AS 1247—2004
ISO 10289:1999
(Incorporating Amendment No. 1)
Reconfirmed 2017

AS 1247—2004

Australian Standard™

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

STANDARDS AUSTRALIA

This Australian Standard was prepared by Committee MT-009, Metal Finishing. It was approved on behalf of the Council of Standards Australia on 27 January 2004.

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The following are represented on Committee MT-009:

Australian Institute of Metal Finishing
Australian Aluminium Council
Australian Industry Group
Australian Paint Manufacturer's Federation
Department of Defence
Galvanizers Association of Australia
Powder Coaters Association
The Royal Australian Chemical Institute
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This Standard was issued in draft form for comment as DR 03644.

STANDARDS AUSTRALIA

RECONFIRMATION

OF

AS 1247—2004

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

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.

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NOTES

Australian Standard™

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

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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 1247—1991. After consultation with stakeholders in both counties, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard.

This Standard incorporates Amendment No. 1 (*December 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.*

This Standard is identical with and has been reproduced from ISO 10289:1999, *Methods for corrosion testing of metallic and other inorganic coatings on metallic substrates—Rating of test specimens and manufacturing articles subjected to corrosion tests.*

The object of this revision is to replace the adopted ISO Standard. AS 1247—1991 was an adoption of ISO 1462:1973*, Metallic coating—Coatings other than those anodic to the basis metal—Accelerated corrosion tests—Method for the evaluation of the result.* ISO have withdrawn this Standard and have replaced with ISO 10289:1999.

The Committee decided to change the title of the Standard to *Metallic coatings—Rating of test specimens and manufactured articles subject to corrosion tests,* so that the title would give a clearer understanding of the nature of the Standard.

The significant change in this Standard is the change in the rating numbers in Table 1. In the previous edition the acceptance rating number 8 has now been changed to 7, this is due to a broadening of the rating number range.

As this Standard is reproduced from an International Standard, the following applies:

(a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.

(b) In the source text, 'this International Standard' should read 'this Australian Standard'.

(c) A full point substitutes for a comma when referring to a decimal marker.

A1 (d) The source text should be altered as follows:

(i) Contents, *delete* the word 'colour' from the title of Annex A.

(ii) Annex A, Title, *delete* the word 'colour'.

(iii) Annex A, Clause A2, Paragraph 2, *delete* the word 'colour'

(iv) Annex A, Clause B1, Paragraph 2, *delete* the world 'colour'

NOTES:

1 These changes are indicated in the source text by the use of margin bars.

2 The changes were required as the figures illustrating projection rating original published in colour.

The term 'informative' has been used in this Standard to define the application of the annex to which it applies. An 'informative' annex is only for information and guidance.

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INTRODUCTION

The rating method described in this International Standard recognizes that decorative and protective metallic and inorganic coatings on metallic substrates can be either anodic or cathodic to the substrate. In rating these coatings for the effects of corrosion, two evaluations shall be made:

— the ability of the coating to protect the substrate from corrosion and thus prevent degradation of the base metal;

— the ability of the coating to retain its integrity and thus maintain a satisfactory appearance.

Although these functions overlap, they can be evaluated separately in terms of:

— a protection rating (R_p) relating to the corrosion of the base metal;

— an appearance rating (R_A) relating to the deterioration of the coating.

The protection rating (R_p) assigns a number representing the ability of the coating to protect the base metal from corrosion.

The appearance rating (R_A) assigns a sequence of letters and numbers to the overall appearance of the specimen which includes all deterioration caused by the corrosion test or environment.

NOTE 1 Imperfections on a panel or article before exposure testing should be noted and given due consideration when evaluating the results of the examination. Deliberate imperfections may also be introduced as part of a test programme.

The coating system has to be known and reported if this rating system is applied. It is especially important to know, if possible, whether the coating is anodic or cathodic to the base metal.

NOTE 2 Determination of the anodic and cathodic corrosive mechanisms can be extremely difficult in some cases (chromated zinc on steel or multiple coatings). For the purposes of this document knowledge of these mechanisms is not necessary.

AUSTRALIAN STANDARD

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

1 Scope

This International Standard gives a method of evaluating the condition of decorative and protective metallic and inorganic coated panels or articles which have been exposed to corrosive environments for test or for other purposes.

It is applicable to test panels or components exposed to natural atmospheres, in mobile or static conditions, or subjected to accelerated tests.

NOTE 1 Examples of such tests are given in the Bibliography.

This International Standard recognizes that the protection rating can be assessed objectively in accordance with clause 6. However, the assessment of appearance depends on many subjective factors (see 6.2).

NOTE 2 The edges of test panels or components may be protected, e.g. by tape or wax (paraffin), if this is an agreed part of the test and is recorded in the test report. This is essential if the specimens are cut from larger pieces and have exposed uncoated edges.

2 Terms and definitions

2.1
protection rating
R_p
rating number (see Table 1) assigned to the ability of the coating to protect the base metal from corrosion

2.2
protection defect
defect used to assess the protection rating, including crater corrosion, pin-hole corrosion, corrosion stain due to corrosion from the substrate, blisters and other defects that involve base metal corrosion

NOTE Blisters on electroplated aluminium and zinc alloy die castings usually signify base metal corrosion, but the inspector's judgement may be required to decide whether a blister does or does not arise at the substrate–coating interface.

2.3
appearance rating
R_A
rating number and symbols (see Table 2) assigned to describe the overall appearance of the specimen, including all defects caused by exposure

2.4
appearance defect
defect that detracts from the appearance of the specimen (see Table 2)

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