SLOVENSKI STANDARD
SIST EN ISO 15589-1:2017

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Petrokemična industrija ter industrija za predelavo nafte in zemeljskega plina - Katodna zaščita cevovodov - 1. del: Cevovodi na kopnem (ISO 15589-1:2015)

Petroleum, petrochemical and natural gas industries - Cathodic protection of pipeline systems - Part 1: On-land pipelines (ISO 15589-1:2015)

Erdöl- und Erdgasindustrie - Kathodischer Schutz für Transportleitungsysteme - Teil 1: On-land pipelines (ISO 15589-1:2015)

Industries du pétrole, de la pétrochimie et du gaz naturel - Protection cathodique des systèmes de transport par conduites - Partie 1: Conduites terrestres (ISO 15589-1:2015)

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ICS:

75.200	Oprema za skladiščenje nafte, naftnih proizvodov in zemeljskega plina	Petroleum products and natural gas handling equipment

SIST EN ISO 15589-1:2017 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 15589-1

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ICS 75.200

English Version

Petroleum, petrochemical and natural gas industries - Cathodic protection of pipeline systems - Part 1: On-land pipelines (ISO 15589-1:2015)

Industries du pétrole, de la pétrochimie et du gaz naturel - Protection cathodique des systèmes de transport par conduites - Partie 1: Conduites terrestres (ISO 15589-1:2015)

Erdöl- und Erdgasindustrie - Kathodischer Schutz für Transportleitungssysteme - Teil 1: On-land pipelines (ISO 15589-1:2015)

This European Standard was approved by CEN on 23 August 2017.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

The text of ISO 15589-1:2015 has been prepared by Technical Committee ISO/TC 67 “Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries” of the International Organization for Standardization (ISO) and has been taken over as EN ISO 15589-1:2017 by Technical Committee CEN/TC 219 “Cathodic protection” the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by March 2018, and conflicting national standards shall be withdrawn at the latest by March 2018.

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 15589-1:2015 has been approved by CEN as EN ISO 15589-1:2017 without any modification.

INTERNATIONAL STANDARD

ISO 15589-1

Second edition
2015-03-01

Petroleum, petrochemical and natural gas industries — Cathodic protection of pipeline systems —

Part 1: On-land pipelines

Industries du pétrole, de la pétrochimie et du gaz naturel — Protection cathodique des systèmes de transport par conduites — Partie 1: Conduites terrestres

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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 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*, Subcommittee SC 2, *Pipeline transportation systems*.

This second edition cancels and replaces the first edition (ISO 15589-1:2003), which has been technically revised with the following changes:

— cathodic protection criteria have been extended with further clarification on the application of the criteria;

— requirements for design have been more detailed and periodicities for inspection of cathodic equipment have been enlarged, and the option for remote monitoring added;

— requirements for measurements and testing during commissioning have been further detailed.

ISO 15589 consists of the following parts, under the general title *Petroleum, petrochemical and natural gas industries — Cathodic protection of pipeline systems*:

— *Part 1: On-land pipelines*

— *Part 2: Offshore pipelines*

Introduction

Pipeline cathodic protection is achieved by the supply of sufficient direct current to the external pipe surface, so that the steel-to-electrolyte potential is lowered to values at which external corrosion is reduced to an insignificant rate.

Cathodic protection is normally used in combination with a suitable protective coating system to protect the external surfaces of steel pipelines from corrosion.

It is necessary that users of this part of ISO 15589 be aware that further or differing requirements can be needed for individual applications. This part of ISO 15589 is not intended to inhibit the use of alternative equipment or engineering solutions for the individual application. This can be particularly applicable where there is innovative or developing technology. It is necessary that, where an alternative is offered, any variations from this part of ISO 15589 be identified and documented.

Petroleum, petrochemical and natural gas industries — Cathodic protection of pipeline systems —

Part 1: On-land pipelines

1 Scope

This part of ISO 15589 specifies requirements and gives recommendations for the pre-installation surveys, design, materials, equipment, installation, commissioning, operation, inspection, and maintenance of cathodic protection systems for on-land pipelines, as defined in ISO 13623 or EN 14161 for the petroleum, petrochemical, and natural gas industries, and in EN 1594 or EN 12007-1 and EN 12007-3 used by gas supply industries in Europe.

All contents of this part of ISO 15589 are applicable to on-land pipelines and piping systems used in other industries and transporting other media such as industrial gases, waters, or slurries.

This part of ISO 15589 applies to buried pipelines, landfalls of offshore pipeline sections protected by on-shore based cathodic protection installations, and to immersed sections of on-land pipelines such as river or lake crossings.

This part of ISO 15589 specifies requirements for pipelines of carbon steel, stainless steel, cast iron, galvanized steel, or copper. If other pipeline materials are used, the criteria to apply are defined under the responsibility of the pipeline operator.

This part of ISO 15589 does not apply to pipelines made of reinforced concrete for which EN 12696 can be applied.

NOTE Special conditions sometimes exist where cathodic protection is ineffective or only partially effective. Such conditions can include shielding (e.g. disbonded coatings, thermal-insulating coatings, rocky soil, etc.) and unusual contaminants in the electrolyte.

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 8044, *Corrosion of metals and alloys — Basic terms and definitions*

ISO 10012, *Measurement management systems — Requirements for measurement processes and measuring equipment*

ISO 13623, *Petroleum and natural gas industries — Pipeline transportation systems*

ISO 13847, *Petroleum and natural gas industries — Pipeline transportation systems — Welding of pipelines*

ISO 21809 (all parts), *Petroleum and natural gas industries — External coatings for buried or submerged pipelines used in pipeline transportation systems*

IEC 60079-10-1, *Explosive atmospheres — Part 10-1: Classification of areas — Explosive gas atmospheres*

IEC 60529, *Degrees of protection provided by enclosures (IP Code)*

EN 1594, *Gas infrastructure — Pipelines for maximum operating pressure over 16 bar — Functional requirements*

