PCN24/GEN/APP/PT

PCN certification eligibility and examination requirements for persons engaged in non-destructive testing using the penetrant testing (PT) method at Levels 1, 2 and 3

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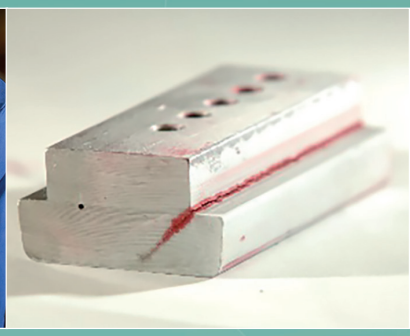
A division of BINDT THE BRITISH INSTITUTE OF NON-DESTRUCTIVE TESTING



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The British Institute of Non-Destructive Testing is an accredited Certification Body offering personnel and quality management systems assessment and certification against criteria set out in international and European standards through the PCN Certification Scheme.

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1. Scope

This document prescribes the specific requirements and procedures by which personnel may be examined and, where successful, certified to use the penetrant testing (PT) method for the testing of metallic materials listed within BS EN ISO 9712 Annex A, specifically A.2.

Requirements contained within this document are additional to those contained in the current edition of PCN24/GEN: General requirements for PCN qualification and certification of NDT personnel, drafted to meet the requirements of BS EN ISO 9712:2022.

The full PCN training, examination and eligibility requirements are set out in PCN24/GEN. This specific Appendix document provides the reader with a glance at PCN PT examination requirements for PCN PT certification at all levels. Except where exemptions apply, all candidates will be required to attempt an examination comprising the appropriate examination elements required for certification listed herein.

For those candidates who are new entrants within the PCN Certification Scheme, and where not confirmed by prior appropriate screening, new aspirant PCN candidates will be required to:

(a) Successfully complete the BINDT-approved online remote self-study training module for materials and process technology (product technology).

(b) Successfully complete a BINDT-approved training course in the appropriate NDT method for the certification sought. The training course shall encompass all common techniques within the NDT method.

(c) Meet the requirements for acuity of vision, colour perception and practical industrial experience prior to the award of certification by PCN.

(d) Sign an undertaking to abide by the BINDT Code of Ethics, published as PCN24/CP27, at all times.

2. Associated documents

2.1 PCN24/GEN: General requirements for qualification and PCN certification of NDT personnel

2.2 BS EN ISO 9712: Non-destructive testing – Qualification and certification of NDT personnel

2.3 PCN24/GEN/Appendix Z1

2.4 PCN24/GEN/Appendix Z2

3. Employer responsibilities

3.1 **IMPORTANT:** Candidates and employers shall ensure that they are conversant with responsibilities ascribed to both the candidate and employer, and that it is the employer's duty to issue PCN-certified employees with the 'authority to operate' before PCN certificate holders carry out NDT tasks on behalf of the employer or employer's customers.

3.2 See PCN24/GEN – Section 5.5.

4. PCN PT certification available for single- or multi-sector use

4.1 PCN Level 1 PT.

4.2 PCN Level 2 PT.

4.3 PCN Level 3 PT.

4.4 PCN certification is available for the following PT equipment combinations:

(a) Fixed installations only – Penetrant flowlines.

(b) Portable equipment only.

(c) Fixed installations and portable equipment combined.

Note: *For Level 3, candidates must prove practical competence in all equipment combinations offered.*

5. Penetrant system techniques for PCN certification

5.1 Fluorescent/water-washable technique (BS EN ISO 3452-1 technique designation **IAa**).

5.2 Fluorescent/post-emulsified technique (BS EN ISO 3452-1 technique designation **IBa**).

5.3 Visible colour contrast technique (BS EN ISO 3452-1 technique designation **IICe**).

6. Industrial sectors for which PT certification is available

6.1 Manufacturing.

6.2 Pre- and in-service testing, which includes manufacturing.

7. Product sectors for which PT certification is available

7.1 Castings (c) (ferrous and non-ferrous materials).

7.2 Forgings (f) and wrought products (wp), which includes:

(a) Forgings, all types of forging: ferrous and non-ferrous materials; and

(b) Wrought products, such as plates, bar and rod.

7.3 Welds (w) (all types of weld, including soldering, for ferrous and non-ferrous materials).

8. Product sector examinations available at Levels 1 and 2

8.1 Multi-sector (general) – Includes all thee product sectors: welds (w), castings (c) and forgings/wrought (f/wp).

8.2 Dual sector – A combination of any two product sectors from: welds (w), castings (c) and forgings/wrought (f/wp).

8.3 Single sector – Any one of the product sectors from: welds (w), castings (c) and forgings/wrought (f/wp).

9. Examination eligibility

9.1 Candidates shall fulfil the minimum requirements for eligibility as detailed in PCN24/GEN and PCN24/CP09.

9.2 Candidates shall provide documentary evidence of having achieved the required amount of practical industrial experience in accordance with PCN24/GEN requirements.

9.3 Candidates shall provide documentary evidence of acceptable near-vision acuity and colour vision perception in accordance with PCN24/GEN requirements.

9.4 The completion of an approved BINDT training course is mandatory for initial examinations.

9.5 Initial training for all students must address the full syllabus for both general theory and specific theory as detailed in PCN syllabus document Z1.

9.6 The practical training completed must include practical training in the testing of the product sector(s) in which certification is sought and must also include practical training using the techniques to be applied in the applicable examination. Any training certificates presented to the Authorised Qualifying Body (AQB) as evidence of training must include concise details of the practical training received.

9.7 Where initial practical training is product sector specific using definitive techniques, supplementary practical training is required where examination applicants wish to add additional product sectors or test techniques to their scope of certification.

10. Examination overview

10.1 The full PCN examination format linked to the candidate's personal certification requirements shall be as described in PCN24/GEN. This PCN document highlights to candidates the examination elements that might be attempted during a PCN examination, dependent upon whether the examination attempted is for initial, renewal, recertification, retest or for supplementary certification.

10.2 The examination time shall be confirmed to the candidate by the examination centre immediately prior to the examination.

10.3 Extensions shall be recorded by the AQB prior to examination commencement.

10.3.1 Permissible extensions to examination times are detailed in PCN24/GEN, Section 8.2.

10.3.2 When applying for or claiming extensions due to medical reasons, it is a requirement for candidates to satisfy the AQB by providing sight of a medical declaration/attestation from a suitably qualified medical professional confirming the situation. The AQB should not retain medical records of candidates, but it shall annotate the examination records detailing any extensions granted.

11. Initial certification examination requirements

11.1 General theory written examination element for PT

11.1.1 Written examination element to test the candidate's general theoretical knowledge of the **PENETRANT** testing method at the appropriate level for the certification sought.

11.1.2 40 multiple-choice questions.

11.1.3 Time allowed per question: 2 minutes.

11.1.4 Pass mark 70%.

11.2 Sector-specific written theory examination element for PT

11.2.1 The examination shall be an open-book examination, where candidates have access to authorised and controlled reference material provided to them by the AQB's examiner. Reference material supplied shall be restricted to copies of those specifications, standards and/or codes upon which specific examination questions are based.

11.2.2 Initial training for all students must address the full syllabus for both general theory and specific theory as detailed in PCN syllabus document Z1. Consequently, initial specific theory examinations shall address the full syllabus. Single product sector specific theory examinations are not available. The rationale for insisting that the specific theory examination covers the full syllabus is to allow certificate holders to add supplementary product sectors by attempting only the practical element for the required additional product sector or sectors.

11.2.3 For PT certification, the specific theory examination shall consist of the following number of questions addressing the full Z1 specific syllabus:

(a) For Level 1: a minimum of 35 questions.

(b) For Level 2: a minimum of 40 questions.

11.2.4 The questions shall be of the multi-choice-answer type based upon the application of the NDT method and technique(s) at the appropriate level for certification. Questions relating to specific method-/technique-based product technology will also be included.

11.2.5 Where the specific examination is multi-sector (*ie* welds, castings, forgings/wrought products), the questions will be evenly spread between the sectors concerned.

11.2.6 Time allowed per question: 3 minutes.

11.2.7 Pass mark 70%.

11.3 Sector-specific practical examination element

11.3.1 The practical examination element requires candidates to test practical specimens, record the resulting information to the degree required and report the results in the AQB's desired format. Specimens shall be sector (one or more) specific, representing defined field geometries and shall contain discontinuities representative of those likely to occur during manufacturing or during in-service life. Defects may be natural or manufactured and the examination shall be as follows.

11.4 Practical examination control checks

11.4.1 Candidates shall demonstrate knowledge and correct use of NDT equipment and/or NDT media to include system and/or media control and validity of verifications and/or media, as per Annex D Table D.1 Item 1 within BS EN ISO 9712, for control checks.

11.4.2 Time allowed: 30 minutes.

11.5 Practical testing element – Level 1

11.5.1 Level 1 candidates shall follow written NDT instructions provided to them by the examiner to test product sector (one or more) specific practical specimens.

11.5.2 The number of specimens tested shall be as advised by the AQB at the time of examination. Each specimen shall be different in character, *ie* in product form, material specification, shape, size or discontinuity type.

11.5.3 For single product sector practical examinations, candidates shall be required to test a minimum of two specimens from the product sector for which certification is sought.

11.5.4 For dual or multiple product sector practical examinations, examination candidates shall be required to test a minimum of one specimen from each product sector for which certification is sought.

11.5.5 For a practical examination targeted at a specific industrial sector, candidates shall be required to test specimens representative of products typically tested within the industrial sectors for which certification is sought.

11.5.6 The recommended time allowed per specimen tested is 1 hour. However, the Certification Body (BINDT) allows the AQB to extend this time period if required based upon the component complexity and test technique deployed.

11.5.7 Pass mark: ≥70% for each practical specimen tested.

12. PCN Level 2 – Initial certification

12.1 Candidates shall follow the examination process requirements described for Level 1 certification but at the required theoretical knowledge level for Level 2 certification, and in addition they shall demonstrate the following enhanced practical testing requirements:

12.2 Level 2 candidates shall **SELECT** the applicable NDT technique and determine the operating conditions required related to a given code, standard or specification.

12.3 Candidates shall test prescribed specimens, recording and **INTERPRETING** the resulting information to the degree required, reporting the results obtained in the AQB's desired format.

12.4 Recommended testing time allowed per practical specimen tested is 1 hour. However, BINDT allows the AQB to extend this time period if required based upon component complexity and test technique deployed.

12.5 Pass mark: ≥70% for each practical specimen tested.

12.6 Written NDT instruction writing element – Level 2

12.6.1 Candidates shall draft a written NDT instruction for one of the specimens tested in the practical examination; the specimen shall be selected by the AQB.

12.6.2 For the written instruction element, the allowed time shall not be less than 60 minutes and not exceed 120 minutes. The actual time permitted shall be advised by the AQB based upon the complexity of the written instruction required.

12.6.3 Pass mark: 70%.

13. PCN Level 3 candidates – Basic examination

13.1 PCN Level 3 candidates will be required to pass a basic examination before attempting main method examinations.

13.2 The basic examination shall assess the candidate's knowledge of basic examination subjects using multiple-choice questions, selected in an unpredictable way from PCN's current collection of questions which are valid on the day of the examination. See PCN24/GEN for further information.

13.3 PCN basic examination items/parts are as follows:

13.4 **Part A:** Technical knowledge in materials science and process technology.

13.4.1 30 multiple-choice questions *(exceeds BS EN ISO 9712)*.

13.4.2 Time allowed: 2 minutes per question.

13.4.3 Pass mark: ≥70%.

13.5 **Part B:** Knowledge of the Certification Body's qualification and certification system based upon the contents contained within PCN24/GEN.

13.5.1 10 multiple-choice questions based upon the content of PCN24/GEN.

13.5.2 Time allowed per question: 3 minutes per question.

13.5.3 Pass mark: 70%.

13.6 **Part C:** General knowledge of at least four NDT methods as required for Level 2 certification, at least one method being volumetric (UT or RT).

13.6.1 15 multiple-choice questions from each method (total 60 possible questions).

13.6.2 Time allowed: 2 minutes per question.

13.6.3 Pass mark: 70%.

13.7 Successful PCN Level 3 basic examination candidates may progress to Level 3 main method training; however, they shall also be required to complete with a grade of ≥70% the practical examination requirements for Level 2 certification where candidates do not hold current valid level 2 certification, excepting the need to draft a written NDT instruction.

13.8 A candidate who holds current valid Level 2 certification shall be exempt from the need to pass the PCN Level 2 practical examination.

14. PCN Level 3 – Main method examination

14.1 A written examination to assess the candidate's knowledge of the main method subjects using multiple-choice questions selected in an unpredictable way from the current collection of questions approved by BINDT at the time of the examination.

14.2 **Part D:** Level 3 knowledge relating to the test method.

14.2.1 30 multiple-choice questions on the method for certification.

14.2.2 Time allowed: 2 minutes per question.

14.2.3 Pass mark: 70%.

14.3 **Part E:** Application of the NDT method in the sector concerned, including the applicable codes, standards, specifications and procedures. This may be an open-book examination in relation to codes, standards, specifications and procedures.

14.3.1 Part E is an open-book examination part related to codes, standards, specifications and procedures that shall be made available to candidates as deemed applicable by the AQB.

14.3.2 Time allowed: 3 minutes per question.

14.3.3 Pass mark: 70%.

14.4 **Part F:** Candidates will be required to draft an NDT procedure in the relevant sector for which certification is required. All applicable codes, standards and or specifications required for the drafting of a written procedure shall be made available to the candidate during the examination by the AQB.

14.4.1 All applicable codes, standards and or specifications required for the drafting of a written procedure shall be made available to the candidate during the examination by the AQB.

14.4.2 Recommended time allowed per written procedure: 6 hours. However, the Certification Body (BINDT) allows the AQB discretion to extend this time period if required.

14.4.3 Pass mark: 70%.

15. Supplementary examinations

15.1 A certified Level 1 or Level 2 individual who would like to change sectors or add another sector for the same NDT method shall be required to attempt the practical examination element for the new sector.

15.2 Level 2 candidates shall also be required to draft an NDT instruction for one of the specimens tested within the new sector.

15.3 A certified Level 3 individual changing sectors or adding another sector for the same NDT method shall be required to take the sector-specific Parts E and F of the main method examination element only.

15.4 All candidates will be required to meet the additional industrial experience requirements as per PCN24/GEN.

16. Re-examination

16.1 A candidate who fails one or more elements of an examination (*ie* general, specific, practical, written instruction, procedure writing, etc) may retake the failed examination element no more than twice.

16.2 The candidate need only reattempt the examination element(s) that were deemed a 'fail' at the original attempt. In terms of Level 1 and Level 2 PT practical re-examinations, the candidate shall reattempt the full practical element as detailed in this document.

16.3 The re-examination shall take place no sooner than 30 days from the date of the original examination and no later than one year after the original examination. The only exception to the 30-day rule is where further (supplementary) training is delivered to address areas of weakness identified in the initial examination, in which case the re-examination is permitted seven days after the date of the initial examination. The training/examination body shall keep records of the supplementary training delivered. BINDT assigns responsibility for ensuring the suitability of the supplementary training to the AQB (or ATO), which may be reviewed during routine BINDT audits.

16.4 A candidate failing the two allowable re-examinations on one or more elements shall complete further training acceptable to BINDT and will then be required to retake all certification examination elements as per the process for initial certification.

17. Renewal and recertification

17.1 BINDT/PCN issues certificates at issue 01 or issue 02. Issue 01 certificates are issued after initial examination or after a five-year or ten-year recertification by examination. Issue 02 certificates are issued following the recertification of an issue 01 certificate by claimed points in accordance with PCN24/CP16.

17.2 Revalidation of issue 01 certificates is deemed to be a 'renewal'. Revalidation of issue 02 PCN certificates is deemed to be 'recertification'.

17.3 For Level 1 and Level 2 applicants, the renewal/recertification examination shall consist of the practical element detailed below and, additionally, for Level 2, the completion of the written instruction element.

17.4 Levels 1 and 2 (five-year renewal of issue 01 certificates by claimed points)

17.4.1 Prior to the completion of the period of validity following certification and recertification, renewal of certification for a further period shall be by application to BINDT/PCN using form PCN24/CP16. The applicant is required to provide the following:

- A completed PCN24/CP16 form;
- Documentary evidence of a satisfactory near-vision acuity examination taken within the preceding 12 months;
- Documentary evidence of a satisfactory colour vision and/or greyscale perception examination taken within the preceding 60 months; and
- Verifiable documentary evidence of continued satisfactory work activity without significant interruption in the method and sector for which certificate renewal is sought. See Annex C of PCN24/CP16 for guidance on claiming renewal by points.

17.5 Levels 1 and 2 – Renewal of issue 01 or recertification of issue 02 certificates by examination

17.5.1 The PCN certificate holder shall apply by submission of a completed PCN24/PSL57A form directly to the AQB.

17.5.2 For renewal or recertification by examination, the candidate shall attempt a practical examination as detailed below.

17.5.3 For Level 2 renewals by examination or recertification, the candidate is also required to complete the written instruction element of the examination.

17.5.4 For renewal or recertification by examination, the candidate shall achieve a pass grade of 70% for each specimen attempted (and for Level 2, the written instruction). Candidates who fail to achieve a pass grade of 70% for each specimen attempted and/or the written instruction (at Level 2) are allowed two retests of the failed element, which shall consist of the practical testing element and/or written instruction element of the examination (at Level 2) depending upon the individual elements failed.

17.5.5 For renewal and recertification examinations (issue 01 or issue 02 certificates) in the penetrant (PT) method, the candidate is required to complete a practical element as detailed below:

- For single product sector practical examinations, candidates shall be required to test a minimum of two specimens from the product sector for which certification is sought.
- For multiple product sector practical examinations, examination candidates shall be required to test a minimum of one specimen from each product sector for which certification is sought.

17.5.6 Any retest/re-examination of a failed examination (or examination element) shall be conducted in accordance with Section 15 previous.

Note 1: *Level 3 certificate holders renewing their Level 2 practical certification in support of their Level 3 certificate need not complete a written instruction as part of the recertification process.*

17.5.7 In the event of final failure in a renewal or recertification examination, BINDT will immediately cancel the certificate concerned, issuing a new record of certification that no longer shows the competence concerned and sending this with an explanatory letter to the certificate holder requesting the return of the superseded record of certification, which is a mandatory requirement.

17.5.8 In the event of failure in the two allowable retests, the certificate shall not be revalidated and, to regain certification for that level, sector and method, the candidate shall reapply for certification as an initial candidate. For Levels 1 and 2, no examination exemptions shall be awarded by virtue of any other valid/recognised certification held.

17.6 Level 3 (five-year renewal)

17.6.1 The procedure for renewal and recertification of PCN Level 3 certificates is detailed in PCN24/CP16.

17.6.2 The PCN certificate holder shall apply by submission of a completed PCN24/PSL57A form directly to the AQB (for renewal by examination) and directly to BINDT (for renewal by points).

17.6.3 For all Level 3 renewals/recertifications, the individual may decide between the examination or credit system for recertification. If the credit system is chosen and requires submission of employer's documents or access to an employer's premises, the individual shall provide to the Certification Body a written statement of approval from the employer.

17.6.4 In both cases (written examination or credit system), the individual is required to provide evidence of their continued practical competence. Options acceptable for proving continued practical competence are detailed in PCN24/GEN.

17.6.5 A candidate who does not meet the requirements of the Level 3 recertification by the structured credit system (PCN24/CP16) shall recertify by examination. In the event of failure at the first attempt at recertification by examination, only one retest of the recertification examination shall be allowed within 12 months of the date of application for recertification via the PCN24/PSL57A form.

17.6.6 For candidates who proceed directly to the recertification examination process, in the event of failure in the allowable retests, the certificate shall not be revalidated and, to regain certification for that level, sector and method, the candidate shall apply for certification as an initial candidate. For Level 3, the candidate shall be required to achieve success in the appropriate main method examination.

18. Change control record

PCN24/GEN/APP/PT – Document issue and review status		
Document issue for review	**Changes/amendments**	**Current document status**
Issue 01	New document, Issue 01	January 2024.
Issue 02	Complete review following comments received post-introduction of issue 01. Scope – Last paragraph amended to add product technology module as a pre-training requisite for new PCN applicants. 4.4 – Clause added to define equipment options. Sections 5, 6, 7 and 10 – Title amended. 5.1-5.3 – Clauses amended to define penetrant techniques. 9.1 and 9.2 – Clauses amended. 9.3 – Clause added. 9.3.1 and 9.3.2 – Clauses rewritten. 10.1.1 – Clause amended. 10.2.1-10.2.4 – Subclauses added and following clauses renumbered. 10.5 – Title expanded. 10.5.2 – Old clause removed and following clauses renumbered accordingly. 10.5.2 – Phrase deleted from new clause. 10.5.3-10.5.5 – Clauses amended to better define requirement. 11.6.2 – Clause rewritten to better define requirement. 13.3.1 – Clause added and subsequent clauses renumbered. 13.4.1 – Clause added. 13.4.2 – Clause amended to reflect 6 hours allowed for procedure writing. Sections 15 and 16 – Sections added.	August 2025.
Issue 03	Review and up-issue following comments/suggestions received: 2.3 and 2.4 – Document codes updated. Section 5 – BS EN ISO 3452-1 technique designations added. Section 8 – New section added, titled: 'Product sector examinations available at Levels 1 and 2'. Following sections/clauses renumbered accordingly. New dual product sector options added. Section 9 (Examination eligibility) – Rewritten (was Section 8). Section 10 – Title amended. 11.2.2 – Old clause replaced with new clause. 11.2.3 – Clause amended. 11.2.5 – Clause amended. 11.5.4 – Clause amended. 15.1 – Clause amended.	April 2026.

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