



## Ultrasonic Testing - Level-II

Course Duration: 80 Hours (Both Level-I (40 Hours) & Level II (40 Hours))

Ultrasonic testing or simply UT, is a method of characterizing the thickness or internal structure of a test piece through the use of high frequency sound waves. The frequencies, or pitch, used for ultrasonic testing are many times higher than the limit of human hearing, most commonly in the range from 500 KHz to 20 MHz. High frequency sound waves are very directional, and they will travel through a medium (like a piece of steel or plastic) until they encounter a boundary with another medium (like air), at which point they reflect back to their source. By analyzing these reflections it is possible to measure the thickness of a test piece, or find evidence of cracks or other hidden internal flaws.

### Training Course Objective:

To provide a basic knowledge of UT to enable a participant to carry out tests according to an established procedure under the supervision of a level II. The course is especially designed to provide a sound theoretical knowledge and practical skill for UT required for a Level II (2) technician.

- As per SNT-TC 1A 2016 Edition is the Recommended Practice for NDT Level II Personnel.
- Select proper test technique, equipment and probes.
- Set up and calibrate the equipment.
- Perform testing and interpret the results as per applicable standards.
- Have knowledge of the scope and limitations of UT.
- Be familiar with production processes of the test material and knowledge of type and location of expected defects.
- To develop UT technique for testing a particular job.
- Prepare test report for i. Accept ii. Reject iii. Rework.
- Guide and check test results of Level-I operators.
- Responsible for care and maintenance of the NDT/UT equipment.

### Training & Examination Entry Requirements: -

- Mandatory Training has to be undergone for Level 1 (40 Hrs) & Level II (40 Hrs) combined total of 80 hrs.
- Minimum Experience for attending Level -1 is 90 Hours and Level II is 170 Hours.
- Candidate seeking admission into the particular course method shall duly fill in an application form and submit his ID proof with two (02) passport size photographs.
- Candidate Educational Qualifications to be also submitted (10th Std, S.S.C, Inter, Diploma in Eng. or B.E / B.Tech/ B.Sc.).
- Candidates shall submit his verifiable experience certificate from his present employer.
- Minimum Passing is 70% and Overall Grading Pass is 80%.

### Career Enhancement:

After successful completion of Training & Examination candidates further seeking career in NDT can attend ET, VT & Certified Welding Inspector (Level -II or Visual Welding Inspector (Level-1) and can also attend MPT Level III.

### Validity of Certification:

- 5 years from the Date of Issue of Certification (renewal to be done by Re-examination or Continuous Satisfactory Performance only)

### Course Outline

- Introduction of Ultrasonic Testing
- Pulse echo Type Ultrasonic Flaw Detector Terminology
- Transducer Operation and Theory
- Physical Principles and Fundamental Ultrasonic
- Basic Ultrasonic Testing Methods
- Calibration & Reference Standards
- Instrument Calibration
- Application - UT of Plates and Welds
- Defect sizing
- Weld Discontinuities
- Defect Characterization
- Principles Of DGS/DAC Methods
- Echo Dynamics For Reflector Evaluation
- Codes, Standards and Procedures
- Acceptance Standards
- Evaluation Of Test Equipment
- Manufacturing Process and Discontinuities Testing

### Certification Scheme / Issued By:



### Examination Module :

**General Examination: 60 Minutes**  
40 Multi Choice Questions

**Specific Examination: 30 Minutes**  
20 Multi Choice Questions

**Practical Examination: 120 Minutes**

- \* 01 Plate
- \* 01 Tee Joint
- \* 01 Pipe
- \* 01 Lamination

**Viva Examination: 15 Minutes**  
15 Questions