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Rubber, vulcanized or thermoplastic — Determination of hardness —

Part 2: Hardness between 10 IRHD and 100 IRHD

*Caoutchouc vulcanisé ou thermoplastique — Détermination de la
dureté —*

Partie 2: Dureté comprise entre 10 DIDC et 100 DIDC



Reference number
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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 the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*, Subcommittee SC 2, *Testing and analysis*.

This first edition of ISO 48-2 cancels and replaces ISO 48:2010, of which it constitutes a minor revision. The changes compared to the previous edition are as follows:

- a new standard number has been given.
- in the Introduction, an explanation of the purpose of the grouping work has been added.
- in [Clause 12](#), an alternative way of expressing results has been added.

A list of all parts in the ISO 48 series can be found on the ISO website.

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.

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Introduction

ISO/TC 45/SC 2 established a principle that it would be helpful for users if standards on the same subject but covering different aspects or methods were grouped together, preferably with an introductory guidance standard, rather than being scattered throughout the numbering system. This has been achieved for some subjects, for example curemeters (ISO 6502) and dynamic properties (ISO 4664).

In 2017, it was decided to group standards for hardness and, subsequently, it was agreed that they would be grouped under the ISO 48 number. The new standards together with the previously numbered standards are listed below.

- ISO 48-1: former ISO 18517
- ISO 48-2: former ISO 48
- ISO 48-3: former ISO 27588
- ISO 48-4: former ISO 7619-1
- ISO 48-5: former ISO 7619-2
- ISO 48-6: former ISO 7267-1
- ISO 48-7: former ISO 7267-2
- ISO 48-8: former ISO 7267-3
- ISO 48-9: former ISO 18898

The hardness test specified in this document is intended to provide a rapid measurement of rubber stiffness, unlike hardness tests on other materials which measure resistance to permanent deformation.

Hardness is measured from the depth of indentation of a spherical indenter, under a specified force, into a rubber test piece. An empirical relationship between depth of indentation and Young's modulus for a perfectly elastic isotropic material has been used to derive a hardness scale which can conveniently be used for most rubbers.

When it is required to determine the value of Young's modulus itself, it is expected that an appropriate test method be used, for example that described in ISO 7743.

The guide to hardness testing, ISO 48-1, can also be a useful reference.