



**NSAI**  
Standards

Irish Standard  
I.S. EN ISO 11177:2016

# Vitreous and porcelain enamels - Inside and outside enamelled valves and pressure pipe fittings for untreated and potable water supply - Quality requirements and testing (ISO 11177:2016)

## I.S. EN ISO 11177:2016

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

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## National Foreword

I.S. EN ISO 11177:2016 is the adopted Irish version of the European Document EN ISO 11177:2016, Vitreous and porcelain enamels - Inside and outside enamelled valves and pressure pipe fittings for untreated and potable water supply - Quality requirements and testing (ISO 11177:2016)

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EUROPEAN STANDARD

EN ISO 11177

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2016

ICS 25.220.50; 91.140.60

English Version

**Vitreous and porcelain enamels - Inside and outside  
enamelled valves and pressure pipe fittings for untreated  
and potable water supply - Quality requirements and  
testing (ISO 11177:2016)**

Émaux vitrifiés - Robinetterie émaillée à l'intérieur et à  
l'extérieur et raccords de tuyauterie pour conduites  
forcées destinées à l'alimentation en eau non traitée et  
en eau potable - Exigences de qualité et essais (ISO  
11177:2016)

Emails und Emailierungen - Innen- und  
außenemailierte Armaturen und  
Druckrohrformstücke für die Roh- und  
Trinkwasserversorgung - Qualitätsanforderungen und  
Prüfung (ISO 11177:2016)

This European Standard was approved by CEN on 23 January 2016.

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

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## **European foreword**

This document (EN ISO 11177:2016) has been prepared by Technical Committee CEN/TC 262 “Metallic and other inorganic coatings” the secretariat of which is held by BSI, in collaboration with Technical Committee ISO/TC 107 “Metallic and other inorganic coatings”.

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of an identical text or by endorsement, at the latest by September 2016, and conflicting national standards shall be withdrawn at the latest by September 2016.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.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## **Endorsement notice**

The text of ISO 11177:2016 has been approved by CEN as EN ISO 11177:2016 without any modification.

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# INTERNATIONAL STANDARD

**ISO**  
**11177**

First edition  
2016-02-15

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## **Vitreous and porcelain enamels — Inside and outside enamelled valves and pressure pipe fittings for untreated and potable water supply — Quality requirements and testing**

*Émaux vitrifiés — Robinetterie émaillée à l'intérieur et à l'extérieur  
et raccords de tuyauterie pour conduites forcées destinées à  
l'alimentation en eau non traitée et en eau potable — Exigences de  
qualité et essais*



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**ISO 11177:2016(E)**



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## ISO 11177:2016(E)

### 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)).

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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](#)

ISO 11177 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 262, *Metallic and other inorganic coatings*, in collaboration with Technical Committee ISO/TC 107, *Metallic and other inorganic coatings*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

## **Introduction**

The requirements defined in this International Standard regarding the product quality of enamelled valves and pressure pipe fittings for untreated and potable water supply take into account the real stress conditions to which a component can be subjected in the course of its operating life. Typical types of stress are:

- during storage: climate, UV radiation, mechanical stress;
- during transportation: mechanical stress e.g. at certain points (impact), laterally (friction);
- during preparation for installation: cleaning agents, mechanical stress e.g. at certain points (impact), laterally (friction);
- during installation: mechanical stress;
- during operation: abrasion caused by the carried medium, corrosion from surrounding medium, mechanical stress from shifting ground loads, UV radiation with valves built in above ground.



# Vitreous and porcelain enamels — Inside and outside enamelled valves and pressure pipe fittings for untreated and potable water supply — Quality requirements and testing

## 1 Scope

This International Standard specifies the requirements for product quality and product testing of enamelled valves and pressure pipe fittings for untreated and potable water supply. It is not applicable for chemical service glass-enamel and apparatus enamel.

## 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 2178, *Non-magnetic coatings on magnetic substrates — Measurement of coating thickness — Magnetic method*

ISO 6370-1, *Vitreous and porcelain enamels — Determination of the resistance to abrasion — Part 1: Abrasion testing apparatus*

ISO 6370-2, *Vitreous and porcelain enamels — Determination of the resistance to abrasion — Part 2: Loss in mass after sub-surface abrasion*

ISO 16474-1, *Paints and varnishes — Methods of exposure to laboratory light sources — Part 1: General guidance*

ISO 16474-2, *Paints and varnishes — Methods of exposure to laboratory light sources — Part 2: Xenon-arc lamps*

ISO 13807, *Vitreous and porcelain enamels — Determination of crack formation temperature in the thermal shock testing of enamels for the chemical industry*

ISO 15695, *Vitreous and porcelain enamels — Determination of scratch resistance of enamel finishes*

ISO 28706-2, *Vitreous and porcelain enamels — Determination of resistance to chemical corrosion — Part 2: Determination of resistance to chemical corrosion by boiling acids, boiling neutral liquids and/or their vapours*

EN 15771, *Vitreous and porcelain enamels — Determination of surface scratch hardness according to the Mohs scale*

DIN 50929-3, *Corrosion of metals — Probability of corrosion of metallic materials when subject to corrosion from the outside — Buried and underwater pipelines and structural components*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

### 3.1

#### **pore**

defect in the enamel coat passed through from the base material

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