AS 1816.2:2026
ISO 6506-2:2017

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# Metallic materials — Brinell hardness test

## Part 2: Verification and calibration of testing machines (ISO 6506-2:2017, IDT)



This Australian Standard® was prepared by MT-006, Mechanical Testing Of Metals. It was approved on behalf of Standards Australia's Standards Development and Accreditation Committee on 10 December 2025.

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Australian Pipelines and Gas Association
Bureau of Steel Manufacturers of Australia
Materials Australia
National Association of Testing Authorities Australia
University of Technology Sydney
Weld Australia

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## Part 2: Verification and calibration of testing machines (ISO 6506-2:2017, IDT)

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# How to read this Standard

This page explains the meaning of the language and structure of this Standard.

Refer to Standards Australia's Standardisation Guide 006 for more details about drafting rules.

Australian and Australian/New Zealand Standards are voluntary unless they are referenced in legislation or called up in contracts.

**Requirements**

To conform to a Standard, all requirements in the Standard need to be met.

A requirement is any statement in the Standard which uses the word "shall".

**Recommendations, permissions and possibilities**

The following words are commonly used in Standards, but statements using them do not have to be followed to conform to the Standard:

(a) "should" means that something is recommended.

(b) "may" means that something is permitted.

(c) "can" means that something is possible.

**Structure of Standards**

A Standard always has the following parts:

(i) The Preface states who developed the Standard, what the Standard is aiming to do, and how it relates to other documents.

(ii) The Scope states what the Standard is about, what it covers and what it does not cover.

(iii) The Normative references clause lists other documents that are referenced in the Standard as part of requirements.

(iv) The Terms and definitions clause defines important terms to help with understanding the Standard.

A Standard may also include other parts, such as the following:

(1) A normative appendix sets additional requirements that need to be conformed to.

(2) An informative appendix provides additional information or guidance. They usually do not contain requirements. If an informative appendix does contain requirements, the Standard will explain when those requirements apply.

(3) A Bibliography lists documents referenced in the Standard but not as part of requirements.

Many Standards include notes. Notes provide recommendations and/or guidance only. They never contain requirements.

# Preface

This Standard was prepared by the Standards Australia Committee MT-006, Mechanical Testing Of Metals to supersede AS 1816.2:2007, *Metallic materials—Brinell hardness test, Method 2: Verification and calibration of testing machines*.

The objective of this document is to specify methods of direct and indirect verification of testing machines used for determining Brinell hardness in accordance with AS 1816.1 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 AS 1816.3, 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.

This document is identical to, and has been reproduced from, ISO 6506-2:2017, *Metallic materials — Brinell hardness test — Part 2: Verification and calibration of testing machines*.

As this document has been reproduced from an international document, a comma is to be read as a full point when referring to a decimal marker.

Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably. Refer to the online catalogue for information on specific Standards.

The terms "normative" and "informative" are used in Standards to define the application of the appendices or annexes to which they apply. A "normative" appendix or annex is an integral part of a Standard, whereas an "informative" appendix or annex is only for information and guidance.

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# 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 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.

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.

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# Australian Standard®

# Metallic materials — Brinell hardness test

## Part 2: Verification and calibration of testing machines (ISO 6506-2:2017, IDT)

## 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.

Especially, it should be checked that:

a) the mount holding the ball-holder slides correctly in its guide;

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