

Australian Standard<sup>®</sup>

**Metal castings**

**Part 1: Ferrous sand moulded**

**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 27 June 2007. This Standard was published on 12 September 2007.

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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
  - Bureau of Steel Manufacturers of Australia
  - Materials Australia
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This Standard was issued in draft form for comment as DR 6609.

Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

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Originally as AS 4738.1—2004.  
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## PREFACE

This Standard was prepared by the Australian members of the Joint Standard Australia/Standards New Zealand Committee MT-001, Iron and Steel, to supersede AS 4738.1—2004, *Metal castings—Part 1: Ferrous sand moulded*.

*This Standard incorporates Amendment No. 1 (June 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 the Standard is to specify the general technical delivery requirements for iron and steel castings, including the requirements for the preparation of the samples and test pieces.

The objective of this edition is to revise the Standard by introducing a designation system for cast iron as specified in ISO/TR 15931.

When material or product Standards differ from this general delivery specification, the materials or product Standards apply. In special cases, variations from these conditions may be agreed upon at the time of order.

This Standard also specifies a group of supplementary requirements, which may be applied to iron and steel castings. These requirements are provided for use when additional testing or inspection is desired, and applied only when individually specified by the purchaser.

During the preparation of this Standard, cognisance was taken of the following International Standards:

ISO/TR  
15931 Designation system for cast iron and pig irons

This Standard is one of a series of Standards covering the range of cast irons and steels. The series comprises the following:

AS  
1830 Grey cast iron  
1831 Ductile cast iron  
1832 Malleable cast iron  
1833 Austenitic cast iron  
1982 Methods for the measurements of case depth in steels  
2027 Abrasive-resistant cast irons  
2074 Cast steels  
4314 Founding—Patterns, pattern equipment and coreboxes for the production of sand moulds and sand cores  
4738 Metal casting  
4738.1 Part 1: Ferrous sand moulded (this Standard)  
5049 Cast iron—Designation of microstructure of graphite  
5052 Compacted (vermicular) graphite cast irons—Classification  
5053 Ausferritic spheroidal graphite cast irons—Classification  
5080 Ferrous materials—Heat treatment—Glossary of terms

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix to which they apply. A ‘normative’ appendix is an integral part of a Standard, whereas an ‘informative’ appendix is only for information and guidance.

Statements expressed in mandatory terms in footnotes to tables are deemed to the requirements of this Standard.

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## STANDARDS AUSTRALIA

### Australian Standard Metal castings

#### Part 1: Ferrous sand moulded

#### 1 SCOPE

This Standard specifies the general technical delivery requirements for iron and steel castings, including the requirements for the preparation of samples and test pieces.

When material or product Standards differ from this general delivery specification, the material or product Standard applies. In special cases, variations from these conditions may be agreed upon at the time of order.

##### NOTES:

- 1 Appendix A lists the supplementary requirements that may be applied to ferrous castings.
- 2 Appendix E lists the application for iron and steel castings.
- 3 For guidance and a list of equivalent Standards on the designation for cast irons and pig irons refer to Appendix H.

#### 2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

##### AS

1100	Technical drawing
1100.201	Part 201: Mechanical engineering drawing
1171	Non-destructive testing—Magnetic particle testing of ferro-magnetic products, components and structures
1199	Sampling procedures for inspection by attributes
1199.0	Part 0: Introduction to the ISO 2859 attribute sampling system
1199.1	Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection
1210	Pressure vessels
1654	ISO system of limits and fits
1830	Grey cast iron
1831	Ductile cast iron
1852	Malleable cast iron
1853	Austenitic cast iron
1988	Welding of ferrous castings
2027	Abrasive-resistant cast irons
2062	Non-destructive testing—Penetrant testing of products and components
2074	Cast steels
3507	Non-destructive testing
3507.1	Part 1: Guide for radiography for ferrous castings
3507.2	Part 2: Radiographic determination of quality of ferrous castings