



**NSAI**  
Standards

Irish Standard  
I.S. EN ISO 6506-2:2018

# Metallic materials - Brinell hardness test - Part 2: Verification and calibration of testing machines (ISO 6506-2:2017)

**I.S. EN ISO 6506-2:2018**

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation — recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

*This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):*

*NOTE: The date of any NSAI previous adoption may not match the date of its original CEN/CENELEC document.*

*This document is based on:*

EN ISO 6506-2:2018

*Published:*

2018-12-19

*This document was published under the authority of the NSAI and comes into effect on:*

2019-01-15

ICS number:

77.040.10

NOTE: If blank see CEN/CENELEC cover page

NSAI  
1 Swift Square,  
Northwood, Santry  
Dublin 9

T +353 1 807 3800  
F +353 1 807 3838  
E standards@nsai.ie  
W NSAI.ie

Sales:  
T +353 1 857 6730  
F +353 1 857 6729  
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

## National Foreword

I.S. EN ISO 6506-2:2018 is the adopted Irish version of the European Document EN ISO 6506-2:2018, Metallic materials - Brinell hardness test - Part 2: Verification and calibration of testing machines (ISO 6506-2:2017)

This document does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

For relationships with other publications refer to the NSAI web store.

**Compliance with this document does not of itself confer immunity from legal obligations.**

*In line with international standards practice the decimal point is shown as a comma (,) throughout this document.*

This page is intentionally left blank

EUROPEAN STANDARD

EN ISO 6506-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2018

ICS 77.040.10

Supersedes EN ISO 6506-2:2014

English Version

**Metallic materials - Brinell hardness test - Part 2:  
Verification and calibration of testing machines (ISO 6506-  
2:2017)**

Matériaux métalliques - Essai de dureté Brinell - Partie  
2: Vérification et étalonnage des machines d'essai (ISO  
6506-2:2017)

Metallische Werkstoffe - Härteprüfung nach Brinell -  
Teil 2: Überprüfung und Kalibrierung der  
Prüfmaschinen (ISO 6506-2:2017)

This European Standard was approved by CEN on 10 December 2018.

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, Serbia, 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: Rue de la Science 23, B-1040 Brussels**

**EN ISO 6506-2:2018 (E)**

<b>Contents</b>	<b>Page</b>
<b>European foreword.....</b>	<b>3</b>

## **European foreword**

This document (EN ISO 6506-2:2018) 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 June 2019, and conflicting national standards shall be withdrawn at the latest by June 2019.

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.

This document supersedes EN ISO 6506-2:2014.

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.

## **Endorsement notice**

The text of ISO 6506-2:2017 has been approved by CEN as EN ISO 6506-2:2018 without any modification.

This page is intentionally left blank



**INTERNATIONAL  
STANDARD**

**ISO  
6506-2**

Fourth edition  
2017-10

---

---

**Metallic materials — Brinell  
hardness test —**

**Part 2:  
Verification and calibration of testing  
machines**

*Matériaux métalliques — Essai de dureté Brinell —*

*Partie 2: Vérification et étalonnage des machines d'essai*



Reference number  
ISO 6506-2:2017(E)

© ISO 2017

**ISO 6506-2:2017(E)**



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2017, 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 Terms and definitions</b> .....	<b>1</b>
<b>4 General conditions</b> .....	<b>1</b>
<b>5 Direct verification</b> .....	<b>2</b>
5.1 General .....	2
5.2 Measurement of the test forces .....	2
5.3 Measurement of the properties of the indenter ball .....	3
5.4 Calibration of the indentation diameter measuring system .....	3
5.5 Verification of the testing cycle .....	4
<b>6 Indirect verification</b> .....	<b>4</b>
<b>7 Intervals between verifications</b> .....	<b>6</b>
<b>8 Verification report/calibration certificate</b> .....	<b>6</b>
<b>Annex A (informative) Uncertainty of measurement of the verification results of the hardness testing machine</b> .....	<b>8</b>
<b>Annex B (normative) Verification of hardness testing machines that are incapable of meeting the specified force/time profile</b> .....	<b>15</b>
<b>Bibliography</b> .....	<b>16</b>

## ISO 6506-2:2017(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](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 voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

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

This fourth edition cancels and replaces the third edition (ISO 6506-2:2014), which has been technically revised.

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

- [Clause 3](#) has been added;
- [Table 3](#) has been modified.

A list of all parts in the ISO 6506 series can be found on the ISO website.

# Metallic materials — Brinell hardness test —

## Part 2: Verification and calibration of testing machines

### 1 Scope

This document specifies methods of direct and indirect verification of testing machines used for determining Brinell hardness in accordance with ISO 6506-1 and also specifies when these two types of verification have to be performed.

The direct verification involves checking that individual machine performance parameters fall within specified limits whereas the indirect verification utilizes hardness measurements of reference blocks, calibrated in accordance with ISO 6506-3, to check the machine's overall performance.

If a testing machine is also to be used for other methods of hardness testing, it has to be verified independently for each method.

This document is applicable to both fixed location and portable hardness testing machines. For machines that are incapable of satisfying the specified force-time profile, the direct verification of force and testing cycle can be modified by the use of [Annex B](#).

### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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, *Metallic materials — Calibration of force-proving instruments used for the verification of uniaxial testing machines*

ISO 6506-1:2014, *Metallic materials — Brinell hardness test — Part 1: Test method*

ISO 6506-3, *Metallic materials — Brinell hardness test — Part 3: Calibration of reference blocks*

ISO 6507-1, *Metallic materials — Vickers hardness test — Part 1: Test method*

### 3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

### 4 General conditions

Before a Brinell hardness testing machine is verified, the machine shall be checked to ensure that it is properly set up in accordance with the manufacturer's instructions.

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

- 
- [Looking for additional Standards? Visit Intertek Inform Infostore](#)
  - [Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation](#)
-