AS/NZS 2312.2:2014

Australian/New Zealand Standard™

# Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings

## Part 2: Hot dip galvanizing



STANDARDS Australia

STANDARDS NEW ZEALAND PAEREWA AOTEAROA

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee MT-014, Corrosion of Metals. It was approved on behalf of the Council of Standards Australia on 18 November 2014 and on behalf of the Council of Standards New Zealand on 26 November 2014.
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The following are represented on Committee MT-014:

Australasian Corrosion Association
Australian Chamber of Commerce and Industry
Australian Electrolysis Committee
Australian Industry Group
Australian Paint Manufacturers' Federation
Australian Pipeline Industry Association
Austroads
Bureau of Steel Manufacturers of Australia
CSIRO Materials Science & Engineering
Galvanizers Association of Australia
Galvanizing Association of New Zealand
Materials Australia
New Zealand Heavy Engineering Research
SA Water
Water Services Association of Australia

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## Part 2: Hot dip galvanizing

Originated in Australia as part of MA 1.5—1967.
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# PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee MT-014, Corrosion of Metals, to supersede, in part, AS/NZS 2312:2002, *Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings*. It completely replaces references to hot dip coatings in AS/NZS 2312:2002, Section 5, and elsewhere in that document.

This Standard is Part 2 of a series for the protection of steel from corrosion, as follows:

| AS/NZS | |
|---|---|
| 2312 | Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings |
| 2312.1 | Part 1: Paint coatings |
| 2312.2 | Part 2: Hot dip galvanizing (this Standard) |
| 2312.3 | Part 3: Thermally sprayed metallic coatings (in preparation) |

This Standard does not cover thermal metal spray coatings, including zinc coatings and zinc-alloy coatings, which are the subject of AS/NZS 2312.3 (in preparation).

The objective of this revision is to provide guidelines for the proper specification and design of hot dip galvanized articles in the atmosphere. In preparing this Standard, reference was made to the ISO 14713 series, *Zinc coatings—Guidelines and recommendations for the protection of iron and steel in structures*.

This Standard should be used in conjunction with the relevant manufacturing Standards.

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STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

# Australian/New Zealand Standard

# Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings

## Part 2: Hot dip galvanizing

## 1 SCOPE

This Standard provides guidelines and recommendations regarding general principles of design, appropriate for articles to be hot dip galvanized for corrosion protection. The application of zinc coatings by hot dip galvanizing provides an effective method of retarding or preventing corrosion of ferrous materials. Zinc coatings are used in this regard because they protect iron and steel both by barrier action and by galvanic action.

The protection afforded by the zinc coating to the article will depend on the method of application of the coating, the design of the article (both of which directly influence the thickness of the zinc coating), and the specific environment to which the article is exposed. The zinc coated article can be further protected by application of additional coatings, such as organic coatings (paints or powder coatings). When applied to hot dip galvanized articles, this combination of coatings is often known as a 'duplex system'.

This Standard applies to hot dip galvanized coatings applied by the following processes:

(a) Hot dip galvanized coatings, applied after fabrication. (See Clause 5.1.2.)

(b) Hot dip galvanized coatings, applied onto continuous sheet. (See Clause 5.1.3.)

(c) Hot dip galvanized coatings, applied onto continuous cold-formed shapes. (See Clause 5.1.4.)

Other zinc coating processes covered in this Standard are the following:

(i) Mechanically plated coatings (see Clause 5.1.5).

(ii) Electrodeposited coatings (see Clause 5.1.6).

Specific product-related requirements (e.g. for hot dip galvanized coatings on tubes or fasteners, etc.) will take precedence over these general recommendations.

## 2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

NOTE: Documents that may be referred to for additional information are listed in the Bibliography.

AS

1074 Steel tubes and tubulars for ordinary service

1214 Hot-dip galvanized coatings on threaded fasteners (ISO metric coarse thread series)

1397 Continuous hot-dip metallic coated steel sheet and strip—Coatings of zinc and zinc alloyed with aluminium and magnesium

1442 Carbon steels and carbon-manganese steels—Hot rolled bars and semi-finished products

1447 Hot-rolled spring steels