HAPRI Insulation Materials Manufacturing Dubai UAE (Established in 2003) is one of the UAE Leading Thermal Insulation Company dealing in Polyurethane (PUR) / Polyisocyanurate (PIR) insulation, Pre-Insulated Duct Panels (PIR Ducts), Duct fabrication and HVAC Accessories. We are also one of the leading exporters of thermal insulation Boards, Pre Insulated Duct Panels to the Gulf region, Sub Continent Including Pakistan, India, Bangladesh, Sri Lanka, African countries and Europe.

Hapri Insulation was initially open under the license of a German Company. The Technology used in manufacturing is imported from Germany. Hapri Manufacture rigid Closed Cell, Polyurethane Panels /Polyisocyanurate panels for different thermal Insulation applications like wall Insulation, Roof Insulation Soffit slab Insulation, cavity walls Insulation, Cold Store Insulation, Cladding, Floor Insulation, Doors & Windows Insulation, Ships & containers etc.

Hapri is ISO 9001:2008 Certified companies and is committed to provide best quality services, cost effective solutions according to customers’ needs. HAPRI products are particularly tailored made to meet the necessity of local and global market modern trends in Construction and quality infrastructure.

Our products are approved by Dubai Civil Defense, Certified by Dubai Central Laboratory (DCL) (Building Material Section, Dubai Municipality), Estidama, Urban Planning Council Abu Dhabi, Environment Friendly matching all the necessary requirement for Green Building, Environment Friendly, LEED Certification (Listed as Green Building Insulation by Dubai Central Laboratory). Hapri Insulation Boards are Fire Retardant and certified by Warrington Fire. HAPRI Products are CFC Free, Having ODP, GWP < 5. There are no Asbestos materials or Chlorine Based Materials used in Production and it’s perfectly safe for humans and the environment.
CEO’S MESSAGE

We welcome you to Hapri Insulation Materials Manufacturing and hope that you find the information here relevant and useful to you.

At Hapri Insulation the words Quality Products and Right Solutions epitomize the value we bring to our clients, and it’s what differentiates us within the Insulation industry.

Since our establishment in Dubai, UAE in 2003, our company continues to be committed to manufacturing high quality of Polyurethane (PUR), Polyisocyanurate (PIR), and PIR Pre Insulated Duct Panel for the local and overseas market. Being located in the new Capital of the world, Dubai, our strength lies with our ability to provide immediate and comprehensive before and after sales support. Our team of specially trained sales and marketing personnel will able to guide you to select the right products for your project application and be on hand to provide advice on product installation and other technical details.

Also, as a socially responsible corporation, we intensified our Research and Development efforts to develop ‘Green Products’ through our Hapri Go Green programme. We produce insulation keeping the green building requirements and received enthusiastic response from consultants and developers alike.

We would like to offer a special thanks to our clients for their continued vote of confidence in Hapri Insulation as their choice of PIR/PUR. Without them, none of this would be possible.

Best Wishes,

Hapri
Insulation Materials Manufacturing
QUALITY POLICY

The primary goal of Hapri Insulation Materials Manufacturing is to achieve the highest standards of quality in all business units, practices and operations without compromise. Our objective is to continually improve our company performance, while offering our customers best quality, cost effective environment friendly product and professional service. Quality performance is one of the cornerstones of our company culture and is considered a personal responsibility of all employees. To maintain quality performance of all business units at the highest level.

The following aims are pursued.

- To fulfill customer need and expectations by delivering a quality product in a consistent and timely manner.
- To cultivate and maintain the commitment to continual improvement and communicate our goal and objectives to every employee.
- To promote a working environment where training and tools are provided for all work to proceed in a safe and efficient fashion.
- To Furnish the system of policies which are periodically reviewed to ensure the ability of all group to perform their work effectively.

Hapri Insulation Materials Manufacturing business plans include high targets so that everyone who perform work for the company is responsible to help achieve these targets.
WHY HAPRI INSULATION?

Hapri Polyiso, or polyisocyanurate, is a closed-cell rigid foam board insulation. It’s used mostly on roofs and walls of offices, industrial buildings, warehouses, retail and manufacturing facilities, and large buildings. It has a great reputation as a high thermal performing insulation and is also unique for solving some of the more complex air leakage and insulation challenges in existing homes.

Here are a few of the reasons why we recommend using Hapri Polyiso insulation for our clients:

HIGHEST R-VALUE PER INCH

Hapri PUR/PIR rigid foam board has the best thermal resistance (R-value) of any building insulation product in the market, meaning the product is extremely efficient. This is great news for builders since it reduces the amount of material needed to achieve the same effects as other types of insulation.

COST ADVANTAGES & SAVINGS

Hapri PUR/PIR cost effectiveness is one of the greatest benefits of using this product for your next project. Increasing the thickness of polyiso on a roof deck significantly reduced energy costs for the building. The ongoing savings on monthly energy bills means the cost of installation can be paid off and justified by the significant monthly savings.

COMPRESSIVE STRENGTH

Compressive strength is a material’s ability to maintain its shape and to resist deformation when under a heavy weight or force. Hapri PUR/PIR insulation boards perform very well in compression testing, and are available in a range of compressive strengths. This is important since the material is used for wall application, which requires the product to support flexible siding materials. When used for roofing, the boards must be able to support the weight of anyone installing or repairing the roof, support fastener loads, and sustain the total roofing system. Having high-quality insulation with high compressive strength is important for the durability and longevity of any building.
ENVIRONMENTALLY RESPONSIBLE

When measuring a material’s impact on the environment, organizations like the DCL, DM, and Estidama don’t just measure energy saving impact. They also evaluate the effects the manufacturing process has on the environment and the impacts the material has on the environment while in use. Hapri PUR/PIR perform extremely well on all environmental testing. During manufacturing, polyiso insulation uses a hydrocarbon-based blowing agent which has zero Ozone Depletion Potential (ODP) and virtually no Global Warming Potential (GWP).

FIRE RESISTANT

All construction materials, including polyiso insulation, must pass extensive fire safety testing. Among all foam plastics Hapri PUR/PIR has one of the highest levels of inherent fire resistance due to its strong chemical structure. In addition, polyiso can be ordered with a thermal barrier and left exposed to living areas to meet code. This makes the material more fire resistant and reduces the spread of flame.

Whether you are a homeowner or a builder working on a large-scale industrial project or a complex home retrofit, consider using polyiso insulation. As an alternative insulation material, it provides superior R-value, fire resistance and a host of other benefits.
Hapri Polyisocyanurate (PIR) and Polyurethane (PUR) Insulation provide the best R-Value of all the known Rigid Foam Insulation. All our products are meeting the green building requirements, CFC Free, low GWP, O ODP and eco friendly duly certified by Dubai Central Laboratory and Dubai Municipality. Hapri Products are having better thermal properties and high level of fire resistance which made it the most suitable insulation to be used in the construction industries.

Hapri Products are tailor made depending upon the usage with difference facings like Aluminum foil, Fiberglass, Craft paper and combination of the different facings. Our Products are approved by Dubai Municipality, Dubai Civil Defense and Estidama Abu Dhabi.
HAPRI POLYISOCYANURATE (HAPRI - PIR) INSULATION FOAM

TECHNICAL DETAILS OF HAPRI POLYISOCYANURATE (HAPRI PIR-WF) INSULATION FOAM

Hapri PIR-WF is comes without any facing. its mainly used in EIFS, Wall External and cavity walls instulation.

Recommended Uses.

- Wall Insulation External
- EIFS System
- Cavity walls
- Filling up gaps
- Cold storage
- Cladding
- Roof insulation

Technical Details

- Thickness Range : 20-200mm
- Density: Min 30kg/m3 , Max 100 kg/m3 (Recommended density for best thermal conductivity : 35-50 kg/m3)
- Panel Dimensions: 2m x 1.2m (Length can be increased up to 5m)
- Thermal Conductivity(K value)=0.0207 w/m*k - 0.022 w/m*k
- Characteristics in Fire: Class B2, Euro Class E.
- Compressive strength : more than 200 kpa
- CFC Free
- 0 ODP and
- GWP Less than 5
- Approved by Dubai Municipality.
- Certified by Dubai Central Laboratory.
- Approved by Dubai Civil Defense.
- Listed as Green Building Material by Dubai Central Laboratory (DCL)
TECHNICAL DETAILS OF HAPRI POLYISOCYANURATE (HAPRI PIR-FF) INSULATION FOAM

Hapri PIR-FF is laminated on both sides with Fiberglass. Fiberglass is suited for adhesive properties. It's mostly used in the areas where there is any external element to be fixed directly to the Insulation like plaster, EIFS system, Bitumen's, gypsum board etc. Hapri PIR-FF can be directly painted as well.

Recommended Uses.

- EIFS System.
- External Wall Insulation
- Roof Insulation if there is some adhesion required to the insulation (depends upon the roof structure)
- Soffit Slab Insulation with direct paint.

Technical Details

- Thickness Range: 20-200mm
- Density: Min 30 kg/m³, Max 100 kg/m³ (Recommended density for best thermal conductivity: 35-50 kg/m³)
- Panel Dimensions: 2m x 1.2m (Length can be increased up to 5m)
- Thermal Conductivity (K value) = 0.0207 W/m²K - 0.022 W/m²K
- Characteristics in Fire: Class B2, Euro Class E.
- Compressive strength: more than 200 kPa
- CFC Free
- 0 ODP and
- GWP Less than 5
- Approved by Dubai Municipality.
- Certified by Dubai Central Laboratory.
- Approved by Dubai Civil Defense.
- Listed as Green Building Material by Dubai Central Laboratory (DCL)
TECHNICAL DETAILS OF HAPRI POLYISOCYANurate (HAPRI PIR-AA) INSULATION FOAM

Hapri PIR-AA is laminated on both sides with Aluminum Foil/Reinforced Aluminum Foil. Aluminum foil work as water vapor barrier. It’s mostly used in the areas where you can expect some sort of moisture from the surface or the environment.

Recommended Uses.

- Roof Insulation
- Soffit Slab Insulation
- Cavity Walls
- Cladding
- Doors & Windows Insulations
- Cold Stores

Technical Details

- Thickness Range: 20-200mm
- Density: Min 30kg/m3, Max 100 kg/m3 (Recommended density for best thermal conductivity: 35-50 kg/m3)
- Panel Dimensions: 2m x 1.2m (Length can be increased up to 5m)
- Thermal Conductivity (K value)=0.0207 w/m°k - 0.022 w/m°k
- Characteristics in Fire: Class B2, Euro Class E.
- Compressive strength: more than 200 kpa
- CFC Free
- 0 ODP and
- GWP Less than 5
- Approved by Dubai Municipality.
- Certified by Dubai Central Laboratory.
- Approved by Dubai Civil Defense.
- Listed as Green Building Material by Dubai Central Laboratory (DCL)
TECHNICAL DETAILS OF HAPRI POLYISOCYANURATE(HAPRI PIR-CR) INSULATION FOAM

Hapri PIR-CR is laminated on both sides with Craft Paper. Craft Paper adds adhesion properties to insulation. It’s best suited for areas where there is direct paint or adhesion to the insulation required.

Recommended Uses.

- Floor Insulation
- Soffit Slab Insulation for direct paint.
- Cold store Insulation.

Technical Details

- Thickness Range : 20-200mm
- Density: Min 30kg/m3 , Max 100 kg/m3 (Recommended density for best thermal conductivity : 35-50 kg/m3)
- Panel Dimensions: 2m x 1.2m (Length can be increased up to 5m)
- Thermal Conductivity(K value)=0.0207 w/m*k - 0.022 w/m*k
- Characteristics in Fire: Class B2, Euro Class E.
- Compressive strength : more than 200 kpa
- CFC Free
- 0 ODP and
- GWP Less than 5
- Approved by Dubai Municipality.
- Certified by Dubai Central Laboratory.
- Approved by Dubai Civil Defense.
- Listed as Green Building Material by Dubai Central Laboratory (DCL)
TECHNICAL DETAILS OF HAPRI POLYISOCYANURATE (HAPRI PIR-FA) INSULATION FOAM

Hapri PIR-FA is laminated with one side Fiberglass and other side with aluminum foil. Its best suited in areas where there is moisture expected on one side and on the other side some sort of adhesion to the insulation is required like EIFS, Soffit slab insulation or Roof insulation at times.

Recommended Uses.

- Wall Insulation External
- EIFS System
- Soffit slab Insulation

Technical Details

- Thickness Range: 20-200mm
- Density: Min 30kg/m3, Max 100 kg/m3 (Recommended density for best thermal conductivity: 35-50 kg/m3)
- Panel Dimensions: 2m x 1.2m (Length can be increased up to 5m)
- Thermal Conductivity (K value): 0.0207 W/m*k - 0.022 W/m*k
- Characteristics in Fire: Class B2, Euro Class E.
- Compressive strength: more than 200 kpa
- CFC Free
- 0 ODP and
- GWP Less than 5
- Approved by Dubai Municipality.
- Certified by Dubai Central Laboratory.
- Approved by Dubai Civil Defense.
- Listed as Green Building Material by Dubai Central Laboratory (DCL)
HAPRI POLYURETHANE (HAPRI - PUR) INSULATION FOAM

TECHNICAL DETAILS OF HAPRI POLYURETHANE (HAPRI PUR-WF) INSULATION FOAM

Hapri PUR-WF is comes without any facing. It’s mainly used in EIFS, Wall External and cavity walls instulation.

Recommended Uses.
- Wall Insulation External
- EIFS System
- cavity walls
- filling up gaps
- cold storage
- Cladding

Technical Details
- Thickness Range : 20-200mm
- Density: Min 30kg/m³ , Max 100 kg/m³ (Recommended density for best thermal conductivity : 35-50 kg/m³)
- Panel Dimensions: 2m x 1.2m (Length can be increased up to 5m)
- Thermal Conductivity(K value)=0.0207 w/m*k - 0.022 w/m*k
- Characteristics in Fire: Class B2, Euro Class E.
- Compressive strength : more than 200 kpa
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- GWP Less than 5
- Approved by Dubai Municipality.
- Certified by Dubai Central Laboratory.
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- Listed as Green Building Material by Dubai Central Laboratory (DCL)
TECHNICAL DETAILS OF HAPRI POLYURETHANE (HAPRI PUR-FF) INSULATION FOAM

Hapri PUR-FF is laminated on both sides with Fiberglass. Fiberglass is suited for adhesive properties. It’s mostly used in the areas where there is any external element to be fixed directly to the Insulation like plaster, EIFS system, Bitumen’s, gypsum board etc. Hapri PIR-FF can be directly painted as well.

Recommended Uses.

- EIFS System.
- External Wall Insulation
- Roof Insulation if there is some adhesion required to the insulation (depends upon the roof structure)
- Soffit Slab Insulation with direct paint.

Technical Details

- Thickness Range: 20-200mm
- Density: Min 30kg/m3, Max 100 kg/m3 (Recommended density for best thermal conductivity: 35-50 kg/m3)
- Panel Dimensions: 2m x 1.2m (Length can be increased up to 5m)
- Thermal Conductivity (K value) = 0.0207 w/m*k - 0.022 w/m*k
- Characteristics in Fire: Class B2, Euro Class E.
- Compressive strength: more than 200 kpa
- CFC Free
- 0 ODP and
- GWP Less than 5
- Approved by Dubai Municipality.
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- Approved by Dubai Civil Defense.
- Listed as Green Building Material by Dubai Central Laboratory (DCL)
TECHNICAL DETAILS OF HAPRI POLYURETHANE (HAPRI PUR-AA) INSULATION FOAM

Hapri PUR-AA is laminated on both sides with Aluminum Foil/Reinforced Aluminum Foil. Aluminum foil work as water vapor barrier. It’s mostly used in the areas where you can expect some sort of moisture from the surface or the environment.

Recommended Uses.
- Roof Insulation
- Soffit Slab Insulation
- Cavity Walls
- Cladding
- Doors & Windows Insulations
- Cold Stores

Technical Details
- Thickness Range : 20-200mm
- Density: Min 30kg/m³, Max 100 kg/m³ (Recommended density for best thermal conductivity : 35-50 kg/m³)
- Panel Dimensions: 2m x 1.2m (Length can be increased up to 5m)
- Thermal Conductivity(K value)=0.0207 w/m°k - 0.022 w/m°k
- Characteristics in Fire: Class B2, Euro Class E.
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Hapri PUR-CR is laminated on both sides with Craft Paper. Craft Paper adds adhesion properties to insulation. It’s best suited for areas where there is direct paint or adhesion to the insulation required.

Recommended Uses.

- Floor Insulation
- Soffit Slab Insulation for direct paint.
- Cold store Insulation.

Technical Details

- Thickness Range: 20-200mm
- Density: Min 30 kg/m3, Max 100 kg/m3 (Recommended density for best thermal conductivity: 35-50 kg/m3)
- Panel Dimensions: 2m x 1.2m (Length can be increased up to 5m)
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- Characteristics in Fire: Class B2, Euro Class E.
- Compressive strength: more than 200 kpa
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- Listed as Green Building Material by Dubai Central Laboratory (DCL)
TECHNICAL DETAILS OF HAPRI POLYURETHANE (HAPRI PUR-FA) INSULATION FOAM

Hapri PUR-FA is laminated with one side Fiberglass and other side with aluminum foil. It's best suited in areas where there is moisture expected on one side and on the other side some sort of adhesion to the insulation is required like EIFS, Soffit slab insulation or roof insulation at times.

Recommended Uses.
- Wall Insulation External
- EIFS System
- Soffit slab Insulation

Technical Details
- Thickness Range: 20-200mm
- Density: Min 30kg/m3, Max 100 kg/m3 (Recommended density for best thermal conductivity: 35-50 kg/m3)
- Panel Dimensions: 2m x 1.2m (Length can be increased up to 5m)
- Thermal Conductivity (K value): 0.0207 w/m*k - 0.022 w/m*k
- Characteristics in Fire: Class B2, Euro Class E.
- Compressive strength: more than 200 kpa
- CFC Free
- 0 ODP and
- GWP Less than 5
- Approved by Dubai Municipality.
- Certified by Dubai Central Laboratory.
- Approved by Dubai Civil Defense.
- Listed as Green Building Material by Dubai Central Laboratory (DCL)
HAPRI INSULATION FIXINGS WITH HAMMER IN NYLON PIN

Product Information

**Installation tips**
1. Pre-drilling diameter: 10 mm
2. Minimum embedment depth: ETA 25mm

**Material**
- Plug sleeve: impact resistant copolymer of polypropylene PP
- Nail pin: polyamide PA 6.0 (Nylon) reinforced with fibre glass.

<table>
<thead>
<tr>
<th>L (mm)</th>
<th>mm</th>
<th>psc.</th>
<th>PRODUCT CODE</th>
<th>PRODUCT CODE</th>
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<tr>
<td>220</td>
<td>190</td>
<td>250</td>
<td>KI-220</td>
<td>-</td>
</tr>
</tbody>
</table>

**Typical applications**
- Mineral wool, rigid insulation to walls made of solid materials, concrete, solid brick, clinker brick, stone, silicate, brick, aerated concrete.

**Product Code**

<table>
<thead>
<tr>
<th>Base material</th>
<th>Concrete</th>
<th>Concrete</th>
<th>Corated brick</th>
</tr>
</thead>
<tbody>
<tr>
<td>KI-É</td>
<td></td>
<td>KI-É</td>
<td></td>
</tr>
</tbody>
</table>

- Characteristic loads (kN)
  - Concrete C12/15: 0.50
  - Concrete C20/25: 0.60
  - Corated brick C50/60: 0.50

1) Regarding design loads the national safety factors are to be incorporated.
2) Please observe the approval.

**Drill diameter**: 10mm
**Flange diameter**: 60mm
**Drilled hole depth**: 35mm
**Embedment depth**: 25mm

**Installation tips**
1. Pre-drilling diameter: 10 mm
2. Minimum embedment depth: ETA 25mm

**Material**
- Plug sleeve: impact resistant copolymer of polypropylene PP
- Nail pin: polyamide PA 6.0 (Nylon) reinforced with fibre glass.

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**Typical applications**
- Mineral wool, rigid insulation to walls made of solid materials, concrete, solid brick, clinker brick, stone, silicate, brick, aerated concrete.

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- Characteristic loads (kN)
  - Concrete C12/15: 0.50
  - Concrete C20/25: 0.60
  - Corated brick C50/60: 0.50

1) Regarding design loads the national safety factors are to be incorporated.
2) Please observe the approval.

**Drill diameter**: 10mm
**Flange diameter**: 60mm
**Drilled hole depth**: 35mm
**Embedment depth**: 25mm
GLASS FIBRE MESH FABRICS

Hapri Fiber Glass Reinforcement Mesh

General description

Glass fiber mesh fabrics combined with specially designed mesh surface treatments can be used in a wide range of applications. Mesh is mainly used as one component of external thermal insulation systems. A high quality synthetic coating on the glass yarn protects our mesh against alkaline influences from the adhesives and other materials that are used.

Technical characteristics

Works Standard: 0326 Glass Fibre Mesh Fabrics

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Units Description</th>
<th>R 131 A101</th>
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<tbody>
<tr>
<td>Setting</td>
<td>per 100mm</td>
<td>25x2</td>
</tr>
<tr>
<td>Waves</td>
<td>half leno</td>
<td>20.5</td>
</tr>
<tr>
<td>Standard Width (1)</td>
<td>cm individual value</td>
<td>100 or 110</td>
</tr>
<tr>
<td>Roll Length (1)</td>
<td>m individual value</td>
<td>50</td>
</tr>
<tr>
<td>Treated Fabric Weight</td>
<td>mm individual value</td>
<td>0.52</td>
</tr>
<tr>
<td>Loom state Fabric Weight</td>
<td>g/m² individual value</td>
<td>160</td>
</tr>
<tr>
<td>Treated Fabric Weight</td>
<td>g/m² individual value minimum</td>
<td>160</td>
</tr>
<tr>
<td>Combustible Matter Content (LOI)</td>
<td>% of mass individual value</td>
<td>20</td>
</tr>
<tr>
<td>Treatment type</td>
<td></td>
<td>alkali resistant without emollient, obstructing yarn drifting</td>
</tr>
<tr>
<td>Square Dimension</td>
<td>mm individual value</td>
<td>5mm x 5mm</td>
</tr>
</tbody>
</table>

(1) Other dimension on request

Tensile strength (TS) and elongation:

Minimum individual tensile strength (N/50 mm) and maximum elongation (%) when reaching minimum tensile strength is ascertained according DIN EN ISO 13934 -1 as per EN ISO 13934-1 as per

<table>
<thead>
<tr>
<th>Deposition method</th>
<th>Tensile Strength</th>
<th>Elongation</th>
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</thead>
<tbody>
<tr>
<td>Standard condition</td>
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<tr>
<td>3 ions solution</td>
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<tr>
<td>5% NaOH Solution</td>
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<td></td>
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<tr>
<td>Fast Test (6 hours)</td>
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<tr>
<td>Fast Test (24 hours)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(ETAG 004)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Setting: ± 5 % in warp and weft |
| Width: ± 1 %                    |
| Length: ± 0.5 % ± 2 %           |
| LOI: ± 4 %                      |

Quality inspection:
The way of quality inspection, taking of the samples and taking over of the material, is according to 0326 works standard.

Packing:
The rolls of fabrics are packed vertically in cardboard, on a wooden pallet.

A precise method of packing is mentioned in the works standard for packing

Storing:
Packed rolls are to be stored in dry rooms. Storing temperature is from -10°C to + 50°C.
Pre Insulated Duct Panels is the modern trend in HVAC Ducting. Hapri 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. Hapri ISO Pre Insulated Ducts are preferred over the traditional ducting and competitors due to the following advantages.

1. Light weighted.
Hapri 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
Hapri 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
Hapri ducts can be fabricated with less manpower, thus reducing labor cost directly.
5. Environment Advantages. Hapri 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. Hapri ISO Pre Insulated Ducts provide the best thermal conductivity among the materials used for ducting.

8. Noise and Vibration Hapri 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. Hapri 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 (HAPRI ISO DUCT) PANELS

Hapri 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/m²k

- **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±2 Kg/m³
- 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 OUTDOOR APPLICATIONS

- THICKNESS: 30 mm
- DENSITY: 50±2 Kg/m³
- SHEET SIZES: 4000 x 1200 mm
- THERMAL CONDUCTIVITY: 0.020 w/m*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

Pre Insulated Duct Panel (HVAC) are alternative to the traditional ducts. Hapri 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. Hapri 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.

HAPRI 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
Tickness: (20mm & 30mm)
Length: 4mt

Aluminum Chair Flange
Tickness: (20mm & 30mm)
Length: 4mt

Aluminum F-Flange
Tickness: (20mm & 30mm)
Length: 4mt

Aluminum U-Flange
Tickness: (20mm & 30mm)
Length: 4mt

PVC Joint Flange (Invisible Flange)
Tickness: (20mm & 30mm)
Length: 4mt

Aluminum sliding channel
Tickness: 30mm
Length: 4mt
GI Corner Cover
Thickness: (20mm & 30mm)

H-Insert (H-Bayonet)
Thickness: 20mm
Length: 4mt

PVC Corner
Thickness: (20mm & 30mm)

Aluminum Tap
2 Inch, 3 Inch

Duct Glue
Capacity: 15kg

Silicon

Reinforcement (Disc & Bar)
Thickness: 14mm
Length: 4mt

Tiger Joint
Cross Fixing Device

Screw for Stiffening Rod

Pre insulated Volume Control Damper

Profile Glue

Glue Spreader Manual

Portable Fabrication Table

Rubber Hammer

Cutting Tools Set
(Left, Right, Straight and V cutter)
Aluminum Clumping Ruler

Compass

Manual Bending Machine

Extended Silicon Tool (Silicon Gun)
PROJECT REFERENCES

Louvre
Abu Dhabi

Al Ghubaiba Metro Station
Dubai

Yas Mall
Abu Dhabi

Golden Mile Palm Jumeirah
Dubai

Mushrif Park
Abu Dhabi

Four Season Beach resort Jumeirah
Dubai
PROJECT REFERENCES

Al Barsha Police Station
Abu Dhabi

D3
Dubai

Home Centre
Ajman

Al Wahda Mall
Abu Dhabi

Mercedese Benz
Sri Lanka

OZO Kandy Sri Lanka
Sri Lanka
HAPRI TEAM

HAPRI LOCATION MAP