

INSULATED PANELS

Roof & Wall



الامارات لصناعة الالواح العازلة
Emirates Industrial Panel



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Introduction

Emirates Industrial Panel LLC (EIP) was set up in Dubai to meet the demand for quality insulated panels and has established itself as the regional leader in insulated roof, wall and cold store panel systems.

EIP has achieved consistent high quality in products and services as evidenced by landmark industrial projects in the MENA region. EIP works closely with industry regulatory bodies to continuously introduce improved systems and solutions to the market.

EIP has been at the forefront of performance based testing and certification for insulated panel products. EIP panels directly contribute to improved building performance criteria including high standards in energy efficiency, fire resistance, air infiltration and environmental impact.

EIP provides customised insulated panel solutions to meet the customers' objectives. Our sales executives together with our engineering personnel are available to provide solutions for your requirements.

Production Technology

EIP production line is a state of the art continuous production facility from Germany with a production capacity of over 3 million square meters of panels per annum.

The production technology, assisted by a complex automated control system, is designed to streamline the different parts of the manufacturing process enabling a minimal number of operators to run the line.

The production system consists of multiple stations, a profiling section, a foam application station, a special cut to length system, curing zone, and an automatic stacking and packaging unit. The fully automated line requires minimum operator intervention, eliminating mistakes and maximizing quality and efficiency.

The plant operates using environment friendly blowing agents meeting international standards in line with Kyoto Protocols,



“Pioneers in cladding and architectural panel systems”



EIP Panel Benefits

EIP sandwich panels offer unique features which includes:

- Light weight
- High rigidity
- High insulation properties
- Air tight fire rated joint
- High fire resistance properties
- Closed cell foam structure
- Easy to install
- Fiber free core
- Resistant to adverse weather conditions
- Hygiene surface meeting HACCP regulations
- Environment friendly - Zero ODP, low GWP



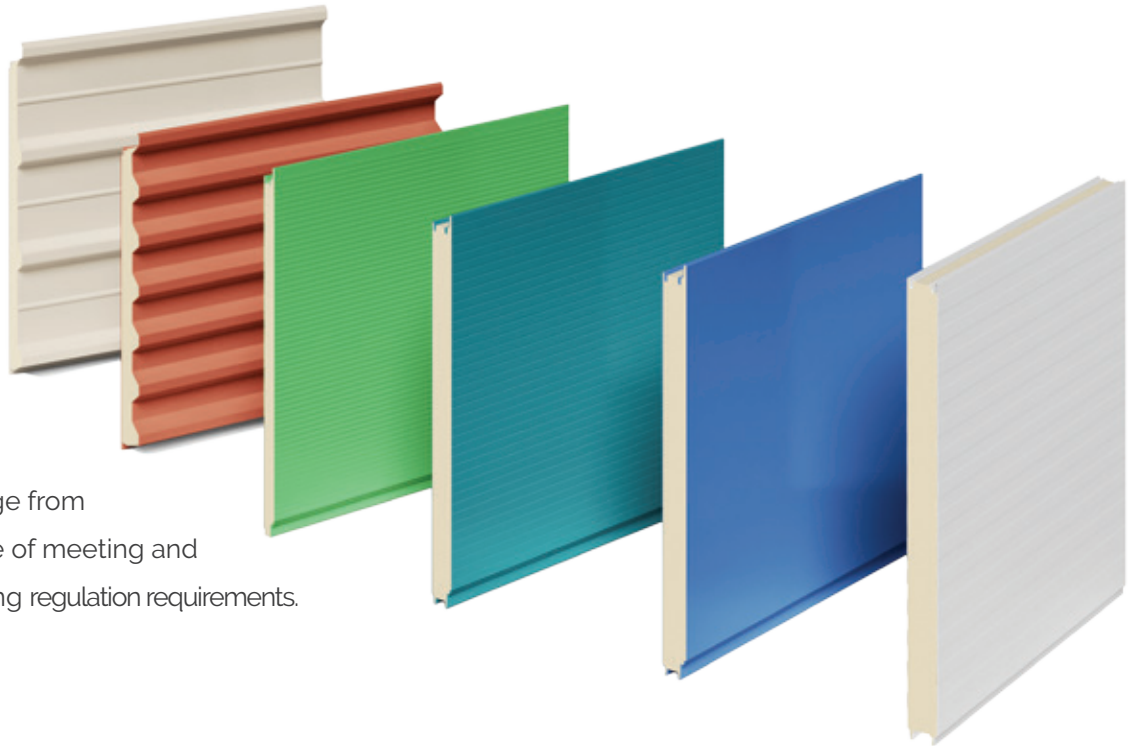
“Great buildings are all about details”

Products

EIP Roof & Wall Panels are composite prefabricated panels, consisting of two layers of metal facers and PUR/PIR insulation core between the facers.

EIP panels are versatile cladding products, allowing for use in:

- Roofs
- External Walls
- Partitions



Panel thicknesses range from 50 to 200mm, capable of meeting and exceeding local building regulation requirements.

Roof Systems

- TRP 40/333 Roof
- TRP 45/150 Roof
- TRP 40/333 Flex
- TRP 40/333 Inverse

Wall Systems

- HFW Hidden-Fix Wall (Architectural)
- TFW Through-Fix Wall
- TFW Partition Panel
- TRP 40/333 Wall
- TRP 45/150 Wall

Roof panels are designed for maximum water-tightness as well as improved structural strength for walkable roofs.

Wall panels offer a wide variety of options to suit different purposes.

HFW Architectural wall panels provide improved aesthetics to the façade with their concealed fixing detail that eliminates screw heads from view.

TFW panels can be fixed on any external wall, as well as constructing self-standing internal partitions.

TRP Panels can also be used on the external walls for a different effect. All wall panels can be installed horizontally or vertically.

Material Specifications

Metal Facers

The standard substrate for Internal and external facers are prepainted and hot-dip galvanised steel to BS EN 10143 standard.

- Thickness: 0.50mm
- Steel Grade: DX51D
- Zinc Coating: Z275 or Z200
- Top coat: Polyester, PES, 25microns thick
- Colour: RAL9002 Off-White
- Surface Protection: Polyethylene film

Variations are possible in the surface material specifications to suite a wide range of specialized applications:

- Thickness options: 0.40mm to 0.80mm
- Substrate options: Aluzinc-coated steel, Stainless steel (SS 304 or 316), Aluminum
- Top coat options: PVDF, Multi-Layer PVDF, High Durable Polyester, Food Safe, Plastisol, PolyDura
- Colour: Any colour from RAL catalogue

High Durable Polyester coating is suitable for increased resistance against corrosion and harsh cleaning agents.

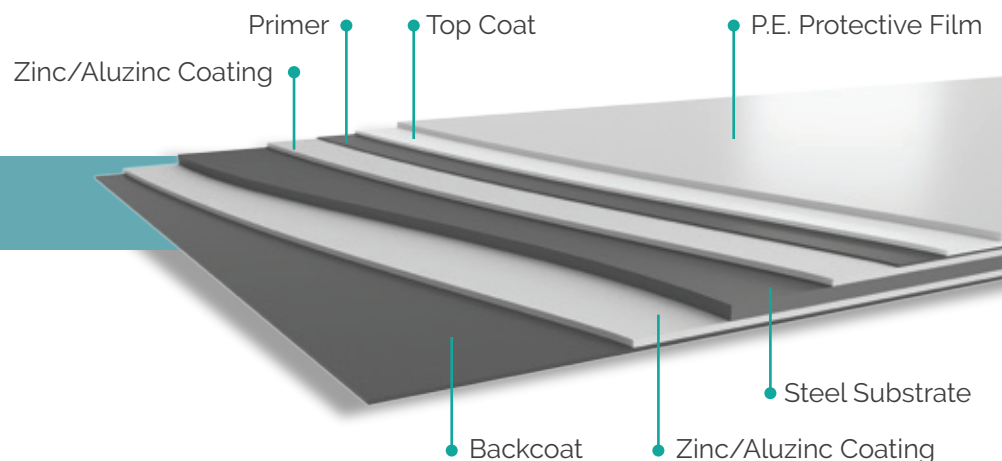
PVDF coating is suitable for external applications where higher resistance against corrosion, colour fading and harsh environment conditions is required.

Plastisol coating is suitable for internal applications for non-contact level food safety and where higher resistance against washing of surfaces is required.

Food Safe coating is suitable for internal applications for contact level food safety with anti-microbial properties.

PolyDura coating is suitable for an all-round improved performance against all factors, comparable to PVDF coating but with a wider colour range.

Steel Facer Detail



Material Specifications

Insulation Core

The core of **EIP** panels is an environmentally sustainable rigid PUR/PIR insulation foam, available in,

- FM Approved Fire-Resistant Polyisocyanurate (PIR) foam
- Flame retardant (PUR or PIR) B2 class
- Polyurethane (PUR) B3 class

having properties as,

- Density: $40 \pm 3 \text{ kg/m}^3$
- Thermal Conductivity: $\lambda_{\text{PUR}} = 0.023 \text{ W/mK}^1$ & $\lambda_{\text{PIR}} = 0.021 \text{ W/mK}^1$
- > 90% Closed Cell content

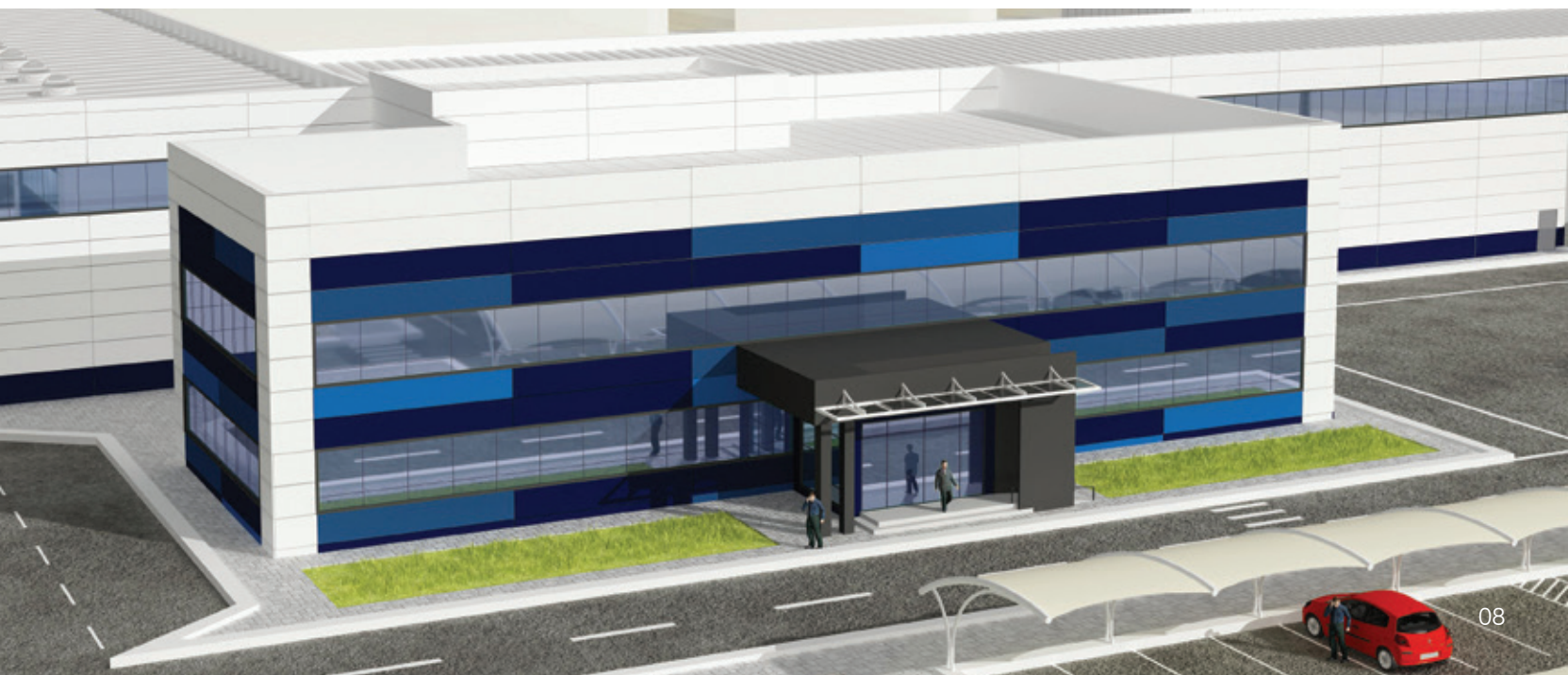
The blowing agent used in EIP panels is environmentally friendly pentane gas with Zero Ozone Depletion Potential (ODP) and Low Global Warming Potential (GWP). It does not contain CFC and HCFC.

Applications

EIP roof and wall panels are used to clad almost any type of construction, across a wide variety of sectors including:

- Industrial and commercial warehouses
- Manufacturing facilities
- Agricultural buildings
- Office complexes
- Retail shops, super/hyper markets
- Modular housing
- Military establishments
- Aircraft hangars, airport maintenance sheds
- Education, healthcare and residential structures
- Theme parks, shopping malls

¹ As per foam laboratory values

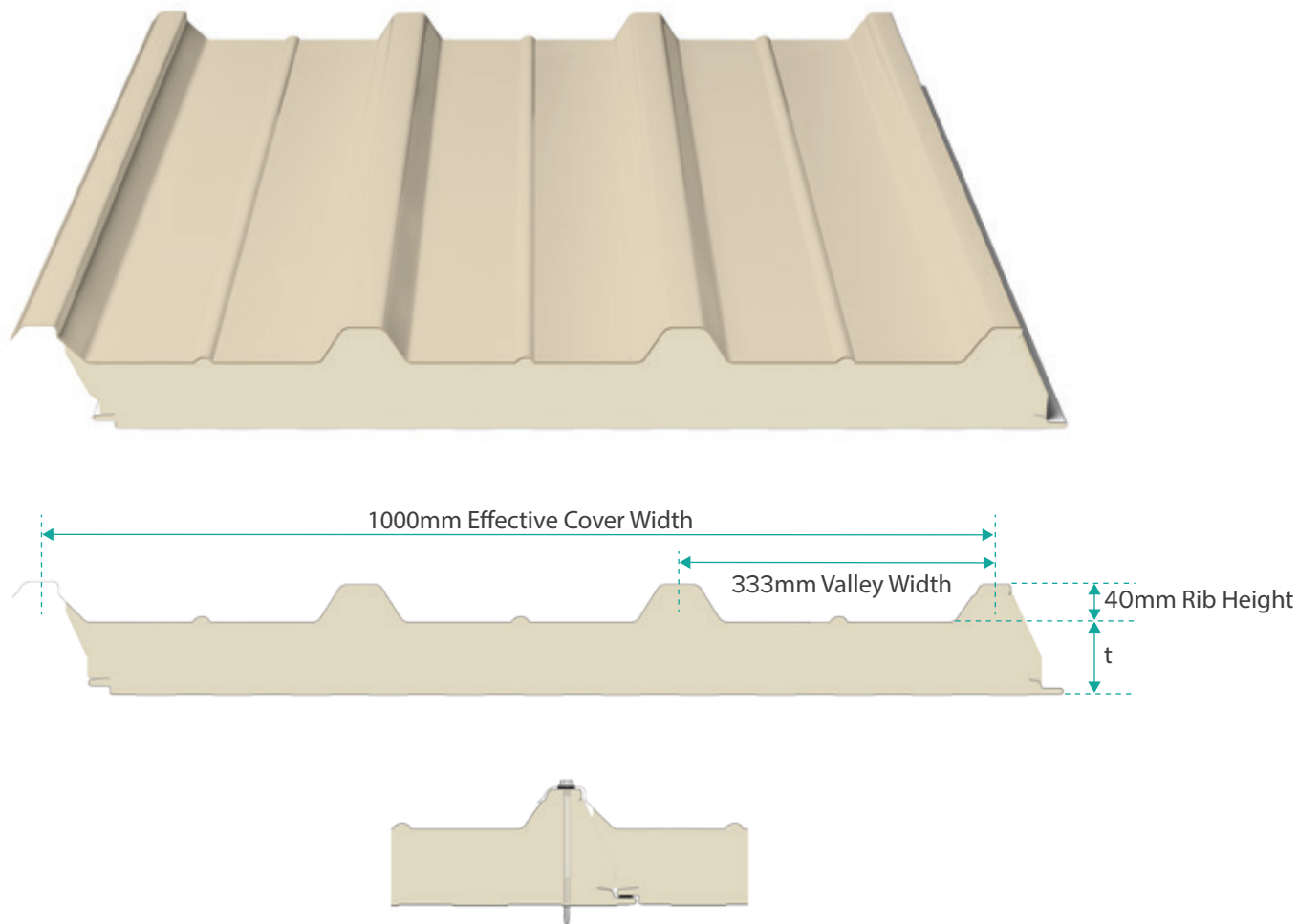


Roof Panels

EIP TRP 40/333

The TRP 40/333 is a trapezoid formed roof panel, through-fixed on the side-lap joints. An all-rounder roof cladding suitable for use in all buildings with roof slopes as low as 3° (5.50%)¹

The 40mm high ribs provide improved strength and water-resistance.



TRP 40/333 panels minimum length is 2.00m and maximum length is 18.00m

t: Core Thickness (mm)	50	60	75	100	150
Weight - Steel (kg/m ²) ²	10.70	11.10	11.70	12.70	14.70
Weight - Aluminum (kg/m ²) ³	5.80	6.20	6.80	7.80	9.80
U value - PIR (W/m ² K) ⁴	0.36	0.31	0.25	0.19	0.13
U value - PUR (W/m ² K) ⁴	0.40	0.34	0.28	0.21	0.14

¹Please contact EIP technical team for selecting the correct design for your slope

²Based on 0.50mm thick facers

³Based on 0.70mm thick outer and 0.50mm thick inner facers

⁴As per foam laboratory values

* Consult factory for improved values with different foam systems



“Trust EIP to build a roof over your head.”

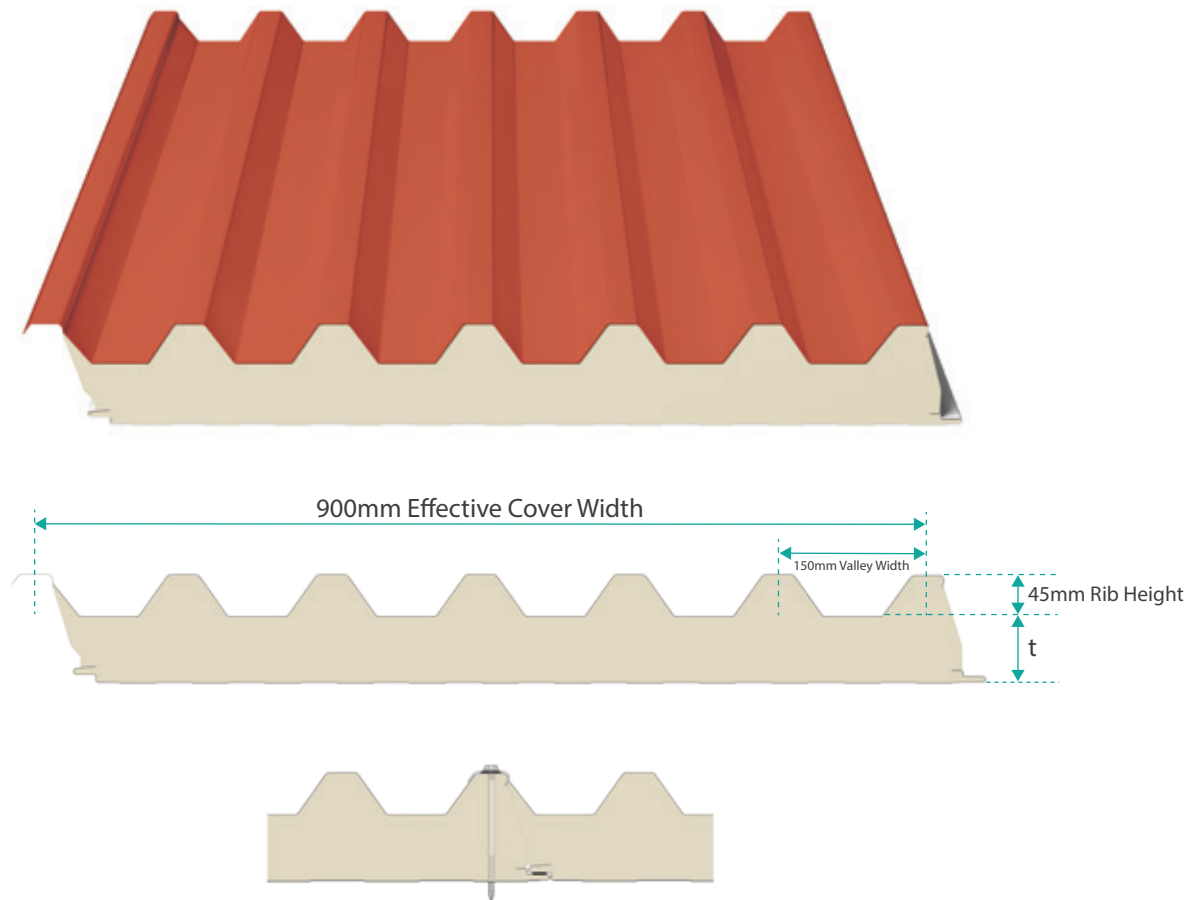


Roof Panels

EIP TRP 45/150

The TRP 45/150 is a trapezoid formed roof panel, through-fixed on the side-lap joints. It is an improved strength model designed to withstand demanding conditions. Suitable for use in all buildings with roof slopes as low as 3° (5.50%)¹

45mm high and increased number of ribs provide superior strength, longer distance spanning capability and water-resistance.



TRP 45/150 panels minimum length is 2.00m and maximum length is 18.00m

t: Core Thickness (mm)	45	50	70	95	145
Weight - Steel (kg/m ²) ²	11.30	11.50	12.30	13.30	15.30
Weight - Aluminum (kg/m ²) ³	6.00	6.20	7.00	8.00	10.00
U value - PIR (W/m ² K) ⁴	0.38	0.35	0.26	0.20	0.13
U value - PUR (W/m ² K) ⁴	0.42	0.38	0.29	0.22	0.14

¹Please contact EIP technical team for selecting the correct design for your slope

²Based on 0.50mm thick facers

³Based on 0.70mm thick outer and 0.50mm thick inner facers

⁴As per foam laboratory values

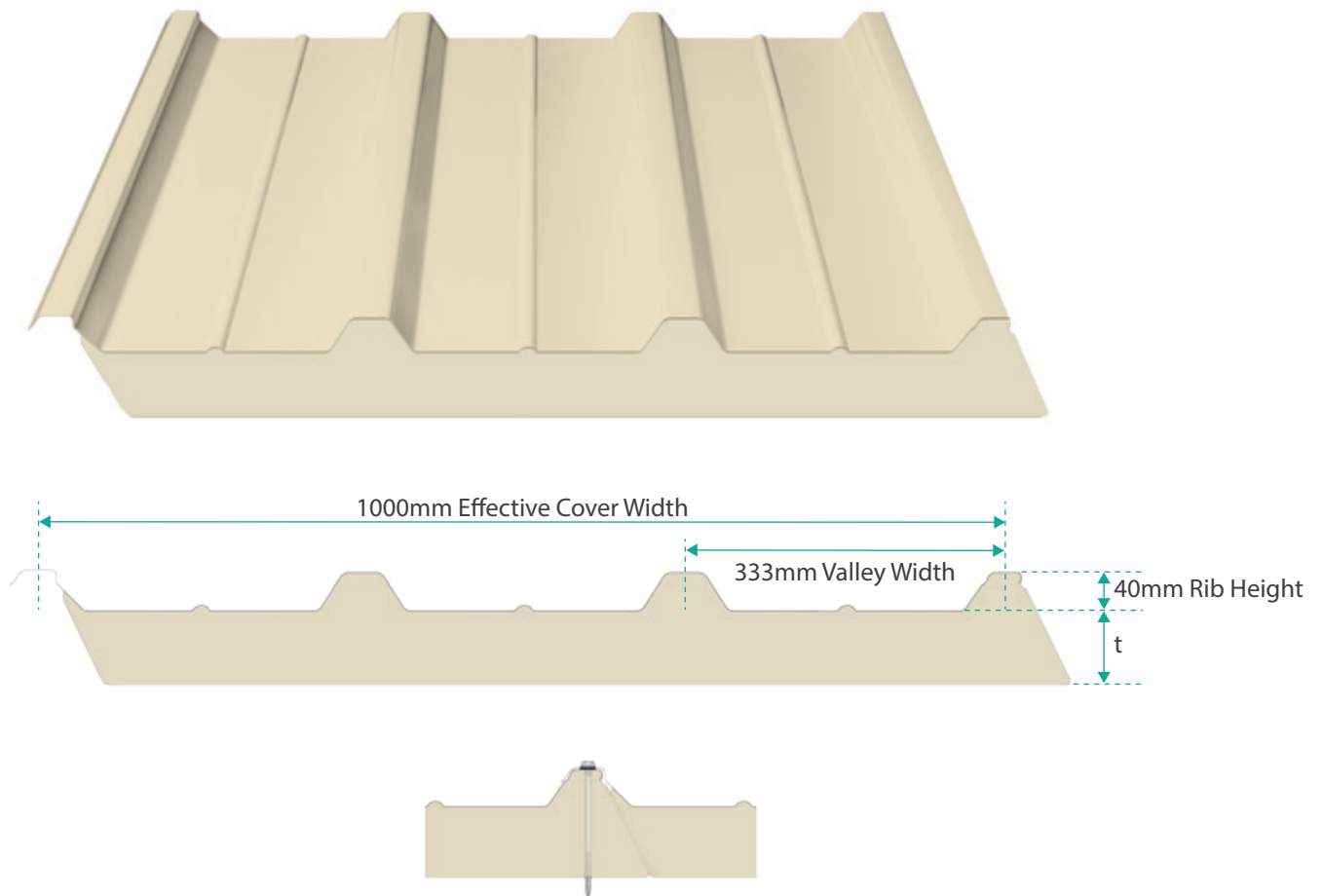
* Consult factory for improved values with different foam systems

Roof Panels

EIP TRP 40/333 Flex

The TRP 40/333 Flex is a lighter variant of the TRP 40/333, with the same trapezoid form but with aluminum foil as the inner sheet of the panel. Through-fixed on the side-lap joints. An all-rounder roof cladding suitable for use in all buildings with roof slopes not lesser than 5° (8.75%)¹

It is a functional and economic option to clad the roof of buildings.



TRP 40/333 Flex panels minimum length is 2.00m and maximum length is 10.00m

t: Core Thickness (mm)	50	75
Weight - Steel (kg/m ²) ²	6.70	7.70
Weight - Aluminum (kg/m ²) ³	4.40	5.40
U value - PIR (W/m ² K) ⁴	0.36	0.25
U value - PUR (W/m ² K) ⁴	0.40	0.28

¹Please contact EIP technical team for selecting the correct design for your slope

²Based on 0.50mm thick outer facers

³Based on 0.70mm thick outer facers

⁴As per foam laboratory values

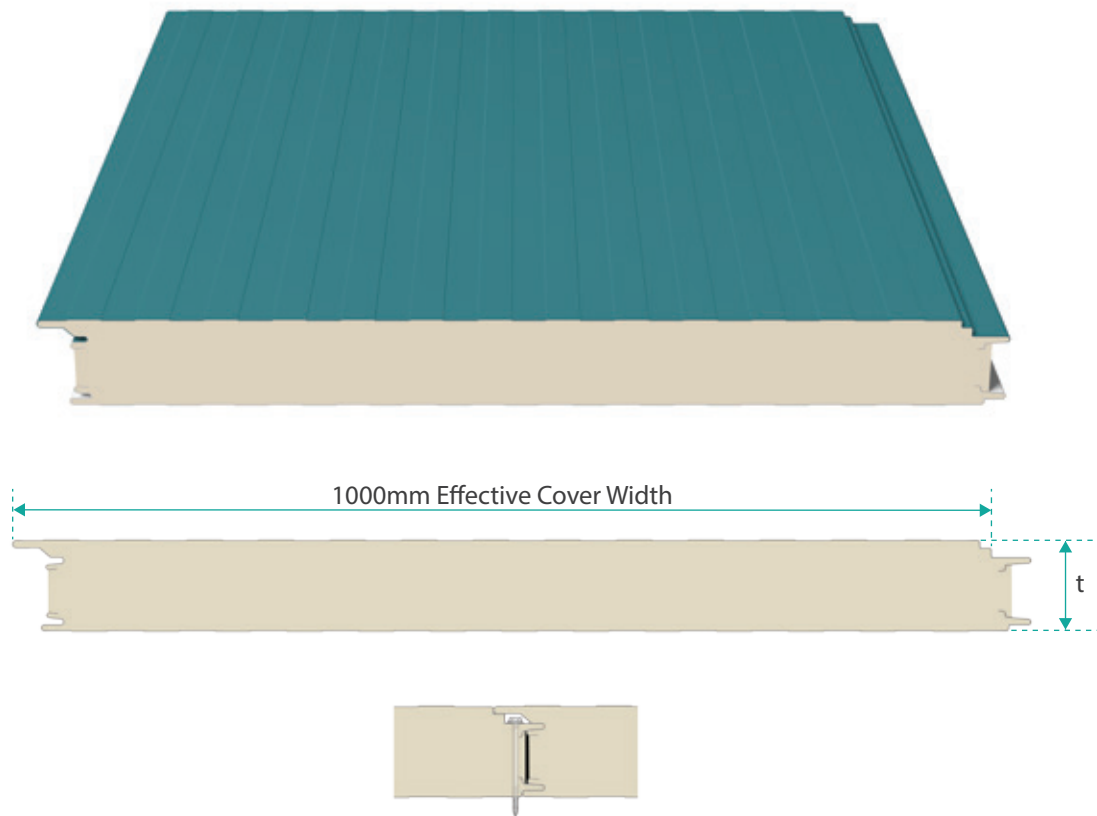
* Consult factory for improved values with different foam systems

Wall Panels

EIP HFW Hidden-Fix Wall (Architectural)

The HFW is an architectural wall panel, with a hidden-fix joint system. This system conceals the fasteners used to install the panels, providing a smooth, aesthetic look to the building's façade. It can be installed horizontally or vertically on any building with positive internal temperatures.

The top choice of architects, HFW panels can easily be cut and modified to satisfy different needs without sacrificing the beauty of the façade.



HFW panels' minimum length is 2.00 m and maximum length is 18.00 m.

Care must be shown while selecting longer lengths for HFW panels. Mishandling during unloading and installation can cause damage. Consult EIP technical department for guidance.

t: Core Thickness (mm)	50	75	100
Weight - Steel (kg/m ²) ¹	10.30	11.60	12.60
Weight - Aluminum (kg/m ²) ²	5.50	6.60	7.60
U value - PIR (W/m ² K) ³	0.42	0.28	0.21
U value - PUR (W/m ² K) ³	0.46	0.30	0.23

¹Based on 0.50mm thick facers

²Based on 0.70mm thick outer and 0.50mm thick inner facers

³As per foam laboratory values

* Consult factory for improved values with different foam systems



“Innovation in building façade systems”

Wall Panels

EIP TFW Through-Fix Wall & Partition

The TFW is a standard, double-tongue-and-groove joint wall panel, through fixed onto the structures. It can be installed horizontally or vertically on any type of building.

Thanks to their design, TFW panels can be used as self-standing internal partition walls and suspended ceilings.



TFW panels' minimum length is 2.00 m and maximum length is 18.00 m.

Care must be shown while selecting longer lengths for TFW panels. Mishandling during unloading and installation can cause damage to the panels. Consult EIP technical department for guidance.

t: Core Thickness (mm)	55	80	100	120	140	150	170	200
Weight - Steel (kg/m ²) ¹	10.40	11.40	12.20	13.00	13.80	14.20	15.00	16.20
Weight - Aluminum (kg/m ²) ²	5.60	6.60	7.40	8.20	9.00	9.40	10.20	11.40
U value - PIR (W/m ² K) ³	0.38	0.26	0.21	0.17	0.15	0.14	0.12	0.10
U value - PUR (W/m ² K) ³	0.41	0.28	0.23	0.19	0.16	0.15	0.13	0.11

¹Based on 0.50mm thick facers

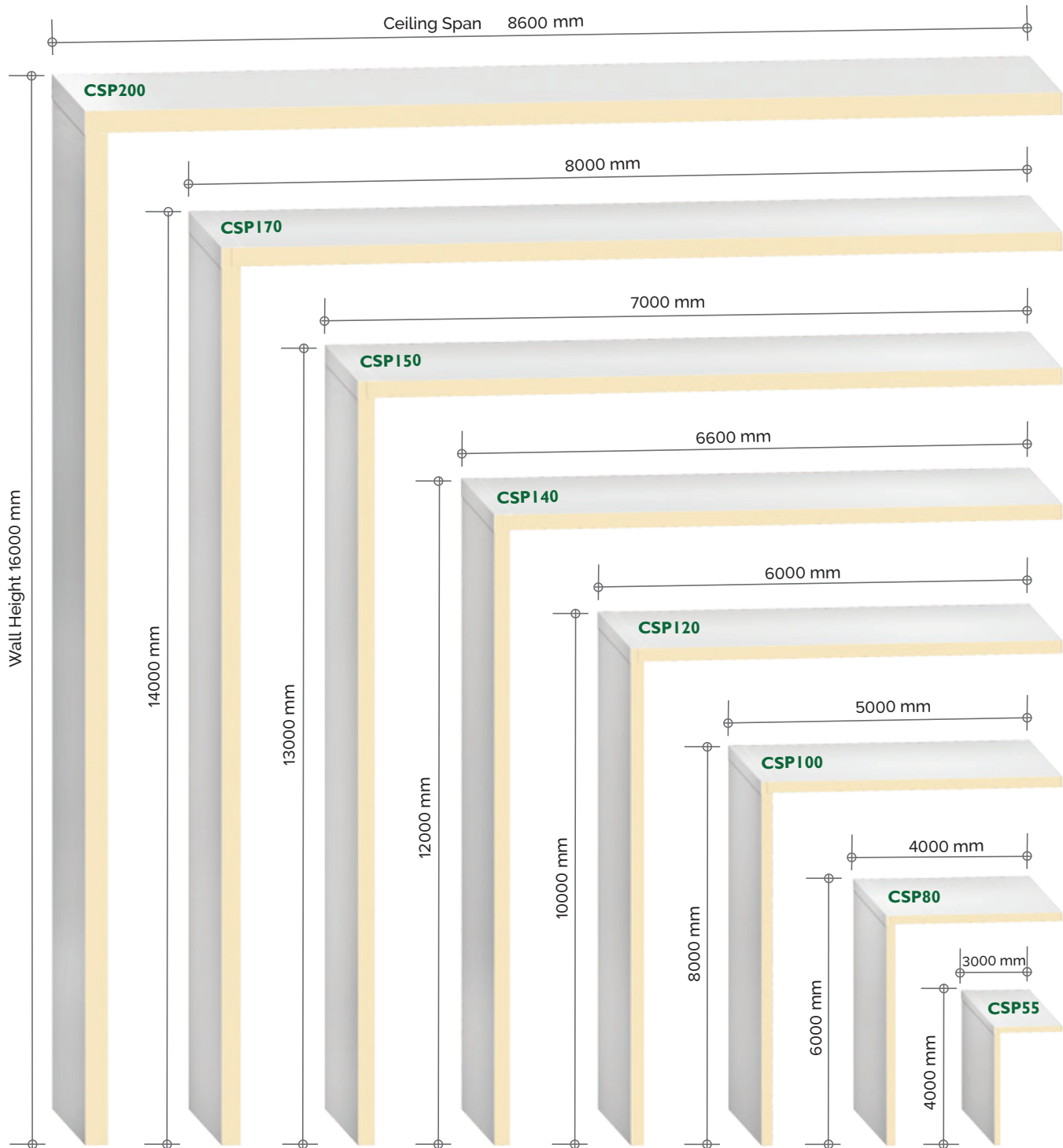
²Based on 0.70mm thick outer and 0.50mm thick inner facers

³As per foam laboratory values

* Consult factory for improved values with different foam systems

Wall & Ceiling Span Guide

While using TFW panels as self-standing partition panels, the following wall and ceiling span guide will show the maximum panel lengths for different thicknesses.



* Span table is based on panels with 0.50mm thick steel internal and external facers

* Wall panel length up to 18000mm

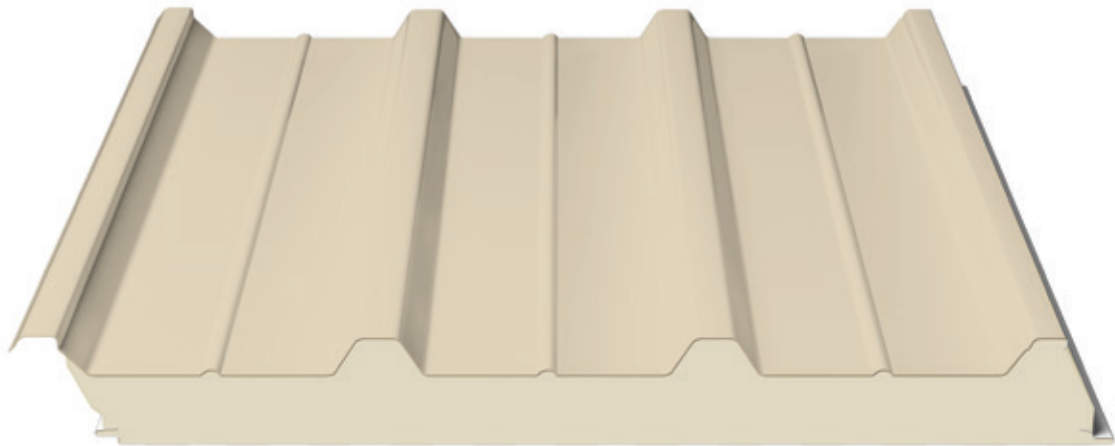
Wall Panels

EIP TRP 40/333 and TRP 45/150 as Wall Panels

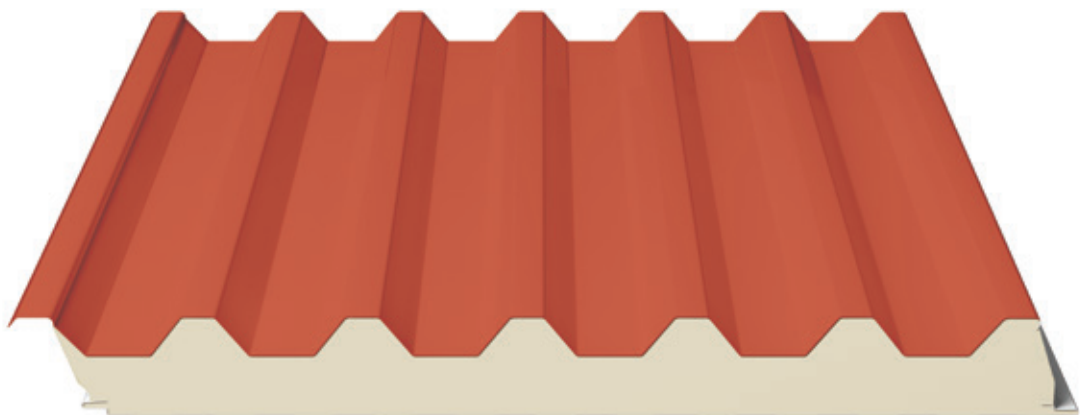
The trapezoid formed TRP panels can also be used as wall panels to clad the façades of structures.

The ribbed profile can provide a different aesthetics in the hands of competent architects, either alone or combined with HFW architectural wall panels for an extended range of design options.

EIP TRP 40/333



EIP TRP 45/150



Wall Panels

Surface Profiles

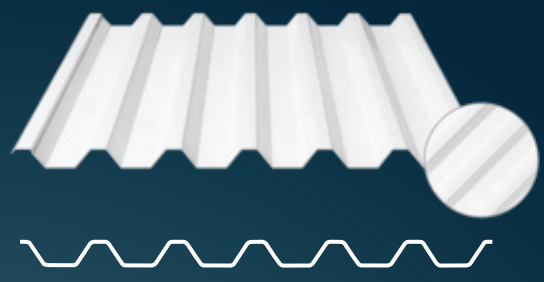
TRP 40/333 and 45/150 panels have 40/333 corrugated and 45/150 corrugated profiles on the external side respectively and as standard Low Rib profile on the internal side.

HFW and TFW panels have as standard Low Rib profile on both sides.

Alternative profile options such as Micro Lining, Micro Wave, Groove & Flat are available for the internal side of TRP panels and either side of HFW & TFW panels.



TRP 40/333



TRP 45/150



lowrib



flat



groove



microline



microwave

Fire Safety

In the developing world of construction materials, higher standards in fire safety are being demanded by end users all across the application spectrum. These demands are firstly motivated by the need to preserve human life, property and products and secondly, the need to improve the quality and performance of insulated structures. Standard polyurethane and polystyrene insulated panels are vastly inefficient against fire, providing hardly any protection at all. Government legislation is now demanding higher fire resistance for insulated panels while maintaining their structural and insulation properties.



EIP Fire Shield

As a response to industry demands Emirates Industrial Panel (EIP) has introduced a new generation of fire resistant sandwich panels: EIP Fire Shield !

EIP Fire Shield incorporates a high grade polyisocyanurate (PIR) insulation core together with a specially-designed, double tongue & groove fire-rated joint. EIP Fire Shield PIR core provides superior fire-resistance and the special joint further protects the core from flame ingress and enables the panel to maintain its structural integrity when exposed to fire.

Fire Safety Testing & Certification

Panels are classified as fire-resistant when they satisfy certain performance criteria during a real fire situation. Fire resistant panels do not spread fire, contribute to it, spit out burning droplets or emit excessive smoke. Fire resistant panels preserve their integrity and heat insulation properties for a certain period of time. By successfully meeting these criteria during a fire, fire-resistant panels will provide sufficient time for occupants to safely evacuate the building and implement fire-fighting measures.

FM Approval

FM Global (Factory Mutual) is the world's leading commercial insurance body that provides client risk management through product certification systems to safeguard clients' properties. FM Approvals is a material testing and certification body which carefully appraise the construction methods vital to fire protection system certification. FM systems are widely recognized by investors, property insurers, designers and constructors for their superior fire engineered performance thus reducing fire risks.

Large scale fire tests such as those carried out by FM Approvals provide a better indication of how panels will perform in a real fire situation.

EIP Fire Shield panels have received FM Approval as Class 1 insulated panels with no height restriction in accordance with FM Approvals standards 4880, 4881 and 4471.

In order to achieve this certification EIP Fire Shield panels have successfully passed vigorous testing conducted at the FM Approvals laboratories in the USA.

With its FM Approved fire-resistant panels, EIP panels have achieved the acceptance of Civil Defence authorities and set the standard for industrial projects.

In addition to the tests passed during FM Approvals certifications, EIP panel have passed other fire tests according to various European and American test and classification standards.

EN 13501-1	Fire Classification of Non-Load Bearing Walls
EN 13501-2	Fire Resistance of Non-Load Bearing Elements
NFPA 255 (ASTM E84)	Surface Burning Characteristics of Building Materials
NFPA 285	Fire Propagation Characteristics of Exterior Non-Load Bearing Walls

Properties of EIP Fire Shield

EIP Fire Shield panels contain a special polyisocyanurate (PIR) insulation core offering superior fire performance when compared to most alternative standard insulation materials. PIR is a thermosetting material, which means that it will permanently become hard and rigid when heated. It will therefore not melt or drip when exposed to fire. The foam core forms a strong carbonaceous char creating a protective layer from the fire. With these unique properties, spread of fire within the panel is prevented. EIP Fire Shield PIR panels do not contribute to the fire and have been proven to help reduce the risk of critical building loss.

With the successful results from tests, it is proven that when exposed to a real life fire situation, EIP Fire Shield Panels :

- Do not contribute to the fire or act as fuel to it
- Do not spread flame on their surface
- Give off minimal smoke
- Preserve their insulation properties¹
- Preserve their structural integrity¹
- Self-extinguish when the fire source is removed



¹As per EN 13501-2 at a certain time limit



Starting from estimation of the panel requirement of any project, EIP is able to provide its customers with a range of engineering and technical advice services.

Some of the services that EIP can provide are:

- Panel estimation based on project drawings
- Preparation of shop drawings, including detail solutions
- Final BOQ to include panels, flashings & accessories
- Preparation of drawings to guide the installation team
- Site supervisor to guide the installation team
- Assistance in selecting an EIP certified contractor for installation of sandwich panels

* All or a combination of the above services are available upon assessing the requirement of each project.



“Engineered to last”



Quality Assurance

EIP Quality System meets the requirements of ISO 9001:2008 standard and is regularly audited by three separate bodies, namely; Det Norske Veritas, Dubai Central Laboratories and FM Approvals.

EIP is committed to providing clients with quality products and service through having the following systems in place :

- Well equipped laboratory with high technology content
- An effective Quality Management System
- Preset quality objectives and a system of continuous review
- A team of qualified and experienced personnel
- Extensive interaction program with customers
- A motivation program for the employees to achieve optimum results



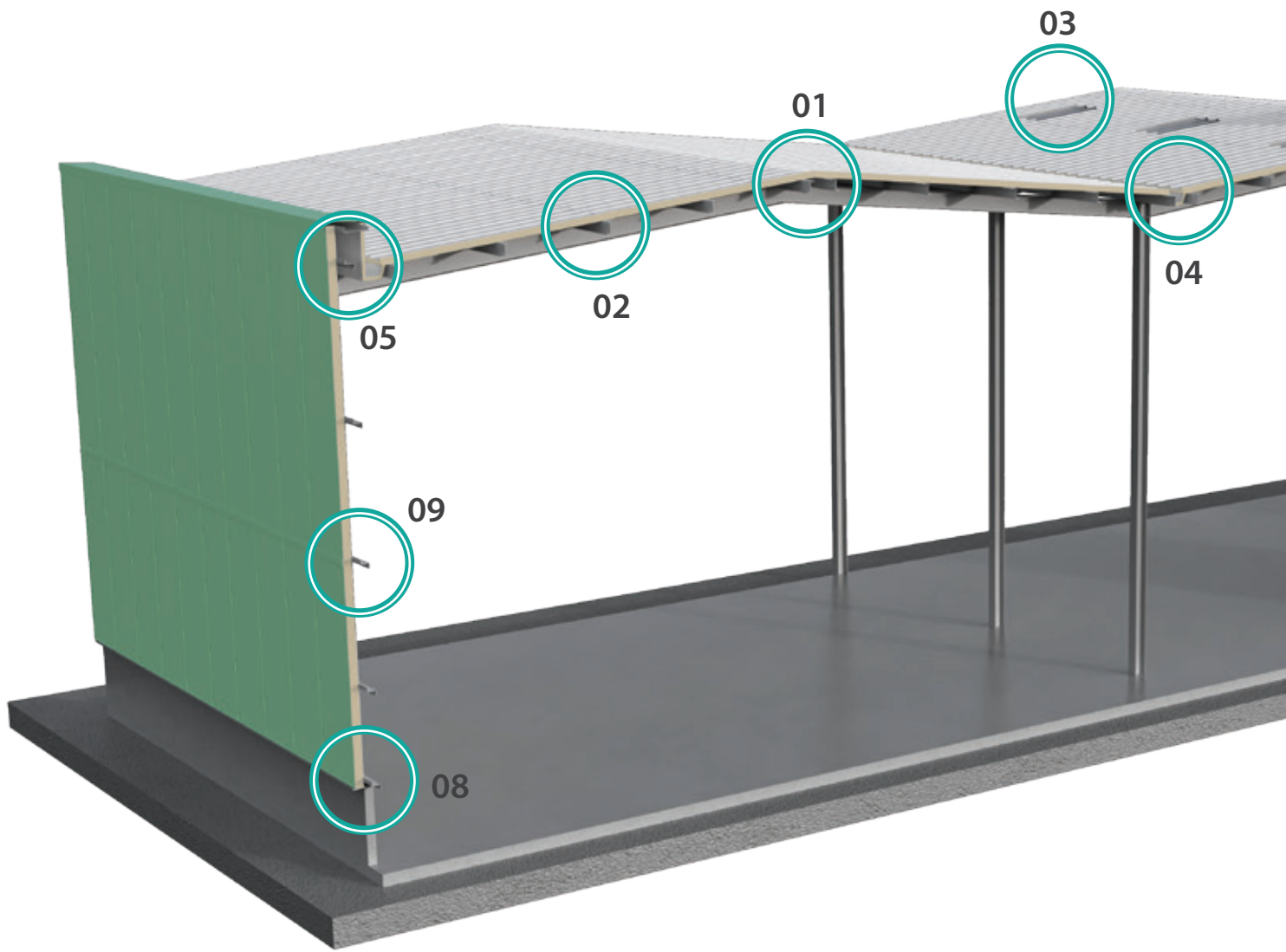
EIP quality management system stipulates numerous checks for the incoming raw materials, in-process checks during the production as well as final controls on the finished product.



“Quality products for all applications”

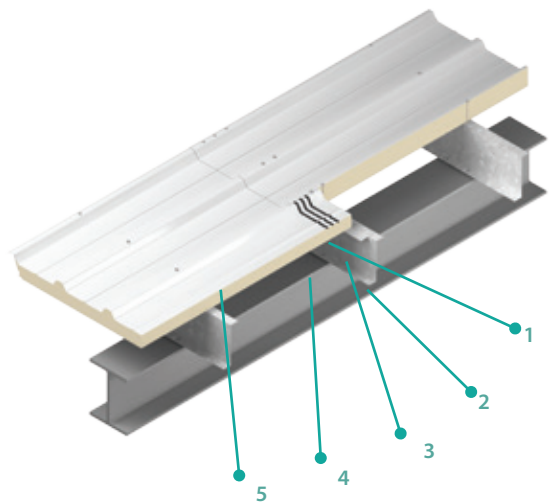
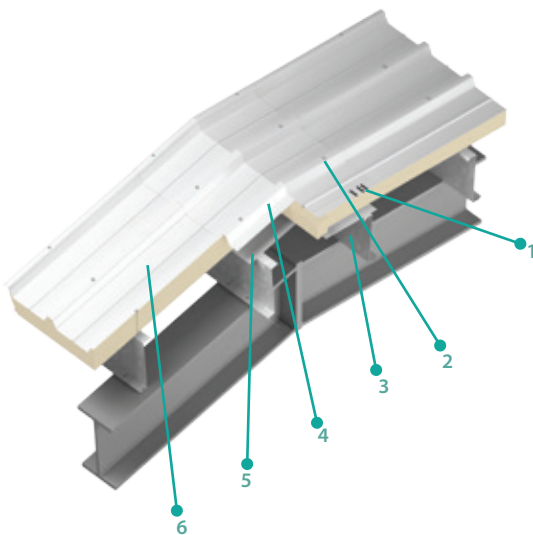


Typical Installation Details



01 Roof Ridge Detail

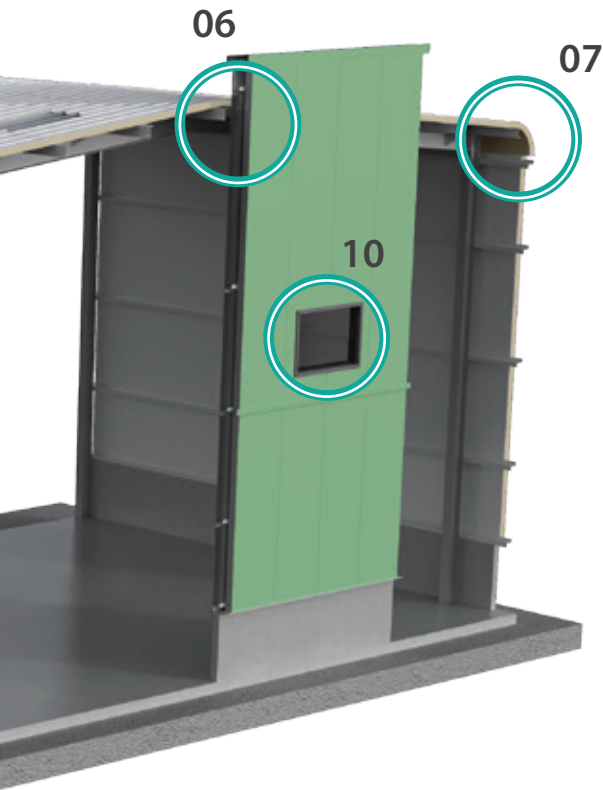
02 Roof Panel Overlap Detail



- 1 Butyl Tape
- 2 Self-Drilling Screw
- 3 Purlin
- 4 Outer Ridge Flashing
- 5 Inner Ridge Flashing
- 6 Roof Panel

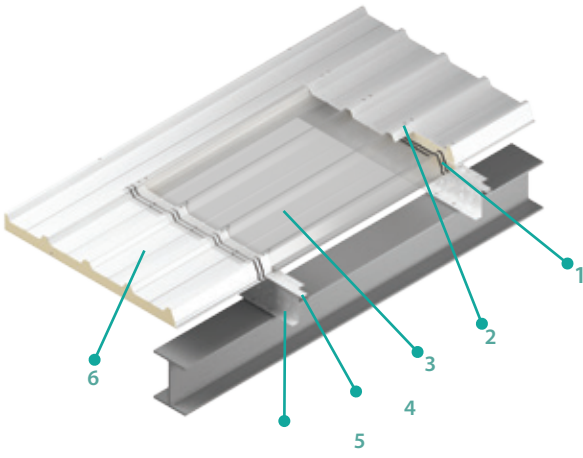
- 1 Self-Drilling Screw
- 2 GI Angle
- 3 Purlin
- 4 Butyl Tape
- 5 Roof Panel

Typical Installation Details



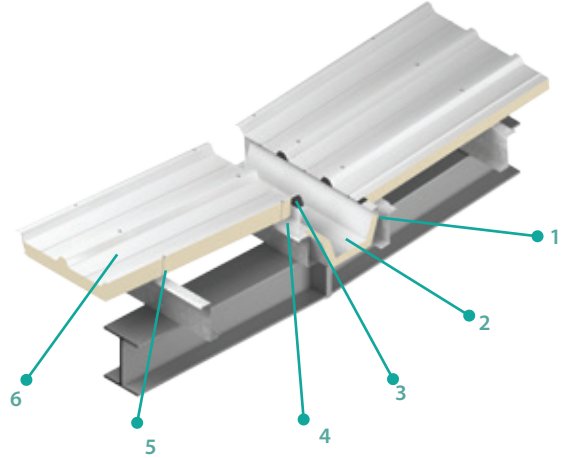
- 01. Roof Ridge Detail
- 02. Roof Panel Overlap Detail
- 03. Skylight Detail
- 04. Insulated Valley Gutter Detail
- 05. Insulated Eave Gutter Detail
- 06. Side Wall Detail
- 07. Insulated Curved Eave Detail
- 08. Drip Flashing Detail
- 09. Joint Flashing Detail
- 10. Opening Detail

03 Skylight Detail



- 1 Butyl Tape
- 2 Self-Drilling Screw
- 3 Skylight
- 4 GI Angle
- 5 Purlin
- 6 Roof Panel

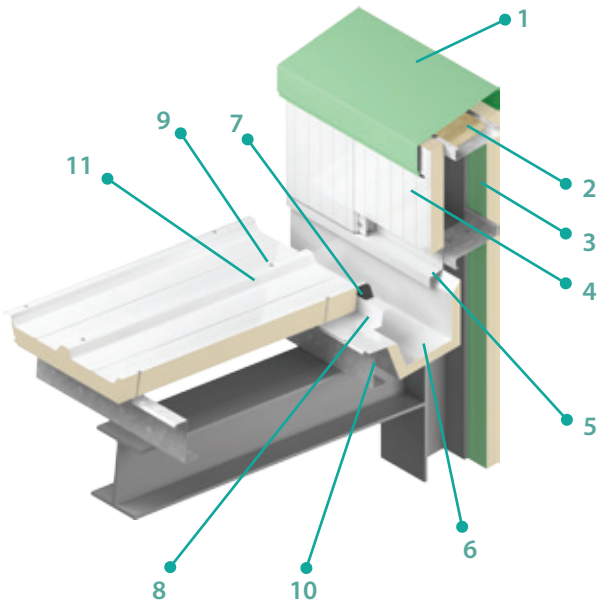
04 Insulated Valley Gutter Detail



- 1 Purlin
- 2 Insulated Valley Gutter
- 3 Filler Block
- 4 Foam Enclosure Flashing
- 5 Self-Drilling Screw
- 6 Roof Panel

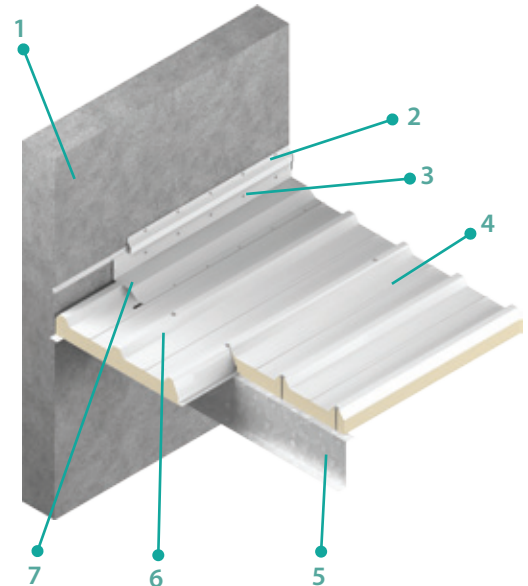
Typical Installation Details

05 Insulated Eave Gutter Detail



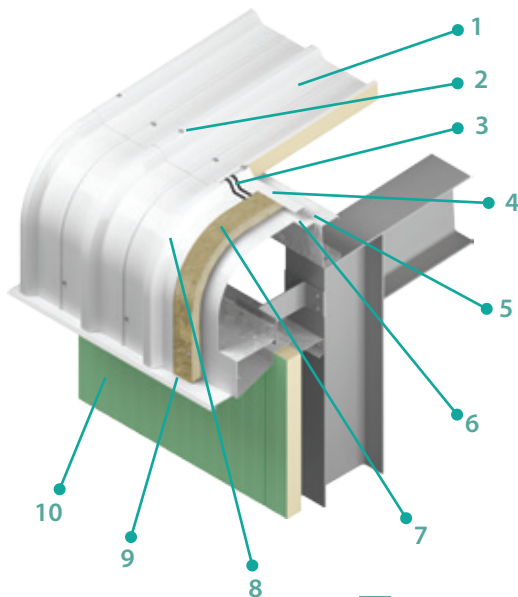
- | | |
|-------------------------|---------------------------|
| 1 Cap Flashing | 7 Filler Block |
| 2 Fiber Insulation | 8 Foam Enclosure FLASHing |
| 3 Wall Panel | 9 Self-Drilling Screw |
| 4 Backer Panel | 10 Purlin |
| 5 Drip Flashing | 11 Roof Panel |
| 6 Insulated Eave Gutter | |

06 Side Wall Detail



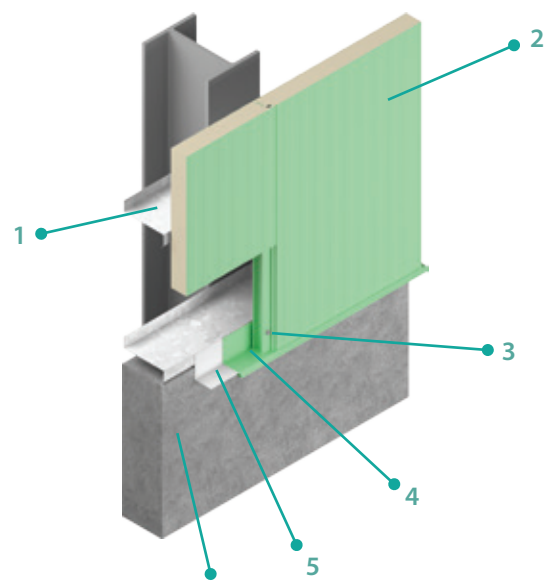
- | | |
|-------------------------|----------------------|
| 1 Concrete Parapet Wall | 7 Side Wall Flashing |
| 2 Drip Flashing | |
| 3 Expansion Bolt | |
| 4 Roof Panel | |
| 5 Purlin | |
| 6 Self-Drilling Screw | |

07 Insulated Curved Eave Detail



- | | |
|---------------------------|-------------------------|
| 1 Roof Panel | 7 Fiber Insulation |
| 2 Self-Drilling Screw | 8 Curved Eave Sheetting |
| 3 Butyl Tape | 9 Drip Flashing |
| 4 Foam Enclosure Flashing | 10 Wall Panel |
| 5 Purlin | |
| 6 GI Angle | |

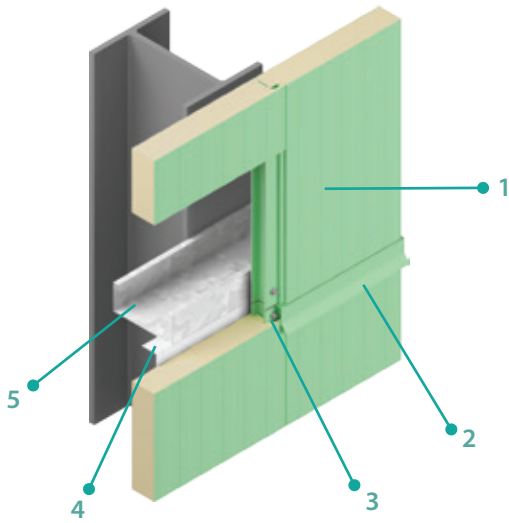
08 Drip Flashing Detail



- | |
|-----------------------|
| 1 Purlin |
| 2 Wall Panel |
| 3 Self Drilling Screw |
| 4 Drip Flashing |
| 5 GI Angle |
| 6 Concrete Wall |

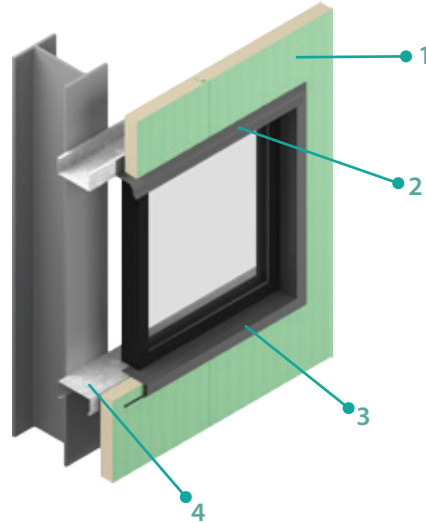
Typical Installation Details

09 Joint Flashing Detail



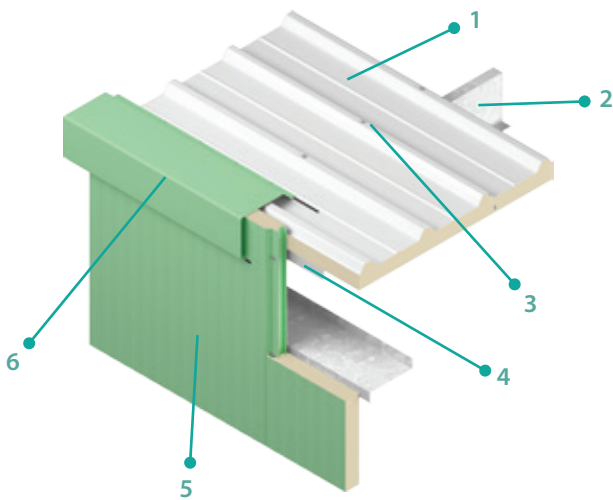
- 1 Wall Panel
- 2 Joint Flashing
- 3 Self Drilling Screw
- 4 GI Angle
- 5 Purlin

10 Opening Detail



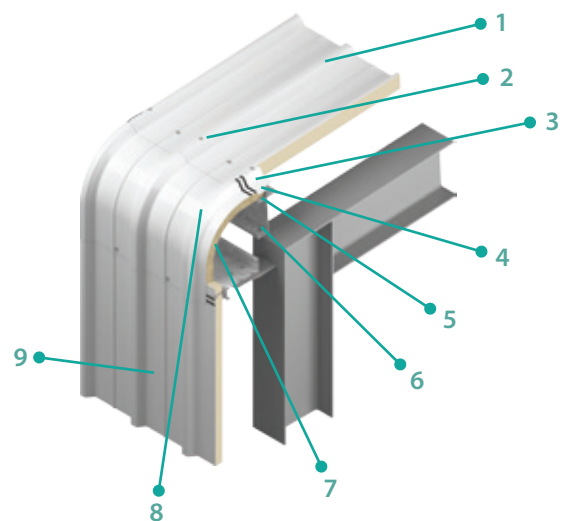
- 1 Wall Panel
- 2 Drip Flashing
- 3 Opening Flashing
- 4 Purlin

11 Gable Detail



- 1 Roof Panel
- 2 Purlin
- 3 Self Drilling Screw
- 4 GI Angle
- 5 Wall Panel
- 6 Gable Flashing

12 Insulated Curved Eave Detail - 2

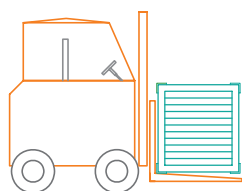


- 1 Roof Panel
- 2 Self-Drilling Screw
- 3 Butyl Tape
- 4 Foam Enclosure Flashing
- 5 GI Angle
- 6 Purlin
- 7 Fiber insulation
- 8 Curved Eave Sheetting
- 9 Wall Panel

Delivery, Handling and Storage

Panels arrive at customer premises packed in "bundles". Each bundle will contain a number of panels wrapped together with transparent polyethylene film and supported at the bottom with sufficient number of polystyrene blocks. Each panel itself will have protective film on the surface to prevent scratches.

Each transport vehicle can take four rows of panels with differing panel counts in each bundle for different panel types. Land and sea freight vehicle capacities differ due to dimensions of the vehicles. Please contact EIP to get more details on number of panels per bundle.



Special Packaging

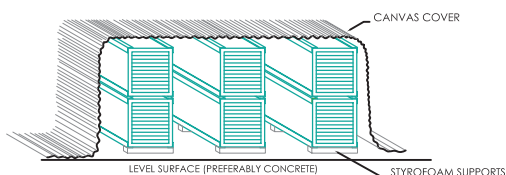
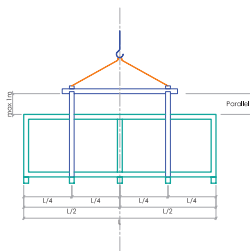
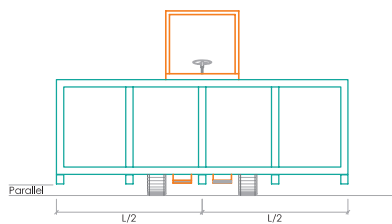
Certain destinations may require special packing. We can create reinforced packing using extra wrappings, timber elements or crates upon request. Additional charges apply.

Handling

Panel stacks are carefully loaded and strapped at factory to ensure EIP clients receive their goods in optimum condition. In order to maintain the panel quality in top condition, it is critical to pay special attention to correctly handling the panels while unloading/moving.

When receiving goods at the site, clients are requested to carefully inspect the panel stacks prior to unloading and to report visible damages on receipt of goods immediately.

All EIP panel bundles have "Handling, Transport and Storage Instructions" sheets on them. Please read carefully and abide by the instructions given therein.



Unloading at Site

Extreme care is advised when unloading the panels at site. A forklift or a crane equipped with a spreader beam must be used to avoid pressure on the edges of the panels which can damage the joints as well as create waviness on panel surface.

Storage

The panels should be stored in a covered area, on a clean and flat surface, with no more than two bundles on top of each other. In case no covered area is available, panels should be stored on a clean and flat surface outside, and covered with a cloth to protect from dust and rain but allow for air circulation under the cover. When stored outside, panels should be placed on a slightly inclined surface to avoid water accumulation. Panels should be kept away from sources of fire risk at all times.



Protective Film

Under normal procedure, panels must be installed soon after they are received at the site and prolonged storage times should be avoided. The surface protection film should normally be removed from the surface of panels after installation.

In case panels are not installed immediately and are kept in packed condition for extended period, the protective foil may be detrimental to the surface quality of the panels and will need to be removed. Please contact EIP for instructions if you are faced with such a situation.

Doors

Different types of doors are offered by EIP to suite a wide variety of purposes that are demanded by industrial and commercial projects.

EIP offers:

- Hinged doors
- Manual horizontal sliding doors
- Automatic horizontal sliding doors
- Automatic vertical sliding doors
- Rapid access doors for chiller & freezer applications
- Dock shelters ,dock levellers and sectional doors for loading points

Doors are supplied in various thicknesses to suite the application and in off-white RAL9002 colour. Other colour options are available upon request.

Doors incorporate internal safety release for added safety as well as door and floor heating for low temperature applications.









“Today we work for a greener tomorrow”



EIP

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