

Transportable gas cylinders — Cylinder bundles — Design, manufacture, identification and testing

The European Standard EN 13769:2003, with the incorporation of amendment A1:2005, has the status of a British Standard

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National foreword

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Summary of pages

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English version

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Bouteilles à gaz transportables - Cadres de bouteilles -
Conception, fabrication, identification et essai

Ortsbewegliche Gasflaschen - Flaschenbündel -
Konstruktion, Herstellung, Kennzeichnung und Prüfung

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Management Centre: rue de Stassart, 36 B-1050 Brussels

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Foreword

This document (EN 13769:2003) has been prepared by Technical Committee CEN/TC 23 “Transportable gas cylinders”, the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by March 2004, and conflicting national standards shall be withdrawn at the latest by March 2004.

Annexes A and B are normative.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports the objectives of the framework Directives on Transport of Dangerous Goods.

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: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

Foreword to amendment A1

This European Standard (EN 13769:2003/A1:2005) has been prepared by Technical Committee CEN/TC 23 “Transportable gas cylinders”, the secretariat of which is held by BSI.

This Amendment to the European Standard EN 13769:2003 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by December 2005, and conflicting national standards shall be withdrawn at the latest by December 2005.

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Introduction

For some applications, the contents of an individual gas cylinder may not satisfy the gas demand, in which case assemblies of cylinders may be used to supply larger volumes of gas in a single unit. The single unit, which contains a number of cylinders, is known as a cylinder bundle.

A cylinder bundle is a portable assembly which is designed for being routinely lifted and which consists of a frame and two or more cylinders connected to a manifold by cylinder valves or fittings such that the cylinders are filled, transported and emptied without disassembly.

A cylinder bundle can be subjected to rough handling in the course of normal operations.

There are types of gas cylinder assemblies which use cylinder bundle components, but which are designed to be disassembled at each filling to enable the cylinders to be filled individually. These assemblies do not conform to the basic definition of a cylinder bundle, however, they are commonly referred to as bundles. Their special requirements are included in annex A.

Acetylene cylinder bundles are often filled without disassembly, however, in order to confirm their solvent content they are disassembled after a defined number of fillings.

Unless otherwise stated, individual cylinders within cylinder bundles should conform to applicable standards for single cylinders. This standard specifies the additional requirements that apply when individual cylinders are assembled into a bundle.

1 Scope

This European Standard specifies the requirements for the design, manufacture, identification and testing of a cylinder bundle. It is applicable to cylinder bundles containing compressed gas, liquefied gas and mixtures thereof. It is also applicable to cylinder bundles for acetylene.

This European Standard does not apply to packages in which cylinders are manifolded together in a support frame which is designed to be fixed permanently to a road vehicle to a railway wagon or to the ground as a customer storage vessel. It does not apply to cylinder bundles which are designed for use in extreme environmental or operational conditions when additional and extraordinary requirements are imposed to maintain safety standards, reliability and performance. Offshore cylinder bundles are a specific example.

NOTE The specific requirements for acetylene are included in annex B.

This standard is primarily for industrial gases other than Liquefied Petroleum gases (LPG) but may also be used for LPG. However for dedicated LPG cylinders, see standards prepared by CEN/TC 286 *Liquefied petroleum gas equipment and accessories*.

2 Normative references

This European Standard incorporates by dated or undated references, 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 287-1, *Approval testing of welders — Fusion welding — Part 1: Steels*.

EN 288-1, *Specification and qualification of welding procedures for metallic materials — Part 1: General rules for fusion welding*.

EN 1089-2, *Transportable gas cylinders — Gas cylinder identification (excluding LPG) — Part 2: Precautionary labels*.

EN 1089-3, *Transportable gas cylinders — Cylinder identification (excluding LPG) — Part 3: Colour coding*.

EN 1290, *Non destructive examination of welds — Magnetic particle examination of welds*.

EN 1291, *Non destructive examination of welds — Magnetic particle testing of welds — Acceptance levels*.

EN 12755, *Transportable gas cylinders — Filling conditions for acetylene bundles*.

EN 13133, *Brazing — Brazer approval*.

EN 13134, *Brazing — Procedure approval*.

EN ISO 14113, *Gas welding equipment — Rubber and plastic hoses assembled for compressed or liquefied gases up to a maximum design pressure of 450 bar (ISO 14113 1997)*.

ISO 13769, *Gas cylinders - Stamp marking*

3 Terms and definitions

For the purposes of this European Standard the following terms and definitions apply. Definitions specific to acetylene are included in annex B.

3.1

cylinder bundle (bundle)

portable assembly which consists of a frame and two or more cylinders each of capacity up to 150 litres and with a combined capacity of not more than 3 000 litres, or 1 000 litres in the case of toxic gases, connected to a manifold by cylinder valves or fittings such that the cylinders are filled, transported and emptied without disassembly

3.2

frame

structural and non-structural members of a bundle which combine all other components together, whilst providing protection for the bundle's cylinders, valves and manifold and which enable the bundle to be transported

3.3

cylinder valve

valve which is fitted into a cylinder and to which a manifold is connected in a bundle

3.4

cylinder fitting

device with no gas shut-off capability which serves as a method for connecting a bundle's manifold to its individual cylinders when cylinder valves are not fitted to the cylinders

3.5

manifold

system for connecting a bundle's cylinder valves or cylinder fittings to the main valve(s) or main connection(s)

3.6

main valve

valve which is fitted to a bundle's manifold isolating it from the main connection(s)

3.7

main connection

means of making a gas connection to a bundle

3.8

sundry items

those parts other than cylinders, frame, manifold, cylinder valves, cylinder fittings and main connections which make up a complete bundle

NOTE Sundry items typically include labels, cylinder neck rings, data plates, fasteners, clamps, dip tubes, pressure gauges and protective caps.

3.9

tare weight

weight of the bundle when empty of gas product

3.10

maximum gross weight

tare weight of the bundle plus the maximum weight of the gas product contained within the bundle

3.11

compressed gas

gas which when packaged under pressure for transport is entirely gaseous at $-50\text{ }^{\circ}\text{C}$, this category includes all gases with a critical temperature less than or equal to $-50\text{ }^{\circ}\text{C}$

3.12

liquefied gas

gas which when packaged under pressure for transport is partially liquid at temperatures above $-50\text{ }^{\circ}\text{C}$.

A distinction is made between:

high pressure liquefied gas; a gas with a critical temperature between $-50\text{ }^{\circ}\text{C}$ and $+65\text{ }^{\circ}\text{C}$ and

low pressure liquefied gas; a gas with a critical temperature above $+65\text{ }^{\circ}\text{C}$