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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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ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

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Foreword

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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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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 2, *Testing and analysis*.

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

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.