

ISO DUCT PANELS FLANGES, TOOLS & ACCESSORIES

ISO DUCT/ PRE INSULATED DUCT PANELS



Pre Insulated Duct Panels is the modern trend in HVAC Ducting. insulation is one of largest producer, exporter of Pre insulated duct panels in Dubai, UAE, Middle East and around the world with the brand name of ISO Ducts. Hapri Ducts are CFC Free and Environment Friendly. Hapri ISO ducts are made of Rigid Polyisocyanurate (PIR)/Polyurethane (PUR) foam with higher densities, compressive strength and best thermal properties.

ISO Pre Insulated Ducts are preferred over the traditional ducting and competitors due to the following advantages.

1. Light weighted.

ISO Pre Insulated Ducts are light weighted yet strong enough to hold the handling in sites and during installation and can keep its dimensional stability for years.

2. Cost Effective

ISO Pre Insulated ducts is less costlier than the other available materials for ducting having all the necessary properties of air circulations.

3. CFC Free

ISO Pre Insulated duct is CFC free.

4. Lesser Manpower

ducts can be fabricated with less manpower , thus reducing labor cost directly.

5. Environment Advantages

ISO Pre insulated ducts are perfectly safer for environment. Hapri materials are listed as green building materials by Dubai Central laboratory (DCL).

6. Antifungal and Antibacterial

ISO Pre Insulated Ducts are antifungal and anti bacterial. It's used in various projects of hospitals, clean rooms , food industries and for pharmaceutical purposes.

7. Thermal Conductivity

ISO Pre Insulated Ducts provide the best thermal conductivity among the materials used for ducting.

8. Noise and Vibration

ISO Ducts are provided in higher densities and compressive strength which generates less/no vibration and noise as compare to traditional GI ducts.

9. Quicker Fabrication and Installation

ISO ducts can be fabricated quickly and most of the time at site and can be installed with minimum efforts and manpower.

10. Fire Properties

ISO ducts provides higher resistance in case of Fire. It's have tested according to the international standards.



TECHNICAL DETAILS OF HAPRI PRE INSULATED PIR PANELS

ISO PIR Ducts are made of closed cell rigid PIR and PUR insulations. The general properties of PIR Pre Insulated Duct panels are given below.

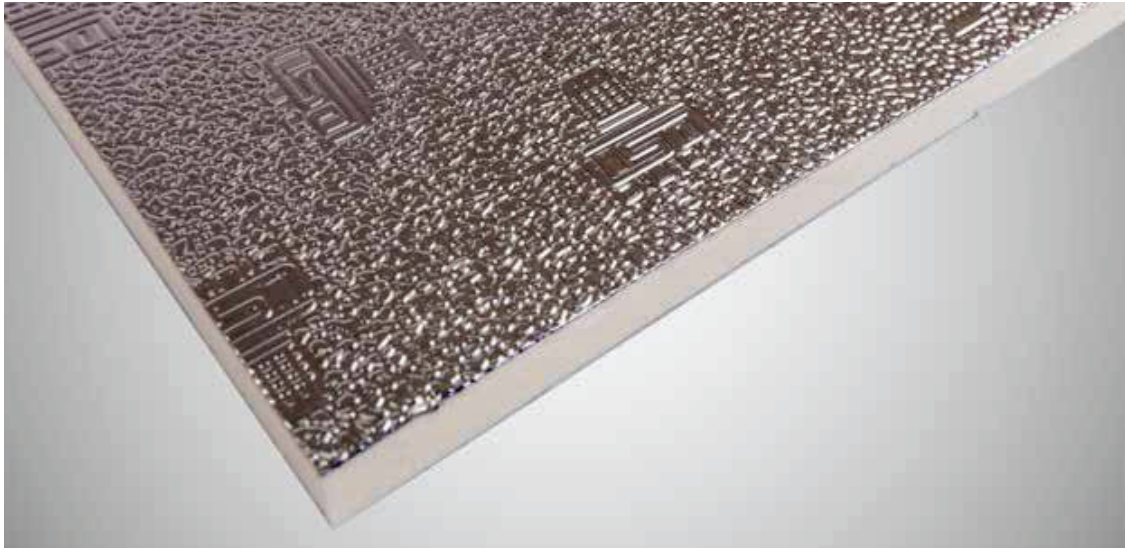
- **Panel Dimensions**
Length : 4000mm
width : 1200mm
- **Thickness of ISO Pre Insulated Duct:**
Available in 20mm and 30mm. 25mm can be also produced.
- **Aluminum Facing of ISO Duct:**
Both sides Embossed Aluminum, One side Embossed and other side Plain
- **Aluminum Thickness:**
80 Micron Embossed & Plain, 200 Micron Embossed Plain
- **Density:**
Standard Density of Hapri Pre Insulated ISO Duct is 48 ± 2 . Density range can vary according to the project requirements
- **Compressive Strength:**
Approx 300 Kpa
- **Thermal Conductivity:**
0.020 w/m*k
- **Fire Properties :**
Class 0/Class 1
- **Water Absorption**
0.04 %
- **Flexural /Bending Strength :**
Between 1200 - 2000 Kpa
- **Pressure Limit :**
Approx 1000 Pa for 20mm, and for 30mm approx 1700 Pa
- **Air Speed :**
15 m/s
- **Usage and Applications :**
Indoor and outdoor, Hospitals, Clean Rooms, Pharmaceutical Industries.
- **Sound Attenuation:**
Avg (3150-100 Hz) 14.1
- **Working Temperature :**
25 till 80 Degree Celsius

PRE INSULATED PIR DUCTS (ISO DUCT) FOR INDOOR APPLICATIONS



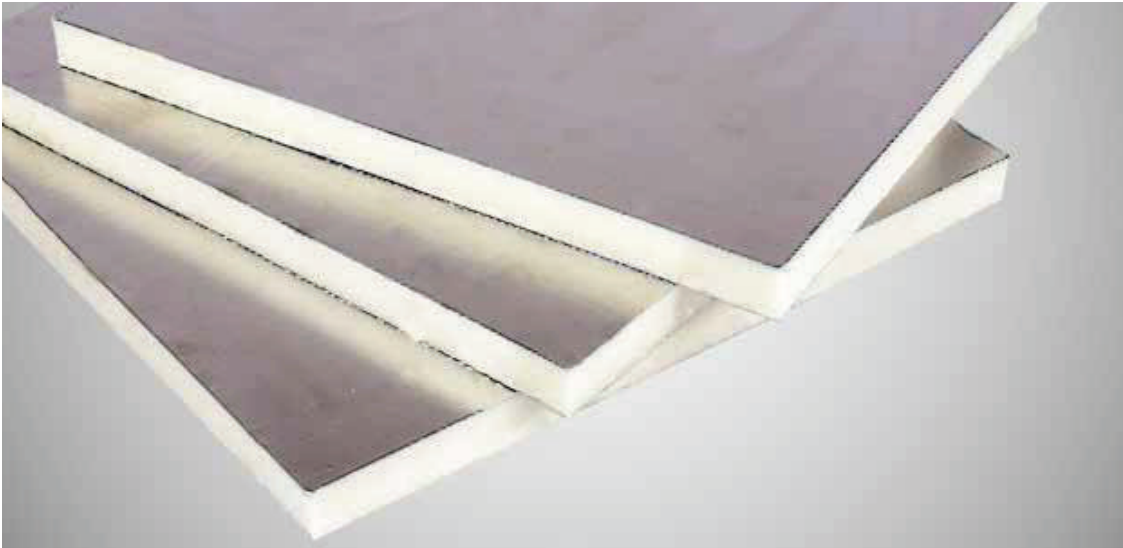
- **THICKNESS :**
20 mm
- **DENSITY :**
 $48 \pm 2 \text{ Kg/m}^3$
- **SHEET SIZES :**
4000 x 1200 mm
- **THERMAL CONDUCTIVITY :**
0.020 w/m*k
- **ALUMINUM FOIL :**
80/80 Micron (One Side of Aluminum
Can be Provided with 200 Micron as well)
- **ALUMINUM FOIL FINISHING :**
Embossed on Both Sides

PRE INSULATED PIR DUCTS (ISO DUCT) FOR OUT DOOR APPLICATIONS



- **THICKNESS :**
30 mm
- **DENSITY :**
 $50 \pm 2 \text{ Kg/m}^3$
- **SHEET SIZES :**
4000 x 1200 mm
- **THERMAL CONDUCTIVITY :**
 $0.020 \text{ w/m}^{\circ}\text{K}$
- **ALUMINUM FOIL :**
80/200 Micron
- **ALUMINUM FOIL FINISHING :**
Embossed on Both Sides

PRE INSULATED PIR DUCTS (ISO DUCT) FOR HOSPITAL/CLEAN Rooms/Pharmaceutical Applications



- **THICKNESS :**
20 mm
- **DENSITY :**
48±2 Kg/m³
- **SHEET SIZES :**
4000 x 1200 mm
- **THERMAL CONDUCTIVITY :**
0.020 w/m*k
- **ALUMINUM FOIL :**
80/80 Micron
- **ALUMINUM FOIL FINISHING :**
Embossed on Both Sides
Antimicrobial, Antibacterial and
Anti Fungal

PRE INSULATED (PIR) ISO DUCT FABRICATION

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Pre Insulated Duct Panel (HVAC) are alternative to the traditional ducts. ISO Pre Insulated PIR ducts are manufactured keeping in mind all the international standards Like SMACNA, ASHREA etc. ISO PIR Ducts can be fabricated to any design to suit the construction and air conditioning requirement of the building.

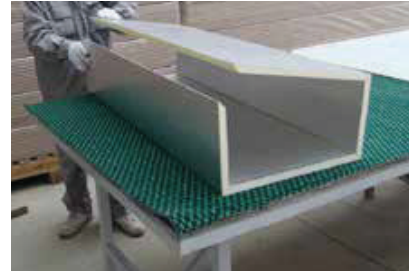
have the honor to train the customers for fabricating the Pre Insulated duct within UAE and Overseas as well. The Fabrication process is closely monitor from Cutting till delivery to the site.

ISO PRE INSULATED DUCT FABRICATION PROCESS INCLUDES THE FOLLOWING.

- **Tracing**
The Cutting marks are drawn by pencil on the sheets according to the sizes.
- **Cutting**
The Duct sheets are cut into the dimensions mentioned in the drawing by different shaped cutters 45 degree left, right, straight and 90 degree angles.
- **Gluing**
Glue is uniformly applied on the edges. The area must be cleaned from dust before applying the glue. It's a specialized PIR Glue used for this specific purpose.



- **Folding/Bonding**
The Ducts are then folded and bonded together properly so that the edges are aligned to each other.
- **Sealing**
The Ducts joints are sealed internally with Sealant so there is no air leakage and the air flow is clean.
- **Taping**
The external joints are closed with Aluminum tap. Also if there is any damage internally or externally, it's covered with the Aluminum Tap.
- **Putting Flanges (Aluminum Profiles/PVC Profiles)**
At the end flanges are put using profile glue. The flanges and profile may be Aluminum or PVC. Reinforcing bar might be used if the duct size is more.



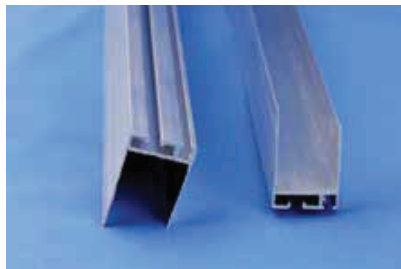
PIR/PUR DUCT FLANGES AND TOOLS

Aluminum Joint

Flange / Invisible Flange

Thickness : (20mm & 30mm)

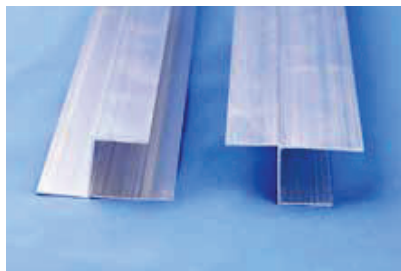
Length : 4mt



Aluminum Chair Flange

Thickness : (20mm & 30mm)

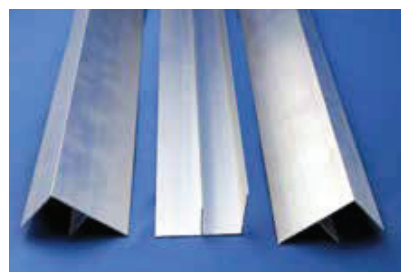
Length : 4mt



Aluminum F-Flange

Thickness : (20mm & 30mm)

Length : 4mt



Aluminum U-Flange

Thickness : (20mm & 30mm)

Length : 4mt



PVC Joint Flange

(Invisible Flange)

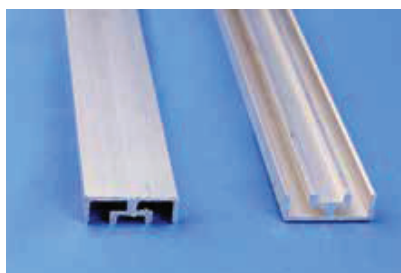
Thickness : (20mm & 30mm)

Length : 4mt

**Aluminum sliding channel**

Thickness : 30mm

Length : 4mt

**H-Insert (H-Bayonet)**

Thickness : 20mm

Length : 4mt

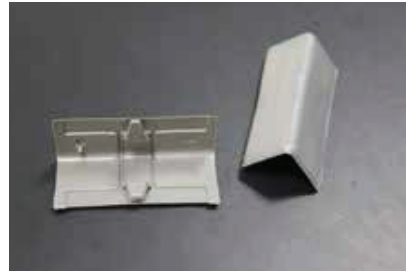
**GI Corner Cover**

Thickness : (20mm & 30mm)



PVC Corner

Thickness : (20mm & 30mm)

**Aluminum Tap**

2 Inch, 3 Inch

**Aluminum Clumping Ruler****Compass**

Glue Spreader Manual



Portable Fabrication Table



Screw for Stiffening Rod

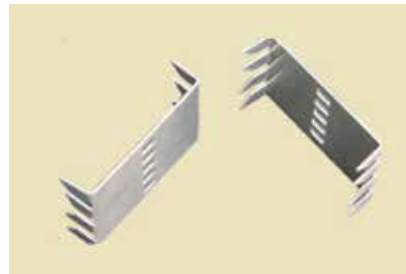


Cross Fixing Device



Reinforcement (Disc & Bar)

Thickness : 14mm & Length : 4mt

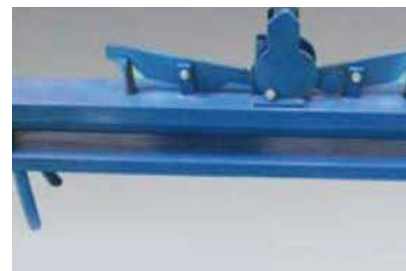
**Tiger Joint****Pre insulated Volume Control Damper****Profile Glue****Duct Glue**

Capacity : 15kg



Silicon**Rubber Hammer****Cutting Tools Set**

(Left, Right, Straight and V cutter)

**Manual Bending Machine****Extended Silicon Tool**

(Silicon Gun)





TECHNICAL SUPPORT PROGRAM

Technical team comprises of experts from different fields. We provide pre-sales and after sale services to our customers in different areas from suggesting the required thickness of insulation till the required training fixing and supervision for the entire projects at intervals.

The first step is to connect the customer to the department immediately and the experts provide all the technical advice suggesting the required thickness of insulation based on the U Value Calculations and requirements of the Local authorities and consultants.

Mockup samples are made at the site for better understanding of fixing and installation. Free training is provided to the installation people at the construction site. Free supervision for the whole project can be provided whenever needed (at intervals)

The specialized Technical team provides the following assistance to the customers worldwide.

- Suggesting the required product without lamination, with different facing depending upon the usage of materials like wall insulation, roof insulation cavity walls, soffit slab, cold store etc.
- Recommending the required thickness according to the u value calculation
- Calculating U-Vales of the Product and the whole system.
- Method of Installation
- Mockup sample at site
- Training for installation at site
- Maintain the quality of application though out the project
- Compliance to the Local authorities regulations like Dubai Municipality, Estidama etc

Duct Fabrication Accessories Calculation (Approx)

	Pre insulated Duct panel 20 mm & 30 mm	QTY/SQM	1000	
S No	Description	Unit	Qty	Box/Tin/pc
1	Aluminium/PVC Joint 4rm/Pcs	Rm	800	200
2	Aluminium Chair 4rm/Pcs	Rm	91	22.72727273
3	Aluminium U Flange 4rm/Pcs	Rm	91	22.72727273
4	Aluminium F Flange 4rm/Pcs	Rm	91	22.72727273
5	H Bayonet 4rm/Pcs	Rm	400	100
6	Duct Glue 15 Kg	Kg	100	6.666666667
7	Duct Silico 24pcs/Box	Roll	110	4.578754579
8	Aluminium Tape 3 inch,16pcs/Box	Roll	164	10.22913257
9	Aluminium tape 2 inch,24pcs/Box	Roll	164	6.819421713
10	PVC Corner	Pcs	909	
11	GI Corner	Pcs	1724	
12	Re-Inforcement Bar Aluminum 4rm/Pcs	Rm	110	27.47252747
13	Aluminum Disc Pcs	Pcs	185	
14	Metal Screw Pcs	Pcs	93	

PROJECT REFERENCES



Home Centre
Ajman



Al Ghubaiba Metro Station
Dubai



D3
Dubai



Golden Mile Palm Jumeirah
Dubai



Mushrif Park
Abu Dhabi



OZO Kandy Sri Lanka
Sri Lanka