STANDARDS AUSTRALIA

RECONFIRMATION

OF
AS 2331.3.10—2001
Methods of test for metallic and related coatings
Method 3.10: Corrosion and related property tests—Cracks and pores in chromium

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

AS 2331.3.10—2001
Reconfirmed 2017

Australian Standard™

Methods of test for metallic and related coatings

Method 3.10: Corrosion and related property tests—Cracks and pores in chromium

1 SCOPE

This Standard sets out two methods, the macro method and the micro method, for the assessment of the distribution of cracks and pores in electroplated coatings of chromium.

The macro method is suitable for a visual assessment of the crack pattern in microcracked coatings whereas the micro method enables an accurate count of very fine crack and pore patterns.

NOTE: The test procedures described in this Standard do not necessarily include all of the precautions required to satisfy health and safety aspects. Care should be taken to ensure that the procedures are carried out only by people who have received suitable training. Guidance in the handling and use of hazardous chemicals is given in AS/NZS 2243.1 and AS/NZS 2243.2.

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS/NZS
2243 Safety in laboratories
2243.1 Part 1: General
2243.2 Part 2: Chemical aspects

ISO
3696 Water for analytical laboratory use—Specification and test methods

3 PRINCIPLE

Copper is electro-deposited from an acid sulfate solution, through cracks and pores present in a chromium deposit, onto the underlying metal, to obtain an outline of the distribution of these discontinuities.

4 APPARATUS

The following apparatus is required:

(a) An optical microscope with a magnification of 100×, fitted with a stage micrometer and filar eyepiece.

(b) Facilities for depositing copper at low current density (0.3 A/dm^2).

5 TEST SOLUTION

The following electroplating solution is recommended for the deposition of copper:

Copper sulfate.....200 g/L

Sulfuric acid (ρ_{20} 1840 kg/m^3).....20 g/L

NOTE: Acid copper sulfate plating baths of other compositions may also be used.