



MANAGEMENT
ENGINEERING
ENVIRONMENT

CLIENT: Guardian Protective Coating Pty Ltd
PO Box 3777
Nedlands WA 6909

YOUR REF: P/O 73

OUR REF: J/N 61/12579/04

Certificate of Test No. 4200

Sample: Guardian Water-based Anti-graffiti Coating

Date Received: 21 October 2003

Date Tested: 30 January 2004

From: Guardian Protective Coatings

Description & Condition: 1-off 1L kit of Guardian Water-based Anti-graffiti Coating – Matt Clear


TEST DESCRIPTION: WATER VAPOUR TRANSMISSION

Sample Preparation:

Two coats, thinned 6% w/w using deionised water, applied by conventional spray wet-on-tacky to unglazed ceramic tiles by GHD (Bentley). Test pieces conditioned to constant weight at $23 \pm 2^\circ\text{C}$ and $65 \pm 5\%$ RH prior to test.

Test Method:

ASTM Standard E96-00 "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
N. Nguyen, Chemist

08/03/04
Date


Approved Signatory
A.M. Peek, Principal Materials Scientist

8/3/04
Date



NATA Accredited Laboratory No. 2678.

This laboratory is accredited by the National Association of Testing Authorities, Australia. The tests reported herein have been performed in accordance with its scope of accreditation. This document shall not be reproduced except in full.

Page 1 of 2

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Test Results:

GHD Sample No:	P24140
Client Identification:	Guardian Water-based Anti-graffiti Coating - Matt Clear
Nominal Dry Film Thickness, microns:	60
Vapour Transmission Rate of Composite, g/m ² /24 hour:	120
Vapour Diffusion Coefficient of Film, cm ² /sec:	5.9 x 10 ⁻⁰⁴
Diffusion Resistance Coefficient (μ):	460
Equivalent Air Layer Thickness (S _D), m:	<1
Estimated Vapour Transmission Rate for Unsupported Film, g/m ² /24 hour:	2180
Permeance of Film, g/Pa s m ² :	9.0 x 10 ⁻⁰⁶

Notes:

1. Results shown are mean values from test pieces P24140E1 & P24140E2.
2. S_D calculated from measured dry film thickness.
3. Klopfer criterion for an effective anti-carbonation coating is S_D<4m.
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 formulation as submitted for test. Changes in the nature, source, or proportion of any component may render these results invalid.