



SLOVENSKI STANDARD
SIST EN ISO 3183:2013/oprA1:2016
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Industrija nafte in zemeljskega plina - Jeklene cevi za cevovodni transportni sistem (ISO 3183:2012/DAM 1:2016)

Petroleum and natural gas industries - Steel pipe for pipeline transportation systems (ISO 3183:2012/DAM 1:2016)

Erdöl- und Erdgasindustrie - Stahlrohre für Rohrleitungstransportsysteme (ISO 3183:2012/DAM 1:2016)

Industries du pétrole et du gaz naturel - Tubes en acier pour les systèmes de transport par conduites (ISO 3183:2012/DAM 1:2016)

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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

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DRAFT AMENDMENT

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

AMENDMENT 1

Industries du pétrole et du gaz naturel — Tubes en acier pour les systèmes de transport par conduites
AMENDEMENT 1

ICS: 77.140.75; 75.200

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Foreword

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The committee responsible for this document is ISO/TC 67/SC 2.

This document replace the whole Annex M (normative) given in ISO 3183:2012

Annex M (normative)

PSL 2 pipe ordered for European onshore natural gas transmission pipelines

M.1 General

This annex specifies additional provisions that apply for PSL 2 pipe for European onshore natural gas transmission pipelines.

M.2 Additional information to be supplied by the purchaser

In addition to items a) to g) as specified by 7.1 and to items a) to c) as specified by 7.2, the purchase order shall indicate which of the following provisions apply for the specific order item:

- a) items that are subject to mandatory agreement, if applicable:
 - 1) chemical composition for pipe with $t > 25,0$ mm (0.984 in) (see M.4.1.2),
 - 2) carbon equivalent limit for Grades L415NE (X60NE) and L555QE (X80QE) (see Table M.1),
 - 3) tensile properties for pipe with $t > 25,0$ mm (0.984 in) (see M.4.2.1),
 - 4) minimum average absorbed energy (see M.4.4.1),
 - 5) diameter and out-of-roundness tolerances for the ends of SMLS pipe with $t > 25,0$ mm (0.984 in) (see Table M.3, footnote b),
 - 6) diameter and out-of-roundness tolerances for pipe with $D > 1\,422$ mm (56.000 in) (see Table M.3),
 - 7) type of inspection certificate (see M.7.1.1),
 - 8) party issuing the inspection certificate (see M.7.1.1);
- b) items that apply as prescribed, unless otherwise agreed:
 - 1) steel casting method for coil or plate used for the manufacture of welded pipe (see M.3.3.2.1),
 - 2) application of diameter tolerance to the outside diameter for pipe with $D \geq 610$ mm (24.000 in) (see Table M.3, footnote d),
 - 3) timing of NDT of HFW weld seam with outside diameter $D < 219,1$ mm (8.625 in) (see M.7.5.3),
 - 4) timing of NDT of full body seamless pipe (see M.7.5.3);
- c) items that apply, if agreed:
 - 1) approval of the quality system (see M.3.1),
 - 2) manufacturing procedure qualification (see M.3.1 and Annex B),
 - 3) another steelmaking process (see M.3.2),

- 4) supply of helical seam pipe containing coil/plate end welds (see M.3.3.2.3),
- 5) chemical composition limits (see Table M.1, footnotes a, f and j),
- 6) temperature for the CVN impact test for the pipe body (see M.4.4.1),
- 7) temperature for the CVN impact test for the pipe weld and heat affected zone (see M.4.4.2),
- 8) use of inside diameter to determine diameter and out-of-roundness tolerances for pipe with $D \geq 219,1$ mm (8.625 in) (see Table M.3, footnote c),
- 9) pipe body DWT testing frequency (see M.7.2 and Table M.7),
- 10) hardness testing frequency (see M.7.2 and Table M.7),
- 11) orientation of tensile test piece (see Table M.8, footnote c),
- 12) ultrasonic inspection for laminar imperfections of pipe body and ends (see Table M.10, numbers 2, 5, 6, 8, 9),
- 13) flux leakage testing for longitudinal imperfections in seamless pipe (see Table M.10),
- 14) flux leakage, or eddy current testing for longitudinal imperfections in HFW pipe (see Table M.10),
- 15) alternate acceptance level for ultrasonic (U2) or flux leakage (F2) testing of longitudinal imperfections (see Table M.10),
- 16) use of fixed-depth notches for equipment standardization [see K.5.1.1 c)],
- 17) radiographic inspection of the pipe ends (non-inspected pipe ends) and repaired areas on longitudinal imperfections [see Table M.10 and K.5.3 a)],
- 18) use of hole penetrometer instead of ISO wire penetrometer (see M.7.5.6.2),
- 19) use of digital radiographic inspection (see M.7.5.6.3).

M.3 Manufacturing

M.3.1 Manufacturing procedure

The pipe manufacturer and the stockist, where products are supplied through a stockist, shall operate a quality system. If agreed, the quality system shall be approved by the purchaser.

NOTE The term "stockist" is equivalent to, and interchangeable with, the term "distributor".

If agreed, the manufacturing procedure shall be qualified in accordance with Annex B.

M.3.2 Steel making

The steel shall be made to a clean steel practice, using either the basic oxygen steel-making process or the electric-arc furnace steel-making process, and shall be fully killed and be made according to fine grain practice.

Other steelmaking processes may be used by agreement.

ISO 3183:2012/Amd.1:2016 (E)**M.3.3 Pipe manufacturing****M.3.3.1 SMLS pipe**

SMLS pipe shall be manufactured from continuously (strand) cast or ingot steel. If the process of cold finishing followed by normalizing (N) or quench and tempering (Q) is used, this shall be stated in the inspection document. The as-rolled (R) pipe forming processes (Table 3) shall not be used.

M.3.3.2 Welded pipe

M.3.3.2.1 Unless otherwise agreed, coil and plate used for the manufacture of welded pipe shall be rolled from continuously (strand) cast or pressure cast slabs. The pipe shall be SAWH, SAWL, COWH, COWL, or HFW in the N or M delivery conditions (Table 3) only.

For HFW pipe from hot-rolled coil, the pipe forming process 'cold forming followed by thermomechanical forming' (Table 3) shall not be used.

M.3.3.2.2 For HFW pipe, the abutting edges of the coil or plate shall be sheared, milled or machined before welding such that the edges are clean and free of damage.

M.3.3.2.3 If agreed, for helical seam pipe made from coil or plate, pipe containing coil/plate end welds may be delivered, provided that such welds are located at least 300 mm (11.8 in) from the pipe end and such welds have been subjected to the same non-destructive testing that is required in M.7.5 for coil/plate edges and welds.

M.4 Acceptance criteria**M.4.1 Chemical composition**

M.4.1.1 For pipe with $t \leq 25,0$ mm (0.984 in), the chemical composition for standard grades shall be as given in Table M.1. Intermediate grades are not allowed. The steel name shall be as given in Table M.1 and consists of an alphanumeric designation that identifies the strength level, followed by a suffix that consists of a letter (N, Q, or M) that identifies the delivery condition and a second letter (E) that identifies the pipe as manufactured to the requirements of this annex.

M.4.1.2 For pipe with $t > 25,0$ mm (0.984 in) up to 40 mm (1.575 in), the chemical composition shall be as agreed, with the requirements given in Table M.1 being amended as appropriate.