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NOBLE QUALITY EVALUATION PRIVATE LIMITED

e-Brochure

Web : www.nobleqe.com

BINDT THE BRITISH INSTITUTE OF NON-DESTRUCTIVE TESTING

APPROVED TRAINING ORGANISATION

BINDT Approved Training Organisation (ATO)
and Authorised Qualifying Body (AQB) for PCN scheme.

BS EN ISO 9001: 2015 Certified
Organisation for Training & Examination

PCN

BINDT THE BRITISH INSTITUTE OF NON-DESTRUCTIVE TESTING

AUTHORISED QUALIFYING BODY

NON DESTRUCTIVE TESTING (NDT) - A GLANCE






NDT as its name implies helps different industries to test, examine, inspect and evaluate the integrity of the materials, components, equipment and structure without impairing the further usefulness of the material or objects being examined.

NDT facilitate to prevent product damages, system failure and ultimately ensure the product reliability to enable a safer world.

Oil & Gas, Power generation, Automobile, Marine, Railways, Nuclear, Aerospace and Infrastructure are the major industries widely using NDT.

Product range covered by NDT includes Welds, Castings, Forged and other wrought items.

NDT has been used as a very effective tool for evaluation of integrity fromraw material to finished product stage. It has also been used in the In-service inspection, Condition Monitoring (CM) & Residual Life Assessment (RLA) in post fabrication.



ABOUT OUR ORGANIZATION

"Quality in Training and Excellence in Quality is our commitment"

- Our premises is located very closer to Tiruchirapalli - Pudhukottai NH, nearer to Tiruchirapalli International Airport (five minutes drive) and connected with frequent bus services.
- Our premises have been facilitated with Wi-Fi Internet connection.
- We have dedicated Classrooms for each purpose with a pleasing and learning atmosphere.
- We are equipped with air-conditioned Lecture Hall, Conference Hall, and Practical Hall for Ultrasonic Testing & Radiographic Interpretation.
- We have dedicated air-conditioned Practical room for UT 3.8 & 3.9
- Our Practical lab for Magnetic Particle Testing is well ventilated.
- Our Practical lab for Liquid Penetrant Testing is well ventilated.
- We have internationally preferred and accepted equipment and accessories for the purpose of Hands on Practice.
- We have adequate Training Samples for hands on practice with embedded and Surface breaking aws in accordance with International Standards.
- Our Tutors are well qualified and experienced professional experts.
- Our Training Notes for PCN scheme which incorporates International Codes and Standard references and latest updates in a comprehensive manner are internationally preferred and recognised.
- We provide shared air-conditioned and furnished Hostel facilities (along with shuttle services) during Course of Training and Examination at very affordable and genuine cost to those candidates on requirement basis.

We prefer to quantify our records and accomplishment by qualitative and incredible training to the international NDT community

PCN is conducted in accordance with EN ISO 9712 and the certificates are issued by BINDT for the successful candidates in examination meeting the eligibility criteria in terms of experience too.

PCN Courses Available With Us Includes

PCN Level 1 & Level 2 & Level 3 courses (Training and Examination) in

- Ultrasonic Testing (UT)
- Magnetic Particle Testing (MT)
- Liquid Penetrant Testing (PT)
- Radiographic Testing (RT)
- Time - of - Flight Diffraction (TOFD)
- Phased Array Ultrasonic Testing (PAUT)

PCN Level 2 course (Training and Examination) in

- Radiographic Interpretation (RI)

Radiation safety (Traning and Examination

- Radiation protection supervisor (RPS)
- Basic Radiation safety (BRS)

"NQE" - Your preferential choice for a comprehensive and thorough learning of NDT

BOOKING PROCESS FOR NDT TRAINING WITH US

Training and Examination are regularly conducted in our premises and course schedules are available in our web site. In addition to regular schedules, additional courses would be conducted based on sufficient candidature.

Based on requirement, NDT Training courses can be conducted at Client's premises or on site. NQE will advice you about the appropriate and suitable training courses for Client requirements.

Feel free to contact us for booking your training courses and quotation for the same. Contact details:

MOB : **+91-87540 42872, 70, 71,73**
TEL : **+91-431-2660947** / **+91-431-2904947**
MAIL : / **admin@nobleqe.com** / **qa@nobleqe.com** / **info@nobleqe.com**

We can also be contacted in person at our office in the following address in all working days.

NOBLE QUALITY EVALUATION PRIVATE LIMITED,

Plot # 20 & 21 Anjaneya Nagar, (Near M.I.E.T), Gundur, Tiruchirapalli- 620007, Tamilnadu, India

Web: www.nobleqe.com

ULTRASONIC TESTING (UT)

Ultrasonic testing is a NDT method which employs sound waves to inspect the internal structure of materials or object. Various application of UT includes: Flaw detection, Thickness gauging, Corrosion assessment, Microstructure studiesand etc. The main advantage of this method is internal imperfection can be detected, sized, characterised and the depth & location can be determined. This method has additional advantages of providing precision and sensitive results. Most of materials which can propagate ultrasound into it can be examined by this method by selecting appropriate transducers.

Minimum work experience and training hours required by PCN scheme for this method is as follows:

	Training	Work experience
Level-1	40 Hours	3 Months
Level-2	80 Hours *For direct access to Level 2 40+80 = 120 Hrs	9 months *For direct access to Level 2 3+9 = 12 months
Level-3	40 Hours	36 Months

Note: If a candidate prefers to go for direct Level 2, without attending Level 1, the training and work experience requirement shall be cumulative of that required for both Level 1 and Level 2.

Note: The training hours specified counts to complete General theory of Ultrasonic Testing, Specific Theory covering Product Technology, applicable Codes and Standards, Practical portion for entire calibrations, Determination of Beam spread for given probes, DAC plotting for shear wave angle probes, Determination of Lamination in plates, Flaw detection in plate butt welds and pipe butt welds and Instruction Writing.

NQE Training and Examination centre provides PCN Ultrasonic Testing course in product sector of weld in the following groups of:

- Butt Welds in Plate (3.1)
- Butt Welds in Pipe (3.2)
- Nozzles (3.8)
- Nodes (3.9)

Course duration (Training &Examination):

UT Level 1- 8 days

UT Level 2:

- 3.1 and 3.2 (Welds) 14 days
- 3.8 Nozzle Welds 4 days
- 3.9 Node Welds 4 days

UT Level 3 (welds) - 4 days

MAGNETIC PARTICLE TESTING (MT)

Magnetic Particle Testing, popularly known as Magnetic Particle Inspection is a method for detection of surface and near-surface discontinuities in ferromagnetic-materials. It depends on the fact that when the material or part under test is magnetized, magnetic discontinuities that lie in a direction generally transverse to the direction of the magnetic field will cause a leakage field to be formed at and above the surface of the part. The magnetic particle method is a sensitive means of locating small and shallow surface cracks in ferromagnetic materials.

Minimum work experience and training hours required by PCN scheme for this method is as follows:

	Training	Work experience
Level-1	16 Hours	1 Month
Level-2	24 Hours *For direct access to Level 2 16+24 = 40 Hrs	3 months *For direct access to Level 2 1+3 = 4 months
Level-3	32 Hours	24 Months

*Note: If a candidate prefers to go for direct Level 2, without attending Level 1, the training and work experience requirement shall be cumulative of that required for both Level 1 and Level 2.

Course Duration (Training & Examination):

- MT Level 1 (Welds/Multisector) : 3 days
- MT Level 2 (Welds/Multisector) : 5 days
- MT Level 3 (Multisector): 4 days

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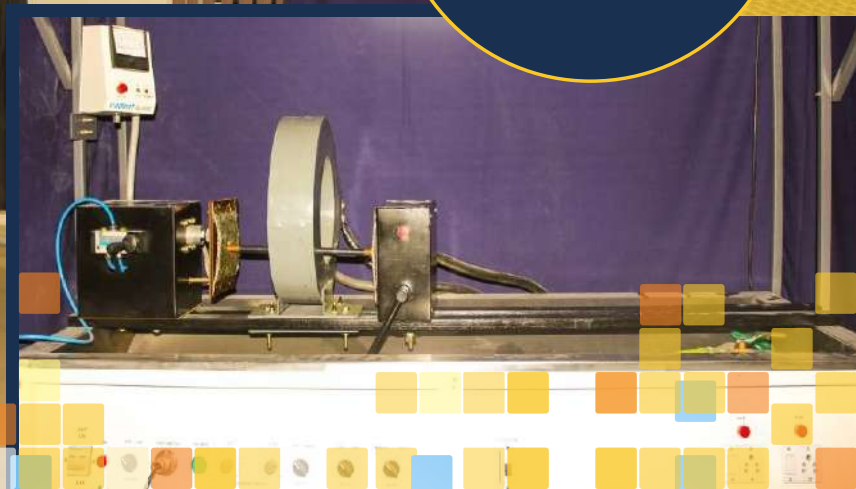

LIQUID PENETRANT TESTING (PT)

Liquid Penetrant Testing, popularly known as Liquid Penetrant Inspection is a NDT method of revealing discontinuities that are open to the surfaces of solid and essentially nonporous materials.

Indications of a wide spectrum of aw sizes can be found regardless of the configuration of the work piece and regardless of aw orientations. Liquid Penetrants seep into various types of minute surface openings by capillary action. Because of this, the process is well suited to the detection of all types of surface cracks, laps, porosity, shrinkage areas, laminations, and similar discontinuities. It is extensively used for the inspection of wrought and cast products of both ferrous and nonferrous metals, powder metallurgy parts, ceramics, plastics, and glass object

Minimum work experience and training hours required by PCN scheme for this method is as follows:

	Training	Work experience
Level-1	16 Hours	1 Month
Level-2	24 Hours *For direct access to Level 2 16+24 = 40 Hrs	3 months *For direct access to Level 2 1+3 = 4 months
Level-3	24 Hours	24 Months

*Note: If a candidate prefers to go for direct Level 2, without attending Level 1, the training and work experience requirement shall be cumulative of that required for both Level 1 and Level 2.

Course duration (Training &Examination):

- PT Level 1 (Welds/Multisector : 3 days
- PT Level 2 (Welds/Multisector) : 5 days
- PT Level 3 (Multisector) : 4 days

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RADIOGRAPHIC TESTING (RT) RADIOGRAPHIC INTERPRETATION (RI)

Radiographic inspection is based on the principle of differential absorption. Because of differences in density and variations in thickness of the part or differences in absorption characteristics caused by variations in composition, different portions of a test piece absorb different amounts of penetrating radiation. These images recorded in lm and processed as radiographs. The radiographs are viewed and interpreted with an aid of illuminator (lm viewer) for assessment of lm quality and Weld quality including Heat Affected Zone.

Radiographic Testing Film Interpretation, widely called as Radiographic Interpretation training, examination and certification in weld, will be most suitable for the Welding / Quality Control Engineers &Inspectors, Client Representatives, Auditors or Third party Inspectors / Surveyors in other words most Non-Radiographers in addition to the Radiographers.

Minimum work experience and training hours required by PCN scheme for this method is as follows:

	Training	Work experience
RI Level-2 BRS RPS	56 Hours (Including 16 Hours Self Study) 16 Hours 24 Hours	6 Months
RT Level-1	40 Hours	3 Months
RT Level-2	80 Hours	9 Months
RT Level-3	40 Hours	36 Months

Course duration (Training &Examination):

- RI Level-2 Dense & Light Metal-X & Gamma Rays) : 6 Days.
- RT Level-1 : 5 Days.
- RT Level-2 : 14 Days
- RT Level-3 : 5 Days

Time-of-flight diffraction (TOFD)

Time-of-flight diffraction (TOFD) method of ultrasonic testing is a sensitive and accurate method for the nondestructive testing of welds for defects. TOFD originated from tip diffraction techniques. TOFD is a tip-diffraction techniques which utilized the principle that the tips of a crack when struck by a wave will diffract the signals back to the other location on the surface. The use of TOFD enabled crack sizes to be measured more accurately, so that expensive components could be kept in operation as long as possible with minimal risk of failure.

In a TOFD system, a pair of ultrasonic probes sits on opposite sides of a weld. One of the probes, the transmitter, emits an ultrasonic pulse that is picked up by the probe on the other side, the receiver. In undamaged pipes, the signals picked up by the receiver probe are from two waves: one that travels along the surface and one that reflects off the far wall. When a crack is present, there is a diffraction of the ultrasonic wave from the tip(s) of the crack. Using the measured time of flight of the pulse, the depth of a crack tips can be calculated automatically by simple

Minimum work experience and training hours required by PCN scheme for this method (TOFD)is as follows:

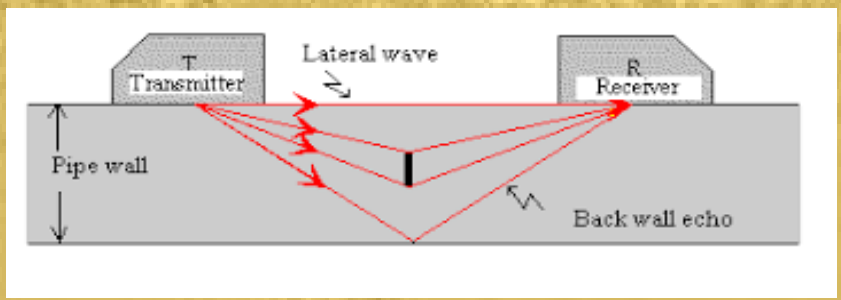
	Training	Work experience
Level-1	40 Hours	3 Months
Level-2	40 Hours *For direct access to Level 2 40+40 = 80 Hrs	9 months *For direct access to Level 2 3+9 = 12 months
Level-3	40 Hours	24 Months

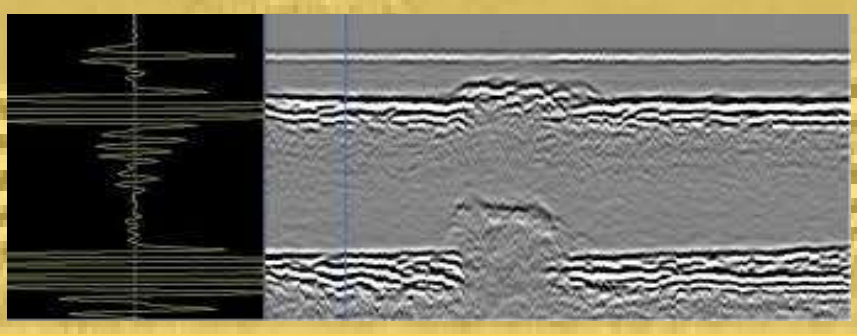
Note: If a candidate prefers to go for direct Level 2, without attending Level 1, the training and work experience requirement shall be cumulative of that required for both Level 1 and Level 2.

Note: The training hours specified counts to complete principles of TOFD, applicable ISO Standards, Practical portion for assembly and entire calibrations of data acquisition, data analysis in plate butt welds and Instruction Writing.

Course duration (Training &Examination):

- TOFD Level 1 : 5 days
- TOFD Level 2 : 9 days
- TOFD Level 3 : 5 days





Phased array ultrasonic tesing (PAUT)

Phased array ultrasonic tesing (PAUT) is an advanced method of ultrasonic testing that has applications in industrial non-destructive testing. Common applications are to examine to find flaws in manufactured materials such as welds. The beam from a phased array probe can be focused and swept electronically without moving the probe. The beam is controllable because a phased array probe is made up of multiple small elements, each of which can be pulsed individually at a computer-calculated timing. The term phased refers to the timing, and the term array refers to the multiple

Minimum work experience and training hours required by PCN scheme for this method (PAUT)is as follows:

	Training	Work experience
Level-1	40 Hours	3 Months
Level-2	80 Hours *For direct access to Level 2 40+80 = 120 Hrs	9 months *For direct access to Level 2 3+9 = 12 months
Level-3	40 Hours	24 Months

Note: If a candidate prefers to go for direct Level 2, without attending Level 1, the training and work experience requirement shall be cumulative of that required for both Level 1 and Level 2.

Note: The training hours specified counts to complete principles of PAUT, applicable ISO Standards, Practical portion for assembly and entire calibrations of data acquisition, data analysis in plate butt welds and Instruction Writing.

Course duration (Training &Examination):

- PAUT Level 1 : 5 days
- PAUT Level 2 : 14 days
- PAUT Level 3 : 5 days