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## ROYAL TECH TRAINING & CONSULTANCY

Method & Level	PCN Level 1- Ultrasonic Testing
Minimum Course Duration - Days & Hours	8 days & 56 Hours
Revision & Updated on	Rev 6- Updated on 22-4-2026

### Prerequisite Mandatory Product Technology Course

Please be informed that PCN has introduced a new requirement for all first-time PCN aspirants. Effective from 1st November 2025, candidates must complete an online Product Technology Training before registering for any PCN course at an approved institute.


The mandatory Product Technology Training Course being introduced exceeds these 'basic prior knowledge' requirements and all students (at whatever level) are required to complete this Product Technology training in advance of attending their first BINDT ATO-approved training course.

This also applies to Level 3 bespoke training where the applicant does not hold a valid ISO 9712 certificate. This training course need only be completed once. Valid ISO 9712 certificates are those recognised by BINDT and as listed in ICNDT OP19 – MRA Schedule 2 and/or European Federation for Non-Destructive Testing (EFNDT) MRA Schedule 2.

If you have already completed this course, please reply with a copy of your certificate. If you have not yet completed it, please follow the instructions below:

### Key Points to Note:

- Training Access: <https://wcet-online-training.bindt.org/> (Step-by-step registration guidance is attached).
- A fee of **£60 + VAT** (charged by BINDT) is payable online and is valid for **365 days**.
- Duration: The 24-hour course can be completed online at your convenience.
- Upon payment, you will gain access to course materials consisting of **three modules**: -  
**Module 1:** Industrial Materials –  
**Module 2:** Manufacturing Processes –  
**Module 3:** Introduction to NDT (*Total course duration: approximately 24 hours*)
- A **minimum passing score of 80%** is required.
- Each candidate will have **three attempts** to achieve the passing score.
- Certification: Upon passing, you will receive a Course Completion Certificate, which is mandatory for your registration.
- We encourage all new aspirants to complete this training at the earliest to avoid any delay in the registration process.
- Should you have any questions, please feel free to contact the **Royal Tech team** for assistance.
- Once Product Technology Certificate received, we will proceed with your enrolment for any Level course

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### PCN Level 1 Ultrasonic Testing

**Course Duration:** 8 days (56 Hours) minimum duration

#### Course Overview:

This course provides comprehensive knowledge of the theory and practice of ultrasonic testing of welds for technicians to reach the Level I standard. Training accredited to PCN Level 1. This course is suitable for NDT personnel, inspectors, testers and engineers who require a thorough introduction to ultrasonic testing of plates and pipe welded joints.

#### Course Content:

1. Basics of NDT, classifications of NDT
2. History of ultrasonics' & Physics of Sound, classification of sounds
3. Parameters-Modes of Ultrasound, - reflection & refraction, snells law, critical angles. Mode conversion
4. Characteristics of the beam of a circular transducer, Influence of transducer frequency and diameter, Near field (Fresnel zone), Far field (Fraunhofer zone), Beam divergence
5. Generation of Ultrasound-Piezo-electric effect, Piezo-electric effect , magnetostriction , electrostriction
6. Probe-Properties- Piezo Electrical Crystals- Factors Affecting Selection of a piezoelectric transducer
7. Equipment- control systems- Data Display- A, B, C Scan, PRF
8. Techniques- Pulse echo- straight, Delay, focussed, Dual, angle beam, tandem, Pitch catch, straddle, immersion
9. Reference blocks- Equipment, probe performance checks, DAC, Transferer correction
10. Inspection – Parent metal, sizing techniques- mathematics, weld inspection, sizing techniques
11. Implementation of the testing techniques according to products and to expected discontinuities, Influence of geometry and structure (spurious echoes, sound attenuation)
12. Product technology- welding process and its associate defects
13. Inspection & reporting of welds using Pulse echo UT for various types of weld joints
14. Application of a written instruction
15. Practical exercise and Daily assessment

#### Course Objectives:

1. Understand the basic concept of ultrasonic's, technique selection, equipment's and probes
2. Calibrate ultrasonic equipment using calibration blocks
3. Determine attenuation levels, Measure the thickness of steel plates, parent metal inspection
4. Locate and determine size of laminations in steel plates
5. Select correct type of probe to examine butt welded joints
6. Inspect, Detect and report the location and size of defects in butt welds
7. Follow and apply the instructions
8. Meet the syllabus requirements for PCN Level 1 as per PCN24/ GEN Appendix Z1 , PCN24/GEN/APP/UT & PCN24/AQB/REQ/UT .

#### Experience:

- 45 days

Note: . One-day duration is at least seven hours, which can be achieved on a single day or by accumulating hours. The maximum allowable hours in any one day is 12 hours. Experience in days is achieved by dividing the total accumulated hours by 7