SLOVENSKI STANDARD
SIST EN ISO 17782:2019

01-februar-2019

Petrokemična industrija ter industrija za predelavo nafte in zemeljskega plina - Shema za ugotavljanje skladnosti proizvajalcev posebnih materialov (ISO 17782:2018)

Petroleum, petrochemical and natural gas industries - Scheme for conformity assessment of manufacturers of special materials (ISO 17782:2018)

Erdöl-, petrochemische und Erdgasindustrie - Herstellerqualifizierung von Sonderwerkstoffen (ISO 17782:2018)

Industries du pétrole, de la pétrochimie et du gaz naturel - Système d'évaluation de la conformité des fabricants de matériaux spéciaux (ISO 17782:2018)

Ta slovenski standard je istoveten z: **EN ISO 17782:2018**

ICS:

75.180.01	Oprema za industrijo nafte in zemeljskega plina na splošno	Equipment for petroleum and natural gas industries in general

SIST EN ISO 17782:2019 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 17782

November 2018

ICS 75.020

English Version

Petroleum, petrochemical and natural gas industries - Scheme for conformity assessment of manufacturers of special materials (ISO 17782:2018)

Industries du pétrole, de la pétrochimie et du gaz naturel - Système d'évaluation de la conformité des fabricants de matériaux spéciaux (ISO 17782:2018)

Erdöl-, petrochemische und Erdgasindustrie - Herstellerqualifizierung von Sonderwerkstoffen (ISO 17782:2018)

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Ref. No. EN ISO 17782:2018 E

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European foreword

This document (EN ISO 17782:2018) 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 CEN/TC 12 “Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries” the secretariat of which is held by NEN.

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of an identical text or by endorsement, at the latest by May 2019, and conflicting national standards shall be withdrawn at the latest by May 2019.

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

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Endorsement notice

The text of ISO 17782:2018 has been approved by CEN as EN ISO 17782:2018 without any modification.

INTERNATIONAL STANDARD

ISO 17782

First edition
2018-10

Petroleum, petrochemical and natural gas industries — Scheme for conformity assessment of manufacturers of special materials

Industries du pétrole, de la pétrochimie et du gaz naturel — Système d'évaluation de la conformité des fabricants de matériaux spéciaux

Reference number
ISO 17782:2018(E)

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Published in Switzerland

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 67, *Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

This document is based on NORSOK M-650, 4th edition, which was developed by the Norwegian petroleum industry to ensure adequate safety, value added and cost effectiveness for petroleum industry developments and operations.

The conformity assessment requirements provide a Scheme for manufacturers to demonstrate their competence and experience to manufacture the relevant material grades and product forms. The intention is that a manufacturing procedure conformity record (MPCR) accepted by one customer should also be acceptable for other customers, within the essential variables of this document.

This document includes the following annexes that are either normative or informative:

— Annex A provides the Manufacturing Procedure Summary front page and examples (informative);

— Annex B contains the Temperature Uniformity Survey with additional requirements to Annex M of ISO 10423:2009 and ASTM A991-10 (normative);

— Annex C provides an example of verification of the heat treatment procedure (informative);

— Annex D contains requirements related to fasteners (normative);

— Annex E contains requirements related to induction bending in the case of testing for qualification of bends without post-bend heat treatment (normative);

— Annex F contains requirements for the assessment of testing laboratories (normative);

— Annex G provides the Manufacturing Procedure Conformity Record front page (normative).

Petroleum, petrochemical and natural gas industries — Scheme for conformity assessment of manufacturers of special materials

1 Scope

This document establishes a procedure for verifying that the manufacturer of special materials for the petroleum, petrochemical and natural gas industries has sufficient competence and experience of the relevant material grades of metal, and the necessary facilities and equipment, to manufacture these materials in the required shapes and sizes with acceptable properties according to the applicable standard, material specification and/or material data sheet specified by the purchaser.

This document is applicable to manufacturers of various materials, product forms and manufacturing processes when specified by the purchaser. This document has been established considering especially, but not exclusively:

a) duplex stainless steel;

b) high alloyed austenitic stainless steel;

c) nickel-based alloys;

d) titanium and its alloys.

This document is also applicable to the processes of induction bending and strain-hardened products.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 3834-2, *Quality requirements for fusion welding of metallic materials — Part 2: Comprehensive quality requirements*

ISO 9000, *Quality management systems — Fundamentals and vocabulary*

ISO 10423:2009, *Petroleum and natural gas industries — Drilling and production equipment — Wellhead and christmas tree equipment*

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

ISO 14343, *Welding consumables — Wire electrodes, strip electrodes, wires and rods for arc welding of stainless and heat resisting steels — Classification*

ISO 15590-1, *Petroleum and natural gas industries — Induction bends, fittings and flanges for pipeline transportation systems — Part 1: Induction bends*

ISO 15614-1, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 1: Arc and gas welding of steels and arc welding of nickel and nickel alloys*

ISO/IEC 17000:2004, *Conformity assessment — Vocabulary and general principles*

ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories*

ASME Boiler and Pressure Vessel Code, Section II, Materials, Part C, *Specifications for welding rods, electrodes, and filler metals* (also referred to ASME II Part C)

ASME Boiler and Pressure Vessel Code, Section IX: *Welding and Brazing Qualifications* (also referred to ASME IX)

ASTM A370-14, *Standard Test Methods and Definitions for Mechanical Testing of Steel Products*

ASTM A991-10, *Standard Test Method for Conducting Temperature Uniformity Surveys of Furnaces Used to Heat Treat Steel Products*

ASTM E407, *Standard Practice for Microetching Metals and Alloys*

EN 10204, *Metallic products — Types of inspection documents*

3 Terms, definitions and abbreviated terms

For the purposes of this document, the terms and definitions given in ISO 9000, ISO/IEC 17000 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1 Terms and definitions

3.1.1
conformity assessment
demonstration that specified requirements relating to a product, process, system, person or body are fulfilled

[SOURCE: ISO/IEC 17000:2004, 2.1]

3.1.2
continuous furnace
furnace in which the item/product to be heat treated is loaded and heat treated in a continuous cycle

3.1.3
company
owner or organization that is responsible for development of and/or operation of an installation/facility

Note 1 to entry: For the purposes of this document, the company is normally an oil company.

3.1.4
equalization time
time used to ensure a uniform pre-set temperature throughout a heat treatment load and/or throughout all section thicknesses of a component

3.1.5
heat sink
separate block used to monitor temperature during heat treatment and made from the same generic type of material as the parts being heat treated

3.1.6
high alloyed austenitic stainless steel (SS)
austenitic stainless steel typically having PREN ≥ 40 or [%Ni + 2(%Mo)] > 30 where %Mo > 2, all mass fractions expressed as percent

EXAMPLE UNS S31254, UNS N08367, UNS N08926, UNS S31266, UNS S32654, UNS S34565, J93254.

3.1.7
holding time
time from when the controlling thermocouple(s) [normally the furnace thermocouple(s)] has reached set temperature until the specified soaking time is completed

Note 1 to entry: See also Annex C.

Note 2 to entry: Holding time consists of equalization time + soaking time. Holding time is not applicable to continuous and semi-continuous furnaces.

3.1.8
main contractor
party which carries out all or part of the design, engineering, procurement, construction, commissioning or management of a project, or operation or maintenance of a facility, on a contract awarded by the company

3.1.9
manufacturer
party, including subcontractors, which carries out operations that affect the material properties of the finished product

Note 1 to entry: A manufacturer should have minimum one operation, which affects material properties in-house.

Note 2 to entry: These operations can include forming, heat treatment, etc.

3.1.10
pitting resistance equivalent number
PREN
number indicating the resistance of stainless steel to pitting corrosion and related to chemical composition

Note 1 to entry: PREN is calculated from one of the following equations:

a) PREN = %Cr + 3,3 %Mo + 16 %N

b) PREN = %Cr + 3,3 %(Mo + 0,5 W) + 16 %N

where all mass fractions are expressed as a percentage.

Note 2 to entry: The requirement for the minimum PREN value applies to the applicable material specification, MDS and/or material standard as specified by purchaser.

3.1.11
purchaser
party which purchases a product from a manufacturer

Note 1 to entry: Company (end user), main contractor and buyer are purchasers in the context used in this document.

3.1.12
Qualifying Company
body or person that performs *conformity assessment activity* (3.1.13)

3.1.13
second-party conformity assessment activity
conformity assessment activity that is performed by a person or organization that has a user interest in the object

Note 1 to entry: Persons or organizations performing second-party conformity assessment activities include, for example, purchasers or users of products, or potential customers seeking to rely on a supplier's management system, or organizations representing those interests.

[SOURCE: ISO/IEC 17000:2004, 2.3]