AS 1448—2007
(Incorporating Amendment No. 1)

AS 1448—2007

Australian Standard®

Carbon steel and carbon-manganese steels—Forgings (ruling section 300 mm maximum)

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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 Australia
- Institute of Materials Engineering Research Australia
- New Zealand Heavy Engineering Research Association

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Australian Standard®

Carbon steel and carbon-manganese steels—Forgings (ruling section 300 mm maximum)

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PREFACE

This Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee MT-001, Iron and Steel, to supersede AS 1448—1981, *Carbon steel and carbon-manganese steels—Forgings* (*ruling section 300 mm maximum*).

This Standard incorporates Amendment No. 1 (January 2008). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.

After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian, rather than an Australian/New Zealand Standard.

The objective of this Standard is to specify the general technical delivery requirements for carbon steels and carbon-manganese steel forgings for general engineering purposes with ruling sections up to and including 300 mm.

The objective of this revision is to update the referenced documents and to apply current style.

In the selection of steel, one of the most important considerations is whether the mechanical properties required can be obtained from the steel in the size and shape at the time of heat treatment. That portion which is most important from the point of view of the mechanical properties obtained by heat treatment is referred to as the 'ruling section', and the ruling section should always be expressed in terms of the diameter of an equivalent round bar (see BS 5046, *Method for the estimation of equivalent diameters in the heat treatment of steels*). The specifications in Table 5 state that the maximum diameter of round bar, i.e. the limiting ruling section, in which the mechanical properties specified may be obtained. The designer should select steel which will give the desired properties in the actual ruling section at the time of heat treatment. It should be noted that forgings larger than 150 mm ruling section should not, except in special circumstances, be supplied in the as-forged condition.

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

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STANDARDS AUSTRALIA

Australian Standard

Carbon steel and carbon-manganese steels—Forgings (ruling section 300 mm maximum)

1 SCOPE

This Standard specifies requirements for carbon steel and carbon-manganese steel forgings for general engineering purposes with ruling section up to and including 300 mm. This Standard provides for the supply of forgings on the following basis:

(a) Chemical composition only, as specified in Tables 1 to 4.

(b) Chemical composition as specified in Tables 1 to 4, and hardness or other mechanical properties in any heat-treated condition, as negotiated at the time of enquiry and/or order.

(c) Chemical composition and mechanical properties in the normalized or normalized and tempered condition as specified in Table 5.

NOTES:

1 For guidance on purchasing requirements refer to Appendix A.

2 To demonstrate a means of compliance to the Standard refer to Appendix B.

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS	
1065	Non-destructive testing—Ultrasonic testing of carbon and low alloy steel forgings
1171	Non-destructive testing—Magnetic particle testing of ferromagnetic products, components and structures
1199	Sampling procedures for inspection by attributes
1199.0	Part 0: Introduction to the ISO 2859 attribute sampling systems
1199.1	Part 1: Sampling schemes indexed by acceptance quality limits (AQL) for lot-by-lot inspection
1391	Metallic materials—Tensile testing at ambient temperature
1544	Methods for impact tests on metals
1544.1	Part 1: Charpy V-notch
1733	Methods for the determination of grain size in metals
1816	Metallic materials—Brinell hardness test
1816.1	Part 1: Test method (ISO 6506-1:2005, MOD)
1817	Metallic materials—Vickers hardness test
1817.1	Part 1: Test methods (ISO 6507-1:1997, MOD)
2062	Non-destructive testing—Penetrant testing of products and components
2706	Numerical values—Rounding and interpretation of limiting values
5016	Metallic materials—Conversion of hardness values