BS EN ISO 14113:2013

BSI Standards Publication

Gas welding equipment — Rubber and plastics hose and hose assemblies for use with industrial gases up to 450 bar (45 MPa)

bsi.

...making excellence a habit.™

National foreword

This British Standard is the UK implementation of EN ISO 14113:2013. It supersedes BS EN ISO 14113:2008 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee WEE/18, Gas welding and cutting appliances.

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.

ISBN 978 0 580 81065 7

ICS 25.160.30; 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 October 2013.

Amendments issued since publication

Date	Text affected

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 14113

October 2013

ICS 25.160.30; 83.140.40

Supersedes EN ISO 14113:2008

English Version

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

Matériel de soudage aux gaz - Tuyaux souples et flexibles en caoutchouc et en plastique pour des gaz industriels jusqu'à 450 bar (45 MPa) (ISO 14113:2013)

Gasschweißgeräte - Gummi- und Kunststoffschläuche und Schlauchleitungen für Industriegase bis zu einem Druck von 450 bar (45 MPa) (ISO 14113:2013)

This European Standard was approved by CEN on 3 September 2013.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, 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: Avenue Marnix 17, B-1000 Brussels

Ref. No. EN ISO 14113:2013: E

Foreword

This document (EN ISO 14113:2013) has been prepared by Technical Committee ISO/TC 44 “Welding and allied processes” in collaboration with Technical Committee CEN/TC 121 “Welding and allied processes” the secretariat of which is held by DIN.

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 April 2014, and conflicting national standards shall be withdrawn at the latest by April 2014.

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

This document supersedes EN ISO 14113:2008.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 14113:2013 has been approved by CEN as EN ISO 14113:2013 without any modification.

Contents

Page

Foreword ... **iv**

1 Scope ... **1**

2 Normative references ... **1**

3 Terms and definitions ... **2**

4 Construction ... **3**
4.1 Hose ... 3
4.2 End fittings ... 3
4.3 Hose assemblies ... 3

5 Dimensions and tolerances ... **3**
5.1 Bore size ... 3
5.2 Concentricity ... 3
5.3 Cut lengths and tolerances ... 4
5.4 Length of hoses assemblies ... 4

6 Physical properties of lining and cover — Type tests ... **4**
6.1 General ... 4
6.2 Resistance to ignition requirement for oxygen hose lining ... 5
6.3 Resistance to acetone (acetylene hose only) ... 5

7 Performance requirements — Type tests ... **5**
7.1 Pressure resistance requirements ... 5
7.2 Adhesion (rubber hoses only) ... 6
7.3 Flexibility ... 6
7.4 Low temperature flexibility ... 6
7.5 Ozone resistance (for hoses with an outer protective cover of rubber) ... 6
7.6 UV resistance (for hoses with plastics cover) ... 6
7.7 Permeability to gas ... 6
7.8 Electrical conductivity ... 6
7.9 End fitting integrity ... 6

8 Performance requirements — Production tests ... **7**
8.1 Pressure tests for hose assemblies ... 7
8.2 Leak test ... 7
8.3 Cleaning for oxygen service ... 7

9 Marking ... **7**

10 Packaging ... **8**

11 Instructions ... **8**

Annex A (normative) **Acetylene decomposition test for hose assemblies used in high pressure acetylene installations** ... **9**

Annex B (normative) **Oxygen pressure surge test** ... **10**

Annex C (normative) **Oxygen system installation considerations** ... **12**

Bibliography ... **13**

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. 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. 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 on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 44, *Welding and allied processes*, Subcommittee SC 8, *Equipment for gas welding, cutting and allied processes*.

This third edition cancels and replaces the second edition (ISO 14113:2007), of which it constitutes a minor revision with the following changes:

— correction of temperature value in 7.5;

— editorial revision.

Requests for official interpretations of any aspect of this International Standard should be directed to the Secretariat of ISO/TC 44/SC 8 via your national standards body. A complete listing of these bodies can be found at www.iso.org.

INTERNATIONAL STANDARD **ISO 14113:2013(E)**

Gas welding equipment — Rubber and plastics hose and hose assemblies for use with industrial gases up to 450 bar (45 MPa)

1 Scope

This International Standard specifies requirements for rubber and plastics hose and hose assemblies for use with compressed, liquefied, and dissolved gases up to a maximum working pressure of 450 bar (45 MPa), within the ambient temperature range of −20 °C to +60 °C.

This International Standard applies to hose assemblies used to connect industrial gas cylinders to manifolds or bundles prior to any pressure reduction stage.

This International Standard does not cover rubber or thermoplastic hoses for welding, cutting, and allied processes (see ISO 3821 and ISO 12170).

This International Standard does not apply to refrigerated liquefied gases or to liquefied petroleum gases (LPG).

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 105-A02:1993, *Textiles — Tests for colour fastness — Part A02: Grey scale for assessing change in colour*

ISO 1307:2006, *Rubber and plastics hoses — Hose sizes, minimum and maximum inside diameters, and tolerances on cut-to-length hoses*

ISO 1402, *Rubber and plastics hoses and hose assemblies — Hydrostatic testing*

ISO 1746:1998, *Rubber or plastics hoses and tubing — Bending tests*

ISO 1817, *Rubber, vulcanized — Determination of the effect of liquids*

ISO 4080:1991, *Rubber and plastic hoses and hose assemblies — Determination of permeability to gas*

ISO 4671, *Rubber and plastics hoses and hose assemblies — Methods of measurement of the dimensions of hoses and the lengths of hose assemblies*

ISO 4672:1997, *Rubber and plastics hoses — Sub-ambient temperature flexibility tests*

ISO 7326:2006, *Rubber and plastics hoses — Assessment of ozone resistance under static conditions*

ISO 8031, *Rubber and plastics hoses and hose assemblies — Determination of electrical properties*

ISO 8033:2006, *Rubber and plastics hoses — Determination of adhesion between components*

ISO 15296, *Gas welding equipment — Vocabulary — Terms used for gas welding equipment*

ISO 11114-3, *Transportable gas cylinders — Compatibility of cylinder and valve materials with gas contents — Part 3: Autogenous ignition test in oxygen atmosphere*

ISO 30013:2011, *Rubber and plastics hoses — Methods of exposure to laboratory light sources — Determination of changes in colour, appearance and other physical properties*