

# TAYWOOD ■ ENGINEERING ■ LIMITED

CONSULTANTS IN MATERIALS TECHNOLOGY

*Technology Park  
Suite 2, 14 Brodie Hall Drive  
Bentley Western Australia 6102  
Post Office Box 1021, Bentley Delivery Centre Western Australia 6983  
Tel: (08) 9470 1511 Fax: (08) 9470 1279  
Email: [telper@taywood.aust.com](mailto:telper@taywood.aust.com)  
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.



Certificate No. 2805

Page 2 of 3

TEST RESULTSConcrete Substrate Mix Proportions

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

Tested by

Date

Approved by

Date

THIS CERTIFICATE OF TEST IS COPYRIGHT. REPRODUCTION OF THE WHOLE OR ANY PART THEREOF MUST NOT BE MADE WITHOUT THE EXPRESS PERMISSION OF TAYWOOD ENGINEERING LIMITED. THIS CERTIFICATE AND THE RESULTS SHOWN AND THE RECOMMENDATIONS MADE ARE BASED UPON THE INFORMATION DRAWINGS SAMPLES AND TESTS REFERRED TO HEREIN. TAYWOOD ENGINEERING LIMITED ACCEPTS NO LIABILITY FOR ANY DAMAGES CHARGES COSTS OR EXPENSES IN RESPECT OF OR IN RELATION TO INJURY OR DEATH OF ANY PERSON OR DAMAGE TO ANY PROPERTY OR OF OTHER LOSS WHATSOEVER ARISING EITHER DIRECTLY OR INDIRECTLY FROM THE USE OF THIS CERTIFICATE OF TEST THE CARRYING OUT OF ANY RECOMMENDATIONS MADE OR THE USE OF ANY GOODS OR MATERIALS REFERRED TO HEREIN.



Certificate No. 2805

Page 3 of 3

TEST RESULTS

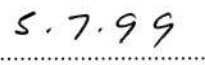
TEL Lab No.		Water Absorption %w/w @ hrs		Reduction in Water Absorption (%) @ hrs		Depth of Silane Penetration (mm)
		48	312	48	312	
P18299	Control	0.74	1.18			
P18300	Control	0.73	1.20			
	Mean	0.73	1.19			
P18291	Solid Silane	0.09	0.21			
P18292	Solid Silane	0.08	0.20			
	Mean	0.09	0.20	84	84	4
P18293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

  
 Date

  
 Approved by

  
 Date

THIS CERTIFICATE OF TEST IS COPYRIGHT. REPRODUCTION OF THE WHOLE OR ANY PART THEREOF MUST NOT BE MADE WITHOUT THE EXPRESS PERMISSION OF TAYWOOD ENGINEERING LIMITED. THIS CERTIFICATE AND THE RESULTS SHOWN AND THE RECOMMENDATIONS MADE ARE BASED UPON THE INFORMATION DRAWINGS SAMPLES AND TESTS REFERRED TO HEREIN. TAYWOOD ENGINEERING LIMITED ACCEPTS NO LIABILITY FOR ANY DAMAGES CHARGES COSTS OR EXPENSES IN RESPECT OF OR IN RELATION TO INJURY OR DEATH OF ANY PERSON OR DAMAGE TO ANY PROPERTY OR OF OTHER LOSS WHATSOEVER ARISING EITHER DIRECTLY OR INDIRECTLY FROM THE USE OF THIS CERTIFICATE OF TEST THE CARRYING OUT OF ANY RECOMMENDATIONS MADE OR THE USE OF ANY GOODS OR MATERIALS REFERRED TO HEREIN.



# TAYWOOD ■ ENGINEERING ■ LIMITED

## CONSULTANTS IN MATERIALS TECHNOLOGY

*Technology Park  
Suite 2, 14 Brodie Hall Drive  
Bentley Western Australia 6102  
Post Office Box 1021, Bentley Delivery Centre Western Australia 6983  
Tel: (08) 9470 1511 Fax: (08) 9470 1279  
Email: [telper@taywood.aust.com](mailto:telper@taywood.aust.com)  
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. 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

Page 2 of 3

TEST RESULTSConcrete Substrate Mix Proportions

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

Tested by

Date

Approved by

Date

THIS CERTIFICATE OF TEST IS COPYRIGHT. REPRODUCTION OF THE WHOLE OR ANY PART THEREOF MUST NOT BE MADE WITHOUT THE EXPRESS PERMISSION OF TAYWOOD ENGINEERING LIMITED. THIS CERTIFICATE AND THE RESULTS SHOWN AND THE RECOMMENDATIONS MADE ARE BASED UPON THE INFORMATION DRAWINGS SAMPLES AND TESTS REFERRED TO HEREIN. TAYWOOD ENGINEERING LIMITED ACCEPTS NO LIABILITY FOR ANY DAMAGES CHARGES COSTS OR EXPENSES IN RESPECT OF OR IN RELATION TO INJURY OR DEATH OF ANY PERSON OR DAMAGE TO ANY PROPERTY OR OF OTHER LOSS WHATSOEVER ARISING EITHER DIRECTLY OR INDIRECTLY FROM THE USE OF THIS CERTIFICATE OF TEST THE CARRYING OUT OF ANY RECOMMENDATIONS MADE OR THE USE OF ANY GOODS OR MATERIALS REFERRED TO HEREIN.



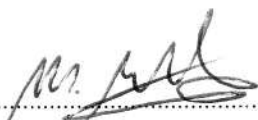
Certificate No. 2807

Page 3 of 3

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

 5/7/99  
 Date

  
 Approved by

 5.7.99  
 Date

THIS CERTIFICATE OF TEST IS COPYRIGHT. REPRODUCTION OF THE WHOLE OR ANY PART THEREOF MUST NOT BE MADE WITHOUT THE EXPRESS PERMISSION OF TAYWOOD ENGINEERING LIMITED. THIS CERTIFICATE AND THE RESULTS SHOWN AND THE RECOMMENDATIONS MADE ARE BASED UPON THE INFORMATION DRAWINGS SAMPLES AND TESTS REFERRED TO HEREIN. TAYWOOD ENGINEERING LIMITED ACCEPTS NO LIABILITY FOR ANY DAMAGES CHARGES COSTS OR EXPENSES IN RESPECT OF OR IN RELATION TO INJURY OR DEATH OF ANY PERSON OR DAMAGE TO ANY PROPERTY OR OF OTHER LOSS WHATSOEVER ARISING EITHER DIRECTLY OR INDIRECTLY FROM THE USE OF THIS CERTIFICATE OF TEST THE CARRYING OUT OF ANY RECOMMENDATIONS MADE OR THE USE OF ANY GOODS OR MATERIALS REFERRED TO HEREIN.



# TAYWOOD ■ ENGINEERING ■ LIMITED

CONSULTANTS IN MATERIALS TECHNOLOGY

*Technology Park  
Suite 2, 14 Brodie Hall Drive  
Bentley Western Australia 6102  
Post Office Box 1021, Bentley Delivery Centre Western Australia 6983  
Tel: (08) 9470 1511 Fax: (08) 9470 1279  
Email: [telper@taywoodeng.com.au](mailto:telper@taywoodeng.com.au)  
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. 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.

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

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

Certificate No. 2892

Page 2 of 3

TEST RESULTSConcrete Substrate Mix Proportions

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

*N. M. J.* 4.10.99  
 Tested by \_\_\_\_\_ Date \_\_\_\_\_

*Paul* 5/10/99  
 Approved by \_\_\_\_\_ Date \_\_\_\_\_

THIS CERTIFICATE OF TEST IS COPYRIGHT. REPRODUCTION OF THE WHOLE OR ANY PART THEREOF MUST NOT BE MADE WITHOUT THE EXPRESS PERMISSION OF TAYWOOD ENGINEERING LIMITED. THIS CERTIFICATE AND THE RESULTS SHOWN AND THE RECOMMENDATIONS MADE ARE BASED UPON THE INFORMATION DRAWINGS SAMPLES AND TESTS REFERRED TO HEREIN. TAYWOOD ENGINEERING LIMITED ACCEPTS NO LIABILITY FOR ANY DAMAGES CHARGES COSTS OR EXPENSES IN RESPECT OF OR IN RELATION TO INJURY OR DEATH OF ANY PERSON OR DAMAGE TO ANY PROPERTY OR OF OTHER LOSS WHATSOEVER ARISING EITHER DIRECTLY OR INDIRECTLY FROM THE USE OF THIS CERTIFICATE OF TEST THE CARRYING OUT OF ANY RECOMMENDATIONS MADE OR THE USE OF ANY GOODS OR MATERIALS REFERRED TO HEREIN.





Certificate No. 2892

Page 3 of 3

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	

*N. M. S. P.* 4.10.99  
Tested by Date

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

THIS CERTIFICATE OF TEST IS COPYRIGHT. REPRODUCTION OF THE WHOLE OR ANY PART THEREOF MUST NOT BE MADE WITHOUT THE EXPRESS PERMISSION OF TAYWOOD ENGINEERING LIMITED. THIS CERTIFICATE AND THE RESULTS SHOWN AND THE RECOMMENDATIONS MADE ARE BASED UPON THE INFORMATION DRAWINGS SAMPLES AND TESTS REFERRED TO HEREIN. TAYWOOD ENGINEERING LIMITED ACCEPTS NO LIABILITY FOR ANY DAMAGES CHARGES COSTS OR EXPENSES IN RESPECT OF OR IN RELATION TO INJURY OR DEATH OF ANY PERSON OR DAMAGE TO ANY PROPERTY OR OF OTHER LOSS WHATSOEVER ARISING EITHER DIRECTLY OR INDIRECTLY FROM THE USE OF THIS CERTIFICATE OF TEST THE CARRYING OUT OF ANY RECOMMENDATIONS MADE OR THE USE OF ANY GOODS OR MATERIALS REFERRED TO HEREIN.

