AS 2331.0—2006
Reconfirmed 2017

AS 2331.0—2006

Australian Standard®

Methods of test for metallic and related coatings

Part 0: Method selection guide

This Australian Standard® was prepared by Committee MT-009, Metal Finishing. It was approved on behalf of the Council of Standards Australia on 19 July 2006.
This Standard was published on 14 August 2006.

The following are represented on Committee MT-009:

- Australasia Institute of Metal Finishing
- Australian Chamber of Commerce and Industry
- Australian Industry Group
- Department of Defence
- Galvanizers Association of Australia
- Institute of Materials Engineering Australia
- The Royal Australian Chemical Institute
- Society of Automotive Engineers-Australia

This Standard was issued in draft form for comment as DR 06289.

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 public comment period.

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STANDARDS AUSTRALIA

RECONFIRMATION

OF
AS 2331.0—2006
Methods of test for metallic and related coatings
Part 0: Method selection guide

RECONFIRMATION NOTICE

Technical Committee MT-009 has reviewed the content of this publication and, in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

Certain documents referenced in the publication may have been amended since the original date of publication. Users are advised to ensure that they are using the latest versions of such documents as appropriate, unless advised otherwise in this Reconfirmation Notice.

Approved for reconfirmation in accordance with Standards Australia procedures for reconfirmation on 20 March 2017.

The following are represented on Technical Committee MT-009:

Australasian Institute of Surface Finishing
Australian Chamber of Commerce and Industry
Australian Industry Group
Australian Steel Institute
Bureau of Steel Manufacturers of Australia
Galvanizers Association of Australia
Galvanizing Association of New Zealand
New Zealand Metal Roofing Manufacturers

NOTES

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Part 0: Method selection guide

Originally as AS 2331.0—2001.
Second edition 2006.

Published by Standards Australia GPO Box 476, Sydney, NSW 2001, Australia

ISBN 0 7337 7682 5

PREFACE

This Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee MT-009, Metal Finishing, to supersede AS 2331.0—2001, Methods of test for metallic and related coatings, Part 0: Introduction and list of methods.

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 edition is to revise the guide by describing the scope and application of each Standard in the series and to include four new Standards.

All Standards in the AS 2331 series apply to metallic and related coatings. However, it should be noted that test methods for paint and related coatings are specifically covered in the AS/NZS 1580, Paints and related materials—Methods of test, series of Standards.

This Standard is Part 0 of a series of Standards covering the methods of tests for metallic and related coatings.

The series comprises the following Parts:

AS

2331	Methods of test for metallic and related coatings	
2331.0	Method 0:	Method selection guide (this Standard)
2331.1.1	Method 1.1:	Local thickness tests—Microscopic examination of cross-sections
2331.1.2	Method 1.2:	Local thickness tests—Coulometric method
2331.1.3	Method 1.3:	Local thickness tests—Magnetic method
2331.1.4	Method 1.4:	Local thickness tests—Magnetic induction and eddy current methods
2331.1.5	Method 1.5:	Local thickness tests—Beta-backscatter method
2331.1.6	Method 1.6:	Local thickness tests—Taper section method
2331.1.7	Method 1.7:	Local thickness tests—Measurement of dry film thickness of thin coating systems particularly by coil coated products by destructive means using a boring device
2331.2.1	Method 2.1:	Tests for average coating mass per unit area or for thickness—Dissolution methods—Strip and weigh, and analytical
2331.2.3	Method 2.3:	Tests for average coating mass per unit area or for thickness—Hydrogen evolution method for zinc coatings
2331.3.1	Method 3.1:	Corrosion and related property tests—Neutral salt spray test (NSS test)
2331.3.2	Method 3.2:	Corrosion and related property tests—Acetic acid salt spray test (ASS test)
2331.3.3	Method 3.3:	Corrosion and related property tests—Copper accelerated acetic salt spray test (CASS test)
2331.3.4	Method 3.4:	Corrosion and related property tests—Thioacetamide anti-tarnish and porosity test
2331.3.5	Method 3.5:	Corrosion and related property tests—Sulfur dioxide/hydrogen sulfide porosity tests
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2331.3.12 Method 3.12: Corrosion and related property tests—Cyclic salt fog/UV exposure of organically coated metal
2331.3.13 Method 3.13: Corrosion and related property tests—Wet (salt fog)/dry/humidity

2331.4.1 Method 4.1: Physical tests—Qualitative adhesion tests
2331.4.2 Method 4.2: Physical tests—Ductility
2331.4.4 Method 4.4: Physical tests—Assessment of intensity of shot-peening
2331.4.5 Method 4.5: Physical tests—Electroplated plastics—Thermal cycling tests
2331.4.7 Method 4.7: Physical tests—Resistance to scratching

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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SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard gives guidance on the selection of the appropriate methods for the testing of metallic and related coatings. In the following Clauses the scope and principle of each Standard in the series are specified.

This series of Standards are arranged in four categories:

Part 1: Local thickness tests

Part 2: Tests for average coating mass per unit area or for thickness

Part 3: Corrosion and related property tests

Part 4: Physical tests

NOTES:

1 Since the last edition of this Standard two Standards in this series have been withdrawn, viz. AS 2331.2.2—1980 on the time of gassing method and AS 2331.4.6—1990 on solderability.

2 Since the last edition of this Standard four Standards have been included in the series, viz. AS 2331.1.7 (see Clause 2.7), AS 2331.3.12 (see Clause 4.12), AS 2331.3.13 (see Clause 4.13) and AS 2331.4.7 (see Clause 5.5).

1.2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

1247 Metallic coatings—Rating of test specimens and manufactured articles subject to corrosion tests

4108 Metal finishing—Glossary of terms in electroplating and related processes

ISO

1463 Metallic and oxide coatings—Measuring of coating thickness—Microscopical method

2177 Metallic coatings—Measurement of coating thickness—Coulometric method by anodic dissolution

2178 Non-magnetic coatings on magnetic substrates—Measurement of coating thickness—Magnetic method

2819 Metallic coatings on metallic substrates—Electrodeposited and chemically deposited coatings—Review of methods available for testing adhesion

3543 Metallic and non-metallic coatings—Measurement of thickness—Beta backscatter method