

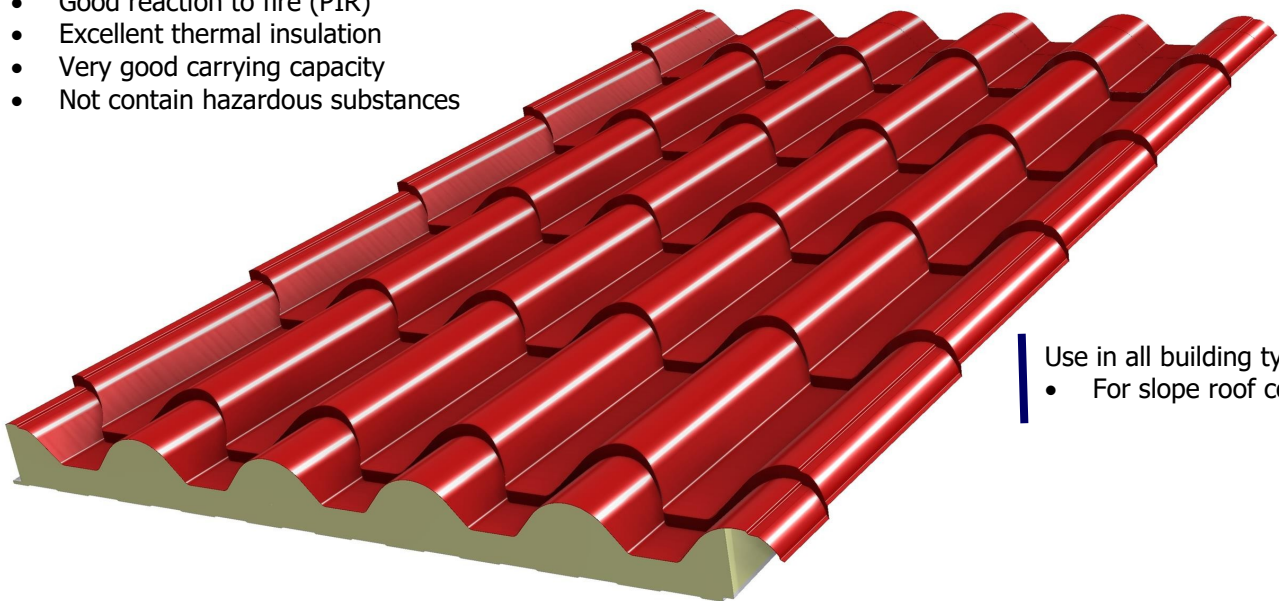
Product Data Sheet

Polyurethane Roof Roman Tile Panel T. PU 350

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:

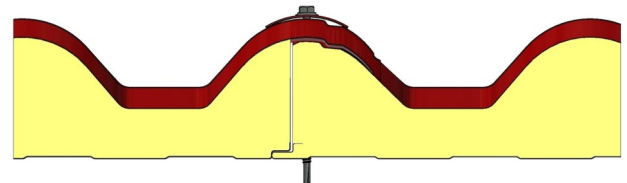
- For slope roof cover

Average minimum thickness: **40 mm**
Average maximum thickness: **90 mm**

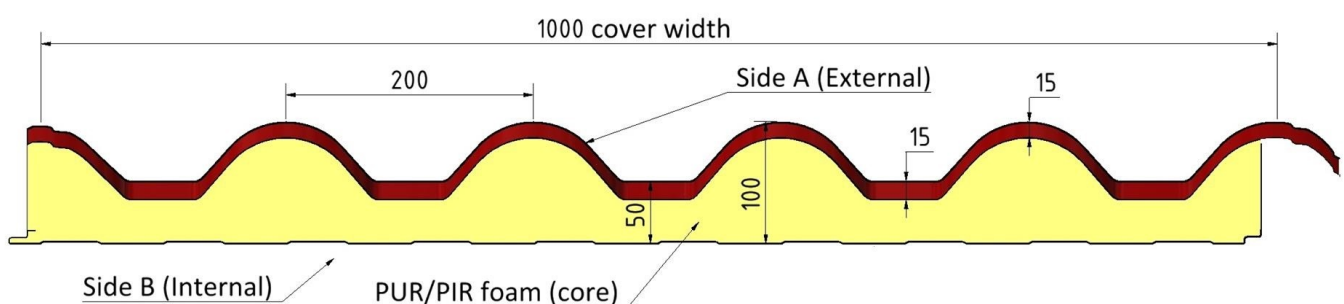
Available length:
1.75m with a step of 350mm to 14m

Cover width
1000mm

- Overlap panels are not recommended and are not available. If required by the project specifications the overlap length must be between 350mm and 450mm and it must be done on construction site.
- The tile panels are fixed to the structure by the standard method of visible anchoring. It is recommended that the support be applied to the peaks and not to the valleys.



Profile view of Roman tile panel gives an excellent aesthetic effect.



Polyurethane Roof Roman Tile Panel / T . PU 350**Dimensional Tolerances** (according to the EN 14509)

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

Metal Sheet Thickness $>0,50\text{mm}$ **Metal sheet options**

Steel pre-painted, galvanized, produced according to EN 10204-2.2

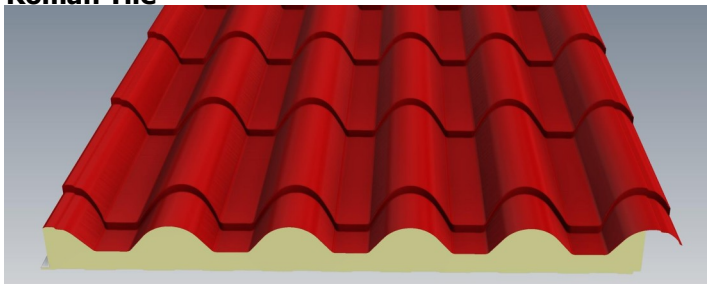
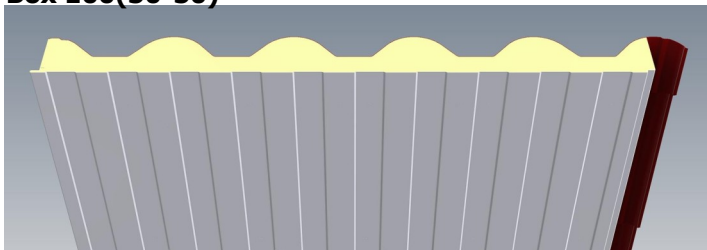
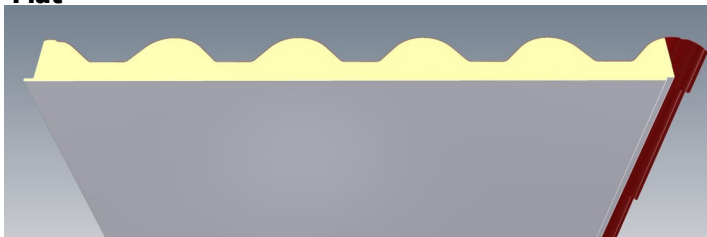
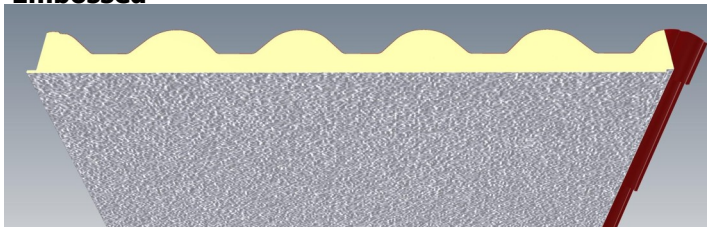
- Metal grade DX51D, S220, S250, S280, according to EN 10346 and EN 10143
- Hot-dip zinc coating, Z70 to Z275 gr/m^2
- AluZinc protection, az70 to az265 gr/m^2
- Nominal thickness from 0,35 mm **up to 1,0mm**
- Polyester, Plastisol or PVDF color coating

Aluminum uncoated with aluzinc protection or prepainted, produced according to EN 10204-3.1

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

Stainless Steel, produced according to EN 10088-1

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

Metal Face profile options**Roman Tile****Box 100(50-50)****Flat****Embossed****External face profiles:**

- Corrugation of Roman tile effect, smooth or embossed

Internal face profiles:

- Box 100(50-50)
- Flat
- Embossed

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.

Polyurethane Roof Roman Tile Panel / T . PU 350**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 > 20µm, 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 > 50µm.

Insulated polyurethane core PUR / PIR

The **PUR** polyurethane foam core of high density 40 kg/m³ 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, $\rho \leq 40 \pm 2 \text{ kg/m}^3$
- Thermal conductivity, $\lambda \leq 0.023 \pm 0.001 \text{ W/mK}$
- Adhesion, $\text{adh} \leq 120 \text{ kPa}$
- Compression, $\text{comp} \leq 150 \text{ kPa}$
- Stability, $\text{dim} \leq 1.0\%$ at -20°C
- Stability, $\text{dim} \leq 1.0\%$ at $+70^\circ \text{C}$
- Structure, 90% closed cell
- Adsorption $\leq 3\%$ of mass
- **Reaction to fire (PIR), Bs1d0**

Characteristic properties

Thermal transmittance U (EN 8990:1996-09)						0,277 W/m ² K	
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Panel Length	[m]	1.75	2.10	2.45	2.80	3.15	3.50
Panel Weight	[kg]	17.0	20.4	23.8	27.2	30.6	34.0

[m]	3.85	4.20	4.55	4.90	5.25	5.60	5.95	6.30
[kg]	37.4	40.8	44.2	47.6	51.0	54.4	57.8	61.2

[m]	6.65	7.00	7.35	7.70	8.05	8.40	8.75	9.10
[kg]	64.6	68.0	71.4	74.8	78.2	81.6	85.0	88.4

[m]	9.45	9.80	10.15	10.50	10.85	11.20	11.55
[kg]	91.8	95.2	98.6	102.0	105.4	108.8	112.2

[m]	11.90	12.25	12.60	12.95	13.30	13.65	14.00
[kg]	115.6	119.0	122.4	125.8	129.2	132.6	136.0

Panel weight

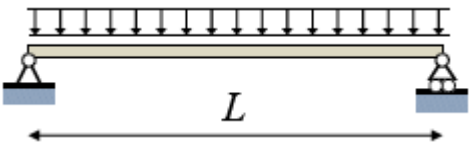
Panel weight was calculated including the following parameters:

- Core density of 40 kg/m³
- Metal sheets thicknesses 0,40/0,35 mm, Polyester coating (typical metal faces)

Thermal transmittance U

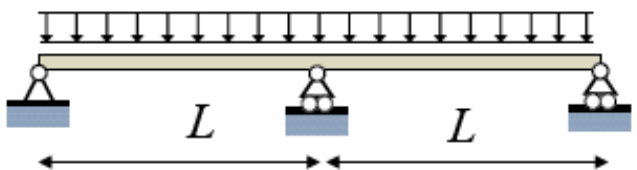
Panel thermal transmittance was calculated according to EN 8990:1996-09 including the following parameters:

- Core density of 40 kg/m³,
- Core thermal conductivity 0,023 Wm.K
- Metal sheets thicknesses 0,40/0,35 mm, Polyester coating (typical metal faces)

Polyurethane Roof Roman Tile Panel / T . PU 350**Single Span Load Table****Max load in span - Load bearing capacity (kg/m²)**


External steel sheet thickness [mm]	Internal steel sheet thickness [mm]	Nominal panel weight [kg/m ²]	Maximum Span L [m]							
			1,05	1,40	1,75	2,10	2,45	2,80	3,15	3,50
0.60	0.50	13.0	350	245	170	130	100	75	50	-
0.50	0.40	11.2	295	200	145	105	85	55	-	-
0.40	0.35	9.7	270	185	135	95	75	50	-	-

- * Calculations were made according to EN 14509, the values indicate the maximum bending $< l / 200$ and do not include any safety factor.
- * Steel sheet face thickness, external / internal as indicated.
- * Support width 100mm. Anchoring should be able to withstand the panel loads.
- * The values in the table are indicative

Multi Span Load Table**Max load in span - Load bearing capacity (kg/m²)**


External steel sheet thickness [mm]	Internal steel sheet thickness [mm]	Nominal panel weight [kg/m ²]	Maximum Span L [m]							
			1,05	1,40	1,75	2,10	2,45	2,80	3,15	3,50
0.60	0.50	13.0	420	265	185	135	105	80	75	-
0.50	0.40	11.2	350	210	150	110	95	70	-	-
0.40	0.35	9.7	330	200	145	105	90	65	-	-

- * Calculations were made according to EN 14509, the values indicate the maximum bending $< l / 200$ and do not include any safety factor.
- * Steel sheet face thickness, external / internal as indicated.
- * Support width 100mm. Anchoring should be able to withstand the panel loads.
- * The values in the table are indicative

Metal sheet color coating options. Please visit our website:
<https://www.metaltemporiki.gr/products/xromatologio>

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