STANDARDS AUSTRALIA

RECONFIRMATION

OF
AS 1816.1—2007
Metallic materials—Brinell hardness test
Method 1: Test method (ISO 6506-1:2005, MOD)

RECONFIRMATION NOTICE

Technical Committee MT-009 has reviewed the content of this publication and, in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

Certain documents referenced in the publication may have been amended since the original date of publication. Users are advised to ensure that they are using the latest versions of such documents as appropriate, unless advised otherwise in this Reconfirmation Notice.

Approved for reconfirmation in accordance with Standards Australia procedures for reconfirmation on 20 March 2017.

The following are represented on Technical Committee MT-009:

Australasian Institute of Surface Finishing
Australian Chamber of Commerce and Industry
Australian Industry Group
Australian Steel Institute
Bureau of Steel Manufacturers of Australia
Galvanizers Association of Australia
Galvanizing Association of New Zealand
New Zealand Metal Roofing Manufacturers

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AS 1816.1—2007
Reconfirmed 2017

Australian Standard®

Metallic materials—Brinell hardness test

Method 1: Test method (ISO 6506-1:2005, MOD)

PREFACE

This Standard was prepared by the Standards Australia Committee MT-006, Mechanical Testing of Metals to supersede AS 1816.1—2002, *Metallic materials—Brinell hardness test,* Method 1: *Test method.*

This Standard is an adoption with national modifications and is reproduced from ISO 6506-1:2005, *Metallic materials—Brinell hardness test,* Part 1: *Test method.*

Variations to the ISO text for Australia are set out in Appendix ZZ. Changes to the ISO text are indicated by a marginal bar.

This Standard modifies ISO 6506-1 to conform with established Australian practices for hardness testing.

This Standard is one of a series of Standards covering the range of hardness testing methods. The series comprises of the follow:

AS
1815 Metallic materials—Rockwell hardness test
1815.1 Method 1: Test method (scales A, B, C, D, E, F, G, H, K, N, T)
1815.2 Method 2: Verification and calibration of testing machines (scales A, B, C, D, E, F, G, H, K, N, T)
1815.3 Method 3: Calibration of reference blocks (scales A, B, C, D, E, F, G, H, K, N, T) (ISO 6508-3:2005, MOD)

1816 Metallic materials—Brinell hardness test
1816.1 Method 1: Test method (ISO 6506-1:2005, MOD) (this Standard)
1816.2 Method 2: Verification and calibration of testing machines
1816.3 Method 3: Calibration of reference blocks
1816.4 Method 4: Tables of hardness values

1817 Metallic materials—Vickers hardness test
1817.1 Method 1: Test methods (ISO 6507-1:1994, MOD)
1817.2 Method 2: Verification of testing machines
1817.3 Method 3: Calibration of reference blocks

5016 Metallic materials—Conversion of hardness values

As this Standard is reproduced from an international standard, the following applies:

(a) Its number appears on the cover and title page while the international standard number appears only on the cover.

(b) In the source text 'this part of ISO 6506' should read 'this Australian Standard'.

(c) A full point substitutes for a comma when referring to a decimal marker.

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References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

Reference to International Standard ISO		*Australian Standard* AS	
4498	Sintered metal materials, excluding hardmetals—Determination of apparent hardness	—	
4498-1	Part 1: Materials of essentially uniform section hardness		
6506	Metallic materials—Brinell hardness test	1816	Metallic materials—Brinell hardness test
6506-2	Part 2: Verification and calibration of testing machines	1816.2	Method 2: Verification and calibration of testing machines
6506-4	Part 4: Table of hardness values	1816.4	Method 4: Table of hardness values

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the annex or appendix to which they apply. A ‘normative’ annex or appendix is an integral part of a standard, where an ‘informative’ annex or appendix is only for information and guidance.

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1 Scope

This part of ISO 6506 specifies the method for the Brinell hardness test for metallic materials and is applicable up to the limit of 650 HBW.

For specific materials and/or products, particular International Standards exist (i.e. ISO 4498-1).

2 Normative references

The following referenced documents are indispensable for the application 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 4498-1, *Sintered metal materials, excluding hardmetals — Determination of apparent hardness — Part 1: Materials of essentially uniform section hardness*

ISO 6506-2:2005, *Metallic materials — Brinell hardness test — Part 2: Verification and calibration of testing machines*

ISO 6506-4, *Metallic materials — Brinell hardness test — Part 4: Table of hardness values*

3 Principle

An indenter (hardmetal ball with diameter D) is forced into the surface of a test piece and, after removal of the force F, the diameter of the indentation d left in the surface is measured.

The Brinell hardness is proportional to the quotient obtained by dividing the test force by the curved surface area of the indentation. The indentation is assumed to retain the shape of the ball, and its surface area is calculated from the mean indentation diameter and the ball diameter.

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