



SLOVENSKI STANDARD SIST EN ISO 4545-1:2018

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Nadomešča:

SIST EN ISO 4545-1:2006

Kovinski materiali - Preskus trdote po Knoopu - 1. del: Preskusna metoda (ISO 4545-1:2017)

Metallic materials - Knoop hardness test - Part 1: Test method (ISO 4545-1:2017)

Metallische Werkstoffe - Härteprüfung nach Knoop - Teil 1: Prüfverfahren (ISO 4545-1:2017)

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Matériaux métalliques - Essai de dureté Knoop - Partie 1 : Méthode d'essai (ISO 4545-1:2017)

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77.040.10 Mehansko preskušanje kovin Mechanical testing of metals

SIST EN ISO 4545-1:2018

en

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 4545-1

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Supersedes EN ISO 4545-1:2005

English Version

Metallic materials - Knoop hardness test - Part 1: Test method (ISO 4545-1:2017)

Matériaux métalliques - Essai de dureté Knoop - Partie 1: Méthode d'essai (ISO 4545-1:2017)

Metallische Werkstoffe - Härteprüfung nach Knoop - Teil 1: Prüfverfahren (ISO 4545-1:2017)

This European Standard was approved by CEN on 30 November 2017.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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European foreword

This document (EN ISO 4545-1:2018) has been prepared by Technical Committee ISO/TC 164 “Mechanical testing of metals” in collaboration with Technical Committee ECISS/TC 101 “Test methods for steel (other than chemical analysis)” the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2018, and conflicting national standards shall be withdrawn at the latest by September 2018.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

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According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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INTERNATIONAL
STANDARD

ISO
4545-1

Second edition
2017-12

**Metallic materials — Knoop
hardness test —**

**Part 1:
Test method**

Matériaux métalliques — Essai de dureté Knoop —

Partie 1: Méthode d'essai
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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).

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This document was prepared by Technical Committee ISO/TC 164, *Mechanical testing of metals*, Subcommittee SC 3, *Hardness testing*. [SIST EN ISO 4545-1:2018](https://standards.iteh.ai/catalog/standards/sist/d77209f9-935f-48a3-9a72-891bb6f2e701/iso-4545-1:2018)

This second edition cancels and replaces the first edition (ISO 4545-1:2005), which has been technically revised.

The main changes compared to the previous edition are as follows:

- all references have been removed of indentation diagonals <0,020 mm;
- the resolution requirements have been defined for the measuring system;
- the lower test force limit of the Knoop hardness test has been expanded to 0,009 807 N;
- the requirements for the periodic (weekly or daily) verifications of the testing machine have been defined as normative, the maximum permissible bias value has been revised, and the requirements for the maximum permissible error in measuring a reference indentation have been revised;
- the recommendations for inspection and monitoring of the indenter have been added (moved from ISO 4545-2);
- the requirements have been revised for the approach velocity of the indenter prior to contact with the sample surface;
- the timing requirements for the test force application and the duration at maximum test force are revised to indicate target time values;
- [Figure 3](#) has been added illustrating the requirements for the minimum distance between indentations; the distances have been stated with respect to the indentation centres rather than the indentation limits, but the requirements have not changed;
- the requirements have been added to the test report for reporting the test date and any hardness conversion method used;

- [Annexes C, D](#) and [E](#) have been added concerning Knoop hardness measurement traceability, the CCM — Working group on hardness and adjustment of Köhler illumination systems, respectively.

A list of all parts in the ISO 4545 series can be found on the ISO website.

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