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Rubber, vulcanized and thermoplastic — Preformed gaskets used in buildings — Classification, specifications and test methods

Caoutchouc vulcanisé et thermoplastique — Profilés d'étanchéité utilisés dans le bâtiment — Classification, spécifications et méthodes d'essai

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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 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 45, *Rubber and rubber products*, Subcommittee SC 4, *Products (other than hoses)*.

This third edition cancels and replaces the second edition (ISO 3934:2002), which has been technically revised.

The main changes to the previous edition are as follows:

— requirements on estimation of lifetime have been added;

— hardness tolerance has increased;

— references have been updated.

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

Preformed gaskets used in buildings have conditions of use which differ depending on their function and position in the building. When preparing this document, it was felt necessary to take into account the various conditions to which the gaskets are subjected in order to define the material specifications. The tests take into account the static and dynamic stresses to which the gaskets are subjected.

Rubber, vulcanized and thermoplastic — Preformed gaskets used in buildings — Classification, specifications and test methods

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

1 Scope

This document specifies a system of classification of materials used in preformed gaskets for buildings. It applies to the following products:

a) gaskets for use round the inside of door or window casings, i.e. weatherstripping (dynamic gaskets);

b) gaskets for glazing (static gaskets);

c) gaskets for use round infilling;

d) gaskets for use between facade parts;

e) gaskets for use between masonry walls.

In addition to specifying the characteristics required for the constituent materials, some functional tests on the gaskets themselves are specified. The corresponding test procedures are given in Annexes A to E.

This document applies to preformed gaskets made from vulcanized or thermoplastic rubber. It also applies to preformed gaskets made of cellular rubber designed for use at temperatures between −20 °C and +55 °C (thermal conditions category P_1) and between −40 °C and +70 °C (thermal conditions category P_3) (see Clause 4).

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 48-4, *Rubber, vulcanized or thermoplastic — Determination of hardness — Part 4: Indentation hardness by durometer method (Shore hardness)*

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

ISO 188:2011, *Rubber, vulcanized or thermoplastic — Accelerated ageing and heat resistance tests*

ISO 812, *Rubber, vulcanized or thermoplastic — Determination of low-temperature brittleness*

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*

ISO 1431-1, *Rubber, vulcanized or thermoplastic — Resistance to ozone cracking — Part 1: Static and dynamic strain testing*

ISO 2285:2019, *Rubber, vulcanized or thermoplastic — Determination of tension set under constant elongation, and of tension set, elongation and creep under constant tensile load*

ISO 3384-1:2019, *Rubber, vulcanized or thermoplastic — Determination of stress relaxation in compression — Part 1: Testing at constant temperature*

ISO 4892-2, *Plastics — Methods of exposure to laboratory light sources — Part 2: Xenon-arc lamps*

ISO 11346, *Rubber, vulcanized or thermoplastic — Estimation of life-time and maximum temperature of use*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
compression force
force needed to compress a test piece through its working range to its *minimum width* (3.3)

3.2
compression recovery
ability of a gasket to recover its shape after being compressed through its working range

3.3
minimum width
lower limit of the *working compression range* (3.7)

Note 1 to entry: For a glazing gasket, the minimum width is the sum of the gaps between the glass and the frame on each side of the glass. For weatherstripping, it is the gap between the door or window and the casing, measured at the hinge side.

Note 2 to entry: It is recommended that the minimum width of weatherstripping and the minimum clearance between glazing and frame for a glazing gasket be agreed by consultation between designer, manufacturer and user

3.4
sample
complete batch of test material (gaskets) as supplied by the manufacturer for test purposes and from which test pieces are cut

3.5
stress relaxation
time-dependent decrease in stress at a constant deformation

3.6
weathering resistance
resistance to combined detrimental influences of the outdoor environment (e.g. sunlight, ozone, oxygen, humidity, temperature) on a material