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.

This Standard was published on 9 December 2009.

The following are represented on Committee BD-023:

Austroads

Association of Consulting Engineers Australia Australian Chamber of Commerce and Industry Australian Industry Group Australian Steel Institute Bureau of Steel Manufacturers of Australia **Business New Zealand** New Zealand Heavy Engineering Research Association Steel Construction New Zealand University of Melbourne University of New South Wales University of Sydney University of Western Australia

Keeping Standards up-to-date

Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

Detailed information about joint Australian/New Zealand Standards can be found by visiting the Standards Web Shop at www.saiglobal.com.au or Standards New Zealand web site at www.standards.co.nz and looking up the relevant Standard in the on-line catalogue.

For more frequent listings or notification of revisions, amendments and withdrawals, Standards Australia and Standards New Zealand offer a number of update options. For information about these services, users should contact their respective national Standards organization.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Please address your comments to the Chief Executive of either Standards Australia or Standards New Zealand at the address shown on the back cover.

This Standard was issued in draft form for comment as DR 07236.

Australian/New Zealand Standard™

Cold-formed structural steel hollow sections

Originated as AS A177—1969. Previous edition AS 1163—1991. Jointly revised and designated as AS/NZS 1163:2009.

COPYRIGHT

© Standards Australia/Standards New Zealand

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher.

Jointly published by Standards Australia, GPO Box 476, Sydney, NSW 2001 and Standards New Zealand, Private Bag 2439, Wellington 6140

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 afterfabrication 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.
- (1) 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*—Hotrolled plates, floorplates and slabs, AS/NZS 3679.1, *Structural steel*—Hotrolled 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.

CONTENTS

	Pag	;e
1	SCOPE	4
2	NORMATIVE REFERENCES	4
3	DEFINITIONS	5
4	NOTATION	6
5	DESIGNATION	6
6	MANUFACTURING PROCESS—STEEL FEED	6
7	CHEMICAL COMPOSITION	7
8	MANUFACTURING TOLERANCES	9
9	FREEDOM FROM DEFECTS1	4
10	TESTING1	5
11	MECHANICAL PROPERTIES 1	7
12	REMOVAL OF SURFACE DEFECTS1	8
13	IDENTIFICATION, CERTIFICATION AND INDEPENDENT TESTS 1	9
14	ROUNDING OF NUMBERS	1
15	MANIPULATION	.1
16	NOMINAL DIMENSIONS, SECTION PROPERTIES AND MASS	1
17	SAMPLING AND TESTING TO DEMONSTRATE PRODUCT CONFORMITY 2	1
AFFENI	PURCHASING GUIDELINES 2	2
B	PRODUCT CONFORMITY	4
С	BASIS FOR ASSESSMENT OF COMPLIANCE OF MECHANICAL	
	PROPERTIES BY STATISTICAL SAMPLING	8
D	DIMENSIONS AND PROPERTIES OF CROSS-SECTION	0
BIBLIO	GRAPHY4	-1