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## PSL/26 ISSUE 14

## PCN CERTIFICATION AVAILABLE

### Introduction

The British Institute of NDT issues PCN certification to NDT personnel according to the industrial or product sector in which they are applying the NDT method. In most instances, there will be a further categorisation of certification according to the type of material or configuration of structure that the certified individual is recognised as competent to test.

### Scope

This document summarises the categories of certification available in each of the sectors. Some certificates are "multi-sectoral", which means that the holder may have been examined on specific knowledge relating to castings, weldments and wrought products. The relevant appendix should be consulted to ascertain that this is the case.

From 1 January 2016 the pass grade of a PCN exam will be reduced to a 70% pass on each examination part, with no overall average. A distinction level will be awarded for all candidates receiving the 80% average grade.

Therefore, there will be a L2 and a L2D on certificates (excluding BRS/RPS/WI and ISO 20807 certificates).

### Associated documents

PCN/GEN: General requirements for the certification of personnel engaged in non-destructive testing.

PSL/8A: PCN Documents - Issue status

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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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## **WELDS (SINGLE PRODUCT SECTOR)**

### **Ultrasonic Testing (PCN/GEN Appendix C1)**

<u>Clause</u>	<u>Certification category</u>
3.1	Level 1 Group 3.1 Butt welds in plate and 3.2 Butt welds in pipe
3.2.1	Level 2 Group 3.1 Butt welds in plate Level 2 Group 3.2 Butt welds in pipe and tube Level 2 Group 3.7 Constructional T joints Level 2 Group 3.8 Nozzles and variable configuration welds Level 2 Group 3.9 Nodes
3.3	Level 3 Ultrasonic Testing of Welds

### **Ultrasonic Testing (PCN/GEN Appendix C1)**

<u>Clause</u>	<u>Certification category</u>
3	Level 2 Critical assessment of weld defects (category 'w').

### **Radiographic Testing (PCN/GEN Appendix C2)**

<u>Clause</u>	<u>Certification category</u>
3.1.1	Level 1 X-Radiography of Light Metal Welds
3.1.2	Level 1 X-Radiography of Dense Metal Welds
3.1.3	Level 1 Gamma Radiography of Dense Metal Welds
3.1.4	Level 1 X-Radiography and Gamma Radiography of Dense Metal Welds
3.1.5	Level 1 X-Radiography of Light and Dense Metal Welds and Gamma Radiography of Dense Metal Welds
3.2.1	Level 2 X-Radiography of Light Metal Welds
3.2.2	Level 2 X-Radiography of Dense Metal Welds
3.2.3	Level 2 Gamma Radiography of Dense Metal Welds
3.2.4	Level 2 X-Radiography and Gamma Radiography of Dense Metal Welds
3.2.5	Level 2 X-Radiography of Light and Dense Metal Welds and Gamma Radiography of Dense Metal Welds
3.3	Level 3 Radiographer (Welds)
3.4.1	Radiographic Interpreter of Dense Metal Welds
3.4.2	Radiographic Interpreter of Light Metal Welds

### **Eddy Current (PCN/GEN Appendix C3A)**

<u>Clause</u>	<u>Certification category</u>
3.1.1	Level 1 Single frequency Eddy Current Testing of Welds
3.2.1	Level 2 Single frequency Eddy Current Testing of Welds
3.3	Level 3 Eddy Current Testing of Welds

### **Ultrasonic Testing TOFD (PCN/GEN Appendix C4)**

<u>Clause</u>	<u>Certification category</u>
3.1	Level 1 Ultrasonic Time of Flight Diffraction Testing of Linear Butt Welds
3.2	Level 2 Ultrasonic Time of Flight Diffraction Testing of Linear Butt Welds
3.3	Level 3 Ultrasonic Time of Flight Diffraction Testing

## **Weld Inspector (PCN/WI)**

<u>Clause</u>	<u>Certification category</u>
7.1.1	Weld Inspection Level 1
7.1.2	Weld Inspection Level 2
7.1.3	Weld Inspection Level 3

## **CASTINGS (SINGLE PRODUCT SECTOR)**

### **Ultrasonic Testing (PCN/GEN Appendix B1)**

<u>Clause</u>	<u>Certification category</u>
3.1	Level 1 Ultrasonic Testing (Castings)
3.2	Level 2 Ultrasonic Testing (Castings)
3.3	Level 3 Ultrasonic Testing (Castings)

### **Radiographic Testing (PCN/GEN Appendix B2)**

<u>Clause</u>	<u>Certification category</u>
3.1.1	Level 1 X-Radiography of Light Metal Castings
3.1.2	Level 1 X-Radiography of Dense Metal Castings
3.1.3	Level 1 Gamma Radiography of Dense Metal Castings
3.1.4	Level 1 X-Radiography and Gamma Radiography of Dense Metal Castings
3.1.5	Level 1 X-Radiography of Light and Dense Metal Castings and Gamma Radiography of Dense Metal Castings
3.2.1	Level 2 X-Radiography of Light Metal Castings
3.2.2	Level 2 X-Radiography of Dense Metal Castings
3.2.3	Level 2 Gamma Radiography of Dense Metal Castings
3.2.4	Level 2 X-Radiography and Gamma Radiography of Dense Metal Castings
3.2.5	Level 2 X-Radiography of Light and Dense Metal Castings and Gamma Radiography of Dense Metal Castings
3.3.1	Level 3 Radiographer (Castings)
3.4.1	Radiographic Interpreter of Dense Metal Castings
3.4.2	Radiographic Interpreter of Light Metal Castings

## **WROUGHT PRODUCTS (SINGLE PRODUCT SECTOR)**

### **Ultrasonic Testing (PCN/GEN Appendix D1)**

<u>Clause</u>	<u>Certification category</u>
3.1	Level 1 Ultrasonic Testing: Bar, Billet and Plate
3.2.1	Level 2 Ultrasonic Testing: Bar, Billet and Plate
3.2.2	Level 2 Ultrasonic Testing: Bar, Billet, Plate and General Forgings
3.3	Level 3 Ultrasonic Testing of Wrought Products

## **Eddy Current Testing (PCN/GEN Appendix D2)**

<u>Clause</u>	<u>Certification category</u>
3.1	Level 1 Eddy Current Testing of General Wrought Products (category 's')
3.2.1	Level 2 Eddy Current Testing of General Wrought Products (category 's') will also be awarded category 'x' for single frequency.
3.2.2	Level 2 Eddy Current Testing of Tubular Wrought Products (category 't') will also be awarded category 'x' for single frequency.
3.2.3	Level 2 Eddy Current Testing of Tubular Wrought Products (category 't') can also be awarded category 'y' for multiple frequency.
3.3	Level 3 Eddy Current Testing of Wrought Products

## **Ultrasonic (PCN/GEN/ISO 20807 Appendix A 1.1)**

<u>Clause</u>	<u>Certification category</u>
1.	Level 2 Ultrasonic Testing of Wrought Plate –Including thickness gauging

## **PRE AND IN-SERVICE INSPECTION (MULTI-SECTORAL)**

### **Magnetic Particle Testing (PCN/GEN Appendix E1)**

<u>Clause</u>	<u>Certification category</u>
3.1	Level 1 (portable equipment or fixed installations) General Engineering Products (multi-sector)
3.2.	Level 2 (portable equipment or fixed installations) General Engineering Products (multi-sector)
3.2.1	Level 2 Castings
3.2.2	Level 2 Welds
3.2.3	Level 2 Wrought Products
3.3	Level 3 General Engineering Products (multi-sector)

### **Liquid Penetrant Testing (PCN/GEN Appendix E2)**

<u>Clause</u>	<u>Certification category</u>
3.1	Level 1 (Dye penetrant or fluorescent penetrant) General Engineering Products (multi-sector)
3.2.	Level 2 (Dye penetrant or fluorescent penetrant) General Engineering Products (multi-sector)
3.2.1	Level 2 Castings
3.2.2	Level 2 Welds
3.2.3	Level 2 Wrought Products
3.3	Level 3 General Engineering Products (multi-sector)

### **Radiation Safety (PCN/GEN Appendix E3)**

<u>Clause</u>	<u>Certification category</u>
5.1	Basic Radiation Safety (BRS - mandatory for all radiographers)
5.2	Radiation Protection to Supervisor level (RPS - optional for all radiographers)

### **Visual Testing (PCN/GEN Appendix E5)**

<u>Clause</u>	<u>Certification category</u>
3.1	Level 1 General Engineering Products (multi-sector)
3.2.	Level 2 General Engineering (multi-sector)
3.2.1	Level 2 Castings
3.2.2	Level 2 Welds

- 3.2.3 Level 2 Wrought Products
- 3.3 Level 3 General Engineering Products (multi-sector)

### **UT Phased Array (PCN/GEN Appendix E9)**

- | <u>Clause</u> | <u>Certification category</u>   |
|---------------|---|
| 5.1           | Level 1 UTPA Data Collection (welds only).  |
| 5.2           | Level 2 UTPA (includes Interpretation) of general engineering materials, components and fabrications in the pre and in-service inspection multi-sector.<br><br>Alternatively Level 2 candidates may apply for single sector certification covering one <b>(only)</b> of the following groups; |
| 5.2.1         | Castings  |
| 5.2.2         | Welds   |
| 5.2.3         | Wrought Products  |
| 5.3           | Interpretation of UTPA data covering <b>one</b> of the following: Multi Sector or single sector for Castings, Welds or Wrought Products.  |
| 5.4           | Level 3 UTPA of general engineering materials, components and fabrications in the pre and in-service inspection multi sector.   |

### **Computed Radiographic Testing (PCN/GEN Appendix E10)**

- | <u>Clause</u> | <u>Certification category</u>   |
|---------------|---|
| 4.1           | Level 1 CRT of general engineering materials, components and fabrications in the pre and in-service inspection multi-sector   |
| 4.2           | Level 2 CRT (includes Interpretation) of general engineering materials, components and fabrications in the pre and in-service inspection multi-sector.<br><br>Alternatively, Level 1 and Level 2 candidates may apply for single sector certification covering one <b>(only)</b> of the following groups: |
| 4.2.1         | Castings  |
| 4.2.2         | Welds   |
| 4.2.3         | Wrought Products  |
| 4.3           | CRT Interpreter of data covering <b>one</b> of the following: Multi Sector or single sector for Castings, Welds or Wrought Products   |
| 4.4           | Level 3 CRT of Castings, Welds and Wrought Products (all 3 sectors)   |

### **AEROSPACE (MULTI-SECTORAL)**

#### **Eddy Current Testing (PCN/GEN Appendix A1)**

- | <u>Clause</u> | <u>Certification category</u>  |
|---------------|--|
| 3.2.1         | Level 2 Eddy Current Testing of Aerospace Materials and Components             |
| 3.2.2         | Level 2 Eddy Current Testing of Aerospace Materials, Components and Structures |
| 3.3           | Level 3 Eddy Current Testing Aerospace Materials, Components and Structures    |

#### **Ultrasonic Testing (PCN/GEN Appendix A2)**

- | <u>Clause</u> | <u>Certification category</u>  |
|---------------|--|
| 3.2.1         | Level 2 Ultrasonic Testing of Aerospace Materials and Components             |
| 3.2.2         | Level 2 Ultrasonic Testing of Aerospace Materials, Components and Structures |
| 3.3           | Level 3 Ultrasonic Testing Aerospace Materials, Components and Structures    |

### **Radiographic Testing (PCN/GEN Appendix A3)**

<u>Clause</u>	<u>Certification category</u>
3.1	Level 2 Radiographic Testing Aerospace materials and components.
3.2	Level 2 Radiographic Testing Aerospace materials, components and structures.
3.3	Level 3 Radiographic Testing Aerospace materials, components and structures.

### **Radiographic Testing (Aerospace Welds) (PCN/GEN Appendix A4)**

<u>Clause</u>	<u>Certification category</u>
3.2	Level 2 Radiographic Testing (Aerospace Welds)
3.3	Level 3 Radiographic Testing (Aerospace Welds)

### **Magnetic Particle Testing (PCN/GEN Appendix A5)**

<u>Clause</u>	<u>Certification category</u>
3.2	Level 2 Magnetic Particle Testing (Aerospace products)
3.3	Level 3 Magnetic Particle Testing (Aerospace products)

### **Liquid Penetrant Testing (PCN/GEN Appendix A6)**

<u>Clause</u>	<u>Certification category</u>
3.2	Level 2 Liquid Penetrant Testing (Aerospace products)
3.3	Level 3 Liquid Penetrant Testing (Aerospace products)

## **RAILWAY PRODUCTS (MULTI-SECTORAL)**

### **Ultrasonic Testing of Railway Axles (PCN/GEN Appendix F1)**

<u>Clause</u>	<u>Certification category</u>
3.1	Level 1 Ultrasonic Testing of Railway Axles
3.2	Level 2 Ultrasonic Testing of Railway Axles
3.3	Level 3 Ultrasonic Testing of Railway Axles

### **Ultrasonic Testing of Rail (PCN/GEN Appendix F2)**

<u>Clause</u>	<u>Certification category</u>
3.1.1	Level 1 Ultrasonic Testing of Rail: U1/U2 - Fish-plated joints
3.1.2	Level 1 Ultrasonic Testing of Rail: U3 - 070 Test System
3.1.3	Level 1 Ultrasonic Testing of Rail: U4 - Bolt hole crack size estimation
3.1.4	Level 1 Ultrasonic Testing of Rail: U5 - Squat assessment
3.1.5	Level 1 Ultrasonic Testing of Rail: U7 - Rail measurement
3.1.6	Level 1 Ultrasonic Testing of Rail: U10 - Adjustment switches
3.1.7	Level 1 Ultrasonic Testing of Rail: U14 - Gauge corner cracking
3.1.8	Level 1 Ultrasonic Testing of Rail: U8 - Vertical and longitudinal defect characterisation
3.3.1	Level 2 Ultrasonic Testing of Rail: U1/U2 - Fish-plated joints
3.3.2	Level 2 Ultrasonic Testing of Rail: U3 - 070 Test System
3.3.3	Level 2 Ultrasonic Testing of Rail: U4 - Bolt hole crack size estimation
3.3.4	Level 2 Ultrasonic Testing of Rail: U5 - Squat assessment
3.3.5	Level 2 Ultrasonic Testing of Rail: U7 - Rail measurement
3.3.6	Level 2 Ultrasonic Testing of Rail: U8 - Vertical and longitudinal defect characterisation

- 3.3.7 Level 2 Ultrasonic Testing of Rail: U10 - Adjustment switches
- 3.3.8 Level 2 Ultrasonic Testing of Rail: U14 - Gauge corner cracking
- 3.2 Level 1 Ultrasonic Testing of Rail Welds: U6 - Alumino-thermic welds
- 3.4 Level 2 Ultrasonic Testing of Rail Welds: U6 - Alumino-thermic welds
- 3.5 Level 3 Ultrasonic Testing of Rail

**Magnetic Particle Testing of Railway Running Rail and Associated Components (PCN/GEN Appendix F3)**

<u>Clause</u>	<u>Certification category</u>
3.1	Level 1 Railway Running Rail and Associated Components
3.2	Level 2 Railway Running Rail and Associated Components

**Liquid Penetrant Testing of Railway Running Rail and Associated Components (PCN/GEN Appendix F4)**

<u>Clause</u>	<u>Certification category</u>
3.1	Level 1 Railway Running Rail and Associated Components
3.2	Level 2 Railway Running Rail and Associated Components

**In-service Inspection – Manual Ultrasonic Testing via the modular route (PCN ISI\_GEN Appendix A-ISI)**

<u>Clause</u>	<u>Certification category</u>
5.1.1	Level 2 Thickness measurement & Corrosion monitoring of steel components - (after successful completion of Modules, 01, 02, 03, 04).
5.1.2	Level 2 Butt welds in plate* (two samples selected from three categories) - (after successful completion of 4.1.1 & Module 05)
5.1.3	Level 2 Butt welds in pipe (three samples selected from three categories) - (after successful completion of 4.1.1 & Module 06)
5.1.4	Level 2 Constructional T joints (two samples selected from two categories) - (after successful completion of 4.1.1 & Module 07)
5.1.5	Level 2 Nozzles and variable configuration welds (two samples selected from two categories) - (after successful completion of 4.1.1 & Module 08)
5.1.6	Level 2 Nodes (one sample from one category) - (after successful completion of 4.1.1 & Module 09)
5.1.7	Level 2 Thickness measurement & Corrosion monitoring of steel components
5.2 Level 3	Candidates may obtain level 3 certificates by successful completion of the examination described in Clause 2.3, but they must hold appropriate level 2 certification for ultrasonic testing of welds issued under PCN requirements, or an equivalent approval recognised by PCN. Otherwise they must successfully complete a practical examination equivalent to PCN level 2 plate butt welds