

<b>STN</b>	<b>Kovové materiály. Skúška tvrdosti podľa Leeba. Časť 3: Kalibrácia referenčných doštičiek (ISO 16859-3: 2015).</b>	<b>STN EN ISO 16859-3</b>  42 0357
------------	--	--

Metallic materials - Leeb hardness test - Part 3: Calibration of reference test blocks (ISO 16859-3:2015)

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 03/16

Obsahuje: EN ISO 16859-3:2015, ISO 16859-3:2015

**122323**

EUROPEAN STANDARD

**EN ISO 16859-3**

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2015

ICS 77.040.10

English Version

## Metallic materials - Leeb hardness test - Part 3: Calibration of reference test blocks (ISO 16859-3:2015)

Matériaux métalliques - Essai de dureté Leeb - Partie 3  
: Etalonnage des blocs de référence (ISO 16859-  
3:2015)

Metallische Werkstoffe - Härteprüfung nach Leeb - Teil  
3: Kalibrierung von Härtevergleichsplatten (ISO  
16859-3:2015)

This European Standard was approved by CEN on 10 July 2015.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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.

CEN members are the national standards bodies of 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 United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

**Contents**

**Page**

**European foreword..... 3**

## European foreword

This document (EN ISO 16859-3:2015) 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 April 2016, and conflicting national standards shall be withdrawn at the latest by April 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.

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.

### Endorsement notice

The text of ISO 16859-3:2015 has been approved by CEN as EN ISO 16859-3:2015 without any modification.

---

---

**Metallic materials — Leeb hardness  
test —**

**Part 3:  
Calibration of reference test blocks**

*Matériaux métalliques — Essai de dureté Leeb —  
Partie 3: Etalonnage des blocs de référence*





**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2015, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

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
<b>Foreword</b> .....	<b>iv</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Manufacture of reference test blocks</b> .....	<b>1</b>
<b>4 Calibration machine</b> .....	<b>2</b>
4.1 General.....	2
4.2 Traceability.....	2
4.3 Requirements on calibration machines.....	2
4.4 Calibration of calibration machines.....	3
<b>5 Calibration procedure</b> .....	<b>4</b>
<b>6 Number of test indentations</b> .....	<b>4</b>
<b>7 Uniformity of hardness</b> .....	<b>4</b>
<b>8 Marking</b> .....	<b>6</b>
<b>9 Validity</b> .....	<b>6</b>
<b>Annex A (normative) Requirements for Leeb hardness calibration machines</b> .....	<b>7</b>
<b>Annex B (informative) Measurement uncertainty of reference test block</b> .....	<b>8</b>
<b>Annex C (informative) Examples of reference test block</b> .....	<b>12</b>
<b>Bibliography</b> .....	<b>13</b>

## 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](http://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](http://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 164, *Mechanical testing of metals*, Subcommittee SC 3, *Hardness testing*.

ISO 16859 consists of the following parts, under the general title *Metallic materials — Leeb hardness test*:

- *Part 1: Test method*
- *Part 2: Verification and calibration of the testing devices*
- *Part 3: Calibration of reference test blocks*



# Metallic materials — Leeb hardness test —

## Part 3: Calibration of reference test blocks

### 1 Scope

This part of ISO 16859 specifies a method for the calibration of reference test blocks that are used for the indirect verification of Leeb hardness testers according to ISO 16859-2 and for the periodic checking according to ISO 16859-1.

The procedures necessary to ensure metrological traceability of the calibration machine are also specified.

### 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 16859-1, *Metallic materials — Leeb hardness test — Part 1: Test method*

ISO 16859-2, *Metallic materials — Leeb hardness test — Part 2: Verification and calibration of the testing devices*

ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories*

**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**