



SLOVENSKI STANDARD

SIST EN ISO 14577-3:2015

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Nadomešča:

SIST EN ISO 14577-3:2004

Kovinski materiali - Instrumentirano vtiskanje pri preskušanju trdote in drugih lastnosti materialov - 3. del: Kalibracija referenčnih etalonov (ISO 14577-3:2015)

Metallic materials - Instrumented indentation test for hardness and materials parameters - Part 3: Calibration of reference blocks (ISO 14577-3:2015)

Metallische Werkstoffe - Instrumentierte Eindringprüfung zur Bestimmung der Härte und anderer Werkstoffparameter - Teil 3: Kalibrierung von Referenzproben (ISO 14577-3:2015)

Matériaux métalliques - Essai de pénétration instrumenté pour la détermination de la dureté et de paramètres des matériaux - Partie 3: Étalonnage des blocs de référence (ISO 14577-3:2015)

Ta slovenski standard je istoveten z: EN ISO 14577-3:2015

ICS:

77.040.10 Mehansko preskušanje kovin Mechanical testing of metals

SIST EN ISO 14577-3:2015

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 14577-3

July 2015

ICS 77.040.10

Supersedes EN ISO 14577-3:2002

English Version

**Metallic materials - Instrumented indentation test for hardness
and materials parameters - Part 3: Calibration of reference
blocks (ISO 14577-3:2015)**

Matériaux métalliques - Essai de pénétration instrumenté
pour la détermination de la dureté et de paramètres des
matériaux - Partie 3: Étalonnage des blocs de référence
(ISO 14577-3:2015)

Metallische Werkstoffe - Instrumentierte Eindringprüfung
zur Bestimmung der Härte und anderer Werkstoffparameter
- Teil 3: Kalibrierung von Referenzproben (ISO 14577-
3:2015)

This European Standard was approved by CEN on 16 April 2015.

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European foreword

This document (EN ISO 14577-3:2015) 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of an identical text or by endorsement, at the latest by January 2016, and conflicting national standards shall be withdrawn at the latest by January 2016.

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

This document supersedes EN ISO 14577-3:2002.

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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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The text of ISO 14577-3:2015 has been approved by CEN as EN ISO 14577-3:2015 without any modification.

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INTERNATIONAL STANDARD

ISO
14577-3

Second edition
2015-08-01

Metallic materials — Instrumented indentation test for hardness and materials parameters —

Part 3: Calibration of reference blocks

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(standards.iteh.ai)
*Matériaux métalliques — Essai de pénétration instrumenté pour la
détermination de la dureté et de paramètres des matériaux —
Partie 3: Étalonnage des blocs de référence*

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ISO 14577-3:2015(E)

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 \(standards.iteh.ai\)](http://Foreword - Supplementary information (standards.iteh.ai))

The committee responsible for this document is ISO/TC 164, *Mechanical testing of metals*, Subcommittee SC 3, *Hardness testing*.

This second edition cancels and replaces the first edition (ISO 14577-3:2002), which has been technically revised.

ISO 14577 consists of the following parts, under the general title *Metallic materials — Instrumented indentation test for hardness and materials parameters*:

- *Part 1: Test method*
- *Part 2: Verification and calibration of testing machines*
- *Part 3: Calibration of reference blocks*
- *Part 4: Test method for metallic and non-metallic coatings*

Introduction

Hardness has typically been defined as the resistance of a material to permanent penetration by another harder material. The results obtained when performing Rockwell, Vickers, and Brinell tests are determined after the test force has been removed. Therefore, the effect of elastic deformation under the indenter has been ignored.

ISO 14577 (all parts) has been prepared to enable the user to evaluate the indentation of materials by considering both the force and displacement during plastic and elastic deformation. By monitoring the complete cycle of increasing and removal of the test force, hardness values equivalent to traditional hardness values can be determined. More significantly, additional properties of the material such as its indentation modulus and elasto-plastic hardness can also be determined. All these values can be calculated without the requirement to measure the indent optically. Furthermore, by a variety of techniques, the instrumented indentation test allows to record hardness and modulus depth profiles within a, probably complex, indentation cycle.

ISO 14577 (all parts) has been written to allow a wide variety of post test data analysis.

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