Rofo®
Roofing For You
Since 2008
PHIM Registration No. 07020229

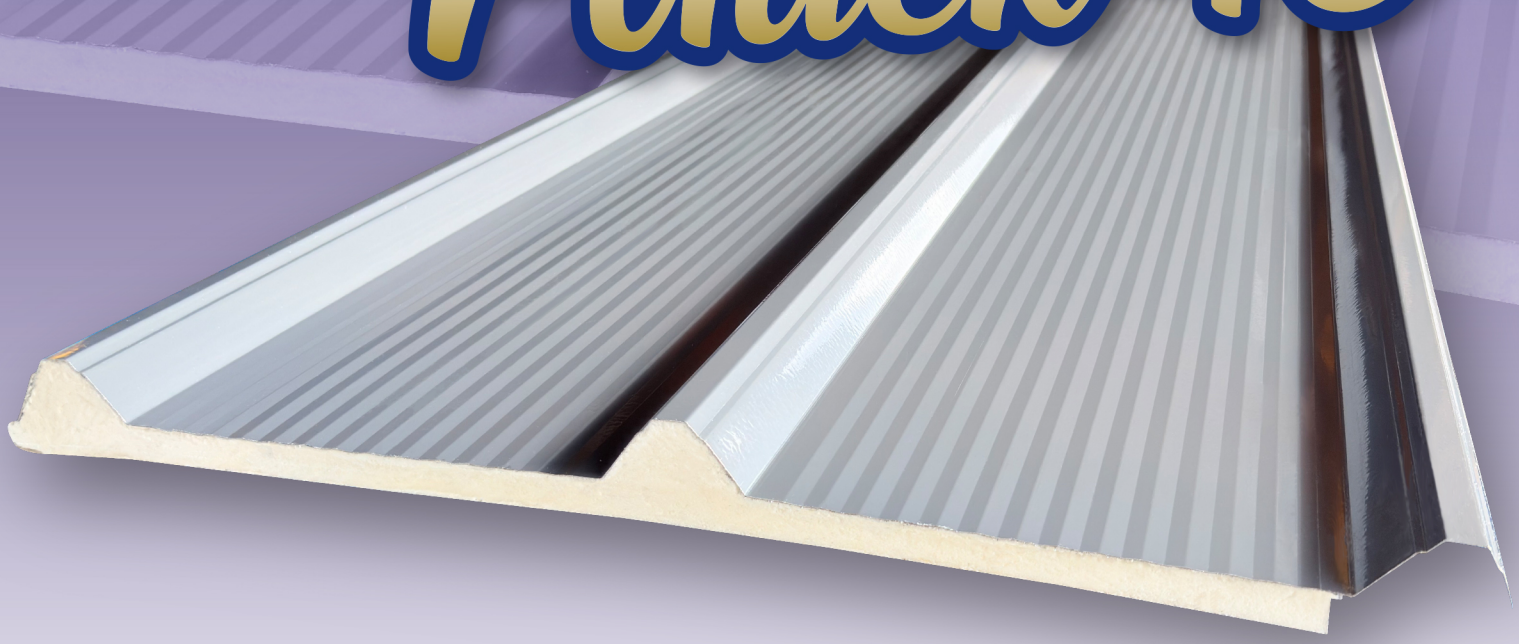
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Innovative Metal-Plas Roofing & Building Product

Quality • Innovative • Service • System

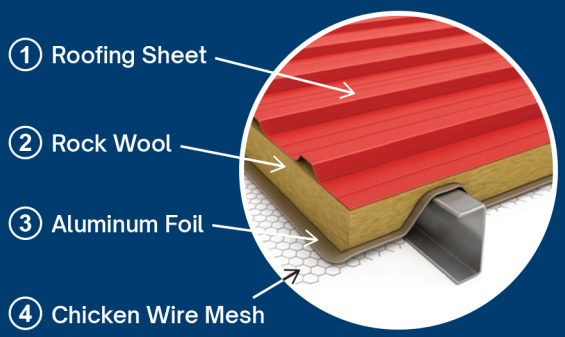
PUdek 40

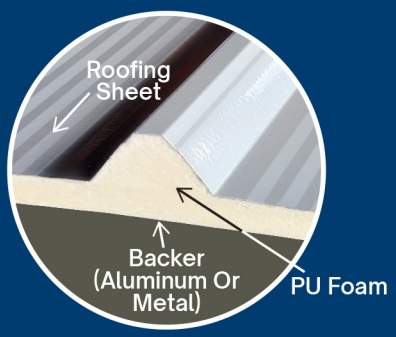


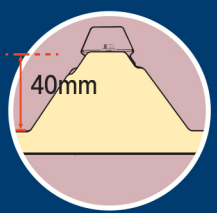
1) Revolutionizing Composite Panel Roofing

For over 30 years, we have pioneered in cold-formed steel solutions. Today, through continuous research and development, we redefine innovation with **Rofo-PUdek 40** — a revolutionary composite panel that integrates high-density polyurethane (PU) insulation, premium corrosion-resistant steel, and a stylish ceiling finish. One solution, NO layers, NO compromises.

Diagram: Traditional vs Pudek 40 (Cross- section Showing layers vs all Integrated in One)







Trapezoidal 40mm profile can install with Hi-Optional Cap

Chaotic Traditional Site vs. Clean Pudek 40 Installation

We conducted extensive Research & Development (R&D) on this product prior to production, dedicating nearly five years to its refinement. Our efforts focused on optimizing the trapezoidal steel roofing profile, selecting the ideal polyurethane (PU) type, studying the interaction between PU and steel sheets, refining the PU blowing process, minimizing water absorption at the edges, determining optimal lapping lengths, preventing leaks at self-tapping screw points, enhancing load capacity for longer spans, and improving both **thermal insulation** and **sound absorption**.

The result is PUdek 40, engineered with the world's latest technology for high-density polyurethane (PU) blowing. This innovation not only reduces material usage but also provides superior thermal and acoustic insulation. In addition, its enhanced strength supports longer spans, requiring fewer rafters and fasteners.



Messy Traditional Site



Clean PUdek 40 Installation

2) Application

For those seeking an integrated panel roofing system with superior heat insulation, excellent rain sound absorption, and extended span capability, this solution also reduces installation time. It is highly recommended for factories, commercial buildings, warehouses, agricultural structures, and low-pitch residential projects.

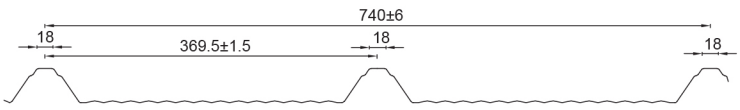


4) PU Insulation Properties

| PU Density | ≥40kg/m³ |

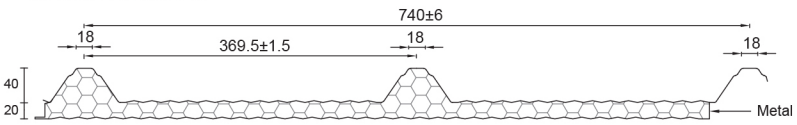
| Thermal Conductivity | 0.022 W/mK |

3) Product Diagrams

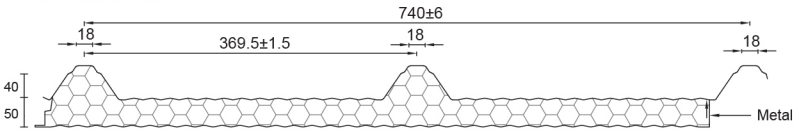


1. Metal Backer

1a. With 20mm PU

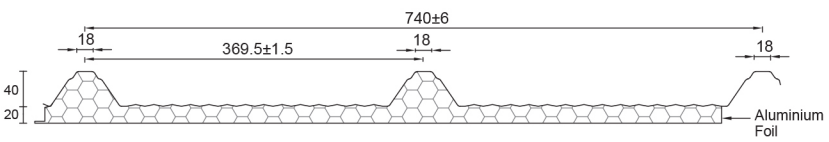


1b. With 50mm PU



2. Aluminum Foil Backer

2a. With 20mm PU



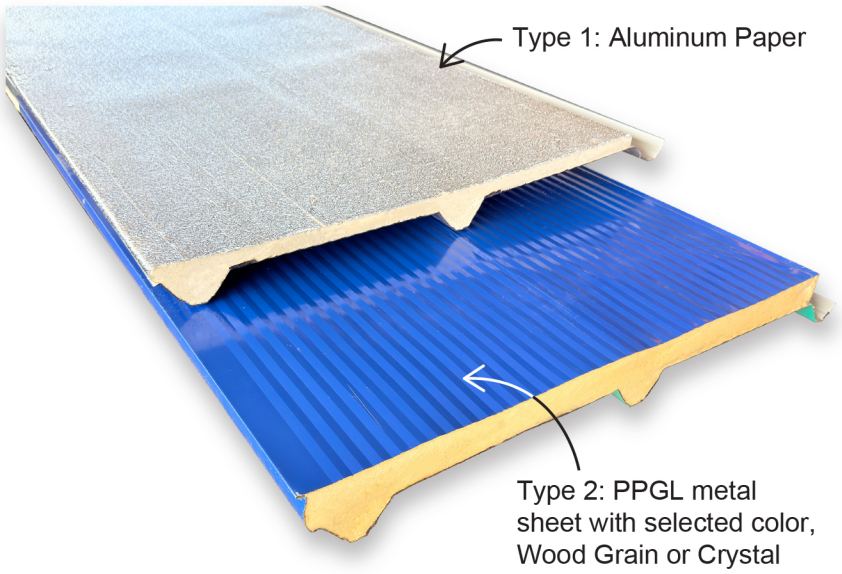
5) 2 Type of Material as Backside of PU

There are two types of materials that can be used as the backside of Rofo-PUdek 40:

The backside can be finished with PPGL metal sheet in any color, or with Wood Grain or Crystal designs. This creates an attractive ceiling that is resistant to leaking and requires little to no painting later.

Type 1: Fire Retardant type of Aluminum Paper with texture and thickness as the backside PU

Type 2: Prepainted Steel Sheet (Metal) with embossed line as the backside of PU, providing a stylish ceiling finish.



6) BQ Specification

Info Rofo-PUdek-40-25mm-M

Rofo - PUdek - 40 - 20mm - AF

① ② ③ ④ ⑤

① Rofo - Brand
② PUdek - Profile Name
③ 40 - Profile Rib Height 40mm
④ 20mm - PU thickness 20mm & 50mm
⑤ AF - Bottom Profile (AF – Aluminum Foil, M – Metal Finishing)

7) Unmatched Advantages

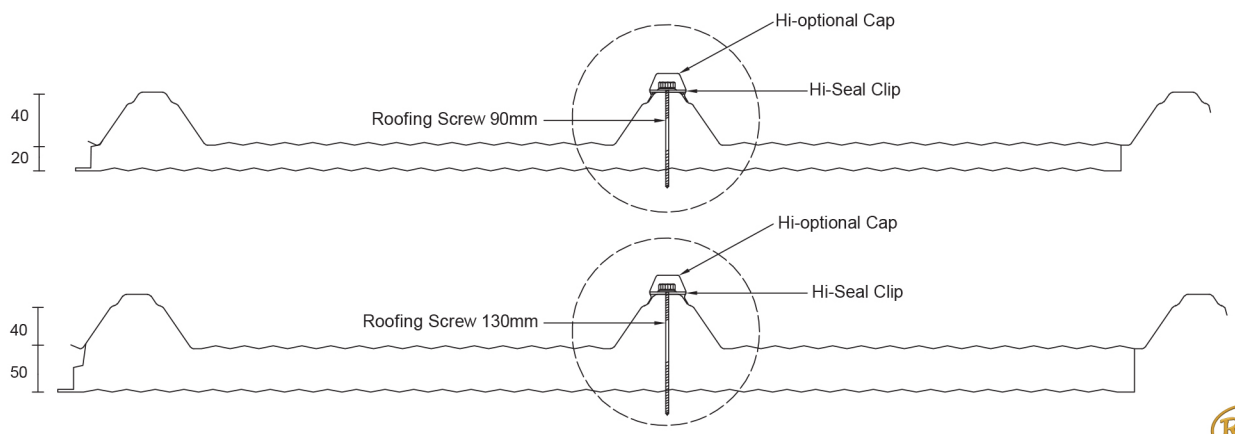
Our PUdek 40 are totally different with those Polyurethane (PU) in the market. It consists of 3 sections to form a single integrated panel:

i. **Roofing material:**
We use Genuine AZ55% G550 High Tensile Prepainted Gafolume Steel good in strength and against the corrosion.

ii. **Roof Profile design:**
40mm high Trapezoidal profile allow low pitch (3 deg) with Superior load distribution.

iii. **Protection:**
Specially designed to allow install of our Hi-optional cap for hidden screws, preventing leakage issue cause by over-tightening of screws and aging of anti-leak rubber seals, it also prevent screw from rusting.
(100% weatherproof)

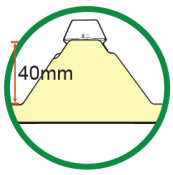




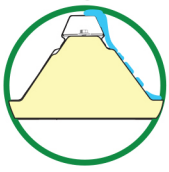
PU Advantages



① Genuine AZ55% G550 High Tensile Material



② Trapezoidal 40mm profile can install with Hi-Optional Cap



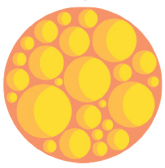
③ Protect Screw & Anti-Leakage



④ Free Length (Cut to length)



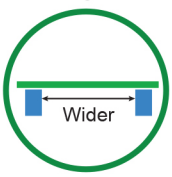
⑤ PU No Chemical Reaction



⑥ High Density PU



⑦ High Pressure Foaming increase the Density



⑧ Wider Span



⑨ Superior Heat & Sound Absorption



⑩ No Edge Water Absorption Issue



⑪ Save Labour Cost For Lay & Handling



⑫ No More Aluminum Foil & Netting Failure Issue



⑬ Nice Ceiling Texture



⑭ Durable & Anti water leaking



⑮ Maintenance Free

*Section B: **PU Insulation – The Heart of PUDEK 40*

iv. PU insulation is specially formulated with high-density material that is free from water absorption. In the event of leakage, water will not be absorbed, preventing it from later attacking or damaging the roofing material.





v. Totally would not cause any corrosion at the edges by water osmosis effect.

vi. The chemical of PU used will cause no reaction with the paint coating or Roofing material.
Safety: Chemically inert-zero metal reaction.

vii. **Superior Heat insulation with the figure**
- Thermal Resistance (R-value): *≥5.0* (infrared heat map vs. traditional roof).
Thanks to its homogeneous and high-density structure acting as one layer, the insulation performance is significantly better than conventional separated multi-layer systems.

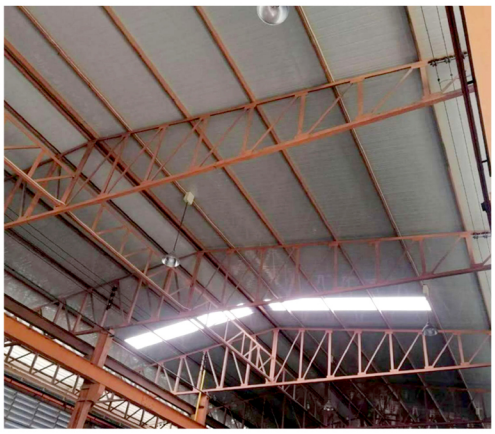
viii. Reduce the raining sound by impressive sound absorption properties due to its high density.
- Noise Reduction: *Up to 30dB* (sound wave graphic).



ix. No more aluminum paper or wire mesh failure hanging and corroding at the back of the roof—an untidy, unattractive, and unhygienic sight when no ceiling is installed.

x. **Save the labour cost**
- Due to its installation like ordinary roofing sheets, unlike conventional way which requires separate installation of wire mesh, Aluminum paper, and wool before laying the roof. With rising labor costs, laying these 3 layers separately typically cost at least RM1.50 per sq.ft. In common practice in roofing heat and sound insulation purpose, wool, aluminum paper and wire mesh are installed. This method is messy, hard handling, time-consuming, and often results in non-homogenous installation, as it is difficult for workers to tighten them well.

xi. Larger span
- Strength: High-density PU bonds with steel into a homogeneous beam – *30% longer spans* (span comparison chart).
- It allows for longer span due to the nature of the PU and also, with high pressure method for complete forming. At least 5% increase in strength can be achieved, cost saving on rafter, batten and self-tapping screws.



xii. Less Rafter Beauty
- Some architect desire less rafter beauty. Hence PUdek 40 can become structural Panel.

xiii. Metal sheet with emboss line or wood texture can be use at the backside for ceiling readiness, So no need to additionally install ceiling again which costs huge sum of money.

xiv. Zero Maintenance: No water absorption, no sagging.

9) Wind Capacity Load Span

There are 2 type of materials that can be use as the backside of Rofo-PUdek 40 :
The backside can finish with line embossed on the material of PPGL metal sheet with any color or with Wood Grain or Crystal series so it will become nice ceiling which will not be affected by leaking and almost free of painting later.

		Distributed Load (kN/m2) Span Length (m)					
Materials	Thickness mm (BMT/TCT)	0.6	0.9	1.2	1.5	1.8	2.1
26GB	0.35/0.40	20.12	8.93	5.00	3.20	2.20	1.60
26G	0.38/0.44	22.12	9.80	5.50	3.50	2.42	1.77
25G	0.42/0.48	22.78	10.09	5.66	3.67	2.54	1.86

**Based on Deadload 0.12kN/m2 & Deflection limit span/300*

10) Maximum Recommended Spacing Support for each thickness and type

20mm thk. Foam Density (25-35kg/m3)

		Roof		Wall		
Materials	Thickness mm (BMT/TCT)	Internal Span (mm)	End Span (mm)	Internal Span (mm)	End Span (mm)	Overhang (mm)
26GB	0.35/0.40	1650	1450	1900	1750	150
26G	0.38/0.44	1700	1500	1950	1800	150
25G	0.42/0.48	1750	1550	2000	1850	180

50mm thk. Foam Density (25-35kg/m3)

		Roof		Wall		
Materials	Thickness mm (BMT/TCT)	Internal Span (mm)	End Span (mm)	Internal Span (mm)	End Span (mm)	Overhang (mm)
26GB	0.35/0.40	1800	1600	2100	1900	200
26G	0.38/0.44	2150	1750	2450	2150	250
25G	0.42/0.48	2200	1800	2500	2200	250

11) Packing, Transport & Storage

Special care is needed during packing, loading/unloading and also transporting to avoid denting and scratching the product. When not installed immediately, store in covered area protected from weather and direct sunlight. Product must be lifted from the ground and in a slanted position to avoid stagnant liquid on product. **Do not use hard object such as wood/metal to directly support the product at anytime to avoid denting. Suggest to use soft material such as foam with around 20mm thickness as a buffer material.**



For long period storage

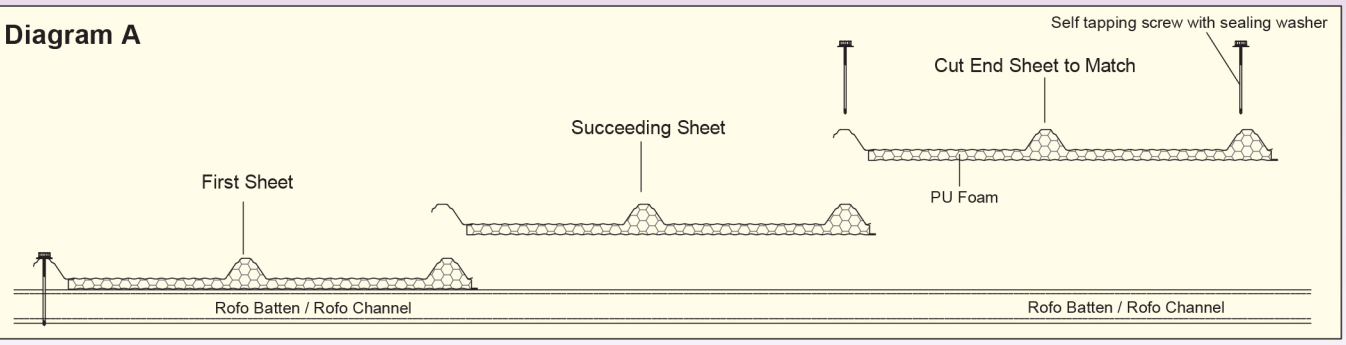


Proper loading of PUdek 40 to 70ft trailer

12) Installation

12a. For panel width lapping, PUdek 40 is designed with an integrated joint system, ensuring perfect alignment between the first and subsequent sheets. The PU core does not cause any lapping issues such as leakage or installation difficulties.

Diagram A



12b. For panel length, when roof spans exceed transportation limits, the system includes an automatic setback of 150 mm at the end laps. This ensures a secure and watertight overlap wherever lengthwise joints are required.

Diagram B: Panel End Cut Back

For installation of insulated metal roof, the following measures are recommended :
i) Trim back at end joints - 6 inches (150mm)
ii) Minimum clearance - 6 inches (150mm)

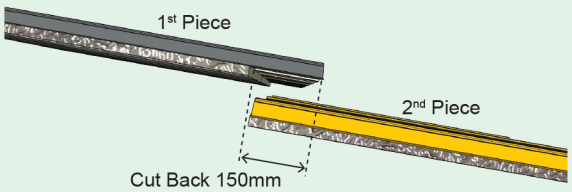
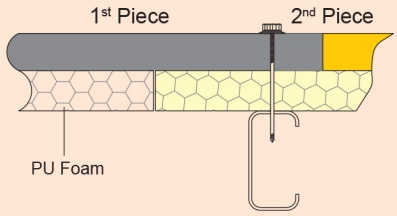
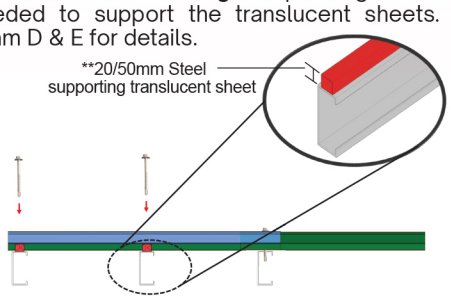


Diagram C: Panel End Lap

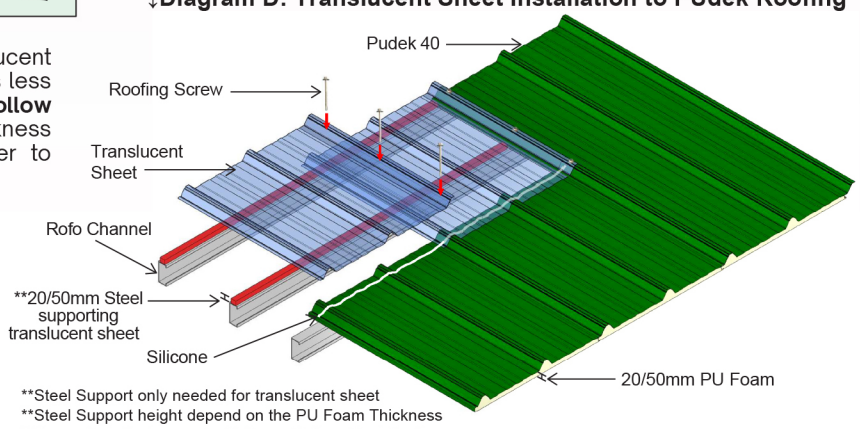


12c. When installing PUdek 40 along with translucent sheets, due to the height of the translucent sheets is less than PUdek 40, **additional steel support (battens or hollow sections) with suitable height** depending on PU thickness is needed to support the translucent sheets. Refer to Diagram D & E for details.



↑**Diagram E: Side View of Translucent Sheet Installation**

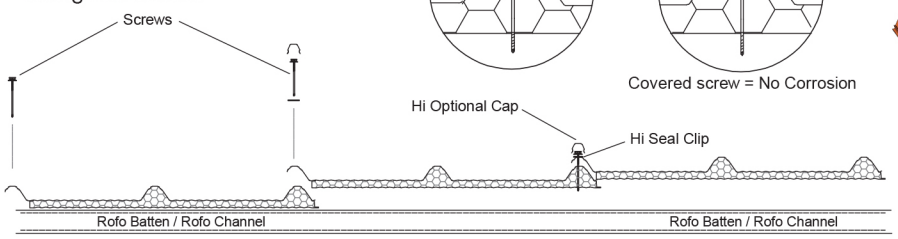
↓**Diagram D: Translucent Sheet Installation to PUdek Roofing**

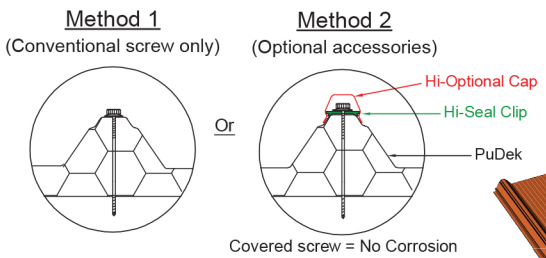


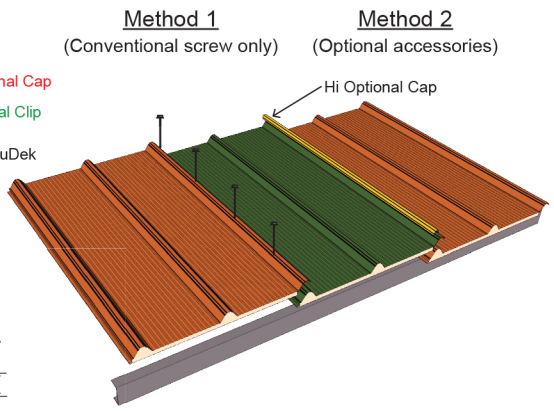
**Steel Support only needed for translucent sheet
**Steel Support height depend on the PU Foam Thickness
**Suggested steel supports: Battens, Hollow Steel Sections, or other suitable materials.

13) Installation-Optional

Self-tapping screws can also be concealed by installing seals with our Hi-optional Caps. Once fixed, this prevents corrosion and leakage, while also eliminating issues caused by over-tightening during installation.







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