DIN EN 13480-8 Berichtigung 1:2016-10 (E)

Metallic industrial piping - Part 8: Additional requi rements for aluminium and aluminium alloy piping; German version EN 13480-8:2012, Corrigendum to DIN EN 13480-8:2014-12

Contents

Page

Foreword 5

1 Scope 7

2 Normative references 7

3 Terms, definitions, symbols and units 9

4 General requirements 9

5 Materials 9
5.1 General 9
5.2 Material grouping system 9
5.3 Elongation after fracture 10
5.4 Chemical composition 11
5.5 Lamellar tearing 11
5.6 Design temperature and properties 11
5.7 Prevention of brittle fracture 11
5.8 Specific requirements for fasteners made of aluminium and aluminium alloys 12
5.9 Lined piping 12
5.10 Clad products 12
5.11 Technical delivery conditions for welding consumables 12

6 Design 12
6.1 General 12
6.2 Time-independent nominal design stress 12
6.3 Straight pipes 13
6.4 Pipe bends and elbows 13
6.5 Mitre bends 13
6.6 Socket welds 14
6.7 Designing with transition joints 15
6.7.1 Design considerations 15
6.7.2 Location of transition joints 15
6.7.3 Requirements for transition joints 15

7 Fabrication and installation 15
7.1 General 15
7.2 Material grouping 16
7.3 Tolerances 16
7.3.1 Welded pipes and connection dimensions of pipe fittings 16
7.3.2 Welded piping construction 16
7.4 Cutting and bevelling 16
7.5 Bending and other forming 17
7.5.1 General 17
7.5.2 Definition of cold- and hot forming 17
7.5.3 Heat treatment after cold forming 17
7.5.4 Heat treatment after hot forming 18
7.6 Welding 19
7.6.1 Welding personnel 19

7.6.2 Welding processes ... 19
7.6.3 Weld joint preparation ... 19
7.6.4 Preheating ... 20
7.6.5 Backing rings and backing strips ... 21
7.6.6 Post-weld heat treatment (PWHT) ... 21

8 Inspection and testing ... 21
8.1 General ... 21
8.2 Formed pressure retaining parts ... 21
8.2.1 General ... 21
8.2.2 Testing of formed parts ... 22
8.2.3 Destructive testing of formed and heat treated parts ... 22
8.3 Welding ... 23
8.4 Visual and non-destructive testing of welds ... 23
8.4.1 Application of NDT ... 23
8.4.2 Circumferential, branch, socket and seal welds ... 23
8.4.3 Longitudinal welds and spiral welded tubes/pipes ... 24
8.5 VT and NDT Methods ... 24
8.6 Production test plates for welded pipes ... 25

9 Final assessment and documentation ... 26
9.1 General ... 26
9.2 Pneumatic pressure test ... 26
9.3 Documentation for components ... 27

Annex A (informative) Dimensional tolerances ... 29

Annex B (normative) Transition joints ... 31

Annex C (normative) Nominal design stress values ... 31

Annex Y (informative) History of EN 13480-8 ... 42

Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2014/68/EU aimed to be covered ... 43

Bibliography ... 44

Figures

Figure 6.5-1 — Mitre bend ... 14
Figure 7.6.3.1 — Socket welds ... 20
Figure A.1 — Dimensional details of spools ... 30

Tables

Table 5.2-1 — Grouping system based on CEN ISO/TR 15608:2005 and EN AW numbers according to EN 573-3:2009 10
Table 6.2-1 — Design stresses for aluminium and aluminium alloy material 12
Table 6.2-2 — Allowable design strength values for 6 000 series aluminium alloys in the welded condition (see 5.6) 13
Table 6.5-1 — Special symbols for subclause 6.5 14
Table 7.3-1 — Tolerances for welded pipes 16
Table 7.5-1 — Heat treatment of flat products after cold forming 18
Table 7.5-3 — Heat treatment after hot forming 19
Table 8.2-1 — Destructive testing of formed and heat treated parts 23
Table 8.4-1 — Extent of testing for circumferential, branch, socket and seal welds 24
Table 8.4-2 — Extent of VT and NDT for longitudinal welds and spiral welded tubes/pipes 24
Table 8.5-1 — Techniques, methods, acceptance criteria 25
Table 8.6-1 — Production test plates for welded pipes according to 8.6 a) 26
Table 8.6-2 — Required tests and acceptance criteria for production test plates 26
Table 9.2-1 — Extent of NDT in case of pneumatic pressure test according to 9.2b) 27
Table A.1 — Tolerances 29
Table B.1 — Testing of transition joints (T.J.) 34
Table C.1 — Extruded rod/bar, tube and profile 36
Table C.2 — Cold drawn rod/bar and tube 37
Table C.3 — Forgings 38
Table C.4 — Plate 39
Table ZA.1 — Correspondence between this European Standard and Directive 2014/68/EU on Pressure Equipment 43