



DPC: 23/30459178 DC

BSI Group Headquarters

389 Chiswick High Road London W4 4AL

Tel: +44 (0)20 8996 9000

Fax: +44 (0)20 8996 7400

www.bsigroup.com

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Title: Draft BS EN 14620-5 Design and manufacture of site built, vertical, cylindrical, flat-bottomed tank systems for the storage of refrigerated, liquefied gases with operating temperatures between 0 °C and -196 °C. Part 5: Testing, drying, purging and cool-down.

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- iii) requires additional national guidance or information

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Responsible Committee Secretary: Mr Bernard N Shelley (BSI)

Direct tel: 020 8996 7217

E-mail: bernard.shelley@bsigroup.com

Full document details: 23/30459178 DC

Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

For national standards, comments will be reviewed by the relevant UK national committee and the resulting standards published as a British Standard.

UK Vote

Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

Submission of Comments

- **Annotated drafts are not acceptable and will be rejected.**
- All comments should be submitted online at <https://standardsdevelopment.bsigroup.com/>. You will need to register in order to comment.

Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/Table/Note	Type of comment	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	

English Version

Design and manufacture of site built, vertical, cylindrical,
flat-bottomed tank systems for the storage of refrigerated,
liquefied gases with operating temperatures between 0 °C
and -196 °C - Part 5: Testing, drying, purging and cool-
down

Conception et fabrication de réservoirs cylindriques
fond plat, verticaux, construits sur site, destinés au
stockage des gaz réfrigérés, liquéfiés, dont les
températures de service sont comprises entre 0 °C et -
196 °C - Partie 5 : Essais, séchage, inertage et mise en
froid

Auslegung und Herstellung standortgefertigter,
stehender, zylindrischer Flachboden-Stahltanks für die
Lagerung von tiefkalt verflüssigten Gasen bei
Betriebstemperaturen zwischen 0 °C und -165 °C - Teil
5: Prüfen, Trocknen, Inertisieren und Kaltfahren

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.

This draft European Standard was established by CEN 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

This document (prEN 14620-5:2023) has been prepared by Technical Committee CEN/TC 265 “Site built metallic tanks for the storage of liquids”, the secretariat of which is held by BSI.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 14620-5:2006.

prEN 14620-5:2023 includes the following significant technical changes with respect to EN 14620-5:2006:

- Table 1 ‘Hydrostatic test requirements’ updated and adjusted to relate to product temperature;
- permitted use of small temporary safety opening in primary steel liquid container after hydrostatic test added;
- requirements for inspection of concrete surfaces during pressure test added;
- negative pressure test details clarified;
- negative pressure test requirements for double wall double roof tanks clarified;
- purging of bottom insulation space clarified;
- decommissioning guidance improved.
- new informative annex for global test for membrane tanks added.

A list of all parts in the EN 14620 series can be found on the CEN website.

1 Scope

This document specifies the requirements for testing, drying, purging, cool-down and decommissioning of refrigerated liquefied gas storage tanks.

This document deals with the design and manufacture of site built, vertical, cylindrical, flat-bottomed tank systems for the storage of refrigerated, liquefied gases with operating temperatures between 0 °C and -196°C.

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 14620-1:—,¹ *Design and manufacture of site built, vertical, cylindrical, flat-bottomed tank systems for the storage of refrigerated, liquefied gases with operating temperatures between 0°C and -196 °C — Part 1: General*

EN 14620-2:2006, *Design and manufacture of site built, vertical, cylindrical, flat-bottomed steel tanks for the storage of refrigerated, liquefied gases with operating temperatures between 0 °C and -165 °C - Part 2: Metallic components*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 14620-1:— apply.

4 Hydrostatic and pneumatic testing

4.1 Hydrostatic test

4.1.1 General

A hydrostatic test shall be carried out. The hydrostatic test shall demonstrate that:

- the tank system is designed and constructed to contain the product;
- the foundation is able to support the tank contents.

NOTE A hydrostatic test also aids the relief of residual stresses for steel tanks.

4.1.2 Test requirements for each type of tank

For the various tank types, the hydrostatic test shall be carried out in accordance with Table 1.

A specification shall be prepared with all the actions to be taken. The test results shall be documented.

NOTE See Annex C.

¹ Under preparation. Current stage: prEN 14620-1:2023.

Table 1 — Hydrostatic test requirements

Contents	Single containment	Double containment	Full containment	Membrane tank
Tank system design temperature $\geq -50\text{ }^{\circ}\text{C}$	Primary liquid container - steel FH	Primary liquid container - steel FH	Primary liquid container – steel FH	Membrane barrier No test (see NOTE 2)
		Secondary liquid container - steel FH (see NOTE 3)	Secondary liquid container - steel FH (see NOTE 3)	Outer container - steel FH
		Secondary liquid container - pre-stressed concrete No test	Secondary liquid container – pre-stressed concrete No test	Outer container - pre-stressed concrete PH (see NOTE 2)
Tank system design temperature $< -50\text{ }^{\circ}\text{C}$	Primary liquid container - steel PH	Primary liquid container - steel PH	Primary liquid container - steel PH	Membrane barrier No test (see NOTE 2)
		Secondary liquid container - steel PH (see NOTE 3)	Secondary liquid container - steel PH (see NOTE 3)	Outer container - steel PH
		Secondary liquid container – pre-stressed concrete No test	Secondary liquid container – pre-stressed concrete No test	Outer container – pre-stressed concrete PH (see NOTE 2)

NOTE 1 FH means Full height hydrostatic test, PH means Partial height hydrostatic test.

NOTE 2 In the case of a membrane tank, there is no requirement for the membrane barrier to be hydrostatically tested. Refer to cl 4.3 for hydrotesting of membrane tank outer container

NOTE 3 The requirement to conduct a full or partial height hydrotest of steel secondary liquid container can be waived by written agreement by the purchaser.

4.1.3 Additional requirements

The following additional requirements shall apply:

- Leak testing shall be completed by means of the welding examination and inspection requirements described in EN 14620-2:2006.
- For a full height hydrostatic test, the primary liquid container shall be filled to the maximum design liquid level. The same quantity of water shall be used when testing the outer tank;
- For a partial height hydrostatic test of the primary liquid container, the test pressure applied by hydrotest water to the tank bottom shall be equal to 1,25 times the pressure applied to the tank bottom by the product at the height of the maximum design liquid level. The same quantity of water contained shall be used when testing the secondary liquid container.
- When secondary liquid containers are hydrostatically tested, a suitable water barrier shall be provided to prevent test water ingress in to the bottom insulation.