

Cryogenic vessels - Large transportable vacuum insulated vessels - Part 1: Fundamental requirements

Cryogenic vessels - Large transportable vacuum insulated vessels - Part 1: Fundamental requirements

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 13530-1:2002 sisaldab Euroopa standardi EN 13530-1:2002 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 18.10.2002 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 13530-1:2002 consists of the English text of the European standard EN 13530-1:2002.</p> <p>This document is endorsed on 18.10.2002 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>
--	---

<p>Käsitlusala:</p> <p>This European Standard specifies the fundamental requirements for large transportable vacuum insulated cryogenic vessels designed to operate above atmospheric pressure. Appropriate parts can be used as a guidance for vessels designed to operate to the atmosphere. This European Standard applies to fixed tanks (of tank-vehicles and tank-wagons), demountable tanks, tanks of battery-vehicles and tank-containers (TC) for refrigerated liquefied gases in the sense of the regulations of the transport of dangerous goods. This standard applies to large transportable vacuum insulated cryogenic vessels for fluids as specified in 3.1 and is not applicable to such vessels designed for toxic fluids.</p>	<p>Scope:</p> <p>This European Standard specifies the fundamental requirements for large transportable vacuum insulated cryogenic vessels designed to operate above atmospheric pressure. Appropriate parts can be used as a guidance for vessels designed to operate to the atmosphere. This European Standard applies to fixed tanks (of tank-vehicles and tank-wagons), demountable tanks, tanks of battery-vehicles and tank-containers (TC) for refrigerated liquefied gases in the sense of the regulations of the transport of dangerous goods. This standard applies to large transportable vacuum insulated cryogenic vessels for fluids as specified in 3.1 and is not applicable to such vessels designed for toxic fluids.</p>
---	---

ICS 23.020.40

Võtmesõnad: acceptance testing, coolers, gas cylinders, marking, materials, mechanical properties, mobile, properties, safety requirements, sample surveys, specification (approval), specifications, surveillance (approval), temperature, testing, toughness, transport boxes, vacuum

English version

Cryogenic vessels - Large transportable vacuum insulated vessels - Part 1: Fundamental requirements

Réceptacles cryogéniques - Grands réceptacles transportables
isolés sous vide - Partie 1: Exigences fondamentales

Kryo-Behälter - Große ortsbewegliche, vakuum-isolierte
Behälter - Teil 1: Grundanforderungen

This European Standard was approved by CEN on 3 January 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, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



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

Management Centre: rue de Stassart, 36 B-1050 Brussels

Contents

	page
Foreword.....	3
1 Scope	4
2 Normative references	4
3 Terms and definitions.....	4
4 General requirements.....	7
5 Mechanical loads	7
6 Chemical effects.....	8
7 Thermal loads.....	9
8 Materials.....	9
9 Design, fabrication, inspection and testing	9
10 Marking and labelling	10
11 Final acceptance test.....	10
12 Periodic inspection.....	10
Annex A (informative) Tank plates.....	11

Foreword

This document EN 13530-1:2002 has been prepared by Technical Committee CEN/TC 268, "Cryogenic vessels", the secretariat of which is held by AFNOR.

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 November 2002, and conflicting national standards shall be withdrawn at the latest by November 2002.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

In this standard the annex A is informative.

EN 13530 consists of the following parts under the general title, *Cryogenic vessels – Large transportable vacuum insulated vessels*:

- *Part 1: Fundamental requirements.*
- *Part 2: Design, fabrication, inspection and testing.*
- *Part 3: Operational requirements.*

This European Standard has been submitted for reference into the RID and/or in the technical annexes of the ADR. Therefore in this context the standards listed in the normative references and covering basic requirements of the RID/ADR not addressed within the present standard are normative only when the standards themselves are referred to in the RID and/or in the technical annexes of the ADR.

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, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard specifies the fundamental requirements for large transportable vacuum insulated cryogenic vessels designed to operate above atmospheric pressure. Appropriate parts can be used as a guidance for vessels designed to operate to the atmosphere.

This European Standard applies to fixed tanks (of tank-vehicles and tank-wagons), demountable tanks, tanks of battery-vehicles and tank-containers (TC) for refrigerated liquefied gases in the sense of the regulations of the transport of dangerous goods. This standard applies to large transportable vacuum insulated cryogenic vessels for fluids as specified in 3.1 and is not applicable to such vessels designed for toxic fluids.

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 1252-1, *Cryogenic vessels - Materials - Part 1: Toughness requirements for temperatures below – 80 °C.*

EN 1252-2, *Cryogenic vessels - Materials - Part 2: Toughness requirements for temperatures between – 80 °C and – 20 °C.*

EN 1626, *Cryogenic vessels - Valves for cryogenic service.*

EN 1797, *Cryogenic vessels - Gas/material compatibility.*

EN 10204, *Metallic products; Types of inspection documents.*

EN 12300, *Cryogenic vessels - Cleanliness for cryogenic service.*

prEN 13648-1, *Cryogenic vessels - Safety devices for protection against excessive pressure - Part 1: Safety valves for cryogenic service.*

prEN 13530-2, *Cryogenic vessels - Large transportable vacuum insulated vessels - Part 2: Design, fabrication, inspection and testing.*

EN 13530-3, *Cryogenic vessels - Large transportable vacuum insulated vessels - Part 3: Operational requirements.*

3 Terms and definitions

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

3.1

cryogenic fluid (refrigerated liquefied gas)

gas which is partially liquid because of its low temperature¹⁾. In the context of all parts of this standard the (refrigerated but) non-toxic gases and mixtures of them given in Table 1 are referred to as cryogenic fluids

1) This includes totally evaporated liquids and supercritical fluids.