

Australian Standard<sup>®</sup>

**Continuous hot-dip metallic coated steel  
sheet and strip—Coatings of zinc and  
zinc alloyed with aluminium and  
magnesium**



This Australian Standard® was prepared by Committee MT-001, Iron and Steel. It was approved on behalf of the Council of Standards Australia on 18 August 2011. This Standard was published on 15 September 2011.

---

The following are represented on Committee MT-001:

- Australian Building Codes Board
  - Australasian Corrosion Association
  - Australian Foundry Institute
  - Australian Institute of Architects
  - Australian Steel Association
  - Australian Steel Institute
  - Bureau of Steel Manufacturers of Australia
  - Materials Australia
  - New Zealand Heavy Engineering Research Association
  - Society of Automotive Engineers—Australasia
  - The University of Sydney
- 

This Standard was issued in draft form for comment as DR AS 1397.

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.

---

#### **Keeping Standards up-to-date**

Australian Standards® are living documents that 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Standards may also be withdrawn.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 that may have been published since the Standard was published.

Detailed information about Australian Standards, drafts, amendments and new projects can be found by visiting [www.standards.org.au](http://www.standards.org.au)

Standards Australia welcomes suggestions for improvements, and encourages readers to notify us immediately of any apparent inaccuracies or ambiguities. Contact us via email at [mail@standards.org.au](mailto:mail@standards.org.au), or write to Standards Australia, GPO Box 476, Sydney, NSW 2001.

---

Australian Standard<sup>®</sup>

**Continuous hot-dip metallic coated steel  
sheet and strip—Coatings of zinc and  
zinc alloyed with aluminium and  
magnesium**

Originated as part of AS A20—1934.  
Previous edition AS 1397—2001.  
Sixth edition 2011.  
Reissued incorporating Amendment No. 1 (October 2012).

**COPYRIGHT**

© Standards Australia Limited

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, unless otherwise permitted under the Copyright Act 1968.

Published by SAI Global Limited under licence from Standards Australia Limited, GPO Box 476, Sydney, NSW 2001, Australia

ISBN 978 0 7337 9925 9

## PREFACE

This Standard was prepared by the Australian members of Joint Standards Australia/Standards New Zealand Committee MT-001, Iron and Steel, to supersede AS 1397—2001, *Steel sheet and strip—Hot-dipped zinc-coated or aluminium/zinc-coated*.

*This Standard incorporates Amendment No. 1 (October 2012). 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 Standard rather than an Australian/New Zealand Standard.

This Standard upgrades the requirements of AS 1397—2001 and introduces three new coating types:

- (a) Zinc and aluminium (Type ZA).
- (b) Zinc, aluminium and magnesium (Type ZM).
- (c) Aluminium, zinc and magnesium (Type AM).

Committee MT-001 has sought to align with the following international and national Standards, where applicable:

ISO 9364:2006, *Continuous hot-dip aluminium/zinc-coated steel sheet of commercial, drawing and structural qualities*

ISO 4998:2011, *Continuous hot-dip zinc-coated carbon steel sheet of structural quality*

ISO 3575:2011, *Continuous hot-dip zinc-coated carbon steel sheet of commercial and drawing qualities*

ASTM A1046/A1046M-10a, *Specification for steel sheet, zinc-aluminium-magnesium alloy-coated by the hot-dip process*

ASTM A902-09, *Terminology relating to metallic coated steel products*

ASTM A875/875M-09a, *Specification for steel sheet, zinc-5% aluminium alloy-coated by the hot-dip process*

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

	<i>Page</i>
SECTION 1 SCOPE AND GENERAL	
1.1 SCOPE.....	4
1.2 NORMATIVE DOCUMENTS .....	4
1.3 DEFINITIONS.....	5
1.4 SURFACE CONDITIONING AND SURFACE TREATMENT.....	6
1.5 PRODUCT DESIGNATION .....	7
1.6 ROUNDING OF TEST RESULT VALUES.....	10
1.7 MARKING .....	10
SECTION 2 THE STEEL BASE	
2.1 SCOPE OF SECTION .....	11
2.2 CHEMICAL COMPOSITION .....	11
2.3 TENSILE TEST.....	11
2.4 BEND TEST.....	12
2.5 DIMENSIONAL TOLERANCES.....	12
SECTION 3 THE COATING	
3.1 SCOPE OF SECTION .....	14
3.2 DETERMINATION OF COATING MASS.....	14
3.3 DETERMINATION OF COATING ADHESION .....	15
APPENDICES	
A PURCHASING GUIDELINES.....	19
B PRODUCT CONFORMITY .....	21
C INFORMATION ON COATING THICKNESS DETERMINATION AND ON THE THICKNESS/MASS RELATIONSHIP BETWEEN BASE STEEL AND COATING .....	23
D INFORMATION AND GUIDELINES ON THE SELECTION OF STEEL GRADES AND COATING CLASSES .....	27
BIBLIOGRAPHY.....	31

## STANDARDS AUSTRALIA

## Australian Standard

**Continuous hot-dip metallic coated steel sheet and strip—Coatings of zinc and zinc alloyed with aluminium and magnesium**

## SECTION 1 SCOPE AND GENERAL

**1.1 SCOPE**

This Standard specifies requirements for continuously hot-dip metallic coated sheet steel and strip supplied in thicknesses up to and including 5.0 mm.

Requirements for product conformity to this Standard are given in Appendix B.

Requirements covered in this Standard are as follows:

- (a) Formability grades of steel.
- (b) Structural grades of steel.
- (c) Classes of zinc coating, including differential coatings.
- (d) Classes of zinc coating converted to zinc/iron alloy.
- (e) Classes of zinc/aluminium coatings.
- (f) Classes of zinc/aluminium/magnesium alloy coating.
- (g) Classes of aluminium/zinc alloy coating.
- (h) Classes of aluminium/zinc/magnesium alloy coating.
- (i) Surface finish.

## NOTES:

- 1 Advice and recommendations on information to be supplied by the purchaser at the time of enquiry or order are contained in Appendix A.
- 2 The specified requirements apply to the full length and full width of the product supplied, unless otherwise indicated.
- 3 Within the description of the classes of coatings, the majority element present is listed first, followed by the next major element and followed by a third element if appropriate.

**1.2 NORMATIVE DOCUMENTS**

The following are the normative documents referenced in this Standard:

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

## AS

1391	Metallic materials—Tensile testing of ambient temperature
2331	Methods of test for metallic and related coatings
2331.2.1	Method 2.1: Tests for average coating mass per unit area or for thickness Dissolution methods—Strip and weigh and analytical
2331.2.3	Method 2.3: Tests for average coating mass per unit area or for thickness- Hydrogen evolution method for zinc coatings
2505	Metallic materials
2505.1	Part 1: Sheet, strip and plate—Bend tests