INTERNATIONAL STANDARD

ISO 4633

Fourth edition
2015-06-01

Rubber seals — Joint rings for water supply, drainage and sewerage pipelines — Specification for materials

Joints étanches en caoutchouc — Garnitures de joints de canalisations d'adduction et d'évacuation d'eau (égouts inclus) — Spécification des matériaux

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Reference number
ISO 4633:2015(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).

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 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.

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The committee responsible for this document is ISO/TC 45, *Rubber and rubber products*, Subcommittee SC 4, *Products (other than hoses)*.

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This fourth edition cancels and replaces the third edition (ISO 4633:2002), which has been technically revised.

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Rubber seals — Joint rings for water supply, drainage and sewerage pipelines — Specification for materials

WARNING — Persons using this International Standard should be familiar with normal laboratory practice. This International Standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and to ensure compliance with any national regulatory conditions.

1 Scope

This International Standard specifies requirements for materials used in vulcanized rubber seals for the following:

a) cold drinking-water supplies (up to 50 °C);

b) drainage, sewerage, and rainwater systems (continuous flow up to 45 °C and intermittent flow up to 95 °C).

The different designations of seals specified are defined according to their type, application, and requirements (see Table 3).

General requirements for finished joint seals are also given; any additional requirements called for by the particular application are specified in the relevant product standards, taking into account that the performance of pipe joints is a function of the seal material properties, seal geometry, and pipe joint design. This International Standard is intended to be used, where appropriate, with product standards which specify performance requirements for joints.

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This International Standard is applicable to joint seals for all pipeline materials, including iron, steel, clay, fibre cement, concrete, reinforced concrete, plastics, and glass-reinforced plastics.

It is applicable to elastomeric components of composite or non-composite seals. In the case of composite seals for materials of hardness ranges from 76 IRHD to 95 IRHD, the requirements for elongation at break, compression set, and stress relaxation apply only when the material is participating in the sealing function or in the long term stability of the seal.

Joint seals made with an enclosed void as part of their design are included in the scope of this International Standard.

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

ISO 48, *Rubber, vulcanized or thermoplastic — Determination of hardness (hardness between 10 IRHD and 100 IRHD)*

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

ISO 815-1, *Rubber, vulcanized or thermoplastic — Determination of compression set — Part 1: At ambient or elevated temperatures*

ISO 815-2, *Rubber, vulcanized or thermoplastic — Determination of compression set — Part 2: At low temperatures*

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