

## **Metallic materials - Knoop hardness test - Part 3: Calibration of reference blocks**

Metallic materials - Knoop hardness test - Part 3:  
Calibration of reference blocks

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 4545-3:2006 sisaldab Euroopa standardi EN ISO 4545-3:2005 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 25.01.2006 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 4545-3:2006 consists of the English text of the European standard EN ISO 4545-3:2005.</p> <p>This document is endorsed on 25.01.2006 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p><b>Käsitlusala:</b></p> <p>This part of ISO 4545 specifies the method for the calibration of reference blocks to be used for the indirect verification of Knoop hardness testing machines as specified in ISO 4545-2.</p>	<p><b>Scope:</b></p> <p>This part of ISO 4545 specifies the method for the calibration of reference blocks to be used for the indirect verification of Knoop hardness testing machines as specified in ISO 4545-2.</p>
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ICS 77.040.10

Võtmesõnad:

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English Version

## Metallic materials - Knoop hardness test - Part 3: Calibration of reference blocks (ISO 4545-3:2005)

Matériaux métalliques - Essai de dureté Knoop - Partie 3:  
Etalonnage des blocs de référence (ISO 4545-3:2005)

Metallische Werkstoffe - Härteprüfung nach Knoop - Teil 3:  
Kalibrierung der Härtevergleichsplatten (ISO 4545-3:2005)

This European Standard was approved by CEN on 28 October 2005.

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## Foreword

This document (EN ISO 4545-3:2005) has been prepared by Technical Committee ISO/TC 164 "Mechanical testing of metals" in collaboration with Technical Committee ECISS/TC 1 "Steel - Mechanical testing", 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of an identical text or by endorsement, at the latest by May 2006, and conflicting national standards shall be withdrawn at the latest by May 2006.

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## Endorsement notice

The text of ISO 4545-3:2005 has been approved by CEN as EN ISO 4545-3:2005 without any modifications.

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**Metallic materials — Knoop hardness  
test —**

**Part 3:  
Calibration of reference blocks**

*Matériaux métalliques — Essai de dureté Knoop —  
Partie 3: Étalonnage des blocs de référence*



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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 4545-3 was prepared by Technical Committee ISO/TC 164, *Mechanical testing of metals*, Subcommittee SC 3, *Hardness testing*.

ISO 4545-3 cancels and replaces the first edition of ISO 4547:1993, which has been technically revised.

ISO 4545 consists of the following parts, under the general title *Metallic materials — Knoop hardness test*:

- *Part 1: Test method*
- *Part 2: Verification and calibration of testing machines*
- *Part 3: Calibration of reference blocks*
- *Part 4: Table of hardness values*



# Metallic materials — Knoop hardness test —

## Part 3: Calibration of reference blocks

### 1 Scope

This part of ISO 4545 specifies the method for the calibration of reference blocks to be used for the indirect verification of Knoop hardness testing machines as specified in ISO 4545-2.

The method is applicable only for indentations with long diagonals  $\geq 0,020$  mm.

### 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 376:2004, *Metallic materials — Calibration of force-proving instruments used for the verification of uniaxial testing machines*

ISO 4287:1997, *Geometrical Product Specifications (GPS) — Surface texture: Profile method — Terms, definitions and surface texture parameters*

ISO 4545-1:2005, *Metallic materials — Knoop hardness test — Part 1: Test method*

ISO 4545-2, *Metallic materials — Knoop hardness test — Part 2: Verification and calibration of testing machines*

### 3 Manufacture of the block

**3.1** The block shall be specially manufactured for use as a hardness-reference block.

**NOTE** Attention is drawn to the need to use a manufacturing process which will give the necessary homogeneity, stability of structure and uniformity of surface hardness.

**3.2** The reference block thickness shall be greater than twenty times the depth of indentation made with the certified test force.

**3.3** The reference blocks shall be free of magnetism.

**3.4** The maximum deviation in flatness of the surfaces shall not exceed 0,005 mm.

**3.5** The maximum error in parallelism shall not exceed 0,010 mm/50 mm.