, as well as mechanical aids such as micrometers, calipers, and weld gauges. This technique employed properly could find physical damage, corrosion, erosion, and other surface flaws.

Contact us to learn more

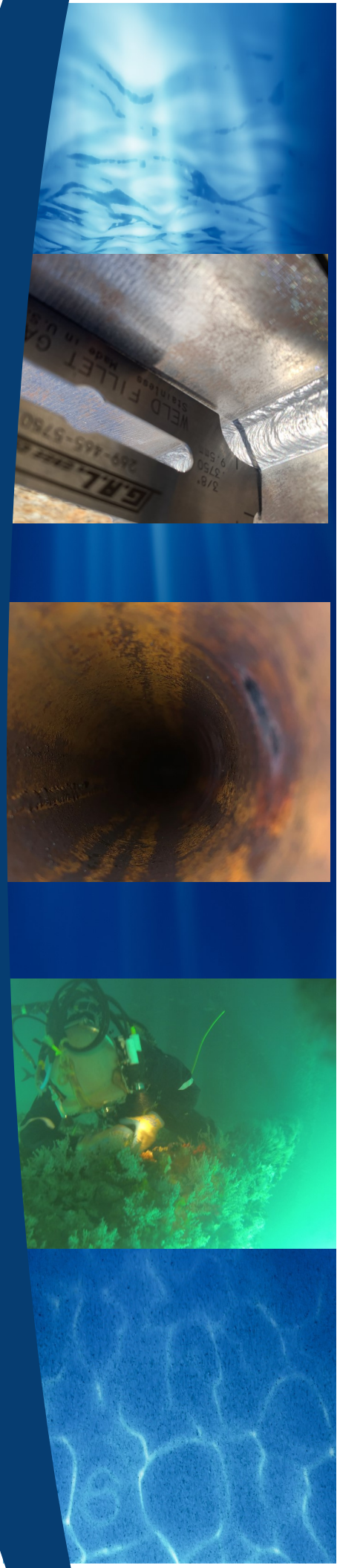
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Dye Penetrant Testing (PT):

Detects Surface Breaking Flaws

Dye Penetrant Testing (PT) is a low cost, widely applied inspection method used to check surface breaking flaws in non-porous materials. Most commonly applied to non-ferrous materials such as stainless steel, aluminum, and all other non-magnetic materials; however, PT can be applied to ferrous materials as well. This inspection method uses the force of capillary action by applying a colored (visible or fluorescent) penetrant to the specimen, which is drawn into the flaw. Next, excess penetrant is removed, and a developer is applied. The developer then draws the penetrant from the flaw to the surface where it can be evaluated for acceptance. This inspection technique is excellent for finding surface breaking flaws – cracks, corrosion, porosity, and laps.



Magnetic Particle Testing (MT):

Detects Surface and Near Surface Flaws

Magnetic Particle Testing (MT) is a low cost, widely applied inspection method used to check surface and near surface breaking flaws in ferromagnetic materials. This process is completed by magnetizing a part either direct or indirectly. After magnetization, the inspection area is covered in ferrous particles, dry or suspended. Flaws in the part distort the magnetic field causing a flux leakage which attracts the ferrous particles indicating a flaw. This inspection technique is excellent for finding surface breaking flaws and near surface flaws – cracks, corrosion, porosity, and laps.



Ultrasonic Testing (UT):

Full Volumetric Testing and Thickness Gauging

Ultrasonic Testing uses high-frequency sound waves to propagate through a medium to detect internal flaws, surface flaws, and thickness in ultrasonically sound materials (steel, aluminum, glass, composites, etc.). Ultrasonic testing requires highly skilled operators to operate an oscilloscope to interpret the results of the Cathode Ray Tube (CRT) screen and comprehend the electrical response for acceptance or rejection of flaws. This technique is used for corrosion/erosion surveys, weld testing, and corrosion mapping.



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