REPORT OF TESTS

Description	One Sample of Jotashield Paint System (Coated Panel)		
Tested for	Jotun U.A.E. Post. Box No. 3671, Dubai, U.A.E.		
Lab Ref. No.	WR05-88308 (Page 1 of 2)	Request No.	WQ05-13333
Date Received	05.12.2005	Date Reported	08.12.2005

Client's reference : Requisition dated 05.12.2005

1.0 Introduction

Further to the test work instructions received from M/s. Jotun U.A.E. dated 05.12.2005, the sample of Jotashield Paint System (Coated Panel) provided has been tested for the following by Al Futtaim Bodycote Materials Testing Services LLC:

1.1 UV Reflectance Test

2.0 Sample Reference

*Paint System	1.Jotun Siloxane Acrylic Primer 2.Jotashield Tex Ultra (Total Dry Film Thickness–300 Microns)
Sample preparation	Sample preparation was carried out by Jotun U.A.E
Light source	UV Lamp 75W
Reflection angle	45°
Distance between surface & sensor	0.5 mtr.
Application date	N.G
AFBMTS sample No.	W05-013333/1
Source	Jotun U.A.E
Sample brought in by	Client

* Information given by the client.

3.0 Results

Results are given on the attached sheet.

Al Futtaim Bodycote
P.O. Box 34924 - DUBAI - U.A.E.

RESULTS

The coating was tested using the UV radiant source and the reflection measured was then compared against the uncoated asbestos panel.

Sample Description	Reading at 0.5 mtr. from the sample	Improvement of UV Reflectivity of Jota Shield @ 45° Angle (against uncoated panel) *
Panel Coated with Jota Shield	28 Lux	100 %
Uncoated panel	14 Lux	

*(Improvement of UV Reflectivity is calculated by considering the reading on uncoated panel as the base value.)

V.K. Pillai
Chemical Laboratory Manager

Al-Futtaim Bodycote MATERIALS TESTING SERVICES
P.O. Box: 34924 - DUBAI - U.A.E.

For and on behalf of Al Futtaim Bodycote
Materials Testing Services (L.L.C)
Tested by: AR. Date tested: 08.12.2005
Sampled by the client, certificate of sampling was not given

REPORT OF TESTS

Description	One Sample of Jotashield Paint System (Coated Panel)		
Tested for	Jotun U.A.E, Post. Box No. 3671, Dubai, U.A.E.		
Lab Ref. No.	WR05-91244 (Page 1 of 2)	Request No.	WQ05-13333
Date Received	05.12.2005	Date Reported	27.12.2005

Client's reference : Requisition dated 05.12.2005

1.0 Introduction

Further to the test work instructions received from M/s. Jotun U.A.E, dated 05.12.2005, the sample of Jotashield Paint System (Coated Panel) provided has been tested for the following by Al Futtaim Bodycote Materials Testing Services LLC:

1.1 IR Reflectance Test

2.0 Sample Reference

*Paint System	1.Jotun Siloxane Acrylic Primer 2.Jotashield Tex Ultra (Total Dry Film Thickness=300 Microns)
Sample preparation	Sample preparation was carried out by Jotun U.A.E
Light source	IR Lamp 150W
Reflection angle	45°
Distance between surface & sensor	0.5 mtr.
Application date	N.G
AFBMTS sample No.	W05-013333/3
Source	Jotun U.A.E
Sample brought in by	Client

* Information given by the client.

3.0 Results

Results are given on the attached sheet.

RESULTS

The coating was tested using the IR radiant source and the reflection measured was then compared against the uncoated asbestos panel.

Sample Description	Reading at 0.5 mtr. from the sample	Improvement of IR Reflectivity of Jota Shield @ 45° Angle (against uncoated panel) *
Panel Coated with Jota Shield	43 Lux	104.8 %
Uncoated panel	21 Lux	

*(Improvement of IR Reflectivity is calculated by considering the reading on uncoated panel as the base value.)

V.K. Pillai
Chemical Laboratory Manager

For and on behalf of Al Futtaim Bodycote
Materials Testing Services (L.L.C)
Tested by: AR. Date tested: 27.12.2005
Sampled by the client, certificate of sampling was not given

SPECIALIST EQUIPMENT LIMITED

Manufacturers of Corrosion and Environmental Chambers

Leintwardine, Craven Arms, Shropshire SY7 0NB, UK.
Tel (01547) 540654 • Fax (01547) 540412
Internet: www.cw-spec.com • E-mail: sales.service@cw-spec.com

27 August 2002

Taylor Woodrow Construction Ltd
Engineering Division
345 Ruislip Road
Southall
Middlesex
UB1 2QX

TESTING REPORT

JOTASHIELD TEX ULTRA

YOUR ORDER No.	:	T337 E06759
TEST	:	Salt Spray – ASTM B117
DURATION	:	500 Hours
SAMPLES	:	129755 to 129762 - Eight
TEST CABINET	:	Salt Spray - Model SF/1000, Serial No. TCWL/TSG/001
START DATE	:	06.08.02
FINISH DATE	:	27.08.02
CALIBRATION No.	:	6019 (Certificate Attached)

Results

Sample No.'s 129755, 129758, 129759, 129760 and 129761 showed no changes to being exposed to the test.

Sample No.'s 129756 and 129762 showed after 264 hours exposure a slight lifting of the material at the cross hatch scribe mark made on each coating. The condition of the material did not change throughout the remainder of the test.

Sample No. 129757 showed after 384 hours exposure a slight lifting of the material at the cross hatch scribe mark. The lifting on the scribe did not increase during the rest of the test.

Conclusion

The material in an undamaged state did not show any ill effect from being exposed to the Salt Spray test ASTM B117 for 500 hours.

The only change to the samples was on the cross hatch scribe mark but these changes did not increase during the 500 hours exposure.

On behalf of the company

N D CREMER
Managing Director

CW SPECIALIST EQUIPMENT LIMITED

Manufacturers of Corrosion and Environmental Chambers

Leintwardine, Craven Arms, Shropshire SY7 0NB, UK.
Tel (01547) 540654 • Fax (01547) 540412
Internet: www.cw-spec.com • E-mail: sales.service@cw-spec.com

27 August 2002

Taylor Woodrow Construction Ltd
Engineering Division
345 Ruislip Road
Southall
Middlesex
UB1 2QX

TESTING REPORT

JOTASHIELD TEX ULTRA

YOUR ORDER No.	:	T337 E06759
TEST	:	Humidity – BS 3900 F2 Cyclic 42°C-48°C-42°C 60 minutes at 98% RH
DURATION	:	500 Hours
SAMPLES	:	129758 to 129762 - Five
TEST CABINET	:	Humidity - Model AB6, Serial No. TCWL/TSG/002
START DATE	:	01.08.02
FINISH DATE	:	22.08.02
CALIBRATION No.	:	6018 (Certificate Attached)

Results

The five samples were inspected daily and the condition of each sample remained the same. No change occurred at all.

Conclusion

The material under test showed no changes to being exposed for 500 hours to the test method BS 3900 Part F2.

On behalf of the company

N D CREMER
Managing Director

C&W SPECIALIST EQUIPMENT LIMITED

Manufacturers of Corrosion and Environmental Chambers

Leintwardine, Craven Arms, Shropshire SY7 0NB, UK.
Tel (01547) 540654 • **Fax** (01547) 540412
Internet: www.cw-spec.com • **E-mail:** sales.service@cw-spec.com

QCF 28/3

C+W Specialist Equipment Ltd

TEST CABINET

CALIBRATION CERTIFICATE

Certificate No.	: **6018**
Cabinet	: **Humidity Cabinet**
Model	: **AB6**
Serial No.	: **TCWL/TSG/002**

We hereby confirm that the above cabinet was serviced and calibrated with our instruments traceable to NAMAS, Certificate No. 14426T, copy attached, with the following readings:

(i)	Temperature Controller Setting	42.0°C
(ii)	Temperature Controller Reading	42.0°C
(iii)	Digital Electronic Thermometer Reading	42.0°C

Uncertainty of Measurement *± 0.3°C + 1 least significant digit.*

ON BEHALF OF **C & W SPECIALIST EQUIPMENT LTD**

Signed .....
N D CREMER
Managing Director

Work carried out: 01.08.02

REPORT OF TESTS

Description : One sample of Jotashield Tex Ultra Paint Coating Application

Tested for : Jotun U.A.E.(LTD), Post Box No. 3671, Dubai , U.A.E

Lab Ref. No : WR01-13180 (Sheet 1 of 3) Request No. WQ01-04756

Date Received 05.06.2001 Date Reported 08.07.2001

Client's reference	:	Requisition dated 20.05.2001
Sample reference	:	Jotun Siloxane Acrylic Primer & Jotashield Tex Ultra Paint
Sample No.	:	W01-004756

1. Introduction

Further to instructions received via a test requisition dated 20.05.2001 from M/S Jotun Dubai , Al Futtaim Tarmac Laboratories Division have tested a sample of Paint Coating Application The following tests were undertaken.

1.1 Impact Resistance
1.2 Pull Off Test
1.3 Salt Spray
1.4 Pull Off Test After 500 Hours Salt Spray

2.0 Sample Preparation

Sample preparation was carried out by Al Futtaim Tarmac Laboratory Division and surface coating was applied by Jotun U.A.E Ltd.

3.0 Results

Results are given on the attached sheets.

RESULTS

3.1 Impact resistance

Test Mehtod : Test was carried out in accordance with ISO 6272

Test	Height	Wt	Results
Impact resistance	500 mm	500 (g)	No sign of disbonding was observed except the hitting point.
	1000 mm	500 (g)	
	500 mm	1000 (g)	

3.2 Pull Off Test

Test Method : Test was carried out in accordance with ASTM D 4541 : 1989 , using a calibrated Elcometer (Adhesion tester)

Test position	Vertical	Vertical	Vertical	Vertical
Test No.	1	2	3	4
Pull Off Strength (N/mm^2)	2.5	2.0	3.0	3.0

3.3 Salt Spray

Test Method : Test was carried out in accordance with ASTM B 117

The coated specimen was air cured for 7 days at room temperature of 22 ± 2 °C. After the curing period the test specimen was subject to salt spray test for 500 hours

Test		Visual Observation
Salt Spray	After 500 hours	No sign of blistering or loss of adhesion was observed after 500 hours salt spray .

WR01-13180 (Sheet 3 of 3) 08.07.2001

3.4 **Pull Off Test after 500 hours of Salt Spray**

Test Mehtod : Test was carried out in accordance with ASTM D 4541 : 1989 , using a calibrated Elcometer (Adhesion tester)

Sample No	1	2
Test Position	Vertical	Vertical
Pull off strength reading (N/mm^2)	1.0	1.5
Mode of failure	Failure occurred on the concrete substrate	Failure occurred on the concrete substrate

For Al Futtaim Tarmac (Pte) Ltd.
Laboratories Division
Tested by: SKS , Date Tested : 06.06.2001 - 06.07.2001

REPORT OF TESTS

Description	One Sample of Coating System – Jotashild Tex Ultra		
Tested for	Jotun U.A.E, Post Box No.3671, Dubai, U.A.E		
Lab Ref. No.	WR06-51605 D (Page 1 of 4)	Request No.	WQ06-18234
Date Received	23.11.2006	Date Reported	25.12.2006

Client's reference	:	Requisition dated 23.11.2006
Sample reference	:	Coating System – Jotahild Tex Ultra
Location	:	Dubai, U.A.E
Manufacturer	:	Jotun Paints
Sample submitted by	:	Client
AFBMTS No	:	W06-018234/1

1.0 Introduction

Further to the test work instructions received from M/s. Jotun U.A.E, Dubai, dated 23.11.2006, the sample of coating system provided has been tested for Static Crack Bridging Capacity by Al Futtaim Bodycote Materials Testing Services LLC;

2.0 Static Crack Bridgeability

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

A concrete test block assembly coated with Jotashield Tex Ultra was air cured @ 22±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 2.0mm. 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 or any other type of failure

Coating System		Observation
Jotashield Tex Utra Total dft – 200 microns	@ 2.0mm Crack width	No sign of cracks, loss of adhesion or any other type of failure was observed after completion of the up and down movement.

V.K. Dilai
Technical Laboratory Manager

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

Al-Futtaim Bodycote MATERIALS TESTING SERVICES باديكوت ماتيريال تيستينغ سيرفيسز الفطيم
P.O. Box: 34924 - DUBAI - U.A.E.

Tested by: PK/LV, Date tested: 11.12.2006 - 23.12.2006
Sampled by the client, certificate of sampling was not given.