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PCN-ISO 20807-GEN Requirements for the Qualification of personnel for Limited Applications of Non-destructive Testing

Scope

1.1 This Specification establishes a system for the qualification of personnel who perform NDT applications of a limited, repetitive or automated nature. The present applications covered herein are:

Appendix A – UT Of Wrought Plate Including Thickness Gauging

Further applications will be included as required by industry.

1.2 When the need for qualified non-destructive testing (NDT) personnel is defined in product standards, regulations, codes or specifications, and the nature of the testing to be carried out is limited in scope or automated such that the qualification requirements specified in International Standard ISO 9712 or European standard EN 473 (see references) are considered inappropriate or excessive, it may be satisfied by qualification in accordance with this specification

1.3 The requirements detailed herein apply only to NDT personnel qualified for specific applications, and no direct attempt should be made to equate this to the NDT levels defined in PCN/GEN and its appendices. However, it is recommended that qualified personnel defined in this specification are supervised by an appropriately certified NDT level 2 or 3 person as defined in PCN/GEN and documents referenced therein.

References

The following normative documents contain provisions which, through reference in this text, constitute provisions of this specification.

ISO 20807	Qualification of personnel for limited applications of non-destructive testing
ISO 9712	Non-Destructive Testing - Qualification and Certification of Personnel.
EN 473	Non-Destructive Testing - Qualification and Certification of Personnel – General principles
ISO/IEC 17024	Conformity assessment - General requirements for bodies operating certification of persons

Terms and definitions

For the purposes of this specification, the following terms and definitions apply.

- 1.1 candidate - individual seeking qualification in accordance with the provisions of this specification
- 1.2 certificate - written testimony of qualification
- 1.3 certification body - agency that complies with ISO/IEC 17024 and administers procedures for qualification of NDT personnel in accordance with the requirements of this specification
- 1.4 employer - organization for which the candidate works on a regular basis
- 1.5 examination centre - centre approved by the Certification Body or Qualifying Body where qualification examinations will be carried out

NOTE An examination centre may be situated at an employer's premises



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.



- 1.6 examiner - a person certified at level 3 in accordance with the provisions of ISO 9712 for the method and sector he/she is to examine, and authorised by the Certification Body to conduct, supervise and grade NDT qualification examinations
- 1.7 experience - period during which the candidate carried out, under supervision, the NDT application for which qualification is sought
- 1.8 NDT application - specific non-destructive test applied to a defined product or range of products.
NOTE An NDT application will normally be restricted to the use of only one NDT method but may involve the use of more than one NDT technique.
- 1.9 NDT instruction - written description of the precise steps to be followed in testing to an established NDT procedure, standard, code, or specification
- 1.10 NDT method - application of a physical principle in non-destructive testing (for example: ultrasonic testing)
- 1.11 NDT operator - An individual qualified according to this specification.
- 1.12 NDT procedure - orderly sequence of steps describing where, how, and in which sequence an NDT method should be applied to a product
- 1.13 NDT technique - specific way of utilising an NDT method (for example: immersion ultrasonic testing)
- 1.14 NDT training - process of instruction in theory and practice in the NDT application for which qualification is sought, which takes the form of training courses covering an approved syllabus
- 1.15 operating authorization - written statement issued by the employer based on the NDT operator's competence to carry out the NDT application(s) detailed on the certificate of qualification
- 1.16 qualification - demonstration of physical attributes, knowledge, skill, training and experience required to properly perform NDT tasks
- 1.17 qualifying body - competent organization approved by the Certification Body to prepare and administer examinations to qualify NDT personnel
- 1.18 significant interruption - absence or a change of activity which prevents the qualified NDT operator from practising the duties corresponding to his qualification for a continuous period exceeding one year
- 1.19 supervision - act of directing the application of NDT performed by other NDT personnel, which includes the control of actions involved in the preparation of the test, performance of the test and reporting of the results
- 1.20 test specimen - sample used in practical examinations.
NOTE Samples should be representative of products typically tested in the NDT application for which qualification is sought and may include more than one area or volume to be tested. Samples should contain discontinuities typical of those found in the products concerned.

2. Responsibilities

- 2.1 The Certification Body (BINDT):
- f* administers the procedures and operations for qualification and certification in accordance with a documented procedure meeting the minimum requirements of ISO/IEC 17024;
 - f* delegates, under its direct responsibility, the detailed administration of the qualification procedure to other organisations which will act as Authorised Qualifying Bodies;
 - f* publishes its requirements for the approval of Authorised Qualifying Bodies. Where the qualifying body is also the employer, the Certification Body shall require additional controls to preserve impartiality;
 - f* authorises appropriately trained and qualified examiners to set, conduct and grade the examinations described in this specification;
 - f* approves, either directly or through an Authorised Qualifying Body, properly staffed and equipped examination centres;

- f having reviewed the evidence of qualification, makes and record its decision to issue of a certificate of qualification;
- f ensures that appropriate records are maintained and issues certificates of qualification;

2.2 The Authorised Qualifying Body is authorised by the BINDT to:

- f administer PCN examinations to a documented quality procedure;
- f establish and monitor examination centres with adequate qualified staff, premises and equipment to ensure satisfactory qualification examinations for the NDT applications concerned;
- f prepare and supervise qualification examinations;
- f create and maintain a collection of relevant examination materials, including specimens, questions and answers;
- f use only those examination questions and practical specimens approved by BINDT for examinations;
- f maintain qualification records as required by BINDT.

2.3. The employer shall:

- f introduce the candidate to the BINDT or the Authorised Qualifying Body (if the candidate is self-employed, or introduces himself, he shall assume all responsibilities described for the employer);
- f confirm the validity of the personal information provided, including the declaration of satisfactory vision, education, training and experience needed to establish the eligibility of the candidate;
- f be fully responsible for all that concerns the authorisation to operate and the validity of the results of NDT operations;
- f ensure that NDT operators holding certificates of qualification issued under this specification undergo an annual test of visual acuity.

2.4 Candidates and PCN certificate holders shall comply with the PCN code of ethics (CP27)

3. Scopes of Competence

NDT operators qualified in accordance with this specification may, within the scope and limitations of the qualification concerned:

- f set up and verify equipment settings;
- f perform the tests in accordance with written instructions produced by EN 473 or ISO 9712 certified level 2 or level 3 personnel;
- f record, classify, interpret and evaluate the test results in accordance with documented criteria;
- f organise and report test results.

4. Vision requirements

Personnel qualified in accordance with this specification shall comply with the minimum vision requirements stipulated in the current edition of PCN document PSL/44.

5. Eligibility

5.1 Eligibility for Examination

To be eligible for examination, the candidate shall provide evidence acceptable to the BINDT or the Authorised Qualifying Body of completion of a course of NDT training appropriate to the scope of qualification sought.

NOTE 1 Training providers should issue documentary proof of completion of training.

NOTE 2 Appendices to this specification provide training and examination syllabi, and minimum durations of training.

5.2 Eligibility for Certification

5.2.1 The candidate shall have satisfactorily completed an appropriate written and practical examination.

5.2.2 The candidate shall have gained experience as required by BINDT, taking into account the guidance provided in the relevant appendix to this specification, and provide verifiable evidence in a form acceptable to BINDT of such experience.

5.2.3 The candidate shall provide documentary evidence of satisfactory vision in accordance with clause 6.

6. Examination

The qualification examination shall comprise a written examination and a practical examination. Information on examination content is given in the relevant appendix listed in Annex A to this specification.

7.1 Written examination

7.1.1 The written examination shall include an evaluation of the candidate's understanding of procedures, codes, standards and specifications relevant to the NDT application, as well as the theory of the NDT method. Questions shall be selected from BINDT's or the Authorised Qualifying Body's collection of questions valid at the date of examination.

7.1.2 The candidate shall be required, as a minimum, to give answers to thirty questions, which may be multiple choice and/or short answer questions.

7.1.3 The time allowed to the candidates for completion of each examination is based upon the difficulty of the questions and is stated in the relevant appendix to this specification.

7.2 Practical examination

7.2.1 The practical examination requires that the candidate demonstrate competence in the application of the NDT method and technique to products appropriate to the NDT application for which qualification is sought. This will involve the testing of a defined number of test specimens, detecting and reporting all mandatory reportable discontinuities.

7.2.2 Each practical examination test specimen has a master sheet which gives details of all the relevant properties of, and discontinuities in the test specimen. The master sheet includes all relevant equipment settings used to prepare the master sheet (see Annex B). The master sheet for use in grading examinations is compiled based upon at least two independent tests conducted by appropriately qualified personnel, and is authorised by a PCN Chief Examiner.

7.2.3 The number of areas or volumes to be tested will be adequate to the application concerned, and is documented in the relevant appendix to this specification.

7.3 Conduct of examination

7.3.1 All PCN examinations are conducted in centres approved and monitored by BINDT, either directly or through an Authorised Qualifying Body.

7.3.2 At the examination, the candidate shall have in his possession valid proof of identification and an official notification of the examination, which shall be shown to the examiner or invigilator upon demand.

7.3.3 A candidate for a practical examination may use his own apparatus. In this case, the examiner shall establish that the apparatus is covered, where applicable, by a valid certificate of calibration, and is serviceable for the purpose of the examination.

7.4 Grading

7.4.1 An authorised PCN examiner shall be responsible for grading the examinations in accordance with procedures approved by BINDT.

7.4.2 The written and practical examinations shall be graded separately.

7.4.3 To be successful in the examinations, a candidate shall obtain a grade of at least 70% in the written examination and 80% in the practical examination (weighting factors for practical examination elements is given in Annex B).

8. Qualification

8.1 BINDT will in all cases review evidence of qualification and, where competence is proven, issue a certificate and corresponding wallet card. Certificates and wallet cards will between them include:

- the full name of the NDT operator;
- the date of qualifying;
- the date upon which the certificate expires;
- a unique identification number;
- the logo of the Certification Body
- the scope of the qualification, including specific applications covered;
- the signature of the qualified NDT operator;
- a space for the signature(s) of the employer(s);
- a photograph of the NDT operator in case of the wallet card;
- the signature of a representative of BINDT.

NOTE By issuing the certificate of qualification and/or corresponding wallet card, BINDT attests to the qualification of the NDT operator but does not give any operating authorisation. The signature of the employer on the certificate of qualification may provide evidence that the employer is authorising the certificate holder to operate within the scope defined on the certificate.

8.2 The period of validity of the certificate of qualification shall not exceed five years from the date of qualification indicated on the certificate and/or wallet card.

8.3 The certificate of qualification shall be invalid:

- for any specific applications other than that for which it was issued;
- at the option of BINDT after reviewing evidence of unethical behaviour or incompetence;
- if the NDT operator fails to meet the vision requirements,
- if a significant interruption takes place in the NDT operator's work within the scope of the certificate of qualification.

9. Renewal

9.1 Upon completion of the first 5 year period of validity, a certificate of qualification may be renewed by BINDT for a new period of 5 years, provided the certificate holder supplies, in a form acceptable to BINDT, verifiable documentary evidence of:

9.1.1 satisfactorily meeting during the preceding 12 months the vision requirements of PCN document PSL/44 and

9.1.2 continued satisfactory work activity relevant to the certificate of qualification without significant interruption.

9.2 If the 9.1.2 criteria for renewal are not met, the individual shall recertify.

10. Re-certification

10.1 Upon completion of each second period of validity (every 10 years), or following a significant interruption, a new certificate of qualification may be issued by BINDT for a period of 5 years on the basis of the following requirements:

10.1.1 The candidate provides evidence of meeting the vision requirements of the current edition of PCN document PSL/44;

10.1.2 The candidate is successful in a practical examination, which includes the competences covered by the scope of the qualification.

10.2 If the NDT operator fails to achieve a grade of at least 80% for each specimen attempted (weighted according to the guidance in Annex B), one retest of the whole recertification examination shall be allowed within 6 months.

10.3 In the event of failure in the one allowable retest, the certificate of qualification shall not be issued and, to regain qualification the individual shall follow the same rules as for initial qualification.

11. Files

11.1 BINDT maintains and publishes an updated list of all certificates of qualification awarded.

11.2 BINDT or its Authorised Qualifying Bodies maintain individual files for each qualified NDT operator, including those whose certificate of qualification has lapsed, containing:

- a) application forms;
- b) examination documents, such as questionnaires, answers, description of specimens, records, results of test, written procedures, and grade sheets;
- c) renewal documents, including evidence of visual acuity and continuous activity.

11.3 Individual files are kept under suitable conditions of safety and confidentiality for as long as the certificate of qualification remains valid and for at least ten years after the lapse of the certificates of qualification to which they relate.

Exemptions

Due to the limited application of these Methods there will be NO examination exemptions from any of the Appendices programmes into the PCN/EN473 programme.