DIN EN ISO 13588:2019-07 (E)

Non-destructive testing of welds - Ultrasonic testing - Use of automated phased array technology (ISO 13588:20 19)

Contents

Page

European foreword ... 4

Foreword ... 5

1 Scope ... 6

2 Normative references ... 6

3 Terms and definitions ... 7

4 Testing levels ... 7

5 Informtion required prior to testing ... 9
5.1 Items to be defined prior to procedure development ... 9
5.2 Specific information required by the operator before testing ... 9
5.3 Written test procedure ... 10

6 Requirements for personnel and test equipment ... 10
6.1 Personnel qualifications ... 10
6.2 Test equipment ... 11
6.2.1 General ... 11
6.2.2 Ultrasonic instrument ... 11
6.2.3 Ultrasonic probes ... 11
6.2.4 Scanning mechanisms ... 11

7 Preparation for testing ... 11
7.1 Volume to be tested ... 11
7.2 Verification of the test setup ... 11
7.3 Scan increment setting ... 11
7.4 Geometry considerations ... 12
7.5 Preparation of scanning surfaces ... 12
7.6 Temperature ... 12
7.7 Couplant ... 12

8 Testing of base material ... 12

9 Range and sensitivity settings ... 13
9.1 Settings ... 13
9.1.1 General ... 13
9.1.2 Pulse-echo time window ... 13
9.1.3 Pulse-echo sensitivity settings ... 13
9.1.4 TOFD settings ... 13
9.2 Checking of the settings ... 13
9.3 Reference blocks ... 14
9.3.1 General ... 14
9.3.2 Material ... 14
9.3.3 Dimensions and shape ... 14
9.3.4 Reference reflectors ... 14

10 Equipment checks ... 15

11 Procedure qualification ... 15

12 Weld testing 15
13 Data storage 16
14 Interpretation and analysis of phased array data 16
14.1 General 16
14.2 Assessing the quality of the phased array data 16
14.3 Identification of relevant indications 16
14.4 Classification of relevant indications 16
14.5 Determination of location 17
14.6 Determination of length and height 17
14.6.1 General 17
14.6.2 Determination of length 17
14.6.3 Determination of height 17
14.7 Evaluation against acceptance criteria 18
15 Test report 18
Annex A (informative) Typical reference blocks and reference reflectors 20
Annex B (informative) Illustrations of possible signals to be used 25
Bibliography 29