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Gas cylinders - Flexible hoses assemblies - Specification and testing (ISO 16964:2019)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 09/20

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 16964

April 2020

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English Version

Gas cylinders - Flexible hoses assemblies - Specification and testing (ISO 16964:2019)

Bouteilles à gaz - Flexibles - Spécifications et essais (ISO 16964:2019)

Gasflaschen - Flexible Schlauchleitungen - Spezifikation und Prüfung (ISO 16964:2019)

This European Standard was approved by CEN on 13 April 2020.

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European foreword

The text of ISO 16964:2019 has been prepared by Technical Committee ISO/TC 58 "Gas cylinders" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 16964:2020 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of an identical text or by endorsement, at the latest by October 2020, and conflicting national standards shall be withdrawn at the latest by October 2020.

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Endorsement notice

The text of ISO 16964:2019 has been approved by CEN as EN ISO 16964:2020 without any modification.

INTERNATIONAL STANDARD

ISO 16964

Second edition
2019-01

Gas cylinders — Flexible hoses assemblies — Specification and testing

Bouteilles à gaz — Flexibles — Spécifications et essais

Reference number
ISO 16964:2019(E)

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 58, *Gas cylinders,* Subcommittee SC 2, *Cylinder fittings*.

This second edition cancels and replaces the first edition (ISO 16964:2015), which has been technically revised.

The main changes compared to the previous edition are as follows:

— Test 1 for the safety cable has been clarified;

— the leak test has been corrected;

— the pressure cycle test has been clarified;

— the test apparatus for the torsion test, as shown in Figures A.6 and A.7 has been clarified.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Flexible hose assemblies are used to transfer industrial and medical gases into cylinders, bundles, MEGCs and trailers (battery vehicles), and also to supply such gases to user equipment.

There is a range of existing International Standards to be used for specific applications or hose construction:

— ISO 14113 which covers hoses made with internal rubber or plastics tubing and used to supply gases to customers for welding applications;

— ISO 21969 which covers hoses with an internal corrugated metallic liner and used to supply medical gases to customers;

— ISO 10380 which covers hoses with internal corrugated metallic liner for all applications including non-industrial and medical gases.

ISO 14113 and ISO 21969 cover only specific customer applications and are intended to be used accordingly, while ISO 10380 is general in its approach.

The intent of the document is to describe flexible hoses not defined in the specific applications documents mentioned above.

INTERNATIONAL STANDARD **ISO 16964:2019(E)**

Gas cylinders — Flexible hoses assemblies — Specification and testing

1 Scope

This document provides specification and testing requirements for high pressure flexible hose assemblies intended to be connected to gas cylinders, bundles of cylinders or trailers (battery vehicles), and MEGCs for use when filling and emptying gas at production sites and also for customer use. This document applies to flexible hose assemblies with rated pressures up to 1 000 bar for use in the temperature range of −40 °C to +65 °C.

This document is not applicable to:

— rubber and plastics flexible hose assemblies for welding, cutting and related processes up to 45 MPa (450 bar) for customer use (see ISO 14113);

— high pressure flexible hose assemblies for use with medical gas systems for customer use (see ISO 21969);

— low pressure hose assemblies for use with medical gases for customer use (see ISO 5359);

— rubber and thermoplastic low pressure hose assemblies for welding, cutting and related processes for customer use (see ISO 3821 or ISO 12170);

— flexible hose assemblies for cryogenic applications (see ISO 21012);

— flexible hose assemblies for liquid petroleum gas (LPG).

NOTE Flexible hose assembly designs which pass the type test approval described in this document can have a lower ratio of burst pressure to rated pressure than stated in other standards.

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.

ISO 148-1, *Metallic materials — Charpy pendulum impact test — Part 1: Test method*

ISO 10286, *Gas cylinders — Terminology*

ISO 10380, *Pipework — Corrugated metal hoses and hose assemblies*

ISO 14113:2013, *Gas welding equipment — Rubber and plastics hose and hose assemblies for use with industrial gases up to 450 bar (45 MPa)*

ISO 21969:2009, *High-pressure flexible connections for use with medical gas systems*

