AS 1770—2003
ISO 642:1999

Australian Standard™

Steel—Hardenability test by end quench (Jominy test)

Standards Australia

This Australian Standard was prepared by Committee MT-001, Iron and Steel. It was approved on behalf of the Council of Standards Australia on 9 May 2003 and published on 27 June 2003.

The following are represented on Committee MT-001:

Australasian Railway Association

Australian Building Codes Board

Australian Foundry Institute

Australian Industry Group

Australian Steel Institute

Bureau of Steel Manufacturers of Australia

Institute of Material Engineering Australasia

New Zealand Heavy Engineering Research Association

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Australian Standard™

Steel—Hardenability test by end quench (Jominy test)

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PREFACE

This Standard was prepared by Standards Australia Committee MT-001, Iron and Steel to supersede AS 1770—1975, *Method for the end-quench test for hardenability of steel (Jominy test).*

This Standard is identical with and has been reproduced from ISO 642:1999, *Steel—Hardenability test by end quenching (Jominy test).*

Committee MT-001 decided to change the ISO title of the Standard, *Steel—Hardenability test by end quenching (Jominy test*), so as to align this title with international trend and current terminology used in Australia.

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 International Standard' should be read as 'this Australian Standard'.

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

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

Reference to International Standard		*Reference to Australian Standard*	
ISO		AS	
6507	Metallic materials—Vickers hardness test	1817	Metallic materials—Vickers hardness test
6507-1	Part 1: Test method	1817.1	Part 1: Test method (ISO 6507-1:1997, MOD)
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: Verification and calibration of testing machines (scales A, B, C, D, E, F, G, H, K, N, T)
6508-3	Part 3: Calibration of reference blocks (scales A, B, C, D, E, F, G, H, K, N, T)	1815.3	Part 3: Calibration of reference blocks (scales A, B, C, D, E, F, G, H, K, N, T)

The term 'informative' has been used in this Standard to define the application of the annex to which it applies. An 'informative' annex is only for information and guidance.

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NOTES

AUSTRALIAN STANDARD

Steel—Hardenability test by end quench (Jominy test)

1 Scope

This International Standard specifies a method for determining the hardenability of steel by end quenching (Jominy test) by using a test piece 25 mm in diameter and 100 mm long.

NOTE By agreement and for a defined field of application, the test described in this International Standard may be replaced by the calculation of the Jominy curve in accordance with an accepted mathematical model (see annex A). In case of dispute, the test shall be carried out.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard 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 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, *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).*

ISO 6508-3, *Metallic materials — Rockwell hardness test — Part 3: Calibration of reference blocks (scales A, B, C, D, E, F, G, H, K, N, T).*

3 Principle

The test consists of:

a) heating a cylindrical test piece to a specified temperature in the austenitic range for a specified period of time;

b) quenching it by spraying water on one of its ends under specified conditions;

c) measuring the hardness at certain given points, on longitudinal flats made on the test piece, in order to determine the hardenability of the steel by variations of this hardness.