

AS/NZS 2312:2002  
(Incorporating Amendment No. 1)

AS/NZS 2312

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.

---

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  
AUSTROADS  
Bureau of Steel Manufacturers of Australia  
Corrosion Prevention Centre  
Department of Defence, Australia  
Division of Building, Construction and Engineering, CSIRO  
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  
Corrosion engineers and consultants  
Metal spray suppliers  
Paint manufacturers and suppliers  
Steel Institute of Australia

---

### **Keeping Standards up-to-date**

Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

Detailed information about joint Australian/New Zealand Standards can be found by visiting the Standards Web Shop at [www.standards.com.au](http://www.standards.com.au) or Standards New Zealand web site at [www.standards.co.nz](http://www.standards.co.nz) and looking up the relevant Standard in the on-line catalogue.

Alternatively, both organizations publish an annual printed Catalogue with full details of all current Standards. For more frequent listings or notification of revisions, amendments and withdrawals, Standards Australia and Standards New Zealand offer a number of update options. For information about these services, users should contact their respective national Standards organization.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Please address your comments to the Chief Executive of either Standards Australia International or Standards New Zealand at the address shown on the back cover.

---

**AS/NZS 2312:2002**  
(Incorporating Amendment No. 1)

## 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.  
Fourth edition 2002.  
Reissued incorporating Amendment No. 1 (August 2004)

### **COPYRIGHT**

© Standards Australia/Standards New Zealand

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher.

Jointly published by Standards Australia International Ltd, GPO Box 5420, Sydney, NSW 2001 and Standards New Zealand, Private Bag 2439, Wellington 6020

ISBN 0 7337 4887 2

## 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.

## CONTENTS

	<i>Page</i>
<b>SECTION 1 SCOPE AND GENERAL</b>	
1.1 SCOPE .....	6
1.2 NEED FOR CORROSION PROTECTION .....	7
1.3 USE OF THIS STANDARD.....	7
1.4 REFERENCED DOCUMENTS .....	7
1.5 DEFINITIONS .....	10
1.6 DURABILITY CONSIDERATIONS .....	11
1.7 DESIGNATION OF PROTECTION SYSTEMS.....	11
<b>SECTION 2 CLASSIFICATION OF ENVIRONMENTS</b>	
2.1 GENERAL .....	13
2.2 MICRO-ENVIRONMENTS .....	13
2.3 ATMOSPHERIC CORROSIVITY CATEGORIES .....	14
2.4 OTHER ENVIRONMENTS .....	15
<b>SECTION 3 PLANNING AND DESIGN FOR CORROSION PROTECTION</b>	
3.1 SCOPE AND GENERAL .....	16
3.2 PLANNING.....	17
3.3 DESIGN .....	17
<b>SECTION 4 SURFACE PREPARATION TREATMENTS</b>	
4.1 GENERAL .....	35
4.2 SURFACE PREPARATION TREATMENTS.....	35
4.3 THE PROTECTION OF STEEL DURING EXTENDED FABRICATION.....	40
4.4 RUST CONVERSION.....	40
<b>SECTION 5 METALLIC COATINGS FOR CORROSION PROTECTION</b>	
5.1 GENERAL .....	41
5.2 METAL SPRAY COATINGS .....	41
5.3 HOT-DIP GALVANIZED COATINGS (BATCH PROCESS).....	44
5.4 SECTIONS PRODUCED FROM PRE-GALVANIZED STRIP .....	47
5.5 SPECIALIZED HOT DIP GALVANIZED PRODUCTS .....	48
5.6 IN-LINE GALVANIZED PRODUCTS.....	49
5.7 STRUCTURE SECTIONS MANUFACTURED FROM ELECTROGALVANIZED STRIP .....	49
5.8 PAINT SYSTEMS FOR CONTINUOUSLY, SPECIALIZED AND ELECTROGALVANIZED PRODUCTS.....	50
5.9 THE USE OF ROOFING AND CLADDING MATERIALS.....	50
5.10 ELECTROPLATED COATINGS.....	50
<b>SECTION 6 PAINT COATING SYSTEMS FOR CORROSION PROTECTION</b>	
6.1 GENERAL .....	52
6.2 DURABILITY OF PAINT COATINGS .....	52
6.3 COATING SYSTEMS FOR ATMOSPHERIC ENVIRONMENTS .....	52

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

- 
- Looking for additional Standards? Visit Intertek Inform Infostore
  - Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation
-