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# Fabriksfremstillede ståltanke – Del 1: Horisontale cylindriske enkelt- og dobbeltvægstanke til underjordisk opbevaring af brændbare og ikke-brændbare vandforurenende væsker beregnet til andet end opvarmning og afkøling af bygninger

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

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## EUROPÄISCHE NORM

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ICS 13.300; 23.020.10

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

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

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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.

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## 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 ( $-20\text{ }^{\circ}\text{C}$  to  $+50\text{ }^{\circ}\text{C}$ ) 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 ( $P_o$ ) of maximum 50 kPa (0,5 bar(g)) and minimum  $-5\text{ kPa}$  ( $-50\text{ mbar(g)}$ ) and;
- for double skin tanks with a vacuum leak detection system where the kinematic viscosity does not exceed  $5 \times 10^{-3}\text{ m}^2/\text{s}$ .

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)*