ISO 16831:2012-04 (E)

Non-destructive testing - Ultrasonic testing - Characterization and verification of ultrasonic thickness measuring equipment

Contents

Page

Introduction vi

1 Scope 1

2 Normative references 1

3 Terms and definitions 1

4 General requirements for compliance 1

5 Manufacturer's technical specification for ultrasonic thickness measuring equipment 2
5.1 General 2
5.2 General attributes 2
5.3 Display 2
5.4 Transmitter 3
5.5 Receiver 3
5.6 Other information 3

6 Calibration blocks 3
6.1 General 3
6.2 Material 3
6.3 Shape and size 4

7 Performance requirements for ultrasonic thickness measuring equipment 5

8 Probes 6

9 Group 1 tests 7
9.1 General 7
9.2 Equipment required for Group 1 tests 7
9.3 Stability against temperature 7
9.4 Low battery warning 7
9.5 Battery operational time 8
9.6 Operational voltage range 8
9.7 Operational current range 8
9.8 Operational temperature range 9
9.9 Pulse repetition frequency, PRF 9
9.10 Transmitter pulse shape, rise-time and peak voltage 9
9.11 Receiver frequency range of operation 11
9.12 Minimum and maximum measurable thicknesses 11
9.13 Accuracy and resolution 11
9.14 Range of velocity setting (calibration) 11
9.15 Calibration mechanisms 11
9.16 Calibration setting storage 12
9.17 Data storage 12
9.18 Printing 12
9.19 Display and recall 13
9.20 Display response time 13

10 Group 2 tests 13
10.1 General 13

10.2 Equipment required for Group 2 tests 13
10.3 General characteristics 14
10.4 General mechanical state and external aspects 14

11 Group 3 tests 14
11.1 General 14
11.2 General mechanical state and external aspects 14
11.3 Calibration mechanisms 14

Foreword v
11.4 Calibration setting storage 14
11.5 Data storage 15

Bibliography 16