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 them immersed and cured in limewater at 23±2°C to 28 days age. Substrates removed from limewater and air-dried in laboratory at 23±2°C and 50±20%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 500µm 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±2°C and 50±20% RH prior to test.

Test Method

Test specimens weighed then immersed in water at 23±2°C and weighed in SSD condition after elapsed times of 1,2,3,6,24 and 48 hours.

Samples oven-dried at 40±2°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.

Certificate No. 2805

TEST RESULTS

Concrete Substrate Mix Proportions

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

Tested by 5/7/99 Date

Approved by 5.7.99 Date

TEL

Certificate No. 2805

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.

Tested by ..... 5/7/99 Date

Approved by ..... 5.7.99 Date

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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 them immersed and cured in limewater at 23±2°C to 28 days age. Substrates removed from limewater and air-dried In laboratory at 23±2°C and 50±20%RH for a minimum 7 days prior to coating. Substrates wire-brushed and air blasted to remove laitence and loose fragments prior to coating.

Coating system consisted of one coat Solid Silane applied at 500µm 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±2°C and 50±20% RH prior to test.

Test Method

Test specimens weighed then placed in a salt-spray tank containing 5±0.5% NaCl solution at 60±2°C for 5 days. Samples removed, weighed, then oven-dried at 40±2°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 µm 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

TEST RESULTS

Concrete Substrate Mix Proportions

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

5/7/99 — Tested by — Date

5.7.95 — Approved by — Date

TEL

Certificate No. 2807

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±2°C for 3 days prior to test.

5/7/99 — 5.7.99

Tested by — Date — Approved by — Date

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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±2°C to 28 days age. Substrates removed from limewater and air-dried in laboratory at 23±2°C and 50±20%RH for a minimum 7 days prior to coating. Substrates wire-brushed and air blasted to remove laitence and loose fragments prior to coating.

Coating system consisted of one coat Solid Silane applied at 500µm 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±2°C and 50±20% RH prior to test.

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

TEST RESULTS

Concrete Substrate Mix Proportions

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

4.10.99 — Tested by — Date

5/10/99 — Approved by — Date

TEL

Certificate No. 2892

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	

4.10.99 ..... Tested by ..... Date

5/10/99 ..... Approved by ..... Date

TEL