

TAYWOOD ■ ENGINEERING ■ LIMITED

CONSULTANTS IN MATERIALS TECHNOLOGY

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A.R.B.N. 009 474 079*

CLIENT: Australian Tech Dry
YOUR REF: Solid Silane Coating System
OUR REF: J/N: 2242-01

Certificate of Test No. 2805

Sample: Solid Silane
Date Received: 22 April 1999
From: Australian Tech Dry
**Description
& Condition:** 2 x 1L containers of Solid Silane

TEST DESCRIPTION: REDUCTION IN WATER ABSORPTION

Sample Preparation

Concrete cylinder substrates prepared in accordance with AS 1012.2-1994 "Methods of Testing Concrete. Method 2 : Preparation of Concrete Mixes in the Laboratory". Cylinders demoulded at 24 hrs then immersed and cured in limewater at $23\pm 2^{\circ}\text{C}$ to 28 days age. Substrates removed from limewater and air-dried in laboratory at $23\pm 2^{\circ}\text{C}$ and $50\pm 20\%\text{RH}$ for a minimum 7 days prior to coating. Substrates wire brushed and airblasted to remove laitence and loose fragments prior to coating.

Coating system consisted of one coat Solid Silane applied at $500\mu\text{m}$ WFT. Application by brush to a 200 x 100mm diameter concrete cylinder substrate by Taywood Engineering Limited (Perth). Coated samples cured 7 days in laboratory at $23\pm 2^{\circ}\text{C}$ and $50\pm 20\%\text{RH}$ prior to test.

Test Method

Test specimens weighed then immersed in water at $23\pm 2^{\circ}\text{C}$ and weighed in SSD condition after elapsed times of 1,2,3,6,24 and 48 hours.

Samples oven-dried at $40\pm 2^{\circ}\text{C}$ for 72 hours, weighed then re-immersed in water for 48 hours, removed and weighed in SSD condition. Regime performed 6 cycles in total.

On completion, depth of penetration of treatment determined by exposing fresh face using hammer and chisel, misting with water and measuring using steel rule.





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TEST RESULTSConcrete Substrate Mix Proportions

TEL Lab No.	Component & Source	Mix
P18248	Cement (kg/m ³)	
	Type GP Cement (Cockburn Cement Ltd)	350
P18076 P15701	Aggregate (kg/m ³)	
	20mm Granite (Boral)	650
	14/10mm Granite (CSR Readymix)	520
	7mm Granite (CSR Readymix)	145
	Jandakot Sand	630
	Water (L/m ³)	175
P16157	Admixtures (mL/m ³)	
	Pozzoloth 322N (MBT Australia)	150
	Slump (mm)	85


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Tested by5/7/99
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Date
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Approved by5.7.99
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Date

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TEST RESULTS

TEL Lab No.		Water Absorption %w/w @ hrs		Reduction in Water Absorption (%) @ hrs		Depth of Silane Penetration (mm)
		48	312	48	312	
P18299	Control	0.74	1.18			
P18300	Control	0.73	1.20			
	Mean	0.73	1.19			
P18291	Solid Silane	0.09	0.21			
P18292	Solid Silane	0.08	0.20			
	Mean	0.09	0.20	84	84	4
P18293	Solid Silane	0.11	0.22			
P18294	Solid Silane	0.10	0.21			
	Mean	0.11	0.21	85	82	4

Note: 1. P18293 and P18294 immersed in 0.1M KOH for 14 days, then oven dried at 40°C for 3 days prior to test.

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CLIENT: Australian Tech Dry
YOUR REF: Solid Silane Coating System
OUR REF: J/N: 2242-01

Certificate of Test No. 2807

Sample: Solid Silane
Date Received: 22 April 1999
From: Australian Tech Dry
**Description
& Condition:** 2 x 1L containers of Solid Silane

TEST DESCRIPTION: REDUCTION IN CHLORIDE ION UPTAKE

Sample Preparation

Concrete cylinder substrates prepared in accordance with AS 1012.2-1994 "Methods of Testing Concrete. Method 2 : Preparation of Concrete Mixes in the Laboratory". Cylinders demoulded at 24 hrs then immersed and cured in limewater at $23\pm 2^{\circ}\text{C}$ to 28 days age. Substrates removed from limewater and air-dried in laboratory at $23\pm 2^{\circ}\text{C}$ and $50\pm 20\%\text{RH}$ for a minimum 7 days prior to coating. Substrates wire-brushed and air blasted to remove laitance and loose fragments prior to coating.

Coating system consisted of one coat Solid Silane applied at $500\mu\text{m}$ WFT. Application by brush to 200 x 100mm diameter concrete cylinder substrate by Taywood Engineering Limited (Perth). Coated samples cured 7 days in laboratory at $23\pm 2^{\circ}\text{C}$ and $50\pm 20\%\text{RH}$ prior to test.

Test Method

Test specimens weighed then placed in a salt-spray tank containing $5\pm 0.5\%$ NaCl solution at $60\pm 2^{\circ}\text{C}$ for 5 days. Samples removed, weighed, then oven-dried at $40\pm 2^{\circ}\text{C}$ for 2 days. Regime performed 4 cycles in total.

On completion, depth of penetration of treatment determined by exposing fresh face using hammer and chisel, misting with water and measuring using steel rule.

Cylinder samples crushed and pulverised to pass $150\mu\text{m}$ sieve. Chloride content determined in accordance with BS1881:Part 124: 1988 "Methods for Analysis of Hardened Concrete: Section 10.2 except titration by potentiometric method.

Certificate No. 2807

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TEST RESULTSConcrete Substrate Mix Proportions

TEL Lab No.	Component & Source	Mix
P18248	Cement (kg/m ³)	
	Type GP Cement (Cockburn Cement Ltd)	350
P18076 P15701	Aggregate (kg/m ³)	
	20mm Granite (Boral)	650
	14/10mm Granite (CSR Readymix)	520
	7mm Granite (CSR Readymix)	145
	Jandakot Sand	630
	Water (L/m ³)	175
P16157	Admixtures (mL/m ³)	
	Pozzolith 322N (MBT Australia)	150
	Slump (mm)	85

Tested by

Date

Approved by

Date

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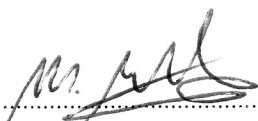
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TEST RESULTS

TEL Lab No.		% Chloride by Weight of Concrete @ 33 days age	Reduction in Chloride absorbed (%) @ 33 days age	Depth of Penetration (mm)
P18301	Control	0.28		
P18302	Control	0.22		
	Mean	0.25		
P18297	Solid Silane	0.02		
P18298	Solid Silane	0.04		
	Mean	0.03	88	7
P18295	Solid Silane	0.05		
P18296	Solid Silane	0.03		
	Mean	0.04	84	5

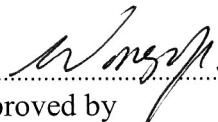
Note: 1. P18295 and P18296 immersed in 0.1M KOH for 14 days, then oven dried at $40\pm 2^{\circ}\text{C}$ for 3 days prior to test.



Tested by

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CLIENT: Australian Tech Dry
YOUR REF: Solid Silane Coating System
OUR REF: J/N: 2242-01

Certificate of Test No. 2892

Sample: Solid Silane
Date Received: 22 April 1999
From: Australian Tech Dry
**Description
& Condition:** 2 x 1L containers of Solid Silane

TEST DESCRIPTION: DEPTH OF PENETRATION

Sample Preparation

Concrete cylinder substrates prepared in accordance with AS 1012.2-1994 "Methods of Testing Concrete. Method 2 : Preparation of Concrete Mixes in the Laboratory". Cylinders demoulded at 24 hrs then immersed and cured in limewater at $23\pm 2^{\circ}\text{C}$ to 28 days age. Substrates removed from limewater and air-dried in laboratory at $23\pm 2^{\circ}\text{C}$ and $50\pm 20\%\text{RH}$ for a minimum 7 days prior to coating. Substrates wire-brushed and air blasted to remove laitence and loose fragments prior to coating.

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Test Method

Section face exposed by breaking cylinder with hammer and chisel. Surface misted with water and depth of unwetted zone measured.

Certificate No. 2892

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TEST RESULTSConcrete Substrate Mix Proportions

TEL Lab No.	Component & Source	Mix
P18248	Cement (kg/m ³) Type GP Cement (Cockburn Cement Ltd)	350
P18076 P15701	Aggregate (kg/m ³) 20mm Granite (Boral) 14/10mm Granite (CSR Readymix) 7mm Granite (CSR Readymix) Jandakot Sand	650 520 145 630
	Water (L/m ³)	175
P16157	Admixtures (mL/m ³) Pozzolith 322N (MBT Australia)	150
	Slump (mm)	85

N. M. J. 4.10.99
 Tested by _____ Date _____

Paul 5/10/99
 Approved by _____ Date _____

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TEST RESULTS

Test Cylinder	Mean Depth mm	Range mm
P18291	4.0	2.0-6.0
P18292	4.0	2.0-7.0
P18293	4.5	2.0-8.0
P18294	4.5	2.0-8.0
P18295	7.5	3.0-10.0
P18296	7.0	4.0-8.0
P18297	9.0	6.0-11.0
P18298	8.0	5.0-10.0
Mean	6.0	

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