AS 1163—1991

Australian Standard®

Structural steel hollow sections

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The following interests are represented on Committee BD/23:

Australian Chamber of Manufacturers
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Confederation of Australian Industry
Institute of Steel Service Centres of Australia
Master Builders Construction and Housing Association Australia
Metal Trades Industry Association of Australia
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PREFACE

This Standard was prepared by the Standards Australia Committee on Structural Steel to supersede AS 1163—1981. This edition incorporates the following changes:

(a) The deletion of C200 and all H (hot-formed) grades. The inclusion of a new cold-formed grade C450 and grades with guaranteed impact performance at 0°C, namely C250L0, C350L0 and C450L0.

In line with the above change, the tensile strengths of grades C250 and C350 are reduced to reflect the properties obtained on cold-formed sections.

(b) A revised table on chemical analysis.

(c) An amended table on minimum inside radius.

(d) A revised table on tensile test requirements.

(e) The deletion of the previous Appendix B on rounding of numbers in lieu of reference to AS 2706.

CONTENTS

STANDARDS AUSTRALIA

Australian Standard
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1 SCOPE This Standard specifies the requirements for cold-formed steel hollow sections for structural purposes, for the six grades of steel that are suitable for welding.

NOTES:
1 For guidelines on information to be supplied at the time of enquiry or order, see Appendix A.
2 Alternative means for demonstrating compliance with this Standard are given in Appendix B.

2 REFERENCED DOCUMENTS The following documents are referred to in this Standard:

AS	
1050	Methods for the analysis of iron and steel
1171	Methods for magnetic particle testing of ferromagnetic products and components
1199	Sampling procedures and tables for inspection by attributes
1210	SAA Unfired Pressure Vessels Code
1213	Iron and steel—Methods of sampling
1391	Methods for tensile testing of metals
1399	Guide to AS 1199—Sampling procedures and tables for inspection by attributes
1544	Methods for impact tests on metals
1544.2	Part 2: Charpy V-notch
1553	Covered electrodes for welding
1554	SAA Structural Steel Welding Code
1554.1	Part 1: Welding of steel structures
2084	Non-destructive testing—Eddy current testing of metal tubes
3900	Quality systems—Guide to selection and use
3904	Quality management and quality system elements
K1	Methods for the sampling and analysis of iron and steel
ISO	
2566	Steel—Conversion of elongation values
2566-1	Part 1: Carbon and low alloy steels
Guide 44	General rules of ISO or IEC international third-party certification schemes for products

3 DEFINITIONS For the purpose of this Standard, the definitions below apply.

3.1 Batch—hollow sections of the same size, thickness and grade manufactured from the same cast.

3.2 Cast analysis—chemical analysis determined from a test sample taken during casting.

3.3 Cold-formed hollow section—hollow sections formed and shaped at ambient temperature from a single strip of steel, both edges of which are continuously welded by either the electric resistance or submerged arc process.

3.4 Longitudinal direction—direction parallel to the longitudinal weld.

3.5 Product analysis—chemical analysis determined from a test sample of the finished material.

3.6 Testing—mechanical and chemical analysis tests as required by this Standard.

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

3.8 Test sample—portion of material or product or a group of items selected from a batch or group by sampling.

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

3.10 Transverse direction—direction at right angles to the longitudinal weld.

3.11 Unit—length of hollow section.

4 DESIGNATION All grades shall be designated as follows:

Example: AS 1163–C250L0
where
AS 1163 = number of this Standard
C = cold-formed sections
250 = nominal minimum yield strength of steel
L = guaranteed impact properties of the material
0 = low temperature impact test at 0°C