This is a preview of "BS EN ISO 6508-1:201...". Click here to purchase the full version from the ANSI store.

BS EN ISO 6508-1:2015



BSI Standards Publication

Metallic materials — Rockwell hardness test

Part 1: Test method

bsi.

...making excellence a habit.™

This is a preview of "BS EN ISO 6508-1:201...". Click here to purchase the full version from the ANSI store.

This British Standard is the UK implementation of EN ISO 6508-1:2015. It supersedes BS EN ISO 6508-1:2005 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee ISE/101/5, Indentation hardness testing.

A list of organizations represented on this committee can be obtained on request to its secretary.

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

© The British Standards Institution 2015.
Published by BSI Standards Limited 2015

ISBN 978 0 580 79170 3
ICS 77.040.10

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 March 2015.

Amendments/corrigenda issued since publication

Date	Text affected

This is a preview of "BS EN ISO 6508-1:201...". Click here to purchase the full version from the ANSI store.

EUROPÄISCHE NORM

March 2015

ICS 77.040.10

Supersedes EN ISO 6508-1:2005

English Version

Metallic materials - Rockwell hardness test - Part 1: Test method (ISO 6508-1:2015)

Matériaux métalliques - Essai de dureté Rockwell - Partie 1: Méthode d'essai (ISO 6508-1:2015)

Metallische Werkstoffe - Härteprüfung nach Rockwell - Teil 1: Prüfverfahren (ISO 6508-1:2015)

This European Standard was approved by CEN on 12 December 2014.

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

© 2015 CEN All rights of exploitation in any form and by any means reserved worldwide for CEN national Members.

This is a preview of "BS EN ISO 6508-1:201...". Click here to purchase the full version from the ANSI store.

Foreword

This document (EN ISO 6508-1:2015) 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 September 2015, and conflicting national standards shall be withdrawn at the latest by September 2015.

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 6508-1:2005.

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 6508-1:2015 has been approved by CEN as EN ISO 6508-1:2015 without any modification.

This is a preview of "BS EN ISO 6508-1:201...". Click here to purchase the full version from the ANSI store.

Contents

Page

Foreword ..... **iv**
1 Scope **1**
2 Normative references **1**
3 Principle **1**
4 Symbols, abbreviated terms and designations **1**
5 Testing machine **4**
6 Test piece **5**
7 Procedure **5**
8 Uncertainty of the results **7**
9 Test report **7**
10 Conversions to other hardness scales or tensile strength values **7**
Annex A (normative) **Special HR30TSm and HR15TSm test for thin products** **8**
Annex B (normative) **Minimum thickness of the test piece in relation to the Rockwell hardness** **9**
Annex C (normative) **Corrections to be added to Rockwell hardness values obtained on convex cylindrical surfaces** **12**
Annex D (normative) **Corrections to be added to Rockwell hardness C scale values obtained on spherical test surfaces of various diameters** **15**
Annex E (normative) **Daily Verification Procedure** **16**
Annex F (normative) **Inspection of diamond indenters** **19**
Annex G (informative) **Uncertainty of the measured hardness values** **20**
Annex H (informative) **CCM - Working Group on Hardness** **29**
Annex I (informative) **Rockwell Hardness Measurement Traceability** **30**
Bibliography **33**

© ISO 2015 – All rights reserved

This is a preview of "BS EN ISO 6508-1:201...". Click here to purchase the full version from the ANSI store.

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

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

This third edition cancels and replaces the second edition (ISO 6508-1:2005), which has been technically revised.

ISO 6508 consists of the following parts, under the general title *Metallic materials — Rockwell hardness test*:

— *Part 1: Test method*

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

— *Part 3: Calibration of reference blocks*

 © ISO 2015 – All rights reserved

This is a preview of "BS EN ISO 6508-1:201...". Click here to purchase the full version from the ANSI store.

Metallic materials — Rockwell hardness test —

Part 1: Test method

1 Scope

This part of ISO 6508 specifies the method for Rockwell regular and Rockwell superficial hardness tests (scales and applicable range of application according to Table 1) for metallic materials and is applicable to stationary and portable hardness testing machines.

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

NOTE Attention is drawn to the fact that the use of tungsten carbide composite for ball indenters is considered to be the standard type of Rockwell indenter ball. Steel indenter balls are allowed to continue to be used only when complying with Annex A.

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 6508-2:2015, *Metallic materials — Rockwell hardness test — Part 2: Verification and calibration of testing machines*

ISO 6508-3:2015, *Metallic materials — Rockwell hardness test — Part 3: Calibration of reference blocks*

3 Principle

An indenter of specified size, shape, and material is forced into the surface of a test specimen under two force levels using the specific conditions defined in Clause 7. The specified preliminary force is applied and the initial indentation depth is measured, followed by the application and removal of a specified additional force, returning to the preliminary force. The final indentation depth is then measured and the Rockwell hardness value is derived from the difference, h, in the final and initial indentation depths and the two constants N and S (see Figure 1, Table 1 and Table 2) as:

$$\text{Rockwell hardness} = N - \frac{h}{S} \tag{1}$$

4 Symbols, abbreviated terms and designations

4.1 See Table 1, Table 2, Table 3, and Figure 1.

© ISO 2015 – All rights reserved