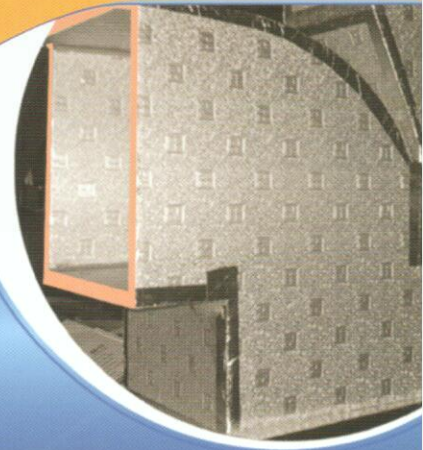





# PEARL

Industries



# Total Solution

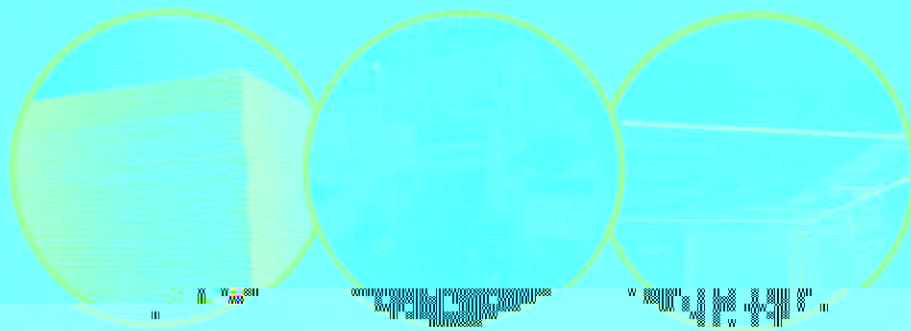
for Phenolic Pre-Insulated Panels & duct works.

A photograph of a person from behind, with their hands clasped in prayer. They are looking out a window at a bright, cloudy sky. The person is wearing a light-colored, possibly white, garment. The window frame is white. The overall mood is one of hope and resolution.

Your Search ends here



# Introduction



The first part of the presentation is devoted to the general introduction of the project, its objectives and the main results. The second part is dedicated to the description of the methodology used in the project, the tools and the software used. The third part is devoted to the presentation of the results of the project, the conclusions and the perspectives.

The second part of the presentation is devoted to the description of the methodology used in the project, the tools and the software used. The third part is devoted to the presentation of the results of the project, the conclusions and the perspectives.

## Product Data



### Description:

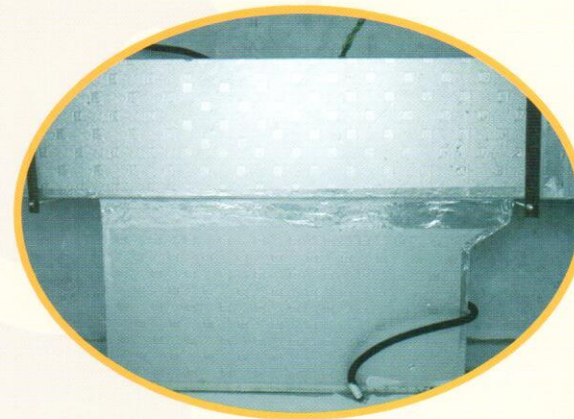
PI Phenolic Pre Insulated panel shall comprise a 65-70 kg/m<sup>3</sup> nominal density CFC/HCFC-free rigid Phenolic insulation core with zero Ozone Depletion Potential (ODP), autohesively bonded on both sides to a 80 micron low vapour permeability aluminum foil facing.

PI Phenolic Pre Insulated panels are available in the below mentioned thicknesses to suit different performance specifications:

- 20mm / <sup>80</sup>/<sub>80</sub> micron
- 30mm / <sup>80</sup>/<sub>80</sub> micron

### Chemical and physical characteristics:

- 3.9 Mtrs x 1.2 Mtrs
- Available in 20mm/30mm thickness.
- Facing on both sides 80 Microns Aluminium.



### Technical specifications:

Specifications	Value	Standards
Density	65-70 Kg/m <sup>3</sup>	ASTM D1622:03 / BS EN 1602 : 1997
Thermal Conductivity	0.033 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 <sup>0</sup> C to 80 <sup>0</sup> C	
Dimensions	3,900 x 1,200 x 20mm	

## Product Data



### ***Heat Resistance:***

Phenolic Pre Insulated panels are suitable for use in peak temperatures as high as 80°C and continuous operating temperatures up to 70°C.

### ***Environment Performance:***

Phenolic Pre Insulated panels are manufactured without the use of CFCs/HCFCs and have zero Ozone Depletion Potential (ODP).

### ***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.



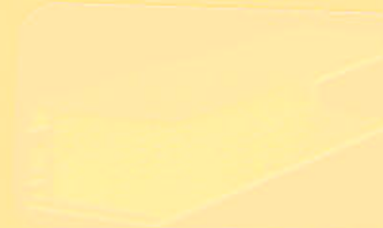


# Panel Accessory



## Aluminium Extruded Profile PVC Coated Profile

Length	1000, 1500, 2000
Thickness	1.5, 2, 2.5, 3, 4
Color	White, Grey, Black, Silver, Bronze, Gold, Copper, Green, Blue, Red, Yellow, Orange, Purple, Pink, Brown, Tan, Cream, Ivory, Pearl, Marble, Wood Grain, etc.
Profile Type	Channel, T, Z, L, U, C, S, H, I, J, K, M, N, O, P, Q, R, T, W, X, Y, Z, etc.



## PVC Sliding Channel

Length	2000, 2500, 3000, 3500, 4000
Color	White, Grey, Black, Silver, Bronze, Gold, Copper, Green, Blue, Red, Yellow, Orange, Purple, Pink, Brown, Tan, Cream, Ivory, Pearl, Marble, Wood Grain, etc.

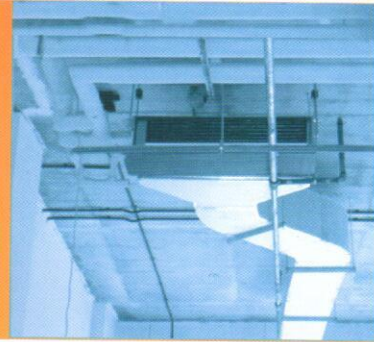


## Aluminium Extruded Profile

Length	1000, 1500, 2000
Thickness	1.5, 2, 2.5, 3, 4
Color	White, Grey, Black, Silver, Bronze, Gold, Copper, Green, Blue, Red, Yellow, Orange, Purple, Pink, Brown, Tan, Cream, Ivory, Pearl, Marble, Wood Grain, etc.
Profile Type	Channel, T, Z, L, U, C, S, H, I, J, K, M, N, O, P, Q, R, T, W, X, Y, Z, etc.

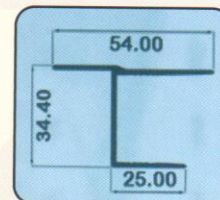
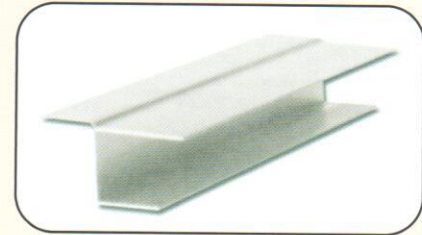
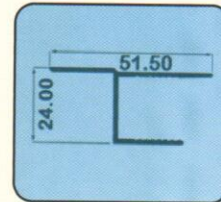


# Panel Accessories



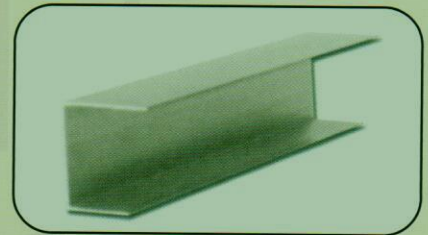
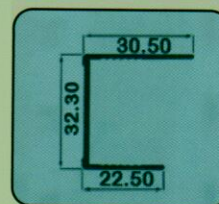
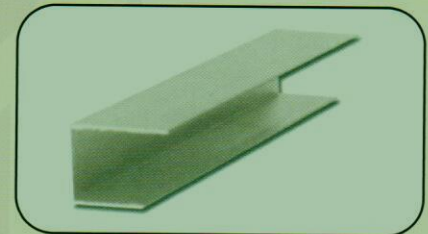
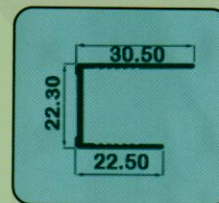
## Aluminium 'h' profile

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



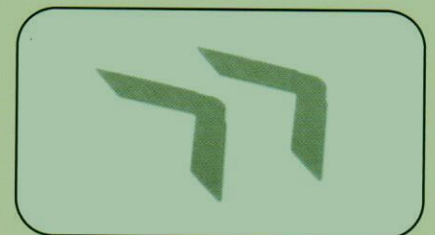
## Aluminium U profile

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



## GI corner

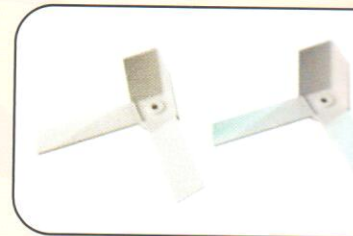
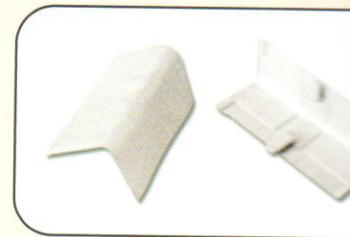
Thickness: 20mm  
Code: VCDOTR 022





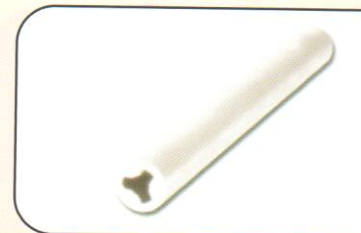
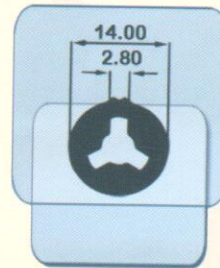
PVC Corner Cover  
PVC Corner

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



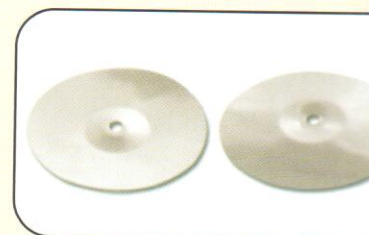
Reinforcement Bar Aluminium

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

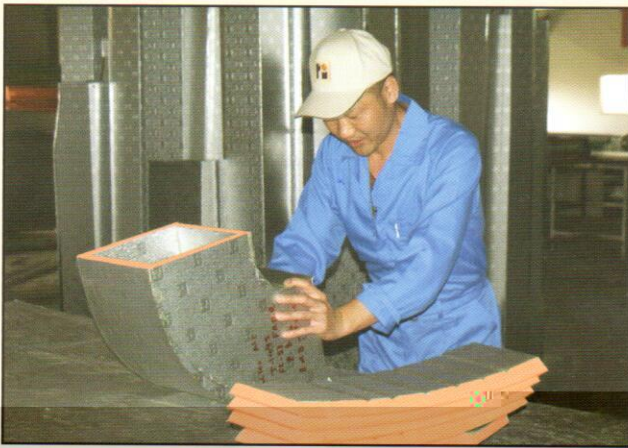
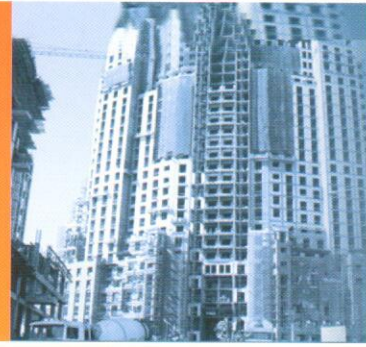


Reinforcement Disc

Code: VCDOTR 021



# Work



# 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 where GI sheet metal ductwork would require additional structural support.

# 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.

## 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 aluminium foil faced foam 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
Aluminium faced polyisocyanurate (PIR) foam	"Pi" and "Phenolic Type"	20mm	1.25-1.3 kg/m <sup>3</sup>
<b>Individual components used to manufacture composite</b>			
Aluminium foil	"Pre Coated Aluminium Foil"	80 microns	--
Polyisocyanurate foam	"Pi" and "Phenolic Type"	20mm	64kg/m <sup>3</sup>
Aluminium foil	"Pre Coated Aluminium Foil"	80 microns	--
Please see page 5 of this test report for the full description of the product tested			

**Test Sponsor** Pearl Industries LLC, PO 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** 14<sup>th</sup> & 15<sup>th</sup> January 2010

## Signatories

  
**PP T. Mort**  
 Senior Technical Officer

Responsible Officer  
 T. Benyon \*  
 Technical Officer

  
 Approved  
 D J. Owen \*  
 Senior Technical Officer

  
 Authorised  
 C. Dean \*  
 Operations Manager

\* For and on behalf of Exova Warringtonfire

Report issued: 27<sup>th</sup> January 2010

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# Certificates

  
**ترخيص معلم**

دولة الإمارات العربية المتحدة  
 وزارة الداخلية  
 الإدارة العامة للمقار المدني  
 إدارة الحماية المدنية و السلامة

رقم الترخيص : 4/137

تم ترخيص المصنع لصناعة المواد المبينة استناداً إلى القانون الاتحادي رقم 3 لسنة 1979 بشأن الدفاع المدني وتعديلاته والقرارات الوزارية المنفذة له .

الاسم التجاري للمنشأة: **اللولوة للصناعات** .

اسم صاحب الترخيص : **عمر حسن عمر الوعش** الجنسية : **الإمارات**

**احمد حسين الهنداوي** الجنسية : **الأردن**

نوع النشاط : **ألواح مقاومة للحريق** تاريخ بداية المنشأة : **2008/3/11م**

منطقة النشاط : **الإمارة : الشارقة** المدينة : **صناعة 15** الشارع : **الهاتف : 06/5345266**

تاريخ الإصدار : **2008/3/11م** تاريخ الانتهاء : **2009/3/10م**

المعدات و الأجهزة و المواد المرخص بتسليمها من رقم : **( 1 )** إلى **( - )**

مدير إدارة الحماية المدنية  


مدير عام المقار المدني  

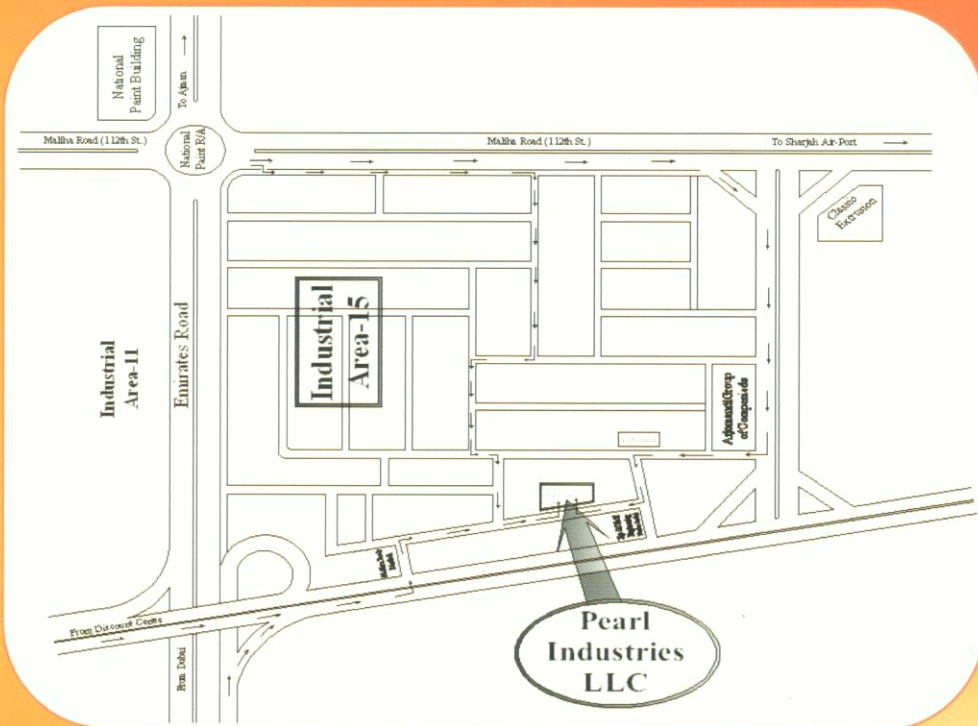

رقم الترخيص : 4/137

اسم المادة : **اللولوة للصناعات**

لصنف والمعدات والأجهزة والمواد المعتمدة طبقاً للترخيص

رقم	اسم المادة / المادة / المقار	النوع	ملاحظات
1	ألواح عازلي أنظمة التكيف والتهوية معزولة مسبقاً	PI System	
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E-mail: sales@pearl.ae Website: www.pearl.ae