

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

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AS/NZS 2312.2:2014

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Australian Chamber of Commerce and Industry
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Australian Industry Group
Australian Paint Manufacturers' Federation
Australian Pipeline Industry Association
Austroads
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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

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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/NZS 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