Positive Material Identification (P.M.I)  
Alloy Verification (A.V) Procedure

1.0 Purpose

1.1 The purpose of this procedure is to detail the requirements for carrying out positive material identification (P.M.I.)

2.0 Scope

2.1 Positive Material Identification (PMI) also called Alloy Verification (AV) is an exercise in alloy verification and semi-quantitative analysis.

3.0 Background

3.1 PMI testing should be carried out to supplement the mill certificate where this is available.

3.2 Tests are performed in accordance with the requirements of BS EN 10204 but do not replace the original 3.1 or 3.2 type certification.

4.0 Method

4.1 The test method used should be suitable for the analytical information required.

4.2 Special attention should be made to ensure that the technique used is suitable to identify the important elements in the material. Example: where a material mix-up is identified or where low wavelength elements are important.

4.3 Accuracy is +/- 1% of the given result.

5.0 Environment

5.1 Instruments are manufactured to operate on or off site.

5.2 Instruments are to be operated in dry conditions acceptable temperature range is 0°C to 35°C.

6.0 Health and Safety

6.1 It is the operator’s responsibility to ensure the correct health and safety legislation is adhered to. When working on site liaise with the customer representative for local directives.

6.2 Ensure that a risk assessment has been carried out and that the Ionising Radiations Regulations 1999 (IRR 99) regulations are met.
7.0 Instrument

7.1 NITON XL2 800 XRF ANALYZER SERIAL No 93882

8.0 Calibration

8.1 Primary calibration will be performed by the instrument manufacturer taking due care over power settings and inter-element effects for each program.

8.2 Adjustments to these programs should only be carried out by approved personnel.

9.0 Calibration Procedure

9.1 As a minimum the instrument shall be calibrated at the beginning of the test period and at the end of the test period and after an interval of 50 analyses.

9.2 Calibration shall be carried out using the certified reference standard.

9.3 Calibration of the instrument should be carried out to the manufacturer’s instructions using the certified reference standard supplied with the instrument.

9.4 Instruments will be serviced by the manufacturer and will be calibrated by an approved engineer on a yearly basis.

9.5 The calibration certificate will remain with the instrument at all times.

9.6 Certified reference standard will remain with the instrument at all times.

10.0 Test Procedure

10.1 The instrument is used for identifying the material by quantitative measurement of the alloying elements.

10.2 100% testing shall be performed on materials.

10.3 Areas of contamination of loss scale and paint shall be avoided.

10.4 Single or multi analysis may be taken in one or more locations.

11.0 Acceptance Criteria

11.1 For acceptance it must be demonstrated that the materials tested contain the amounts of alloying elements shown in the material specification.

12.0 Operator Qualification

12.1 The PMI will be carried out by operators who have completed a training course conducted by the instrument manufacturer and have been issued with a certificate of training.
13.0 Reporting

13.1 Reports of PMI test shall be submitted stating as the minimum

- Item Identity
- Date of Test
- Instrument model
- Analysis Results
- Job No
- Operators Approval and Certification

14.0 Marking

14.1 If required, after PMI has been successfully completed, each piece shall be marked with the letters PMI using indelible marker pen to show which items have been tested and are acceptable

14.2 Unacceptable items will be marked immediately with a red indelible marker pen with cross and shall be quarantined in the designated area

15.0 Standard References

15.1 ASME Code Section II Parts A & B