

Title: Calibration of Ultrasonic Thickness Meters

1 Scope

Work Instruction for the calibration of Network Rail approved ultrasonic thickness meters. To be used in the absence of a manufacturers calibration instruction.

2 Preparation

The calibration shall be carried out using the minimum of Category 'A' Master instruments.

Equipment required:

- Oscilloscope with a minimum 100MHz bandwidth
- Digital Multimeter
- Variable DC Power supply
- Calibration blocks covering the range of the thickness gage.

All equipment shall have the appropriate certificate of calibration traceable through United Kingdom Accreditation Service and shall be rechecked at intervals of no more than 1 year.

3 Method

3.1 Calibration shall be conducted in accordance with BS EN 15317:2007 by an approved Network Rail calibration body. Performance requirements are either contained in the manufacturer's specification or in BS EN 15317:2007.

3.2 Record serial numbers and check general condition and record results.

3.3 Check for low battery warning and display drift and record results.

3.4 Check operational voltage range and record results.

3.5 Check operational current range and record results.

3.6 Check pulse repetition frequency (PRF) and record results.

3.7 Check transmitter parameters and record results.

3.8 Check minimum/maximum measureable thickness and record results.

3.9 Check resolution and record results.

3.10 Check calibration storage settings and record results.

3.11 Check display and recall and record results.

3.12 Make final checks and record results.

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Appendix A. Thickness Meter Calibration Result Sheet

Thickness Meter Type:		Case Number:		Chassis Number:	
Date last checked:		Next check due:			
Master Equipment Used:					
Oscilloscope:		Digital Multimeter:			
Variable DC Power supply:		Calibration Blocks for Range:			

Parameter	Test Limits	OEM Spec	Reading	Pass	Fail	Comments
1. Visual Examination	Free from mechanical damage					
2. a. Low Battery Warning	± 5% min specified voltage See Manufacturers specifications					
b. Display Drift						
3. Operational Voltage Range	See Manufacturers specifications					
4. Operational Current Range	±10% of Manufacturers specification					
5. Pulse Repetition Frequency	±20% of Manufacturers specification					