

Anvil International

Non-Destructive Examination



Since 1958, Anvil International, *formerly Grinnell Corporation*, offers and performs non-destructive examination services to a variety of businesses and industries, including **Commercial, Military, and Nuclear**. These services can be performed in-house or at remote field locations. Personnel involved in the performance, evaluation and the supervision of examinations are fully qualified and certified in accordance with SNT-TC-1A of the American Society for Non-destructive testing.

Our present expertise and offered techniques include:

- Radiography (x-ray and gamma ray)
- Ultrasonic
- Magnetic Particle
- Liquid Penetrant
- Helium (Mass Spectrometer) Leak Detection
- Visual Inspection
- Video Borescope
- Welding & Casting Upgrade Services
- Training Programs
- In-house Training Classes
- Weld Procedure and Welder Qualification
- Welder training

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Definitions

Radiography: X-ray and gamma ray inspections are performed with isotopes Cobalt 60 and Iridium 192. This method of testing involves the passing of rays through an object. Our experienced radiographers can detect and detail the internal structure of the tested components. X-ray exams are performed with the use of a Gemini 320 KUP machine.

Ultrasonic Testing: High frequency sound waves in the range of 0.5 to 10.0 megahertz (MHZ) are used for the inspection of materials to detect defects or for thickness determination. Basically, the method uses an electrical impulse transformed to mechanical vibration by means of a transducer. The pulses are measured or displayed on a cathode-ray tube for interpretation. Hard copy printouts are also available.

Magnetic Particle Testing: This method is used for the detection of surface and slightly subsurface indications by setting up a magnetic field. The magnetic field will affect magnetic particles which will align themselves with a discontinuity. Both wet and dry methods are available, for shop and field applications.

Liquid Penetrant: Liquid penetrant testing is performed by applying a visible dye to the surface of the test specimen. This method detects defects such as cracks which appear by contrast in colors between a white developer and the penetrant. Fluorescent penetrant methods are also available.

Upgrade Services:

Upgrading involves a process where stock material is tested to meet the requirements of a particular code or standard.

Tests for upgrading can include one or more of the following:

- Radiographic Examination
- Liquid Penetrant Examination
- Magnetic Particle Examination
- Visual Examination
- Grinding / Weld Repair
- Material Test Reports
- Destructive Testing / Mechanical Testing / Chemical Analysis

With respect to qualifications, our welders are certified to ASME Section IX and are qualified in many different applications.

All welding procedures and associated procedure qualifications are in accordance with ASME Section IX.

Our Non-Destructive Examination technicians are certified in accordance with the requirement of the American Society for Non-Destructive Testing Qualification and certified Procedure SNT-TC-1A 1980 and 1984 Editions. Level I, II, and III services are available.

Included in the qualifications are:

- Radiography (X-ray and gamma ray)
- Liquid Penetrant (visible dye & fluorescent)
- Magnetic Particle (dry & wet fluorescent methods)
- Ultrasonic
- Visual
- Helium Leak Detection

Our Non-destructive Examination Technicians have been involved in numerous situations involving welding / upgrading problems on castings and forgings. Since some of these technicians are certified ASME Section IX welders, their experience has helped to expedite many projects which resulted in a cost saving for all parties involved.

History:

Since its inception as “The Providence Steam and Gas Pipe Company” in 1850, Anvil International Inc., has experienced substantial growth. Originally a New England firm, it has grown into an international concern with the majority of sales concentrated in the United States and Canada. The company’s name was changed to “ITT Grinnell Corporation” by the international Telephone & Telegraph Corporation (ITT) in 1969. Following its acquisition by Tyco Laboratories on January 1, 1986, the company was redesignated “Grinnell Corporation”. As of May 2000, the company name was again changed to “Anvil International, Incorporated”.

The Non-Destructive Testing and Inspection Group was formed in 1958. The group was established to provide the Corporation with non-destructive testing and inspection technical expertise for the examination and inspection of proposed developed and manufactured products, and as a tool for assisting in failure analysis determinations. The NDT group’s responsibilities grew with the company, and new techniques were required to satisfy these additional obligations. The non-destructive testing section was responsible for devising the methods, techniques and procedures to be used on Grinnell products. Grinnell, being involved in both fossil and nuclear power plant construction, also provided non-destructive testing, destructive testing, and inspection services to Grinnell field jobsite locations for the examination of installed pipe and piping products.

Since 1974, the examination services have been offered to industry to provide both shop and field non-destructive , and destructive tests.