STANDARDS AUSTRALIA

RECONFIRMATION

OF
AS 1817.1—2003
Metallic materials—Vickers hardness test
Method 1: Test method (ISO 6507-1:1997, 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

NOTES

AS 1817.1—2003
Reconfirmed 2017

Australian Standard™

Metallic materials—Vickers hardness test

Method 1: Test method (ISO 6507-1:1997, MOD)

PREFACE

This Standard was prepared by Standards Australia Committee MT-006, Mechanical Testing of Metals to supersede (in part) AS 1817—1991, *Metallic materials—Vickers hardness test*

This Standard is an adoption with national modifications and is reproduced from ISO 6507-1:1997, *Metallic materials—Vickers 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 is Method 1 of a series of Standards covering the Vickers hardness testing of metallic materials.

The series comprises the following Methods:

AS	
1817	Metallic materials—Vickers hardness test
1817.1	Method 1: Test method (ISO 6507-1:1997, MOD)
1817.2	Method 2: Verification of testing machines
1817.3	Method 3: Calibration of reference blocks

This Standard is a modification of ISO 6507-1 in which the ISO Annex D and the Note in Clause 5.3 have been changed to conform with established Australian practices for Vickers hardness testing.

The force values in this Method were calculated from kilogram force values. They were introduced before the SI-system was adopted. It was decided to keep the values based on the old units for this Method but in the next revision it will be necessary to consider the advantage of introducing rounded values of test force and their effect on the hardness scales.

Attention is drawn to the fact that, in this Method, the following aspects should be considered:

(a) The test method is specified for lengths of indentation diagonals between 0.020 mm and 1.400 mm.

(b) If the difference between the lengths of the two indentation diagonals is greater than 5%, this is stated in the test report.

(c) Addition of provisions, in Clause 8, concerning the uncertainty of the test results.

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

(i) The number does not appear on each page of text and its identity is shown only on the cover and title page.

(ii) In the source text ‘this part of ISO 6507’ should read ‘this Australian Standard’.

(iii) A full point should be substituted for a comma when referring to a decimal marker.

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

Reference to International Standard		*Australian Standard*	
ISO		AS	
6507	Metallic materials—Vickers hardness test	1817	Metallic materials—Vickers hardness test
6507-2	Part 2: Verification of testing machines	1817.2	Method 2: Verification of testing machines
6507-3	Part 3: Calibration of reference blocks	1817.3	Method 3: Calibration of reference blocks

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

1 Scope

This part of ISO 6507 specifies the method of Vickers hardness test for the three different ranges of test force for metallic materials (see table 1).

Table 1

Ranges of test force, *F* N	**Hardness symbol**	**Previous designation** (ISO 6507-1:1982)
$F \geqslant 49{,}03$	$\geqslant$ HV 5	Vickers hardness test
$1{,}961 \leqslant F < 49{,}03$	HV 0,2 to < HV 5	Low load Vickers hardness test
$0{,}098\ 07 \leqslant F < 1{,}961$	HV 0,01 to < HV 0,2	Vickers microhardness test

The Vickers hardness test is specified in this part of ISO 6507 for lengths of indentation diagonals between 0,020 mm and 1,400 mm.

The force values in this part of ISO 6507 were calculated from kilogram force values. They were introduced before the SI-system was adopted. It was decided to keep the values based on the old units for this edition, but for the next revision it will be necessary to consider the advantage of introducing rounded values of test force and the consequence on the hardness scales.

NOTE — In general, decreasing the test force increases the scatter of results of the measurements. This is particularly true for low-force Vickers hardness tests and Vickers microhardness tests where the principal limitation will arise in the measurement of the diagonals of the indentation. For Vickers microhardness, the accuracy of determination of the mean diagonal length is unlikely to be better than ± 0,001 mm (see annex E).

For specific materials and/or products, particular International Standards exist.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this part of ISO 6507. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this part of ISO 6507 are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 6507-2:1997, *Metallic materials — Vickers hardness test — Part 2: Verification of testing machines.*