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Australian Standard 1815, Part 1 — 1976

METHOD FOR ROCKWELL HARDNESS TEST PART 1 — TESTING OF METALS

[Title allocated by Defence Cataloguing Authority: TESTER, MATERIAL HARDNESS]

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THE FOLLOWING SCIENTIFIC, INDUSTRIAL AND GOVERNMENTAL organizations and departments were officially represented on the committee entrusted with the preparation of this standard:

Aluminium Development Council
Associated Chambers of Manufactures of Australia
Australian Institute of Metals
Bureau of Steel Manufacturers of Australia
Department of Defence
Department of Manufacturing Industry
Metal Trades Industry Association of Australia
National Association of Testing Authorities
National Measurement Laboratory
Railways of Australia Committee
Society of Automotive Engineers—Australasia
Universities

This standard, prepared by Committee MT/6, Mechanical Testing of Metals, was approved on behalf of the Council of the Standards Association of Australia on 25 August 1975, and was published on 1 May 1976.

To keep abreast of progress in industry, Australian standards are regularly reviewed. Suggestions for improvements to published standards, addressed to the head office of the Association, are welcomed.

This standard was issued in draft form for public review as DR 74070.

AUSTRALIAN STANDARD

METHOD FOR ROCKWELL HARDNESS TEST

Part 1 TESTING OF METALS

AS 1815, Part 1 — 1976

First published (as AS B84, Part 1) 1967
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PREFACE

This standard was prepared by the Association's Committee on Mechanical Testing of Metals as a revision and metrication of AS B84, Part 1—1967, which it accordingly supersedes, and which was the endorsement of BS 891:Part 1:1962.

During preparation of the standard, the committee considered the resolution taken by ISO/TC 17/SC 6 that, regardless of the introduction of the international system of units (SI), hardness values should remain unchanged. This resolution has been adhered to.

The standard includes additional requirements for the installation, calibration and maintenance of the testing machine. Recommendations for user checks are set out in Appendix A.

This standard requires reference to the following Australian standards:

AS 1815	Method for Rockwell Hardness Test Part 2—Calibration of the Testing Machine
AS 1817	Method for Vickers Hardness Test Part 1—Testing of Metals
AS B161	Charts for Approximate Comparison of Hardness Scales for Steels.

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
METHOD FOR ROCKWELL HARDNESS TEST

PART 1 — TESTING OF METALS

1 SCOPE. This standard sets out methods for measuring the hardness of metals and metal products on scales of Rockwell hardness. It includes requirements for the installation of the testing machine, its initial and periodical calibration, and recommendations for its maintenance by the user.

NOTES:

1. This standard does not preclude the use, by agreement, of portable hardness testing machines meeting all the requirements of Clause 5, with the exception of those relating specifically to non-portable machines.
2. The standard is not intended to meet the special requirements of the Rockwell superficial hardness test.
3. Rockwell scales for metals and metal products are given in Table 1.
4. Rockwell scales covering materials other than metals are not included in this standard.

2 DEFINITIONS. For the purpose of this standard, the following definitions apply:

Sample—a portion of material or a group of items selected from a batch or consignment by a sampling procedure.

Test specimen—a portion of material or a single item taken from the sample for the purpose of applying a particular test.

Test piece—a prepared piece for testing made from a test specimen by some mechanical operation.

NOTE: Rockwell hardness tests may be made on test pieces or test specimens, the latter often being in the form of finished products or components.

3 PRINCIPLE OF TEST. The test consists in pressing an indenter into the surface of a test piece in two operations and measuring the permanent increase in the depth of penetration of this indenter as follows:

(a) An indenter of standard type consisting of a diamond cone or a hardened steel ball mounted rigidly in a suitable holder is pressed into the test piece by a preliminary force F_0 (see Fig. 1, position 'a').