

AS 1163—1991

Australian Standard[®]

Structural steel hollow sections

This Australian Standard was prepared by Committee BD/23, Structural Steel. It was approved on behalf of the Council of Standards Australia on 30 August 1991 and published on 15 November 1991.

The following interests are represented on Committee BD/23:

Australian Chamber of Manufacturers
Australian Institute of Steel Construction
AUSTROADS
Bureau of Steel Manufacturers of Australia
Confederation of Australian Industry
Institute of Steel Service Centres of Australia
Master Builders Construction and Housing Association Australia
Metal Trades Industry Association of Australia
Railways of Australia Committee
Steel Reinforcement Institute of Australia
University of Queensland
University of Sydney

Review of Australian Standards. To keep abreast of progress in industry, Australian Standards are subject to periodic review and are kept up to date by the issue of amendments or new editions as necessary. It is important therefore that Standards users ensure that they are in possession of the latest edition, and any amendments thereto.

Full details of all Australian Standards and related publications will be found in the Standards Australia Catalogue of Publications; this information is supplemented each month by the magazine 'The Australian Standard', which subscribing members receive, and which gives details of new publications, new editions and amendments, and of withdrawn Standards.

Suggestions for improvements to Australian Standards, addressed to the head office of Standards Australia, are welcomed. Notification of any inaccuracy or ambiguity found in an Australian Standard should be made without delay in order that the matter may be investigated and appropriate action taken.

This Standard was issued in draft form for comment as DR 90108.

AS 1163—1991

Australian Standard[®]

Structural steel hollow sections

First published as AS A177—1969.
Revised and redesignated AS 1163—1973.
AS A177 withdrawn 1976.
Second edition AS 1163—1981.
Third edition 1991.

Incorporating:
Amdt 1—1992
Amdt 2—1996

PUBLISHED BY STANDARDS AUSTRALIA
(STANDARDS ASSOCIATION OF AUSTRALIA)
1 THE CRESCENT, HOMEBUSH, NSW 2140

ISBN 0 7262 7109 8

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

	<i>Page</i>
1 SCOPE	3
2 REFERENCED DOCUMENTS	3
3 DEFINITIONS	3
4 DESIGNATION	3
5 STEELMAKING PROCESS	4
6 CHEMICAL COMPOSITION	4
7 DIMENSIONS, MASS AND GEOMETRICAL PROPERTIES	4
8 DIMENSIONAL TOLERANCES	4
9 MASS TOLERANCE	6
10 FREEDOM FROM DEFECTS	6
11 REMOVAL OF SURFACE DEFECTS	6
12 REMOVAL OF UPSET	6
13 MECHANICAL TESTING	6
14 PREPARATION OF TEST PIECES FOR MECHANICAL TESTING	7
15 MECHANICAL TEST REQUIREMENTS	7
16 MECHANICAL PROPERTIES	8
17 ROUNDING OF NUMBERS	8
18 MARKING	8

APPENDICES

A PURCHASING GUIDELINES	10
B MEANS FOR DEMONSTRATING COMPLIANCE WITH THIS STANDARD	11
C DIMENSIONS AND PROPERTIES OF CROSS-SECTION	13
D METHOD FOR VERIFYING GRADE L0 COMPLIANCE OF THIN WALL SECTIONS	24

© Copyright — STANDARDS AUSTRALIA

Users of Standards are reminded that copyright subsists in all Standards Australia publications and software. Except where the Copyright Act allows and except where provided for below no publications or software produced by Standards Australia may be reproduced, stored in a retrieval system in any form or transmitted by any means without prior permission in writing from Standards Australia. Permission may be conditional on an appropriate royalty payment. Requests for permission and information on commercial software royalties should be directed to the head office of Standards Australia.

Standards Australia will permit up to 10 percent of the technical content pages of a Standard to be copied for use exclusively in-house by purchasers of the Standard without payment of a royalty or advice to Standards Australia.

Standards Australia will also permit the inclusion of its copyright material in computer software programs for no royalty payment provided such programs are used exclusively in-house by the creators of the programs.

Care should be taken to ensure that material used is from the current edition of the Standard and that it is updated whenever the Standard is amended or revised. The number and date of the Standard should therefore be clearly identified.

The use of material in print form or in computer software programs to be used commercially, with or without payment, or in commercial contracts is subject to the payment of a royalty. This policy may be varied by Standards Australia at any time.

STANDARDS AUSTRALIA

Australian Standard

Structural steel hollow sections

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

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

-
- Looking for additional Standards? Visit Intertek Inform Infostore
 - Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation
-