

Contents

Page

Foreword	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Abbreviated terms	2
5 Application	2
6 Hose designation	2
7 Materials	3
7.1 Construction	3
7.1.1 Light and normal duty hoses	3
7.1.2 Flux fuel gas hose	3
7.1.3 Twin hose	3
7.2 Manufacture	3
8 Dimensions and tolerances	3
8.1 Inside diameters	3
8.2 Outside diameters	4
8.3 Wall thickness	4
8.4 Concentricity (total indicator reading)	5
8.5 Cut lengths and tolerances	5
8.6 Disclosure of inside diameter and outside diameter	5
9 Requirements and type tests	5
9.1 General	5
9.2 Basic requirements	5
9.2.1 Tensile strength and elongation at break	5
9.2.2 Accelerated ageing	5
9.2.3 Adhesion	5
9.2.4 Hydrostatic requirements	6
9.2.5 Flexibility at ambient temperature	6
9.2.6 Low-temperature flexibility	6
9.2.7 Protection against incandescent particles and hot surfaces	6
9.2.8 Ozone resistance	6
9.3 Special requirements	6
9.3.1 Non-ignition requirement for oxygen hoses	6
9.3.2 Resistance to acetone and dimethylformamide for acetylene hoses	7
9.3.3 Resistance to <i>n</i> -pentane for propane hoses	7
9.3.4 Resistance to azeotrope of trimethylborate with methanol for flux fuel gas hoses	7
9.3.5 Flexibility of flux fuel gas hoses	8
9.3.6 Permeability to LPG, MPS, and natural gas of methane hoses, universal fuel gas hoses, and flux fuel gas hoses	8
9.3.7 Requirements for twin hoses	8
9.3.8 Requirements for universal fuel gas hose	8
10 Hose colour and gas identification	8
10.1 General	8
10.2 Gas identification	8
10.3 Marking	9
Annex A (normative) Method of test for non-ignition	10
Annex B (normative) Method of test for resistance to <i>n</i>-pentane	12
Annex C (normative) Method of test for resistance to incandescent particles and hot surfaces	13

Annex D (normative) Summary of requirements and type tests	15
Annex E (normative) Alternative oxygen gas colour codes.....	16
Bibliography	17

QUESTO DOCUMENTO È UNA PREVIEW. RIPRODUZIONE VIETATA

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 44, *Welding and allied processes*, Subcommittee SC 8, *Equipment for gas welding, cutting and allied processes*.

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.

Official interpretations of TC 44 documents, where they exist, are available from this page: <https://committee.iso.org/sites/tc44/home/interpretation.html>.

This fifth edition cancels and replaces the fourth edition (ISO 3821:2008) which has been technically revised.

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

- the definition of maximum working pressure has been added;
- [Clauses 7](#) to [9](#) have been revised;
- the requirements for marking have been revised;
- editorial changes have been made.

QUESTO DOCUMENTO È UNA PREVIEW. RIPRODUZIONE VIETATA

Gas welding equipment — Rubber hoses for welding, cutting and allied processes

1 Scope

This document specifies requirements for rubber hoses (including twin hoses) for welding, cutting and allied processes.

This document specifies requirements for rubber hoses for normal duty of 2 MPa (20 bar) and light duty [limited to hoses for maximum working pressure of 1 MPa (10 bar) and with bore up to and including 6,3 mm].

This document applies to hoses operated at temperatures $-20\text{ }^{\circ}\text{C}$ to $+60\text{ }^{\circ}\text{C}$ and used in:

- gas welding and cutting;
- arc welding under the protection of an inert or active gas;
- processes allied to welding and cutting, in particular, heating, brazing, and metallization.

This document does not specify requirements for hose assemblies; these are detailed in ISO 8207.

This document applies neither to thermoplastics hoses nor to hoses used for high pressure [$>0,15\text{ MPa}$ ($>1,5\text{ bar}$)] acetylene.

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 37, *Rubber, vulcanized or thermoplastic — Determination of tensile stress-strain properties*

ISO 188, *Rubber, vulcanized or thermoplastic — Accelerated ageing and heat resistance tests*

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 10619-1, *Rubber and plastics hoses and tubing — Measurement of flexibility and stiffness — Part 1: Bending tests at ambient temperature*

ISO 10619-2, *Rubber and plastics hoses and tubing — Measurement of flexibility and stiffness — Part 2: Bending tests at sub-ambient temperatures*

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

ISO 4080, *Rubber and plastics 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 7326, *Rubber and plastics hoses — Assessment of ozone resistance under static conditions*

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