INTERNATIONAL STANDARD

ISO 6123-1

Second edition
2015-08-15

Rubber or plastics covered rollers — Specifications —

Part 1: Requirements for hardness

Cylindres revêtus de caoutchouc ou de plastique — Spécifications —

Partie 1: Spécifications de dureté

Reference number
ISO 6123-1:2015(E)

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

Page

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 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;