AS 4312—2008

Australian Standard®

Atmospheric corrosivity zones in Australia

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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 Pipeline Industry Association
- Australian Paint Approval Scheme
- AUSTROADS
- Blast Cleaning & Coating Association of Australia
- Bureau of Steel Manufacturers of Australia
- Corrosion Prevention Centre
- CSIRO Manufacturing and Materials Technology
- Galvanizers Association of Australia
- Materials Australia
- Plumbing Products Industry Group
- Water Utility Interests
- Water Services Association of Australia

This Standard was issued in draft form for comment as DR 07270.

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.

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PREFACE

This Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee MT-014, Corrosion of Metals.

After consulting with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian rather than an Australian/New Zealand Standard.

The objective of this Standard is to provide guidelines for the classification of atmospheric environments in terms of their effects on corrosion to assist with the selection of metal finishes for ferrous products.

This Standard expands on information previously published in AS/NZS 2312, *Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings,* to provide industry with more comprehensive guidance on atmospheric corrosivity.

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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S E C T I O N 1 S C O P E A N D G E N E R A L

1.1 SCOPE

This Standard provides guidelines for the classification of corrosivity zones in Australia and their effect on the corrosion of steel and other metals.

These guidelines use corrosion rate classifications defined in ISO 9223 to delineate atmospheric corrosivity zones. Environments which are not atmospheric, such as immersed or underground, are not considered in this Standard.

1.2 APPLICATION

This Standard is to be used by designers and specifiers of corrosion control methods to assist in determining the correct corrosivity zone in Australia. The influence of microclimates is also addressed and should be considered when specifying the necessary corrosion protection that is required.

In general, a knowledge of atmospheric corrosivity is necessary in the following corrosion mitigation activities:

(a) Selection of protective coatings. The more severe the environment, the better the coating system required.

(b) Maintenance of coating systems. In severe environments, maintenance is more difficult and more urgent than less severe environments.

(c) Selection of suitable metals and metallic-coated products. The suitability, expected life and durability of coated materials, such as zinc coated steel and metals such as copper and stainless steels, depends on the corrosivity of the environment.

(d) Design of products and components. The importance of minimizing corrosion through careful design and fabrication procedures becomes more important as the environment becomes more corrosive.

NOTE: AS/NZS 2312 provides details of selection and maintenance of protective coatings, and shows design features for minimizing corrosion.

1.3 REFERENCED DOCUMENTS

The following documents are referenced in this standard:

AS	
1565	Copper and copper alloys—Ingots and castings
AS/NZS	
1734	Aluminium and aluminium alloys—Flat sheet, coiled sheet and plate
1866	Aluminium and aluminium alloys—Extruded rod, bar, solid and hollow shapes
2312	Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings
4673	Cold-formed stainless steel structures

