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Interested committees:

Title: Draft BS ISO 19880-7 Gaseous hydrogen - Fuelling stations. Part 7: Rubber O-rings.

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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

For national standards, comments will be reviewed by the relevant UK national committee and the resulting standards published as a British Standard.

UK Vote

Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

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Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/Table/Note	Type of comment	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	

DRAFT INTERNATIONAL STANDARD

ISO/DIS 19880-7

ISO/TC 197

Secretariat: SCC

Voting begins on:
2023-11-22

Voting terminates on:
2024-02-14

Gaseous hydrogen — Fuelling stations —

Part 7: Rubber O-rings

ICS: 71.100.20; 43.060.40

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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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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 World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 197, *Hydrogen technologies*.

This document was developed using the document of ISO 3601 series developed by ISO/TC131, *Fluid power systems, SC7, Sealing devices*.

A list of all parts in the ISO 3601 series can be found on the ISO website.

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

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Gaseous hydrogen — Fuelling stations —

Part 7: Rubber O-rings

1 Scope

This document specifies the requirements for rubber O-rings and their housing dimensions, which seal gaseous hydrogen, in high-pressure hydrogen devices for gaseous hydrogen fuelling stations, such as valves, filters, joints, breakaways and other such devices, suitable for sealing hydrogen gas of up to 70 MPa nominal working pressure, in the operating temperature range of $-40\text{ }^{\circ}\text{C}$ to $65\text{ }^{\circ}\text{C}$.

This document contains safety requirements for the design of O-rings and their housing dimensions, compound design, test methods for seal systems. This document applies to newly manufactured O-rings for hydrogen gas seal in high-pressure hydrogen devices used in hydrogen fuelling stations.

NOTE 1 This document was developed using the standard ISO 3601 family, "Fluid power systems -O-rings".

NOTE 2 This document was developed based on several temperature classes of rubber O-rings suitable for use with high-pressure hydrogen seals in devices for gaseous hydrogen stations.

NOTE 3 Regardless of the operationg temperature, the hydrogen gas temperature can rise up to $180\text{ }^{\circ}\text{C}$.

NOTE 4 The O-ring seal system for the high-pressure hydrogen devices are designed by the device manufacturers. The detailed specifications of the O-rings and design of static or non-static high-pressure hydrogen seal systems for the high-pressure hydrogen devices are determined as agreed upon between the interested parties by referring to this document.

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.

ASTM D1414-15, *Standard Test Methods for Rubber O-rings*

ISO 1382, *Rubber — Vocabulary*

ISO 14687:2019, *Hydrogen fuel quality — Product specification*

ISO 1629, *Rubber and latices — Nomenclature*

ISO 1817:2015, *Rubber, vulcanized or thermoplastic — Determination of the effect of liquids*

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

ISO 19880-1, *Gaseous hydrogen — Fuelling stations — Part 1: General requirements*

ISO 2921:2019, *Rubber, vulcanized — Determination of low-temperature characteristics — Temperature-retraction procedure (TR test)*

ISO 2921, *Rubber, vulcanized — Determination of low-temperature characteristics — Temperature-retraction procedure (TR test)*