

METALLMATERJALID. ROCKWELLI KÕVADUSE KATSE.  
OSA 1: KATSEMEETOD

Metallic materials - Rockwell hardness test - Part 1:  
Test method (ISO 6508-1:2023)

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>See Eesti standard EVS-EN ISO 6508-1:2023 sisaldab Euroopa standardi EN ISO 6508-1:2023 ingliskeelset teksti.</p> <p>Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 20.12.2023.</p> <p>Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.</p>	<p>This Estonian standard EVS-EN ISO 6508-1:2023 consists of the English text of the European standard EN ISO 6508-1:2023.</p> <p>This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.</p> <p>Date of Availability of the European standard is 20.12.2023.</p> <p>The standard is available from the Estonian Centre for Standardisation and Accreditation.</p>
--	---

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile [standardiosakond@evs.ee](mailto:standardiosakond@evs.ee).

ICS 77.040.10

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardimis- ja Akrediteerimiskeskusele. Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardimis- ja Akrediteerimiskeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardimis- ja Akrediteerimiskeskusega: Koduleht [www.evs.ee](http://www.evs.ee); telefon 605 5050; e-post [info@evs.ee](mailto:info@evs.ee)

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation and Accreditation. No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation and Accreditation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation and Accreditation: Homepage [www.evs.ee](http://www.evs.ee); phone +372 605 5050; e-mail [info@evs.ee](mailto:info@evs.ee)

EUROPEAN STANDARD

EN ISO 6508-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2023

ICS 77.040.10

Supersedes EN ISO 6508-1:2016

English Version

## Metallic materials - Rockwell hardness test - Part 1: Test method (ISO 6508-1:2023)

Matériaux métalliques - Essai de dureté Rockwell -  
Partie 1: Méthode d'essai (ISO 6508-1:2023)

Metallische Werkstoffe - Härteprüfung nach Rockwell -  
Teil 1: Prüfverfahren (ISO 6508-1:2023)

This European Standard was approved by CEN on 13 November 2023.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye 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

## European foreword

This document (EN ISO 6508-1:2023) has been prepared by Technical Committee ISO/TC 164 "Mechanical testing of metals" in collaboration with Technical Committee CEN/TC 459/SC 1 "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 2024, and conflicting national standards shall be withdrawn at the latest by June 2024.

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 6508-1:2016.

Any feedback and questions on this document should be directed to the users' national standards body/national committee. A complete listing of these bodies can be found on the CEN website.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

## Endorsement notice

The text of ISO 6508-1:2023 has been approved by CEN as EN ISO 6508-1:2023 without any modification.

# Contents

Page

Foreword.....	iv
<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 Symbols, abbreviated terms and designations.....</b>	<b>1</b>
<b>5 Rockwell hardness.....</b>	<b>3</b>
<b>6 Testing machine.....</b>	<b>4</b>
<b>7 Test piece.....</b>	<b>5</b>
<b>8 Procedure.....</b>	<b>5</b>
<b>9 Uncertainty of the results.....</b>	<b>7</b>
<b>10 Test report.....</b>	<b>7</b>
<b>11 Conversions to other hardness scales or tensile strength values.....</b>	<b>8</b>
<b>Annex A (normative) Special HR30T<sub>Sm</sub> and HR15T<sub>Sm</sub> test for thin products.....</b>	<b>9</b>
<b>Annex B (normative) Minimum thickness of the test piece in relation to the Rockwell hardness.....</b>	<b>10</b>
<b>Annex C (normative) Corrections to be added to Rockwell hardness values obtained on convex cylindrical surfaces.....</b>	<b>13</b>
<b>Annex D (normative) Corrections to be added to Rockwell hardness C scale values obtained on spherical test surfaces of various diameters.....</b>	<b>16</b>
<b>Annex E (normative) Daily verification procedure.....</b>	<b>17</b>
<b>Annex F (normative) Inspection of diamond indenters.....</b>	<b>20</b>
<b>Annex G (informative) Uncertainty of the measured hardness values.....</b>	<b>21</b>
<b>Annex H (informative) CCM — Working group on hardness.....</b>	<b>26</b>
<b>Annex I (informative) Rockwell hardness measurement traceability.....</b>	<b>27</b>
<b>Bibliography.....</b>	<b>31</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 document 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)).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at [www.iso.org/patents](http://www.iso.org/patents). ISO shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of 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 [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*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 459, *ECISS - European Committee for Iron and Steel Standardization*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This fifth edition cancels and replaces the fourth edition (ISO 6508-1:2016), which has been technically revised.

The main changes are as follows:

- removal of note related to the use of tungsten and steel ball indenters ([Clause 1](#));
- removal of the year from the Normative References specified and various places throughout the body of the standard ([Clause 2](#));
- addition of [Clause 3](#), Terms and definitions;
- added additional information for the use of single-piece spherically tipped indenters ([6.3](#) NOTE 1);
- added the table reference and table title ([7.4](#));
- modified the uncertainty of the results section to only provide a single reference for the determination of uncertainty ([Clause 9](#));
- modified [Annex G](#) to remove the “procedure without bias (M2)” method for determining uncertainty.

A list of all parts in the ISO 6508 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

# Metallic materials — Rockwell hardness test —

## Part 1: Test method

### 1 Scope

This document specifies the method for Rockwell regular and Rockwell superficial hardness tests for scales A, B, C, D, E, F, G, H, K, 15N, 30N, 45N, 15T, 30T, and 45T for metallic materials and is applicable to stationary and portable hardness testing machines.

For specific materials and/or products, other specific International Standards apply (e.g. ISO 3738-1 and ISO 4498).

### 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 6508-2, *Metallic materials — Rockwell hardness test — Part 2: Verification and calibration of testing machines and indenters*

ISO 6508-3, *Metallic materials — Rockwell hardness test — Part 3: Calibration of reference blocks*

### 3 Terms and definitions

No terms and definitions are listed in this document.

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

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

### 4 Symbols, abbreviated terms and designations

According to [Table 1](#), [Table 2](#), [Table 3](#), and [Figure 1](#).