ICS 75.180.01 SLOVENSKÁ TECHNICKÁ NORMA Júl 2016

STN	**Ropný a plynárenský priemysel. Výber materiálov pre prostredie s vysokým obsahom CO2 pre pažnice, ťažobné rúrky a zariadenie na zvislý vrt (ISO 17348: 2016).**	**STN EN ISO 17348** 45 1502

Petroleum and natural gas industries - Materials selection for high content CO2 environment for casings, tubings and downhole equipment (ISO 17348:2016)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 06/16

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 17348

March 2016

ICS 75.180.01

English Version

Petroleum and natural gas industries - Materials selection for high content CO_2 environment for casings, tubings and downhole equipment (ISO 17348:2016)

Industries du pétrole et du gaz naturel - Choix des matériaux une teneur élevée en CO_2 pour tubes de cuvelage et de production et équipements de fond (ISO 17348:2016)

Erdöl-, petrochemische und Erdgasindustrie - Werkstoffauswahl in CO_2 Umgebung für nahtlose Rohre und Formstücke für den Gebrauch als Futterrohr, Steigrohr und Bohrloch-Ausrüstungen - Richtlinien (ISO 17348:2016)

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EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN ISO 17348:2016) 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of an identical text or by endorsement, at the latest by September 2016, and conflicting national standards shall be withdrawn at the latest by September 2016.

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.

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Endorsement notice

The text of ISO 17348:2016 has been approved by CEN as EN ISO 17348:2016 without any modification.

INTERNATIONAL STANDARD

ISO 17348

First edition
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Petroleum and natural gas industries — Materials selection for high content CO_2 for casing, tubing and downhole equipment

Industries du pétrole et du gaz naturel — Choix des matériaux une teneur élevée en CO_2 pour tubes de cuvelage et de production et équipements de fond

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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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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 67, *Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries*.

Introduction

This International Standard gives recommendations and guidelines for materials selection in oil and gas production wells, specifically for high CO_2 content gas injection and production systems, as well as for water alternating gas (WAG) injection systems. It is intended to enable responsible parties to carry out materials selection in a consistent manner as a part of the engineering work, based upon a design basis for a particular installation. The main users of this International Standard are oil and gas production companies and engineering contractors. Material manufacturers and equipment suppliers can benefit from using this International Standard for their product development.

Carbon capture and storage (CCS) has been identified as an important technology for achieving a significant reduction in CO_2 emissions to the atmosphere.

Many of the technologies and practices that have been developed for CO_2 enhanced oil recovery (EOR) can have applicability in CCS projects, assuming that each project design meets its site-specific conditions. The CO_2 EOR experiences of the oil and gas industry represent the largest collective base of technical information available on CO_2 injection and, as such, provide valuable information for development and implementation of CCS field projects as they move forward.

This International Standard does not provide detailed material requirements and recommendations for manufacturing and testing of equipment. Such information can be found in particular product standards and in manufacturing and testing standards. Other International Standards related to material usage limitations are referred to, e.g. ISO 15156 (all parts) for H_2S containing service.

In case of conflict between this International Standard and other international product standards, the requirements of the latter take precedence.

INTERNATIONAL STANDARD ISO 17348:2016(E)

Petroleum and natural gas industries — Materials selection for high content CO_2 for casing, tubing and downhole equipment

1 Scope

This International Standard provides guidelines and requirements for material selection of both seamless casing and tubing, and downhole equipment for CO_2 gas injection and gas production wells with high pressure and high CO_2 content environments [higher than 10 % (molar) of CO_2 and 1 MPa CO_2 partial pressure]. Oil production wells are not covered in this International Standard. This International Standard only considers materials compatibility with the environment.

Guidance is given for the following:

— corrosion evaluation;

— materials selection;

— corrosion control.

This International Standard is aimed at high CO_2 content wells, where the threat of low pH and CO_2 corrosion is greatest. However, many aspects are equally applicable to environments containing lower CO_2 concentrations.

Materials selection is influenced by many factors and synergies and should be performed by either materials or corrosion engineer.

2 Normative references

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

ISO 11960, *Petroleum and natural gas industries — Steel pipes for use as casing or tubing for wells*

ISO 13680, *Petroleum and natural gas industries — Corrosion-resistant alloy seamless tubes for use as casing, tubing and coupling stock — Technical delivery conditions*

ISO 15156 (all parts), *Petroleum and natural gas industries — Materials for use in H2S-containing environments in oil and gas production*

ISO 21457, *Petroleum, petrochemical and natural gas industries — Materials selection and corrosion control for oil and gas production systems*

ISO 23936-1, *Petroleum, petrochemical and natural gas industries — Non-metallic materials in contact with media related to oil and gas production — Part 1: Thermoplastics*

ISO 23936-2, *Petroleum, petrochemical and natural gas industries — Non-metallic materials in contact with media related to oil and gas production — Part 2: Elastomers*