



Atmospheric corrosivity zones in Australia



AS 4312:2019

This Australian Standard® was prepared by MT-014, Corrosion Of Metals. It was approved on behalf of the Council of Standards Australia on 9 October 2019.

This Standard was published on 29 October 2019.

The following are represented on Committee MT-014:

- Australasian Corrosion Association
- Australian Chamber of Commerce and Industry
- Australian Paint Manufacturers Federation
- Australian Pipelines and Gas Association
- Australian Steel Institute
- Austrroads
- Bureau of Steel Manufacturers of Australia
- CSIRO
- Energy Safe Victoria
- Galvanizers Association of Australia
- Materials Australia
- Plumbing Products Industry Group
- RMIT University
- Water Services Association of Australia

This Standard was issued in draft form for comment as DR AS 4312:2019.

Keeping Standards up-to-date

Ensure you have the latest versions of our publications and keep up-to-date about Amendments, Rulings, Withdrawals, and new projects by visiting:

www.standards.org.au



Atmospheric corrosivity zones in Australia

First published as AS 4312—2008.
Second edition 2019.

COPYRIGHT

© Standards Australia Limited 2019

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, unless otherwise permitted under the Copyright Act 1968 (Cth).

Preface

This Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee MT-014, Corrosion of Metals, to supersede AS 4312—2008.

After consulting with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard 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 edition includes the following major changes from the previous edition:

- (a) Description of and identification of regions within the ISO CX severe corrosivity classification.
- (b) More accurate definition of locations within corrosivity categories, especially in tropical regions, and redrawing the corrosivity maps.
- (c) Removal of the industrial and marine sub-sections of the C5 and the Tropical category, to achieve complete correlation with the ISO categories.
- (d) Additional information on identifying internal environments.

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

Preface	ii
Section 1 Scope and general	1
1.1 Scope.....	1
1.2 Application.....	1
1.3 Normative references.....	1
1.4 Terms and definitions.....	1
Section 2 Factors affecting corrosion of metals	3
2.1 General.....	3
2.2 Macro-climatic factors.....	3
2.2.1 Primary factors.....	3
2.2.2 Modifying factors.....	4
2.3 Micro-climatic and design factors.....	5
2.3.1 General.....	5
2.3.2 Industrial pollutants and chemical attack.....	5
2.3.3 Shelter from rain and regular washing.....	5
2.3.4 Screening from salt and pollution deposition.....	5
2.3.5 Prolonged surface wetness.....	5
2.3.6 Abrasion and erosion.....	6
2.3.7 Other factors.....	6
2.4 Corrosivity categories.....	6
2.5 Atmospheric corrosion — Metals other than steel.....	6
2.5.1 General.....	6
2.5.2 Stainless steels.....	7
2.5.3 Zinc.....	7
2.5.4 Aluminium.....	7
2.5.5 Aluminium-zinc alloys.....	7
2.5.6 Copper.....	8
Section 3 Corrosivity environments	9
3.1 General.....	9
3.2 Atmospheric corrosivity categories.....	9
3.2.1 C1: Very Low (mild steel corrosion rate < 1.3 µm/y).....	9
3.2.2 C2: Low (mild steel corrosion rate 1.3 µm/y to 25 µm/y).....	9
3.2.3 C3: Medium (mild steel corrosion rate 25 µm/y to 50 µm/y).....	9
3.2.4 C4: High (mild steel corrosion rate 50 µm/y to 80 µm/y).....	10
3.2.5 C5: Very High (mild steel corrosion rate 80 µm/y to 200 µm/y).....	10
3.2.6 CX: Extreme (mild steel corrosion rate 200 µm/y to 700 µm/y).....	10
Section 4 Determining the corrosivity environment	11
4.1 General.....	11
4.2 Determining the external corrosivity environment.....	11
4.3 Internal environments.....	12
Appendix A (informative) Corrosion categories	14
Appendix B (informative) Measurement of corrosion rates	23
Appendix C (informative) Corrosivity sections in other standards	25
Bibliography	27

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](#)
-