



SLOVENSKI STANDARD SIST EN ISO 3183:2013

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Nadomešča:

SIST EN 10208-1:2009

SIST EN 10208-2:2009

Industrija nafte in zemeljskega plina - Jeklene cevi za cevovodni transportni sistem (ISO 3183:2012)

Petroleum and natural gas industries - Steel pipe for pipeline transportation systems (ISO 3183:2012)

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Erdöl- und Erdgasindustrie - Stahlrohre für Rohrleitungstransportsysteme (ISO 3183:2012)

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Industries du pétrole et du gaz naturel - Tubes en acier pour les systèmes de transport par conduites (ISO 3183:2012)

Ta slovenski standard je istoveten z: EN ISO 3183:2012

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75.200	Oprema za skladiščenje nafte, naftnih proizvodov in zemeljskega plina	Petroleum products and natural gas handling equipment
77.140.75	Jeklene cevi in cevni profili za posebne namene	Steel pipes and tubes for specific use

SIST EN ISO 3183:2013

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NORME EUROPÉENNE
EUROPÄISCHE NORM

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**Petroleum and natural gas industries - Steel pipe for pipeline
transportation systems (ISO 3183:2012)**

Industries du pétrole et du gaz naturel - Tubes en acier
pour les systèmes de transport par conduites (ISO
3183:2012)

Erdöl- und Erdgasindustrie - Stahlrohre für
Rohrleitungstransportsysteme (ISO 3183:2012)

This European Standard was approved by CEN on 22 September 2012.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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Contents

Page

Foreword.....3

**iTeh STANDARD PREVIEW
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SIST EN ISO 3183:2013

<https://standards.iteh.ai/catalog/standards/sist/4b7f34a2-52cd-4134-988f-a2b3c556e0f9/sist-en-iso-3183-2013>

Foreword

This document (EN ISO 3183:2012) has been prepared by Technical Committee ISO/TC 67 "Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries" in collaboration with Technical Committee ECISS/TC 110 "Steel tubes, and iron and steel fittings" the secretariat of which is held by UNI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 2013, and conflicting national standards shall be withdrawn at the latest by November 2013.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 10208-1:2009, EN 10208-2:2009.

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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Endorsement notice

The text of ISO 3183:2012 has been approved by CEN as a EN ISO 3183:2012 without any modification.

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INTERNATIONAL STANDARD

**ISO
3183**

Third edition
2012-11-01

Petroleum and natural gas industries — Steel pipe for pipeline transportation systems

*Industries du pétrole et du gaz naturel — Tubes en acier pour les
systèmes de transport par conduites*

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Contents

Page

Foreword	v
Introduction	vi
1 Scope	1
2 Conformance	1
2.1 Units of measurement	1
2.2 Rounding	1
2.3 Compliance to this International Standard	1
3 Normative references	2
4 Terms and definitions	5
5 Symbols and abbreviated terms	11
5.1 Symbols	11
5.2 Abbreviated terms	12
6 Pipe grade, steel grade and delivery condition	13
6.1 Pipe grade and steel grade	13
6.2 Delivery condition	14
7 Information to be supplied by the purchaser	15
7.1 General information	15
7.2 Additional information	16
8 Manufacturing	19
8.1 Process of manufacture	19
8.2 Processes requiring validation	21
8.3 Starting material	21
8.4 Tack welds	22
8.5 Weld seams in COW pipe	22
8.6 Weld seams in SAW pipe	22
8.7 Weld seams in double-seam pipe	23
8.8 Treatment of weld seams in EW and LW pipes	23
8.9 Cold sizing and cold expansion	23
8.10 Coil/plate end welds	23
8.11 Jointers	24
8.12 Heat treatment	24
8.13 Traceability	24
9 Acceptance criteria	24
9.1 General	24
9.2 Chemical composition	24
9.3 Tensile properties	29
9.4 Hydrostatic test	33
9.5 Bend test	33
9.6 Flattening test	33
9.7 Guided-bend test	33
9.8 CVN impact test for PSL 2 pipe	34
9.9 DWT test for PSL 2 welded pipe	35
9.10 Surface conditions, imperfections and defects	35
9.11 Dimensions, mass and tolerances	37
9.12 Finish of pipe ends	42
9.13 Tolerances for the weld seam	44
9.14 Tolerances for mass	47
9.15 Weldability of PSL 2 pipe	47
10 Inspection	48
10.1 Types of inspection and inspection documents	48
10.2 Specific inspection	49

ISO 3183:2012(E)

11	Marking	77
11.1	General	77
11.2	Pipe markings	77
11.3	Coupling markings	79
11.4	Marking of pipe to multiple grades	80
11.5	Thread identification and certification	80
11.6	Pipe processor markings	80
12	Coatings and thread protectors	81
12.1	Coatings and linings	81
12.2	Thread protectors	81
13	Retention of records	81
14	Pipe loading	82
Annex A	(normative) Specification for welded jointers	83
Annex B	(normative) Manufacturing procedure qualification for PSL 2 pipe	84
Annex C	(normative) Treatment of surface imperfections and defects	88
Annex D	(normative) Repair welding procedure	90
Annex E	(normative) Non-destructive inspection for other than sour service or offshore service	95
Annex F	(normative) Requirements for couplings (PSL 1 only)	106
Annex G	(normative) PSL 2 pipe with resistance to ductile fracture propagation	109
Annex H	(normative) PSL 2 pipe ordered for sour service	115
Annex I	(normative) Pipe ordered as “Through the Flowline” (TFL) pipe	126
Annex J	(normative) PSL 2 pipe ordered for offshore service	128
Annex K	(normative) Non-destructive inspection for pipe ordered for sour service and/or offshore service	144
Annex L	(informative) Steel designations	149
Annex M	(normative) PSL 2 pipe ordered for European onshore natural gas transmission pipelines ..	152
Annex N	(informative)	169
Annex O	(informative)	170
Annex P	(informative) Equations for threaded and coupled pipe and background equations for guided bend and CVN test specimens	171
Bibliography	181

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 3183 was prepared by Technical Committee ISO/TC 67, *Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries*, Subcommittee SC 2, *Pipeline transportation systems*.

Working Group 16 of ISO/TC 67/SC 2 meets jointly with the Line Pipe Working Group (currently WG 4210) of the American Petroleum Institute (API) to ensure the harmonization of ISO 3183 with API Specification 5L.

This third edition of ISO 3183 cancels and replaces the second edition (ISO 3183:2007), on which it is based but with revisions to incorporate updating, clarification and additional technical requirements.

The second edition of ISO 3183 was harmonized to a great extent with the 44th edition of API 5L, published on 1 October 2007, and the revisions produced by the joint ISO and API Working Groups are intended to extend or complete harmonization with the new 45th edition of API 5L.

It is the intent of ISO/TC 67 that the second and third editions of ISO 3183 shall both be applicable, at the option of the purchaser (as defined in 4.49), for a period of six months from the first day of the calendar quarter immediately following the date of publication of this third edition, after which period, the second edition (ISO 3183:2007) will no longer be applicable.

ISO 3183:2012(E)

Introduction

This International Standard is the result of harmonizing the requirements of the following standards:

- API Spec 5L; 44th edition published 1 October 2007;
- ISO 3183:2007; second edition published 15 March 2007.

In the preparation of this third edition of ISO 3183, the technical committee has maintained the concept of two basic levels of standard technical requirements for line pipe expressed as two product specification levels (PSL 1 and PSL 2). Level PSL 1 provides a standard quality level for line pipe. Level PSL 2 has additional mandatory requirements for chemical composition, notch toughness and strength properties and additional non-destructive testing (NDT). Requirements that apply only to PSL 1 or only to PSL 2 are so designated. Requirements that are not designated to a specific PSL designation apply to both PSL 1 and PSL 2 pipe.

The technical committee also recognized that the petroleum and natural gas industry often specifies additional requirements for particular applications. In order to accommodate such needs, optional additional requirements for special applications are available, as follows:

- PSL 2 pipe ordered with a qualified manufacturing procedure (Annex B), the requirements of which have been enhanced to include verification detail of critical processes in the production of feedstock material, line pipe manufacture and product testing and inspection;
- PSL 2 pipe ordered with resistance to ductile fracture propagation in gas pipelines (Annex G);
- PSL 2 pipe ordered for sour service (Annex H);
- pipe ordered as “Through the Flowline” (TFL) pipe (Annex I);
- PSL 2 pipe ordered for offshore service (Annex J);

The following two new annexes are added to the third edition of this International Standard.

- PSL 2 pipe ordered for European onshore natural gas transmission pipelines (Annex M).
- Equations for threaded and coupled pipe and background equations for guided bend and CVN test (Annex P).

The requirements of the annex(es) apply only when specified on the purchase order.

When pipe is ordered for dual or multiple applications, the requirements of more than one annex for special applications can be invoked. In such instances, if a technical conflict arises due to applying the requirements of more than one annex for special applications, the most stringent requirement applicable to the intended service applies.

This International Standard does not provide guidance on when it is necessary to specify the above supplementary requirements. Instead, it is the responsibility of the purchaser to specify, based upon the intended use and design requirements, which, if any, of the supplementary requirements apply for a particular purchase order.

This third edition of ISO 3183 is the result of a continuing process of harmonizing documents of different heritage. It has been necessary to give consideration to traditional symbols (denoting mechanical or physical properties or their values, dimensions or test parameters) and the format of equations that have been widely used and which (in their traditional format) maintain strong links with other widely used standards and specifications, and with the original scientific work that led to their derivation. Accordingly, although in some instances changes to established symbols and equations have been made to optimize alignment with the ISO/IEC Directives, Part 2, in other instances, some symbols and equations, most specifically those in 9.2, Table F.1 and Annex P, have been retained in their traditional form to avoid causing confusion in this post-harmonization stage. Where changes have been made, care has been taken to ensure that the new symbol replacing the traditional one has been fully and clearly defined.

Petroleum and natural gas industries — Steel pipe for pipeline transportation systems

1 Scope

This International Standard specifies requirements for the manufacture of two product specification levels (PSL 1 and PSL 2) of seamless and welded steel pipes for use in pipeline transportation systems in the petroleum and natural gas industries.

This International Standard is not applicable to cast pipe.

2 Conformance

2.1 Units of measurement

In this International Standard, data are expressed in both International System (SI) units and United States Customary (USC) units. For a specific order item, only one system of units shall be used, without combining data expressed in the other system. Data values expressed in SI and USC units shall not be combined on the same inspection document or in the same required pipe marking sequence.

Where product is tested and verified against requirements using one measurement system (USC or SI), and an inspection document is issued, with data reported in the alternate measurement system units, a statement shall appear on the inspection document indicating that the data presented was converted from the measurement system used for the original inspection.

The purchaser shall specify whether data, drawings, and maintenance dimensions of pipes shall be in the International System (SI) or US Customary (USC) system of measurements. Use of an SI data sheet indicates that the SI measurements shall be used. Use of a USC data sheet indicates that the USC system of measurements shall be used.

For data expressed in SI units, a comma is used as the decimal separator and a space is used as the thousands separator. For data expressed in USC units, a dot (on the line) is used as the decimal separator and a space is used as the thousands separator.

2.2 Rounding

Unless otherwise stated in this International Standard, to determine conformance with the specified requirements, observed or calculated values shall be rounded to the nearest unit in the last right-hand place of figures used in expressing the limiting value, in accordance with ISO 80000-1:2009, Annex B, Rule A.

NOTE For the purposes of this provision, the rounding method of ASTM E29-08^[1] is equivalent to ISO 80000-1:2009, Annex B, Rule A.

2.3 Compliance to this International Standard

A documented quality system shall be applied to assist compliance with the requirements of this International Standard.

NOTE Documentation of a quality system does not require certification by a third party certification body. Only the creation or adoption of a written quality system is necessary to meet the requirement of this International Standard. ISO defers to the expertise of responsible quality management personnel to create or adopt the system which best reflects the need of each company. There are many existing quality management systems to which personnel can refer for guidance in the development of an appropriate quality system, including ISO/TS 29001^[2] and API Spec Q1^[3], which contain provisions specific to the oil and gas industry, or ISO 9001^[4], which contains general requirements for quality management systems that are auditable. This list is not exhaustive and is provided for information only.

ISO 3183:2012(E)

A contract may specify that the manufacturer shall be responsible for complying with all of the applicable requirements of this International Standard. It shall be permissible for the purchaser to make any investigation necessary in order to be assured of compliance by the manufacturer and to reject any material that does not comply.

3 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 148-1, *Metallic materials — Charpy pendulum impact test — Part 1: Test method*

ISO 404, *Steel and steel products — General technical delivery requirements*

ISO 2566-1, *Steel — Conversion of elongation values — Part 1: Carbon and low alloy steels*

ISO 4885, *Ferrous products — Heat treatments — Vocabulary*

ISO 5173, *Destructive tests on welds in metallic materials — Bend tests*

ISO 6506 (all parts), *Metallic materials — Brinell hardness test*

ISO 6507 (all parts), *Metallic materials — Vickers hardness test*

ISO 6508 (all parts), *Metallic materials — Rockwell hardness test*

ISO 6892-1, *Metallic materials — Tensile testing — Part 1: Method of test at room temperature*

ISO 6929, *Steel products — Vocabulary* (standards.iteh.ai)

ISO 7438, *Metallic materials — Bend test*

ISO 7539-2, *Corrosion of metals and alloys — Stress corrosion testing — Part 2: Preparation and use of bent-beam specimens*

ISO 8491, *Metallic materials — Tube (in full section) — Bend test*

ISO 8492, *Metallic materials — Tube — Flattening test*

ISO 8501-1:2007, *Preparation of steel substrates before application of paints and related products — Visual assessment of surface cleanliness — Part 1: Rust grades and preparation grades of uncoated steel substrates and of steel substrates after overall removal of previous coatings*

ISO 9712, *Non-destructive testing — Qualification and certification of NDT personnel*

ISO/TR 9769, *Steel and iron — Review of available methods of analysis*

ISO 10474:1991, *Steel and steel products — Inspection documents*

ISO 10893-2:2011, *Non-destructive testing of steel tubes — Part 2: Automated eddy current testing of seamless and welded (except submerged arc-welded) steel tubes for the detection of imperfections*

ISO 10893-3:2011, *Non-destructive testing of steel tubes — Part 3: Automated full peripheral flux leakage testing of seamless and welded (except submerged arc-welded) ferromagnetic steel tubes for the detection of longitudinal and/or transverse imperfections*

ISO 10893-4, *Non-destructive testing of steel tubes — Part 4: Liquid penetrant inspection of seamless and welded steel tubes for the detection of surface imperfections*

ISO 10893-5, *Non-destructive testing of steel tubes — Part 5: Magnetic particle inspection of seamless and welded ferromagnetic steel tubes for the detection of surface imperfections*

ISO 10893-6, *Non-destructive testing of steel tubes — Part 6: Radiographic testing of the weld seam of welded steel tubes for the detection of imperfections*

ISO 10893-7:2011, *Non-destructive testing of steel tubes — Part 7: Digital radiographic testing of the weld seam of welded steel tubes for the detection of imperfections*

ISO 10893-8:2011, *Non-destructive testing of steel tubes — Part 8: Automated ultrasonic testing of seamless and welded steel tubes for the detection of laminar imperfections*

ISO 10893-9:2011, *Non-destructive testing of steel tubes — Part 9: Automated ultrasonic testing for the detection of laminar imperfections in strip/plate used for manufacture of welded steel tubes*

ISO 10893-10:2011, *Non-destructive testing of steel tubes — Part 10: Automated full peripheral ultrasonic testing of seamless and welded (except submerged arc-welded) steel tubes for the detection of longitudinal and/or transverse imperfections*

ISO 10893-11:2011, *Non-destructive testing of steel tubes — Part 11: Automated ultrasonic testing of the weld seam of welded steel tubes for the detection of longitudinal and/or transverse imperfections*

ISO 10893-12, *Non-destructive testing of steel tubes — Part 12: Automated full peripheral ultrasonic thickness testing of seamless and welded (except submerged arc-welded) steel tubes*

ISO 11484, *Steel products — Employer's qualification system for non-destructive testing (NDT) personnel*

ISO 11699-1:2008, *Non-destructive testing — Industrial radiographic film — Part 1: Classification of film systems for industrial radiography*

ISO 12135, *Metallic materials — Unified method of test for the determination of quasistatic fracture toughness*

ISO 13678, *Petroleum and natural gas industries — Evaluation and testing of thread compounds for use with casing, tubing, line pipe and drill stem elements*

ISO 14284, *Steel and iron — Sampling and preparation of samples for the determination of chemical composition*

ISO 19232-1:2004, *Non-destructive testing — Image quality of radiographs — Part 1: Image quality indicators (wire type) — Determination of image quality value*

ISO 80000-1:2009, *Quantities and units — Part 1: General*

API Spec 5B¹⁾, *Specification for Threading, Gauging, and Thread Inspection of Casing, Tubing, and Line Pipe Threads*

API RP 5A3, *Recommended Practice on Thread Compounds for Casing, Tubing, Line Pipe, and Drill Stem Elements*

API RP 5L3, *Recommended Practice for Conducting Drop-Weight Tear Tests on Line Pipe*

API Std 5T1, *Standard on Imperfection Terminology*

ASNT SNT-TC-1A²⁾, *Recommended Practice No. SNT-TC-1A — Non-Destructive Testing*

ASTM A370³⁾, *Standard Test Methods and Definitions for Mechanical Testing of Steel Products*

ASTM A435, *Standard Specification for Straight-Beam Ultrasonic Examination of Steel Plates*

ASTM A578/A578M, *Standard Specification for Straight-Beam Ultrasonic Examination of Rolled Steel Plates for Special Applications*

ASTM A751, *Standard Test Methods, Practices, and Terminology for Chemical Analysis of Steel Products*

1) American Petroleum Institute, 1220 L Street, N.W., Washington, DC 20005, USA.

2) American Society for Nondestructive Testing, 1711 Arlingate Lane, Columbus, OH 43228-0518, USA.

3) ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, USA.