Workshop fabricated steel tanks - Part 1: Horizontal cylindrical single skin and double skin tanks for the underground storage of flammable and nonflammable water polluting liquids other than for heating and cooling of buildings

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 12285-1:2018 sisaldab Euroopa standardi EN 12285-1:2018 ingliskeelset teksti.	This Estonian standard EVS-EN 12285-1:2018 consists of the English text of the European standard EN 12285-1:2018.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 04.07.2018.	Date of Availability of the European standard is 04.07.2018.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 13.300, 23.020.10

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 12285-1

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Supersedes EN 12285-1:2003

English Version

Workshop fabricated steel tanks - Part 1: Horizontal cylindrical single skin and double skin tanks for the underground storage of flammable and nonflammable water polluting liquids other than for heating and cooling of buildings

Réservoirs en acier fabriqués en atelier - Partie 1 : Réservoirs horizontaux cylindriques à simple ou double paroi pour le stockage enterré de liquides inflammables et non inflammables polluant l'eau en dehors du chauffage et du refroidissement des bâtiments

Werksgefertigte Tanks aus Stahl - Teil 1: Liegende, zylindrische, ein- und doppelwandige Tanks zur unterirdischen Lagerung von brennbaren und nicht brennbaren wassergefährdenden Flüssigkeiten, die nicht für das Heizen und Kühlen von Gebäuden vorgesehen sind

This European Standard was approved by CEN on 15 February 2018.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

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

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European foreword

This document (EN 12285-1:2018) has been prepared by Technical Committee CEN/TC 265 “Metallic tanks for the storage of liquids”, 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 January 2019, and conflicting national standards shall be withdrawn at the latest by April 2020.

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.

This document, together with prEN 12285-3:2016, supersedes EN 12285-1:2003.

Compared to EN 12285-1:2003, this document has been revised as follows:

— exclusion of tanks covered by the Mandate M/131;

— old Clause 3, Terms and definitions has been combined with old Clause 4, Symbols and abbreviations;

— old Clause 5, Designation and purchaser's specification has been combined with new Clause 7, Classification and designation;

— old Clause 6, Materials, Clause 7, Design, Clause 8, Fabrication and Clause 10, Handling and installation have been replaced by new Clause 4, Product characteristics;

— old Clause 9, Testing has now become Clause 5, Testing, assessment and sampling methods;

— old Clause 11, Marking of the tank and manufacturer's statement has now been combined with new Clause 8, Marking, labelling and packaging.

The informative Annexes A and B give further guidance: A on transport, storage and installation procedures and B on the liquid-material combinations to be chosen. Annex C provides guidance on environmental aspects.

This European Standard *Workshop fabricated steel tanks* consists of 3 parts:

— *Part 1: Horizontal cylindrical single skin and double skin tanks for the underground storage of flammable and nonflammable water polluting liquids other than for heating and cooling of buildings*;

— *Part 2: Horizontal cylindrical single skin and double skin tanks for the aboveground storage of flammable and non-flammable water polluting liquids*;

— *Part 3: Horizontal cylindrical single skin and double skin tanks for the underground storage of flammable and nonflammable water polluting liquids for heating and cooling of buildings*.

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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This document specifies the product characteristics and test methods for workshop fabricated cylindrical, horizontal steel tanks, single (type S) and double skin (type D) intended to be used for the underground storage of water polluting liquids (both flammable and non-flammable) and installed in industrial processes or in petrol stations at normal ambient temperature conditions (−20 °C to +50 °C) within the following limits:

— from 800 mm up to 3 000 mm nominal diameter and;

— up to a maximum overall length of 6 times the nominal diameter;

— with an operating pressure (Po) of maximum 50 kPa (0,5 bar(g)) and minimum – 5 kPa (–50 mbar(g)) and;

— for double skin tanks with a vacuum leak detection system where the kinematic viscosity does not exceed 5×10^{-3} m^2/s.

Tanks designed to this standard allow for an earth cover of up to 1,5 m. If there are imposed traffic loads or a greater earth cover, calculation is expected to be carried out.

This document is not applicable to tanks used for storage and/or supply of fuel/gas for building heating/cooling systems, and of hot or cold water not intended for human consumption, nor to loads and special measures necessary in areas subject to risk of earthquakes.

Guidance on installation of tanks is presented in Annex A, which does not include special measures that might be necessary in areas subject to flooding.

This document is not applicable for the storage of liquids having dangerous goods classes listed in Table 1 because of the special dangers involved.

Table 1 — List of dangerous goods which are not covered by this standard

UN-classification	**Type of dangerous goods**
Class 1	Explosives
Class 4.2	Substances liable to spontaneous combustion
Class 4.3	Substances which in contact with water emit flammable gases
Class 5.2	Organic peroxides
Class 6.2	Infectious substances
Class 7	Radioactive substances, hydrocyanic or hydrocyanic solvent liquids, metal carbons, hydrofluoric acid, bromide liquids

NOTE The classifications referred to are those adopted by the United Nations Committee of Experts on the Transport of Dangerous Goods (not to be interpreted as tank classes described in 6.2).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

EN 10025-2:2004, *Hot rolled products of structural steels – Part 2: Technical delivery conditions for non-alloy structural steels*

EN 10204:2004, *Metallic products - Types of inspection documents*

EN 13160-1, *Leak detection systems – Part 1: General Principles*

EN 13160-2, *Leak detection systems – Part 2: Requirements and test/assessment methods for pressure and vacuum systems*

EN 13160-3, *Leak detection systems – Part 3: Requirements and test/assessment methods for liquid systems for tanks*

EN 22768 (all parts), *General tolerances (ISO 2768 series)*

EN ISO 898-1, *Mechanical properties of fasteners made of carbon steel and alloy steel – Part 1: Bolts, screws and studs with specified property classes - Coarse thread and fine pitch thread (ISO 898-1)*

EN ISO 12944-7, *Paints and varnishes - Corrosion protection of steel structures by protective paint systems – Part 7: Execution and supervision of paint work (ISO 12944-7)*

EN ISO 13920, *Welding - General tolerances for welded constructions - Dimensions for lengths and angles - Shape and position (ISO 13920)*

3 Terms, definitions, symbols and abbreviations

3.1 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1.1
tank
workshop fabricated cylindrical containment for the storage of liquids

Note 1 to entry: Tanks are made of steel plates, equipped with dished ends and consist of one or more compartments.

3.1.2
underground tank
tank which is totally or partially imbedded in the ground