

SLOVENSKI STANDARD

SIST EN ISO 28765:2012

01-januar-2012

Nadomešča:
SIST EN 15282:2007

Steklasti in porcelanski emajli - Projektiranje s steklastim emajlom zaščiteneih jeklenih rezervoarjev za skladiščenje ali pripravo vode ali komunalnih ali industrijskih odplak (ISO 28765:2008)

Vitreous and porcelain enamels - Design of bolted steel tanks for the storage or treatment of water or municipal or industrial effluents and sludges (ISO 28765:2008)

iTeh STANDARD PREVIEW

Emails und Emaillierungen - Gestaltung von verschraubten Stahlbehältern für die Speicherung oder Behandlung von Wasser oder kommunalen und industriellen Abwässern und Abwasserschamm (ISO 28765:2008)

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Émaux vitrifiés - Conception de réservoirs en acier boulonnés pour le stockage ou le traitement des eaux ou des effluents d'eaux usées urbains ou industriels (ISO 28765:2008)

Ta slovenski standard je istoveten z: EN ISO 28765:2011

ICS:

23.020.10	Nepremične posode in rezervoarji	Stationary containers and tanks
25.220.50	Emajlne prevleke	Enamels

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 28765

March 2011

ICS 25.220.50

Supersedes EN 15282:2007

English Version

**Vitreous and porcelain enamels - Design of bolted steel tanks
for the storage or treatment of water or municipal or industrial
effluents and sludges (ISO 28765:2008)**

Émaux vitrifiés - Conception de réservoirs en acier
boulonnés pour le stockage ou le traitement des eaux ou
des effluents d'eaux usées urbains ou industriels (ISO
28765:2008)

Emails und Emailierungen - Gestaltung von verschraubten
Stahlbehältern für die Speicherung oder Behandlung von
Wasser oder kommunalen und industriellen Abwässern und
Abwasserschlamm (ISO 28765:2008)

This European Standard was approved by CEN on 3 March 2011.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

The text of ISO 28765:2008 has been prepared by Technical Committee ISO/TC 107 “Metallic and other inorganic coatings” of the International Organization for Standardization (ISO) and has been taken over as EN ISO 28765:2011 by Technical Committee CEN/TC 262 “Metallic and other inorganic coatings” 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 September 2011, and conflicting national standards shall be withdrawn at the latest by September 2011.

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.

This document supersedes EN 15282:2007.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

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The text of ISO 28765:2008 has been approved by CEN as a EN ISO 28765:2011 without any modification.

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INTERNATIONAL STANDARD

ISO
28765

First edition
2008-10-01

Vitreous and porcelain enamels — Design of bolted steel tanks for the storage or treatment of water or municipal or industrial effluents and sludges

*Émaux vitrifiés — Conception de réservoirs en acier boulonnés pour le
stockage ou le traitement des eaux ou des effluents d'eaux usées
urbains ou industriels*
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ISO 28765:2008(E)

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ISO 28765:2008(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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 28765 was prepared by the European Committee for Standardization (CEN) (as EN 15282) and was adopted, under a special “fast-track procedure”, by Technical Committee ISO/TC 107, *Metallic and other inorganic coatings*, in parallel with its approval by the ISO member bodies.

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Vitreous and porcelain enamels — Design of bolted steel tanks for the storage or treatment of water or municipal or industrial effluents and sludges

1 Scope

This International Standard establishes the requirements for the design and use of vitreous-enamel-coated bolted cylindrical steel tanks for the storage or treatment of water or municipal or industrial effluents and sludges.

It applies to the design of the tank and any associated roof and gives guidance on the requirements for the design of the foundation.

It applies where

- a) the tank is cylindrical and is mounted on a load-bearing base substantially at or above ground level;
- b) the product of the tank diameter in metres and the wall height in metres lies within the range 5 to 500;
- c) the tank diameter does not exceed 100 m and the total wall height does not exceed 50 m;
- d) the stored material has the characteristics of a liquid, exerting a negligible frictional force on the tank wall; the stored material may be undergoing treatment as part of a municipal or industrial effluent treatment process;
- e) the internal pressure in the headspace above the liquid does not exceed 50 kPa and the internal partial vacuum above the liquid does not exceed 10 kPa;
- f) the walls of the tank are vertical;
- g) the floor of the tank is substantially flat at its intersection with the wall; the floor of the tank may have a rise or fall built in to allow complete emptying of the tank contents, the slope of which does not exceed 1:100;
- h) there is negligible inertial and impact load due to tank filling;
- i) the minimum thickness of the tank shell is 1,5 mm;
- j) the material used for the manufacture of the steel sheets is carbon steel (tanks constructed of sheets made from aluminium or stainless steel are outside the scope of this International Standard);
- k) the temperature of the tank wall during operation is within the range -50 °C to $+100\text{ °C}$ under all operating conditions.

This International Standard also gives details of procedures to be followed during installation on site and for inspection and maintenance of the installed tank.

It does not apply to chemical-reaction vessels.

It does not apply to tanks fitted with floating roofs.

It does not cover resistance to fire.

ISO 28765:2008(E)

2 Normative references

The following referenced documents are indispensable for the application 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 2178, *Non-magnetic coatings on magnetic substrates — Measurement of coating thickness — Magnetic method*

ISO 2747, *Vitreous and porcelain enamels — Enamelled cooking utensils — Determination of resistance to thermal shock*

ISO 2859-1, *Sampling procedures for inspection by attributes — Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection*

ISO 4532, *Vitreous and porcelain enamels — Determination of the resistance of enamelled articles to impact — Pistol test*

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

ISO 8289:2000, *Vitreous and porcelain enamels — Low voltage test for detecting and locating defects*

ISO 15686-1, *Buildings and constructed assets — Service life planning — Part 1: General principles*

ISO 28706-1:2008, *Vitreous and porcelain enamels — Determination of resistance to chemical corrosion — Part 1: Determination of resistance to chemical corrosion by acids at room temperature*

ISO 28706-2:2008, *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*

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ISO 28706-3:2008, *Vitreous and porcelain enamels — Determination of resistance to chemical corrosion — Part 3: Determination of resistance to chemical corrosion by alkaline liquids using a hexagonal vessel*

ISO 28706-4:2008, *Vitreous and porcelain enamels — Determination of resistance to chemical corrosion — Part 4: Determination of resistance to chemical corrosion by alkaline liquids using a cylindrical vessel*

EN 101, *Ceramic tiles — Determination of scratch hardness of surface according to Mohs*

EN 1993-1-6, *Eurocode 3 — Design of steel structures — Part 1-6: Strength and Stability of Shell Structures*

EN 1993-4-1, *Eurocode 3 — Design of steel structures — Part 4-1: Silos*

EN 1993-4-2, *Eurocode 3 — Design of steel structures — Part 4-2: Tanks*

EN 1998-4, *Eurocode 8 — Design of structures for earthquake resistance — Part 4: Silos, tanks and pipelines*

EN 10209:1996, *Cold rolled low carbon steel flat products for vitreous enamelling — Technical delivery conditions*

EN 14430:2004, *Vitreous and porcelain enamels — High voltage test*

ANSI/AWWA D 103-97, *Factory-Coated Bolted Steel Tanks for Water Storage*