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Standards

Irish Standard  
I.S. EN ISO 16961:2015

# Petroleum, petrochemical and natural gas industries - Internal coating and lining of steel storage tanks (ISO 16961:2015)

## I.S. EN ISO 16961:2015

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

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**Petroleum, petrochemical and natural gas industries - Internal  
coating and lining of steel storage tanks (ISO 16961:2015)**

Industries du pétrole, de la pétrochimie et du gaz naturel -  
Revêtement de protection interne et doublure des  
réservoirs de stockage en acier (ISO 16961:2015)

Erdöl-, petrochemische und Erdgasindustrie - Innere  
Schutzbeschichtungen und Auskleidungen für überirdische  
Stahltanklager (ISO 16961:2015)

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**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

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## **European foreword**

This document (EN ISO 16961:2015) 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 AFNOR.

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of an identical text or by endorsement, at the latest by February 2016, and conflicting national standards shall be withdrawn at the latest by February 2016.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 16961:2015 has been approved by CEN as EN ISO 16961:2015 without any modification.

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# INTERNATIONAL STANDARD

**ISO  
16961**

First edition  
2015-08-01

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## **Petroleum, petrochemical and natural gas industries — Internal coating and lining of steel storage tanks**

*Industries du pétrole, de la pétrochimie et du gaz naturel —  
Revêtement de protection interne et doublure des réservoirs de  
stockage en acier*



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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](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

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*.

## **ISO 16961:2015(E)**

### **Introduction**

This International Standard is based on GSO 2057 – 2010 (E). The objectives of this International Standard are to define minimum technical requirements for the corrosion protection by coating and lining of internal surfaces of steel storage tanks, to provide technical guidance for developing local standards and specifications, and to ensure compliance in coating and lining material selection and performance with contract requirements.

Users of this International Standard should be aware that further or differing requirements can be needed for individual applications. This International Standard is not limiting the contractor and/or manufacturer from proposing or the company from accepting alternative engineering solutions for the individual application. This can be particularly applicable where there is innovative or developing technology. Where an alternative is proposed, the specification issuer should identify any deviations from this International Standard and provide details.

[Annexes A, B, C](#) and [D](#) of this International Standard are informative only.

# Petroleum, petrochemical and natural gas industries — Internal coating and lining of steel storage tanks

## 1 Scope

This International Standard specifies the minimum requirements for surface preparation, materials, application, inspection and testing of internal coating lining systems that are intended to be applied on internal surfaces of steel storage tanks of crude oil, hydrocarbons and water for corrosion protection.

It covers both new construction and maintenance works of tank internal coating and lining as well as the repair of defective and deteriorated systems.

This International Standard also provides the minimum requirements for shop performance testing of the coated/lined samples and the criteria for their approval.

## 2 Conformance

### 2.1 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 purpose of this provision, the rounding method of ASTM E29-08 is equivalent to ISO 80000-1:2009, Annex B, Rule A.

### 2.2 Compliance to this International Standard

A quality system should be applied to assist compliance with the requirements of this International Standard. ISO/TS 29001 gives sector-specific guidance on quality management systems.

The applicator shall comply with all of the applicable requirements of this International Standard. It shall be permissible for the client to make any investigations necessary in order to be ensured of compliance by the applicator and to reject any material that does not comply.

## 3 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.

API RP 652, *Lining of Aboveground Petroleum Storage Tank Bottoms*

API STD 653, *Tank Inspection, Repair, Alteration and Reconstruction*

API STD 2015, *Requirements for Safe Entry and Cleaning of Petroleum Storage Tanks*

ASTM C868-02 (2012), *Standard Test Method for Chemical Resistance of Protective Linings*

ASTM D412, *Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers — Tension*

ASTM D522, *Standard Test Methods for Mandrel Bend Test of Attached Organic Coatings*

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