Product Data Sheet

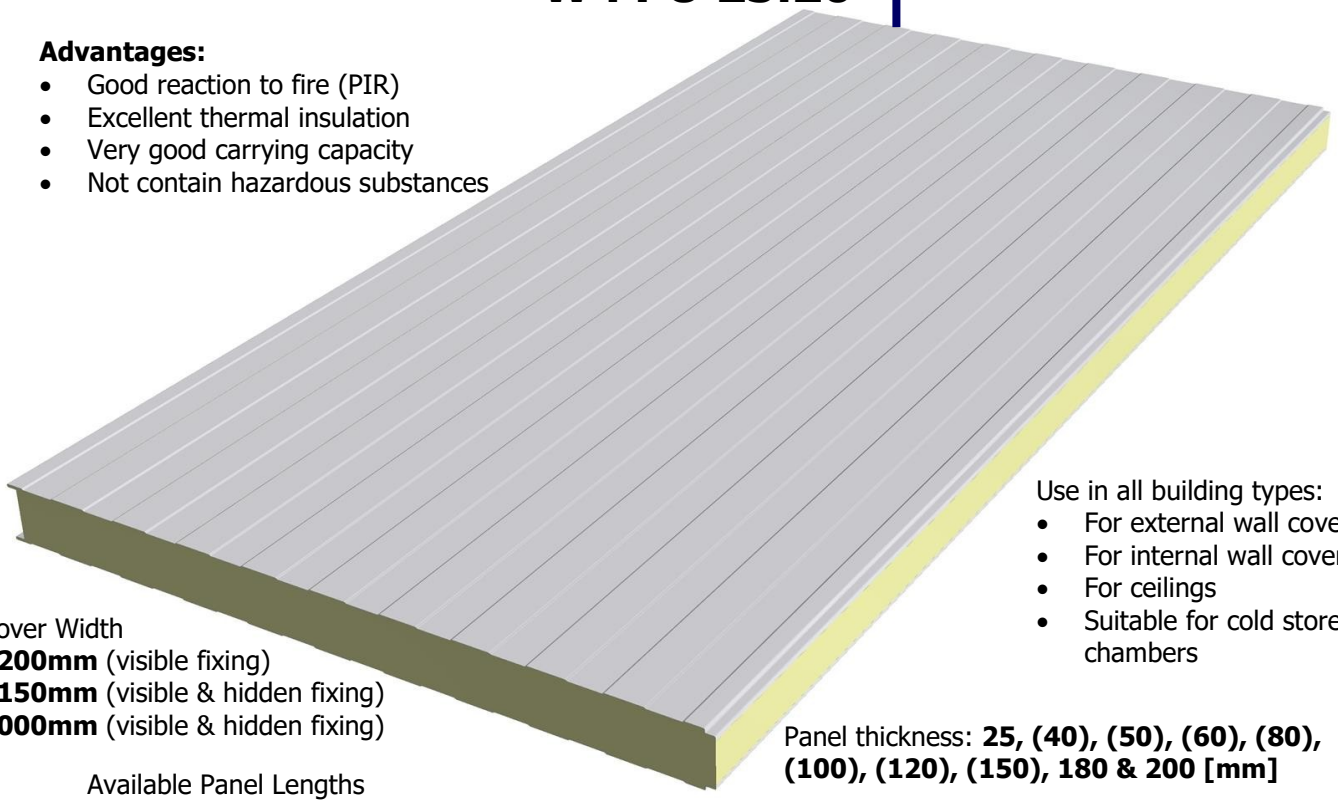
Polyurethane Wall Cover Panel

W . PU 25.20

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 external wall cover
- For internal wall cover
- For ceilings
- Suitable for cold store chambers

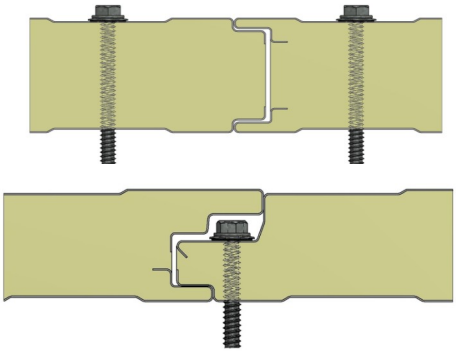
Cover Width
1200mm (visible fixing)
1150mm (visible & hidden fixing)
1000mm (visible & hidden fixing)

Available Panel Lengths
From **2 m** to **14 m**

Panel thickness: **25, (40), (50), (60), (80), (100), (120), (150), 180 & 200 [mm]**

Thicknesses in **(brackets),** are common for both Hidden & Visible fixing joint

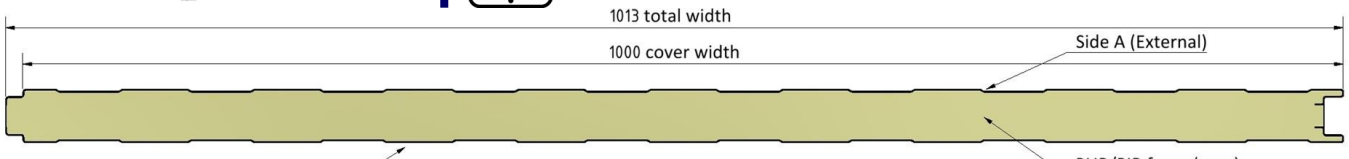
- Polyurethane wall cover panels can be installed either vertically or horizontally. At the horizontal installation it is recommended to use additional accessories to cover the vertical joint



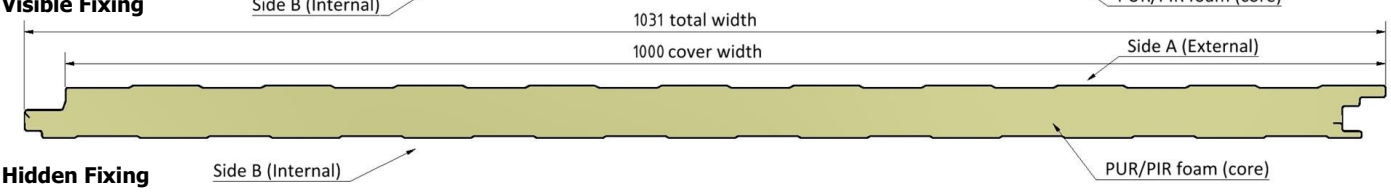
Polyurethane wall cover panels are fastened to the bearing structure by the standard method of visible anchoring. This method adds robustness to the construction and an industrial look to the building.

There are also available hidden fixing panels which are fastened to the bearing structure by the method of hidden anchoring. The panel has such a configuration in its profile so that the support elements are not visible and therefore offer an excellent aesthetic effect without depriving their characteristic properties.

For cooling purpose, it is recommended to add a strip of foam in the joint, in order to achieve the insulation continuity.



Visible Fixing



Hidden Fixing

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Dimensional Tolerances (according to 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 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 > 0,5 mm

Metal sheet options

Steel sheet pre painted, galvanized,

- Metal grade DX51D, S220, S250, S280, according to EN 10346, EN 10143 and 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

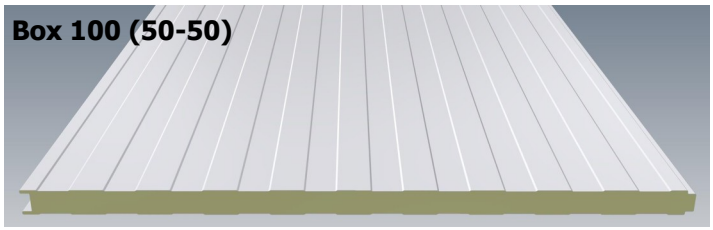
Aluminum uncoated with aluzinc protection or pre-painted, produced according to EN485-1-2-4, EN573-3, EN546-1-2-3-4, EN1396, EN602, ASTM-B209

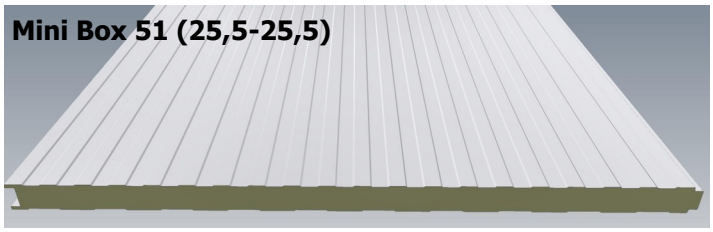
- Aluminum alloy of series 1xxx, 3xxx ή 5xxx
- Hardness degree H14, H24 ή H44
- AluZinc protection from az70 gr/m^2
- Nominal thickness from 0,35 mm to1,0mm
- Polyester color coating with min 20μm thickness

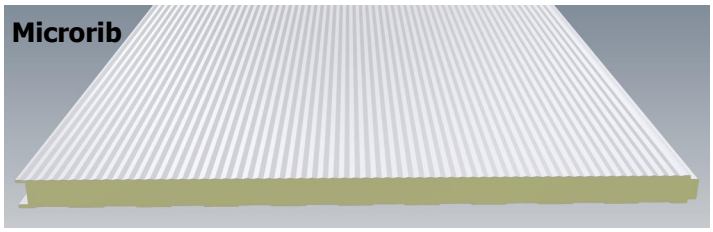
Stainless Steel, produced according to EN 10088-1

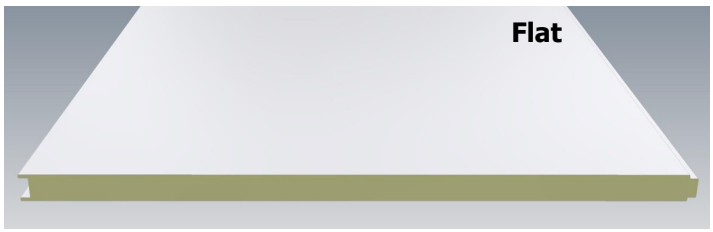
- Metal grade AISI 304 2B ή AISI 316 L
- Nominal thickness from 0,35 mm to 1,0mm
- Mat or gloss color coating

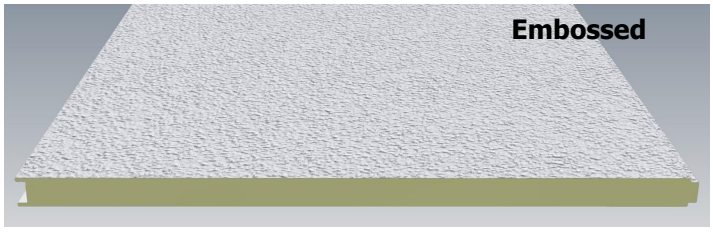
Metal Face profile options











External face profiles:

- Box 100(50-50)
- Mini Box 51(25,5-25,5)
- Micro-rib
- Flat
- Embossed

Internal face profiles:

- Box 100(50-50)
- Mini Box 51(25,5-25,5)
- Flat
- Embossed

There is an option to produce panels where the internal metal sheet can be replaced by 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
- Thermal 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
- Structure, 90% closed cell
- Adsorption ≤ 3% of mass
- **Reaction to fire (PIR), Bs1d0**

Characteristic properties

Panel nominal thickness	Panel weight (W 1000mm)*	Thermal transmittance*
[mm]	[kg/m^2]	U [W/m^2.K]
25	9,3	0,76
40	9,9 / 10,1	0,58 / 0,69
50	10,3 / 10,5	0,46 / 0,54
60	10,7 / 10,9	0,37 / 0,43
80	11,5 / 11,7	0,28 / 0,29
100	12,3 / 12,5	0,22 / 0,23
120	13,1 / 13,3	0,18 / 0,19
150	14,3 / 14,5	0,15
180	15,5	0,12
200	16,3	0,11

* Double values indicate visible / hidden fixing

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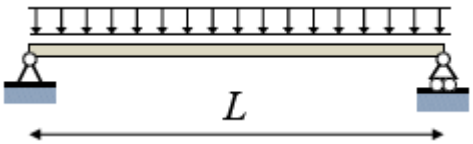
Max load in span - Load bearing capacity (kg/m²)

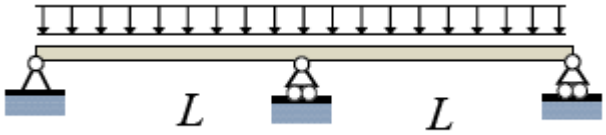


Single Span Load Table

Panel thickness	Max Span L [m]														
	1,50	**1,75**	**2,00**	**2,25**	**2,50**	**2,75**	**3,00**	**3,25**	**3,50**	**3,75**	**4,00**	**4,25**	**4,50**	**4,75**	**5,00**
25	155	130	110	80	70	55									
40	245	210	185	155	125	105	85	70	65	55					
50	295	250	220	190	155	125	110	90	75	70	60	50			
60	340	290	250	225	180	150	125	110	90	80	70	65	55	50	
80	405	350	305	270	235	195	160	135	115	105	90	80	70	65	55
100	475	410	355	315	280	230	195	160	140	120	110	95	85	75	70
120	530	455	395	355	315	260	215	185	160	140	120	110	95	85	75
150	590	505	440	390	350	295	250	210	185	160	140	120	110	100	90
180					385	325	270	230	200	165	155	135	115	105	95
200						340	280	235	205	170	160	140	120	110	100

* Calculations according to EN 14509, the values indicate the ultimate limit state or the serviceability limit state (l/100).
* 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]														
	1,50	**1,75**	**2,00**	**2,25**	**2,50**	**2,75**	**3,00**	**3,25**	**3,50**	**3,75**	**4,00**	**4,25**	**4,50**	**4,75**	**5,00**
25	135	110	80	65	55										
40	220	165	125	100	80	70	55	50							
50	255	200	155	120	100	80	70	60	50						
60	295	225	175	145	115	95	80	70	60	55					
80	335	275	220	180	150	125	105	90	75	70	65	55			
100	360	305	260	215	180	150	125	110	95	80	70	65	60	50	
120	365	310	270	235	200	165	145	120	110	95	80	70	70	60	55
150	370	315	270	240	210	190	160	145	125	110	100	85	75	70	65
180					230	205	175	155	140	125	110	95	85	80	70
200						210	180	160	145	130	115	100	95	85	75

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

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