QTCE Quality Testing & Calibration Engineers

QUALITY TESTING & CALIBRATION ENGINEERS

We Quality Testing & Calibration Engineers

(an ISO 9001:2015 certified co.) are a fast growing Marketing, Testing, Calibration and Consultancy agency, offering a variety of services to diverse industries.

WHAT IS NDT (NON-DESTRUCTIVE TESTING)?

NDT refers to an array of inspection techniques that allow inspectors to collect data about a material without damaging it.

NDT stands for Non-Destructive Testing. It refers to an array of inspection methods that allow inspectors to evaluate and collect data about a material, system, or component without permanently altering it.

In the field, NDT is often used as an umbrella term to refer to non-destructive inspection methods, inspection tools, or even the entire field of non-destructive inspections.

For commercial applications, the goal of NDT is to ensure that critical infrastructure is properly maintained in order to avoid catastrophic accidents.

While NDT methods are typically associated with industrial use cases, like inspecting weak points in a boiler at an oil refinery, uses in medicine are actually some of the most common.

For example, an expecting mother getting an ultrasound to check on the health of her baby would be considered an NDT use case, as would getting an X-ray or MRI to learn more about an injury.

THE IMPORTANCE OF NDT

- **Savings**. The most obvious answer to this question is that NDT is more appealing than destructive testing because it allows the material or object being examined to survive the examination unharmed, thus saving money and resources.

- **Safety**. NDT is also appealing because almost all NDT techniques (except radiographic testing) are harmless to people.

- **Efficiency**. NDT methods allow for the thorough and relatively quick evaluation of assets, which can be crucial for ensuring continued safety and performance on a job site.

- **Accuracy**. NDT methods have been proven accurate and predictable, both qualities you want when it comes to maintenance procedures meant to ensure the safety of personnel and the longevity of equipment.

"NDT is the life blood of a well-run facility, and the high importance of NDT is known by any trained inspector. NDT techniques and repeatable results depend on highly trained technicians with experience and integrity. Not only does the technician need to be certified in a specific NDT method, but they also need to know how to operate the equipment being used to gather data. Understanding equipment capabilities and limitations is the difference between making an accept or reject determination."

WHERE IS NDT USED?

Depending on how broadly you define NDT you could say that it's used in almost every industry in the world, since visual inspections (whether formalized or casual) take place in almost every workplace in some form or other.

That being said, there are specific industries that require NDT and have formalized processes for its use, as codified by those organizations we listed above like API and ASME.

These industries include:

- Oil & Gas
- Power Generation
- Chemicals
- Mining
- Aerospace
- Automotive
- Maritime
- Mining

Here are the most commonly followed organizations in the world for creating NDT standards and codes:

- API (American Petroleum Institute)
- ASME (American Society for Mechanical Engineers)
- ASTM (American Society for Testing and Materials)
- ASNT (American Society For Non destructive Testing)
- COFREND (French Committee for Non-destructive Testing Studies)
- CSA Group (Canadian Standards Association)
- CGSB (Canadian General Standards Board)

What Is the Difference Between Destructive Testing and Non-Destructive Testing?

Non-Destructive Testing (NDT) is used to collect information about a material in ways that do not alter it (i.e., without destroying it). **Destructive Testing (DT)** is used to collect information about a material in ways that do alter it (i.e., destroy it).

Essentially, the NDT and DT difference is that NDT doesn't require inspectors to damage the material they test, while DT does.

In Destructive Testing, for example, a piece of the material might be scraped away for analysis or altered in some other way onsite.

Here are some examples of destructive testing:

- **Macro sectioning.** Macro sectioning tests a small section of a welded material by polishing and etching it for examination.
- **Tensile testing.** Also called tension testing, this is a destructive testing technique that uses controlled tension applied to a sample material to see how it reacts. Tension could be applied to test certain loads or conditions, or to test a material's failure point.
- **3 point bend testing.** 3 point bend testing examines the soundness and flexibility (or ductility) of a material by taking a sample of it, called a coupon, and bending it in three points to a specified angle.

The 8 Most Common NDT Methods

1. Visual NDT (VT)
2. Ultrasonic NDT (UT)
3. Radiography NDT (RT)
4. Magnetic Particle NDT (MT)
5. Dye Penetrant NDT (PT)

1. VISUAL TESTING (VT)

Definition: Visual Non-Destructive Testing is the act of collecting visual data on the status of a material. Visual Testing is the most basic way to examine a material or object without altering it in any way.

2. ULTRASONIC TESTING (UT)

Definition: Ultrasonic Non-Destructive Testing is the process of transmitting high-frequency sound waves into a material in order to identify changes in the material's properties.

3. RADIOGRAPHY TESTING (RT)

Definition: Radiography Non-Destructive Testing is the act of using gamma- or X-radiation on materials to identify imperfections.

4. MAGNETIC PARTICLE INSPECTION (MPI)

Definition: Magnetic Particle Non-Destructive Testing is the act of identifying imperfections in a material by examining disruptions in the flow of the magnetic field within the material.

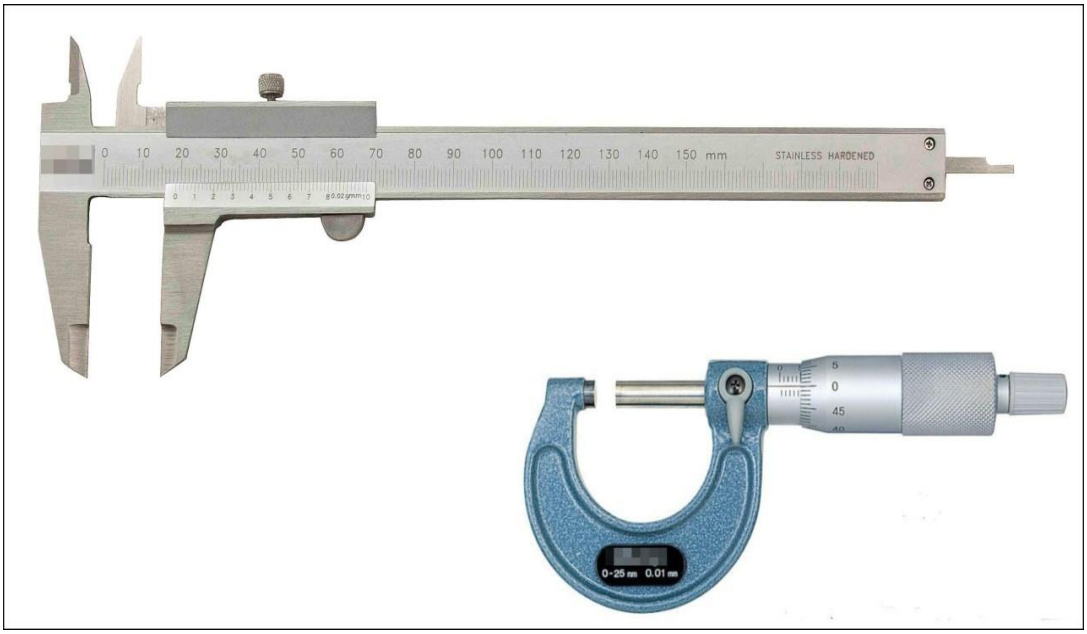
5. DYE PENETRANT TESTING (PT)

Definition: Dye Penetrant Penetrant Non-Destructive Testing (also called Liquid Penetrant Testing) refers to the process of using a liquid to coat a material and then looking for breaks in the liquid to identify imperfections in the material.

CALIBRATION

- 9 point Calibration of thermal equipment such as Industrial Furnaces, thermo couple, Temperature Indicator, Temperature Controller etc.

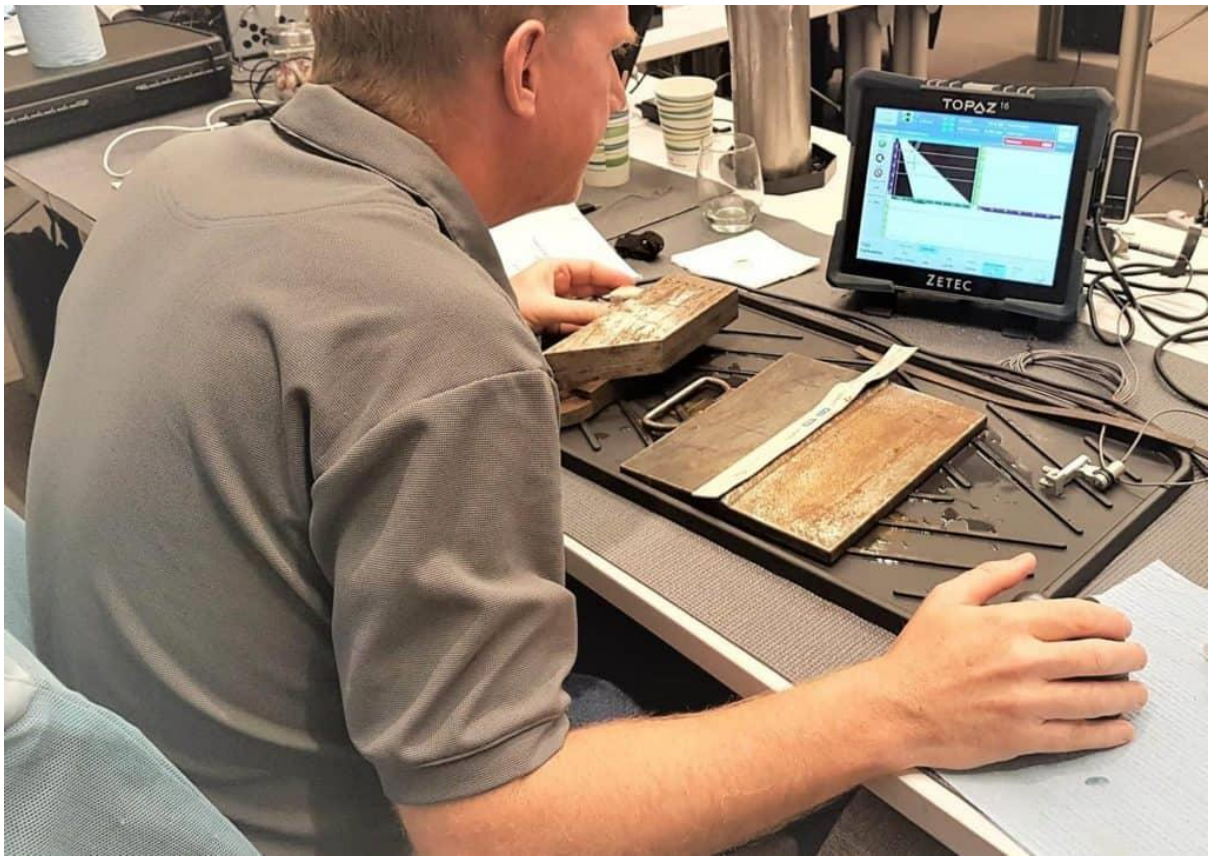
- Linear measurement equipment such as Vernier Caliper, Micrometer ETC.



Pressure gauges etc.

Digital differential pressure gauge adopts high precision, high sensitivity pressure sensitive components and ultra-low power consumption microprocessor. It processes the differential pressure of the measured medium into digital signal and displays the differential pressure value in real time. It has the characteristics of fast response, high precision, good stability and long service life.

Understanding the Ultrasonic Equipment Calibration Procedure



We are NDT Consultants

A TEAM OF SPECIALIST NDT CONSULTANTS ENSURING SAFETY, QUALITY, AND RELIABILITY THROUGH NON-DESTRUCTIVE TESTING - SINCE 1985

CONSULTANCY

- Non Destructive Testing
- NDE procedure approval
- Works approval as per API Q1, API 6A •
- Laboratory Management System i.e ISO 17025: 2005
- Management System Consultancy i.e, IATF 16949, ISO 9001,14001 and 18001
- ASNT level-III services
- ISI marking
- WPS approval

More about what we do at NDT

Level III NDT Consultancy Services

Do you need expert guidance and support to ensure your non-destructive testing processes are compliant? Our team of Level III consultants offers top-notch expertise and support to ensure your non-destructive testing processes meet all necessary standards and regulations.

Inspection Services

Are you looking for efficient and reliable inspection service providers? At our company, our consultants provide a comprehensive selection of specialised inspection services, encompassing radiography, ultrasonic, magnetic particle, penetrant, visual inspection – and a range of other methods – designed to suit your requirements.

Research and Development

Are you embarking on an exciting phase of innovation in your company? Our research and development team and our consultants focus on creating advanced non-destructive testing techniques and solutions to meet the evolving needs of our innovative clients. We'll help you ensure your new creative idea becomes a reality – faster.

Calibration Services

Do you want to ensure your equipment is up to scratch? Our calibration services guarantee the precision and compliance of your non-destructive testing equipment with the required standards. We've invested heavily to ensure that we can get your equipment calibrated for you efficiently and effectively.

Consumable Products

Are you looking for high-quality consumables for your NDT equipment? Our team of experienced consultants and our entire company provides various consumable products designed explicitly for non-destructive testing, encompassing films, chemicals, and accessories.\

MARKETING

- Mechanical Testing Equipments:-
  Universal Testing Machine, Hardness Testing Machine Impact Testing Machine etc.
- Ultrasonic Testing Machine:-
  Ultrasonic Flaw Detectors, Ultrasonic Thickness Gauges, Coating Thickness
  Gauge, UT Probes, Cables
- Portable Hardness Tester
- Surface Roughness Tester

NDT Equipment Suppliers

Are you looking for top-notch NDT equipment? NDT Consultants specialise in sourcing and distributing the highest quality non-destructive testing equipment. We offer a diverse selection of ultrasonic, radiographic, and magnetic particle equipment and many more – tailored to your unique requirements

Universal Testing Machine

Hydraulic Grips Computerised Universal Testing Machine,

Hardness Testing Machine

Hardness Testers, Model B-3000 (H) & Model B-3000 (O) are precision engineered confirming to IS:2281:1968, BS:240 and ASTM:E 10, however B-3000 (H) & Model 3000 (O) are most suitable for production testing. These machines are designed to measure hardness of castings, forgings, other metals and alloys of all kinds, hard or soft, whether flat, round or irregular in shape.

Impact Testing Machine

Charpy Izod Impact Testing Machine, Capacity: 300 J/168 J, Automation Grade: Manual

Ultrasonic Flaw Detectors

Arjun30 - Ultrasonic Flaw Detector – with (DGS)

Ultrasonic Thickness Gauges

Thickness gauges for accurately measuring the thickness of many types of material.All of our ultrasonic thickness gauges can measure thickness from one side of a part. An ultrasonic thickness gauge can measure most engineering materials, including plastics, metals, metal composites, rubber, and internally corroded materials.

Coating Thickness Gauge

Coating Thickness Gages for ALL Metal Substrates

The rugged, fully electronic PosiTector 6000 Paint Thickness Gage uses magnetic and eddy current principles to measure paint thickness on both ferrous and non-ferrous metals, accurately and quickly.

Ultrasonic Transducers

Ultrasonic transducers are used for applications as diverse as flaw detection, thickness gaging, materials research and medical diagnostics. More than 5000 ultrasonic transducer types come in many styles, element diameters, frequencies, and connector styles

QTCE also provide.

TRAINING

- ASNT Level-II Ultrasonic Testing
- ASNT Level-II Magnetic Particle Testing
- ASNT Level-II Dye Penetrant Testing

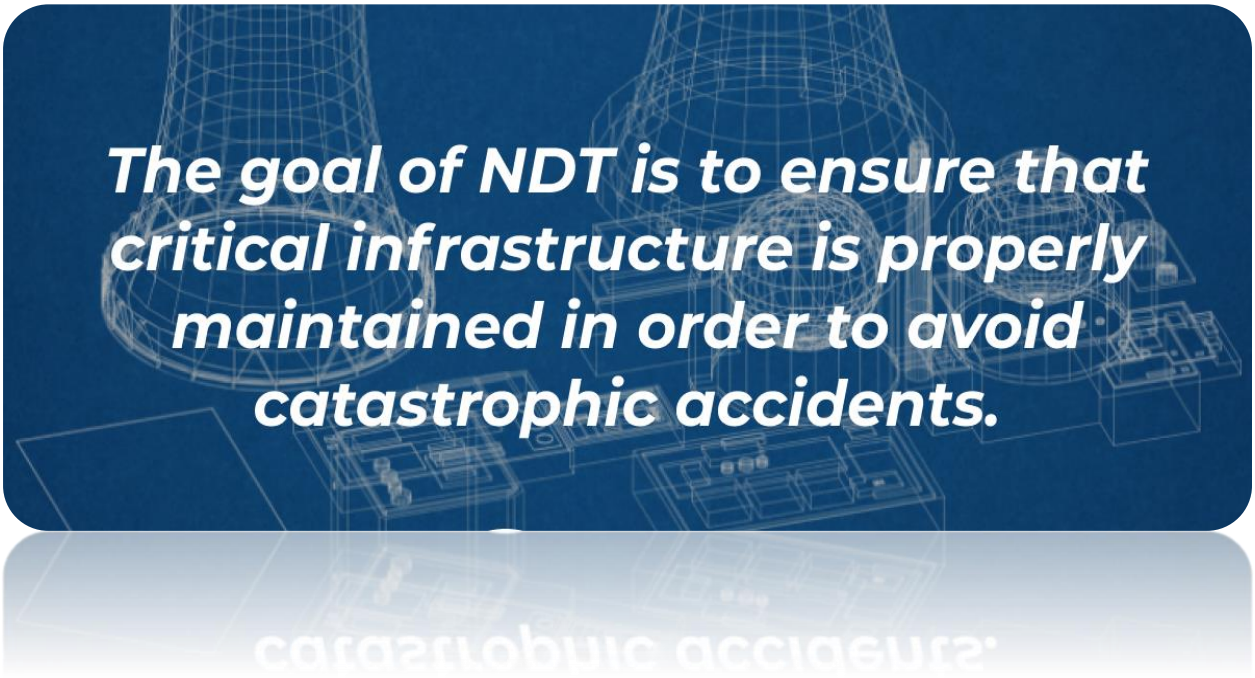
Institute of NDT and Training (Mandi Gobindgarh)

Non-destructive testing is an essential part of so many industries today for quality assurance. It's considered to be a non-invasive type of analysis that helps in identifying deformities and flaws without even harming the material or component. Plus, when it comes to **NDT training** and certification, it is important to make sure that the person has all the required skills in order to inspect and evaluate the problems.

An NDT certification helps you to prove your skills, expertise, and knowledge to potential employers. It also increases the chances of growing your career. It provides you with access to advanced NDT training courses to keep NDT professionals updated with the newest developments in technology. With an NDT certification, you can insist on good pay and enhance your chances of getting a noteworthy job opportunity.

Institute of NDT Mandi Gobindgarh, is a leading NDT training institute based in Eastern India. It has provided certification and training on several nondestructive methods since 1993, such as liquid penetrant testing, visual testing, ultrasonic testing, magnetic particle testing, and radiography testing. The courses are offered by highly professional and ASNT NDT Level-II associates and personnel in modern classrooms that are well-equipped with up-to-date instrumental facilities.

QTCE



QTCE is a company building solutions for the inspection and exploratin.,it enables industrial companies and inspection professionals to reduce downtime, inspection costs, and risks to workers. We are located at “mini steel city” of India i.e Mandi gobindgarh, Punjab. We offer the services as per the requirements of our valuable clients with the expert and dedicated team of professionals. We have a vast experience which helped us to achieve our motto successfully with the help of our socially responsible approach. **QTCE** helps industries by providing standard based Testing and Calibration solution to ensure that challenges being faced by businesses.

HEADQUARTERS

Mandi Gobindgarh

ludhiana qualitytesting2000@gmail..com

Punjab:

Ground floor, guru ki nagari, Bhadla Rd, near kisco casting, Mandi Gobindgarh, GobindgarhR, Punjab 141411

- Contact

+91 9876689819

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MAKE BY - J MAHI