Who we are?

ASTAR is an NDT training & service provider organization located in Chennai, India providing complete solution for NDT training & inspection.

We conduct training for PCN Level 1, 2 & 3 in the following methods

- PCN - Phased Array Ultrasonic Testing (PAUT)
- PCN - Time of Flight Diffraction (ToFD)
- PCN - Ultrasonic Testing 3.1 & 3.2
- PCN - UT - 3.8 & 3.9 (Nozzles & Node)
- PCN - Magnetic Particle Testing (only Level 1 & 2)
- PCN - Liquid/Dye Penetrant Testing (only Level 1 & 2)
- PCN - Radiographic Film Interpretation (only Level 2)

How to Book Your Training Course

To book a training course, simply call +91 9123544074 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 enquiry.astarindia@gmail.com (or) by visiting us on the web at www.astarindia.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 schedule basis at our Chennai Training and Examination Centre.

Contact Us

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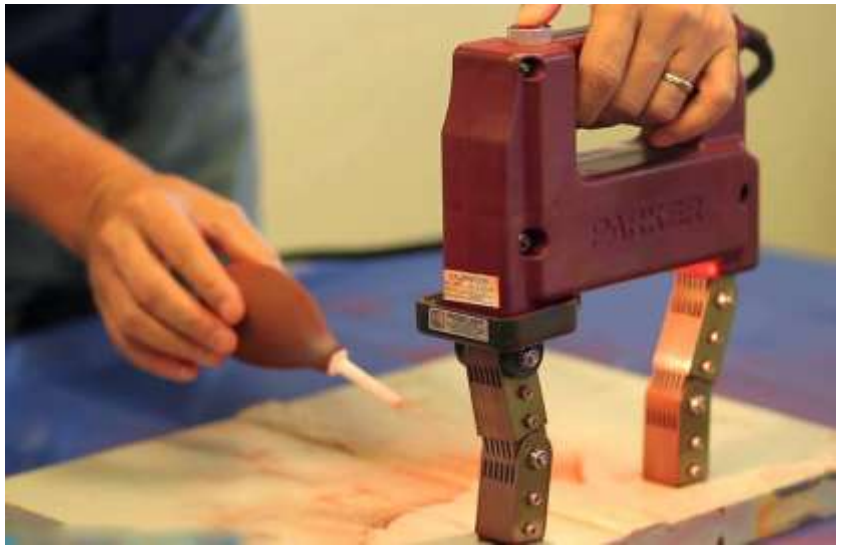
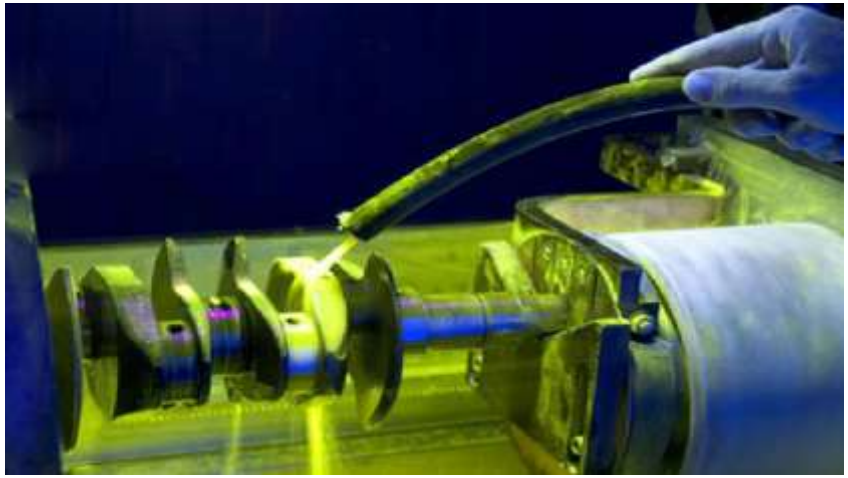
ASTAR TRAINING & CONSULTANCY SERVICES
A BINDT AUTHORIZED ATO & AQB





Magnetic Particle Testing Course Curriculum

ASTAR/CC/MT-01-Rev 09

What is Magnetic Particle Testing?

Magnetic particle Inspection (MPI) is a non-destructive testing (NDT) process for detecting surface and shallow subsurface discontinuities in ferromagnetic materials such as iron, nickel, cobalt, and some of their alloys. Test part can be magnetized by direct or indirect magnetization. Direct magnetization occurs when the electric current is passed through the test object and a magnetic field is formed in the material. Indirect magnetization occurs when no electric current is passed through the test object, but a magnetic field is applied from an outside source. The magnetic lines of force are perpendicular to the direction of the electric current, which may be either alternating current (AC) or some form of direct current (DC) (rectified AC). The presence of a surface or subsurface discontinuity in the material allows the magnetic flux to leak, since air cannot support as much magnetic field per unit volume as metals. To identify a leak, ferrous particles, either dry or in a wet suspension, are applied to a part. These are attracted to an area of flux leakage and form what is known as an indication, which is evaluated to determine its nature, cause, and course of action, if any.

About the course

PCN Level 1 & 2

This course is designed to provide the participants, a better understanding about theory and application of MPI in welds, to train them and qualify them as PCN Level 1 or 2 in Magnetic Particle Testing.

PCN Level 3

This guidance course is aimed at the PCN Level 3 requirements for Magnetic 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 as per PCN24/GEN Requirements

Training Days

Level 1	Level 2	Level 3
3 Days	2 Days	4 Days
Direct access to Level 2 or 3 requires the total days shown in table for Levels 1 and 2 or Levels 1, 2 and 3.		

Experience

Level 1	Level 2	Level 3
15 Days	45 Days	240 Days
Note-1: For Level 2 certification, the intent is that work experience consists of period as a Level 1. If the individual is being qualified directly to Level 2, with no period at Level 1, the experience shall consist of the sum of the periods 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. (see other essential information in the page 6)		

Pre-Training Requirement

PCN candidate who do not currently hold, or who have never held PCN, or other BS EN ISO 9712 compliant NDT certification that they shall be required to demonstrate knowledge of materials and processes/product technology.

New PCN applicants (those without PCN certification or certified under ISO 9712) shall complete the Product Technology Learning Program prior to attending any training course.

Link to attend the online product technology learning programme: Home | BINDT (Press control and click the link)

Course Content

PCN Level 1

- Basic of Magnetism
- Magnetization Techniques
- Inspection Mediums & Inspection Techniques
- Indication Classification
- Test Equipment and Accessories
- Demagnetization
- Types of Discontinuities.

PCN Level 2

- Basics of NDT & Basic of Magnetism
- Magnetization Techniques
- Inspection Mediums & Inspection Techniques
- Indication Classification
- Test Equipment and Accessories
- Demagnetization
- Indication- interpretation and Recording
- Product technology- Discontinuities in Casting, Forging, Wrought & Forming process
- Understanding of codes
- Welding technology- major weld process SMAW, SAW, TIG, MIG, FCAW, etc.

Learning Outcomes

PCN Level 1

Successful candidate will be able to

- Set up equipment- Perform the Penetrant 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 Magnetic Particle Testing technique for the test method to be used
- Define the limitations of application of the testing method
- Translate Magnetic Particle Testing codes, standards, specifications and procedures into Magnetic Particle Testing instructions adapted to the actual working conditions
- Set up and verify Magnetic Particle Testing equipment settings
- Perform and supervise Magnetic Particle tests
- Interpret and evaluate results according to applicable standards, codes, specifications or procedures
- Prepare written Magnetic Particle 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 Magnetic Particle 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

Special Note

- ASTAR 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. ASTAR provides candidate with required equipment and other accessories needed for practical inspection.
- Follow professional dress code during the entire training and examination.
- Once when enrolled for course, ASTAR customer care people will send joining instructions through mail and enough information shall be communicated through telephonic call.

Documents to be submitted for Examination

- PCN24/PSL 57A - Examination application
- PCN24/PSL 30 - Log of Experience
- PCN24/PSL 44 - Vision Requirements (which has to be certified by a registered medical practitioner)
- PCN24/CP-27 - Code of ethics
- PCN E-certificate/ wallet card copy (If available)
- PCN level 1 Certificate copy (If applicable)
- One govt approved identity card (example: Passport / Voter ID /Aadhaar Card) & Two Photographs

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.

Experience may be acquired either prior to (for Level 1 and 2 entries only) or following success in the qualification examination. However, the chances of success in a PCN examination may be significantly reduced if candidates have little or no current experience in the application of the NDT method in the sector concerned.

In the event that the PCN examination has been passed by a candidate lacking the experience required for certification, BINDT will issue a letter of attestation to the successful candidate indicating that they have passed the qualification examination and needs only to meet the experience requirement in order to be certificated.

Records of experience obtained post examination shall be presented on PCN form PCN24/PSL30 or PCN24/PSL57C as appropriate within the 2 years from the date of examination passed.

Supplementary Examination

- Candidates holding certification in one product sector who wish to add another single sector will be required to pass a further practical examination comprising the testing of 3 samples selected by the examiner as representative of the single sector sought.
- Candidates should note that this will result in 2 separate certificates being held and will need to be maintained separately.
- Candidates holding certification in one product sector who apply for certification in the multisector (all product sectors) will be required to pass a further practical examination comprising the testing of three samples selected by the examiner as representative of the additional sectors sought.
- Level two candidates attempting supplementary examination will not be required to produce a written instruction. Candidates who wish to add another category to their existing certification/scope will be required to pass a further practical exam testing sample within the existing sector selected from the new category/scope sought (i.e., portable or fixed)