

PCN CERTIFICATION ELIGIBILITY AND EXAMINATION REQUIREMENTS FOR PERSONS ENGAGED IN NON- DESTRUCTIVE TESTING USING THE VISUAL TESTING (VT) METHOD AT LEVEL 1, 2, and 3.



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PCN EXAMINATION AND ELIGIBILITY REQUIREMENTS FOR: PERSONNEL ENGAGED IN NDT VISUAL TESTING (VT) AT LEVELS 1, 2, and 3

CONTENTS:

SECTION	PCN24/GEN/APP/VT: CONTENT	PAGE NUMBER
	Document title cover sheet	1
	Document Contents	2
1	Document scope	2
2	Associated documents	3
3	Employer responsibilities	3
4	PCN (VT) certification available, for single, or multisector use	3
5	Industrial sectors where PCN certification may be applied	3
6	Product sectors for (VT) certification	4
7	Examination eligibility	4
8	Examination content overview	4
9	PCN level 1 initial certification	5
10	PCN level 2 initial certification	6
11	PCN level 3 candidates – Basic examination	7
12	PCN level 3 main method examination	8
13	Supplementary examinations	8
14	Certification renewal and recertification	9
15	Reference literature and essential reading	9
	Document review status	9

1. SCOPE:

This document prescribes the specific requirements and procedures by which personnel may be examined and, where successful, certified to use the Visual Testing (VT) method for the testing of metallic materials within listed within BS EN ISO 9712 at 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.

Full PCN examination format is described in PCN24/GEN. This appendix document provides the reader with at a glance PCN examination requirements PCN VT certification at all levels. Except where Exemptions apply, all candidates will be required to attempt an examination comprised of the appropriate examination elements listed herein.

**PCN EXAMINATION AND ELIGIBILITY
REQUIREMENTS FOR:
PERSONNEL ENGAGED IN NDT VISUAL
TESTING (VT)
AT LEVELS 1, 2, and 3**

2. ASSOCIATED DOCUMENTS:

- 2.1 PCN24/GEN: General Requirements for the Certification of Personnel Engaged in NDT.
- 2.2 BS EN ISO 9712: Non-destructive testing — Qualification and certification of NDT personnel.
- 2.3 PCN/GEN/SYLLABUS DOCUMENT.
- 2.4 PCN/GEN/SPECIMEN QUESTIONS COMPENDIUM.

3. EMPLOYER RESPONSIBILITIES:

- 3.1 **IMPORTANT:** Candidates and employers shall ensure that they are conversant with responsibilities ascribed to both 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 (VT) CERTIFICATION AVAILABLE - FOR SINGLE, OR MULTISECTOR USE:

- 4.1 Multi product sector certification (castings, forgings, and welds) is available for the VT of general engineering materials, components, and fabrications within the manufacturing, or for pre- and in-service testing which includes manufacturing industrial sectors at the following certification levels:
 - 4.1.1 PCN Level 1 VT
 - 4.1.2 PCN Level 2 VT
 - 4.1.3 PCN Level 3 VT
- 4.2 Alternatively, and for Levels 1 and 2 only, candidates may apply for single product sector certification covering any one of the following products within the manufacturing or pre- and in service testing which includes manufacturing, industrial sectors:
 - 4.2.1 PCN Level 1 VT Castings only
 - 4.2.2 PCN Level 2 VT Welds only
 - 4.2.3 PCN Level 2 VT Wrought Products only.

5. INDUSTRIAL SECTORS WHERE PCN (VT) CERTIFICATION MAY BE APPLIED:

- 5.1 Manufacturing.
 - 5.2 Pre-and in-service testing which includes manufacturing.
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**PCN EXAMINATION AND ELIGIBILITY
REQUIREMENTS FOR:
PERSONNEL ENGAGED IN NDT VISUAL
TESTING (VT)
AT LEVELS 1, 2, and 3**

6. PRODUCT SECTORS FOR (VT) CERTIFICATION: *(BS EN ISO 9712 Annex A, A.2 for metallic materials).*

- 6.1 Castings (c) (ferrous and nonferrous materials).
- 6.2 Forgings (f) and wrought products (wp) which includes.
 - 6.2.1 For forgings all types of forgings: ferrous and non-ferrous materials.
 - 6.2.2 For wrought products, (products such as plates, bar, and rod).
- 6.3 Welds (w) (all types of welds, including soldering, for ferrous and non-ferrous materials).

7. EXAMINATION ELIGIBILITY:

- 7.1 Candidates shall provide documentary evidence of acceptable near vision acuity and colour vision perception in accordance with PCN24/GEN requirements.
- 7.2 Candidates shall provide documentary evidence of having achieved the required amount of practical industrial experience in accordance with PCN24/GEN requirements.
- 7.3 Candidates shall provide documentary evidence of having satisfactorily completed an approved NDT training course within the NDT method, and at the required level for certification in accordance with PCN24/GEN.

8. EXAMINATION CONTENT OVERVIEW:

- 8.1 The full PCN examination format linked to the candidate's personal certification requirements shall be as described in PCN24/GEN. This PCN examination requirements appendix document serves to highlight to candidates the potential examination elements which might be attempted during a PCN examination, dependent upon whether the examination attempted is for initial, recertification, retest or for supplementary certification.
 - 8.2 Examination time shall be confirmed to the candidate on the front of the PCN examination paper. Additional time may be allowed at the discretion of the AQB for those circumstances detailed below at 9.3.1 and 9.3.2.
 - 8.3 Extensions shall be recorded by the AQB prior to examination commencement.
 - 8.3.1 Where the candidate's primary language is not English, who may require additional reading time (25%).
 - 8.3.2 Where the candidate suffers with disabilities such as dyslexia, and who may require additional reading time (25%). It will be a requirement for candidates to supply to the AQB a medical declaration/attestation from a suitably qualified medical professional confirming matters. A copy of the declaration/attestation shall be retained within the candidate's examination records file.
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**PCN EXAMINATION AND ELIGIBILITY
REQUIREMENTS FOR:
PERSONNEL ENGAGED IN NDT VISUAL
TESTING (VT)
AT LEVELS 1, 2, and 3**

9. PCN LEVEL 1 INITIAL CERTIFICATION:

9.1 GENERAL THEORY WRITTEN EXAMINATION ELEMENT FOR VT.

- 9.1.1 Written examination element specific to the general theory of the VISUAL Testing method.
- 9.1.2 40 multiple choice questions.
- 9.1.3 Time allowed per question: 2 minutes.
- 9.1.4 Pass mark 70%.

9.2 SECTOR SPECIFIC WRITTEN THEORY EXAMINATION ELEMENT FOR VT:

- 9.2.1 Theoretical written examination element specific to the application and use of the VISUAL Testing method.
- 9.2.2 35 multiple choice questions. : *(Exceeds BS EN ISO 9712).*
- 9.2.3 Where the specific theory examination element covers two or more sectors, the examination shall take into account the industrial or product sectors concerned, questions shall be spread evenly across the product sectors for examination.
- 9.2.4 Time allowed per question: 3 minutes.
- 9.2.5 Pass mark 70%.

9.3 SECTOR SPECIFIC PRACTICAL EXAMINATION ELEMENT:

- 9.3.1 The practical examination element requires candidates to test practical specimens, record the resulting information to the degree required, reporting the results in the AQB's desired format. Specimens shall be sector (one or more) specific, representing 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, the examination shall be as follows:

9.4 PRACTICAL EXAMINATION CONTROL CHECKS:

- 9.4.1 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. (Control checks).
- 9.4.2 Time allowed 30 minutes.

9.5 PRACTICAL TESTING LEVEL 1:

- 9.5.1 Level 1 candidates shall follow written NDT instructions provided to them by the examiner to test product sector (one or more) specific practical specimens.
- 9.5.2 Where the certification examination covers two or more product sectors, practical specimens tested shall include a MINIMUM of one specimen from each product sector for certification. This shall result

**PCN EXAMINATION AND ELIGIBILITY
REQUIREMENTS FOR:
PERSONNEL ENGAGED IN NDT VISUAL
TESTING (VT)
AT LEVELS 1, 2, and 3**

in candidates demonstrating their practical ability to deploy a number of different NDT techniques within the VT method.

- 9.5.3 The number of specimens tested shall be as advised by the AQB at the time of examination to meet the requirements of BS EN ISO 9712 Annex B. Each specimen shall be different in character, i.e., in product form, material specification, shape, size, or discontinuity type.
- 9.5.4 Single product sector practical examination candidates shall be required to test a minimum of two specimens and, for multiple product sectors, a minimum of one specimen from each product sector for certification.
- 9.5.5 For an industrial sector related practical examination: Candidates shall be required to test a minimum of two specimens, representative of products typically tested within the industrial sector certification.
- 9.5.6 Candidates shall report results obtained during testing in the AQB's required format.
- 9.5.7 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 component complexity and test technique deployed.
- 9.5.8 Pass mark: $\geq 70\%$ for each specimen tested.

10. PCN LEVEL 2 INITIAL CERTIFICATION:

- 10.1 Candidates shall follow the examination process requirements described for Level 1 certification but at the required theoretical (general and specific) knowledge level for Level 2 certification, and in addition they shall demonstrate the following enhanced practical testing requirements:
- 10.2 Level 2 candidates shall **SELECT** the applicable NDT technique and determine the operating conditions required related to a given code, standard or specification.
- 10.3 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.
- 10.4 Recommended testing time allowed per 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.
- 10.5 Pass mark: $\geq 70\%$ for each practical specimen tested.

10.6 WRITTEN NDT INSTRUCTION WRITING ELEMENT - LEVEL 2:

- 10.6.1 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.
 - 10.6.2 Time allowed per written instruction: 1 hour.
 - 10.6.3 Pass mark: 70%.
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**PCN EXAMINATION AND ELIGIBILITY
REQUIREMENTS FOR:
PERSONNEL ENGAGED IN NDT VISUAL
TESTING (VT)
AT LEVELS 1, 2, and 3**

11. PCN LEVEL 3 CANDIDATES – BASIC EXAMINATION:

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

11.2 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.

11.3 Basic examination Items/Parts are as follows:

11.4 **PART A:** Technical knowledge in materials science and process technology.

11.4.1 30 multiple-choice questions : (*Exceeds BS EN ISO 9712*).

11.4.2 Time allowed: 2 minutes per question.

11.4.3 Pass mark: $\geq 70\%$.

11.5 **PART B:** Knowledge of the certification body's qualification and certification system based upon the contents contained within PCN24/GEN.

11.5.1 10 multiple-choice questions based upon the content of PCN24/GEN.

11.5.2 Time allowed per question: 3 minutes per question.

11.5.3 Pass mark 70%.

11.6 **PART C:** General knowledge of at least four methods as required for Level 2 certification with at least 1 method being volumetric from (UT or RT).

11.6.1 15 multiple-choice questions from each method (total 60 questions)

11.6.2 Time allowed: 2 minutes per question.

11.6.3 Pass mark 70%.

11.7 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 $\geq 70\%$ 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.

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

**PCN EXAMINATION AND ELIGIBILITY
REQUIREMENTS FOR:
PERSONNEL ENGAGED IN NDT VISUAL
TESTING (VT)
AT LEVELS 1, 2, and 3**

12. PCN LEVEL 3 MAIN METHOD EXAMINATION:

12.1 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.

12.2 **PART D:** Level 3 knowledge relating to the test method:

12.2.1 30 multiple-choice questions on the method for certification.

12.2.2 Time allowed: 2 minutes per question.

12.2.3 Pass mark 70%.

12.3 **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.

12.3.1 20 multiple-choice questions based upon the sector for specific certification.

12.3.2 Time allowed: 3 minutes per question.

12.3.3 Pass mark 70%.

12.4 **PART F:** Candidates will be required to draft an NDT procedure in the relevant sector for which certification is required. The Applicable codes, standards, specifications, and other procedures shall be available to the candidate by the AQB.

12.4.1 Recommended time allowed per written procedure: 4 Hours. However, the certification body (BINDT) allows the AQB discretion to extend this time period if required.

12.4.2 Pass mark 70%.

13. SUPPLEMENTARY EXAMINATIONS:

13.1 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 take sector specific and practical examination elements for the new sector. Level 2 candidates shall also be required to write the NDT instruction for the new sector.

13.2 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.

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

**PCN EXAMINATION AND ELIGIBILITY
REQUIREMENTS FOR:
PERSONNEL ENGAGED IN NDT VISUAL
TESTING (VT)
AT LEVELS 1, 2, and 3**

14. CERTIFICATION RENEWAL AND RECERTIFICATION:

- 14.1 Comprehensive general rules for certification renewal, recertification and retest at all levels are described in PCN24/GEN Sections 10 and 11.
- 14.2 Applications for renewal of existing Level 1, or Level 2 certification can be made using PCN document PCN24/F45.
- 14.3 Applications for renewal of Level 3 certification can be made using PCN document PCN24/F46.

15. REFERENCE LITERATURE ESSENTIAL READING:

- 15.1 All associated VT reference literature can be found within PCN document PCN24/XXX.

PCN24/GEN/APP/VT Document issue and review status.		
Document issue for review:	Changes/amendments:	Current document Status:
Not applicable.	New Document Issue 01.	PCN24/GEN/APP/VT. Issue 01. July 2023. Implementation - 01 Jan 2024.