SLOVENSKI STANDARD
oSIST prEN 12285-4:2022

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[Not translated]

Workshop fabricated steel tanks - Part 4: Vertical cylindrical single skin and double skin tanks for the aboveground storage of flammable and nonflammable water polluting liquids other than for heating and cooling of buildings

Werksgefertigte zylindrische vertikale Metalltanks mit ein- und doppelwandiger Hülle zur Lagerung von brennbaren und nicht brennbaren wassergefährdenden Flüssigkeiten

Ta slovenski standard je istoveten z: **prEN 12285-4**

ICS:

13.300	Varstvo pred nevarnimi izdelki	Protection against dangerous goods
23.020.10	Nepremične posode in rezervoarji	Stationary containers and tanks

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EUROPEAN STANDARD

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English Version

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Werksgefertigte zylindrische vertikale Metalltanks mit ein- und doppelwandiger Hülle zur Lagerung von brennbaren und nicht brennbaren wassergefährdenden Flüssigkeiten

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 265.

If this draft becomes a European Standard, 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.

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

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European foreword

This document (prEN 12285-4:2022) 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 document is currently submitted to the CEN Enquiry.

1 Scope

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

— from Ø 1250 mm up to Ø 4 000 mm inner tank nominal diameter, and

— up to maximum overall shell length of 6 times the nominal inner tank diameter (or max 14 m shell lenght *Lz*), and

— tank possible to be divided from 1 to 5 compartments,

— for liquids with maximum density of up to 1,9 kg/l, and

— with an operating pressure (P_0) of maximum 50kPa (0,5 bar (g)) and minimum – 5 kPa (- 50 mbar (g)), and

— where double skin tanks with vacuum leak detection system are used the kinematic viscosity of the stored media shall not exceed 5×10^{-3} m²/s.

This document is applicable for normal ambient temperature conditions (−40 °C to + 50 °C). Where temperatures are outside this range, additional requirements need to be taken into account.

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.

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 document

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 10025-2:2019, *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 2: Requirements and test/assessment methods for pressure and vacuum systems*

EN 13160-4, *Leak detection systems - Part 4: Requirements and test/assessment methods for sensor based leak detection systems*

EN 22768 series, *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 13616-1, *Overfill prevention devices for static tanks for liquid fuels - Part 1: Overfill prevention devices with closure device*

EN 13616-2, *Overfill prevention devices for static tanks for liquid fuels - Part 2: Overfill prevention devices without a closure device*

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 https://www.electropedia.org/

— ISO Online browsing platform: available at https://www.iso.org/obp

3.1.1
tank
workshop fabricated cylindrical containment for the storage of liquids

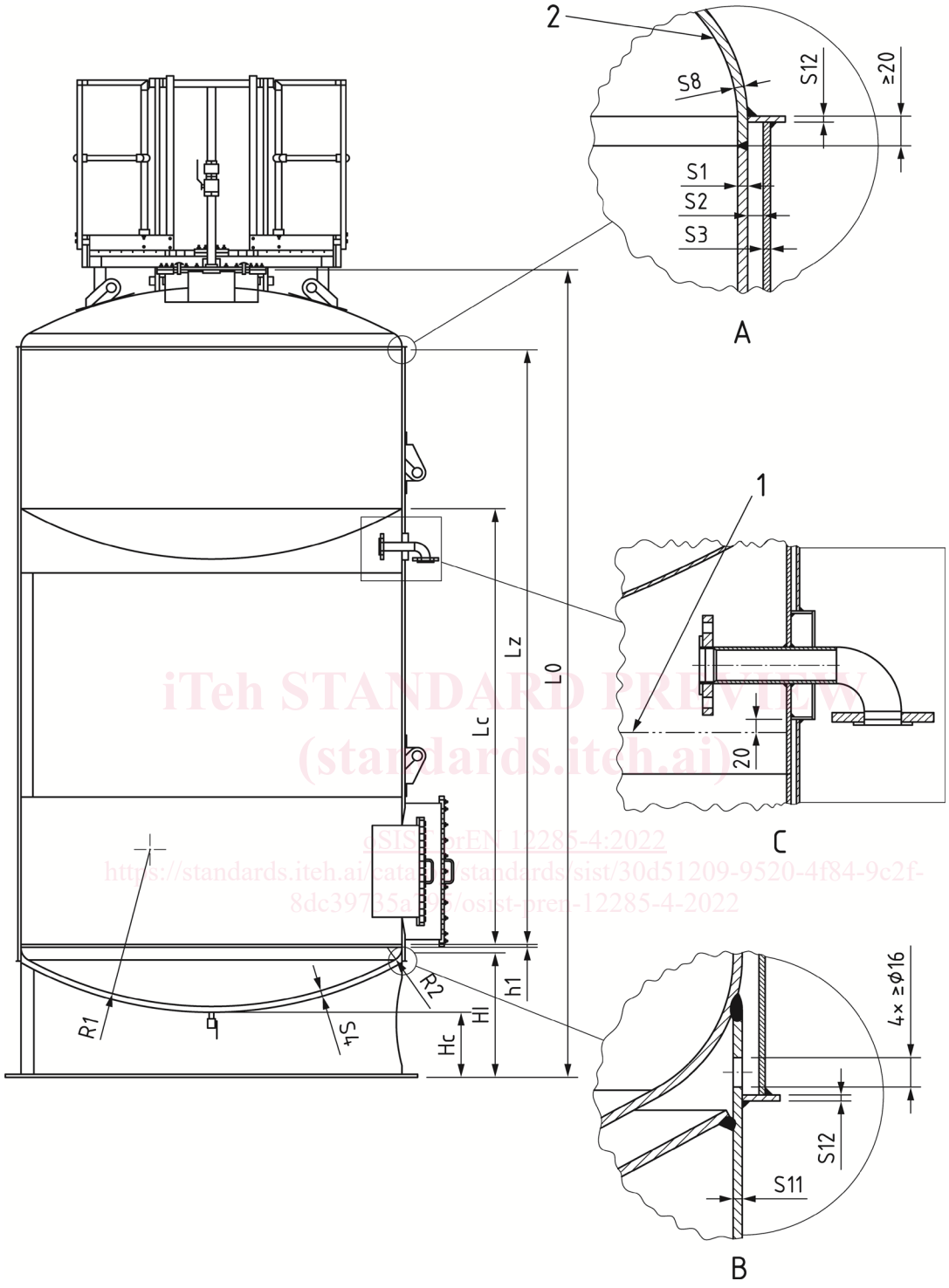
Note 1 to entry: Tanks are made of steel plates, equipped with dished ends and consist of one or more compartments.

3.1.2
compartment
single fluid storage space within a tank

3.1.3
single skin tank
impermeable containment consisting of a self-contained/ self supported tank of single containment

Note 1 to entry: A single skin tank also constitutes the inner skin of a double skin tank. See Figure 1 and Figure 2.

Note 2 to entry: See Figure 1.

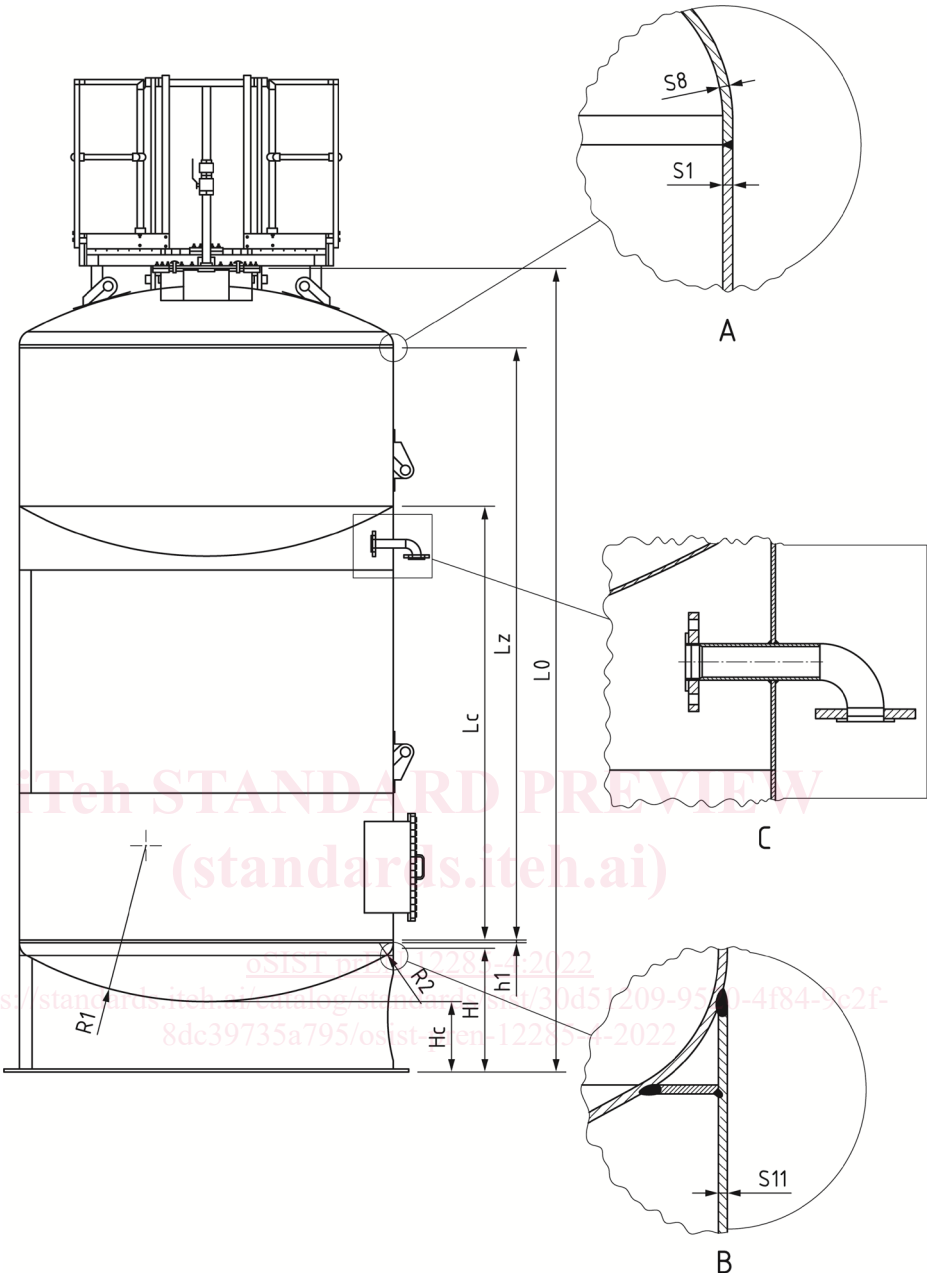


Key

1 max compartment liquid level on normal pipe connection

2 above liquid level single skin

Figure 1 — Example of tank symbols for double skin tank



Key

1 Ring to ensure proper painting. Venting hole needed on the ring for ensuring vapors to vent and for pressure testing.

Figure 2 — Example of tank symbols for single skin tank

3.1.4
double skin tank
impermeable self-contained tank with outer skin welded around the inner tank

Note 1 to entry: See Figure 1.

3.1.5
operating pressure
p_o
pressure bar(g) inside the tank above the liquid during operating conditions

3.1.6
prototype tank test pressure
p_{t1}
pressure bar(g) to which the tank or compartment is subjected for testing

3.1.7
prototype interstitial space test pressure
p_{t2}
pressure bar(g) to which the interstitial space between the skins is subjected for testing

Note 1 to entry: Only applicable for double skin tanks.

3.1.8
tank leak tightness test pressure
p_{t3}
pressure bar(g) to which the tank or compartment is subjected to leak testing

3.1.9
interstitial space leak tight test pressure
pt_4
pressure bar(g) to which the interstitial space is subjected to leak testing

3.1.10
nominal volume
storage capacity for which the tank is designed

3.1.11
actual volume
volume which is equal to or greater than the nominal volume

3.2 Symbols and abbreviations

For the purpose of this document the following symbols apply.

Dimensions in millimetres

a	dimension for welding (See Figure 2)
d_1	external nominal diameter of the tank
d_2	internal diameter of the manway
d_3	diameter of the manway cover and corresponding flange
d_4	internal diameter of the outer manway
d_5	diameter of the outer manway cover and corresponding flange
h_1	length of the straight flange of the dished end