AS 1397:2021

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

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The following are represented on Committee MT-001:

Australasian Corrosion Association
Australian Building Codes Board
Australian Industry Group
Australian Steel Association
Australian Steel Institute
Bureau of Steel Manufacturers of Australia
Materials Australia

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Originated as part of AS A20—1934.
Revised and redesignated as AS 1397—1973.
Previous edition 2011.
Seventh edition 2021.

Preface

This Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee MT-001, Iron and Steel, to supersede AS 1397—2011.

This Standard maintains the requirements of AS 1397 — 2011 and includes a reduction in the minimum aluminium content threshold for Type ZM coatings (from 5 % to 3 %). The expanded chemistry range for Type ZM coatings has resulted in nomination of two sub-Types, identified as "ZMa" and "ZMb". The revised Standard also introduces an additional coating class for Type AM coatings, AM225.

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

(a) ISO 9364:2017, *Steel sheet, 55 % aluminium-zinc alloy-coated by the continuous hot-dip process of commercial, drawing and structural qualities*

(b) ISO 4998:2014, *Continuous hot-dip zinc-coated and zinc-iron alloy-coated carbon steel sheet of structural quality*

(c) ISO 3575:2016, *Continuous hot-dip zinc-coated and zinc-iron alloy-coated carbon steel sheet of commercial and drawing qualities*

(d) ASTM A1046/A1046M, *Standard specification for steel sheet, zinc-aluminium-magnesium alloy-coated by the hot-dip process*

(e) ASTM A902-18a, *Standard terminology relating to metallic coated steel products*

(f) ASTM A875/A875M-13, *Standard specification for steel sheet, zinc-5 % aluminium alloy-coated by the hot-dip process*

(g) EN 10346:2015, *Continuously hot-dip coated steel flat products for cold forming — Technical delivery conditions*

(h) JIS G 3323:2019, *Hot-dip zinc-aluminium-magnesium alloy-coated steel sheet and strip*

The major changes in this edition are as follows:

(i) Inclusion of additional coating chemistries within the ZM Coating Type and division of that coating Type into two sub-Types (ZMa and ZMb).

(ii) Inclusion of ZM Type coatings with aluminium content (by mass) in the range of 3 % to less than 5 % to broaden compatibility with coating chemistries contained within ASTM A1046/A1046M. The expanded range of coating chemistries (Type ZMb) is reflected by ASTM A1046/A1046M Type 2 coating chemistries.

(iii) The inclusion of an additional coating class within Type AM coatings of AM225.

The terms "normative" and "informative" are used in Standards to define the application of the appendices 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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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.

NOTE 1 Advice and recommendations on information to be supplied by the purchaser at the time of enquiry or order are contained in Appendix A.

NOTE 2 The specified requirements apply to the full length and full width of the product supplied, unless otherwise indicated.

NOTE 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 applicable.

1.2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document.

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

AS 1391, *Metallic materials — Tensile testing of ambient temperature*

AS 2331.2.1, *Methods of test for metallic and related coatings, Method 2.1: Tests for average coating mass per unit area or for thickness — Dissolution methods — Strip and weigh, and analytical*

AS 2331.2.3, *Methods of test for metallic and related coatings, Method 2.3: Tests for average coating mass per unit area or for thickness — Hydrogen evolution method for zinc coatings*

AS 2505.1, *Metallic materials, Method 1: Sheet, strip and plate — Bend tests*

AS/NZS 1050, *Methods for the analysis of iron and steel (all parts)*

AS/NZS 1365, *Tolerances for flat-rolled steel products*