

Certificate of Test

Title:

JOTUN UAE LTD

Jotashield Topcoat Silk

**Determination of Moisture Vapour
Transmission Rate**

Certificate of Test No: **7933**

Client's Name & Address:

**Mr S Mathew
Jotun UAE Limited
PO Box 3671
Dubai
United Arab Emirates**

Our Ref: **1.64.12/SPG**
TW Job No: **T474 - 3ET3**
Your Ref: **Fax dated 09.10.05**
Date: **10 January 2006**
Date Sample(s) Received: **24 October 2005**
Sample(s) Received From: **Mr S Mathew**

Sample No(s): **143006 - 143007**

Tested By:  **S P Gurney**

Authorised By:  **A T Blake**

Job Title: **Manager, Materials Test Laboratories**

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For

Taylor Woodrow Technology

Stanbridge Road, Leighton Buzzard, Bedfordshire,
LU7 4QH

Tel No. 01525 859111 Fax No. 01525 859112

Registered Office Watford
England

Registered No.1090601



Taylor Woodrow

1. SAMPLE DESCRIPTION AND ANALYSIS REQUESTED

The Materials Testing Laboratories received one litre of Jotashield Penetrating Primer (sample no. 143006) and one litre of Jotashield Topcoat Silk (sample no. 143007). No Certificate of sampling was received. The coatings were given a unique sample number for reference purposes only.

The moisture vapour transmission rate of the coated sample was to be determined.

2. METHOD

2.1 Coating Application

The coating system was brush applied to previously characterised cartridge paper using a weighing procedure to achieve the coverage rate required. One coat of Jotashield Penetrating Primer was applied at rate of 135g/m^2 and allowed to dry for a minimum of 8 hours. Two coats of Jotashield Topcoat Silk were then applied, each at a rate of 105g/m^2 with a minimum drying period of 24 hours between coats. Each subsequent coat was applied at 90° to the previous. The coated sample was cured for 2-3 days in the laboratory and then conditioned at $23\pm 2^\circ\text{C}$ and $60\pm 5\%$ Relative Humidity for a minimum period of four weeks prior to testing

2.2 Determination of Moisture Vapour Transmission

The test was carried out in triplicate at $23\pm 2^\circ\text{C}$ for the coated specimen. Three discs were sealed in Payne permeability cups such that both faces were exposed. The coated face was exposed to a dry atmosphere (0% Relative Humidity) and the other face to water vapour (100% Relative Humidity).

The test cups were weighed periodically over the test interval. Equilibrium conditions were achieved after approximately 4 days and the subsequent steady state flow of water vapour was calculated from the rate of weight loss.

The diffusion coefficient with respect to water vapour for the coating ($D_{\text{H}_2\text{O}}$) was calculated from the measured flux for the cartridge paper ($\text{g/m}^2\cdot 24\text{hr}$) using Fick's law of diffusion and Crank's equation.

3. RESULTS

MOISTURE VAPOUR TRANSMISSION RATE

COATING SYSTEM	Jotashield Topcoat Silk		
Specimen No.	143007/5A	143007/5B	143007/5C
Flux (g/m ² .24hr)	36.69	35.06	26.93
D _{H₂O} (cm ² s ⁻¹)	1.89E-05	1.80E-05	1.35E-05
μ-value	1.35E+04	1.41E+04	1.88E+04
S _D (m)	1.3	1.3	1.8
Mean DFT (μm)	94	94	94

Date tested: 05.12.05 – 03.01.06

Notes

- (i) The S_D-value (equivalent air layer thickness) is dependent on film thickness and is calculated above for the mean of the measured dry film thickness obtained from a spare sample.
- (ii) D_{H₂O} for the Cartridge Paper (thickness = 192μm) is 0.00043 (Units of D are cm²s⁻¹)
- (iii) The criteria for an acceptable anti-carbonation coating is for S_D to be equal to, or less than, 4m.

END OF CERTIFICATE

REPORT OF TESTS

Description : Jotashield Topcoat Silk White
 Tested for : Jotun (U.A.E), PO Box 3671, Dubai, U.A.E.
 Lab Ref. No : WR02-02473 (Sheet 1 of 2) Req. No. WQ02-00808
 Date Received : 10.02.2002 Date Reported : 03.03.2002

1.0 Introduction

Further to instructions received via a test requisition dated 10th February 2002 from Messrs Jotun (U.A.E), Al Futtaim Tarmac Laboratories Division have a tested a product called as " Jotashield Topcoat Silk White" for light reflectivity compared against uncoated concrete.

Client's Reference	:	Req. dt. 10.02.2002
AFTLD Sample No.	:	W02-000808/01
Source of Radiance	:	Electric Bulb (100 W)
Product Name	:	Jotashield Topcoat Silk White
Instrument for Detection	:	ISO-TECH ILM 350 Digital Light Meter
Distance between radiance & sample	:	40cm
Angle	:	45°

2.0 Test Method

Test was conducted by using closed 'V' channels at 45° angle using ISO-TECH ILM 350 Digital Light Meter and the result was compared for coated concrete panel against the uncoated concrete panel.

3.0 Application

Single coat of Jotashield alkali resistant primer was applied on the surface of the concrete and allowed to dry for 2 hours. Then Jotashield Topcoat Silk White was applied to give a dry film thickness of 250 microns. after 24 hours the light reflection capacity was measured using Digital Light Meter.

Sample preparation was carried out by Jotun (U.A.E)

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- Samples will be retained for a period of one month only, unless otherwise requested.
- The test results relate only to the samples tested.



WR02-02473 (Sheet 2 of 2)

03.03.2002

4.0 Results

The coating was tested using the light source and the reflection was measured at a path length of 50cm. The reading was then compared against the control sample.

Sample Description	Reading at 50cm from sample LUX	Light Reflectivity - % (Improvement against uncoated concrete)
Jotashield Topcoat Silk White (applied on concrete)	73	97.3
Concrete (uncoated)	37	

Note : The coating on the surface of the concrete was applied at a thickness of approximately 250 microns.

5.0 Conclusion

- The sample of 'Jotashield Topcoat Silk White', when tested for light reflectivity was found to have high value of reflectivity (LUX) compared to control samples (uncoated concrete), confirming superior reflectivity of the coating against the control sample.


For Al Futtaim Tarmac (Pte) Ltd.
Laboratories Division



Tested by: SKS Date tested 24.02.2002
Sampled by the client, certificate of sampling was not given.

REPORT OF TESTS

Description	One Sample of Jotashield Topcoat Silk		
Tested for	Jotun U.A.E. Ltd., Post Box No.3671, Dubai, U.A.E		
Lab Ref. No.	WR05-86706 (Page 1 of 1)	Request No.	WQ05-12297
Date Received	14.11.2005	Date Reported	24.11.2005

Client's reference : Requisition dated. 14.11.2005
 Sample reference : Jotashield Topcoat Silk
 Manufacturer : Jotun U.A.E. Ltd., Dubai, U.A.E
 AFBMTS sample no. : W05-012297/01

1.0 Introduction


Further to the test work instructions received from M/s. Jotun U.A.E. Ltd., Dubai, dated 14.11.2005, the sample of Jotashield Topcoat Silk provided has been tested for the following by Al Futtaim Bodycote Materials Testing Services LLC:

2.0 Crack Bridgeability

Test Method : In general accordance with ASTM C 836: 95

The concrete test block assembly was coated with Jotashield Topcoat Silk to an approximate thickness of 60 microns in two coats and air cured @ 23±2°C for 7 days. After curing, the assembly was fixed on an extension and compression machine by means of suitable clamps. The blocks were pulled apart at a rate of 3.2mm/hr until the space between is 0.72 mm. Then the open space was closed at the same rate. After this movement, the test assembly was examined for any kind of cracks, loss of adhesion for any other type of failure

Test	Observation
Crack Bridgeability @ 0.72 mm	No sign of cracks, loss of adhesion or any other type of failure was observed after completion of the up and down movement.


 For and on behalf of Al Futtaim Bodycote
 Materials Testing Services (L.L.C)

Tested by : AR , Date tested : 16.10.2005 – 23.11.2005

Sampled by the client, certificate of sampling was not given.

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 The test results relate only to the samples tested.



1. SAMPLE DESCRIPTION AND ANALYSIS REQUIRED

The Materials Testing Laboratories received one litre of Jotashield Penetrating Primer (sample no. 143006) and one litre of Jotashield Topcoat Silk (sample no. 143007). No Certificate of sampling was received. The coatings were each given a unique sample number for reference.

The carbon dioxide diffusion coefficient was to be determined in general accordance with In-House Test Procedure TP950/05/13569 Issue 1 and EN 1062-6:2002.

2. METHOD

2.1 Coating Application

The coating system was brush applied to previously characterised porous plates using a weighing procedure to achieve the coverage rate required. One coat of Jotashield Penetrating Primer was applied at a rate of 135 g/m² and allowed to dry for a minimum of 8 hours. Two coats of Jotashield Topcoat Silk were then applied, each at a rate of 105g/m², with a minimum drying period of 24 hours between coats. Each coat was applied at 90° to the previous. The coated sample was allowed to cure for 2-3 days in the laboratory, and then conditioned at 23±2°C and 60±5% relative humidity for a minimum period of four weeks prior to testing.

2.3 Determination of Carbon Dioxide Diffusion Resistance

One coated tile (specimen no. 143007/3) was sealed in a circular steel rig such that the coated and uncoated faces were exposed. Carbon dioxide (15% in oxygen) at a known pressure and flow rate was passed over the coated face of the plate and helium gas was passed over the opposite face at the same pressure and flow rate. The helium gas stream was continuously monitored by gas chromatography to analyse for carbon dioxide. Equilibrium conditions were achieved after approximately 24 hours and the steady state flux of carbon dioxide was then calculated from the percentage of carbon dioxide in the helium stream and the flow rate of this gas.

The diffusion coefficient for carbon dioxide (D_{CO_2}) is calculated using Fick's Law of Diffusion and Crank's equation.

3. RESULTS

The results of the analysis are tabulated below.

Carbon Dioxide Diffusion Resistance	
Coating	Jotashield Topcoat Silk
TW Specimen No.	143007/3
D_{CO_2} (cm^2s^{-1})	2.44E-08
μ -value	6.66E+06
R (m)	626
S_c (cm)	156
Mean Dry Film Thickness (μm)	94
Date of Test	09 December 2005

Notes:

- i) R (equivalent air layer thickness) and S_c (equivalent thickness of concrete) are dependent on the film thickness and are calculated here for the dry film thickness (DFT) present on the test specimens.
- ii) D_{CO_2} and the diffusion resistance coefficient (μ -value) are calculated using the mean DFT measured on a spare unused specimen.
- iii) D_{CO_2} for an uncoated plate is $1.0 \times 10^{-3} cm^2s^{-1}$.
- iv) S_c is calculated assuming an average grade concrete where the μ -value has been estimated as 400.
- v) Klopfer criterion for effective anti-carbonation coating is R greater than 50 metres.

END OF CERTIFICATE

REPORT OF TESTS

Description : Sample of Jotashield Topcoat Silk 07
Tested for : Jotun Paints , PO Box 3671, Dubai, UAE
Lab Ref. No : WR01-10442 (Sheet 1 of 2) Request No. WQ01-03824
Date Received : 06.05.2001 Date Reported : 14.05.2001

Client's ref. : Req dtd 05.05.2001
Sample no. : W01-003824/01

1.0 Introduction

One sample of "Jotashield Topcoat Silk 07 " was delivered to Al Futtaim Tarmac Laboratories Division by the client on 06.05.2001.

A request was made to carry out a mix in the laboratory , using the proportion and mixing procedure provided by the client and carry out the following test.

- 1.1 Tensile Strength
- 1.2 Elongation at Break

The laboratory mixing of the 'Jotashield Topcoat' and specimens preparation for the tests were carried out on 06.05.2001. The specimens were air cured at laboratory conditions of 20 ± 2 °C for 7 days

2.0 Results

Results are given on the attached sheet

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- Samples will be retained for a period of one month only, unless otherwise requested.
- The test results relate only to the samples tested.

WR01-10442 (Sheet 2 of 3)

14.05.2001

Results

2.1 Tensile Strength

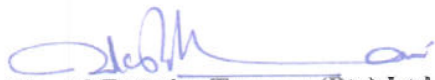
Test method : Test was carried out in accordance with ASTM D 412 : 1991

Specimen No.	Age of Test	Max. Fail Load (kN)	Tensile Strength (N/mm ²)	Average Tensile Strength (N/mm ²)
1	7 days	10.0	2.75	2.86
2		11.0	3.06	
3		10.0	2.78	

2.2 Elongation at Break

Test method : Test was carried out in accordance with ASTM D 412 : 1991

Specimen No.	Age of Test	Elongation (% ²)	Average Elongation (%)
1	7 days	52	51
2		50	
3		50	



For Al Futtaim Tarmac (Pte) Ltd.
Laboratories Division

Tested by : AR, Date Tested : 13.05.2001



Certificate of Test

Supplement to Certificate of Test No. 5388
dated 16th February 1999, change of product name.

Title:

JOTUN U.A.E. LIMITED

JOTASHIELD TOPCOAT SILK

Determination of Water Sorptivity

Certificate of Test No: 6431

Client's Name & Address:

**Jotun U.A.E. Ltd
PO Box 3671
Dubai
United Arab Emirates**

Our Ref:	N956/SPJ/JM/1154
TEL Job No:	6729
Your Ref:	-
Date:	18 th October, 2001
Date Sample(s) Received:	24 th June, 1997
Sample(s) Received From:	Mr S Mathew

Sample No(s): 122815

Tested By: See Certificate of Test No. 5388

Authorised By:  A T Blake

Job Title: **Manager, Analytical Laboratories**

for

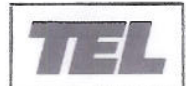
TAYWOOD ENGINEERING
CONSULTANTS IN DESIGN AND TECHNOLOGY

Technology Division
345 Ruislip Road, Southall, Middlesex, UB1 2QX
Tel No. 020 8578 2366 Fax No. 020 8575 4215
Registered Office Southall Registered No. 1090601 England

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1. SAMPLE DESCRIPTION

One litre of Jotashield Topcoat Silk. Sample No. 122815.

2. ANALYSIS REQUESTED

The Analytical Laboratories were requested to determine the water sorptivity of a coated and an uncoated reference concrete slice.

3. METHOD

3.1 Preparation

One slice was cut from a standard concrete core (approximately 100mm diameter and 50mm thickness). Jotashield Topcoat Silk was brush applied onto one surface of two of the slices using a weighing procedure to obtain the coverage rate required. Two coats were applied at a rate of 12.6m²/L/coat allowing 6 hours between each coat. The second coat was applied at 90° to the first coat.

The coated specimens were left to cure for 2-3 days in the laboratory and then conditioned at 23±2°C and 60±5% RH for a minimum period of 4 weeks prior to testing.

3.2 Water Sorptivity

Water sorption testing was carried out in accordance with In-House Test Procedure AGTM/95/01 Issue 1. Care was taken to ensure that the sample was not immersed above the level of the coating.

4. RESULTS

The results of the analysis are detailed in Tables 1 to 3.

4.1 Summary of Results

Table 1

SAMPLE IDENTIFICATION	TEL SAMPLE NO.	SORPTIVITY mm/min ^{1/2}
Jotashield Topcoat Silk	122815/11	0.03
Reference Concrete	-	0.10

Sample: Jotashield Topcoat Silk Coated Concrete 122815/11 Test Date: 19 September 1997
 Age at Test: N/A Tested By: Harjit Johal
 Cross Sectional Area (A): 7763.14mm² Sample Weight (Wd): 834.79
 Notes: Jotashield Topcoat Silk (Coating)

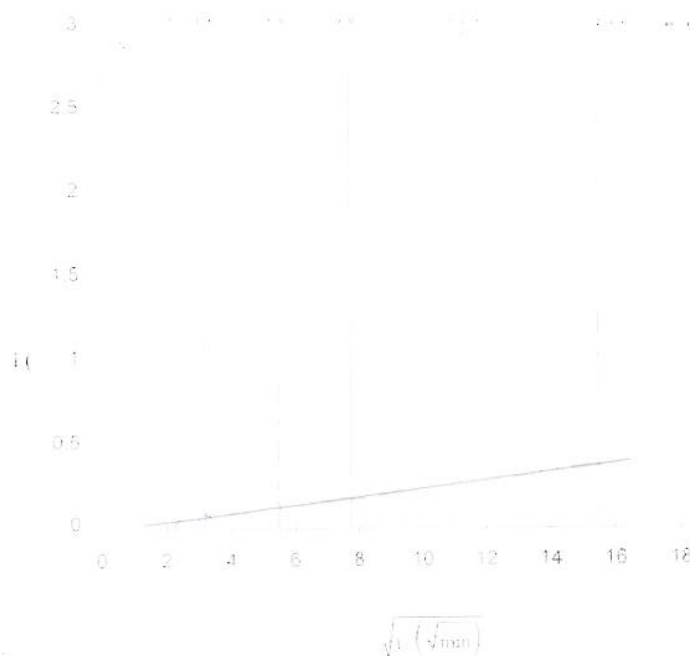
Table 2

MEASUREMENTS		TIME 'T' (mins)						
		0	5	10	30	60	120	240
WEIGHT Wt (g)		Wd	835.28	835.45	836.04	836.49	836.96	837.72
Wt - Wd (g)		0	0.44	0.66	1.25	1.70	2.17	2.93
i (mm ³ /mm ²)		0	0.06	0.09	0.16	0.22	0.28	0.38
t (√min)		0	2.24	3.16	5.48	7.75	10.95	15.49
HEIGHT RISE at given distance from each face (mm)	0mm	0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	40mm	0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	80mm	0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	120mm	0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	160mm	0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	200mm	0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	240mm	0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	280mm	0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MEAN			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

NOTE:- $i = \frac{W_t - W_d}{A} \times 10^3$ mm³ / mm² for water sorption

RESULTS

SORPTIVITY = 0.03 mm/min^{1/2}



The content of this Certificate of Test was originally presented under a different product name. Nothing else from the original Certificate of Test (No. 5388) has been altered.

Sample: TE reference concrete
 Age at Test: -
 Cross Sectional Area (A): 7796.32mm²
 Notes: TEL Reference Concrete

Test Date: 19 September 1997
 Tested By: Harjit Johal
 Sample Weight (Wd): 905.23

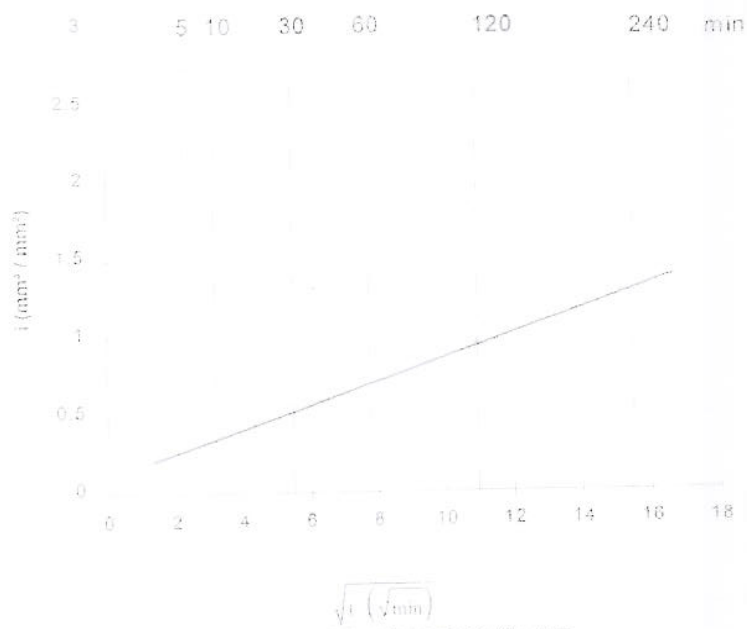
Table 3

MEASUREMENTS		TIME 'T' (mins)						
		0	5	10	30	60	120	240
WEIGHT W _t (g)		W _d	907.42	907.86	909.34	910.39	911.85	913.93
W _t - W _d (g)		0	2.19	2.63	4.11	5.16	6.62	8.70
i (mm ³ /mm ²)		0	0.28	0.34	0.53	0.66	0.85	1.12
t (√min)		0	2.24	3.16	5.48	7.75	10.95	15.49
HEIGHT RISE at given distance from each face (mm)	0mm	0	3	4	4	4	4	4
	40mm	0	4	7	7	7	7	7
	80mm	0	4	7	7	7	7	7
	120mm	0	0	3	3	3	3	3
	160mm	0	6	8	8	8	8	8
	200mm	0	4	6	6	6	6	6
	240mm	0	5	9	9	9	9	9
	280mm	0	7	10	10	10	10	10
MEAN			4.13	6.75	6.75	6.75	6.75	6.75

NOTE:- $i = \frac{W_t - W_d}{A} \times 10^3$ mm³ / mm² for water sorption

RESULTS

SORPTIVITY = 0.10 mm/min^{1/2}



END OF CERTIFICATE

The content of this Certificate of Test was originally presented under a different product name. Nothing else from the original Certificate of Test (No. 5388) has been altered.

Certificate of Test

Title:

JOTUN UAE Ltd

Jotashield Topcoat Silk

**Determination of Liquid Water
Transmission Rate**

Certificate of Test No: 7949

Client's Name & Address:

**Mr S Mathew
Jotun UAE Ltd LLC
Al Quoz Industrial Area
PO Box 3671
Dubai
United Arab Emirates**

Our Ref: 1.64.12/KJS
TW Job No: T498-3FY4
Your Ref: Fax dated 9 Oct 05
Date: 19 January 2006
Date Sample(s) Received: 24 October 2005
Sample(s) Received From: Jotun UAE Ltd

Sample No(s): 143007

Tested By:  K J Stagg

Authorised By:  A T Blake

Job Title: **Manager, Materials Test Laboratories**

For

Taylor Woodrow Technology

Stanbridge Road, Leighton Buzzard, Bedfordshire,
LU7 4QH

Tel No. 01525 859111 Fax No. 01525 859112
Registered Office Watford Registered No.1090601
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Taylor Woodrow

1. SAMPLE DESCRIPTION AND ANALYSIS REQUESTED

One litre of Jotashield Topcoat Silk (sample no. 143007) and one litre of Jotashield Penetrating Primer (sample no. 143006), were received by the Materials Testing Laboratory. No certificate of sampling was received.

The liquid-water transmission rate of the coating system was to be determined.

2. METHOD

2.1 Coating Application

The coating system was brush applied to a mortar slab approximately 150 x 150 x 20mm using a weighing procedure to achieve the coverage rate required. One coat of Jotashield Penetrating Primer was applied at a rate of 135g/m² and allowed to dry for a minimum of 8 hours. Two coats of Jotashield Topcoat Silk were each applied at a rate of 105g/m², with a minimum drying period of 24 hours between coats. Each coat was applied at 90° to the previous.

Before conditioning the reverse side and edges of the test specimens were sealed to prevent water ingress. The coated sample was allowed to cure for 2-3 days in the laboratory and then conditioned at 23±2°C and 60±5% relative humidity for a minimum period of three weeks prior to testing.

2.2 Determination of Liquid-Water Transmission Rate

The samples were conditioned and tested in triplicate in accordance with BS EN 1062-3, paints and varnishes – coating materials and coating systems for exterior masonry and concrete – Part 3: Determination and classification of liquid-water transmission rate.

3. RESULTS

LIQUID-WATER TRANSMISSION RATE OF
JOTASHIELD TOPCOAT SILK

Client Identification	TW Sample No.	Liquid-Water Transmission Rate ($\text{kg/m}^2\text{h}^{0.5}$)	Classification
Jotashield Topcoat Silk	143007/14	0.01	Low
Jotashield Topcoat Silk	143007/15	0.01	Low
Jotashield Topcoat Silk	143007/16	0.01	Low

DFT of coating: 94 μm

Date tested: 18–19 January 2006

Notes

- (i) The reduction in water absorption for the Jotashield Topcoat Silk coating was calculated to be 99.9%.
- (ii) Classification in accordance with EN 1062-1

Classification	Liquid-Water Transmission Rate (w) ($\text{kg/m}^2\text{h}^{0.5}$)
I (high)	> 0.5
II (medium)	0.1 – 0.5
III (low)	< 0.1

END OF CERTIFICATE

Certificate of Test

Supplement to Certificate of Test No. 5679
dated 26th July 1999, change of product name.

Title:

JOTUN U.A.E. LTD

**Determination of Chloride Ion
Diffusion Resistance of Jotashield
Top Coat Silk**

Certificate of Test No: 6428

Client's Name & Address:

**Jotun U.A.E. Ltd
PO Box 3671
Dubai
United Arab Emirates**

Our Ref:	N956/SPJ/JM/1151
TEL Job No:	6729
Your Ref:	-
Date:	18 th October, 2001
Date Sample(s) Received:	24 th June, 1997
Sample(s) Received From:	Mr S Mathew

Sample No(s): 122815/9 and 130336/9

Tested By: See Certificate of Test No. 5679

Authorised By:  A T Blake

Job Title: **Manager, Analytical Laboratories**

for

TAYWOOD ENGINEERING
CONSULTANTS IN DESIGN AND TECHNOLOGY

Technology

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1. SAMPLE DESCRIPTION

One litre of Jotashield Top Coat Silk emulsion : Sample No. 122815.

2. METHOD

2.1 Preparation

Three slices were cut from a standard concrete core (approximately 10cm diameter and 1.5cm thickness)

Jotashield Top Coat Silk was brush applied onto one surface of two of the slices using a weighing procedure to achieve the coverage rate required. Two coats of Jotashield Top Coat Silk were applied at a rate of 12.6m²/L/coat allowing 6 hours drying time between each coat. The second coat was applied at 90° to the first coat.

The third concrete slice was left uncoated as a control.

The coated specimens were left to cure for 2-3 days in the laboratory and then conditioned at 23 ± 2°C and 60 ± 5% RH for a minimum period of 4 weeks prior to testing.

2.2 Determination of Chloride Diffusion Resistance

One coated specimen (122815/8) and the uncoated control (130336/9) were immersed in saturated calcium hydroxide solution for 1 week (this procedure is used to avoid anomalous effects due to chloride ingress by sorption rather than diffusion). The specimen and the control were then mounted in a diffusion cell as shown in Figure 1 (coated face on side (a)). The remaining coated slice was kept as a spare. The cells were maintained at 23 ± 2°C and the chloride diffusing through the specimen was determined at suitable intervals using the procedures described below.

An aliquot of the downstream solution (10cm³) was accurately pipetted into a clean oven dried glass container. Nitric acid 10% (approximately 50-70cm³) was cautiously added to the sample which was then left to stand with occasional stirring. Automatic potentiometric titration, with continuous stirring, was used to analyse the samples. The titrator was a Metrohm 682 Titroprocessor and the course of the titration was monitored using a Metrohm silver combined electrode filled with potassium nitrate.

The above titration was carried out in general accordance with In-House Test Procedure TP1303/90/4670, Issue 3.

The accuracy of the method was checked using control concrete dust samples of known chloride content (0.14 ± 0.01% by weight of sample).

3. RESULTS

	<u>Jotashield Top Coat Silk*</u>	<u>Control</u>
Specimen No	122815/9	130336/9
Thickness (cm)	1.494	1.475
Test Area (cm ²)	77.25	77.48
Chloride Ion Diffusion Coefficient (cm ² /s)	6.20×10^{-9}	4.13×10^{-9}

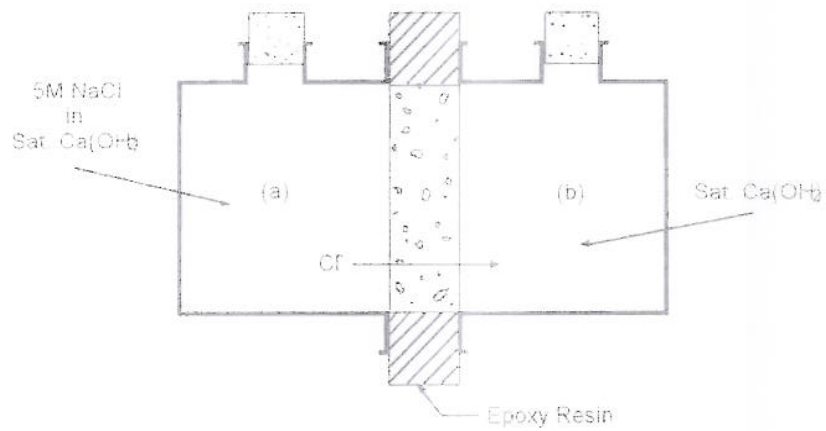
Both tests have reached equilibrium and diffusion coefficients have been calculated from the graphs shown in Figures 2 and 3.

The coated sample has retarded and passage of chloride ions at a very similar rate to the uncoated control. It is, therefore, not possible to calculate a diffusion coefficient for the coating separately.

- * The original test was discontinued after approximately 60 days when the coating was found to be cracked. The test has been repeated on the spare sample, No. 122815/9.

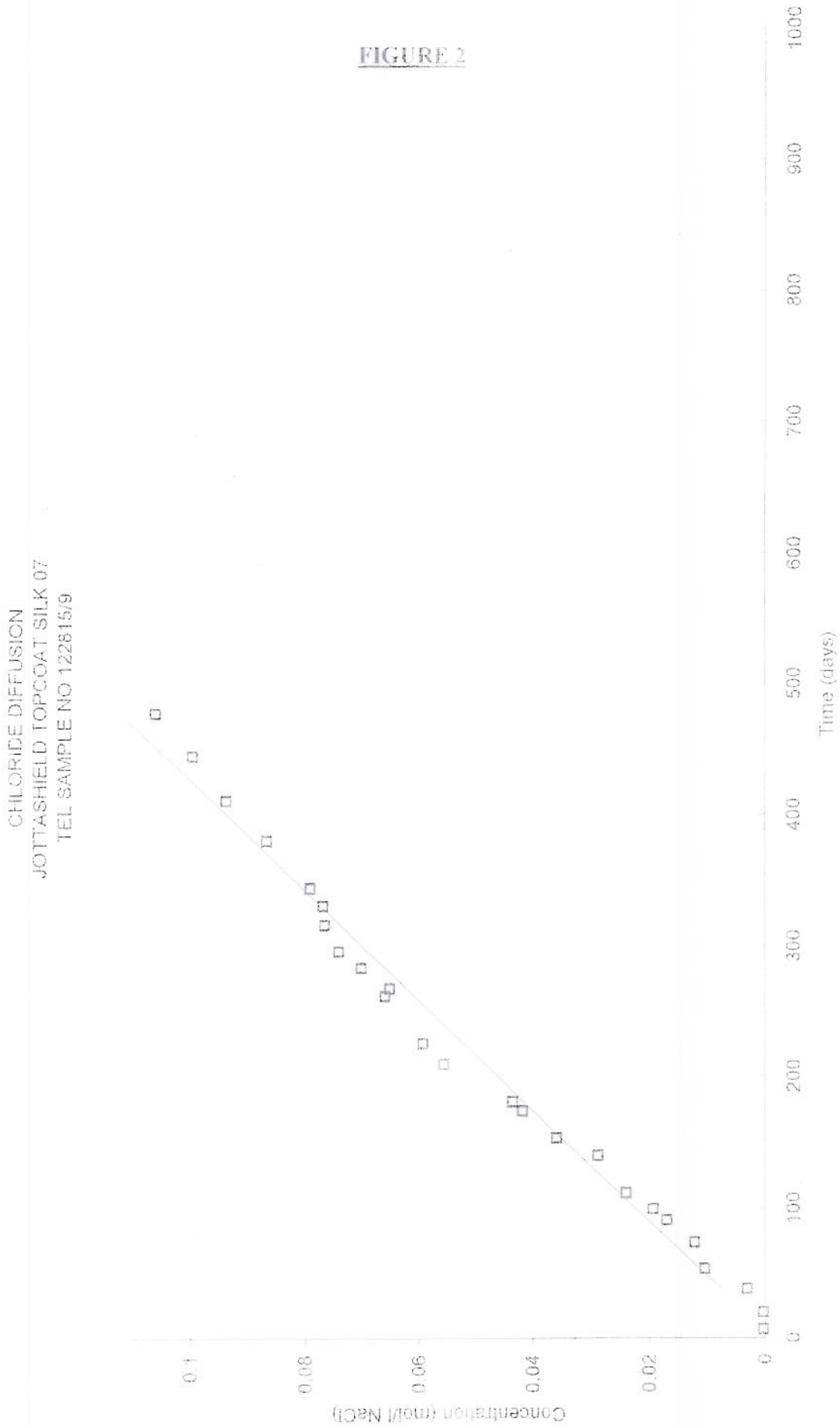
FIGURE 1

THE DIFFUSION CELL



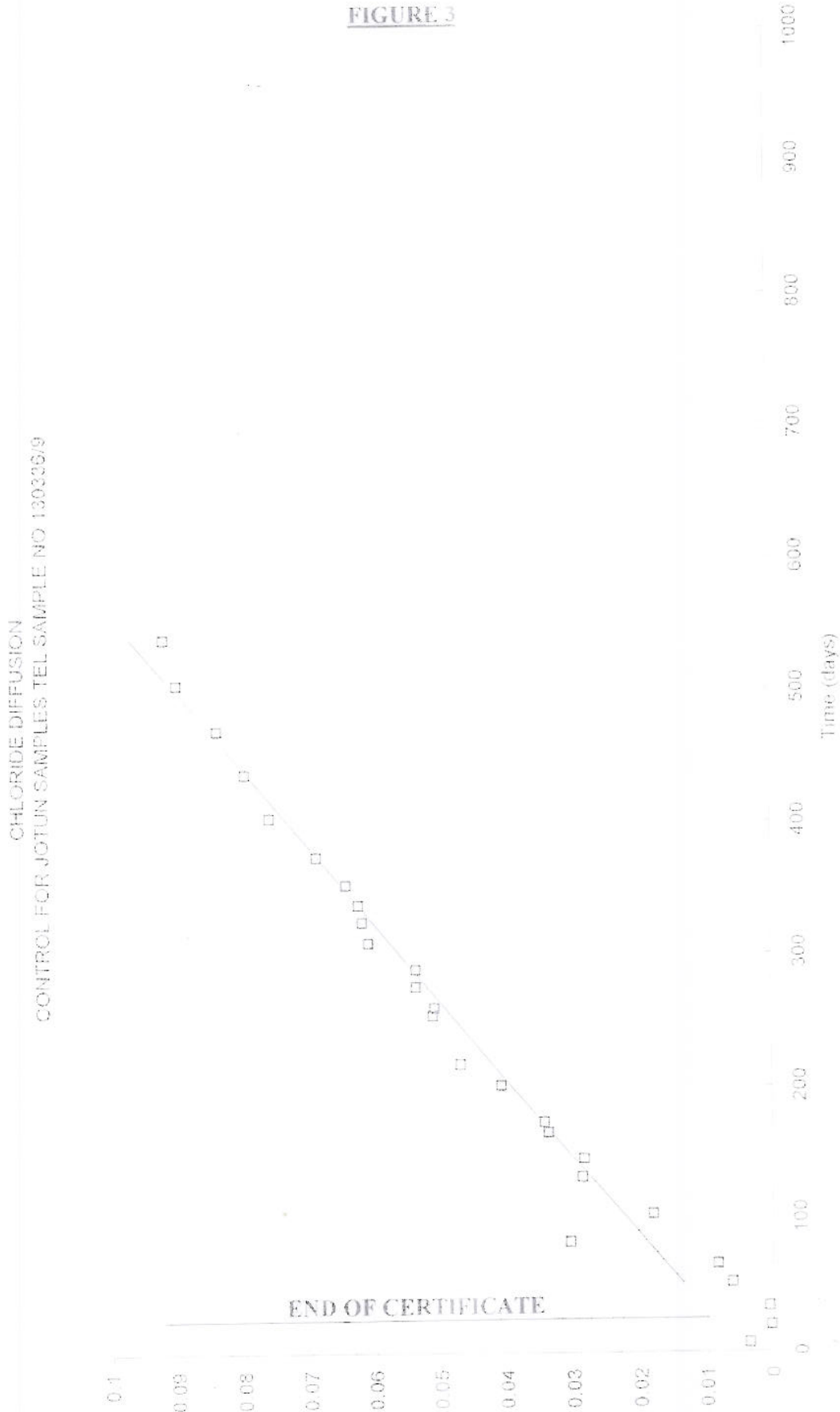
The content of this Certificate of Test was originally presented under a different product name. Nothing else from the original Certificate of Test (No. 5679) has been altered.

FIGURE 2



The content of this Certificate of Test was originally presented under a different product name. Nothing else from the original Certificate of Test (No. 5679) has been altered.

FIGURE 3



The content of this Certificate of Test was originally presented under a different product name. Nothing else from the original Certificate of Test (No. 5679) has been altered.