

Who we are?

TIW is an NDT training & service provider organization located in Trichy, India providing complete solution for NDT training & inspection

We conduct training for PCN Level I, II & III in the following methods

- PCN – Phased Array Ultrasonic Testing (PAUT)
- PCN - Ultrasonic Testing 3.1 & 3.2
- PCN UT – 3.8 & 3.9 (Nozzles & Node)
- PCN - Magnetic Particle Testing (only Level I & II)
- PCN - Liquid/dye Penetrant Testing (only Level I & II)
- PCN - Radiographic Film Interpretation (only Level II)

How to Book Your Training Course

To book a training course, simply call [+91 9043322221](tel:+919043322221) and we will be happy to discuss your requirements with you. If necessary, we can provide advice on which type of training and certification is appropriate for you or your company. Enquiries may also be made via email to tiwpcn@gmail.com or by visiting us on the web at www.tiw.co.in

On confirmation of the booking, we will send to you an application form which must be completed and returned to us in order to confirm the booking process. Training courses will be conducted on a weekly basis at our Trichy Training and Examination Centre

Contact Us

TRICHY INSTITUTE FOR WELDING

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TRICHY INSTITUTE FOR WELDING
A BINDT AUTHORIZED ATO & AQB



Ultrasonic Testing Course Curriculum

What is Ultrasonic Testing?

Ultrasonic testing (UT) is a family of non-destructive testing techniques based on the propagation of ultrasonic waves in the object or material tested. In most common UT applications, very short ultrasonic pulse-waves with center frequencies ranging from 0.1-15 MHz, and occasionally up to 50 MHz, are transmitted into materials to detect internal flaws or to characterize materials. Ultrasonic testing is often performed on steel and other metals and alloys, though it can also be used on concrete, wood and composites, albeit with less resolution. It is used in many industries including steel and aluminium construction, metallurgy, manufacturing, aerospace, automotive and other transportation sectors.

About the course

PCN Level 1 & 2

This course is designed to provide the participants, a better understanding about theory and application of ultrasonic testing in welds, to train them and qualify them as PCN Level I or II in ultrasonic testing.

PCN Level 2 UT 3.8 & 3.9

This course extends your practical Ultrasonic Testing knowledge in the Welds category to include Nozzles (3.8) & Nodes (3.9). In gaining Nozzle (3.8) certification you are also then certified to test "T" Welds (3.7). We recommend 3 days of training for both Nozzle & Node. However, these can be done individually. This is applicable for UT level 2 certified personnel.

PCN Level 3

This guidance course is aimed at the PCN Level 3 requirements for Ultrasonic Testing practitioners. The main objective of the course is to make candidates fully aware of the scope of the examination and level of knowledge required. It will also enable candidates to identify their weak subject areas. Advice will be given on any further tuition required.

Qualification Requirements

Training Hours

Level 1	Level 2	Level 3
40 Hrs	80 Hrs	40 Hrs
Direct access to Level 2 requires the total hours shown in table for Levels 1 and 2		

Experience

Level 1	Level 2	Level 3
3 months	9 months	36 months
Note-1: For Level 2 certification, the intent is that work experience consists of time as a Level 1. If the individual is being qualified directly to Level 2, with no time at Level 1, the experience shall consist of the sum of the times required for Level 1 and Level 2. No reduction in the period of experience shall be allowed		
Note-2: Industrial NDT experience in the appropriate sector may be acquired either prior to or following success in the qualification examination.		

Documents to be submitted for Examination

- PSL 57-A Initial Examination application
- PSL 30- Log of Experience
- PSL 44-Vision Requirements (which has to be certified by a registered medical practitioner)
- PCN Wallet card copy
- PCN UT level I Certificate copy (If applicable)
- One govt approved identity card (example: Passport/voter ID /Aadhaar Card)

Course Content

PCN Level 1

- ❖ Properties of Sound Waves
- ❖ Generation of Ultrasonic waves
- ❖ Interaction of ultrasound with matter and boundaries
- ❖ Types of Probes
- ❖ Test Methods & Test Equipment
- ❖ Instrumentation & Test Variables
- ❖ Inspection procedures
- ❖ Types of Discontinuities

❖ PCN Level 2- UT 3.1 & 3.2

- ❖ History and Physics of UT
- ❖ Parameters - Types of Ultrasound
- ❖ Behavior of sound at interface and in material
- ❖ Generation of Ultrasound and Probe - its properties
- ❖ Equipment, controls- DATA display
- ❖ Techniques- Blocks- Calibrations- Inspection, Interpretation and Evaluation
- ❖ Welding technology- major weld process SMAW, SAW, TIG, MIG, FCAW etc

❖ PCN Level 2- UT 3.8 & 3.9

- ❖ Node Welds
- ❖ Set on preparations- Full penetration
- ❖ Set through preparations (Both Part & Full penetration welds)

Learning Outcomes

PCN Level 1

Successful candidate will be able to

- ❖ Set up equipment- Perform the Ultrasonic Inspection tests;
- ❖ Record and classify the results of the tests according to written criteria and Report the results

PCN Level 2

Successful candidate will be able to

- ❖ Select the Ultrasonic Testing technique for the test method to be used
- ❖ Define the limitations of application of the testing method
- ❖ Translate Ultrasonic Testing codes, standards, specifications and procedures into Ultrasonic Testing instructions adapted to the actual working conditions
- ❖ Set up and verify Ultrasonic Testing equipment settings
- ❖ Perform and supervise Ultrasonic tests
- ❖ Interpret and evaluate results according to applicable standards, codes, specifications or procedures
- ❖ Prepare written Ultrasonic Testing instructions
- ❖ Carry out and supervise all tasks at or below Level 2
- ❖ Provide guidance for personnel at or below Level 2
- ❖ Report the results of Ultrasonic tests.

❖ PCN Level 3

Successful candidate will be able to

- ❖ Establish, review for editorial and technical correctness and validate NDT instructions and procedures
- ❖ Designate the particular test methods, techniques and procedures to be used;
- ❖ Within the scope and limitations of any certification held, carry out all tasks at all levels

What to bring?

- ❖ Scientific calculator
- ❖ coveralls/Lab coat if possible
- ❖ Safety boots are mandatory in practical areas
- ❖ PCN Candidates: PCN wallet card or other form of photographic identification
- ❖ Pin Profile Gauge (Where possible)

Special Note

- ❖ TIW reserves the right to disqualify the participants from certification program when the personnel is found that they he/she shall not meet the PCN requirements
- ❖ Participants are not allowed to use their own equipment / laptop during the training and examination. TIW provides candidate with ultrasonic Flaw detector for practical inspection and other accessories needed for practical.
- ❖ Follow professional dress code during the entire training and examination.
- ❖ Once when enrolled for course, TIW customer care people will send joining instructions through mail and enough information shall be communicated through telephonic call.

Other information about Training & Examination

Training program comprises of daily assessment after completion of each chapter and the participants are required to get above 70% marks. Based on daily assessment exams, candidate is awarded with successful completion of training.

Then the participants are required to undergo examination which consists of specific and practical examination. Candidate has to obtain a minimum of 70% in each examination to get certified as level 1/2/3.

This certificate is valid for 5 years from the date of certification. The certificate has to be renewed as per PCN requirements.