BS EN ISO 16964:2020



BSI Standards Publication

Gas cylinders — Flexible hoses assemblies — Specification and testing

bsi.

Documents
Document Sharing Hub

Full document details: BS EN ISO 16964:2020

National foreword

This British Standard is the UK implementation of EN ISO 16964:2020. It is identical to ISO 16964:2019. It supersedes BS ISO 16964:2019, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PVE/3/1, Gas containers - Valve fittings for gas containers.

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

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2020
Published by BSI Standards Limited 2020

ISBN 978 0 539 06471 1

ICS 23.020.35; 83.140.40

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 January 2019.

Amendments/corrigenda issued since publication

Date	Text affected
31 May 2020	This corrigendum renumbers BS ISO 16964:2019 as BS EN ISO 16964:2020

Documents
Document Sharing Hub

Full document details: BS EN ISO 16964:2020

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 16964

April 2020

ICS 23.020.35; 83.140.40

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.

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 CEN-CENELEC 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

© 2020 CEN All rights of exploitation in any form and by any means reserved worldwide for CEN national Members.

Ref. No. EN ISO 16964:2020 E

Documents
Document Sharing Hub

Full document details: BS EN ISO 16964:2020

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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

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

AVA Documents
Document Sharing Hub

Full document details: BS EN ISO 16964:2020

Contents

Page

Foreword ..... **iv**
Introduction ..... **v**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **1**
4 Requirements **2**
4.1 Production pressure tests 2
4.1.1 Strength test 2
4.1.2 Leak test 2
4.2 Type tests 2
4.2.1 General 2
4.2.2 Burst pressure test (3 samples per type) 3
4.2.3 Pressure cycle test (3 samples per type) 3
4.2.4 Oxygen compatibility test (3 samples per type) 4
4.2.5 Acetylene compatibility test (3 samples) 4
4.2.6 Gas material compatibility 4
4.2.7 Test of the safety cable (2 samples) 4
4.2.8 Additional tests 5
5 Marking **6**
Annex A (informative) **Examples of kink test, side impact test and torsion test** **7**
Bibliography **14**

© ISO 2019 – All rights reserved

Documents
Document Sharing Hub
Full document details: BS EN ISO 16964:2020

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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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.

© ISO 2019 – All rights reserved
AVA Documents Document Sharing Hub
Full document details: BS EN ISO 16964:2020

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.

© ISO 2019 – All rights reserved

Documents
Document Sharing Hub
Full document details: BS EN ISO 16964:2020

Documents
Document Sharing Hub

Full document details: BS EN ISO 16964:2020