BS ISO 3302-1:2014

BSI Standards Publication

Rubber — Tolerances for products

Part 1: Dimensional tolerances

This British Standard is the UK implementation of ISO 3302-1:2014. It supersedes BS 3734-1:1997 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PRI/73, Industrial rubber products.

A list of organizations represented on this committee can be obtained on request to its secretary.

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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

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

This second edition cancels and replaces the first edition (ISO 3302-1:1996), which has been technically revised to incorporate the Amendment ISO 3302-2:1996/Amd.1:2001.

ISO 3302 consists of the following parts, under the general title *Rubber — Tolerances for products*:

— *Part 1: Dimensional tolerances*

— *Part 2: Geometrical tolerances*

Introduction

Rubber products are subject to changes in their dimensions after processing and vulcanization. This can be due to a variety of factors, such as mould shrinkage or relaxation of die swell.

These changes should be determined and allowed for when designing such items as moulds and dies used in the manufacture of a given product.

The closer tolerance classes outlined in this specification are not to be demanded unless required by the final application and are to be restricted to those dimensions deemed to be critical. The greater the degree of accuracy demanded, the closer the control to be be exercised during manufacture, and hence the higher the costs.

When particular physical properties are required in the product, it might not always be possible to provide them in a mix which is capable of fabrication to close tolerances. lt is advisable, in these circumstances, that consultation should take place between the interested parties. In general, softer vulcanizates (i.e. those of hardness below 50 IRHD - see ISO 48) need greater tolerances than harder ones.

INTERNATIONAL STANDARD ISO 3302-1:2014(E)

Rubber — Tolerances for products —

Part 1: Dimensional tolerances

1 Scope

This part of ISO 3302 specifies classes of dimensional tolerances and their values for moulded, extruded, and calendared solid rubber products. The relevant test methods necessary for the establishment of compliance with this part of ISO 3302 are also specified.

The tolerances are primarily intended for use with vulcanized rubber but can also be suitable for products made of thermoplastic rubbers.

This part of ISO 3302 does not apply to precision toroidal sealing rings or to calendared composite products such as rubber-coated fabrics or products where a rubber coating is applied by the process of topping or skim coating.

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 3, *Preferred numbers — Series of preferred numbers*

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

ISO 2230, *Rubber products — Guidelines for storage*

ISO 23529, *Rubber — General procedures for preparing and conditioning test pieces for physical test methods*

3 Measurement of dimensions

3.1 General

For solid products, measurements of dimensions shall not be made until 16 h have elapsed after vulcanization, this minimum time is being extended to 72 h in cases of dispute. Measurements shall be completed within 3 months after the date of despatch to the purchaser or before the product is put into use, whichever is the shorter time. Measurements shall be made at standard temperature, after conditioning, in accordance with ISO 23529. Care shall be taken to ensure that the products are not subjected to adverse storage conditions in accordance with ISO 2230, and that they are not distorted during measurement.