

sky

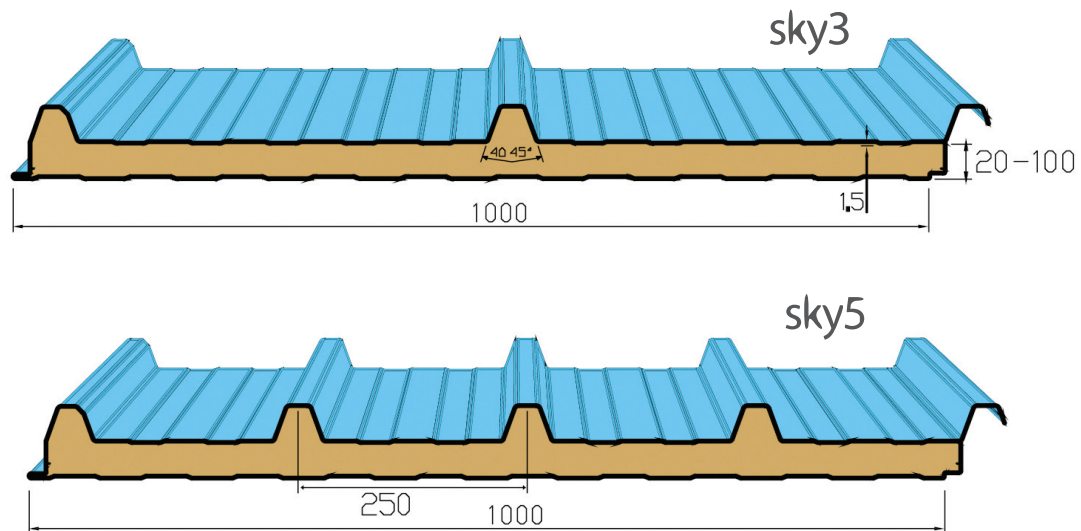
# description



The Polyurethane insulated arkhon sky panel is an excellent solution at low cost with unique aesthetics. The unique in greek market available from 20mm to 100mm in 7 different thicknesses in order to cover every need of building roofs.

sky

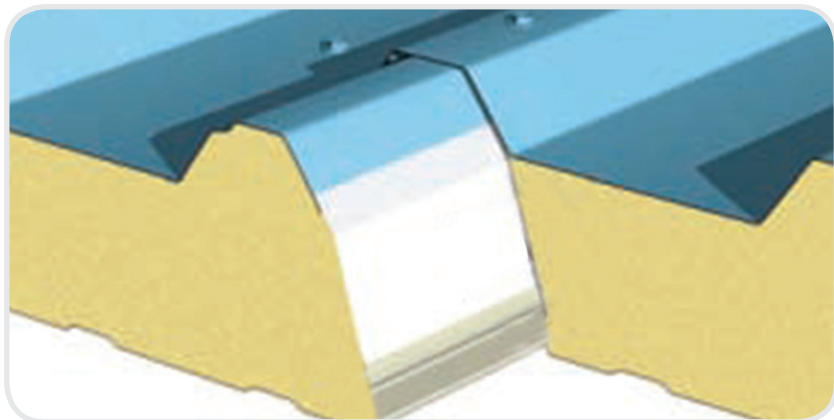
## section



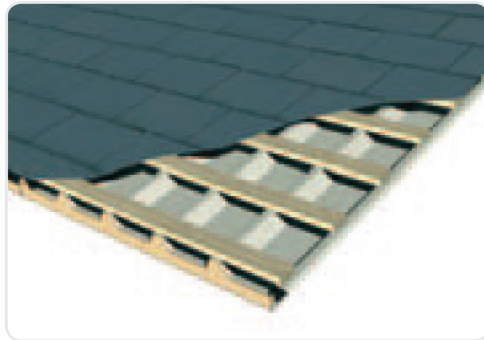
### New design with a recess in the latch

1. Prevention of capillary action and rust on the link
2. Silicone is not required in the joint.
3. Water-resistant.
4. U-Value factor.
5. without thermal bridges or gaps, no risk of crystallization
6. Uninterrupted insulation.
7. Roof slope from 4°
8. Special color coatings for minimum need of maintenance.

## joint design



The arkhon sky design facilitates the installation of photovoltaic panels on them as well as the thin pv film pre-installation before the final placement.



The arkhon sky can be used as a thermo insulating tile roof basis when speed and high quality insulation are required. The resistance to large spans, the small slope of the roof and the internal wood texture, makes it ideal.

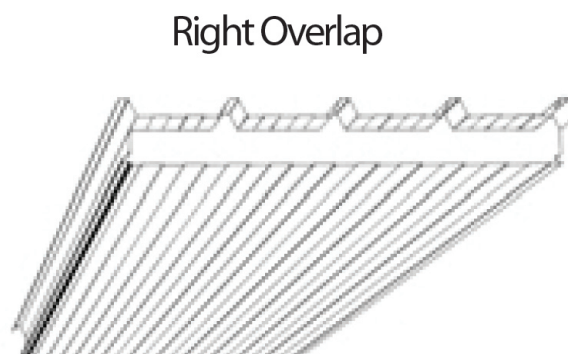
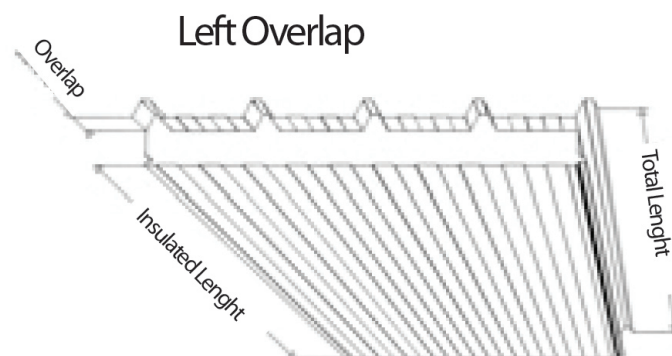
### STEEL SHEETS

- Pre-painted steel with polyester paint  
25 microns and 7 microns backside (EN 10169-1/03)
- Thickness from 40mm up to 1.00mm (EN 10142/00)
- 350 Mpa Yield Point  
350-380 N/mm<sup>2</sup>.
- Zinalume® S 320GD AZ150  
(55%Al-43,5%Zinc-1,5%Si)  
(EN 10147/00 & EN10142/00)  
Color bond® XRW organic polyester  
furnace paint (EN 10169-2/99).

### geometry

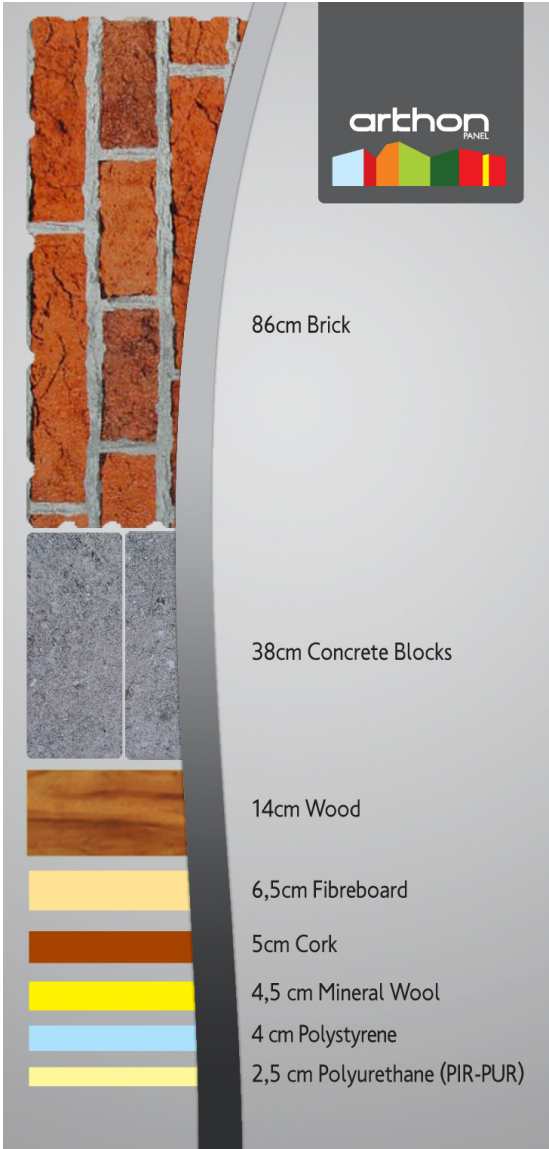
Thickness, t (mm):	20, 30, 40, 50, 60, 80 and 100
Maximum Length (mm)*:	15.000
<b>Minimum Length (mm):</b>	
In the production line:	1,800
Off production line **:	300
<b>Overlapping (mm)</b>	
Minimum	25
Maximum	250

\* Restriction by the means of transport





## polyurethane foam



*By using arkhon panels you can achieve excellent steady insulation efficiency without gaps or inconsistencies in the joints.*

The panel core is consisted of rigid polyurethane foam (PUR) or polyisocyanuric (PIR) with the following characteristics:

**PUR**

Density	40-42kg/m <sup>3</sup>	(ISO 845)
Adhesion	138Kpa	(ASTM D 1623)
	125 Kpa	(EN 1607)
Fire reaction	PUR	B2-B3
	PIR	(100mm REI30)
Closed cells Percentage		98%
Dimension stability	2%	(ISO 2796)
Cut shrinkage		+2mm

**PIR**

Density	42-45kg/m <sup>3</sup>	(ISO 845)
Adhesion	138Kpa	(ASTM D 1623)
	125 Kpa	(EN 1607)
<b>Fire resistance 30 min</b>		
Fire reaction	PIR	(100mm REI30)
Closed cells Percentage		98%
Dimension stability	2%	(ISO 2796)
Cut shrinkage		+2mm

## thermal insulation (properties)

thickness(mm)	R	U	K
20 mm	1,004 m <sup>2</sup> K/W	0,813 W/m <sup>2</sup> K	0,752 K/m <sup>2</sup> h°C
30 mm	1,397 m <sup>2</sup> K/W	0,713 W/m <sup>2</sup> K	0,616 K/m <sup>2</sup> h°C
40 mm	1,790 m <sup>2</sup> K/W	0,557 W/m <sup>2</sup> K	0,480 K/m <sup>2</sup> h°C
50 mm	2,138 m <sup>2</sup> K/W	0,465 W/m <sup>2</sup> K	0,402 K/m <sup>2</sup> h°C
60 mm	2,658 m <sup>2</sup> K/W	0,375 W/m <sup>2</sup> K	0,323 K/m <sup>2</sup> h°C
80 mm	3,690 m <sup>2</sup> K/W	0,270 W/m <sup>2</sup> K	0,233 K/m <sup>2</sup> h°C
100 mm	4,328 m <sup>2</sup> K/W	0,230 W/m <sup>2</sup> K	0,198 K/m <sup>2</sup> h°C

The following charts are created according to the EN 14509.  
The rates are based on sheet thicknesses 0.5/0.5mm and 0.6/0.6mm and minimum purlin thickness 1.5mm and width 40mm, to a maximum permitted deflection L/200.

## statics

0.5/0.5

sky3								Supports spacing (m)	Multiple Span							
Simple Span									Multiple Span							
Panel thickness									Panel thickness							
100	80	60	50	40	30	20		20	30	40	50	60	80	100		
<b>Max load capacity kg/m<sup>2</sup> steel</b>									<b>Max load capacity kg/m<sup>2</sup> steel</b>							
489	421	344	292	260	220	155	2	190	270	358	471	558	649	731		
370	327	280	250	200	140	85	2,5	145	210	292	378	441	522	598		
300	270	220	180	130	85	35	3	67	130	192	250	300	355	421		
235	215	160	120	86	50		3,5	25	90	130	180	220	280	348		
200	170	115	85	60			4		60	90	110	170	220	250		
160	130	82	62				4,5			70	90	120	178	200		
110	100	62					5				70	90	130	160		

0.6/0.6

Simple Span								Supports spacing (m)	Multiple Span							
Panel thickness									Panel thickness							
100	80	60	50	40	30	20			20	30	40	50	60	80	100	
<b>Max load capacity kg/m<sup>2</sup> steel</b>									<b>Max load capacity kg/m<sup>2</sup> steel</b>							
510	443	366	315	278	235	173	2	205	290	379	490	571	670	752		
390	350	300	268	214	150	97	2,5	158	225	284	382	465	548	642		
330	289	235	193	139	91	43	3	74	139	204	268	325	367	437		
270	230	171	128	92	54		3,5		96	139	193	235	300	375		
230	182	123	91	64			4		64	96	118	182	235	300		
175	139	88	66				4,5			75	96	128	190	230		
123	107	66					5				75	96	139	200		

0.5/0.5

sky5								Supports spacing (m)	Multiple Span							
Simple Span									Multiple Span							
Panel thickness									Panel thickness							
100	80	60	50	40	30	20		20	30	40	50	60	80	100		
<b>Max load capacity kg/m<sup>2</sup> steel</b>									<b>Max load capacity kg/m<sup>2</sup> steel</b>							
620	510	408	345	295	250	185	2	246	329	418	481	579	730	806		
448	374	290	265	220	170	105	2,5	152	235	295	372	448	531	631		
330	280	235	200	160	110	45	3	87	170	215	270	323	443	506		
272	225	185	140	110	75		3,5	32	115	165	200	248	338	400		
220	178	130	95	74			4	80	115	150	198	250	342	370		
170	130	96	70	50			4,5		55	86	105	155	210	285		
140	110	73					5			62	82	108	150	205		

0.6/0.6

Simple Span								Supports spacing (m)	Multiple Span							
Panel thickness									Panel thickness							
100	80	60	50	40	30	20			20	30	40	50	60	80	100	
<b>Max load capacity kg/m<sup>2</sup> steel</b>									<b>Max load capacity kg/m<sup>2</sup> steel</b>							
630	530	421	361	313	268	203	2	265	348	438	500	598	719	830		
467	390	310	284	235	182	117	2,5	168	251	372	388	467	552	653		
350	298	251	214	171	118	53	3	99	182	230	298	341	462	522		
292	241	198	150	118	80		3,5	40	123	177	214	265	359	428		
240	190	139	102	79			4		86	123	161	212	268	370		
190	139	103	75	54			4,5		59	92	112	166	225	306		
160	118	78	50				5			66	88	116	161	227		

## Acoustic efficiency

The arkhon panel acoustic efficiency has been calculated with the use of specialized software. The results in the following chart are based in arkhon sky 80mm.

Sound Reduction Index (SRI)	
Frequency Hz	SRI dB
125	17.2
250	20.0
500	23.2
1k	23.4
2k	23.2
4k	40.5

## Air Tightness

According to EN 14509 and EN 1214, the air permeability must not exceed 10m<sup>3</sup>/Ω/m<sup>2</sup>. As in all previous tests, so in the air tightness test, arkhon panel surpass these limits.

## Water Sealing

The basic compliance standard for sealing control in polyurethane panels is EN 12865. The model requires attaining a pressure seal 600 Pa under normal conditions. Laboratory tests showed that arkhon panel is watertight up to the pressure of 1070 Pa, far beyond the requirement of the system.

## Color palette

In addition to the colors in stock, many other colors can be offered, upon request, in any shading, to cover specific architectural needs. Special color orders are binding according to the size of the order. Arkhon products manage to combine high thermal insulation capability with high stability and excellent protection from the weather conditions, since their production is based on high technology machinery and chemical evolution. The diversity of our panels includes roof panels, wall panels and frigo

panels with a variety in the design, depending on usage. The evolution and ensure of the unique qualities of our products is an important task for the research division of Arkhon. The project is based on the skills of experienced engineers of all disciplines (engineers, chemists, environmentalists and civil engineers) who are at your disposal for any challenges in insulation and construction. Arkhon applies environmental friendly policy using recyclable materials and polyurethanes cfc & hcfc free.

● SIMILRAL9002 ps   smooth	● SIMILRAL7035 ps   smooth or stucco embossed	● SIMILRAL1014 ps   smooth or stucco embossed	● SIMILRAL1015 ps   smooth	● SIMILRAL9006 ps   smooth	● SIMILRAL9007 ps   smooth
● SIMILRAL6011 ps   smooth	● SIMILRAL6005 ps   smooth	● SIMILRAL6021 ps   smooth	● SIMILRAL7045 ps   smooth	● SIMILRAL7040 ps   smooth	● SIMILRAL7015 ps   smooth
● SIMILRAL5010 ps   smooth	● SIMILRAL5015 ps   smooth	● SIMILRAL5024 ps   smooth	● SIMILRAL2002 ps   smooth	● SIMILRAL3003 ps   smooth	● SIMILRAL3020 ps   smooth
● SIMILRAL3016 ps   smooth	* Please ask for PVC catalogue for special colours				