

Australian/New Zealand Standard™

**Guide to long-life coatings for
concrete and masonry**

**Part 5: Guidelines to methods of
test**

AS/NZS 4548.5:1999

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee CH/3, Paints and Related Materials. It was approved on behalf of the Council of Standards Australia on 26 February 1999 and on behalf of the Council of Standards New Zealand on 24 February 1999. It was published on 5 April 1999.

The following interests are represented on Committee CH/3:

Australian Paint Approval Scheme
Australian Paint Manufacturers Federation
Australian Retailers Association
AUSTROADS
Building Research Association of New Zealand
Institution of Professional Engineers New Zealand
Master Painters Australia
National Association of Testing Authorities, Australia
New Zealand Abrasive Blasting Association
New Zealand Manufacturers Federation
New Zealand Painting Contractors Association
Surface Coatings Association Australia
Telarc New Zealand
Telstra Corporation
Water Corporation Western Australia

Review of Standards. To keep abreast of progress in industry, Joint Australian/New Zealand Standards are subject to periodic review and are kept up to date by the issue of amendments or new editions as necessary. It is important therefore that Standards users ensure that they are in possession of the latest edition, and any amendments thereto.

Full details of all Joint Standards and related publications will be found in the Standards Australia and Standards New Zealand Catalogue of Publications; this information is supplemented each month by the magazines 'The Australian Standard' and 'Standards New Zealand', which subscribing members receive, and which give details of new publications, new editions and amendments, and of withdrawn Standards.

Suggestions for improvements to Joint Standards, addressed to the head office of either Standards Australia or Standards New Zealand, are welcomed. Notification of any inaccuracy or ambiguity found in a Joint Australian/New Zealand Standard should be made without delay in order that the matter may be investigated and appropriate action taken.

This Standard was issued in draft form for comment as DR 97563.



Documents

Document Sharing Hub

Australian/New Zealand Standard™

Guide to long-life coatings for concrete and masonry

Part 5: Guidelines to methods of test

First published as AS/NZS 4548.5:1999.

Published jointly by:

Standards Australia
1 The Crescent,
Homebush NSW 2140 Australia

Standards New Zealand
Level 10, Radio New Zealand House,
155 The Terrace,
Wellington 6001 New Zealand

PREFACE

This Guide was prepared by the Joint Standards Australia/Standards New Zealand Committee CH/3, Paints and Related Materials, to augment the range of Standards dealing with paints for buildings.

The AS/NZS 4548 series has been prepared as a guide for information on the properties that could be expected from long-life exterior coatings applied to concrete and masonry surfaces. These product characteristics are to be taken as a guide only, i.e. it is not mandatory for a product to have these characteristics.

The objective of this Standard is to provide a guide to test methods called up in the AS/NZS 4548 series which have not been formalized in the AS/NZS 1580 series of tests.

This Standard is intended to be superseded when the test methods are formalized in the AS/NZS 1580 series.

© Copyright — STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Users of Standards are reminded that copyright subsists in all Standards Australia and Standards New Zealand publications and software. Except where the Copyright Act allows and except where provided for below no publications or software produced by Standards Australia or Standards New Zealand may be reproduced, stored in a retrieval system in any form or transmitted by any means without prior permission in writing from Standards Australia or Standards New Zealand. Permission may be conditional on an appropriate royalty payment. Australian requests for permission and information on commercial software royalties should be directed to the head office of Standards Australia. New Zealand requests should be directed to Standards New Zealand.

Up to 10 percent of the technical content pages of a Standard may be copied for use exclusively in-house by purchasers of the Standard without payment of a royalty or advice to Standards Australia or Standards New Zealand.

Inclusion of copyright material in computer software programs is also permitted without royalty payment provided such programs are used exclusively in-house by the creators of the programs.

Care should be taken to ensure that material used is from the current edition of the Standard and that it is updated whenever the Standard is amended or revised. The number and date of the Standard should therefore be clearly identified.

The use of material in print form or in computer software programs to be used commercially, with or without payment, or in commercial contracts is subject to the payment of a royalty. This policy may be varied by Standards Australia or Standards New Zealand at any time.

CONTENTS

	<i>Page</i>
1 SCOPE	4
2 REFERENCED DOCUMENTS	4
3 DEFINITIONS	4
4 GUIDELINES TO TEST METHODS	4

APPENDICES

A	GUIDELINES ON TESTING FOR CURE IN CONCRETE AND MASONRY SURFACES	5
B	GUIDELINES ON WATER TRANSMISSION RESISTANCE TESTING	6
C	GUIDELINES ON WATER VAPOUR TRANSMISSION TESTING	9
D	GUIDELINES ON CARBON DIOXIDE DIFFUSION TESTING	12
E	GUIDELINES ON CHLORIDE ION DIFFUSION RESISTANCE TESTING ..	15
F	GUIDELINES ON THE DETERMINATION OF CRACK BRIDGING ABILITY	18

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Australian/New Zealand Standard**Guide to long-life coatings for concrete and masonry****Part 5: Guidelines to methods of test**

1 SCOPE This Standard provides a guide to the six test methods recommended in AS/NZS 4548, Parts 1 to 4.

2 REFERENCED DOCUMENTS The following documents are referred to in this Standard—

AS

2193 Method for calibration and grading of force-measuring systems of testing machines

AS/NZS

2310 Glossary of paint and painting terms

4548 Guide to long-life coatings for concrete and masonry

4548.1 Part 1: Wall coatings—Latex extensible

4548.2 Part 2: Latex-finish coatings—High-build, low profile

4548.3 Part 3: Latex—Textured coatings—Non-aggregate

4548.4 Part 4: Latex—Textured coatings—Aggregate-filled

ASTM

E96 Standard test methods for water vapour transmission of materials

3 DEFINITIONS For the purpose of this Standard the definitions given in AS/NZS 2310 apply.

4 GUIDELINES TO TEST METHODS

4.1 Concrete/masonry cure Guidelines on testing for cure in concrete and masonry surfaces are given in Appendix A.

4.2 Water transmission Guidelines on testing for water transmission are given in Appendix B.

4.3 Water vapour transmission Guidelines on testing for water vapour transmission are given in Appendix C.

4.4 Carbon dioxide diffusion Guidelines on testing for carbon dioxide diffusion are given in Appendix D.

4.5 Chloride ion diffusion Guidelines on testing for chloride ion diffusion are given in Appendix E.

4.6 Crack bridging Guidelines on testing for crack bridging ability are given in Appendix F.

APPENDIX A

GUIDELINES ON TESTING FOR CURE IN CONCRETE AND MASONRY SURFACES

A1 SCOPE This Appendix describes a procedure which may be used to determine if a freshly rendered concrete or masonry surface has cured sufficiently and its pH is sufficiently low to allow the application of a sealer.

A2 MATERIALS

A2.1 Indicator test solution Dissolve 1 g of phenolphthalein in 50 mL of ethanol and dilute with 100 mL of water.

A2.2 Syringe or eyedropper

A3 PREPARATION OF TEST SURFACE Wipe the selected area of freshly rendered surface free of dirt, moisture and dust, using a clean cloth.

A4 PROCEDURE The procedure is as follows:

- (a) Place several drops of indicator solution over a representative area on the test surface using the eyedropper or syringe. The larger the area tested, the more reliable are the results.
- (b) Observe any colour change from clear to pink in the applied test solution.
- (c) If a pink colour is observed the surface is too alkaline, and should be left to settle for a further period prior to painting.
- (d) Retest the rendered surface at weekly intervals until no colour change is observed in the test solution.
- (e) When the applied test solution remains clear, the substrate pH is low enough to allow painting.
- (f) Prior to painting, wash the test solution from the substrate with clean water.