

DIN EN ISO 10423:2010-05 (E)

Petroleum and natural gas industries - Drilling and production equipment -
Wellhead and christmas tree equipment (ISO_10423:2009); English version
EN_ISO_10423:2009, only on CD-ROM

Contents

Page

Foreword	2
Introduction.....	6
1 Scope.....	7
1.1 Purpose	7
1.2 Applicability	7
1.3 Service conditions.....	8
1.4 Product specification levels.....	9
2 Normative references.....	12
3 Terms, definitions and abbreviated terms.....	14
3.1 Terms and definitions	14
3.2 Abbreviated terms	27
4 Design and performance — General requirements	27
4.1 Performance requirements — General.....	27
4.2 Service conditions.....	28
4.3 Design methods.....	31
4.4 Miscellaneous design information	35
4.5 Design documentation.....	36
4.6 Design review	36
4.7 Design validation.....	36
5 Materials — General requirements	36
5.1 General	36
5.2 Written specifications	37
5.3 Mandrel tubing hangers and casing hangers.....	37
5.4 Bodies, bonnets and end and outlet connections	41
5.5 Ring gaskets	48
5.6 Test coupons	49
5.7 Qualification test coupons	54
5.8 Heat-treating equipment qualification.....	56
5.9 Material qualification.....	56
5.10 Pressure-boundary penetrations.....	56
5.11 Wear bushings.....	57
5.12 Clamp hub-end connectors	57
6 Welding — General requirements.....	57
6.1 General	57
6.2 Non-pressure-containing weldments other than weld overlays — PSL 1 to PSL 3	57
6.3 Pressure-containing fabrication weldments for bodies, bonnets, end and outlet connections, bullplugs, valve-removal plugs and back-pressure valves	57
6.4 Pressure-containing repair weldments for bodies, bonnets, end and outlet connections, bullplugs, valve-removal plugs and back-pressure valves.....	63
6.5 Weld overlay for corrosion resistance and/or hard facing and other material surface property controls.....	65
7 Quality control	69
7.1 General	69
7.2 Measuring and testing equipment.....	69
7.3 Quality-control personnel qualifications	69
7.4 Quality control requirements	70
7.5 Quality control records requirements	110
8 Equipment marking	115

8.1	Marking requirements	115
8.2	Wellhead equipment	117
8.3	Connectors and fittings	117
8.4	Casing and tubing hangers	117
8.5	Valves and chokes.....	118
8.6	Loose connectors [flanged, threaded, other end connectors (OEC) and welded]	119
8.7	Other equipment	119
8.8	Studs and nuts	120
8.9	Christmas trees.....	120
8.10	Valve-removal plugs.....	121
8.11	Bullplugs.....	121
8.12	Back-pressure valves.....	121
9	Storing and shipping.....	121
9.1	Draining after testing.....	121
9.2	Rust prevention.....	121
9.3	Sealing-surface protection	121
9.4	Assembly and maintenance instructions.....	121
9.5	Ring gaskets.....	121
9.6	Age control of non-metallic materials	121
10	Equipment-specific requirements.....	122
10.1	Flanged end and outlet connections	122
10.2	Threaded end and outlet connections.....	158
10.3	Studs and nuts.....	164
10.4	Ring gaskets.....	166
10.5	Valves.....	174
10.6	Casing and tubing heads	187
10.7	Casing and tubing hangers	192
10.8	Tubing-head adapters	198
10.9	Chokes	200
10.10	Tees and crosses.....	203
10.11	Test and gauge connections for 103,5 MPa and 138,0 MPa (15 000 psi and 20 000 psi) equipment.....	208
10.12	Fluid sampling devices	210
10.13	Christmas trees.....	211
10.14	Cross-over connectors	211
10.15	Adapter and spacer spools.....	216
10.16	Actuators	217
10.17	Packing mechanisms for lock screws, alignment pins and retainer screws	222
10.18	Other end connectors	223
10.19	Top connectors	224
10.20	Surface and underwater safety valves and actuators.....	225
10.21	Bullplugs.....	231
10.22	Valve-removal plugs.....	234
10.23	Other pressure-boundary penetrations.....	235
10.24	Back-pressure valves.....	235
11	Repair and remanufacture	236
Annex A (informative)	Purchasing guidelines.....	237
Annex B (informative)	USC unit tables and data for this International Standard.....	256
Annex C (informative)	Method of calculating stud bolt lengths for type 6B and 6BX flanges.....	314
Annex D (informative)	Recommended flange bolt torque.....	316
Annex E (informative)	Recommended weld preparation design dimensions.....	320
Annex F (informative)	Design validation procedures	324
Annex G (informative)	Design and rating of equipment for use at elevated temperatures	359

Annex H (normative) Design and manufacture of surface wellhead running, retrieving and testing tools, clean-out tools and wear bushings.....	363
Annex I (normative) Design validation procedures for surface safety valves and underwater safety valves	367
Annex J (normative) Repair and remanufacture requirements.....	375
Annex K (informative) Recommended specifications for top connectors for christmas trees	389
Annex L (normative) Specifications for valve-removal preparations, valve-removal plugs and handling tools	403
Annex M (informative) Qualification of heat-treating equipment.....	423
Annex N (informative) List of tables and list of figures	426
Bibliography.....	436