

DUCT EXCEL PRE - INSULATED DUCT PANEL

Clean Technology, Clean Living



ISO 9001 : 2015



HVAC System

Heating, Ventilation and Air Conditioning (HVAC), Sick Building Syndrome, Indoor Air Quality and Green building concept have become of major concerns to human health in recent years.

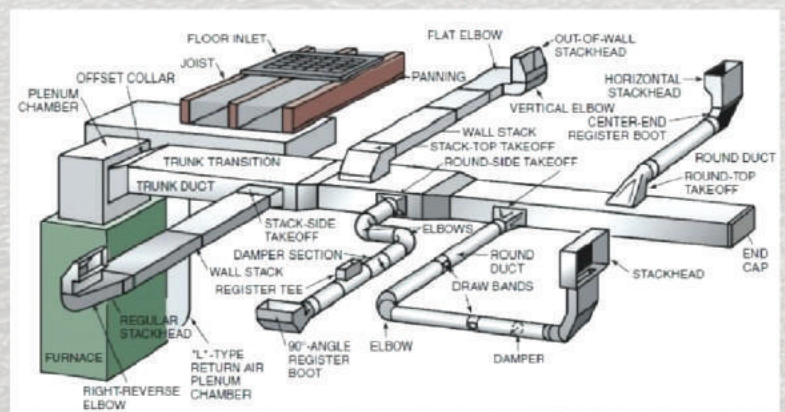
HVAC industry has gone through dynamic changes to keep pace with the remarkable environment development.

Air Ducting is the skeleton of HVAC system where the techniques have been, internationally, accepted in view of the fact that it is fulfilling the demand for better, cleaner and faster air ducting system.

Above features classify pre-insulated ducting system eligible for Green Buildings.

Air duct system fabricated with **Pre-Insulated Duct panels** guarantees excellent air quality, increasing ducting system efficiency, which improves living environment.

The American Society of Heating, Refrigeration, and Air-conditioning Engineers (ASHRAE) Standard 62.1, Ventilation for Acceptable Indoor Air Quality, lists strategies for improving IAQ through mold and microbial growth prevention.



Product

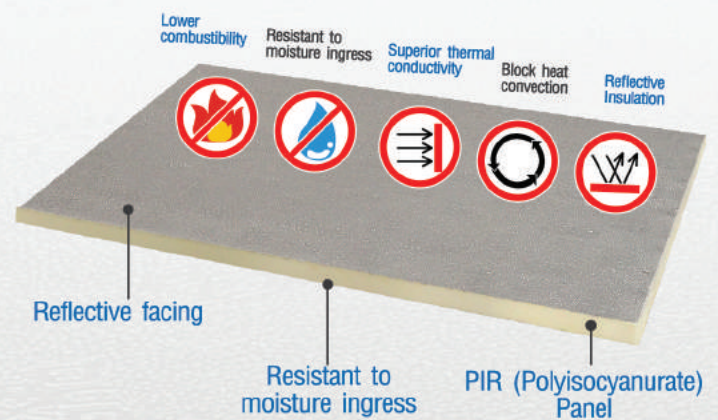
Pre-Insulated Duct Panel (PID Panel)

DUCT EXCEL Pre-Insulated Duct Panel is your best solution of proper and suitable Air Duct System for clean air environment of Heat Ventilation and Air Conditioning (HVAC) System – 100% fiber free.

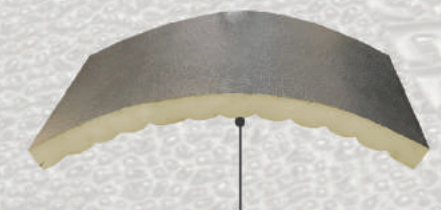
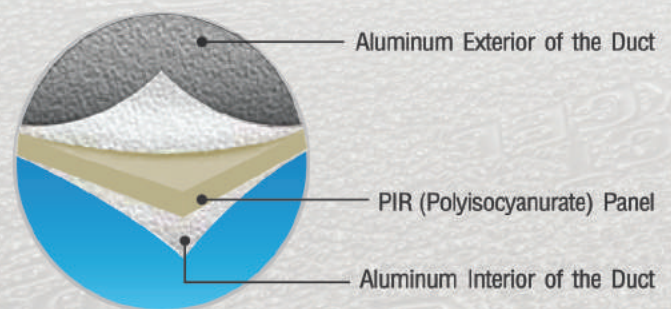
In comparison of traditional Air Duct System, there are many advantages of PID Duct Panel covering of lower initial cost, lower weight of duct & support, saving installation cost and time, long life span, and reduction of operating costs.

Through innovation of PID Duct Panel, its properties can protect many factors including:

- Excellent Fire Performance- 'Class 0' by British Standard 476 (BS476 Part 6 & 7)
- No leakage from duct connection
- Corrosion resistant
- Saving energy from excellent thermal conductivity
- A bit difference of air pressure from beginning to ending
- Resistant to Moisture Ingress, low water absorption, low humidity, and Fungi-free
- Tough enough for making elbow bend
- Saving maintenance cost.
- Eco-friendly
- Economical



PIR Panel Cross Section



Tough enough for making elbow bend

Pre-Insulated Duct Panel Imported Machinery, Technology and Raw Materials

Imported Production Machinery and Technology

Through more than 18 years of Pre-Insulated Duct Panel manufacturing experiences from SAKE Co., Ltd. – South Korea* who has accumulated its own skills and knowledge in the PIR industry, we have imported their production machine and technology for local production.

Production Machinery is not only modern technology, energy saving but also environmentally friendliness. Our machine produces technologically innovative and high quality PID panels accurately and on a timely basis. The technique, quality and practical values of SAKE MACHINERY are leading in PID insulation industry, which is one of the best PID panel machineries in the world.

This superior technology particularly related to 100% water based PIR system and fire retardant foam with cutting edge technology. **Our clean technology provides you high standard of clean living area.**

Furthermore our raw materials have been imported for complete manufacturing solutions including of chemical ingredients and chemical formulas.

Therefore, **Duct Excel PID Panel** is high quality, proper functionality and weather resistant product.

*SAKE Co., Ltd. is the largest pre-insulated duct system and PIR insulation panel manufacturer in South Korea.



Factory in Nakornnayok Province,
45 km. from Bangkok

Advantages

Pre-insulated panels consist of sandwich structure of Aluminium – Poly-isocyanurate foam – Aluminium layers. Internationally recognized manufacturers presented this panel and accepted by ASHRAE as the perfect thermal insulator.

Pre-insulated panels are the first of decades of research and development around the world.

Visually pleasant : It is neat product and looks stylish with surroundings by all means.

Anti-microbial : Pre-insulated ducting system is very much hygienic and less extent to be contaminated by germs and microbes.

Lightweight : The weight of the pre-insulated panels is much lighter than other ducting method. No need for any additional insulation.

Easy to install : This system is simple, fast and easy to fabricate and also in maintenance phase.

“Easy Installation
Corrosion Resistant
Economical
Anti-microbial”



Light of weight! but Strong!!



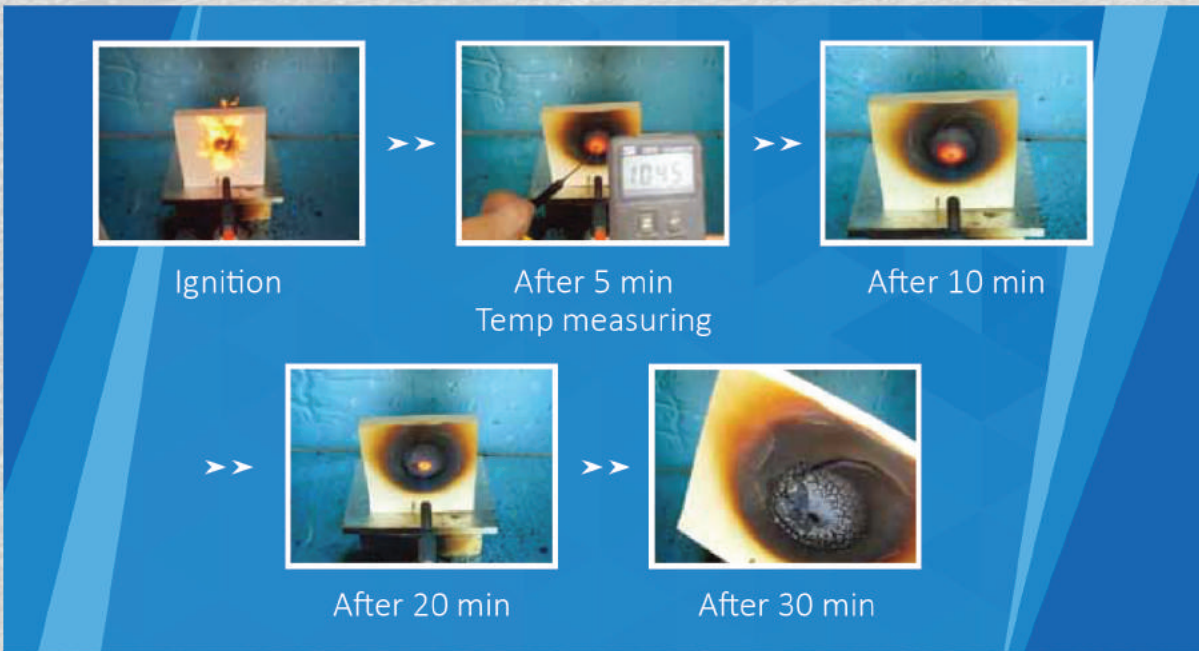
Neat product and looks stylish

Technical Specifications

General Description		DUCT EXCEL PID Panel with Poly-isocyanurate (PIR) foam			
Dimension	Thickness	20 mm			
	Length	4,000 mm			
	Width	1,200 mm			
Model	APA	APAX	APK	SPA	
Surface	- Both sides : <i>Embossed aluminium foil</i>	- Both sides : <i>Embossed aluminium foil with anti-bacterial coating</i>	- Outer face : <i>Embossed aluminium foil</i> - Inner face : <i>Foil scrim kraft</i>	- Outer face : <i>Metal sheet or G.I. sheet</i> - Inner face : <i>Embossed aluminium foil</i>	
Technical Properties for APA and APAX					
Thermal Conductivity		0.018-0.022 W/m-k			
Flexural Strength		66 N/cm ²			
Compression Strength		15 N/cm ²			
Water Absorption		1.4 g/100cm ²			
Aluminium Foil and PIR Foam Characteristics for APA and APAX					
Embossed Aluminium Foil	Thickness	60-80 microns			
	Weight per unit area	0.25 kg/m ²			
	Color reference	Silver			
PIR Foam	Generic type	PIR			
	Product reference	Poly-isocyanurate Panel			
	Thickness	20 mm			
	Density	45-50 kg/m ³			
	Color reference	Beige			

List of Test Reports and Certifications

Description	Test Result	Test Method	Institution
Thermal Conductivity	0.022 W/m-k	ASTM C518-15	SGS
Density	48.63 kg/m ³	ASTM D1622	Exova, Canada
Flexural Strength	954 kPa	ASTM D203-05a	Exova, Canada
Compression Strength	283 kPa	ASTM D1621-16	Exova, Canada
Water Absorption	0.28 %	ASTM C209	Exova, Canada
Toxicity Index	2.75	NES 713	Interscience Fire Laboratory, UK
Vertical Flammability	V-0	UL94v	Interscience Fire Laboratory, UK
Horizontal Burning Foam Material	HF-1	UL94H	Department of Science Service
Fire Propagation Index	Class 0 (Index: 3.2)	BS 476 Part 6 1989+A1: 2009	Exova Warrington fire, UK
Spread of Flame	Class 1 (Index: <50 mm.)	BS 476 Part 7: 1997	Exova Warrington fire, UK
Fire Classification	Class 0	BS 476 Part 6 & 7	Exova Warrington fire, UK
Smoke Development	Class A	ASTM E84-09c	Exova Warrington fire, Canada



Comparison Chart & Data sheet

Comparison Chart

	Steel Duct	Duct Excel PID Panel	Remark
Insulation	Insulation needed additionally	Self-insulation (0.022-0.024 w/m-k)	G/W 40T effect without extra insulation
Weight	0.8T:7.0 kg/m ² (G/W 24K 25T) 1.0T:8.3 kg/m ² (G/W 24K 25T)	1.38 – 1.44 kg/m ²	Only 1/5 weight of- steel duct
Noise	Noise generation and transfer	Excellent noise reducing effect	
Antibacterial	Easily contaminated	Antibacterial Function (Model APAX)	Epoxy coating (Antibacterial Ceramic – Zeolite contained)
Corrosion	Corrosion by humidity in air	No corrosion	Epoxy coating
Chemicals	Rapid corrosion by chemical reaction in air	Strong chemical resistance	Epoxy coating
Permissible Pressure	High pressure possible	Maximum 150 mmAg	
Permissible Velocity	High pressure possible	Below 15m/sec	
Leakage		Excellent	
Installation	Hard to cut, bend, and install Extra insulation needed	Easy to cut and light weight, able to bend No extra insulation needed	Low cost and save time
Exterior	Extra painting needed	Various colors	
Maintenance	Hard	Easy	
Durability	About 10 years	Semi-permanent	
Price	High	Reasonable	

Data sheet

Dimension	4,000 x 1,200 x 20 mm. or 2,400 x 1,200 x 20 mm.
Density	48-50 kg/m ³
Thickness of Aluminium Foil	80 micron
Weight	1.4 kg/m ²
Thermal Conductivity	0.022-0.024 w/m-k
Water Absorption	0.28 %
Temperature Range	-170°C to +140°C

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