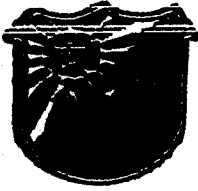


# Product Test Certificates

# Test Certificates

**2004**



Civil Engineering Testing Center  
College of Engineering & Petroleum  
Kuwait University  
P.O. Box 5909 Safat, 13000 Kuwait  
Tel/Fax: 488895

Report No. : CETC2290/11/2004  
Date : 12/12/2004  
Page:1/2

To : شركة النجم المراد الخصوصية  
From : Civil Engineering Testing Center (CETC)  
College of Engineering  
Kuwait University

Dear Sir

We here by report the results requested by you according to the following information :

REPORT : CETC2290/11/2004  
TEST : Membrane Shield Protection Board  
STANDARD : As Enclosed  
CLIENT NAME : شركة عوازل الكويت  
TESTED FOR : شركة النجم المراد الخصوصية  
PROJECT NAME : AVENUE  
CONTRACT NO. : N.A  
NO OF PAGES : 2

**SAMPLES DELIVERED, STATE AND NUMBER:**

One Membrane Shield Protection Board Sample in Good Condition.

**INFORMATION PROVIDED BY SUPERVISION :**

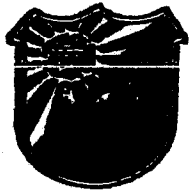
Source : شركة صناعة العزل المراد بالخصوصية

Product : M.S.60

Best regards

Eng. Moh'd Rabi Morally  
CETC Manager





Civil Engineering Testing Center  
College of Engineering & Petroleum  
Kuwait University  
P.O. Box 5989 Safat, 13000 Kuwait  
Tel/Fax : 4818495

Report No. : CETC2290/11/2004

Date : 12/12/2004

Page : 2/2

## Test of Membrane Shield Protection Board

1- Mass per Unit Area (ASTM D146-04) : 6.945 kg/m<sup>2</sup>

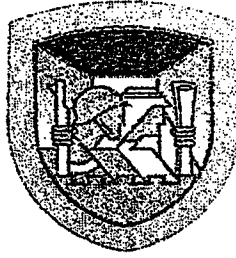
2- Thickness (DIN 52123-85):

Specimen #	Thickness (mm)
1	6.12
2	6.30
3	6.09
4	6.08
5	6.17
6	6.27
Avg.	6.17



# Test Certificates

**2007**



STATE OF KUWAIT  
MINISTRY OF DEFENCE  
MILITARY ENGINEERING PROJECTS

دولة الكويت  
وزارة الدفاع  
هندسة المنشآت العسكرية

تقرير فحص  
Test Report

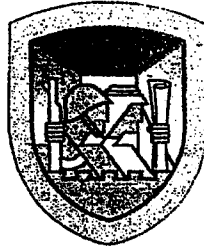
Serial Number	74210 PH 00033	رقم الإشارة
Date of Reporting	2007/04/11	تاريخ التقرير
Contractor/Client	شركة بيت البناء الكويتي	المتعهد / العميل
Project Name	جمعية الفحاحيل	اسم المشروع
Project Address	الفحاحيل	موقع المشروع
Contract No.	-	رقم العقد
Supervision Site	مكتب عبدالعزيز سعود الفليح	جهة الإشراف
Description & Identification / Condition of Sample(s)	لوحة عازل رطوبة (حماية) عدد ( 1 ) سماكة 6 ملم المصدر : شركة عوازل السعودية	وصف / تمييز العينة/ حالة العينة
	-	
	-	
	-	
Date of Test Request	2007/03/26	تاريخ الطلب
Request NO.	MOD - LABS - 1368/A	رقم الطلب
Total Number of Pages including this page	( 2 ) صفحات	عدد صفحات التقرير بما فيها هذه الصفحة

Laboratory Controller

عاقب المخبرات

عماد يوسف الشطي





دولة الكويت  
وزارة الدفاع  
هندسة المنشآت العسكرية

74210 PH 00033	: الاشارة
2007/04/11	: تاريخ النتيجة
-	: رقم العقد
شركة بيت البناء الكويتي	: المتعهد
2007/03/26	: تاريخ الطلب

## TEST OF MEMBRANE SHIELD

UEAtc August 1984

ID : MOD - LABS - 1368 / A

DESCRIPTION	TRIAL No.	TRIAL 1	TRIAL 2	TRIAL 3	AVERAGE	NOMINAL	TOLERANCE
OVERALL LENGTH	(m)	2.000	2.005	2.005	2.003	2	± 1% from nominal
OVERALL WIDTH	(m)	1.000	1.000	0.998	0.999	1	±1% from nominal
MASS PER UNIT AREA	(kg/m <sup>2</sup> )	7.83	7.84	8.16	7.94	7.0	± 10% from nominal <sup>§</sup> ± 15% from nominal <sup>#</sup>
THICKNESS	(mm)	5.8				6.0	± 5% from nominal, max. deviation 0.2 mm

### REMARKS :

<sup>§</sup> Tolerance for sheets without their own protection granules : ± 10% from the nominal.

<sup>#</sup> Tolerance for sheets with their own protection granules : ± 15% from the nominal.

Source : AWAZEL, Saudi Arabia

مراقب المختبرات  
عماد يوسف الشطي

النتائج تمثل العينات المقدمة للفحص فقط



# Test Certificates

2009





مركز الفحوصات الهندسية والمخبرية والمعايرة  
Center of Engineering, Laboratory  
Testing & Calibrations

# Center of Engineering, Laboratory Testing & Calibrations

## مركز الفحوصات الهندسية والمخبرية والمعايرة



Kuwait University  
College of  
Engineering & Petroleum

To : MPW  
From : Center of Engineering, Laboratory Testing & Calibrations  
College of Engineering & Petroleum  
Kuwait University

Ref. : 14479  
Report : CELTC 100757/10/2009  
Date : 07/10/2009  
Page : [1 / 2 ]

Dear Sir,

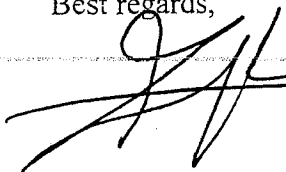
Please find attached the requested report according to the information below, and as per reporting department.

Report : CELTC 100757/10/2009  
Test : Awazel Membrane Shield 60  
Standard : As Enclosed  
Client Name : Combined Group Contracting Co.  
Tested For : MPW  
Project Name: Airport Baxculvert  
Contract No. : N.A  
No. of Pages : 2

Sample Delivered, State & Number:  
Awazel Membrane Shield 60 Sample in Good Condition.

Information Provided by Supervision:  
N.A

Best regards,

  
Dr. Ammar Ben-Nakhi  
CELTC Manager



I hereby certify that I have received & accepted all results as complete, and find this report to fulfill all requested services.

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: 14/10/09  
No. of Pages: \_\_\_\_\_

( في حالة قيام المركز بعمل فحوصات لدى طرف ثالث، فإن الطرف الثالث يتحمل مسؤولية نتائج هذه الفحوصات )



مركز الفحوصات الهندسية والمخبرية والمعايرة  
Center of Engineering, Laboratory  
Testing & Calibrations

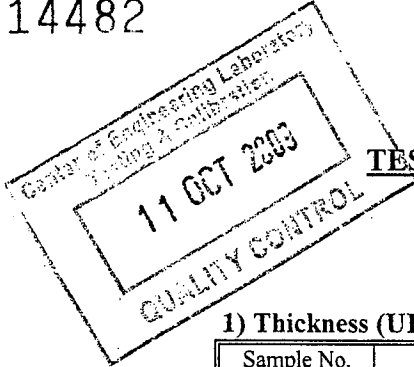
14482

# Center of Engineering, Laboratory Testing & Calibrations

مركز الفحوصات الهندسية والمخبرية والمعايرة



Kuwait University  
College of  
Engineering & Petroleum



## TEST OF AWAZEL MEMBRANE SHIELD 60 PROTECTION BOARD

Test No: T-57  
Date: 8/10/2009  
Page 2/2

### 1) Thickness (UEAtc M.O.A.T.30) :

Sample No.	Thickness (mm)
1	6.37
2	6.23
3	6.21
4	6.44
5	6.28
Average	6.31

### 2) Density (UEAtc M.O.A.T.30) :

Sample No.	Density (g/cm <sup>3</sup> )
1	1.49
2	1.48
3	1.47
Average	1.48





مركز الهندسة والاختبار  
Center of Engineering, Laboratory  
Testing & Calibrations

## Center of Engineering, Laboratory Testing & Calibrations

### مركز الفحوصات الهندسية والمخبرية والمطابقة



Kuwait University  
College of  
Engineering & Petroleum

To : وزارة الأشغال العامة  
From : Center of Engineering, Laboratory Testing & Calibrations  
College of Engineering & Petroleum  
Kuwait University

Ref. : 16936  
Report : CELTC 122237/12/2009  
Date : 28/12/2009  
Page : [1 / 2]

Dear Sir,

Please find attached the requested report according to the information below, and as per reporting department

Report : CELTC 122237/12/2009  
Test : Bituminous Protection Board Test  
Standard : As Enclosed  
Client Name : شركة بدر الملا واخوانه / شركة خاجه للمواد الخصوصيه  
Tested For : وزارة الأشغال العامة  
Project Name : العقيلة - قطعة 3 - مدرسه ثانويه بنون  
Contract No. : 215/م.ا  
No. of Pages : 2

Sample Delivered, State & Number:

Bituminous Protection Board Samples in Good Condition.

Information Provided by Supervision:

N.A

Best regards,

Dr. Ammar Ben-Nakhi  
CELTC Manager



I hereby certify that I have received & accepted all results as complete, and find this report to fulfill all requested services.

Name: خاريف سعيد العيسى Signature: [Signature] Date: 20/1/2010  
No. of Pages: 2

(في حالة قيام المركز بعمل فحوصات لدى طرف ثالث، فإن الطرف الثالث يتحمل مسؤولية نتائج هذه الفحوصات)



# Center of Engineering, Laboratory Testing & Calibrations

مركز الفحوصات الهندسية والمخبرية والمعايرة



Kuwait University  
College of  
Engineering & Petroleum

مركز الفحوصات الهندسية والمخبرية والمعايرة  
Center of Engineering, Laboratory  
Testing & Calibrations

16936

## Test on Awazel Bituminous Protection Board

27 DEC 2009  
CONTROL

Test No: T-237  
Date: 27/12/2009  
Page: 2/2

1- Average thickness (UEAtc M.O.A.T.30): 5.57 mm

### 2-Test on Board Size:

Specimen No	Length (mm)	Width (mm)
1	199.5	100.0
2	200.0	100.0
3	199.5	100.0
Avg.	199.7	100.0

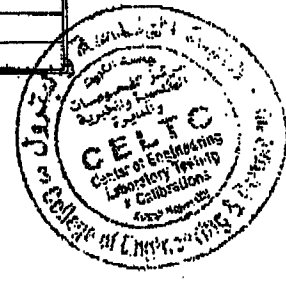
### 3-Density (UEAtc M.O.A.T.30):

Specimen No	Dry Wt.(gm)	Wt. in Water(gm)	Density (g/cc)
1	10.46	2.60	1.33
2	10.06	2.29	1.29
3	10.35	2.25	1.28
Avg.	10.29	2.38	1.30

4- Mass per unit area (UEAtc M.O.A.T.30): 5297 g/m<sup>2</sup>

### 5- Softening point (ASTM D-36):

Specimen No	Temperature °C
1	123.0
2	123.5
Avg.	123.3



# Test Certificates

2010



**DEPARTMENT OF BUILDING AND ENERGY TECHNOLOGIES  
KUWAIT INSTITUTE FOR SCIENTIFIC RESEARCH  
P.O. Box 24885**

**13109-Safat-Kuwait**

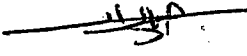
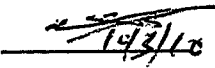
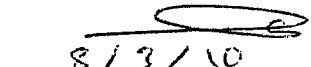
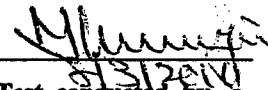
**TEL: 24989101, 24989129, FAX: 24989099.**

**LABORATORY TESTING REPORT**

**TEST REPORT NO. 45/2010.**

**Client** : Awazel Kuwait Co.  
**Sample** : Water Proofing Membrane, MS 60; Product from Saudi Awazel Co.  
**Date** : 8<sup>th</sup> March, 2010.  
**Tests Performed** : - Board Thickness.  
- Unit Weight of Board.  
- Density.  
- Puncture Resistance.

The results in this report relate to the samples  
submitted by the client and to no other.

 <u>31-3-2010</u>	 <u>14/3/10</u>	 <u>8/3/10</u>	 <u>07/3/2010</u>
<b>Approved by</b> f/ <b>DM/BET</b>	<b>Lab Supervisor</b> <b>Eng. Ali M. Ali</b>	<b>Checked and Verified by</b> <b>Mr. Amer Alarbeed</b>	<b>Test conducted by</b> <b>Mr. Tarun K. Mukherjee</b>

**No Liability**

Neither Kuwait Institute for Scientific Research nor its employees give any warranty, expressed or implied, or assumes any legal liability for the accuracy and utility of any information, material, output, process or data disclosed. They do not suggest that its use would not infringe upon privately or publicly owned rights.



**DEPARTMENT OF BUILDING AND ENERGY TECHNOLOGIES**  
**KUWAIT INSTITUTE FOR SCIENTIFIC RESEARCH**  
**LABORATORY TESTING RESULTS**

**Client** : Awazel Kuwait Co.


**Test** : Board Thickness, UEATC M.O.A.T 30.

**Sample** : Water Proofing Membrane, MS 60; Product from Saudi Awazel Co.


**Procedure** : Standard procedure of UEATC M.O.A.T 30 was applied on specimens cut out from the received sample.

**Results** :

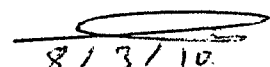
Thickness (mm)	
Readings	Average
6.20 – 6.10 – 6.30 – 6.20 – 6.20	6.00
5.90 – 5.80 – 5.80 – 6.10 – 5.90	
6.20 – 5.89 – 5.87 – 5.96 – 6.00	
6.01 – 5.93 – 5.86 – 5.87 – 5.88	

  
31.3.2010

f/ Approved by  
DM/BET

  
16/3/10

Lab Supervisor  
Eng. Ali M. Ali

  
8/3/10

Checked and Verified by  
Mr. Amer Alarbeed

  
31/3/2010

Test conducted by  
Mr. Tarun K. Mukherjee

**No Liability**


Neither Kuwait Institute for Scientific Research nor its employees give any warranty, expressed or implied, or assumes any legal liability for the accuracy and utility of any information, material, output, process or data disclosed. They do not suggest that its use would not infringe upon privately or publicly owned rights.





**DEPARTMENT OF BUILDING AND ENERGY TECHNOLOGIES**  
**KUWAIT INSTITUTE FOR SCIENTIFIC RESEARCH**  
**LABORATORY TESTING RESULTS**

**Client** : Awazel Kuwait Co.  
**Test** : Unit Weight of Board, UEATC M.O.A.T 30.  
**Sample** : Water Proofing Membrane, MS 60; Product from Saudi Awazel Co.  
**Procedure** : Standard procedure of UEATC M.O.A.T 30 was applied on specimens cut out from the received sample.  
**Results** :

Unit Weight of Board =  $7.7 \text{ kg/m}^2$

  
31. 2010  
f/ Approved by  
DM/BET

  
16/3/10  
Lab Supervisor  
Eng. Ali M. Ali

  
8/3/10  
Checked and Verified by  
Mr. Amer Alarbeed

  
5/3/2010  
Test conducted by  
Mr. Tarun K. Mukherjee

**No Liability**

Neither Kuwait Institute for Scientific Research nor its employees give any warranty, expressed or implied, or assumes any legal liability for the accuracy and utility of any information, material, output, process or data disclosed. They do not suggest that its use would not infringe upon privately or publicly owned rights.





**DEPARTMENT OF BUILDING AND ENERGY TECHNOLOGIES**  
**KUWAIT INSTITUTE FOR SCIENTIFIC RESEARCH**  
**LABORATORY TESTING RESULTS**

**Client** : Awazel Kuwait Co.

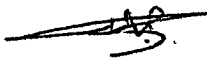
**Tests** : Density, UEATC M.O.A.T 30.


**Sample** : Water Proofing Membrane, MS 60; Product from Saudi Awazel Co.

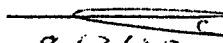
**Procedure** : Standard procedure of UEATC M.O.A.T 30 was applied on specimens cut out from the received sample.

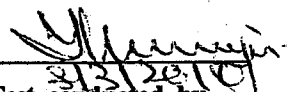
**Results** :

Specimen No.	Density (g/cc)
1	1.34
2	1.35
3	1.35
<b>Average</b>	<b>1.35</b>

  
31.3.2010  
Approved by  
f/ DM/BET

  
10/3/10  
Lab Supervisor  
Eng. Ali M. Ali

  
8/3/10  
Checked and Verified by  
Mr. Amer Alarbeed

  
31/3/2010  
Test conducted by  
Mr. Tarun K. Mukherjee

**No Liability**

Neither Kuwait Institute for Scientific Research nor its employees give any warranty, expressed or implied, or assumes any legal liability for the accuracy and utility of any information, material, output, process or data disclosed. They do not suggest that its use would not infringe upon privately or publicly owned rights.



**DEPARTMENT OF BUILDING AND ENERGY TECHNOLOGIES**  
**KUWAIT INSTITUTE FOR SCIENTIFIC RESEARCH**  
**LABORATORY TESTING RESULTS**

**Client** : Awazel Kuwait Co.

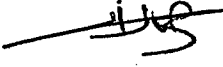
**Tests** : Puncture Resistance; ASTM E 154.

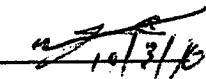
**Sample** : Water Proofing Membrane, MS 60; Product from Saudi Awazel Co.


**Procedure** : Standard procedure of ASTM E 154, was applied on specimens cut out from the original sheet submitted by client.

**Results** :

Specimen No.	Puncture Strength (N)	Deformation at Peak (mm)
1	680	19
2	700	19
<b>Average</b>	<b>690</b>	<b>19</b>

  
31.3.2010  
Approved by  
f/ DM/BET

  
10/3/10  
Lab Supervisor  
Eng. Ali M. Ali

  
8/3/10  
Checked and Verified by  
Mr. Amer Alarbeed

  
31/3/2010  
Test conducted by  
Mr. Tarun K. Mukherjee

**No Liability**

Neither Kuwait Institute for Scientific Research nor its employees give any warranty, expressed or implied, or assumes any legal liability for the accuracy and utility of any information, material, output, process or data disclosed. They do not suggest that its use would not infringe upon privately or publicly owned rights.

To : المؤسسة العامة للرعاية السكنية  
From : Center of Engineering, Laboratory Testing & Calibrations  
College of Engineering & Petroleum  
Kuwait University

Ref. : 16488  
Report : CELTC 022110192  
Date : 15/03/2010  
Page : [1 / 2]

Dear Sir,

إدارة ضبط الجودة  
صادر / / ٢٠  
نتائج

إدارة ضبط الجودة  
وارد / ٣ / ٢٠١٠  
نتائج

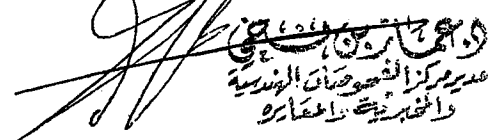
Please find attached the requested report according to the information below, and as per reporting department.

Report : CELTC 022110192  
Test : Bituminous Protection Board Test  
Standard : As Enclosed  
Client Name : شركة عوازل الكويت  
Tested For : المؤسسة العامة للرعاية السكنية  
Project Name : جابر الاحمد  
Contract No. : 1137/2009-2010  
No. of Pages : 2

Sample Delivered, State & Number:  
One Bituminous Protection Board Sample in Good Condition.

Information Provided by Supervision:  
N.A

Best regards,

  
مدير مركز الفحوصات الهندسية  
والمخبرية والمعايرة

Dr. Arimar Ben-Nakhi  
CELTC Manager





مركز القياسات الهندسية والمخبرية و  
Center of Engineering, Laboratory  
Testing & Calibrations

# Center of Engineering, Laboratory Testing & Calibrations

## مركز القياسات الهندسية والمخبرية والمعايرة



Kuwait University  
College of  
Engineering & Petroleum

### Test of Bituminous protection board

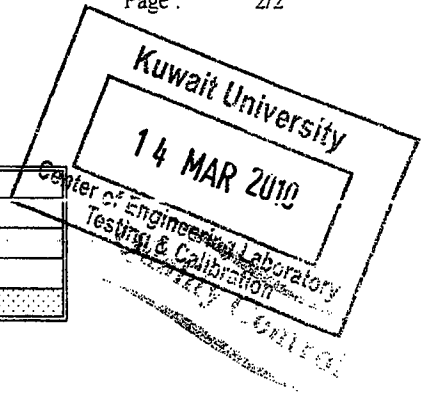
16488

Test No : T-192  
Date : 14/03/2010  
Page : 2/2

- 1- Average thickness (UEAtc M.O.A.T.30) : 5.97 mm
- 2- Mass per unit area (UEAtc M.O.A.T.30) : 7668 g/m<sup>2</sup>
- 3- Board size(UEAtc M.O.A.T.30) : Length=199 cm  
Width =100 cm

4- Density (UEAtc M.O.A.T.30) :

Specimen No	Density(gm/cm <sup>3</sup> )
1	1.312
2	1.356
3	1.347
Avg.	1.338



5- Softening point (ASTM D-36) :

Specimen No	Temperature °C
1	153.0
2	153.5
Avg.	153.3





مركز الهندسة والاختبار والمعايرة  
Center of Engineering, Laboratory  
Testing & Calibrations

# Center of Engineering, Laboratory Testing & Calibrations

## مركز الفحوصات الهندسية والمخبرية والمعايرة



Kuwait University  
College of  
Engineering & Petroleum

To : دار مازن الصانع للاستشارات الهندسية  
From : Center of Engineering, Laboratory Testing & Calibrations  
College of Engineering & Petroleum  
Kuwait University

Ref. : 28368  
Report : CELTC 080110009  
Date : 05/08/2010  
Page : [ 1 / 2 ]

Dear Sir,

Please find attached the requested report according to the information below, and as per reporting department.

Report : CELTC 080110009  
Test : Bituminous Production Boards  
Standard : As Enclosed  
Client Name : شركة الدار للهندسة والإنشاءات  
Tested For : دار مازن الصانع للاستشارات الهندسية  
Project Name : امغره الصناعيه - جابر الاحمد  
Contract No. : RA/155  
No. of Pages : 2

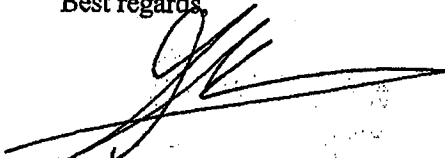
Sample Delivered, State & Number:

Bituminous Production Boards (MS60, KSA) Sample in Good Condition.


Information Provided by Supervision:

N.A

Best regards,

  
Dr. Ammar Ben-Nakhi  
CELTC Manager



انتهت صحت  




مركز الفحوصات الهندسية والمخبرية والمعايرة  
Center of Engineering, Laboratory  
Testing & Calibrations

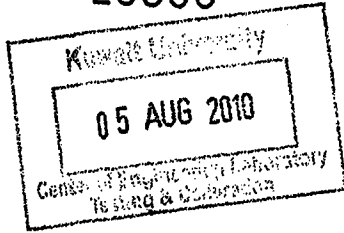
# Center of Engineering, Laboratory Testing & Calibrations

## مركز الفحوصات الهندسية والمخبرية والمعايرة



Kuwait University  
College of  
Engineering & Petroleum

28368

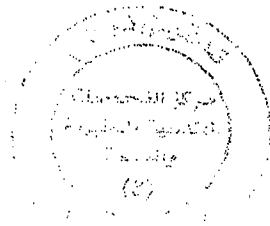


### Test of Bituminous Production Boards Membrane Shield 60 (MS60)

Test No : T-09  
Date : 04/08/2010  
Page : 2 / 2

#### 1- Thickness (DIN 52123) :

Specimen No	Thickness (mm)
1	6.730
2	6.190
3	6.030
4	6.360
5	5.900
6	6.090
7	6.010
8	6.060
9	6.220
10	6.040
Avg.	6.163



# Test Certificates

**2011**



مركز الفحوصات الهندسية والمخبرية والمعايرة  
Center of Engineering, Laboratory  
Testing & Calibrations

# Center of Engineering, Laboratory Testing & Calibrations

## مركز الفحوصات الهندسية والمخبرية والمعايرة



Kuwait University  
College of  
Engineering & Petroleum

To : مكتب دار الاستشارات الفنية  
From : Center of Engineering, Laboratory Testing & Calibrations  
College of Engineering & Petroleum  
Kuwait University

Ref. : 27686  
Report : CELTC 022111070  
Date : 08/03/2011  
Page : [1 / 2 ]

Dear Sir,

Please find attached the requested report according to the information below, and as per reporting department.

Report : CELTC 022111070

Test : Awazel Protection Board

Standard : As Enclosed

Client Name : شركة عوازل الكويت

Tested For : مكتب دار الاستشارات الفنية

Project Name : مشروع بيت التمويل

Contract No. : N.A

No. of Pages : 2

Sample Delivered, State & Number:

Awazel Protection Board (MS60) in Good Condition.

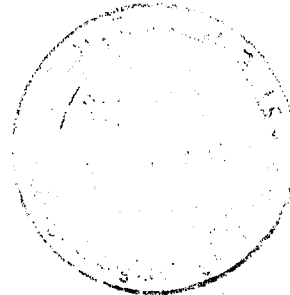
Information Provided by Supervision:

N.A.

Best regards,

**AbdulAzim H. Falah, PH.D.**  
Manager  
Center of Engineering, Laboratory  
Testing & Calibration

Dr. Abdulazim H. Falah  
CELTC Manager







27686

Test of AWAZEL  
PROTECTION BOARD MS60

Test No : T -70  
Date : 2/03/2011  
Page : 2/2



1- Average thickness (UEATC M.O.A.T 30) 6.34 mm

2- Mass per unit area (UEATC M.O.A.T 30) 9324 g/m<sup>2</sup>

3- Board size (UEATC M.O.A.T 30): 1.96 m x 1.0 m

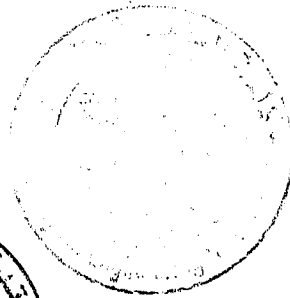
4- Density, g/cc (UEATC M.O.A.T 30) :

Specimen No	Density
1	1.47
2	1.49
3	1.48
4	1.49
Avg.	1.4825

5- Puncture resisane(ASTM E-154)

Specimen No.	Max Load(N)
1	585.5
2	620.5
Avg.	603

Quality Control





مركز الهندسة والمختبر والمعايرة  
Center of Engineering, Laboratory  
Testing & Calibrations

# Center of Engineering, Laboratory Testing & Calibrations

## مركز الفحوصات الهندسية والمختبر والمعايرة



Kuwait University  
College of  
Engineering & Petroleum

Received  
Al-Enma'a Real State Co.  
Al-Enma'a Real State Co.  
Al-Enma'a Real State Co.  
11 MAY 2011  
Time: 1:30 Pm  
Rec. By: [Signature]

[Signature]

To : وزارة الأشغال العامة  
From : Center of Engineering, Laboratory Testing & Calibrations  
College of Engineering & Petroleum  
Kuwait University

Ref. : 27242  
Report : CELTC 050211013  
Date : 10/05/2011  
Page : [1 / 2]

Dear Sir,

Please find attached the requested report according to the information below, and as per reporting department.

Report : CELTC 050211013  
Test : Test of Protection Board.  
Standard : As Enclosed  
Client Name : شركة الإنماء العقارية  
Tested For : وزارة الأشغال العامة  
Project Name: القرين - مبارك الكبير  
Contract No. : 250 / أ  
No. of Pages : 2

Sample Delivered, State & Number:  
Protection Board Sample in Good Condition.

Information Provided by Supervision:  
N.A.

Best regards,  
AbdulAzim H. Falah, PH.D.  
Manager  
Center of Engineering, Laboratory  
Testing & Calibration  
Dr. Abdulazim H. Falah  
CELTC Manager



Document Controller

Date: 11/05/2011



مركز القياسات الهندسية والمختبرية  
Center of Engineering, Laboratory  
Testing & Calibrations

# Center of Engineering, Laboratory Testing & Calibrations

## مركز القياسات الهندسية والمختبرية



Kuwait University  
College of  
Engineering & Petroleum

27242

### TEST OF PROTECTION BOARD

Test No : T-13  
Date : 8/5/2011  
Page : 2/2

10 MAY 2011  
Quality Control

1- Average thickness (UEAtc M.O.A.T.30) :

6.11 mm

2- Water absorption (ASTM D-570) :

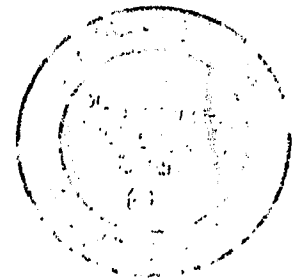
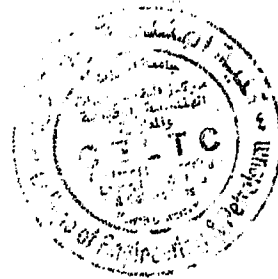
Specimen No	Water Absorption (%)
1	0.154
2	0.165
3	0.133
Avg.	0.151

3- Asphalt content (ASTM D-2172) :

Specimen No.	Original wt. (gm)	polyster wt. ( gm)	Asphalt content (%)
1	84.251	2.074	97.538
2	84.366	2.286	97.290
Avg.	84.309	2.180	97.414

4- Puncture resistance (ASTM E-154) :

Specimen No.	Puncture resistance (N)
1	589.0
2	589.5
Avg.	589.3



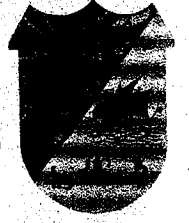
# Test Certificates

2012



# Center of Engineering Laboratories For Testing & Calibration

## مركز الفحوصات الهندسية والمخبرية والمعايرة



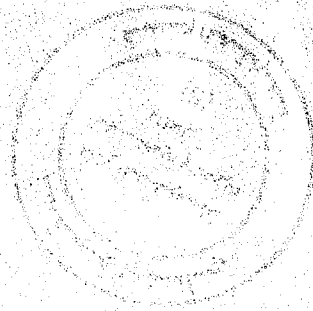
### Test of Awazel Membrane Shield 30

Client Name : Al-Hamra Kuwait Company  
Test For : Al-Hamra Kuwait Company  
Project Name : The Avenues Phase III  
Contract No. : N.A.

Report No. : 120512028  
Date : 18/12/2012  
Page : [ 1 / 1 ]

Sample Description : Awazel Membrane Shield 30 Sample in Good Condition.

Test Name	Units	Results					Average	Standard
		1	2	3	4	5		
- Thickness:	mm	3.17	3.18	3.26	3.14	3.12	3.17	UEAtc, M.O.A.T 30
- Unit Weight:	kg/m <sup>2</sup>	3.55	-	-	-	-	3.55	
- Puncture Resistance:	N	530.00	460.00	-	-	-	495.00	ASTM D154



Dr. Ammar Ben-Nakhi  
CELTC Manager

Dr. Ammar E. Ben-Nakhi  
Manager

Center of Engineering  
Laboratories For Testing & Calibrations

Kuwait University will not be held liable for consequent action based upon the results so obtained in this report

www.celtc.eng.kuniv.edu - Tel.: (965) 2498 7357 - 2498 5975 - Fax: (965) 2481 8495 - P.O.Box: 5969 Safat 13060 Kuwait

000400



# Test Certificates

2013



# Center of Engineering Laboratories For Testing & Calibration

## مركز الفحوصات الهندسية والمخبرية والمعايرة



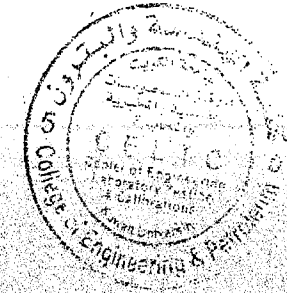
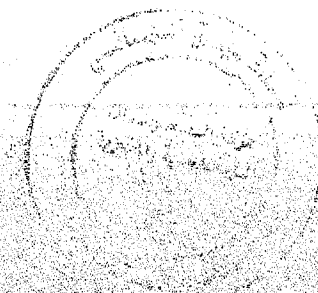
### Test of Membrane Shield MS-60

Client Name : شركة الامراء للتجاره العامه والمقاولات  
Test For : وزارة الاشغال العامه - مشروع تعريب العلوم  
Project Name : مركز تعريب العلوم  
Contract No. : 264 هـ م أ

Report No. : 021313071  
Date : 04/03/2013  
Page : [ 1 / 1 ]

Sample Description : Membrane Shield MS-60 Samples in Good Condition.  
الواح حماية من منتج شركة عوازل السعوديه

Test Name	Units	Results					Average	Standard
		1	2	3	4	5		
- Thickness:	mm	6.60	6.49	6.22	5.86	5.98	6.23	UEAtc M.O.A.T.30
- Unit Weight:	kg/m <sup>2</sup>	7.14	-	-	-	-	7.14	
- Density:	g/cc	1.19	1.21	1.21	1.21	-	1.21	
Softening Point (R&B)	°C	85.00	86.00	-	-	-	85.50	ASTM D-36
- Puncture Resistance:	N	590.00	582.00	-	-	-	586.00	ASTM E-154



Dr. Ammar Ben-Nakhi  
CELTC Manager

Dr. Ammar E. Ben-Nakhi

Engineering  
Laboratory Testing & Calibrations

Kuwait University will not be held liable for consequent action based upon the results so obtained in this report

www.celtc.eng.kuniv.edu - Tel: (965) 2498 7357 - 2498 5975 - Fax: (965) 2481 8495 - P.O.Box: 5969 Safat 13060 Kuwait

001149





# Center of Engineering Laboratories For Testing & Calibration

مركز الفحوصات الهندسية والمخبرية والمعايرة



إدارة ضبط الجودة  
صادر / / ٢٠١٣  
نتائج

## Test of Bituminous Protection Board MS-60

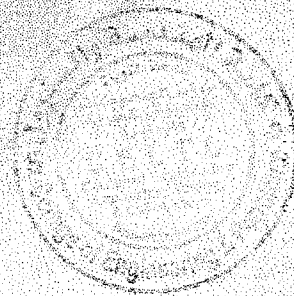
إدارة ضبط الجودة  
وارد / ٨ / ٢٠١٣  
نتائج

Client Name : شركة الراية للإنشاءات  
Test For : المؤسسة العامة للرعاية السكنية  
Project Name : مشروع شمال غرب الصليبخات  
Contract No. : م.ع.ز.س. / ع/ 1193-2013/2012

Report No. : 072313107  
Date : 04/08/2013  
Page : [ 1 / 1 ]

Sample Description : Bituminous Protection Board Sample in Good Condition.

Test Name	Units	Results					Average	Standard
		1	2	3	4	5		
- Thickness:	mm	6.05	5.91	5.97	6.26	6.10	6.06	UEAtc M.O.A.T.30
- Unit Weight:	kg/m <sup>2</sup>	7.22	7.23	7.11	-	-	7.19	
- Density:	gm/cc	1.23	1.21	1.25	-	-	1.23	
- Puncture Resistance:	N	1009	952	-	-	-	980	ASTM E-154



Dr. Ammar Ben-Nakhi  
CELTC Manager

Dr. Ammar E. Ben-Nakhi

Manager  
Center of Engineering  
Laboratories for Testing & Calibrations

003178



Kuwait University will not be held liable for consequent action based upon the results so obtained in this report

www.celtc.eng.kuniv.edu - Tel.: (965) 2498 7357 - 2498 5975 - Fax: (965) 2481 8495 - P.O.Box: 5969 Safat 13060 Kuwait



**STATE OF KUWAIT  
MINISTRY OF DEFENCE  
MILITARY ENGINEERING PROJECTS**



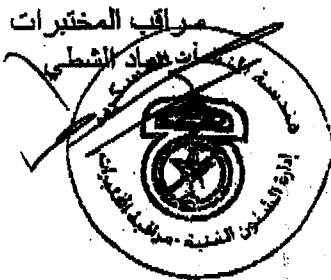
**دولة الكويت  
وزارة الدفاع  
هندسة المنشآت العسكرية**

**تقرير فحص**

**Test Report**

Serial Number	BS/PL - 13682911	رقم الإثارة
Date of Reporting	2013/09/04	تاريخ التقرير
Contractor/Client	شركة سديم الكويت للتجارة العامة والمقاولات	المتعهد / العميل
Project Name	مركز ضاحية أبو فطيرة	اسم المشروع
Project Address	أبو فطيرة	موقع المشروع
Contract No.	(م م أ / 265)	رقم العقد
Supervision Site	وزارة الأشغال	جهة الإشراف
Description & Identification / Condition of Sample(s)	عدد 1 لوح حماية نوع صوالح 6 ملم الاسم التجاري : MS60 المصدر : سعودي	وصف / تمييز العينة/حالة العينة
Date of Test Request	2013/08/29	تاريخ الطلب
Request NO.	R 13082911	رقم الطلب
Total Number of Pages including this page	(2)	عدد صفحات التقرير بما فيها هذه الصفحة

Laboratory Controller



Page 1 of 2

Test reports shall not reproduced except in full, without written approval of the laboratory.



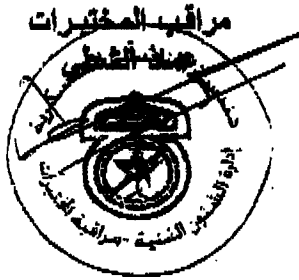
BS/PL 13082911	: الاشارة
2013/08/04	: تاريخ النتيجة
265 / أ	: رقم الطلب
	: المتعهد : شركة سديم الكويت للتجارة العامة
2013/08/29	: تاريخ الطلب

**MEMBRANE SHIELD TEST**

ID:R 13082911

Properties	Typical Results					Technical Data Results for MS 60
	R1	R2	R3	R4	R5	
Board Thickness (mm)	6.1	6.0	6.1	6.1	6.2	6.0
Unit Weight of Board(kg/m <sup>2</sup> )	6.7	6.8	6.8	6.7	6.7	6.7
Board size (Standard)	1.98 x 1.01					2 x 1
Density (g /cm <sup>3</sup> )	1.11					1.10-1.20

REMARKS:



النتائج تمثل العينات المقامة للفحص فقط

