

Australian/New Zealand Standard™

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

## **AS/NZS 2312:2002**

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 14 October 2002 and on behalf of the Council of Standards New Zealand on 12 November 2002. It was published on 28 November 2002.

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The following are represented on Committee MT-014:

Australasian Corrosion Association  
Australian Aluminium Council  
Australian Chamber of Commerce and Industry  
Australian Electrolysis Committee  
Australian Gas Association  
Australian Institute of Steel Construction  
Australian Pipeline Industry Association  
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Galvanizers Association of Australia  
Hunter Water Australia  
Ministry of Economic Development (New Zealand)  
New Zealand Abrasive Blasting Association  
United Water International  
Water Corporation Western Australia

Additional interests participating in the preparation of this Standard:

The Australian Paint Approval Scheme  
Australian Paint Manufacturer's Federation  
Building Research Association of New Zealand  
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Metal spray suppliers  
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# Australian/New Zealand Standard™

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

Originated as part of MA 1.5—1967.  
Previous edition AS/NZS 2312:1994.  
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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 AS/NZS 2312:1994, *Guide to the protection of iron and steel against exterior atmospheric corrosion*.

*This Standard incorporates Amendment 1 (August 2004). 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.*

The objective of this Standard is to provide guidance for architects, engineers, builders, the surface coating industry and users of protective services in general, on coating systems for the protection of steel work against corrosion. The designer can choose from a selection of systems based on expected service life to first maintenance for various environments. The systems recommended herein are based on good industrial practice and usage; however, local knowledge of any corrosion problem should influence the decisions taken.

Many of the system options will provide equal performance in the field. The system chosen will depend on many factors including location, material supply, available equipment, labour and cost.

It is necessary to refer to each Section of this Standard when a specification for an appropriate system is being prepared.

This edition of the Standard has been expanded to cover non-atmospheric environments in addition to exterior atmospheric environments.

In providing recommendations on up-to-date protection systems, the Committee is aware of the large number of systems used commercially, but, to avoid confusion, has included only a limited range of systems for each type of environment.

The Committee acknowledges the developments which are taking place in the protection of structural steel work and will continue to monitor these in order to make changes to future editions of this Standard as may become necessary.

In preparing this revision, cognizance was taken of the International Standard ISO 9223:1992, *Corrosion of metals and alloys—Corrosivity of atmospheres—Classification*. Cognizance was also taken of a number of the draft International Standards being prepared to become part of the ISO 12944 series of Standards, *Paints and varnishes—Corrosion protection of steel structures by protective paint systems*. These Standards were not adopted as most of the paint systems they specify are not used in Australia and New Zealand.

The term ‘informative’ has been used in this Standard to define the application of the appendix to which it applies. An ‘informative’ appendix is only for information and guidance.

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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**

## SECTION 1 SCOPE AND GENERAL

**1.1 SCOPE**

This Standard provides guidelines for the selection and specification of coating systems for the protection of structural steel work against interior and exterior atmospheric environments.

The Standard specifically covers the following subjects:

- (a) Guidance on the use of the Standard.
- (b) Classification of atmospheric and non-atmospheric environments.
- (c) Planning and design for corrosion protection.
- (d) Surface preparation treatments.
- (e) Metallic coatings.
- (f) Paint coating systems and methods of paint application.
- (g) Factors influencing coating selection.
- (h) Powder coatings and wrapping tapes for corrosion protection.
- (i) Maintenance of protective coating systems.
- (j) Inspection and testing.
- (k) Guidance on the preparation of coating specifications.
- (l) Health and safety requirements.
- (m) Economics of corrosion protection.

This Standard covers the protection of structural steel work against interior and exterior atmospheric corrosion and also the protection of items of equipment manufactured from steel which are exposed to exterior atmospheric conditions.

The Standard also covers, to a limited extent, the protection of steel work which is completely immersed in water or buried in soil, or which is subject to atmospheres severely contaminated with acidic or other chemical vapours such as may be encountered in some chemical manufacturing plants, and also the protection of ships. The systems recommended in this Standard can also be used on internal structures where wet or damp areas exist.

It is necessary to understand that the systems recommended have been selected for guidance only and that life expectancy to first major maintenance is an estimate only. In practice, some minor maintenance may be required.

Because particular coating formulations and micro-climates vary, the user of this Standard is advised to confirm with the manufacturer or supplier, that the selected system is suitable for the task and can be reasonably expected to protect the steel for a specified time.



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