

Australian/New Zealand Standard™

**Cold-formed structural steel hollow
sections**



AS/NZS 1163:2009

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee BD-023, Structural Steel. It was approved on behalf of the Council of Standards Australia on 24 November 2009 and on behalf of the Council of Standards New Zealand on 20 November 2009.
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The following are represented on Committee BD-023:

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Association of Consulting Engineers Australia
Australian Chamber of Commerce and Industry
Australian Industry Group
Australian Steel Institute
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Business New Zealand
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Australian/New Zealand Standard™

Cold-formed structural steel hollow sections

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PREFACE

This Standard was prepared by the Standards Australia/Standards New Zealand Committee BD-023 on Structural Steel, to supersede AS 1163—1991, *Structural steel hollow sections*.

This edition incorporates the following major changes to the previous edition:

- (a) The adoption by Standards New Zealand to make it a joint Australian/New Zealand Standard (i.e. AS/NZS 1163).
- (b) Guidance Note on chemical composition classes, which considers suitability for after-fabrication hot-dip galvanizing.
- (c) The provision for non-destructive testing of the hollow section longitudinal weld seam.
- (d) Qualification for impact test requirements for hollow sections with nominal thickness less than 6 mm.
- (e) Increased groupings for elongation results for hollow sections based on the diameter or face slenderness.
- (f) A minimum weld seam or parent metal thickness after external scarfing or removal of surface defects, or both.
- (g) The requirement for individual length marking in order to comply with this Standard. This requirement does not apply to New Zealand.
- (h) Further information in the ‘informative’ appendix on ‘Purchasing Guidelines’.
- (i) The mandatory requirement for test reports and test certificates to be performed by third-party accredited laboratories.
- (j) The introduction of mandatory minimum information required on test certificates.
- (k) The inclusion of Appendix B on ‘Product Conformity’ as a mandatory provision for conformance with this Standard.
- (l) The introduction of new ‘informative’ Appendix C on ‘Basis of Assessment of Compliance of Mechanical Properties by Statistical Sampling’.
- (m) Where applicable, the alignment of technical requirements, dimension symbols and section tolerances with ISO 10799, *Structural steels—Cold-formed, welded, structural hollow sections—Technical delivery requirements*, ISO 4019, *Structural steels—Cold-formed, welded, structural hollow sections, dimensional and section properties*, and EN 10219, *Cold formed welded structural hollow sections of non-alloy and fine grain steels*.
- (n) Where possible, the alignment of contents with AS 3597, *Structural and pressure vessel steel—Quenched and tempered plate*, AS/NZS 3678, *Structural steel—Hot-rolled plates, floorplates and slabs*, AS/NZS 3679.1, *Structural steel—Hot-rolled bars and sections* and AS/NZS 3679.2, *Structural steel—Welded I sections*.

To permit the steel industries time to adjust to the new Standard, the 1991 version of AS 1163 will remain available superseded and will be withdrawn 12 months from the date of publication of this Standard.

A statement expressed in mandatory terms in a Note to a table is deemed to be a requirement of this Standard.

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.

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Cold-formed structural steel hollow sections

1 SCOPE

This Standard specifies the requirements for cold-formed, electric resistance-welded, carbon steel hollow sections used for structural purposes. It considers three strength grades, with or without impact properties, that are suitable for welding.

It is applicable to structural hollow sections formed cold without subsequent heat treatment.

The Standard does not cover submerged arc-welded, helically welded or U'ed and O'ed steel hollow sections.

NOTE: For guidelines on information to be supplied at the time of enquiry or order, see Appendix A.

Means for demonstrating conformance with this Standard are given in Appendix B.

2 NORMATIVE REFERENCES

The following are the normative documents referenced in this Standard:

NOTE: Documents referenced for informative purposes are listed in the Bibliography.

AS

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| 1391 | Metallic materials—Tensile testing at ambient temperature |
| 1544 | Methods for impact tests on metals |
| 1544.2 | Part 2: Charpy V-notch |
| 1733 | Methods for the determination of grain size in metals |
| 2706 | Numerical values—Rounding and interpretation of limiting values |
| 4750 | Electrogalvanized (zinc) coatings on ferrous hollow and open section |

AS/NZS

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| 1050 | Methods for the analysis of iron and steel |
| 1050.1 | Part 1: Sampling iron and steel for chemical analysis |
| 1554 | Structural steel welding |
| 1554.1 | Part 1: Welding of steel structures |
| 4680 | Hot-dip galvanized (zinc) coatings on fabricated ferrous articles |
| 4792 | Hot-dip galvanized (zinc) coatings on ferrous hollow sections, applied by a continuous or a specialized process |
| 4855 | Welding consumables—Covered electrodes for manual metal arc welding of non-alloy and fine grain steels—Classification |

ISO

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| 643 | Steels—Micrographic determination of the apparent grain size |
| 2566 | Steel—Conversion of elongation values |
| 2566-1 | Part 1: Carbon and low alloy steels |
| 7966 | Acceptance control charts |