

ISO 13703-3:2023-09 (E)

Oil and gas industries including lower carbon energy - Piping systems on offshore production platforms and onshore plants - Part 3: Fabrication

Contents		Page
	Foreword	v
	Introduction	vi
1	Scope	1
2	Normative references	1
3	Terms and definitions	3
4	Abbreviated terms	7
	4.1 Symbols.....	7
	4.2 Abbreviated terms.....	7
5	Health, safety and quality requirements	9
	5.1 Health and safety requirements.....	9
	5.2 Quality requirements.....	10
6	Welding requirements	11
	6.1 General requirements.....	11
	6.2 Welding processes.....	12
	6.3 Preparation for welding.....	12
	6.4 Welder and welding operator performance qualification.....	15
7	Welding consumables	15
	7.1 General requirements.....	15
	7.2 Additional requirements for carbon steel.....	17
	7.3 Additional requirements for dissimilar welding.....	17
	7.4 Additional requirements for SS 300-series.....	17
	7.5 Additional requirements for SS type 22Cr duplex and SS type 25Cr duplex.....	17
	7.6 Additional requirements for high alloy stainless steels.....	17
	7.7 Shielding, backing and secondary trailing gases.....	18
8	Welding procedure qualification	18
	8.1 General requirements.....	18
	8.2 Additional requirements for carbon steels.....	19
	8.3 Additional requirements for SS type 22Cr duplex and SS type 25Cr duplex.....	19
	8.4 Additional requirements for high alloyed austenitic stainless steels.....	20
	8.5 Additional requirements for CP titanium.....	20
	8.6 Additional requirements for materials in sour service.....	20
	8.7 Welding procedure qualification essential variable.....	21
9	Preheat and post weld heat treatment'	23
	9.1 Preheating.....	23
	9.2 Post weld heat treatment.....	24
10	Bending of pipe	26
	10.1 General requirements.....	26
	10.2 Heat treatment of bends.....	29
	10.3 Examination of bends.....	30
11	Installation	31
	11.1 General requirements.....	31
	11.2 Threaded connections.....	31
	11.3 Bolted connections.....	31

12	Inspection, examination and testing	32
12.1	General requirements	32
12.2	Visual examination	35
12.3	Magnetic particle examination	36
12.4	Liquid penetrant examination.....	36
12.5	Radiographic examination.....	36
12.6	Ultrasonic examination	37
12.7	Positive materials identification	38
12.8	Production testing.....	39
12.9	Weld metal ferrite testing	40
12.10	Repairs and replacement.....	41
13	Cleaning, leak testing and preservation	42
13.1	General requirements	42
13.2	Flushing and cleaning.....	43
13.3	Leak testing.....	44
13.4	Tightness testing.....	45
13.5	Preservation	46
	Annex A (informative) Reference images for oxidation of weldments	47
	Annex B (normative) Requirements for cold bending of pipes	51
	Annex C (normative) Requirements for hot induction bending of pipes	54
	Annex D (informative) Guidance to European Pressure Equipment Directive	56
	Bibliography	57