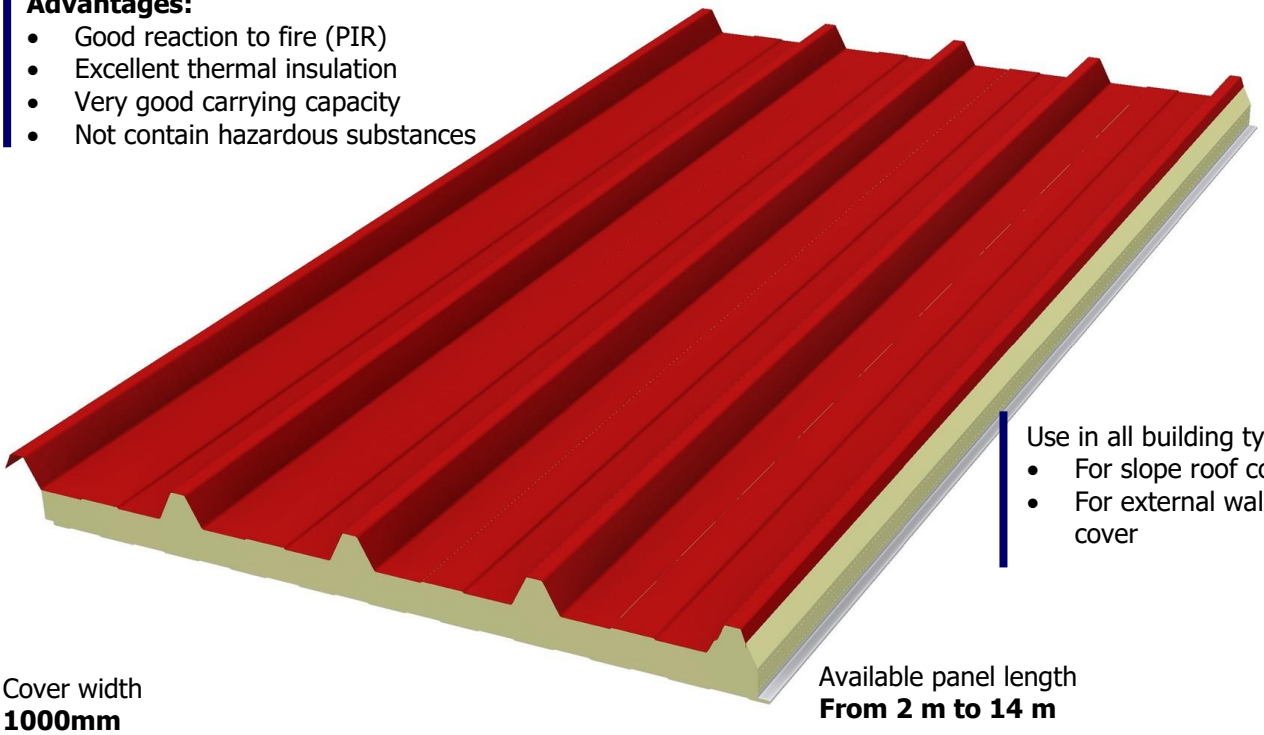
Product Data Sheet

Polyurethane Roof Cover Panel

R . PU 25.12

Factory made Self-supporting double skin metal faced insulating polyurethane core panels

Advantages:
- Good reaction to fire (PIR)
- Excellent thermal insulation
- Very good carrying capacity
- Not contain hazardous substances



Use in all building types:
- For slope roof cover
- For external wall cover

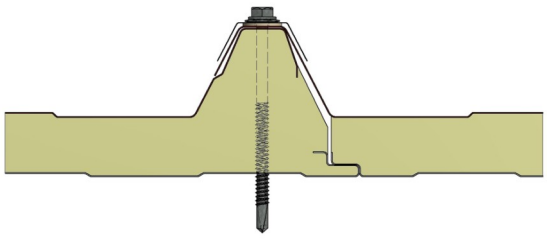
Cover width
1000mm

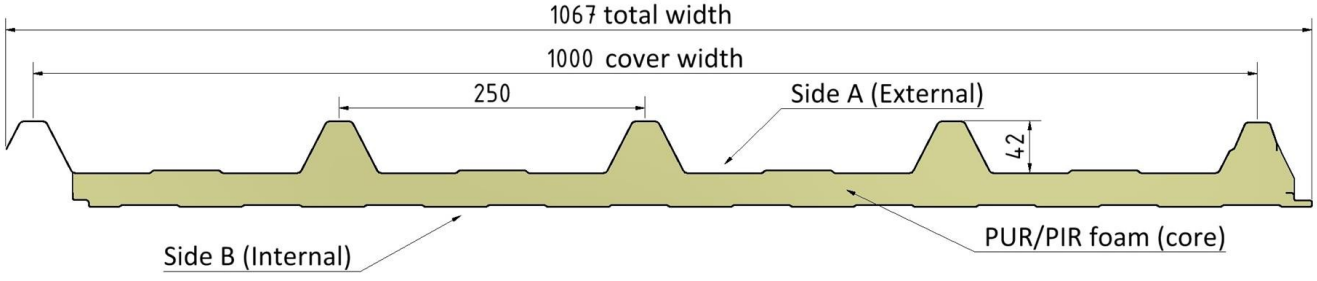
Available panel length
From 2 m to 14 m

Panel thickness : **25*, 30, 35*, 40*, 50, 60, 80, 100, 120 & 150mm**

* **PIR foam** core not available

- Panels are available with right overlap or left overlap depending on project specifications. The overlap length ranges from 50mm to 250mm.
- The roof panels are fastened to the structure by the standard method of visible anchorage.





- 5-rib trapezoidal profile with a height of 42 mm and a pitch of 250 mm (and a 3 rib trapezoidal profile 42/500).
- It can be easily combined with 42/250 profile metal sheets and polycarbonate sunlight sheets.

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Dimensional Tolerances (according to the EN 14509)

Panel thickness	± 2 mm	D ≤ 100 mm
	± 2 %	D > 100 mm
Deviation from flatness	≤ 0,6 mm	Li = 200 mm
	≤ 1,0 mm	Li = 400 mm
	≤ 1,5 mm	Li = 700 mm
Depth of the profile (rib height)	± 1 mm	5 < h ≤ 50 mm
	± 2,5 mm	50 < h ≤ 100 mm
Depth of light profile	± 30 %	ds ≤ 1 mm
	± 0,3 mm	1 ≤ ds < 3 mm
	± 10 %	3 ≤ ds < 5 mm
Panel length	± 5 mm	L ≤ 3000 mm
	± 10 mm	L > 3000 mm
Panel cover width	± 2 mm	W = 1000 mm
Deviation from squareness	≤ 6 mm	W = 1000 mm
Deviation from straightness	≤ 1 mm/m	≤ 5 mm
Bowing (Length)	≤ 2 mm/m	≤ 20 mm
Bowing (Width)	≤ 8,5 mm/m	h ≤ 10 mm
	≤ 10 mm/m	h > 10 mm
Pitch of profile	± 2 mm	h ≤ 50 mm
	± 3 mm	h > 50 mm
Ribs width	± 1 mm	For b1 value
Valleys width	± 2 mm	For b2 value

Metal Sheet Thickness >0,50mm

Metal sheet options

Steel sheets pre painted and galvanized,

- Metal grade DX51D, S220, S250, S280, according to EN 10346, EN 10143, EN 10169
- Hot-dip zinc coating, Z70 to Z275 gr/m^2
- AluZinc protection, az70 to az265 gr/m^2
- Nominal thickness from 0,35 mm **up to 1,0mm**
- Polyester, Plastisol or PVDF color coating

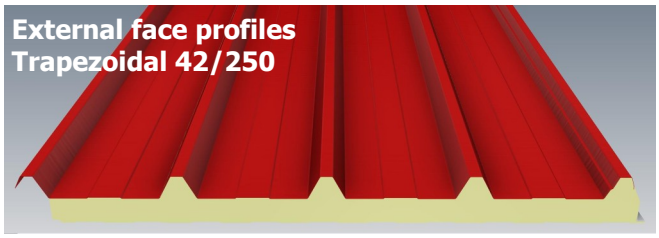
Aluminum uncoated or prepainted with aluzinc protection, produced according to *EN485-1-2-4, EN573-3, EN546-1-2-3-4, EN1396, EN602, ASTM-B209*

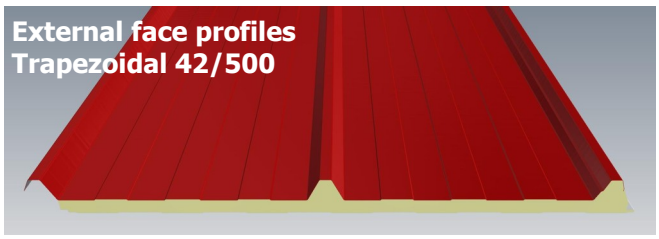
- Aluminum alloy of series 1xxx, 3xxx ή 5xxx
- Hardness degree H14, H24 ή H44
- AluZinc protection from az70 gr/m^2
- Nominal thickness from 0,35 mm to1,0mm
- Polyester color coating with min 20μm thickness

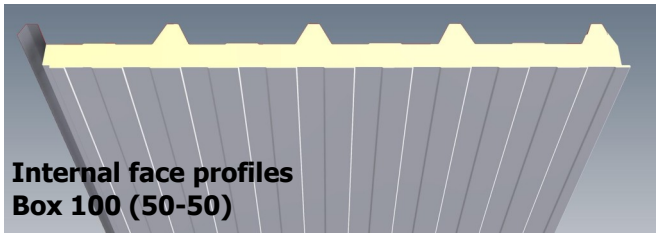
Stainless Steel, produced according to EN 10088-1

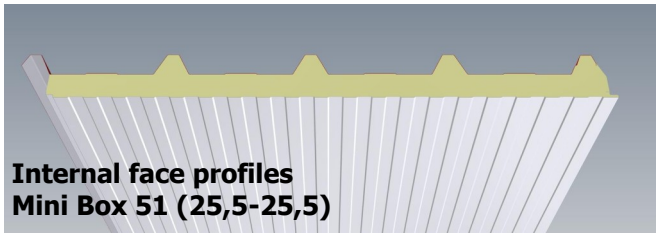
- Metal grade AISI 304 2B ή AISI 316 L
- Nominal thickness from 0,35 mm to 1,0mm
- Mat or gloss color coating

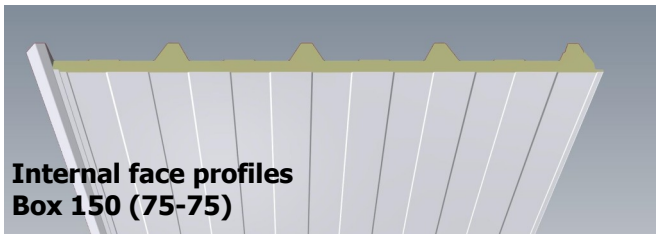
Metal Face profile options

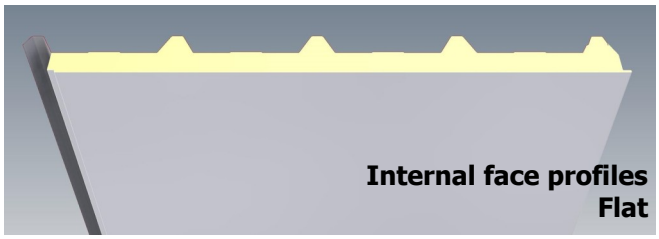


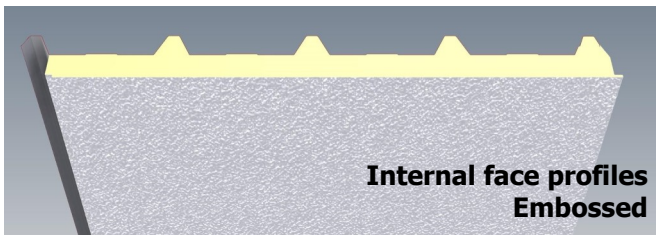












There is an option to produce panels where the internal metal sheet can be replaced with a flat polyester sheet of thickness up to 1mm, wherever the environment is extremely corrosive.

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Color coating options

Typical Polyester coating

Polyester paints are the most common and the most economical coatings. They are suitable for both external and internal surfaces.

With a nominal thickness > 15μm, it has a very good resistance to external environmental conditions.

Durable Plastisol coating

Plastisol coating is very durable to external environmental conditions. It is suitable for outdoor applications where the durable requirements are high.

The nominal coating thickness is up to 200μm.

High req PVDF coating

PVDF coating is suitable for buildings of architectural applications where the texture and color conservation are important. Also its reaction to fire is excellent because it has limited production of smoke, **class S1.** The nominal thickness is > 50mm.

Insulated polyurethane core PUR / PIR

The **PUR** polyurethane foam core of high density 40 kg/m^3 has excellent resistance to heat transfer. It is proven that is the best thermal insulation material in the construction sector.

It does not contain harmful substances, it is odorless and safe for health and the environment. It does not contain CFC & HCFC, ozone-depleting substances. It is recyclable and can be used for production of secondary products.

Its closed cell structure is chemically neutral and this makes it resistant to moisture and mold. It is durable and its properties remain unchanged over time

In addition, PIR foam panels are difficult to ignite, suitable for buildings with structural fire resistance requirements. **PIR** polyurethane foam panels classified as **B-s1-d0** according to standard EN 13501-1, meaning they do not transmit fire, are difficult to ignite, have no/hardly any smoke production and do not produce flaming or non-flaming particles.

Polyurethane core PIR
Essential Characteristics
(according to EN 13165)

- Density, ρ ≤ 40 ± 2 kg/m^3
- Conductivity, λ ≤ 0.023 ± 0.001 W/mK
- Adhesion, adh ≤ 120 kPa
- Compression, comp ≤ 150 kPa
- Stability, dim ≤ 1.0% at –20^o C
- Stability, dim ≤ 1.0% at +70^o C
- Stracture, 90% closed cell
- Adsorption ≤ 3% of mass
- **Reaction to fire (PIR), Bs1d0**

Characteristic properties

Panel nominal thickness	Panel weight	Thermal Transmittance
[mm]	[kg/m^2]	U [W/m^2.K]
25*	10,4	0,83
30	10,6	0,70
35*	10,8	0,61
40*	11,0	0,53
50	11,4	0,43
60	11,8	0,36
80	12,6	0,27
100	13,4	0,22
120	14,2	0,18
150	15.3	0,14

* **PIR foam** core not available

Panel weight

Panel weight was calculated including the following parameters:
- Core density of 40 kg/m^3
- Metal sheets thicknesses 0,50 / 0,50 mm, Polyester coating (typical metal faces)

Thermal transmittance U

Panel thermal transmittance was calculated according to EN 14509 & EN 10211-2 including the following parameters:
- Core density of 40 kg/m^3,
- Core thermal conductivity 0,023 W/m.K,
- Metal sheets thicknesses 0,50 / 0,50 mm, Polyester coating (typical metal faces)
- Calculations to the nominal panel thickness.

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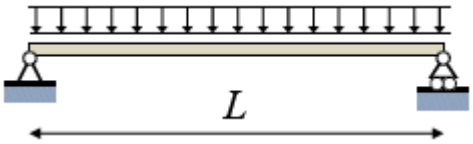
Max load in span - Load bearing capacity (kg/m²)

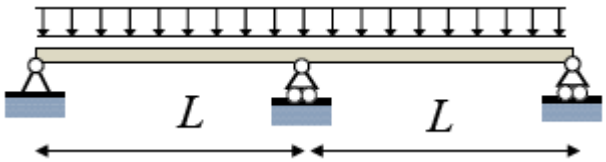


Single Span Load Table

Panel thickness	Max Span L [m]														
	1,00	**1,25**	**1,50**	**1,75**	**2,00**	**2,25**	**2,50**	**2,75**	**3,00**	**3,25**	**3,50**	**3,75**	**4,00**	**4,50**	**5,00**
25	1080	740	475	285	185	125	95	75	50						
30	1130	755	510	320	215	150	110	85	65	50					
35	-	765	535	365	245	175	125	95	75	60	55				
50	-	-	695	510	385	305	225	170	130	95	70	60	50		
60	-	-	835	610	465	365	295	240	195	155	120	100	80	65	55
80	-	-	-	780	595	470	375	310	260	215	170	145	120	95	85
100	-	-	-	845	735	580	470	385	320	270	225	195	165	130	115
120	-	-	-	-	885	695	580	465	390	330	280	250	215	185	145
150	-	-	-	-	-	915	770	595	490	430	365	315	275	245	180

* Calculations according to EN 14509, the values indicate the ultimate limit state or the serviceability limit state (l/200).
* Steel sheet face thickness: external 0,50mm / internal 0,50 mm.
* Support width 120mm. Anchoring should be able to withstand the panel loads.

Max load in span - Load bearing capacity (kg/m²)



Multi Span Load Table

Panel thickness	Max Span L [m]														
	1,00	**1,25**	**1,50**	**1,75**	**2,00**	**2,25**	**2,50**	**2,75**	**3,00**	**3,25**	**3,50**	**3,75**	**4,00**	**4,50**	**5,00**
25	1210	795	555	405	300	235	185	150	120	95	75	60			
30	1270	810	560	410	310	240	195	160	130	105	85	70	60		
35	-	820	565	415	315	245	200	165	135	110	90	75	65	55	
50	-	-	740	540	410	325	260	215	175	140	110	90	75	65	60
60	-	-	870	635	485	380	305	250	210	175	140	110	90	75	70
80	-	-	-	790	600	470	380	310	260	220	185	150	125	105	90
100	-	-	-	-	750	590	475	390	325	280	240	200	170	145	125
120	-	-	-	-	-	740	585	490	405	350	300	255	220	190	165
150	-	-	-	-	-	-	710	605	495	430	375	325	295	260	210

* Calculations according to EN 14509, the values indicate the ultimate limit state or the serviceability limit state (l/200).
* Steel sheet face thickness: external 0,50mm / internal 0,50 mm.
* Support width 120mm. Anchoring should be able to withstand the panel loads.

Metal sheet color coating options. Please visit our website:
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