

**Metallic materials—Rockwell hardness test****Method 1: Test method  
(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 6508-1:1999.

This Standard is Method 1 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:

<i>Reference to International Standard</i>		<i>Australian Standard</i>	
ISO		AS	
6508	Metallic materials—Rockwell hardness test	1815	Metallic materials—Rockwell hardness test
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: Verification and calibration of testing machines (scales A, B, C, D, E, F, G, H, K, N, T)

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 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.

## 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 the method for Rockwell and Rockwell superficial hardness tests (scales and field of application in accordance with Table 1) for metallic materials.

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

NOTE For certain materials, the fields of application may be narrower than those indicated.

## 2 Normative reference

The following normative document contains 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 edition 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 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)*.

## 3 Principle

Forcing an indenter (diamond cone, steel or hardmetal ball) into the surface of a test piece in two steps under specified conditions (see clause 7). Measuring the permanent depth  $h$  of indentation under preliminary test force after removal of additional test force.

From the value of  $h$  and the two constant numbers  $N$  and  $S$  (see Table 2), the Rockwell hardness is calculated following the formula:

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

## 4 Symbols and designations

See Tables 1 and 2 and Figure 1.