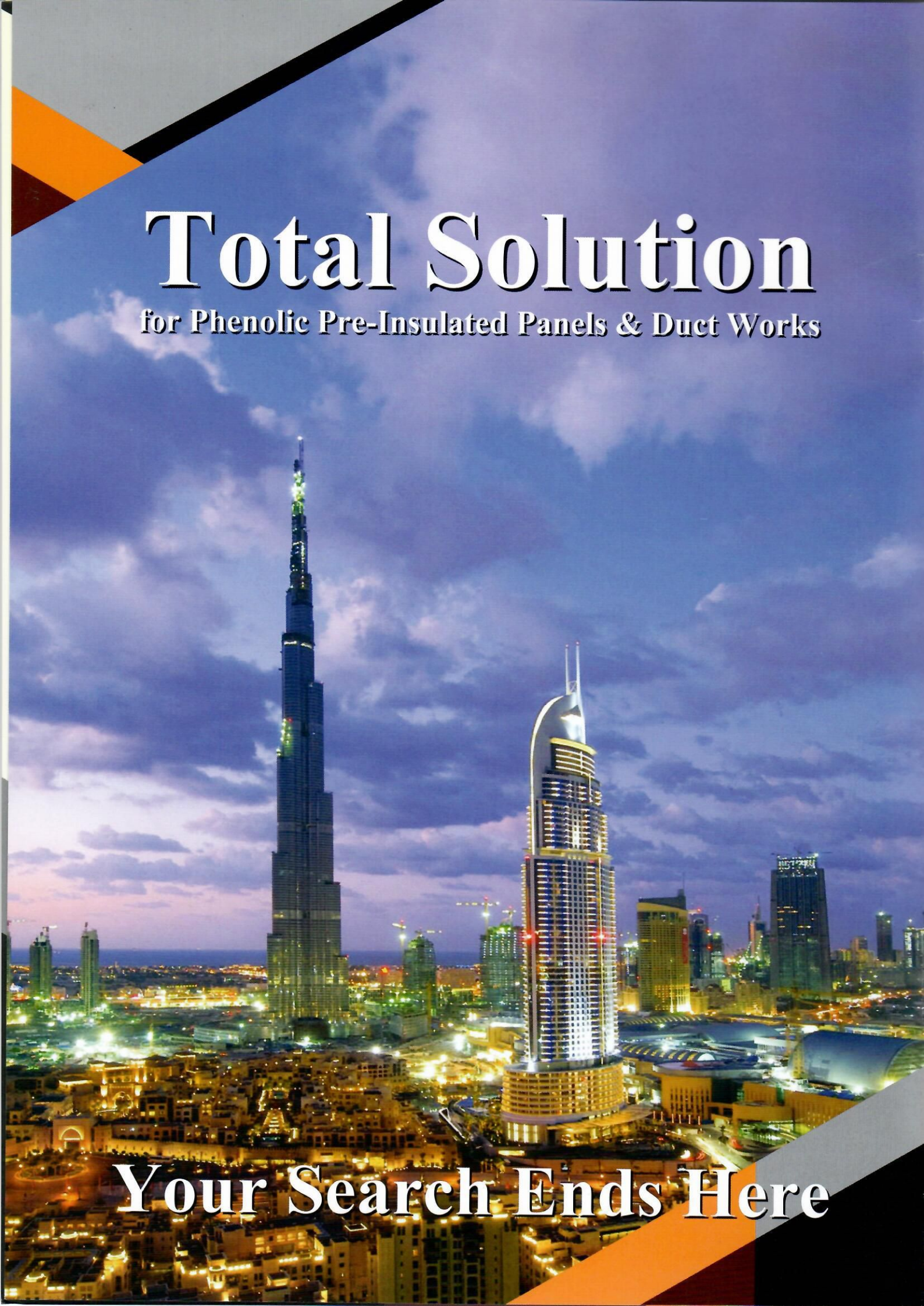
Pearl
Industries LLC

www.pearl.ae

Total Solution

for Phenolic Pre-Insulated Panels & Duct Works

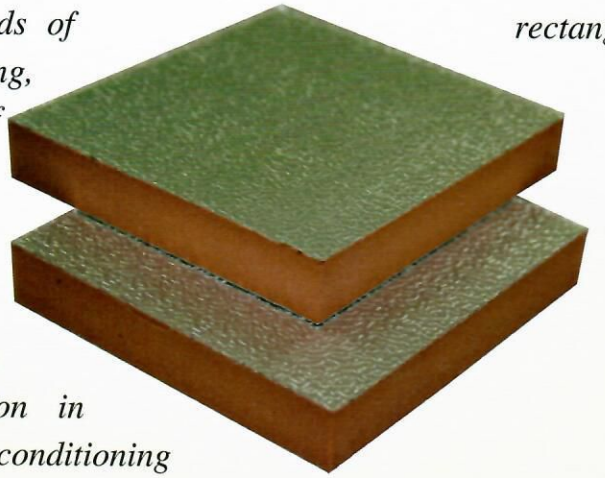


Your Search Ends Here

Introduction

Pearl Industries came into existence in the year 2004. Over the years Pearl Industries LLC has gained an enviable reputation for providing excellently engineered products and services, delivered on time at competitive rates. With extensive internal and external technical sales support, Pearl Industries is able to provide high standards of customer service and can respond quickly and efficiently to the varying demands of the building services industry is the most advanced and innovative system of pre-insulated air distribution ductwork. Phenolic Duct system of pre insulated ductwork is already approved by major Consultants and Contractors in the Industry all over G.C.C. The Phenolic Duct system is the clear leader in the new generation of insulated pre-fabricated ductwork and has already proved itself in the highly competitive global market-place.

Phenolic Pre Insulated Duct Panel is a panel of high strength, taking the Phenolic foam as the core material and with Aluminium on both the sides. It has a fine finish, has a long life material, light weight and easily transported, manipulated and constructed. It is a non combustible material, which has no smoke and innocuous while catching fire. The Phenolic Pre Insulated Panel can be fabricated into all kinds of rectangular (bended) ducts by cutting and adhesive connecting, and can be fabricated into the air ducts of all kinds of specifications and shapes by using the combustion resistant flange and adhesive.



Phenolic Pre Insulated Panel is used in the construction of ducting for air distribution in ventilation, heating and air – conditioning systems (HVAC). It is widely used for the air distribution systems of central air conditioning units in hotels, apartments, hospitals, office buildings and other deluxe high-rise buildings.

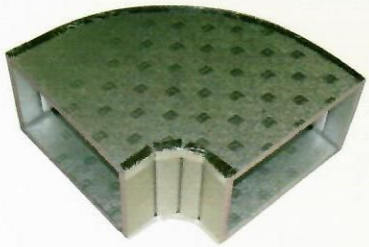
Phenolic Pre Insulated panels can be installed either in the interior or on the exterior of a building, visible or with a false ceiling.

Technical Specification

Description:

Phenolic Pre Insulated panel shall comprise a 65 kg/m^3 ± 5 nominal density and CFC/ HCFC-free, autohesively bonded on both sides to a 80 micron low vapour permeability aluminum foil facing. Phenolic Pre Insulated panels are available in the below mentioned thicknesses to suit different performance specifications:

Phenolic Pre Insulated panel coated with pure embossed aluminium foil.
There are two types of panels :
- 20/65 ± 5 : 20mm thickness
- 30/65 ± 5 : 30mm thickness
For constuction of air ducting in heating, ventilation and air-conditioning systens (HVAC)



PANELS CHARACTERISTIC

		Dimensions	Panel Thickeness	Foam Density	Aluminium Foil Thickness	Aluminium Type
	20/65	4000/1200 mm	20 mm	65 kg/m^3 ± 5	80/80 microns	Embossed
	30/65	4000/1200 mm	30 mm	65 kg/m^3 ± 5	80/80 microns	Embossed

Specifications	***Value***	***Standards***
Density	*65 kg/m^3 ± 5*	*ASTM D1622:03 / BS EN 1602 : 1997*
Thermal Conductivity	*0.030 w/m.K*	*ASTM C518: 2004*
Compressing Strength	*300 kpa – 350 kpa*	*ASTM C 165 : 2007*
Combustibility Property	*Non Combustible Class "0"*	*BS 476 Part 6 & 7*
Water Absorption	*0.25%*	*ASTM C 209:1998*
Maximum Smoke Density	*≤ 15*	*ASTM E84/UL723*
Dimension Stability	*0.3%*	*ASTM D 2126-09*
Working temperature	*-20^0 C to 110^0 C*	

Technical Specification

Heat Resistance:

Phenolic Pre Insulated panels are suitable for use in peak temperatures as high as 110°C and continuous operating temperatures up to 70°C.

Environment Performance:

Phenolic Pre Insulated panels are manufactured without the use of CFCs/HCFCs

Thermal Performance:

The rigid Phenolic Pre Insulated panels have a very low thermal conductivity which increases over a period of time as the insulation ages. The thermal conductivity then remains stable for the service life of the product.

Fire and Smoke Performance:

Phenolic Pre Insulated panels have a resistance to burning and spread of flame far superior to that of any other cellular plastic insulation. In addition, there is an almost complete absence of smoke when subjected to a flame source.

Advantages of Phenalic Technology

- ✔ Easy to clean and hygienic
- ✔ Light weight: only 15% of sheet metal ducting
- ✔ On site fabrication capability
- ✔ High-compressive strength
- ✔ Environmentally friendly
- ✔ Resistant to fungus growth
- ✔ No limit to duct sizes
- ✔ High rigidity / integrity

Comparative Statement

System Benefits

Whole Life Costs:

Whole life costing takes account of the total cost of an item over its life, including durability, energy savings and maintenance as well as initial purchase price. The installation of Pi Phenolic Duct System can save up to 21% on capital cost. Further more over a 30 years life it can also make a saving of over 20% on operating costs.

Weight:

The exceptional strength to weight ratio of the Pi Phenolic Ductwork of pre insulated duct work results in ductwork that is lightweight, easy to handle and install. Phenolic Pre Insulated panels can weigh up to 85% less than insulated galvanized sheet steel ductwork. This results in easier installation and much lower handling costs because fewer people are required to install a ductwork section. Two individuals can quickly and easily install substantially sized ductwork sections fabricated from the Pi Phenolic Duct System of pre insulated ductwork.

Many older buildings involved in refurbishment projects may not be designed to support the additional weight of insulated sheet steel ductwork. The Pi Phenolic duct system can generally alleviate the requirement for additional structural support.

Installed Cost:

The installed cost of the Pi Phenolic ductwork is cheaper than that of Insulated sheet metal ductwork: up to 19% cheaper for larger ducts. In most circumstances Pi Duct Phenolic Ductwork can be supported threaded steel rods whereas Sheet ductwork requires a more robust support system utilizing Unistrut type systems or for larger sized ductwork and support spans, rolled steel angle or channel sections.

Installation Speed:

The Pi Phenolic Duct System can be installed up to three times faster than sheet steel ductwork-not even taking into account the manual process of applying the insulation around the ductwork as a separate operation.

Space:

Pi Phenolic Duct System is space saving by virtue of eliminating the space required for the manual process of applying the insulation above the ductwork as a separate operation. It can be installed flush to the ceiling. This can typically save 150-200 mm/6-8" of valuable space above a false ceiling and can save 1-2% in the overall project construction cost.

Comparative Statement

Air Leakage:
The technology, the fabrication methodology combined with the jointing systems and the complete line of bespoke accessories produce a system where the air leakage can be reduced to a fraction of that typical of sheet metal ductwork.

External Applications:
It can be installed in external applications however like all insulation products, it is necessary to protect the factory applied facing from the adverse effects of sunlight and the weather.

Visible Applications:
The Pi Phenolic Duct System is aesthetically pleasing in open to view applications.

Strength:
Pi Phenolic Duct is rigid Phenolic Pre Insulated panels are capable of being permanently formed to the required shape and have sufficient strength to maintain their shape and duct integrity under operating conditions and limits. The Pi Phenolic Duct System ductwork is very strong and is self supporting. Larger sized ductwork and ductwork subjected to high pressures may require additional stiffening to avoid deflection.

Air quality:
The rigid Phenolic Pre Insulated panels from which Pi Phenolic Duct ductwork is fabricated are resistant to fungal and mould growth, will not sustain vermin, are odourless, non tainting and non-fibrous.

Cleaning:
The Pi Phenolic Duct System can be cleaned using many of the non abrasive dry cleaning methods.

Lifespan:
Ductwork fabricated from the Pi Phenolic Duct System will last as long as the life of the building in which it is installed. However, the lifespan of the ductwork is dependent upon the duct continuing to operate within the original design parameters, not being subjected to outside influences that may cause damage and being part of a regular maintenance programme.

Damage:
Pi Phenolic Duct System like any other material and equipment on site may be at risk of physical damage. Surprisingly Pi Phenolic Duct System is robust and serious damage is very rare. However the Pi Phenolic Duct System offers the flexibility to repair localized damage on site as opposed to replacing the entire ductwork section. Repairs can be made in an economical and efficient manner.

20 mm PANEL (INTERNAL USE)

To produce 1,000m2 of Pi Phenolic Ducting System, the following is a list of material and accessories for a standard construction requirement:

Sr. No.	DESCRIPTION	UOM	APPROX. QTY
1	Panel 4000 x1200mm	m2	1000
2	Aluminium Invisible Profile	mtrs	960
3	H Bayonet in Polymer	mtrs	480
4	PVC cover in Polymer	nos	1760
5	GI Corner Plate	nos	3000
6	Aluminium U Profile	mtrs	110
7	Aluminium Chair Profile	mtrs	108
8	Aluminium F Profile	mtrs	100
9	Duct Adhesive (1 drum = 15 ltrs)	drum	9
10	Aluminium Tape (1 box x 24 rolls)	box	11
11	Silicon Sealant (1 box x 24 tubes)	box	11
12	Profile Glue	nos	17

30 mm PANEL (EXTERNAL USE)

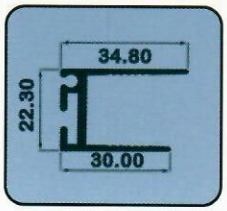
To produce 1,000m2 of Pi Phenolic Ducting System, the following is a list of material and accessories for a standard construction requirement:

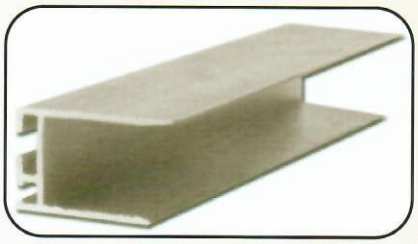
Sr. No.	DESCRIPTION	UOM	APPROX. QTY
1	Panel 4000 x1200mm	m2	1000
2	Aluminium Joint Profile	mtrs	760
3	Aluminium Channel	mtrs	400
4	GI Corner Plate	nos	1,500
5	PVC cover in Polymer	nos	1,500
6	Profile Glue	nos	17
7	Aluminium U Profile	mtrs	80
8	Aluminium Chair Profile	mtrs	80
9	Aluminium F Profile	mtrs	80
10	Duct Adhesive (1 drum = 15 ltrs)	drum	9
11	Aluminium Tape (1 box x 24 rolls)	box	11
12	Silicon Sealant (1 box x 24 tubes)	box	11
13	Reinforcement Bar in Aluminium	mtrs	120
14	Reinforcement Disc	nos	200

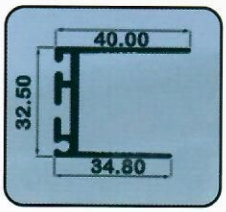
Panel Accessories

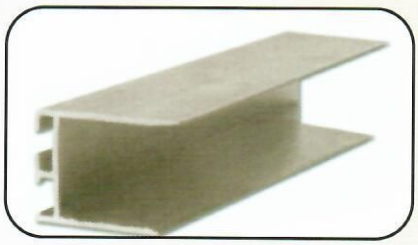
1
Aluminium Invisible Profile
PVC Invisible Profile

Length:	4mt / 5.8mtr
Thickness:	20mm, 30mm
Code:	20mm, ALUPR 014
	30mm, ALUPR 005
(PVC profile)	20mm, ALUPR 006



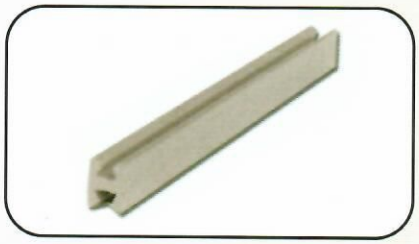






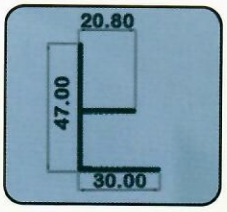
2
PVC Sliding Channel

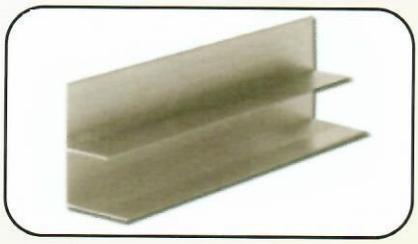
Length:	4mt / 5.8mtr
Code:	ALUPR 007

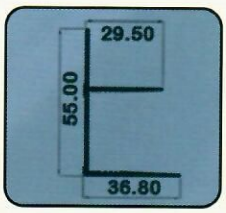


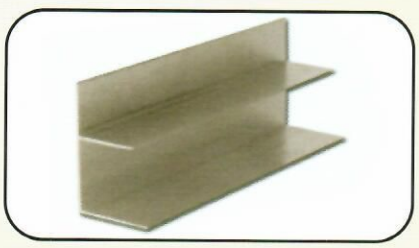
3
Aluminium F Profile

Length:	4mt / 5.8mtr
Thickness:	20mm, 30mm
Code:	20mm, ALUPR 001
	30mm, ALUPR 009

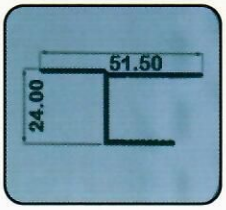


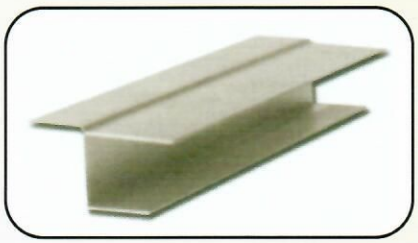




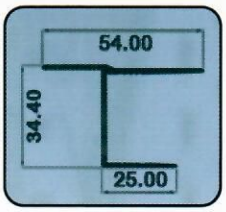


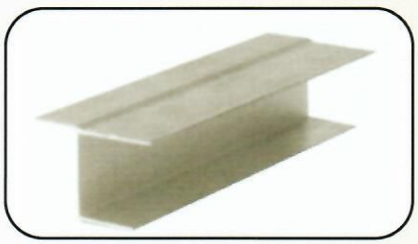
Pi4
Aluminium 'h' profile



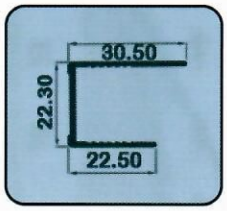


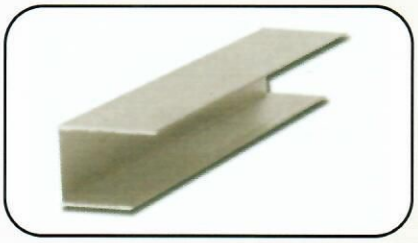
Length: 4mt / 5.8mtr
Thickness: 20mm, 30mm
Code: 20mm, ALUPR 013
30mm, ALUPR 011



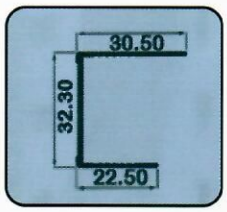


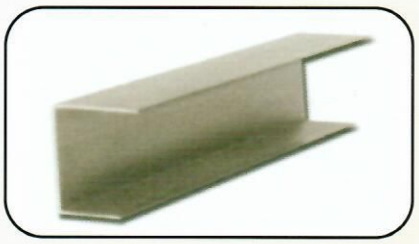
Pi5
Aluminium U profile





Length: 4mt / 5.8mtr
Thickness: 20mm, 30mm
Code: 20mm, ALUPR 002
30mm, ALUPR 010



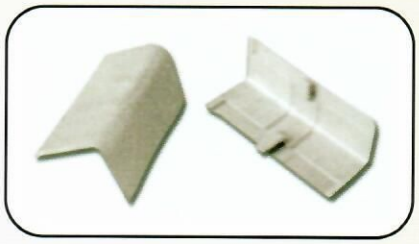


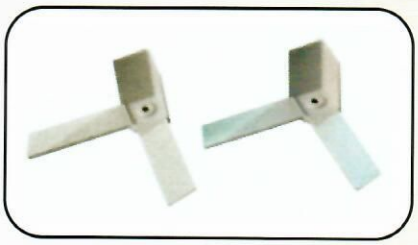
Pi6
GI corner

Thickness: 20mm
Code: VCDOTR 022

7
PVC Corner Cover
PVC Corner

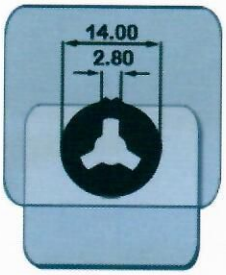
Thickness:	20mm
Code:	CONSM 025
Thickness:	20mm
Code:	CONSM 006

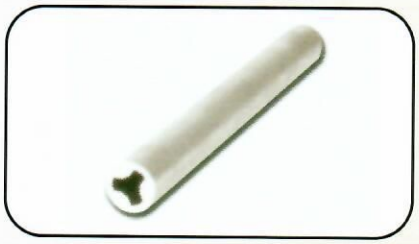




8
Reinforcement Bar Aluminium

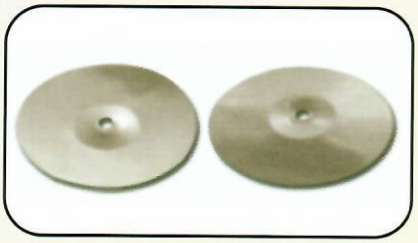
Length:	4mt / 5.8mtr
Thickness:	14mm
Code:	ALUPR 013



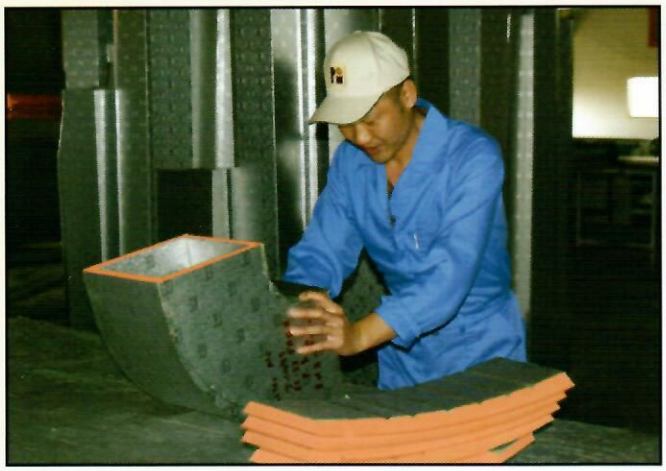


9
Reinforcement Disc

Code: VCDOTR 021



Fabrication Work



Certificates

Class 0 Summary Report **Exova** Warringtonfire

Executive Summary

Objective To assess the results of tests to BS 476:Part 6:1989+A1: 2009 and BS 476:Part 7:1997, obtained on specimens of the following product and to provide an opinion of compliance with the requirements for a Class 0 surface, as defined in Approved Document B to the Building Regulations 2000.

Generic Description	Product reference	Thickness	Weight per unit area or density
Phenolic foam insulation sheet	"PI Phenolic Foam Sheet"	20mm	65kg/m^3
Please see page 5 of this test report for the full description of the product tested			

Test Sponsor Pearl Industries LLC, P.O. Box 26282, Sharjah, United Arab Emirates

Opinion: We consider the results of the tests to BS 476:Part 6:1989+A1: 2009 and BS 476:Part 7: 1997, demonstrate that the product, as tested, complies with the requirements for Class 0, as defined in paragraph A13(b) of Approved Document B, 'Fire Safety', to the Building Regulations 2000.

Date of Test 26th & 28th July 2011

Signatories

Responsible Officer T. Benyon * Technical Officer	Authorised D. J. Owen * Senior Technical Officer

* For and on behalf of **Exova Warringtonfire**.

Report Issued: 9th August 2011

Certificates

وزارة الداخليـــة
الادارة العامه للدفاع المدني
إدارة الوقاية

تاريخ الطباعة :2016-10-24
وقت الطباعة :AM 11:23
رقـم الطلب :PAC16013188

شهـــــادة عدم ممانعة

نوع الشهادة : إعتماد منتج

بيانات المنشأة

الاسم التجاري: شركه فواز للتبريد وتكييف الهواء

رقم السجل التجاري: 18958 رقم الرخصة التجارية: 2069

رقم قيد المنشأة: 10-9686-00 رقم الهاتف:

البريد الإلكتروني:

التصنيف : Fire Rated and Retardant materials

إسم المنتج : Insulation Materials (Rockwool, Thermal insulators etc)

تفاصيل الشهادة

تم مراجعة الطلب المقدم واتضح بأنه لا مانع من اعتماد المنتج /المنتجات الموضحه فى التقرير الفنى المرفق بناء على اعتماده من قبل الهيئه المختبرية الموضحه فى التقرر الفني المرفق .

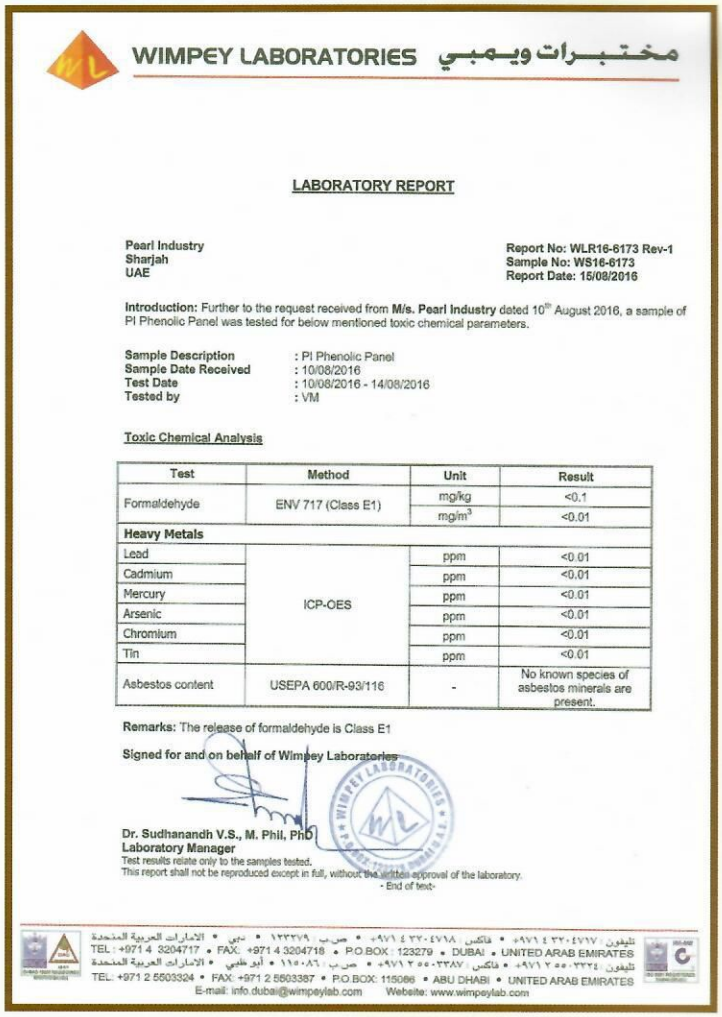
ملاحظات :

-يجب على الشركه الالتزام والعمل بما جاء في الشتراطات قسم أنظمة السلامه التي تم الاطلاع والموافقة عليها من خلال الموقع .
- يجب ان يقوم بتركيب هذا المنتج من قبل مهندسين وفنيين معتمدين من الإدارة العامة للدفاع المدني.
- يجب ان يحمل المنتج العلامة التجارية للهيئه المختبرية المعتمدة والموضحه في التقرير الفني المرفق .

تاريخ الاعتماد : 2016-10-24 تاريخ الإنتهاء : 2018-10-24

مدير إدارة الوقـايـــة
الإدارة العامة للدفاع المدني

Page 1 of 2



WIMPEY LABORATORIES مختبـــرات ويـــمبي

LABORATORY REPORT

Pearl Industry
Sharjah
UAE

Report No: WLR16-6173 Rev-1
Sample No: WS16-6173
Report Date: 15/08/2016

Introduction: Further to the request received from **M/s. Pearl Industry** dated 10th August 2016, a sample of PI Phenolic Panel was tested for below mentioned toxic chemical parameters.

Sample Description : PI Phenolic Panel
Sample Date Received : 10/08/2016
Test Date : 10/08/2016 - 14/08/2016
Tested by : VM

Toxic Chemical Analysis

Test	Method	Unit	Result
Formaldehyde	ENV 717 (Class E1)	mg/kg	<0.1
		mg/m^3	<0.01
Heavy Metals			
Lead	ICP-OES	ppm	<0.01
Cadmium		ppm	<0.01
Mercury		ppm	<0.01
Arsenic		ppm	<0.01
Chromium		ppm	<0.01
Tin		ppm	<0.01
Asbestos content	USEPA 600/R-93/116	-	No known species of asbestos minerals are present.

Remarks: The release of formaldehyde is Class E1

Signed for and on behalf of Wimpey Laboratories

Dr. Sudhanandh V.S., M. Phil, PhD
Laboratory Manager

Test results relate only to the samples tested.
This report shall not be reproduced except in full, without the written approval of the laboratory.
- End of text-

تليفون : ٠٠٩٧١ ٤ ٣٣٠٤٧١٧ • فاكس : ٠٠٩٧١ ٤ ٣٣٠٤٧١٨ • ص.ب : ١٢٣٢٧٩ • دبي • الامارات العربية المتحدة
TEL: +971 4 3304717 • FAX: +971 4 3304718 • P.O.BOX : 123279 • DUBAI • UNITED ARAB EMIRATES
تليفون : ٠٠٩٧١ ٢ ٥٥٠٣٣٤١ • فاكس : ٠٠٩٧١ ٢ ٥٥٠٣٣٨٧ • ص.ب : ١١٥٠٨٦ • أبو ظبي • الامارات العربية المتحدة
TEL: +971 2 5503324 • FAX: +971 2 5503387 • P.O.BOX: 115086 • ABU DHABI • UNITED ARAB EMIRATES
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PRELIMINARY TEST RESULTS – RK042-1

Test Method	Project No.	Date	Time	Test No.
ASTM E84	RK042-1	11/16/2017	1:50 PM	1

Specimen ID

Pearl Industries

Specimen Description

Pre-insulated Phenolic panel

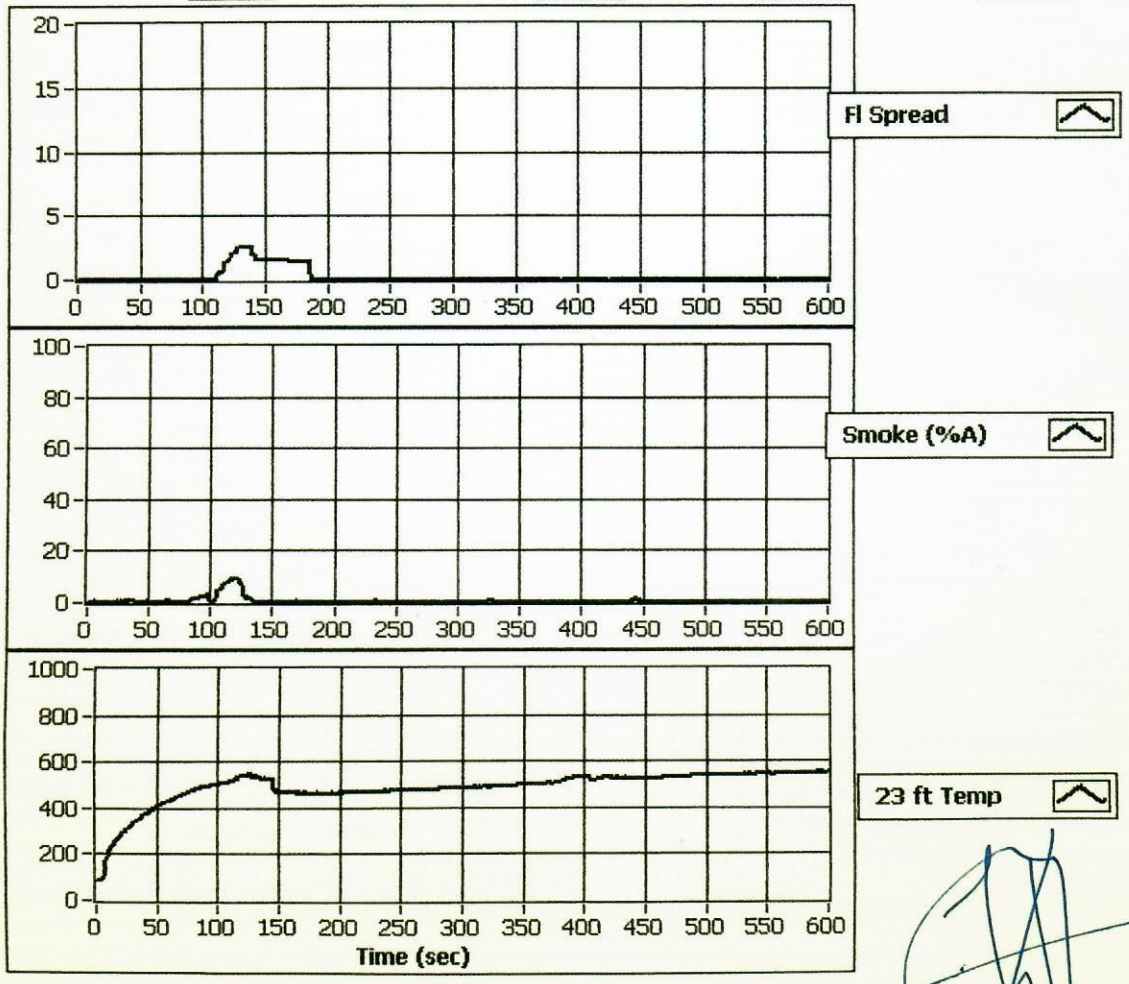
Other

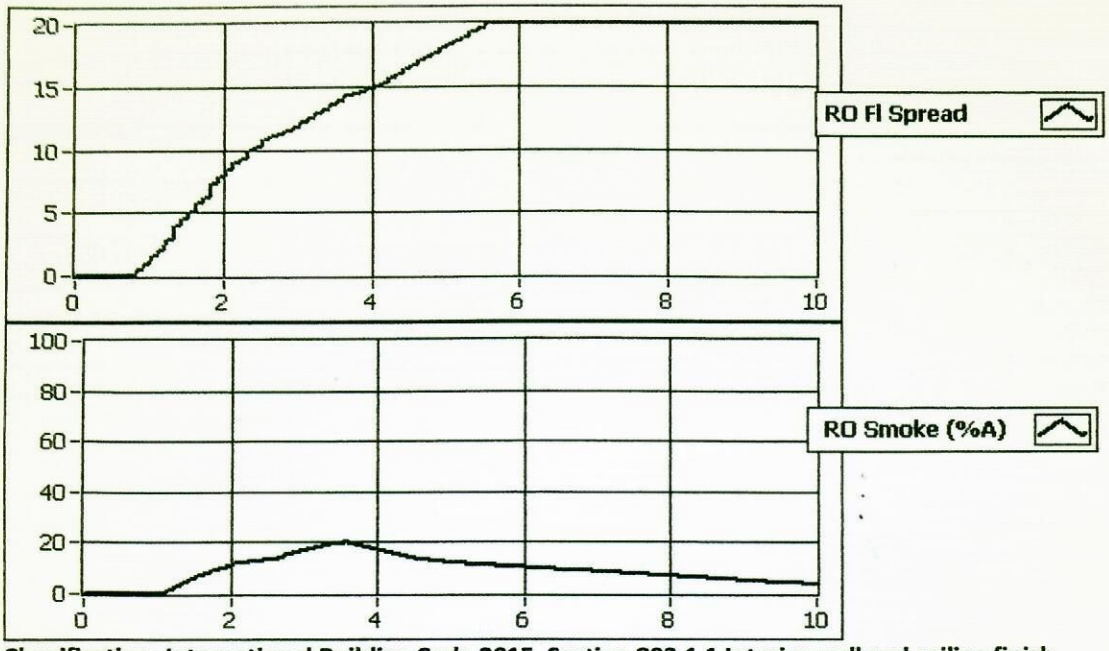
2 Nos. - 2500 x 600 x 30 mm and 1 No. 2320 x 600 x 30mm (l x w x t) (measured)

Instruments Used

7320 x 600 x 30mm (l x w x t) (measured)

Total Fuel (CF)	50.3	Red Oak Smoke Area	91.0	Smoke Area (%A min)	4.0
Maximum FS	2.54	MAX FS Time (min)	2.18	Final SDI	5	Final FSI	10





Classification: International Building Code 2015, Section 803.1.1 Interior wall and ceiling finish materials. Interior wall and ceiling finish materials shall be classified in accordance with UL 723. Such **interior finish materials shall be grouped in the following classes in accordance with their flame spread and smoke-developed indexes.**

Class A: Flame spread index 0 - 25; smoke-developed index 0 - 450.
Class B: Flame spread index 26 - 75; smoke-developed index 0 - 450.
Class C: Flame spread index 76 - 200; smoke-developed index 0 - 450.
The test specimen has been evaluated in accordance with ASTM E84; Standard Test Method for Surface Method for Surface Burning Characteristics of Building Material.

FLAME SPREAD INDEX (FSI)	10
SMOKE DEVELOPED INDEX (SDI)	5

Date Tested: November 16, 2017
Test Conducted by: Hari Krishnan M
Max Temp: 552 deg F
Sponsor: Pearl Industries
Test Specimen Description: Pre-insulated Phenolic panel
Dimension: 2 Nos. - 2500 x 600 x 30 mm and 1 No. 2320 x 600 x 30mm (l x w x t) (measured)
Total dimension: 7320 x 600 x 30mm (l x w x t) (measured)

16/11/17

PRELIMINARY TEST RESULTS – RK042-2

Test Method	Project No.	Date	Time	Test No.
ASTM E84	RK042-2	11/16/2017	3:13 PM	1

Specimen ID

Pearl Industries

Specimen Description

Pre-insulated Phenolic panel

Other

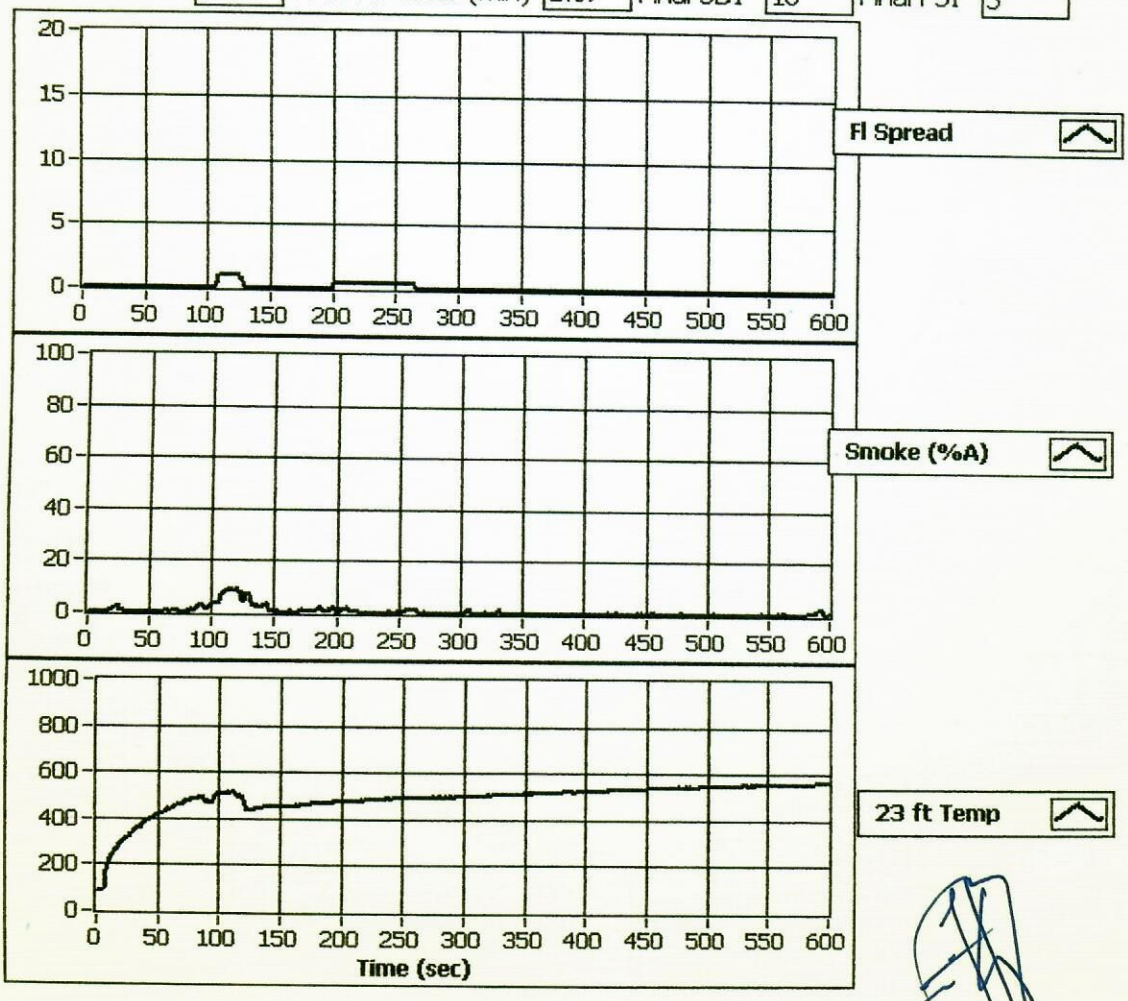
2 Nos. - 2500 x 600 x 20 mm and 1 No. 2320 x 600 x 20mm (l x w x t) (measured)

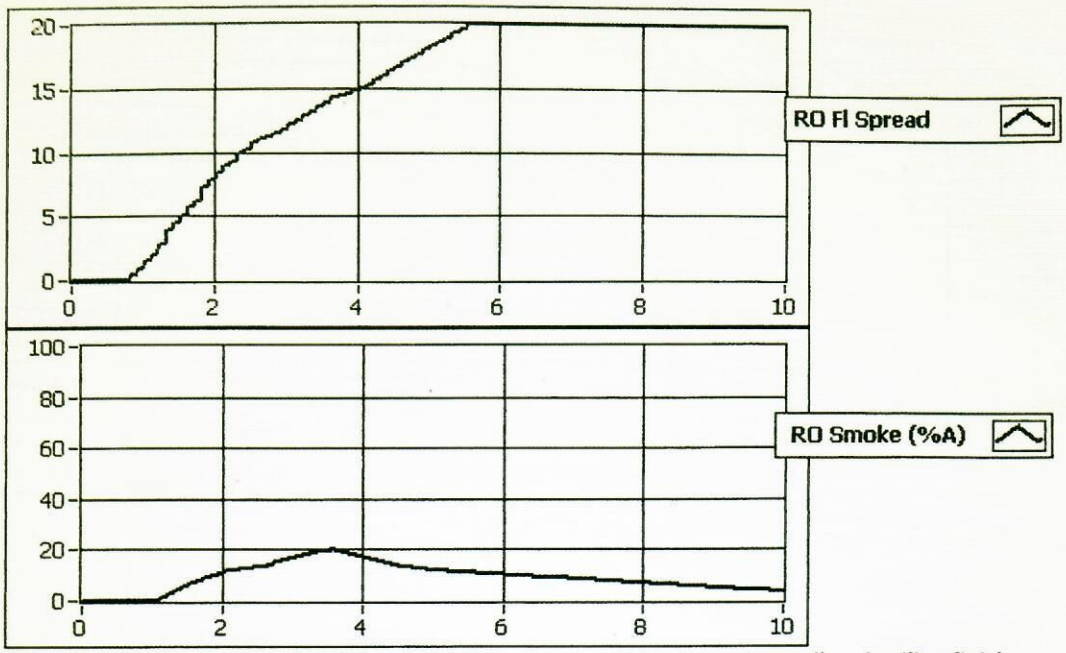
Instruments Used

7320 x 600 x 20mm (l x w x t) (measured)

Total Fuel (CF)	Red Oak Smoke Area	Smoke Area (%A min)
50.3	91.0	7.8

Maximum FS	MAX FS Time (min)	Final SDI	Final FSI
1.05	2.07	10	5





Classification: International Building Code 2015, Section 803.1.1 Interior wall and ceiling finish materials. Interior wall and ceiling finish materials shall be classified in accordance with UL 723. Such **interior finish materials shall be grouped in the following classes in accordance with their flame spread and smoke-developed indexes.**

Class A: Flame spread index 0 - 25; smoke-developed index 0 - 450.
Class B: Flame spread index 26 - 75; smoke-developed index 0 - 450.
Class C: Flame spread index 76 - 200; smoke-developed index 0 - 450.
The test specimen has been evaluated in accordance with ASTM E84; Standard Test Method for Surface Method for Surface Burning Characteristics of Building Material.

FLAME SPREAD INDEX (FSI)	5
SMOKE DEVELOPED INDEX (SDI)	10

Date Tested: November 16, 2017
Test Conducted by: Hari Krishnan M
Max Temp: 562 deg F
Sponsor: Pearl Industries
Test Specimen Description: Pre-insulated Phenolic panel
Dimension: 2 Nos. - 2500 x 600 x 20 mm and 1 No. 2320 x 600 x 20mm (l x w x t) (measured)
Total dimension: 7320 x 600 x 20mm (l x w x t) (measured)

Certificates

United Arab Emirates
Ministry of Interior
General Directorate of Civil Defense
General Department of Civil Defense - Abu Dhabi

دولة الإمارات العربية المتحدة
وزارة الداخلية
القيادة العامة للدفاع المدني
الإدارة العامة للدفاع المدني - أبوظبي

رقم الترخيص : 2014-3-92922
سنة الترخيص : 2017
عدد التراخيص : 1

ترخيص مصنع

تم إصدار الترخيص استنادا إلى القرار الوزاري رقم (24) لسنة 2012 ، في شأن تنظيم خدمات الدفاع المدني

الاسم التجاري للمنشأة	التوتوة للصناعات د.م.م	رقم الرخصة	523466	رقم السجل	2014-3-92922
اسم صاحب الترخيص	أحمد حسين فخري الهنداوي	الجنسية	الأردن		
اسم صاحب الترخيص	محمد إسماعيل حسن صالح	الجنسية	الإمارات العربية المتحدة		
اسم صاحب الترخيص	أنور عبدالرحيم محمد صالح على خان	الجنسية	الإمارات العربية المتحدة		
نوع النشاط	صناعة مجاري الهواء المانعة للحريق			منطقة النشاط	الشارقة
رقم الهاتف	0501744431	رقم الفاكس		ص.ب	26282
عنوان الشركة	أرض مسورة ملك أحمد حسين فخري الهنداوي - خلف شارع المليحة ، الصناعية 15 الشارقة الشارقة				
الموقع و البريد الإلكتروني					
تاريخ تأسيس المنشأة	27/06/2004	تاريخ الإصدار	11/10/2017	تاريخ الانتهاء	02/04/2018
عدد المعدات و الأجهزة المراد ترخيصها	1				
عدد المهندسين المعتمدين	2	عدد الفنيين المعتمدين	6		

تعتبر هذه الشهادة وثيقة رسمية لا تحتاج الى توقيع. للتأكد من صحة المعلومات يرجى زيارة الرابط التالي: https://es.adcd.gov.ae/index/certificate-inquiry

1 / 2

GOVERNMENT OF DUBAI
DUBAI MUNICIPALITY

CERTIFICATE OF PRODUCT CONFORMITY

Dubai Central Laboratory Department (DCLD) of Dubai Municipality, hereby attests that the product(s):

FACTORY MADE RIGID POLYURETHANE FOAM
(Details as per the attached Scope of Certification)

manufactured by:

PEARL INDUSTRIES L.L.C.
P.O. Box 31710, Sharjah Industrial Area 15, Sharjah, UAE

have been assessed in accordance with DCLD Document Ref. No. RD-DP21-2001 (IC) "General Rules for DM third party product certification system through factory assessment" and the relevant Specific Rules, and were found in conformity with the standard specification:

BS EN 13165:2012

Accordingly, DCLD hereby authorizes the above manufacturer to affix the DCL Product Conformity Mark to the above-mentioned product(s).

ENGR. AMIN AHMED AMIN
Director, Dubai Central Laboratory Department
Dubai Municipality

DCL PRODUCT CONFORMITY

DAC CB-003-PRD

Certificate No: CL16020355
Valid Until: 13 April 2018

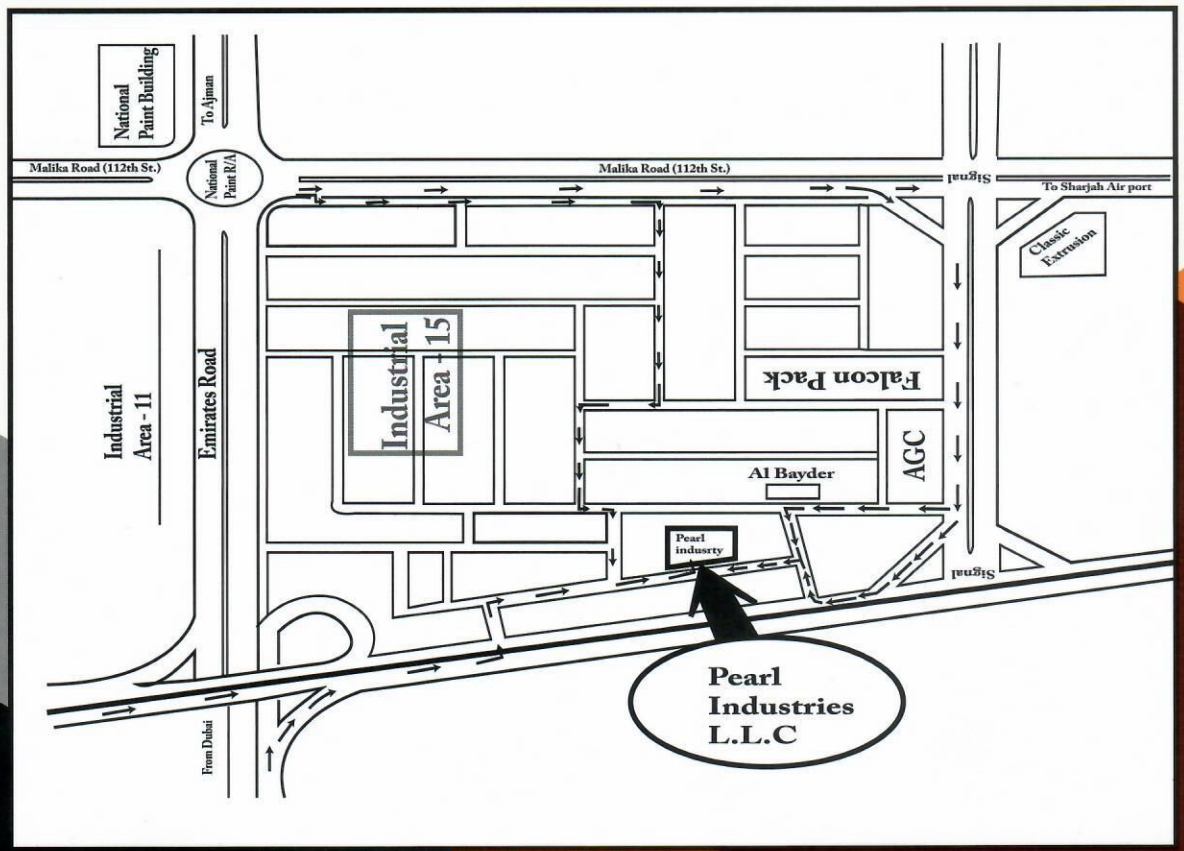
Current Issue Date: 14 April 2017
Original Issue Date: 14 April 2016

The attached Scope of Certification bearing the same Certificate No. forms an integral part of this certificate. This certificate is subject to the Terms and Conditions of the Product Certification System and shall not be reproduced except in full.

F-IC-2031 R9

warrington certifire certification

DCL



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