
**Rubber or plastics covered rollers —
Specifications —**

**Part 1:
Requirements for hardness**

*Cylindres revêtus de caoutchouc ou de plastique — Spécifications —
Partie 1: Spécifications de dureté*





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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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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 6123-1:1982), of which it constitutes a minor revision, mainly to update the normative references.

ISO 6123 consists of the following parts, under the general title *Rubber or plastics covered rollers — Specifications*:

- *Part 1: Requirements for hardness*
- *Part 2: Surface characteristics*
- *Part 3: Dimensional tolerances*

Introduction

Covered rollers are cylindrical cores, generally of metal, with a cover of rubber or plastics for a particular use. They are manufactured in a wide variety of sizes and hardness grades depending on the intended use.

Rubber or plastics covered rollers — Specifications —

Part 1: Requirements for hardness

1 Scope

This part of ISO 6123 specifies requirements for the measured hardness of rubber or plastics covered rollers.

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 7267 (all parts), *Rubber-covered rollers — Determination of apparent hardness*

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

3 Specification of hardness

The hardness of rubber or plastics covered rollers shall be specified in one of the following units, as agreed between the interested parties:

- a) international rubber hardness degrees (IRHD);
- b) Shore hardness degrees (Shore A or Shore D);
- c) Pusey and Jones indentation values.

As hardness can be affected by temperature, the application temperature should be specified, if necessary.

A basic correlation is recognized between IRHD, Shore hardness degrees and Pusey and Jones indentation values for a determined quality. An equivalence exists between IRHD and Shore A hardness degrees. If medium accuracy is required, the use of a Shore A durometer instead of an IRHD hardness tester is possible, but it should be noted that the values are not in any case identical, due to differences in the intervals between taking readings.

NOTE 1 All hand-operated hardness meters are subject to variations in reading from one operator to another. With meters of the IRHD or the Pusey and Jones type, the reading is influenced by the rate of application of the load and whether or not the force applied has a component other than perpendicular. With spring-loaded meters of the Shore type, the reading is additionally dependent on the pressure exerted.

NOTE 2 Since hardness is measured by indentation, the thickness of the rubber or plastics material can affect the hardness reading obtained. The hardness reading of a cover compound on a roller and the true hardness of that compound under standard laboratory conditions are only comparable when the cover thickness is:

- a) for IRHD hardness:
up to 50 IRHD: not less than 9 mm,
over 50 IRHD: not less than 6 mm;