DIN EN 10228-3:2016-10 (E)

Non-destructive testing of steel forgings - Part 3: Ultrasonic testing of ferritic or martensitic steel forgings

Contents

Page

European foreword 4

1 Scope 5

2 Normative references 5

3 Terms and definitions 5

4 Mandatory information 6

5 Test procedure 6
5.1 General 6
5.2 Form 6
5.3 Content 7

6 Personnel qualification 7

7 Equipment and accessories 7
7.1 Instrument 7
7.2 Probes 7
7.2.1 General 7
7.2.2 Contouring 8
7.2.3 Nominal frequency 8
7.2.4 Normal-beam probes 8
7.2.5 Angle-beam probes 8
7.2.6 Dual-element probes 8
7.3 Calibration blocks 8
7.4 Reference blocks 8
7.5 Couplant 8

8 Routine calibration and checking 9

9 Stage of manufacture 9

10 Surface condition 9
10.1 General 9
10.2 Surface finish related to quality class 9
10.3 As-forged surface condition 9

11 Test sensitivity 10
11.1 General 10
11.2 Normal-beam probes 10
11.3 Angle-beam probes 10
11.4 Repeat testing 10

12 Scanning 10
12.1 General 10
12.2 Complex forgings 11
12.3 Grid scanning coverage 11
12.4 100 % scanning coverage 11
12.5 Scanning speed 11

13 Classification 14
13.1 Classification of indications 14
13.2 Classification of discontinuities 16

14 Recording levels and acceptance criteria 18

15 Sizing 20

16 Test report 20

Annex A (informative) Maximum testable depth and corresponding beam path range for circumferential angle beam scans 22

Annex B (informative) Amplitude of indication in dB relative to % DAC 23