

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.)
بأوكوت تيسيتنج (ل.م.م.)
P.O. Box: 34924 - DUBAI - 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.

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08.07.2008

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

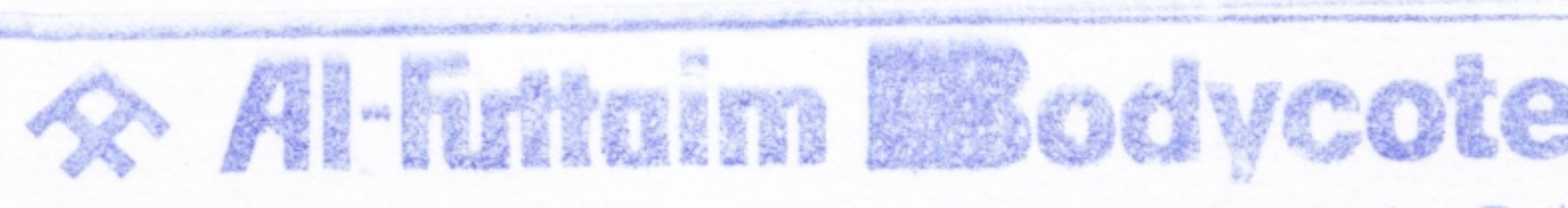
Test Ref. No	Age of Test	Max. Load (kN)	Compressive Strength (N/mm ²)	Average Compressive Strength (N/mm ²)
1	28 days	175.1	70.0	70.1
2		175.6	70.2	
3		175.3	70.1	

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	

V.K. Pillai
Chemical Laboratory Manager


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

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08.07.2008

Results

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

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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08.07.2008

Results

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

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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Results

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

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 subcontracted to BMTS group laboratory – Canada

REPORT OF TESTS

Description	One Sample of Coating System		
Tested for	Berger Paints, PO Box 27524, Dubai, UAE		
Lab Ref. No.	WR08-28639 (Page 1 of 6)	Request No.	WQ08-04981
Date Received	11.03.2008	Date Reported	21.07.2008

Client's reference : Requisition dated 11.03.2008
Mixing ratio : Pre weighed packs submitted by the client
Surface coating system : Apcoflor FP 120 Clear – 1st Coat (1 coat x 50 Microns DFT)
Apcoflor TC 510 Colour-2nd Coat (2 coats x 250 Microns DFT)
Manufacturer : Berger Paints
AFBT sample no. : W08-004981/02

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


الفطيم **TESTING (L.L.C.)**
بادي كوت تيسينغ (ل.م.م.)
P.O. Box: 34924 - DUBAI - U.A.E.

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21.07.2008

Results

Sample reference: Coating System
AFBT sample no.: W08-004981/02

3.1 Shore 'D' Hardness

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

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

3.2 Compressive Strength

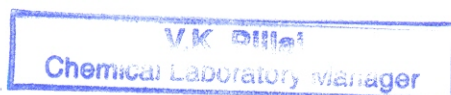
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Test Ref. No	Age of Test	Max. Load (kN)	Compressive Strength (N/mm ²)	Average Compressive Strength (N/mm ²)
1	28 days	175.1	70.0	70.1
2		175.6	70.2	
3		175.3	70.1	

3.3 Flexural Strength

Test Method: Test specimens were prepared with the supplied sample and cured for 28 days at a temperature of $23 \pm 2^{\circ}$ 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	



V.K. Pillai
 Chemical Laboratory Manager



Al-Futtaim Bodycote
 TESTING (L.L.C.)
 باديكوت تيستينغ (ل.ل.م.)
 P.O. Box: 34924 - DUBAI - U.A.E.

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21.07.2008

Results

Sample reference: Coating System
 AFBT sample no.: W08-004981/02

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
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Average				20.1

3.5 Impact Resistance

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

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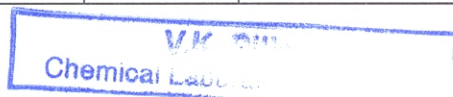
Height (mm)	Falling Wt (kg)	Observation
250	1 kg	No sign of cracks or disbonding was observed.
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750	1 kg	No sign of cracks or disbonding was observed.
1000	1 kg	No sign of cracks or disbonding was observed. Only the hit marks were evident on the surface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

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 28 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 1.10mm. 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 @ 1.10mm	No sign of cracks, loss of adhesion or any other type of failure was observed after completion of the up and down movement.



WR08-28639 (Page 4 of 6)

21.07.2008

Results

Sample reference: Coating System
 AFBT sample no.: W08-004981/02

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 specimens were air cured for 7 days at a temperature of $23 \pm 2^\circ\text{C}$

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 within the substrate. (Concrete)	

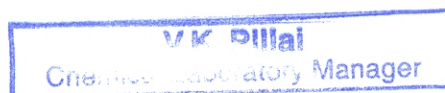
Rapid Chloride Permeability

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 @ $23 \pm 2^\circ\text{C}$. 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	45	96


V.K. Pillai
 Chairman, Laboratory Manager

WR08-28639 (Page 5 of 6)

21.07.2008

Results

Sample reference: Coating System
 AFBT sample no.: W08-004981/02

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


 V.K. Pillai
 Chemical Laboratory Manager

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21.07.2008

Results

Sample reference: Coating System
AFBT sample no.: W08-004981/02

3.11 Hot Water Resistance

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	124	134	14
2	144		

V.K. Pillai
Chemical Laboratory Manager


For and on behalf of Al Futtaim 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


الفطيم **بودي كوت** **تيسينج (ل.ل.ك.)**
P.O. Box: 34924 - DUBAI - U.A.E.

Test Report on Abrasion Resistance

Customer Name	SCIB Paints 6 th of October city ,Egypt
Sample name	Apcoflor HFP 120 50 μ Apcoflor TC 510 500 μ
Test Method	ASTM D 4060-19
Test type	Type 5- self Aligning Tester
No. of Cycles	1000
Vacum Nozzle Height	3mm
Wheel Reference	CS-17
Mass Applied on each wheel	500g
Vacum Opening Diameter	8mm
Room Temperature 23 C, Room Relative Humidity 52%	

Test Results

Specimen No.	Unit	Weight loss
1	mg	34.5
2		35.5
Average		35



SPC Director

Prof. Dr. Maher EL-sokary

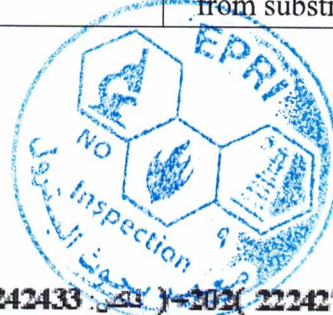
M. El-Sokary
2022-10-20

Test Report on Pull –Off Adhesion Strength

Customer Name	SCIB Paints 6 th of October city ,Egypt
Sample name	Apcoflor HFP 120 50 μ Apcoflor TC 510 500 μ
Test Method	ASTM D 4541-17
Test type	Type 5- self Aligning Tester
Room Temperature	23 C
Room Relative Humidity	52%
Test description	Pull off test was carried out between old Concrete and Smart Care Repair Bond after 7 days cured

Test Results

Description	Results		
Test number	Samle 1	Sample 2	Sample 3
Diameter of Dolly (mm)	20	20	20
Test position	Vertical	Vertical	Vertical
Pull off strength (N/mm ²)	4.8	5.2	5.0
Average pull off strength (N/mm ²)	5.0		
Mode of Failure	Failure observed from substrate	Failure observed from substrate	Failure observed from substrate



SPC Director

Prof. Dr. Maher El-sockary

M. El-said
20-10-2022

Test Report on Chemical Resistance

Customer Name	SCIB Paints 6 th of October city ,Egypt
Sample name	Apcoflor HFP 120 50 μ Apcoflor TC 510 500 μ
Test Method	ASTM D543-20
Nature of substrate	Concrete
Room Temperature	23 C
Room Relative Humidity	52 %

Test Results

Chemicals	Observation	Type of effect
5% Nitric acid	No Blistering , softening or disbanding observed	Resistant
20% Acetic acid		
20% Lactic Acid		
25% Zinc Sulphate		
25% Copper Sulphate		
Tap Water		
Sea Water		
Ground Water		
Petrol		
Diesel		
Hydrolic acid		



SPC Director

Prof. Dr. Maher EL-sockary

M. EL-sockary
20-10-2022



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

المركز القومي للبحوث
الدقى . القاهرة . جمهورية مصر العربية
وحدة التحاليل و الخدمات العلمية المركزية
معمل اختبار المواد



Test Report

Report No.	MO1 0960 02 2023
Client	SCIB Chemicals S.A.E
Authority & date	Request Orders 1/2/2023
Items Tested	Apcoflor TC 510
Results	The detailed test results are given on the following pages of this report (6 pages) .
Report Typist	* Mis. Naglaa Mohamed-Sara Abdel Reheam
Test carried by	Noha Samir * 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	13/2/2023
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 .





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

المركز القومي للبحوث
الدقى . القاهرة . جمهورية مصر العربية
وحدة التحاليل والخدمات العلمية المركزية
معمل اختبار المواد



TO/ SCIB Chemicals S.A.E

Dear Sir.,

With correspondence to your request dated 1/2/2023 concerning the testing sample of Apcoflor TC 510 , We would like to inform you that the all following needed tests were carried out which namely:

- 1- Tensile strength and elongation test according to ASTM D638**
- 2- Flexural strength test according to ASTM C580**
- 3- Abrasion resistance test according to ASTM D4060**
- 4- Bond strength to concrete (Pull-off test) according to D4541**
- 5- Hardness test Shore D according to ASTM D2240**
- 6- Water Permeability test according to EN 12390-8**
- 7- Chemical resistance test at 23°C for 7 days according to ASTM D543**

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

- 1- In all mechanical properties GALDABINI – QUASAR 600 – Made In Italy Universal Testing Machine was used This type has a self calibration , zero adjusting and automatic balance , which are done daily before testing or during testing this testing instrument is accompanied by a highly reliable system for evaluating the mechanical properties .
- 2- Measuring drum of sensitivity $\pm 0.01\text{mm}$ was used for dimensions evaluation.
- 3- On heating a Memmert West Germany oven was used .
- 4- Taber Model 505 DUAL ABRASER Tester
- 5- Weighing Balance with tolerance $+ 0.0001\text{ g}$ was used in determining the weights .
- 6- Braive Instruments .
- 7- Water Permeability tester model 55CO24613 Controls made in Italy
- 8- All used Machineries and apparatuses were calibrated periodically.

The following tables give the obtained results representing the sample delivered from your company .



2023



Test results on a sample of Apcoflor TC 510

Delivered from SCIB Chemicals S.A.E

1- Tensile strength and elongation test according to ASTM D638

No.	Tensile strength (N/mm ²)	Elongation (%)
1	32.61	2.05
2	34.90	2.13
3	33.50	2.22
4	32.70	2.09
5	31.90	2.36
Mean	33.12	2.17

2- Flexural strength test according to ASTM C580

No.	Results (N/mm ²)	The mean value (N/mm ²)
1	29.41	28.01
2	28.13	
3	27.01	
4	28.53	
5	26.99	

3- Abrasion resistance test according to ASTM D4060

No. of cycle	Weight (g)	Used wheel	Weight loss (mg)
1000	1000	CS 10	66.3



2023



Test results on a sample of Apcoflor TC 510

Delivered from SCIB Chemicals S.A.E

4- Bond strength to concrete (Pull-off test) according to D4541

No.	Pull-off strength (N/mm ²)	Mean (N/mm ²)
1	1.79	1.93
2	1.93	
3	1.99	
4	1.91	
5	2.03	

* Failure in concrete

5- Hardness test Shore D according to ASTM D2240

No.	Shore D	The mean value
1	85	86
2	86	
3	86	
4	85	
5	86	

6- Water Permeability test according to EN 12390-8

Direction	Time (hrs)	Pressure (bar)	Control (mm)	Penetration (mm)
+ ve	72	5	37.6	No Penetration



2023



Test results on a sample of Apcoflor TC 510

Delivered from SCIB Chemicals S.A.E

7- Chemical resistance test at 23°C for 7 days

according to ASTM D543

No.	Chemicals	Results
1	Acetic acid 20%	No effect
2	Lactic acid 20%	No effect
3	Zinc sulphate 25%	No effect
4	Copper sulphate 25%	No effect
5	Tap water	No effect
6	Ground water	No effect
7	Diesel	No effect
8	Hydrochloric acid 10%	No effect





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TAHRIR St. DOKKI, CAIRO, EGYPT
Central Unit For Analysis And
Scientifical Services (CUASS)
Material Test Lab.

المركز القومي للبحوث

الدقى . القاهرة . جمهورية مصر العربية
وحدة التحاليل و الخدمات العلمية المركزية
معمل اختبار المواد



*This report was given to you representing only the results for the testing sample of Apcoflor TC 510 , 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 Scientifical Analysis and Tests**

&

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

PROF.DR. MOSTAFA ZAKI MOSTAFA





TEST REPORT ON SLIP RESISTANCE

Client	Berger Paints Emirates LTD CO LLC PO Box:27524 Dubai, UAE		
Client Reference	F8/F10/FF02/SK05	Lab Report No.	WLRP20-1549/1
Sample Description	Epoxy Floor & Skirting Coating	Sample No.	WSP20-1549/1
Source	Berger Paints Emirates LTD CO LLC	Date Received	01/06/2020
Test Method	ASTM E303-93(2018)	Date Tested	20/06/2020
Test Temperature	23°C	Date Reported	25/06/2020
Relative Humidity	50%	Test Location	Dubai-UAE.
Type of Rubber Slider	Natural Rubber	Age of Rubber Slider	2 months (No wear observed)
Contact Path	125mm	Tested By	SU
Coating System	One coat of Apcoflor HFP 120 Anti-skid Aggregate Two coat of Apcoflor TC 510		

Test Results

Sample Reference	PTV Value (Dry Slip Resistance)	PTV Value (Wet Slip Resistance)
WSP20-1549/1	90	80
	92	78
	94	78
	92	78
	92	78
Average	92	78

Remarks: None

Signed for and on behalf of Wimpey Laboratories

S. Sarath Kumar
Senior Technician

Test results relate only to the samples tested

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**TEST REPORT ON ABRASION RESISTANCE**

Client	Berger Paints Emirates LTD CO LLC PO Box:27524 Dubai, UAE	Lab Report No.	WLRP20-1691/2
Contractor	N.G	Sample No.	WSP20-1691
Consultant	N.G	Date Received	23/06/2020
Client Reference	N.G	Date Tested	06/07/2020
Project	N.G	Date Reported	06/07/2020
Sample Description	Apcoflor TC 510	Test Temperature	23°C
Sample Source	Berger Paints Emirates LTD CO LLC	Relative Humidity	50%
Sample Identification	N.G	Sampling Date/Time	N.G
Test Method	ASTM D4060-19	Conditioning Procedure	N.G
No. of Revolution	1000	Wheel Reference	CS-17
Vacuum Nozzle Height	3mm	Mass Applied on each wheel	500g
Vacuum Opening Diameter	8mm	Sample Brought in by	Client
Vacuum Suction Force	137 milli bar	Tested By	SU

Test Results

Specimen Number	Unit	Weight Loss
1	mg	35.6
2		38.4
Average		37.0

Legends : N.G – Information Not Given

Remarks: None

Method Deviation: None

Signed for and on behalf of Wimpey Laboratories

S. Sarath Kumar
Senior Technician

Test results relate only to the samples tested.

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The above test was done by subcontracting

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TEST REPORT ON SHORE D HARDNESS

Client	Berger Paints Emirates LTD CO LLC PO Box:27524 Dubai, UAE		
Sample Description	Apcoflor TC 510	Lab Report No.	WLRP20-1691/4Rev01
Source	Berger Paints Emirates LTD CO LLC	Sample No.	WSP20-1691
Test Method	ASTM D2240-15e1	Date Received	23/06/2020
Equipment Type	Durometer Shore D	Date Tested	06/07/2020
Equipment Model	SHR-D-GOLD	Date Reported	06/07/2020
Serial Number	23167	Curing and test condition	Temperature: 23°C Relative Humidity: 50%
Mean of Testing	Manual	Specimen thickness	5 mm
Indentation Hardness Time	1 second	No of pieces piled	5
Curing Time	7 days	Tested By	SU

Test Results

Test	Readings	Result
Shore D Hardness	68,69,67,69,68	D/68/1

Remarks: None.

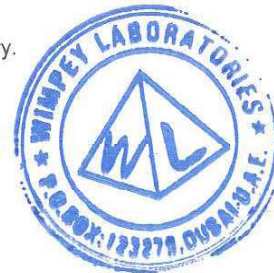
Signed for and on behalf of Wimpey Laboratories

S. Sarath Kumar
Senior Technician

Test results relate only to the samples tested.

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TEST REPORT ON IMPACT STRENGTH

Client	Berger Paints Emirates LTD CO LLC PO Box:27524 Dubai, UAE		
Sample Description	Apcoflor TC 510	Lab Report No.	WLRP20-1691/5
Source	Berger Paints Emirates LTD CO LLC	Sample No.	WSP20-1691
Client Reference	N.G	Date Received	23/06/2020
Test Method	ASTM D2794-93(2019)	Date Tested	06/07/2020
Thickness of Coating	2 mm	Date Reported	06/07/2020
Substrate Thickness	5 mm	Method of application	By Brush
Type of Metal	Steel Plate	Diameter of Punch Used	12.7 mm
Drop Height	750 mm	Drop Mass	0.970 Kg
Conditioning & Test Temperature	23°C & 50% RH	Tested By	SU

Test Result

Test	Unit	Observation	Result
Impact Strength	Kg-m	No cracks or any other surface damages was observed on the surface of the sample.	0.73

Remarks/ None.

Signed for and on behalf of Wimpey Laboratories

S. Sarath Kumar
Senior Technician

Test results relate only to the samples tested.

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TEST REPORT ON CRACK BRIDGING ABILITY

Client	Berger Paints Emirates Ltd Co. L.L.C. P.O.Box: 27524, Al Quos, Dubai, UAE.		
Project Name	Not Applicable	Lab Report No.	WLRP20-1691/6
Sample Description	Apcoflor TC 510	Sample No.	WSP20-1691
Source	Berger Paints Emirates LTD CO LLC	Date Received	23/06/2020
Test Method	BS EN 1062-7:2004	Casting Date	29/06/2020
Sample Preparation Standard	BS EN 1766:2017	Date Tested	06/07/2020
Nature of Substrate	Concrete	Date Reported	06/07/2020
Substrate Dimension(mm)	75 L x 50 W	No. of coat & Method of application	3 coat with brush
Test Method	Method A	Coating Thickness	
Sampling Conditioning	Temperature: 23°C Relative Humidity: 50%	Sample brought in by	Client
Test Condition	Temperature: 23°C Relative Humidity: 50%	Tested By	SU
Coating System	One coat of Apcoflor TC 510 Anti-skid Aggregate Two coat of Apcoflor TC 510		

Test Results

Test	Crack width at which first failure in the coating occurred (mm)
Crack Bridging Ability	2.2

Remarks: None.

Signed for and on behalf of Wimpey Laboratories

S. Sarath Kumar
Senior Technician

Test results relate only to the samples tested

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TEST REPORT ON WATER ABSORPTION

Client	Berger Paints Emirates Ltd Co. L.L.C. P.O.Box: 27524, Al Quos, Dubai, UAE.		
Sample Description	Apcoflor TC 510	Lab Report No.	WLRP20-1691/7
Source	Berger Paints Emirates LTD CO LLC	Sample No.	WSP19-1691
Client's Ref.	N.G	Date Received	23/06/2020
Test Method	ASTM D570-18	Date Tested	07/06/2020
Conditioning Procedure	24 hours at 50°C	Date Reported	07/06/2020
Immersion Procedure	Water Immersion at 23°C	Dimension of Specimen	50 x 50 mm
Time of Immersion	24 hours	Tested By	SU

Test Results

Specimen Number	Unit	Water Absorption
1	%	Nil
2		Nil
3		Nil
Average		Nil
Visual Observation: No Surface damages observed		

Remarks: Reduction in water absorption 100%.

Signed for and on behalf of Wimpey Laboratories

S. Sarath Kumar
Senior Technician

Test results relate only to the samples tested

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TEST REPORT ON PULL-OFF ADHESION STRENGTH

Client	Berger Paints Emirates Ltd Co. L.L.C. P.O.Box: 27524, Al Quos, Dubai, UAE.		
Project Name	N.G	Lab Report No.	WLRP20-1691/8Rev01
Sample Description	Apcoflor TC 510	Sample No.	WSP20-1691
Source	Berger Paints Emirates LTD CO LLC	Date Received	23/06/2020
Client Reference	N.G	Date Tested	07/07/2020
Consultant	N.G	Date Reported	07/07/2020
Contractor	N.G	Cast Date	29/06/2020
Test Method	ASTM D4541-17	Sampling Date & Sampling Time	N.G
Test Type	Type 5-Self Aligning Tester	Substrate Used	Concrete
Machine Details	Manufacturer: Matest Model: E142-01 Serial Number: E142/AC/0390	Adhesive Used	Two Component Epoxy
Location	In-House	Age of Test	7 Days
Test Temperature & Relative Humidity	23°C & 50%	Tested By	SU

Test Procedure

The general pull-off test is performed by securing a loading fixture (dolly, stud) normal (perpendicular) to the surface of the coating with an adhesive. After the adhesive is cured, a testing apparatus is attached to the loading fixture and aligned to apply tension normal to the test surface. The force applied to the loading fixture is then gradually increased and monitored until either a plug of material is detached, or a specified value is reached. When a plug of material is detached the exposed surface represents the plane of limiting strength within the system.

The nature of the failure is qualified in accordance with the percent of adhesive and cohesive failures, and the actual interfaces and layers involved.

The pull-off strength is computed based on the maximum indicated load

Description	RESULTS			
Test Number	1	2	3	4
Test Position	Vertical	Vertical	Vertical	Vertical
Diameter of Dolly (mm)	50	50	50	50
Max. Load Applied (N)	7440	7550	6830	7200
Pull off Strength (N/mm ²)	3.80	3.86	3.48	3.67
Average Pull off Strength (N/mm ²)	3.70			
Mode of Failure	Failure observed from substrate	Failure observed from substrate	Failure observed from substrate	Failure observed from substrate

Remarks: None.

Signed for and on behalf of Wimpey Laboratories,

S. Sarath Kumar
Senior Technician

Test results relate only to the samples tested.

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TEST REPORT ON COMPRESSIVE STRENGTH

Customer Name	Berger Paints Emirates Ltd Co. L.L.C. P.O.Box: 27524, Al Quos, Dubai, UAE.	Lab Report No.	WLRP20-1691/9Rev01
Contractor	N.G	Sample No.	WSP20-1691
Consultant	N.G	Date Received	23/06/2020
Client	N.G	Cast Date	29/06/2020
Project	N.G	Date Tested	07/07/2020
Sample Description	Apcoflor TC 510	Date Reported	07/07/2020
Sample Source	Berger Paints Emirates Ltd Co. L.L.C.	Test Temperature	23°C
Sample Identification	N.G	Relative Humidity	50%
Location (Structure Ref)	N.G	Sampling Date/Time	N.G
Test Method	ASTM C579-18	Age of the Specimen	7 Days
Sampling Procedure	ASTM C579-18	Specimen Size	50x50mm
Method used	Method B	Rate of load	Load rate (41MPa/minutes)
Specimen Thickness	50mm	Tested By	SU

Compressive Strength

Appearance of Specimen: Good

Sample No.	Length (mm)	Width (mm)	Height (mm)	Mass of Specimen (g)	Max. Load @ Failure (kN)	Compressive Strength (N/mm ²)	Type of Failure
WSP20-1691	50.0	50.0	50.0	214.0	190.5	76.2	SF
	50.0	50.0	50.0	211.0	179.5	71.8	SF
	50.0	50.0	50.0	216.0	186.0	74.4	SF
	Average Compressive Strength					74.1	SF

Remarks: None

Method Deviation: None

Signed for and on behalf of Wimpey Laboratories

S. Sarath Kumar
Senior Technician

Test results relate only to the samples tested.

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The above test was done by subcontracting

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TEST REPORT ON TENSILE STRENGTH

Client	Berger Paints Emirates Ltd Co. L.L.C. P.O.Box: 27524, Al Quos, Dubai, UAE		
Project Name	N.G	Lab Report No.	WLRP20-1691/10Rev01
Sample Description	Apcoflor TC 510	Sample No.	WSP20-1691
Source	Berger Paints Emirates Ltd Co. L.L.C.	Date Received	23/06/2020
Client's Ref.	N.G	Cast Date	29/06/2020
Test Method	ASTM C307-18	Curing Time	7 days
Sampling Method	ASTM C307-18	Date Tested	07/07/2020
Conditioning Procedure	7 days at 23°C including curing period in the mold	Date Reported	07/07/2020
Test Condition	Temperature: 23°C Relative Humidity: 50%	Tested By	SU

Test Result

Sample Reference	Width (mm)	Thickness (mm)	Max. Load @ Failure (N)	Tensile Strength (N/mm ²)
WSP20-1691	25.5	25.5	14175	21.8
	25.5	25.5	15931	24.5
	25.5	25.5	15671	24.1
	Average			23.5

Remarks: None

Signed for and on behalf of Wimpey Laboratories

S. Sarath Kumar
Senior Technician

Test results relate only to the samples tested.

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**TEST REPORT ON FLEXURAL STRENGTH**

Client	Berger Paints Emirates Ltd Co. L.L.C. P.O.Box: 27524, Al Quos, Dubai, UAE		
Project Name	N.G	Lab Report No.	WLRP20-1691/11Rev01
Sample Description	Apcoflor TC 510	Sample No.	WSP20-1691
Source	Berger Paints Emirates Ltd Co. L.L.C.	Date Received	23/06/2020
Client's Ref.	N.G	Cast Date	29/06/2020
Sampling Method	ASTM C580-18	Curing Time	7 days
Test Method	ASTM C580-18	Date Tested	07/07/2020
Method Used	Method A	Date Reported	07/07/2020
Conditioning Procedure	7 days at 23°C including curing period in the mold	Sample Ref.	N.G
Test Condition	Temperature: 23°C Relative Humidity: 50%	Tested By	SU

Test Results

Sample Reference	Span Length (mm)	Width (mm)	Thickness (mm)	Max. Load @ Failure (N)	Flexural Strength (N/mm ²)
WSP20-1691	230.0	25.0	25.0	2074	45.8
	230.0	25.0	25.0	2224	49.1
	230.0	25.0	25.0	2246	49.6
Average					48.2

Remarks: None.

Signed for and on behalf of Wimpey Laboratories

S. Sarath Kumar
Senior Technician

Test results relate only to the samples tested.

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The above test was done by subcontracting

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**TEST REPORT ON CHEMICAL RESISTANCE**

Client	Berger Paints Emirates Ltd Co. L.L.C. P.O.Box: 27524, Al Quos, Dubai, UAE		
Project Name	N.G	Lab Report No.	WLRP20-1691/12Rev01
Sample Description	Apcoflor TC 510	Sample No.	WSP20-1691
Source	Berger Paints Emirates Ltd Co. L.L.C.	Date Received	23/06/2020
Client's Ref.	N.G	Date Tested	11/07/2020
Sampling Method	ASTM D543-20	Date Reported	14/07/2020
Sample brought in by	Client	Sampling Date	N.G
Temperature & Relative Humidity	23°C & 50%	Tested By	AP

Test Result

Chemicals	Observation	Type of effect
Lactic Acid (20%)	No blistering, softening or dis-bonding observed	Resistant
Nitric Acid (5%)		
Acetic Acid (20%)		
Copper Sulphate (25%)		
Zinc Sulphate (25%)		
Tap Water		
Sea Water		
Ground Water		
Petrol		
Diesel		
Hydraulic oil		

Remarks: None**Signed for and on behalf of Wimpey Laboratories****S. Sarath Kumar**
Senior Technician

Test results relate only to the samples tested.

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-End of text-



Test Report on VOC

Issue Date: 25/3/2024

Customer name :	SCIB
Sample quantity	1 kg
Standards	ASTM D 6670-01
Roam temperature.	23°C
Roam relative humidity	50 %

Results of analysis

Sample	Test	Unit	Result	Recommendation
Apcoflor TC 510	VOC	g/l	16	pass



SPC Director

Prof. Dr. Ashraf EL-Said

Ashraf EL-Said
25-3-2024



NATIONAL RESEARCH CENTRE
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TO/ SCIB Chemicals S.A.E

Dear Sir.,

With correspondence to your request dated 14/12/2022 concerning the testing sample of Apcoflor TC 510 (sample no.1) , We would like to inform you that the all following needed tests were carried out which namely:

1- Compressive strength test according to ASTM C579

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

1- In all mechanical properties GALDABINI – QUASAR 600 – Made In Italy Universal Testing Machine was used This type has a self calibration , zero adjusting and automatic balance , which are done daily before testing or during testing this testing instrument is accompanied by a highly reliable system for evaluating the mechanical properties .

2-Measuring drum of sensitivity $\pm 0.01\text{mm}$ was used for dimensions evaluation.

3- On heating a Memmert West Germany oven was used .

4- Weighing Balance with tolerance $\pm 0.0001\text{ g}$ was used in determining the weights .

5- All used Machineries and apparatuses were calibrated periodically.

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

Compressive strength test according to ASTM C579

No.	Results (N/mm ²)	The mean value (N/mm ²)
1	79.87	82.24
2	81.01	
3	84.01	
4	83.94	
5	82.35	

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مباشر ٣٣٣٨٧٨٠٣

فاكس ١٤٢٤

داخلي ١٨١٠

٣٣٣٧١٦١٥ - ٣٣٣٧١٣٦٢
٣٧٦٠٧٥٤١ - ٣٣٣٥٥١٩٢



E-mail : nrc1302a@yahoo.com



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Test Report

Report No.	MO1 1642 05 2023
Client	Scib paints
Authority & date	Request Orders 11/5/2023
Items Tested	Apcoflor TC 510
Results	The detailed test results are given on the following pages of this report (4 pages).
Report Typist	* Mis. Sara Abdel Rehim – Naglaa Mohamed
Test carried and supervised by	* Mis . Fatma El – Zahraa Fikry * H.Eng. Ahmed Sayed * 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	21/5/2023
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 .



Test Results On a Sample of Apcoflor TC 510

Delivered from Scib paints

1- Tensile Strength Test & Elongation according to ASTM D638

No.	Tensile St. (N/mm ²)	Elongation (%)
1	28.71	2.52
2	26.93	1.99
3	26.81	2.71
4	26.51	2.47
5	27.39	2.66
The mean value	27.27	2.47

2- Flexural Strength Test & modulus of elasticity

according to ASTM C580

No.	Flexural St. (N/mm ²)	Modulus of elasticity (N/mm ²)
1	34.83	1040
2	36.71	1110
3	33.21	1061
4	36.01	980
5	33.70	1010
The mean value	34.892	1040.2





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This report was given to you representing only the results for testing sample of Apcoflor TC 510 , 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 .

These results represent only the delivered sample and not any stored or produced quantities for any other purpose or project, Unauthorized reproduction of this report or any copy of it by any way or for any target is prohibited.

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

**SUPERVISOR
OF Material Test Lab.**

PROF.DR. MOSTAFA ZAKI MOSTAF



2073





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To / Scib paints

Dear Sir.,

With correspondence to your request dated 11/5/2023 concerning the testing Sample of Apcoflor TC 510, We would like to inform you that the all following needed tests were carried out namely :-

1- Tensile Strength Test & Elongation according to ASTM D638

2- Flexural Strength Test & modulus of elasticity according to ASTM C580

We would like to inform you that the all needed tests were carried out taking into consideration the following conditions :

1-In all mechanical properties GALDABINI –QUASAR 600- Testing Machine was used This type of GALDABINI has a self calibration , zero adjusting and automatic balance , which are done daily before testing or during testing this testing instrument is accompanied by a highly reliable system for evaluating the mechanical properties.

2-Weighing Balance with tolerance+0.0001gwas used in determining the weights

3-Measuring drum of sensitivity+0.01mm was used for dimensions evaluation

4- The all used Machinery and the apparatus were calibrated periodically .

The following tables give the obtained results representing the sample Delivered from your company.



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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The test results relate only to the samples tested.