



Client: Resene Paints (Australia) Limited
7 Production Avenue
Molendinar QLD 4214

Your Reference:

Our Reference: 13-06-196

Certificate of Test No. 9683

Sample: Paint Sample
Date Received: 18th September & 11th October 2013
Date Tested: 25th March – 09th April 2014
From:
Description & Condition: 1 –off container of X-200


Test Description: Carbon Dioxide Diffusion Resistance

Sample Preparation:


Coating system consisted of 1 coat of X-200 by doctor blade. Test pieces conditioned for a minimum of 8 weeks at 23±2°C and 65±5% RH prior to test.

Test Method:

SGS Australia Pty Ltd Laboratory Procedure No. LP/CTG01 "Procedure for Determination of the Gas Diffusion Resistance of Coatings". This method complies with the requirements of AS/NZS 4548.5-1999, Appendix D "Guidelines on Carbon Dioxide Diffusion Testing".


Tested By
N. Nguyen, Chemist

10/04/14
Date


Authorised Signatory
N. Nguyen, Chemist

10/04/14
Date



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Test Results:

SGS Sample No.:	P37572
Client Identification:	X-200
Measured Dry Film Thickness, microns:	180
Temperature during test, °C:	23 ± 2
CO ₂ Diffusion Coefficient, cm ² /sec :	8.0 x 10 ⁻⁰⁸
Diffusion Resistance Coefficient (μ):	2126000
Equivalent Air Layer Thickness (R), m:	380
Equivalent Thickness of Concrete (S _c), cm:	95

- Note:
1. Results shown are mean values from two test pieces.
 2. R and S_c are calculated for measured dry film thickness
 3. Klopfer criterion for an effective anti-carbonation coating is R > 50 m
 4. Calculation of S_c assumes typical μ = 400 for concrete.
 5. These results apply only to the sample as submitted for test. Changes in the nature, source, or proportion of any component may render these results invalid.

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Client: Resene Paints (Australia) Limited
7 Production Avenue
Molendinar QLD 4214

Your Reference:

Our Reference: JN 13-06-196

Certificate of Test No. 9649

Sample: Paint Sample
Date Received: 18th September & 11th October 2013
Date Tested: 26th February – 19th March 2014
From:
Description & Condition: 1 –off container of X-200

Test Description: Water Vapour Transmission

Sample Preparation:

Coating system consisted of 1 coat applied to unglazed ceramic tiles by SGS Laboratory by doctor blade. Test pieces conditioned for a minimum of 8 weeks at $23 \pm 2^{\circ}\text{C}$ and $65 \pm 5\%$ RH.


Samples placed in test dishes with coated face exposed in the low RH environment and sealed with silicone prior to testing.

Test Method:

ASTM Standard E96-12 "Water Vapour Transmission of Materials" Section 12 (Procedure for water method). The diffusion coefficient for water vapour ($D_{\text{H}_2\text{O}}$) was calculated using Fick's First Law of Diffusion. This test method complies with the requirements of AS/NZS 4548.5-1999 "Guide to long-life coatings for concrete and masonry Part 5: Guidelines to methods of test" Appendix C.


Tested By
A. Luobikis, Technical Officer

27/03/14
Date


Authorised Signatory
N. Nguyen, Chemist

27/03/14
Date

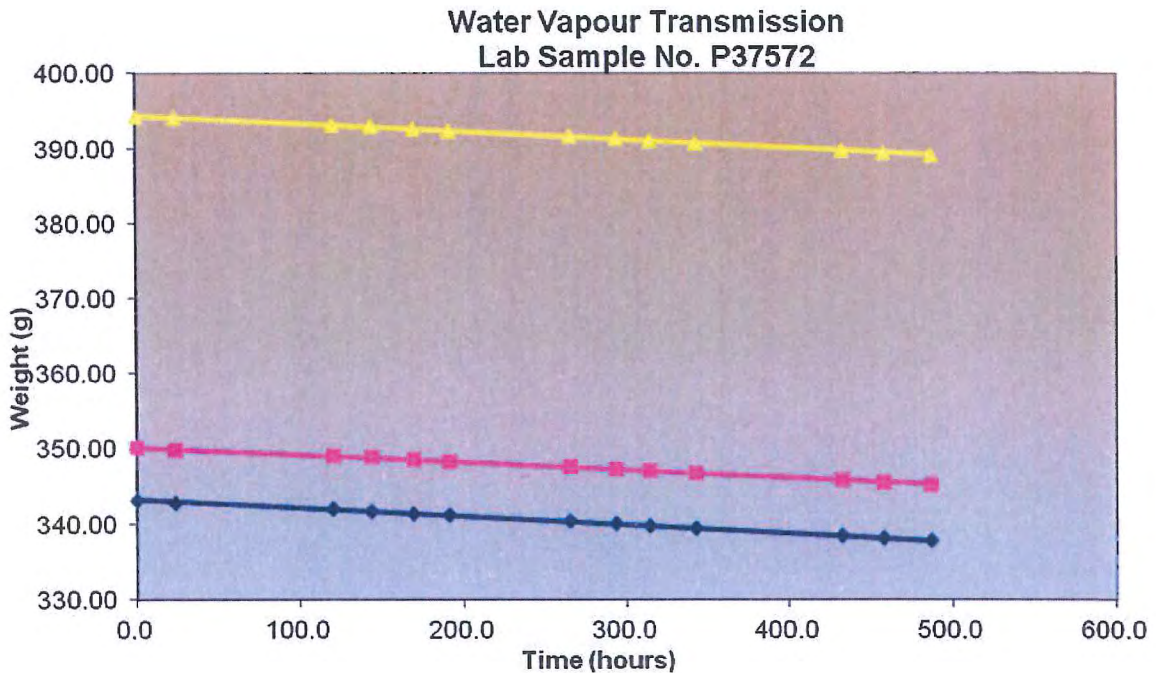


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Test Results:

SGS Sample No:	P37572	Average
Client Identification:	X-200	
Measured Dry Film Thickness, microns:		180
Temperature during test, °C:		23 ± 2
Relative Humidity during test, %:		5 %
Vapour Transmission Rate of Composite, g/m ² /24 hour:		41.2
Vapour Diffusion Coefficient of Film, cm ² /sec:		5.8 x 10⁻⁰⁵
Diffusion Resistance Coefficient (μ):		4,380
Equivalent Air Layer Thickness (S _D), m:		< 1
Estimated Vapour Transmission Rate for Unsupported Film, g/m ² /24 hour:		58.4
Permeance of Film, g/Pa s m ² :	2.4 x 10 ⁻⁰⁷ 2.5 x 10 ⁻⁰⁷ 2.8 x 10 ⁻⁰⁷	2.5 x 10⁻⁰⁷



Test Results:**Notes:**

1. Result shown is mean value from three test pieces.
2. S_D calculated from measured dry film thickness.
3. Klopfer criterion for an effective anti-carbonation coating is $S_D < 4$ m.
4. Vapour Transmission Rate of unsupported film estimated from film diffusion coefficient. Permeance value calculated from this value.
5. These results apply only to the sample as submitted for test. Changes in the nature, source, or proportion of any component may render these results invalid.

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Client: Resene Paints (Australia) Limited
7 Production Avenue
Molendinar QLD 4214

Your Reference:

Our Reference: JN 13-06-196

Certificate of Test No. 9730

Sample: Paint Sample

Date Received: 18th September & 11th October 2013

Date Tested: 21st January – 07th May 2014

From:

Description & Condition: 1 –off container of X-200

Test Description: Chloride Ion Diffusion Resistance

Sample Preparation:

Coating system consisted of 1 coat applied to unglazed ceramic tiles by SGS Laboratory by doctor blade. Test pieces conditioned for a minimum of 2 weeks at $23 \pm 2^{\circ}\text{C}$.

Test Method:

SGS Australia Pty Ltd Laboratory Procedure No. LP/CTG03 "Procedure for Determination of the Chloride Ion Diffusion Resistance of Coatings, Membrane Cell Method". Diffusion co-efficient was determined at steady-state condition using Ficks First Law of Diffusion. This method complies with the requirements of AS/NZS 4548.5-1999 Appendix E 'Guidelines on Chloride Ion Diffusion Resistance Testing'.

Tested By
A. Wasinska, Technical Officer

12/05/14

Date

Authorised Signatory
N. Nguyen, Chemist

12/05/14

Date



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Test Results:

SGS Sample No:	P37572
Client Identification:	X-200
Driving cell NaCl concentration, M:	5.0
Volume of driving and measuring cells, mL:	550
Measured Dry Film Thickness, microns:	180
Cross-sectional area of test specimen, cm ² :	63
Orientation:	Through Coating
Temperature during test, °C:	23 ± 2
Duration of test, days:	106
Chloride Ion Diffusion Coefficient, m ² /sec:	0.1 × 10 ⁻¹²

- Note: 1. Results shown are mean values for two test pieces.
2. These results apply only to the sample as submitted for test. Changes in the nature, source, or proportion of any component may render these results invalid.

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