

**Nafta- ja maagasiitööstus. Terastorud
torutranspordisüsteemidele**

**Petroleum and natural gas industries - Steel pipe for
pipeline transportation systems (ISO 3183:2010)**

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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English Version

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)

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

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of an identical text or by endorsement, at the latest by May 2013, and conflicting national standards shall be withdrawn at the latest by November 2013.

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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.

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

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

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.