

DIN EN 13445-2:2010-12 (E)

Unfired pressure vessels - Part 2: Materials

Contents		Page
Foreword		3
1	Scope	4
2	Normative references	4
3	Terms, definitions, symbols and units	6
3.1	Terms and definitions	6
3.2	Symbols and units	7
4	Requirements for materials to be used for pressure-bearing parts	9
4.1	General	9
4.2	Special provisions	11
4.2.1	Special properties	11
4.2.2	Design temperature above 20 °C	11
4.2.3	Prevention of brittle fracture	12
4.2.4	Design properties in the creep range	12
4.2.5	Specific requirements for steels for fasteners	12
4.3	Technical delivery conditions	13
4.3.1	European Standards	13
4.3.2	European Approval for Materials	13
4.3.3	Particular material appraisals	13
4.3.4	Clad products	13
4.3.5	Welding consumables	13
4.4	Marking	13
5	Requirements for materials to be used for non-pressure parts	14
Annex A (normative) Grouping system for steels for pressure equipment		15
Annex B (normative) Requirements for prevention of brittle fracture at low temperatures		17
Annex C (informative) Procedure for determination of the weld creep strength reduction factor (WCSRF)		50
Annex D (informative) Technical delivery conditions for clad products for pressure purposes		51
Annex E (informative) European steels for pressure purposes		55
Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of the EU Pressure Equipment Directive 97/23/EC		80
Bibliography		81