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## **PCN/AERO A6 ISSUE 2**

### **LIQUID PENETRANT TESTING OF AEROSPACE PRODUCTS**

This Appendix to PCN Aerospace Specific Requirements for Qualification and Certification of NDT Personnel covers the specific requirements for PCN certification of personnel engaged in Liquid Penetrant Non-Destructive Testing of Aerospace products.

Certification issued as a result of success in an examination defined herein complies with European standard EN 473, and may be used by employers of NDT personnel to satisfy the qualification requirements of EN 4179 (Aerospace series -- qualification and approval of personnel for non-destructive testing).

Any person requiring information concerning the content of PCN documents should address queries to the PCN Scheme Manager at the above address.



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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.



## **EXAMINATION CONTENT**

### **1. Level 2**

1.1 PCN aerospace PT certification is presently available at Level 2 and Level 3 to cover aerospace products. Except where exemptions apply (refer to A0 – PCN Aerospace specific requirements), all Level 2 candidates will be required to attempt an examination comprised of the following parts:

1.1.2 General knowledge of the Liquid Penetrant NDT method. Forty multiple choice questions. Time allowed: 60 minutes; pass mark 70%.

1.1.3 Sector specific application of the Liquid Penetrant NDT method to aerospace products. The examination will comprise of thirty multiple choice questions covering standards, codes and specifications, safety precautions in the aerospace environment, basic production processes and associated defects, and defects occurring in service. Thirty multiple choice questions. Time allowed: 60 minutes; pass mark 70%.

1.1.4 Sector Specific Practical examination comprising:

- i) calibration and functional checking of Liquid Penetrant test equipment,
- ii) testing three samples using a range of Liquid Penetrant test equipment and techniques, reporting the results in a prescribed manner in accordance with the code, specification or standard provided (this will include any calculations necessary for inspection sensitivities).
- iii) Preparation of a detailed NDT instruction providing written step by step information on the testing of one of the above samples (selected by the examiner) to a provided procedure, code, standard or specification, and to prove the instruction by application.

1.2 The total time allowed for the practical part is 6 hours and the pass mark is 70% per sample tested and 70% for the NDT instruction (failure to detect and report a reportable discontinuity in any one sample, or failure to produce an acceptable NDT instruction, will result in failure of this examination part).

### **2. Level 3**

2.1 Except where exemptions apply (refer to PCN Aerospace specific requirements), all Level 3 candidates will be required to attempt an examination comprised of the following parts:

2.1.1 Basic Examination (described in PCN Aerospace specific requirements).

2.1.2 Main Method Examination

- D) Forty multiple choice questions covering the general theory of the Liquid Penetrant testing method.
- E) Thirty multiple choice questions covering the application of the Liquid Penetrant NDT method in the aerospace industry sector, including the applicable codes, standards and specifications (the candidate will be provided with any relevant code, standard or specification).
- F) An open book examination in which the candidate will be required to produce a comprehensive Liquid Penetrant test procedure embodying an NDT instruction for a specific aerospace product to a provided specification, standard or code.

2.1.3 Level 2 Sector Specific Practical. Applicable to Level 3 candidates who do not hold Level 2 certification acceptable to PCN for Liquid Penetrant testing of aerospace products. Such candidates will be required to successfully complete the Level 2 practical examination described at 1.1.4 above before proceeding to the Level 3 main method examination parts.

## **CERTIFICATION AVAILABLE**

Level 2 Liquid Penetrant Testing (Aerospace products).

Level 3 Liquid Penetrant Testing (Aerospace products).