

Workshop fabricated steel tanks - Part 1: Horizontal cylindrical single skin and double skin tanks for the underground storage of flammable and non-flammable water polluting liquids

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 12285-1:2003 sisaldab Euroopa standardi EN 12285-1:2003 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 15.04.2003 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 12285-1:2003 consists of the English text of the European standard EN 12285-1:2003.</p> <p>This document is endorsed on 15.04.2003 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala:</p> <p>This standard specifies the requirements for shop fabricated cylindrical, horizontal steel tanks, single and double skin for the underground storage of water polluting liquids (both flammable and non-flammable) within the following limits: - from 800 mm up to 3000 mm nominal diameter and, - up to a maximum overall length of 6 times the nominal diameter and, - for liquids with a maximum density of up to 1,9 kg/l and, - with an operating pressure (po) of maximum 1,5 bar (abs.) and, - for double skin tanks with a vacuum leak detection system where the kinematic viscosity does not exceed 5 x 10⁻³ m²/s</p>	<p>Scope:</p> <p>This standard specifies the requirements for shop fabricated cylindrical, horizontal steel tanks, single and double skin for the underground storage of water polluting liquids (both flammable and non-flammable) within the following limits: - from 800 mm up to 3000 mm nominal diameter and, - up to a maximum overall length of 6 times the nominal diameter and, - for liquids with a maximum density of up to 1,9 kg/l and, - with an operating pressure (po) of maximum 1,5 bar (abs.) and, - for double skin tanks with a vacuum leak detection system where the kinematic viscosity does not exceed 5 x 10⁻³ m²/s</p>
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ICS 13.300, 23.020.10

Võtmesõnad: containers, fire resistant materials, inflammable solids, specification (approval), specifications, steels, storage, storage tank, storages, tank installations, tanks, tanks (containers), testing, types, underground, walls, water-polluting substances, wheel works

ICS 13.300; 23.020.10

English version

**Workshop fabricated steel tanks - Part 1: Horizontal cylindrical
single skin and double skin tanks for the underground storage of
flammable and non-flammable water polluting liquids**

Réservoirs en aciers fabriqués en atelier - Partie
1: Réservoirs horizontaux cylindriques à simple et double
paroi pour le stockage enterré de liquides inflammables et
non-inflammables polluant l'eau

Werksggefertigte Tanks aus Stahl - Teil 1: Liegende
zylindrische ein- und doppelwandige Tanks zur
unterirdischen Lagerung von brennbaren und
nichtbrennbaren wassergefährdenden Flüssigkeiten

This European Standard was approved by CEN on 4 November 2002.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovak Republic, Spain, Sweden, Switzerland and United Kingdom.



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

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Contents

	page
Foreword.....	3
1 Scope	4
2 Normative references	5
3 Terms and definitions.....	5
4 Symbols and abbreviations	7
5 Designation and purchaser's specification.....	8
6 Materials.....	8
6.1 General.....	8
6.2 Materials for shell, dished ends and manholes	9
6.3 Materials for tank accessories.....	9
6.4 Consumable.....	9
6.5 Material inspection documentation	9
7 Design	9
7.1 Forms of construction	9
7.2 Single skin tanks.....	9
7.3 Double skin tanks	9
7.4 Dished ends.....	9
7.5 Compartments.....	9
7.6 Dimensions.....	10
7.6.1 Material thickness.....	10
7.6.2 Secondary skin.....	10
7.6.3 Interstitial space.....	10
7.7 Tolerances	11
7.8 Shell plate arrangement	11
7.9 Manholes and inspection covers	11
7.10 Structural bolts.....	12
7.11 Tank fittings, pipes and nozzles.....	12
7.12 Stiffening rings.....	13
7.13 Lifting lugs.....	15
8 Fabrication.....	15
8.1 Plate preparation.....	15
8.2 Shell plate forming.....	15
8.3 Types of joints.....	15
8.4 Welding procedures, welders' qualifications.....	15
8.5 External coating	19
9 Testing	19
9.1 General.....	19
9.2 Pressure testing.....	20
9.3 Testing of the external coating.....	20
10 Handling and installation	20
10.1 Handling.....	20
10.2 Installation	20
11 Marking of the tank and manufacturer's statement	21
11.1 Marking of the tank	21
11.2 Manufacturer's statement	21
11.3 Drawings.....	21
Annex A (informative) Transport, storage and installation procedure	22
Annex B (informative) Evaluation of liquid-material-combinations for storage tanks according to this standard	24
Annex C (informative) A-deviations.....	155
Bibliography	159

Foreword

This document (EN 12285-1:2003) has been prepared by Technical Committee CEN /TC 221 "Shop fabricated metallic tanks and equipment for storage tanks and for service stations", the secretariat of which is held by DIN.

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 2003, and conflicting national standards shall be withdrawn at the latest by September 2003.

This standard is part of a series of standards in the field of shop fabricated metallic tanks. The titles of the standards which are already edited or are under preparation are:

- Workshop fabricated steel tanks; Horizontal cylindrical single skin and double skin tanks for the underground storage of flammable and non-flammable water polluting liquids
- Workshop fabricated steel tanks; Horizontal cylindrical single skin and double skin tanks for the aboveground storage of flammable and non-flammable water polluting liquids.

Further standards will be evaluated according to former decisions of CEN/TC 221 and according to the common rules for standard works for CEN-standards.

Annexes A, B and C are informative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovak Republic, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This standard specifies the requirements for shop fabricated cylindrical, horizontal steel tanks, single and double skin for the underground storage of water polluting liquids (both flammable and non-flammable) within the following limits:

- from 800 mm up to 3000 mm nominal diameter and,
- up to a maximum overall length of 6 times the nominal diameter and,
- for liquids with a maximum density of up to 1,9 kg/l and,
- with an operating pressure (p_o) of maximum 1,5 bar (abs.) and,
- for double skin tanks with a vacuum leak detection system where the kinematic viscosity does not exceed $5 \times 10^{-3} \text{ m}^2/\text{s}$.

This standard is applicable for normal operating temperature conditions (-20 °C to +50 °C). Where temperatures are outside this range, additional requirements should be taken into account.

For guidance on the liquid-material combinations see Annex B.

This standard is not applicable to the liquid classes listed in Table 1 because of special dangers involved. This standard does not deal with internal coating.

Table 1 — List of dangerous goods not to be considered by this standard

UN-classification	Dangerous Good
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, metalcarbonyls, hydrofluoracid, bromide liquids

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 3.4).

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 287-1, *Approval testing of welders — Fusion welding — Part 1: Steels.*

EN 288-1, *Specification and qualification of welding procedures for metallic materials — Part 1: General rules for fusion welding.*

EN 288-2, *Specification and approval of welding procedures for metallic materials — Part 2: Welding procedure specification for arc welding.*

EN 288-3, *Specification and approval of welding procedures for metallic materials — Part 3: Welding procedure tests for the arc welding of steels.*

EN 10025, *Hot rolled products of non-alloy structural steels — Technical delivery conditions.*

EN 10051:1991, *Continuously hot-rolled uncoated plate, sheet and strip of non-alloy and alloy steels — Tolerances on dimensions and shape.*

EN 10204:1991, *Metallic products — Types of inspection documents.*

prEN 13160-1, *Leak detection systems — Part 1: General principles.*

prEN 13160-2, *Leak detection systems — Part 2: Pressure and vacuum systems.*

prEN 13160-3, *Leak detection systems — Part 3: Liquid systems for tanks.*

prEN 13160-4, *Leak detection systems — Part 4: Liquid and/or vapour sensor systems for use in leakage containments or interstitial spaces.*

prEN 13160-5, *Leak detection systems — Part 5: Tank gauge leak detection systems.*

prEN 13160-6, *Leak detection systems — Part 6: Sensors in monitoring wells.*

prEN 13160-7, *Leak detection systems — Part 7: General requirements and test methods for interstitial spaces, leak protecting linings and leak protecting jackets.*

EN ISO 898-1, *Mechanical properties of fasteners made of carbon steel and alloy steel - Part 1: Bolts, screws and studs (ISO 898-1:1999).*

EN ISO 8501-1, *Preparation of steel substrates before application of paints and related products - Visual assessment of surface cleanliness — Part 1: Rust grades and preparation grades of uncoated steel substrates and of steel substrates after overall removal of previous coatings (ISO 8501-1:1988).*

3 Terms and definitions

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

3.1

tanks

workshop fabricated cylindrical containments for the storage of liquids. They are made of steel, equipped with dished ends and consist of one or more compartments