Australian Standard™

AS 1815.3

Metallic materials—Rockwell hardness test

Method 3: Calibration of reference blocks (scales A, B, C, D, E, F, G, H, K, N, T)

PREFACE

This Standard was prepared by Standards Australia Committee MT-006, Mechanical Testing of Metals to supersede (in part) AS 1815—1991, *Metallic materials—Rockwell hardness test.*

This Standard is identical with and has been reproduced from ISO 6508-3:1999.

This Standard is Method 3 of a series of Standards covering the Rockwell hardness testing of metallic materials.

The series comprises the following Methods:

AS	
1815	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)

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

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

(b) In the source text, ‘this part of ISO 6508’ should read ‘this Australian Standard’.

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

References to International Standards should be replaced by Australian Standards, as follows:

Reference to International Standard		*Australian Standard*	
ISO		AS	
376	Metallic materials—Calibration of force-proving instruments used for verification of uniaxial testing machines	—	
3878	Hardmetals—Vickers hardness test	1817	Metallic materials—Vickers hardness testing
4287	Geometrical Product Specifications (GPS)—Surface texture: Profile method—Terms, definitions and surface texture parameters	—	
6507	Metallic materials—Vickers hardness test	1817	Metallic materials—Vickers hardness testing
6507-1	Part 1: Test method		

ISO		AS	
6508	Metallic materials—Rockwell hardness test	1815	Metallic materials—Rockwell hardness test
6508-1	Part 1: Test method (scales A, B, C, D, E, F, G, H, K, N, T)	1815.1	Part 1: Test method (scales A, B, C, D, E, F, G, H, K, N, T)
6508-2	Part 2: Verification and calibration of testing machines (scales A, B, C, D, E, F, G, H, K, N, T)	1815.2	Part 2: Verificaiton and calibration of testing machiens (scales A, B, C, D, E, F, G, H, K, N, T)

The term ‘normative’ has been used in this Standard to define the application of the annex to which it applies. A ‘normative’ annex is an integral part of a Standard.

INTRODUCTION

The force values in this part of ISO 6508 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 part of ISO 6508 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.

Attention is drawn to the fact that in part of ISO 6508, the use of hardmetal balls as indenters is equivalent to the use of steel balls; however, it is indicated that the measurements made with the two ball types give different results.

1 Scope

This part of ISO 6508 specifies a method for the calibration of reference blocks to be used for the indirect verification of Rockwell hardness testing machines (scales A, B, C, D, E, F, G, H, K, N, T), as specified in ISO 6508-2.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO 6508. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 6508 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 376, *Metallic materials — Calibration of force-proving instruments used for verification of uniaxial testing machines.*

ISO 3878, *Hardmetals — Vickers hardness test.*

ISO 4287:1997, *Geometrical Product Specifications (GPS) — Surface texture: Profile method — Terms, definitions and surface texture parameters.*

ISO 6507-1, *Metallic materials — Vickers hardness test — Part 1: Test method.*

ISO 6508-1, *Metallic materials — Rockwell hardness test — Part 1: Test method (scales A, B, C, D, E, F, G, H, K, N, T).*

ISO 6508-2:1999, *Metallic materials — Rockwell hardness test — Part 2: Verification and calibration of testing machines (scales A, B, C, D, E, F, G, H, K, N, T).*

Guide to the Expression of Uncertainty in Measurement, ISO, 1993.

3 Manufacture of reference blocks

3.1 The block shall be specially manufactured for use as a hardness reference block.

NOTE Attention is drawn to the need to use a manufacturing process which will give the necessary homogeneity, stability of structure and uniformity of surface hardness.

3.2 Each metal block to be calibrated shall be of a thickness no less than 6 mm.

NOTE Reference blocks should have a thickness of 6 mm to 16 mm. To minimize the effect of hardness change with increasing number of indents, a minimum thickness of 12 mm should be used.