

REPORT OF TESTS

Description	One Sample of Coating System		
Tested for	Berger Paints, PO Box 27524, Dubai, UAE		
Lab Ref. No.	WR08-28638 (Page 1 of 6)	Request No.	WQ08-04981
Date Received	11.03.2008	Date Reported	08.07.2008

Client's reference : Requisition dated 11.03.2008
 Mixing ratio : Pre weighed packs submitted by the client
 Surface coating system : Apcoflor FP 100 Clear – 1st Coat (1 coat x 50 Microns DFT)
 Apcoflor TC 510 Colour-2nd Coat (2 coats x 250 Microns DFT)
 Apcoflor TC 600 (1 x 50 Microns DFT)
 Manufacturer : Berger Paints
 AFBT sample no. : W08-004981/01

1.0 Introduction

Further to the test work instructions received from M/s. Berger Paint, Dubai, dated 11.03.2008, one sample of coating system provided has been tested for the following by Al Futtaim Bodycote Testing LLC;

- 1.1 Shore 'D' Hardness
- 1.2 Compressive Strength
- 1.3 Flexural Strength
- 1.4 Tensile Strength
- 1.5 Impact Resistance
- 1.6 Crack Bridging Capacity
- 1.7 Bond Strength
- 1.8 Rapid Chloride Permeability
- 1.9 Water Permeability
- 1.10 Chemical Resistance
- 1.11 Hot Water Resistance
- 1.12 Abrasion Resistance

3.0 Results

Results are given on the attached sheets.

V.K. Pillai
Chemical Laboratory Manager

Al-Futtaim Bodycote
TESTING (L.L.C.)
بودي كوت الفطيم
P.O. Box: 34924 - DUBAI - U.A.E.

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Results

Sample reference: Coating System
AFBT sample no.: W08-004981/01

3.1 Shore 'D' Hardness

Test Method: Test specimen was prepared with supplied sample and air cured for 7 days at a temperature of $23 \pm 2^{\circ} \text{C}$. After curing, the test was carried out in accordance with ASTM D 2240.

Test	Results	Average
Shore 'D' Hardness	65, 66, 64, 65, 64	D/65/1

3.2 Compressive Strength

Test Method: Test specimens were prepared with the supplied sample and air cured for 28 days at a temperature of $23 \pm 2^{\circ} \text{C}$. After curing, the test was carried out in accordance with ASTM C 579

Test Ref. No	Age of Test	Max. Load (kN)	Compressive Strength (N/mm ²)	Average Compressive Strength (N/mm ²)
1	28 days	175.1	70.0	70.1
2		175.6	70.2	
3		175.3	70.1	

3.3 Flexural Strength

Test Method: Test specimens were prepared with the supplied sample and cured for 28 days at a temperature of $23 \pm 2^{\circ} \text{C}$. After curing, the test was carried out in accordance with ASTM C 580

Test Ref No.	Age of Test	Span (mm)	Max. Load (kN)	Flexural Strength (N/mm ²)	Average Flexural Strength (N/mm ²)
1	28 days	230	1.850	40.4	40.1
2		230	1.815	39.7	
3		230	1.830	40.1	

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Sample reference: Coating System
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3.4 Tensile Strength

Test Method: Test specimen was prepared with the supplied sample and air cured for 28 days at a temperature of $23 \pm 2^{\circ}\text{C}$. After curing, the test was carried out in accordance with ASTM C 307.

Test Ref.	Width (mm)	Thickness (mm)	Load (kN)	Tensile strength (N/mm ²)
1	25.06	25.00	12.580	20.1
2	25.09	25.01	12.600	20.1
3	25.03	25.03	12.595	20.1
Average				20.1

3.5 Impact Resistance

Test Method: Test was carried out in general accordance with ASTM ISO 6272

A steel striker weighing 1 kg (with tup dia of 20mm hemispherical) was allowed to fall from different heights on the surface of the concrete block coated with supplied sample. Then the surface was examined for any kind of damages or cracks.

Height (mm)	Falling Wt (kg)	Observation
250	1 kg	No sign of cracks or disbonding was observed.
500	1 kg	No sign of cracks or disbonding was observed.
750	1 kg	No sign of cracks or disbonding was observed.
1000	1 kg	No sign of cracks or disbonding was observed. Only the hit marks were evident on the surface of the coating

3.6 Crack Bridging Capacity

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

The concrete test block assembly was coated with supplied sample and air cured @ $23 \pm 2^{\circ}\text{C}$ 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 1.20mm. 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

Test	Observation
Crack Bridging Capacity @ 1.20mm	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. Pillai
 Chemical Laboratory Manager

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3.7 Bond Strength

Test Method : The tests were carried out in general accordance with BS 1881 Part 207 using a 'LOK-TEST' pull out instrument.

The test sample was prepared by applying the supplied sample on the surface of a host concrete block and test specimen was air cured for 7 days at a temperature of 23±2°C

The test procedure involved fixing a 75mm circular steel disc with a threaded inset over the test area. The disc was affixed on to the mortar using a two component epoxy resin. A partial depth circumferential cut was drilled over the test area utilising a water flushed electrically driven 75 mm diameter diamond core tube. The depth of cut extended through the layer of coating and beyond the bonded interface into the concrete substrate.

After the resin had cured sufficiently an adjustable loading frame was placed and levelled over the test area. The test was then performed using the pull off instrument to apply a tensile force until failure occurred.

Test	1	2	3
Test position	Vertical	Vertical	Vertical
Cylindrical block (dolly) ref	A	B	C
Area of cylindrical block (mm ²)	4416	4416	4416
Maximum load applied (kN)	15.0	15.0	15.0
Pull off (bond) strength (N/mm ²)	3.39	3.39	3.39
Description of the failure	Type of failure	Failure occurred within the concrete substrate.	

3.8 Rapid Chloride Permeability

Test Method : The test was conducted in general accordance with ASTM C 1202. 97

The test specimen was prepared by applying the supplied sample on the surface of a 40N concrete substrate and air cured for 28days @ 23 ± 2° C. After the curing, the test specimen was subjected to chloride penetration test and one uncoated concrete specimen of the same batch was also tested for comparison.

Comparison of tests result (Control Specimen & Test Specimen)

Test	Chloride Penetration (Coulombs)		Percentage and (or) Reduction
	Control Specimen (Uncoated)	Test Specimen (Coated with System)	
Rapid Chloride Permeability	1105	74	93

V.K. Pillai
Chemical Laboratory Manager

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Sample reference: Coating System
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3.9 Water Permeability

Test Method : Test was carried out in general accordance with BS EN 12390
 Part 8 : 2000.

The test specimen was prepared by applying the supplied sample on the surface of a 40N concrete substrate and air cured for 28days @ 23°C±2. After curing, the test specimen was subjected to water penetration test at 5 Bar pressure as per the standard requirement, applied to the face with the coating system, as per BS EN 12390 Part 8 : 2000

Test	Maximum depth of water penetration (mm)
Depth of water penetration (@ 5 Bar Pressure)	Nil

3.10 Chemical Resistance

Test Method : Test was carried in accordance with ASTM D 543
Test Solution : Solutions were prepared from analytical grade chemicals
Test Condition : Test was conducted at a room temperature of 22° C± 2
Duration : 168 Hours (7 days)

Test Reference	Observation (After 7 days)
pH 11.5 solution	No changes were observed
pH 2.0 solution	No changes were observed
Acetic acid 3 %	No changes were observed
Soap Solution	No changes were observed
Diesel	No changes were observed
Petrol	Colour change was observed
Engine Oil	No changes were observed
Vegetable Oil	No changes were observed
Break Fluid	No changes were observed
Ethanol 50%(v/v)	No changes were observed

08.07.2008

Test Method : ASTM D 570

Test	Results
Hot Water Resistance (70°C)	No changes were observed

3.12 Abrasion Resistance *

Machine used	:	Teledyne Taber 5150 Abraser
Abrasive wheels	:	CS-17
Total weight used	:	1000 gms
No of cycles	:	1000
Test condition	:	23±2°C & 50±5% Relative Humidity
Test method	:	ASTM D 4060 :01

Test specimen No.	Weight Loss after 1000 cycles (mg)	Average Weight Loss after 1000 cycles (mg)	Standard Deviation
1	185	185	1
2	186		

V.K. Pillai
Chemical Laboratory Manager

For and on behalf of Al Futtalm Bodycote Testing (L.L.C)

Tested by: PK/SG Date tested: 19.03.2008-30.06.2008

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

* Test subcontracted to BMTS group laboratory – Canada

 **Al-Futtaim Bodycote**

التفتيم TESTING (L.L.C.)
باي كوت تيسٽينج (ل.ل.ك.)

P.O. Box: 34924 - DUBAI - U.A.E.

Testing, calibrating, advising

REPORT OF TESTS

Description	One Sample of Coating System		
Tested for	Berger Paints Emirates Ltd, P.O.Box.27524, Dubai - U.A.E		
Lab Report No.	WR15-09938 (Page 1 of 1)	Request No.	D15-02074
Date Received	30.03.2015	Date Reported	12.05.2014

Client's reference : Requisition dated 30.03.2015
Coating System : Apecoflor FP100
Apecoflor TC510
Apecoflor TC600 with Aggregate

Source : Berger Paint
AFE No. : D15-02074/1

1.0 Introduction

Further to the test work instructions received from M/s. Berger Paints Emirates Ltd, Dubai, dated 30.03.2015, one sample of coating system provided has been tested for the following by Al Futtaim Exova LLC;

2.0 Tear Strength

Test Method : The test sample was prepared by the supplied sample and test specimens were cured at a temperature of $23 \pm 2^{\circ}\text{C}$. The tests were carried out in general accordance with ASTM D 624.

Test Ref.	Thickness (mm)	Load (N)	Tear Strength (N/mm)
1	2.12	35.0	16.5
2	2.16	33.6	15.6
3	2.10	32.4	15.4
4	2.11	38.4	18.2
5	2.10	36.1	17.2
Average			16.6

Paul Wilson

PAUL WILSON
Chemistry and Microbiology Laboratory Manager

For and on behalf of Al Futtaim Exova (L.L.C)
Tested by: SSK, Date tested: 03.05.2015

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

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NATIONAL RESEARCH CENTRE
TAHRIR St. DOKKI, CAIRO, EGYPT
Central Unit For Analysis And
Scientific Services (CUASS)
Material Test Lab.

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معمل اختبار المواد



Test Report

Report No.

MO1 9389 08 2022

Client

SCIB Chemicals S.A.E

Authority & date

Request Orders 28/8/2022

Items Tested

Apcoflor HFP 120 + Apcoflor TC 510 + Apcoflor TC 600

Results

The detailed test results are given on the following pages of this report (3 pages) .

Report Typist

* Mis. Naglaa Mohamed-Sara Abdel Reheam
Noha Samir

Test carried by

* Mis . Fatma El Zahraa Fikry

* H.Eng. Ahmed Said

* Chem. Amr El Shafey

* Dr. Abou El Ftouh Abd El Hakem

Authorized by

Prof. Dr. Mostafa Zaki Mostafa

* The Supervisor of ceramics, Polymer and
Solid Matter Department.

* Management Representative and Quality
Assurance Manager.

Issue date

4/12/2022

Condition of Test
& Issue

The test specimen was conditioned at 23 °C
with a humidity of 60 % and the needed
calibrations as well as balancing of the all
used machines were always done .





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To / SCIB Chemicals S.A.E

Dear Sir.,

With correspondence to your request dated 28/8/2022 concerning the testing sample of Apcoflor HFP 120 + Apcoflor TC 510 + Apcoflor TC 600 , We would like to inform you that the all following needed tests were carried out which namely:

1- Accelerated Weathering resistance test according to ASTM G154

We would like to inform you that the needed test was carried out taking into consideration the following conditions :

- 1- Accelerated weathering tester model QUV/se made in USA .
- 2- All used Machineries and apparatuses were calibrated periodically.

The following table gives the obtained results representing the sample delivered from your company .

Accelerated Weathering resistance test according to ASTM G154

On a sample of Apcoflor HFP 120 + Apcoflor TC 510 + Apcoflor TC 600

Delivered from SCIB Chemicals S.A.E

Exposure time (h)	Exposure temp. (°C)	Light source	Irradiance (w/m2)	Results	
				Observation	Δ E
600	60	313nm UV-B cycle 2	0.71	No crack was observed	2.708



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*This report was given to you representing only the results for the testing sample of Apcoflor HFP 120 + Apcoflor TC 510 + Apcoflor TC 600 , Delivered from SCIB Chemicals S.A.E, These results and conclusions were given to you without any responsibility on **THE CERAMICS, POLYMERS AND SOLID MATTER DEP. of THE MATERIAL TEST LAB** in **THE NATIONAL RESEARCH CENTRE** for pick up the samples to be tested .*

**Head of Director of The Board of Central Department
for Scientific Analysis and Tests**

&

SUPERVISOR
**OF CERAMICS, POLYMER AND
SOLID MATTER DEPARTMENT**

PROF.DR. MOSTAFA ZAKI MOSTAFA



2023

