

E DIN EN ISO 13680:2026-07 (E)

Erscheinungsdatum: 2026-05-29

Oil and gas industries including lower carbon energy - Corrosion-resistant alloy seamless products for use as casing, tubing, coupling stock and accessory material - Technical delivery conditions (ISO/DIS 13680:2026); English version prEN ISO 13680:2026

Contents		Page
Foreword.....		vii
1	Scope.....	1
2	Normative references.....	1
3	Terms, definitions, abbreviated terms and symbols.....	4
	3.1 Terms and definitions.....	4
	3.2 Abbreviated terms.....	7
	3.3 Symbols.....	8
4	General.....	8
	4.1 Dual normative references.....	8
	4.2 Units of measurement.....	8
5	Information supplied by the purchaser.....	9
6	Manufacturing process.....	11
	6.1 Melting practices.....	11
	6.2 Product manufacturing process.....	11
	6.3 Pipe end sizing.....	11
	6.4 Straightening.....	12
	6.5 Processes requiring validation.....	12
	6.6 Traceability.....	12
	6.7 Manufacturing procedure qualification test.....	13
	6.8 Process for update of alloys and/or grades.....	13
7	Material requirements.....	13
	7.1 Chemical composition.....	13
	7.2 Tensile properties.....	13
	7.3 Hardness properties.....	13
	7.4 Charpy V-notch test properties — General requirements.....	14
	7.4.1 Test temperature.....	14
	7.4.2 Evaluation of test results.....	14
	7.4.3 Critical thickness.....	14
	7.4.4 Specimen size, orientation and hierarchy.....	14
	7.4.5 Alternative size impact test specimens.....	15
	7.4.6 Sub-size test specimens.....	15
	7.5 Charpy V-notch — Absorbed energy requirements for coupling stock and accessory material — Group 1, cold-hardened group 2 and group 3.....	15
	7.5.1 General.....	15
	7.5.2 Requirements for group 1, cold-hardened group 2 and group 3.....	15
	7.6 Charpy V-notch — Absorbed energy requirements for pipe — Group 1, cold-hardened group 2 and group 3.....	16
	7.7 Charpy V-notch — Absorbed energy requirements at low temperature — Group 2.....	17
	7.8 Flattening requirements for groups 2 and 3.....	17
	7.9 Corrosion properties.....	17
	7.9.1 General.....	17
	7.9.2 Pitting corrosion properties for group 2.....	18
	7.10 Microstructure properties.....	18
	7.10.1 Group 1.....	18

	7.10.2	Group 2	18
	7.10.3	Group 3	18
7.11		Surface condition	18
7.12		Defects	19
	7.12.1	Pipe	19
	7.12.2	Coupling stock and accessory material	19
	7.12.3	Process control plan	19
8		Dimensions, masses and tolerances	19
8.1		Outside diameter, wall thickness and mass	19
8.2		Length	20
8.3		Tolerances	20
	8.3.1	Tolerance on outside diameter, wall thickness and mass	20
	8.3.2	Straightness	20
	8.3.3	Drift requirements	20
8.4		Product ends	20
9		Inspection and testing	21
9.1		Test equipment	21
9.2		Type and frequency of tests	21
9.3		Testing of chemical composition	21
	9.3.1	Chemical analysis	21
	9.3.2	Test method	21
	9.3.3	Recheck of Product Analyses	22
	9.3.4	Chromium depletion test — Groups 2 and 3	22
9.4		Testing of mechanical characteristics	22
	9.4.1	Test lot	22
	9.4.2	Selection and preparation of samples and test pieces	23
9.5		Tensile test	23
	9.5.1	Orientation and size of test pieces	23
	9.5.2	Test method	23
	9.5.3	Invalidation of test	23
	9.5.4	Retest	23
9.6		Hardness test	23
	9.6.1	Test pieces	23
	9.6.2	Test method	24
	9.6.3	Invalidation of tests	25
	9.6.4	Periodic checks of hardness-testing machines	25
	9.6.5	Verification of hardness-testing machines and indenters	25
	9.6.6	Retests	26
9.7		Impact test	26
	9.7.1	Test pieces	26
	9.7.2	Frequency of testing	27
	9.7.3	Impact test method	27
	9.7.4	Impact test retest	28
	9.7.5	Invalidation of tests	28
9.8		Flattening test for groups 2 and 3	28
	9.8.1	Test pieces	28
	9.8.2	Frequency of testing	28
	9.8.3	Flattening test method	28
	9.8.4	Flattening test retest	28
	9.8.5	Invalidation of tests	29
9.9		Pitting corrosion test for group 2	29
9.10		Microstructural examination	29
	9.10.1	Test pieces	29
	9.10.2	Test method	30
	9.10.3	Retest	30
9.11		Dimensional testing	30
	9.11.1	General	30
	9.11.2	Outside diameter	31

9.11.3	Wall thickness at end of products.....	31
9.11.4	Wall thickness of product body.....	31
9.12	Drift test.....	32
9.12.1	Non-upset and external upset pipe.....	32
9.12.2	Internal upset pipe.....	32
9.12.3	Drift mandrel coating.....	32
9.13	Length.....	32
9.14	Straightness.....	32
9.15	Mass determination.....	33
9.16	Visual inspection.....	33
9.16.1	General.....	33
9.16.2	Pipe body, coupling stock and accessory material.....	34
9.16.3	Pipe ends.....	34
9.16.4	Disposition.....	34
9.17	Non-destructive examination.....	34
9.17.1	General.....	34
9.17.2	NDE personnel.....	35
9.17.3	Products.....	35
9.17.4	Pup joints.....	35
9.17.5	Untested ends.....	35
9.17.6	Upset ends.....	35
9.17.7	Reference standards.....	36
9.17.8	NDE system capability records.....	36
9.17.9	All product group 1.....	37
9.17.10	Full-body NDE of product — Groups 2 and 3.....	37
9.17.11	Pipe, coupling stock and accessory material requiring further evaluation.....	37
9.17.12	Evaluation of indications (prove-up).....	37
9.17.13	Disposition of pipe containing defects.....	38
9.17.14	Disposition of coupling stock and accessory material containing defects.....	39
9.18	Positive material identification.....	39
10	Surface treatment.....	40
10.1	Group 1.....	40
10.2	Groups 2 and 3.....	40
11	Marking.....	41
11.1	General.....	41
11.2	Colour-code identification.....	41
11.3	Marking content and sequence.....	41
12	Surface protection — Group 1.....	42
13	Documents.....	42
13.1	Electronic media.....	42
13.2	Retention of records.....	42
13.3	Test certificates.....	43
14	Handling, packaging and storage.....	44
14.1	General.....	44
14.2	Handling.....	44
14.3	Packaging.....	44
14.3.1	General.....	44
14.3.2	Identification.....	44
14.4	Storage.....	44
15	Minimum Facility Requirements for Manufacturers.....	45
15.1	Pipe mill.....	45
15.2	Bar mill.....	45
15.3	Processor.....	45
15.4	Coupling or Pup-joint Manufacturer.....	45
15.5	Subcontractor.....	45

Annex A (normative) Tables in SI units	46
Annex B (normative) Figures in SI (USC) units	70
Annex C (normative) Tables in USC units	75
Annex D (normative) Purchaser inspection	98
Annex E (normative) Cleanliness requirements	99
Annex F (normative) Bar product	101
Annex G (normative) Product specification level 2 (PSL-2)	117
Annex H (normative) Standardized manufacturing procedure qualification test	119
Annex I (informative) Photographic examples of microstructures, groups 1, 2 and 3	124
Annex J (normative) Provisions for Threading and Applying Couplings	130
Annex K (informative) Procedures Used to Convert from SI Units to USC Units	133
Bibliography	137