



National Standards Authority of Ireland

IRISH STANDARD

I.S. EN 13648-2:2002

ICS 23.060 40

**CRYOGENIC VESSELS - SAFETY DEVICES
FOR PROTECTION AGAINST EXCESSIVE
PRESSURE - PART 2: BURSTING DISC
SAFETY DEVICES FOR CRYOGENIC
SERVICE**

National Standards
Authority of Ireland
Dublin 9
Ireland

Tel: (01) 807 3800
Tel: (01) 807 3838

*This Irish Standard was
published under the
authority of the National
Standards Authority of
Ireland
and comes into effect on
September 13 2002*

**NO COPYING WITHOUT NSAI
PERMISSION EXCEPT AS
PERMITTED BY COPYRIGHT
LAW**

© NSAI 2002

Price Code E

Údarás um Chaighdeáin Náisiúnta na hÉireann

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 13648-2

May 2002

ICS 23.060.40

English version

**Cryogenic vessels - Safety devices for protection against
excessive pressure - Part 2: Bursting disc safety devices for
cryogenic service**

Réceptacles cryogéniques - Dispositifs de protection contre
les suppressions - Partie 2: Dispositif de sécurité à disque
de rupture pour service cryogénique

Kryo-Behälter - Sicherheitseinrichtungen gegen
Drucküberschreitung - Teil 2: Berstscheibeneinrichtungen

This European Standard was approved by CEN on 5 April 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
EUROPAISCHES 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.....	5
4 Requirements	5
4.1 General.....	5
4.2 Design	5
4.2.1 Design temperature	5
4.2.2 Coincident temperature.....	5
4.2.3 Sublimating cryogenes	6
4.3 Materials.....	6
4.3.1 General.....	6
4.3.2 Metallic materials	6
4.3.3 Corrosion resistance	6
4.3.4 Oxygen compatibility.....	6
4.3.5 Acetylene compatibility.....	6
4.3.6 Non-metallic materials.....	6
5 Production testing	7
5.1 Pressure and burst tests.....	7
5.2 Additional tests for bursting disc safety devices with non-replaceable bursting disc assemblies.....	7
5.2.1 Leak tests.....	7
5.2.2 Visual examination	7
6 Cleanliness	7
7 Marking	7
8 Prevention of substitution	7
Annex ZA (informative) Clauses of this European Standard addressing essential requirements or other provisions of EU Directives	8

Foreword

This document (EN 13648-2:2002) 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 document 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).

For relationship with EU Directive(s), see informative annex ZA, which is an integral part of this document.

This document also supports the objectives of the framework Directives on Transport of Dangerous Goods. This standard has been submitted for reference into the RID and/or the technical annexes of the ADR.

This European Standard is composed of the following Parts :

EN 13648-1, *Cryogenic vessels – Safety devices for protection against excessive pressure – Part 1 : Safety valves for cryogenic service ;*

EN 13648-2, *Cryogenic vessels – Safety devices for protection against excessive pressure – Part 2 : Bursting discs safety devices for cryogenic service ;*

prEN 13648-3, *Cryogenic vessels – Safety devices for protection against excessive pressure – Part 3 : Determination of required discharge - Capacity and sizing.*

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.

EN 13648-2:2002 (E)

1 Scope

This European Standard specifies the requirements for the design, manufacture and testing of bursting disc safety devices for cryogenic service, i.e. for operation with cryogenic fluids below $-10\text{ }^{\circ}\text{C}$ in addition to operation at ambient temperature. It is a requirement of this standard that the bursting disc safety device(s) comply with prEN ISO 4126-2. In the event of different requirements, this standard takes precedence over that standard.

This standard is restricted to bursting disc safety devices not exceeding a size of DN 100 designed to relieve single phase vapours or gases. A bursting disc assembly can be specified, constructed and tested such that it is suitable for use with more than one gas or with mixtures of gases.

NOTE This standard does not provide methods for determining the capacity of bursting disc safety devices for a particular cryogenic vessel. Such methods are provided in prEN 13648-3.

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 1251-1:2000, *Cryogenic vessels – Transportable vacuum insulated vessels of not more than 1 000 litres volume – Part 1: Fundamental requirements*.

EN 1252-1:1998, *Cryogenic vessels – Materials – Part 1: Toughness requirements for temperatures below $-80\text{ }^{\circ}\text{C}$* .

EN 1797-1, *Cryogenic vessels - Gas/material compatibility - Part 1: Oxygen compatibility*.

EN 12300:1998, *Cryogenic vessels - Cleanliness for cryogenic service*.

EN ISO 6708:1995, *Pipework components – Definition and selection of DN (nominal size) (ISO 6708:1995)*.

prEN 1252-2, *Cryogenic vessels – Materials – Part 2: Toughness requirements for temperatures between $-80\text{ }^{\circ}\text{C}$ and $-20\text{ }^{\circ}\text{C}$* .

EN 13458-1, *Cryogenic vessels – Static vacuum insulated vessels – Part 1: Fundamental requirements*.

EN 13530-1, *Cryogenic vessels – Large transportable vacuum insulated vessels – Part 1: Fundamental requirements*.

prEN 13648-3, *Cryogenic Vessels – Safety devices for protection against excessive pressure – Part 3: Determination of required discharge - Capacity and sizing*.

prEN ISO 4126-2, *Safety devices for protection against excessive pressure - Part 2: Bursting disc safety devices (ISO/FDIS 4126-2:2002)*.

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

-
- Looking for additional Standards? Visit Intertek Inform Infostore
 - Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation
-