

DIN EN 12952-5:2012-01 (E)

Water-tube boilers and auxiliary installations - Part 5: Workmanship and construction of pressure parts of the boiler

Contents	Page
Foreword	4
1 Scope	6
2 Normative references	6
3 Terms and definitions	7
4 Symbols and abbreviations	8
5 General	8
6 Pressure part	8
6.1 Drums, headers and similar pressure parts	8
6.2 Material identification	9
6.3 Material marking	9
6.4 Marking during manufacture	9
7 Cutting, forming and fabrication tolerances	10
7.1 Cutting material	10
7.2 Forming of drums, headers and ends	11
7.3 Forming of tube bends	11
7.4 Drum and header fabrication tolerances	19
8 Welding	21
8.1 Design and other requirements specific to welding	21
8.2 Welding consumables	24
8.3 Welding approvals	24
8.4 General production requirements for welding	25
8.5 Repairs to welds	26
8.6 Pre-heating	27
8.7 Post-weld heat treatment	27
8.8 Welding subsequent to final post-weld heat treatment	27
8.9 Welded joints, connections and production test plates	28
8.10 Attachment of non-pressure parts to drums and headers by welding	31
8.11 Welding of tubes	32
8.12 Flash butt welding of tubes	34
8.13 Welded tube water walls	34
8.14 Arc stud welding	34
9 Mechanical connections	35
9.1 General	35
9.2 Access openings	35
9.3 Branches and nozzles mechanically connected to the main pressure parts	36
9.4 Tube connections	37
10 Thermal treatment	39
10.1 General	39
10.2 Heating cycles and heat treatment(s) associated with plate forming operations	39
10.3 Pre-heating for welding and thermal cutting	41
10.4 Post weld heat treatment	42

10.5	Heat treatment of production test plates	51
Annex A (normative)	Tube bending procedure tests	52
Annex B (informative)	Welded pressure connections and non-pressure containing attachments	61
Annex C (normative)	Manufacture of welded tubewalls	62
Annex D (normative)	Coiled boilers and coiled superheaters	69
Annex E (normative)	Special requirements for composite tubes	70
Annex F (informative)	Guidelines for the determination of the competency of boiler manufacturers	72
Annex G (informative)	Significant technical changes between this European Standard and the previous edition	85
Annex ZA (informative)	Relationship between this European Standard and the Essential Requirements of EU Directive 97/23/EC	87
Bibliography		88