

Cryogenic vessels — Transportable vacuum insulated vessels of not more than 1 000 litres volume —

Part 3: Operational requirements

The European Standard EN 1251-3:2000 has the status of a
British Standard

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National foreword

This British Standard is the official English language version of EN 1251-3:2000.

The UK participation in its preparation was entrusted to Technical Committee PVE/18, Cryogenic vessels, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Summary of pages

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Kryo-Behälter - Ortsbewegliche, vakuum-isolierte Behälter mit einem Fassungsraum von nicht mehr als 1 000 Liter - Teil 3: Betriebsanforderungen

This European Standard was approved by CEN on 19 June 1999.

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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 Central Secretariat has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Foreword

This European Standard 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of an identical text or by endorsement, at the latest by July 2000, and conflicting national standards shall be withdrawn at the latest by July 2000.

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, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

The standard has been submitted for reference into the RID and/or in the technical annexes of the ADR.

Therefore 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.

The other parts of EN 1251 are:

- Part 1: Fundamental requirements;
- Part 2: Design, fabrication, inspection and testing.

1 Scope

This European Standard specifies operational requirements for transportable vacuum insulated cryogenic vessels of not more than 1 000 litres volume designed to operate above atmospheric pressure. Appropriate parts may be used as guidance for a vessel designed to operate open to the atmosphere.

For small cryogenic vessels specially designed for personal medical use, this standard can be used as a guide only.

The scope includes putting into service, filling, withdrawal, transport within the location, storage, maintenance, periodic inspection and emergency procedures. Operational requirements for vessels used on public roads, sea and air are not covered.

For the transportation of these vessels by public road, rail, sea and air, other requirements apply; these are defined in specific regulations.

This standard applies to vessels for cryogenic fluids as specified in EN 1251-1. The additional requirements for flammable fluids are detailed in clause 16.

For existing small transportable cryogenic vessels, see annex C.

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.

EN 1251-1, *Cryogenic vessels - Transportable vacuum insulated vessels of not more than 1 000 litres volume - Part 1: Fundamental requirements*

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

3 Definitions

For the purposes of this standard, the following definitions apply in addition to those given in EN 1251-1.

3.1

putting into service

the operation by which a vessel is prepared to be used. It applies to either a new vessel being used for the first time or an existing vessel being returned to service

3.2

filling

the operation by which a vessel undergoes a prefill check, filling with a cryogenic fluid and an after fill check

3.3

withdrawal

the operation by which vessels are connected to supply equipment and product is drawn off

3.4

outdoor location

location outside of any building or structure and not enclosed by more than two walls

3.5

underground location

areas or rooms whose ground or floor is on all sides lower than the adjacent ground surfaces

3.6

safety distance

the safety distance from a piece of equipment with inherent hazard is that minimum separation which will mitigate the effect of a likely foreseeable incident and prevent a minor incident escalating into a larger incident. The safety distance will also provide protection from foreseeable external impact (e.g. roadway, flare) or activities outside the control of the operation (e.g. plant or customer station boundary)

Included in safety distances are:

- distances between vessels and neighbouring installations, buildings or public roads, the purpose of which is to protect the vessels from any damage, such as heating as a result of fire, or mechanical damage;
- the distance between the vessel and an object outside the installation, which has to be protected from the effects of a gas release arising from normal operation.

These distances are measured from those points on a vessel from which in the normal course of operation an escape of product may occur, e.g. vent point, fill connection, flanges or other mechanical joints.

The safety distance is the distance, outside of which:

- in the case of flammable gases danger through formation of an explosive atmosphere is eliminated, i.e. the lower explosive limit (LEL) is not exceeded;
- in the case of inert and oxidizing gases, danger from a lack of oxygen or enrichment is eliminated.

The safety distances given in annex B are based on experience and calculation of minor releases.

The safety distances are not intended to provide protection against catastrophic events or major releases and these should be addressed by other means to reduce the frequency and/or consequences to an acceptable level.

3.7

vessel

throughout EN 1251-3, vessel means transportable cryogenic vessel as defined in EN 1251-1, clause 3.2

4 Preliminaries before putting into service

Before putting into service verification shall take place to ensure that the vessel is suitable for the intended service and that the marking, labelling and handover documents are complete.

4.1 Marking and labelling

Marking and labelling shall be in accordance with EN 1251-1.

4.2 Handover documents

In addition to the manufacturer's documentation, where necessary the cryogenic vessel shall be accompanied by vessel specific documents and instructions for all items:

- operations;
- auxiliary equipment;
- inspection records.

These documents shall be retained by the owner of the vessel.

The user shall have appropriate operating instructions available. Such instructions may be attached to the vessel in a permanent manner.