

ISO 13703:2000-12 (E)

Petroleum and natural gas industries - Design and installation of piping systems on offshore production platforms

Contents	Page
Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms, definitions, symbols and abbreviated terms	2
3.1 Terms and definitions	2
3.2 Symbols and abbreviated terms	4
4 General considerations	6
4.1 Materials	6
4.2 Code of pressure piping	7
4.3 Demarcation between systems with different pressure ratings	7
4.4 Corrosion considerations	9
5 Piping design	10
5.1 Pipe material grades	10
5.2 Sizing criteria -- General	12
5.3 Sizing methods for liquid lines	12
5.4 Sizing criteria for single-phase gas lines	19
5.5 Sizing criteria for gas/liquid two-phase lines	23
5.6 Pipe wall thicknesses	26
5.7 Joint connections	30
5.8 Expansion and flexibility	31
5.9 Start-up provisions	32
6 Selection of valves	32
6.1 General	32
6.2 Types of valves	33
6.3 Fire resistance of valves	35
6.4 Valve sizing	35
6.5 Valve pressure and temperature ratings	36
6.6 Valve materials	37
7 Fittings and flanges	37
7.1 General	37
7.2 Welded fittings	38
7.3 Screwed fittings	38
7.4 Branch connections	38
7.5 Flanges	39
7.6 Proprietary connectors	41
7.7 Special requirements for sulfide stress-cracking service	41
7.8 Erosion prevention	41
8 Design considerations for particular piping systems	41
8.1 General	41
8.2 Wellhead accessory items	41
8.3 Flowline and flowline accessories	42

8.4	Production manifolds	45
8.5	Process vessel piping	45
8.6	Utility systems	47
8.7	Heating fluid and glycol systems	48
8.8	Pressure relief and disposal systems	48
8.9	Drain systems	50
8.10	Bridge piping between platforms	50
8.11	Risers	50
8.12	Sampling valves	51
9	Considerations of related items	51
9.1	General	51
9.2	Layout	51
9.3	Elevations	51
9.4	Piping supports	51
9.5	Other corrosion considerations	51
9.6	Thermal insulation	54
9.7	Noise	56
9.8	Pipe, valves and fittings tables	56
9.9	Inspection, maintenance, repair and modification	56
10	Installation and quality control	56
10.1	General	56
10.2	Welding	56
10.3	Pressure testing	57
10.4	Test record	58
	Annex A (informative) Example problems	59
	Annex B (informative) Examples of pipe, valves and fittings tables	71
	Annex C (informative) Acceptable butt-welded joint design for unequal wall thicknesses	74
	Bibliography	76