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Rubber, vulcanized or thermoplastic — Hardness testing — Introduction and guide

Caoutchouc vulcanisé ou thermoplastique — Essai de dureté — Introduction et guide

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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).

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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 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 2, *Testing and analysis*.

This second edition cancels and replaces the first edition (ISO 18517:2005), which has been technically revised.

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Rubber, vulcanized or thermoplastic — Hardness testing — Introduction and guide

1 Scope

This International Standard provides guidance on the determination of the hardness of vulcanized and thermoplastic rubbers.

It is intended to provide an understanding of the significance of hardness as a material property and to assist in the selection of an appropriate test method.

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

ISO 7267-1, *Rubber-covered rollers — Determination of apparent hardness — Part 1: IRHD method*

ISO 7267-2, *Rubber-covered rollers — Determination of apparent hardness — Part 2: Shore-type durometer method*

ISO 7267-3, *Rubber-covered rollers — Determination of apparent hardness — Part 3: Pusey and Jones method*

ISO 7619-1, *Rubber, vulcanized or thermoplastic — Determination of indentation hardness — Part 1: Durometer method (Shore hardness)*

ISO 7619-2, *Rubber, vulcanized or thermoplastic — Determination of indentation hardness — Part 2: IRHD pocket meter method*

ISO 18898, *Rubber — Calibration and verification of hardness testers*

ISO 27588, *Rubber, vulcanized or thermoplastic—Determination of dead-load hardness using the very low rubber hardness (VLRH) scale*

3 Terms and definitions

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

3.1
international rubber hardness degrees
IRHD
hardness scale chosen so that “0” represents the hardness of material having a Young’s modulus of zero and “100” represents the hardness of a material of infinite Young’s modulus

Note 1 to entry: The following conditions are fulfilled over most of the normal range of hardness:

a) one international rubber hardness degree always represents approximately the same proportionate difference in the Young’s modulus;

b) for highly elastic rubbers, the IRHD and Shore A durometer scales are comparable.

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