



**MEK**PAN  
PANEL

DIFFERENT **FACE**  
OF THE BUILDINGS

MAX: 15 TON

MEKPAN PANEL

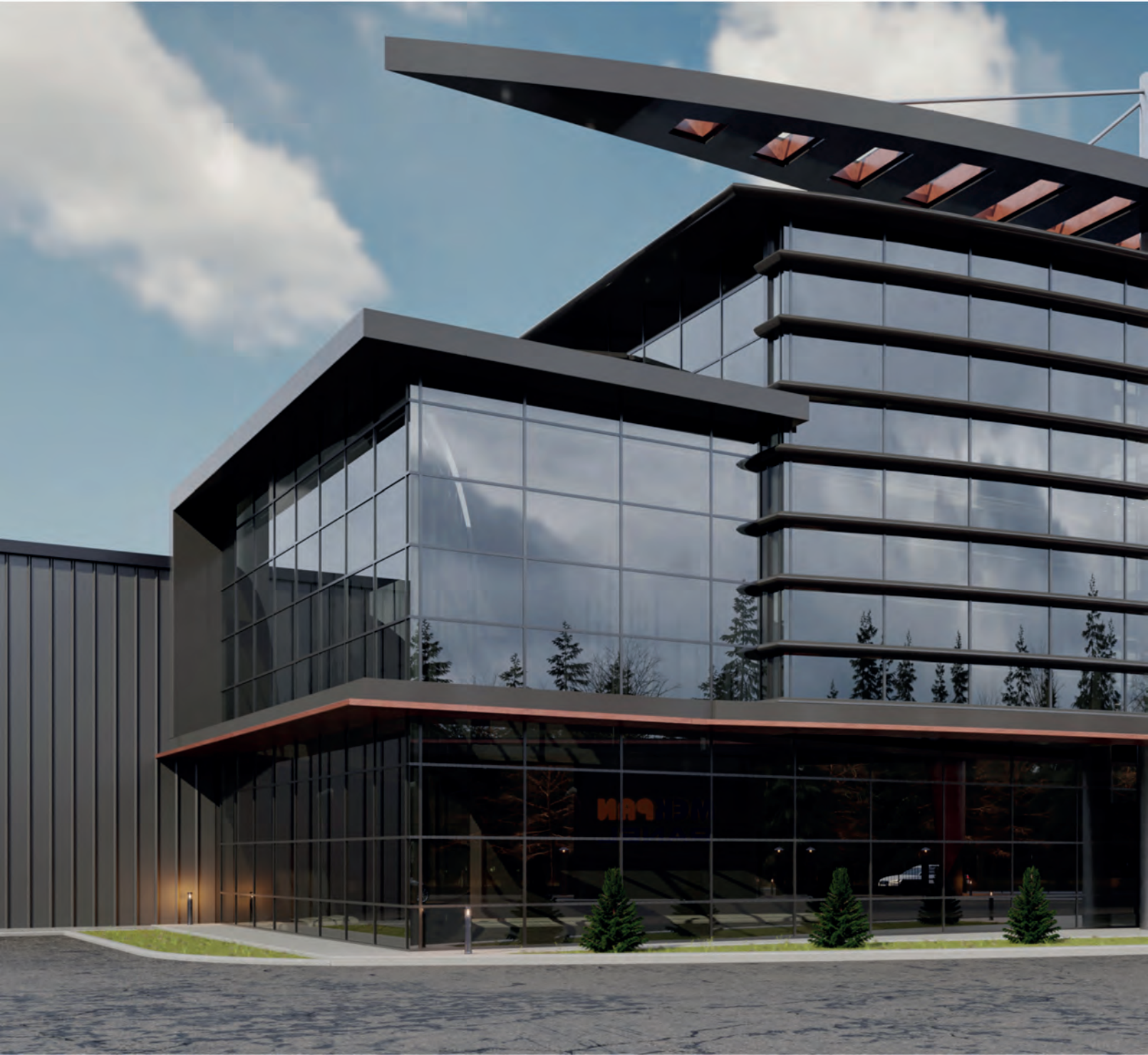
# MEKPAN PANEL

Different Face of the Buildings

Mekpan Panel, which started its activities in Konya in 2011, increased its annual production capacity by 13.600.000 m<sup>2</sup> with new investments and new machinery park.

Mekpan Panel offers new and modern solutions in roof and wall panel applications in the building sector, apart from classical solutions. In addition to these, Mekpan Panel provides continuity in the food sector with the Cold Room Panels it produces, while providing maximum energy savings in insulation.

Mekpan Panel, which aims to popularize the use of Sandwich Panels not only in the industrial sector but also in the housing sector, breaks new ground in Turkey with its new products such as Post Panel, Siding Panel, Sinus Panel, V Wall Panel, Capped Roof Panel as surface profiles and Polyurethane (PUR) and Polyisocyanurate (PIR) applications as filling material. The roof and wall panels produced by Mekpan Panel with state-of-the-art technology combine architectural aesthetics and beauty with economy.



Mekpan Panel, located in konya 3rd Organised Industrial Zone, carries out its production in total area o 64.000 m<sup>2</sup> made up of 41.000 m<sup>2</sup> covered area.

Mekpan Panel can use painted aluminum, natural aluminum, painted galvanized sheet, membrane or kraft paper in the production of roof and wall panels. The most modern roof and wall panels produced with the latest technology under the brands of Mekpan Panel and CHK Panel provide quality assurance to customers.



# MEKPAN PANEL

Different Face of the Buildings

## New and modern solutions

### New Products in Surface Profile

Post Panel,

Siding Panel,

Sinus Panel,

V Wall Panel,

Solar Compatible 4-Ribs Roof Panel  
with Cap

### Filling Materials with High Fire Resistance

Polyurethane (PUR) and

Polyisocyanurate (PIR)

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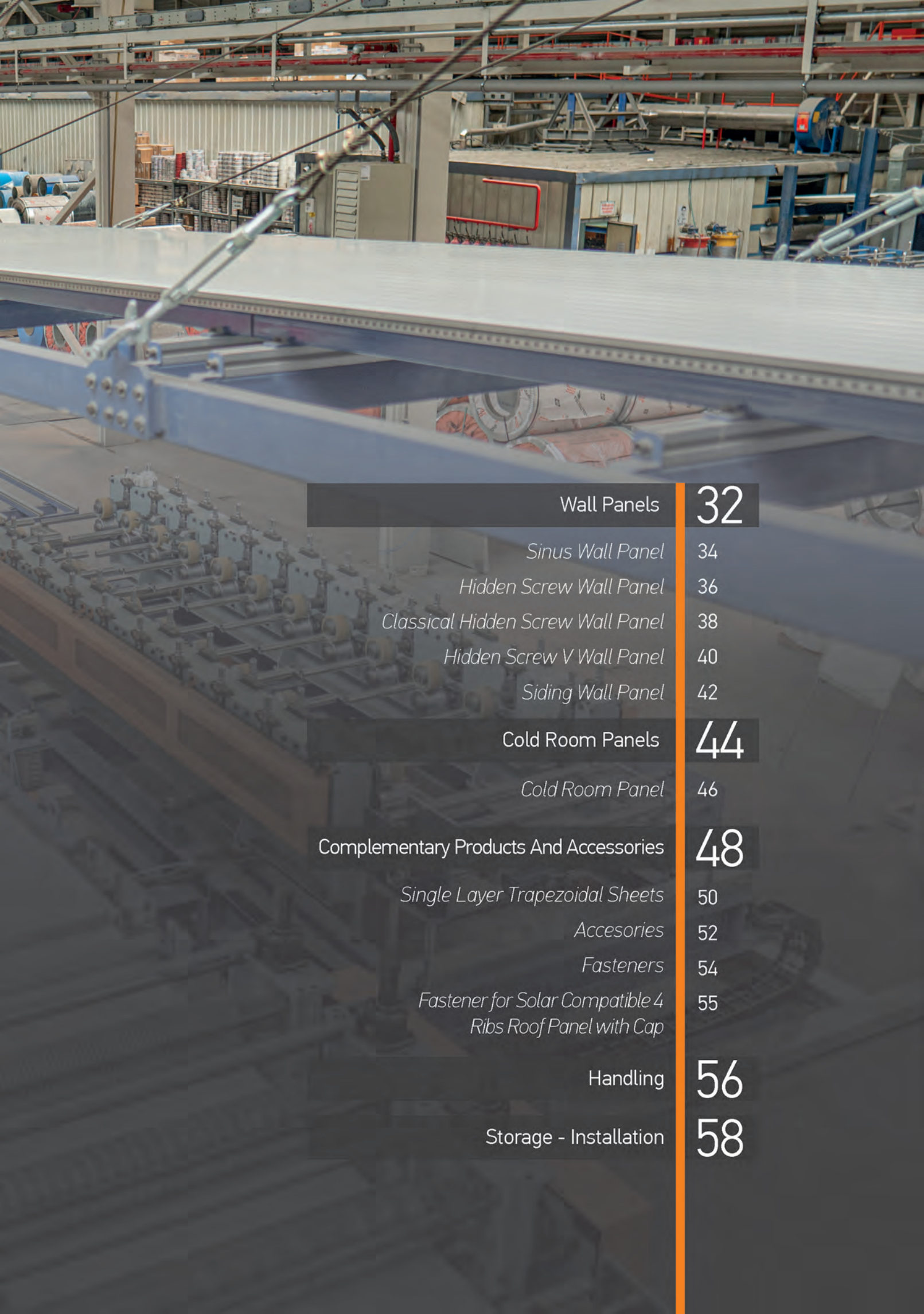
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# Our Sustainability Goals

***We are working for a sustainable cycle by strengthening our corporate structure with the aim of happy and healthy individuals, a prosperous society and a clean environment.***

Our focus on sustainability covers our entire value chain. For a more sustainable future, we have implemented our sustainability policy to address the environmental problems we face, social and economic challenges, and their solutions. While we focus all our efforts on results, we benefit from the UN sustainable development goals. We continuously measure and rate all the action plans we put into effect for sustainability.



## Protect the environment

- We increase energy efficiency.
- We reduce the water we use.
- We recycle our solid waste.
- We reduce the raw material used in our packaging



## Protect people

- At Mekpan Academy, we increase the training per employee by 10% every year.
- We doubled the budget we allocate to education and communication.
- We increase our employment efficiency every year.
- We reduce our work accident rate with the goal of zero work accident.

## Economic Development

- We increased our production investments by 250% so that our products can be accessed more.
- We care about production planning in order to use the capacity in production correctly.
- We develop new products for different needs with R&D and P&D investments.
- We protect and strengthen our transparent, fair, honest and accountable corporate structure.
- We increase our logistics efficiency

\*\*\*

Increasing energy efficiency with thermal insulation has gained great importance in today's world where our energy resources are depleting and costs are increasing rapidly.

As the use of sandwich panels, which have unique benefits, becomes widespread, it starts to create positive effects on the environment by increasing energy efficiency with its affordable cost. Sandwich panels significantly reduce air-conditioning costs with their insulation and lightness feature, thus reducing energy consumption considerably.

As Mekpan Panel, we produce products that protect the environment and human health, and act with the basic principle of providing quality, economical, fast and easy solutions.

Our sandwich panels, which control heating and cooling with their thermal insulation feature by completely wrapping the buildings, increase global energy efficiency and protect our world by preventing heat loss. In addition, it prevents corrosion by providing waterproofing and thus prolongs the life of your structures.

The thermal conductivity values of the PIR and PUR materials we use in our sandwich panels show higher performance than other insulation materials. The table below shows the thickness and amount of raw material required for different insulation materials to provide the same insulation performance.





# MEKPAN QUALITY

## MEKPAN PANEL



As Mekpan Panel, we provide services to all sectors with high quality, economical and environmentally friendly solutions by using innovative and cutting-edge technologies.

We maintain our goal of making "Mekpan Panel", a strong brand, and the market leader in the sandwich panel industry, with fast service and reliable trade understanding.

In order to announce the quality of "Made in Turkey" to the world, we aim to continue our production with innovative and strong stakeholders, and marketing, sales and distribution activities with our professional team.

We keep customer satisfaction at the highest level without sacrificing quality. We always move our targets forward in line with customer requirements and international standards.

Thanks to our innovative and corporate structure, we use our resources in the most efficient way and work with the principle of maximum efficiency.

### Our Quality Policy

- Comply with legislations, legal regulations and customer requirements,
- Make the necessary improvement in the processes we carry out in line with the quality management system,
- Become the preferred company in the sector with "Mekpan Quality" in terms of deadline, cost and quality in the projects we carry out with all our customers, suppliers and business partners,
- Give importance to training and teamwork so that all our employees become individuals who can use their talents at the highest level, and establish quality awareness in all our employees in this direction,
- Be an exemplary organization that respects community and the environment, and contribute to the country's economy by constantly improving its business volume.



ISO 9001:2015



ACCREDITED  
Management Systems  
Certification Body  
ACC NO. M9CB-120



1

Uncoiler

2

Protective Film  
Pinch Roll  
Trimming  
Overlap Film  
Corona

3

Roll Former

4

Chemical Storage

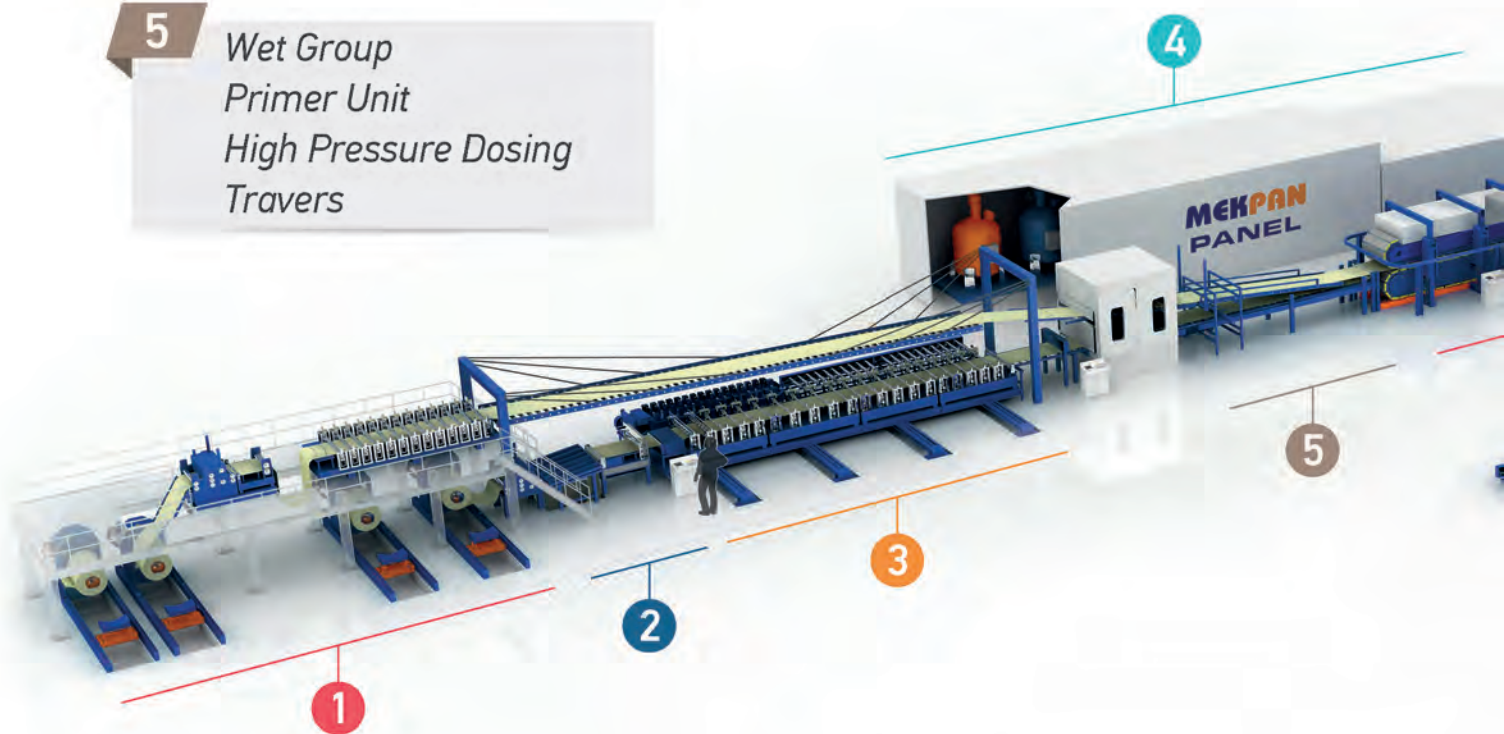
5

Wet Group  
Primer Unit  
High Pressure Dosing  
Travers

Mekpan Panel increased  
its annual production  
capacity by

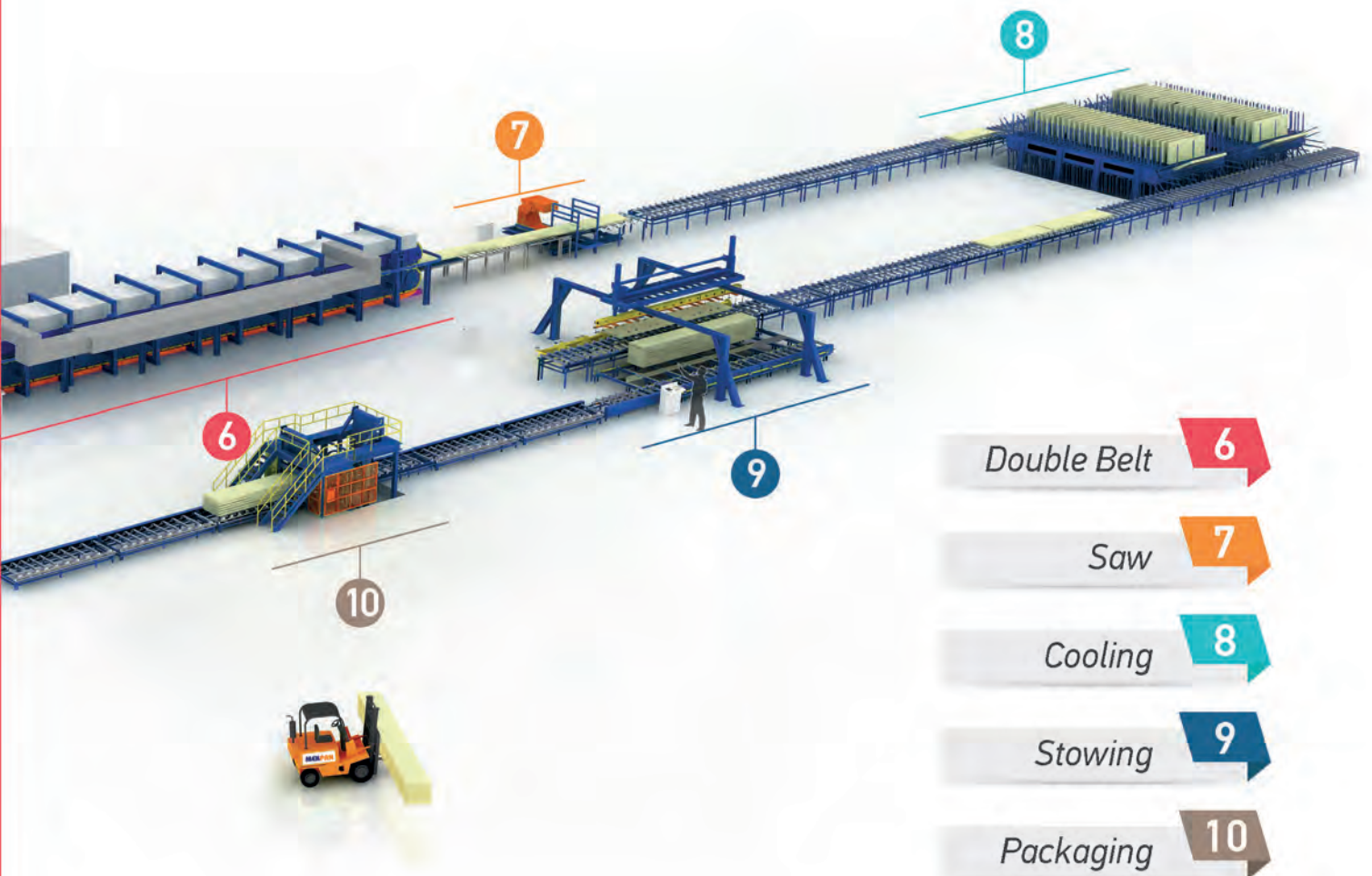
**13.600.000 m<sup>2</sup>**

with new investments and  
new machinery park.



We have included **the LATEST TECHNOLOGY** in our production line

to bring **MEKPAN PANEL QUALITY** to the world.







HIGH QUALITY AND ECONOMIC SOLUTION  
FOR YOUR STRUCTURES  
MEKPAN PANEL

## Sandwich Panel

Sandwich panels are composite materials consisting of polyurethane or rock wool filling material between two metals. Sandwich panels, used as coating material in roofs, walls, interior partitions or cold storages of buildings, comes to the forefront in architectural preferences with its high bearing capacity in addition to its fast assembly possibility and high insulation properties.

The bearing capacity of sandwich panels depends on the panel thickness, the form of the metal surfaces, the density of the panel filling material and the metal thicknesses. The choice of panel form and the thickness of the metals to be used are determined in accordance with the area where the panels will be used and the amount of load on them. In determining the panel thickness, the type of filling material and the climatic conditions of the region where the panels will be used are taken into account.

Sandwich panels create an aesthetic outer shell in buildings by providing water and heat insulation without the need for plaster and paint. Natural aluminum, painted aluminum, painted galvanized sheet or stainless sheet are used in the metal layers of the sandwich panels. Color options can be determined from the RAL Catalogue, according to customer request.



## Superior Features of Sandwich Panels

Aluminum or galvanized surfaces of Roof and Wall panels are painted with 23-25 micron coil coating system polyester paint over 5-7 micron epoxy primer. The strength of A-3005 alloyed aluminum used is the highest level of resistance to salt water and outdoor conditions, and it does not show cracking even in 180 degree bending. Galvanized used in painted sheets has the highest resistance against rusting and oxidation with its 275 gr/m<sup>2</sup> zinc coating.

Density of polyurethane is 40kg/m<sup>3</sup>, inflammability class B2 (DIN 4102-B), thermal conductivity coefficient is  $\lambda=0.022W/mK$  (DIN 4108-4). B2 class non-combustible insulation tape at the panel joints adheres to the panel as a result of its reaction with polyurethane and thus prevents air leakage to the outside environment.

## Single Layer Trapezoidal Sheets

Single layer trapezes are used on roofs and walls that do not need thermal insulation or where sandwich application is made between two metals, including rock wool, glass wool, high-density polyurethane or polystyrene foams.

Another area where single-layer trapezes are used is terrace roofs. In such applications, membrane waterproofing is applied on the upper part of the roof. The above-mentioned rigid heat insulation materials are used under the membrane and there are single layer trapezes at the bottom.



## Types of Coating

The metal surfaces used in sandwich panels consist of a combination of core sheet, galvanized and organic coatings. Especially organic coating provides good performance in corrosion resistance and increases material life. Depending on the type and degree of corrosion, the coating thicknesses facing the outside are in the order of 45µm, made up of 25µm organic coating and 20µm galvanized coating. However, depending on the need, this thickness can be up to 200µm.

In addition, high resistance against UV, chemical, temperature, humidity and physical effects is required from organic coatings. Furthermore, the wide color scale offered by organic coatings provides design and design advantages in architectural solutions. Coating materials are divided into 3 groups as liquid coating, film coating and powder coating. A wide variety of quality and color topcoats used on galvanized steel sheet or aluminum is preferred according to their usage areas and expected properties.

### Polyester:

It provides high resistance to external environmental conditions, high flexibility and temperature balance. It is the most widely used type of paint. It can be used for different purposes indoors and outdoors.

### PVdF:

It provides high resistance to external environmental conditions, high corrosion resistance, and resistance to chemical oils. It shows high resistance against chemicals and UV rays. It is the type of coating with the highest color permanence and gloss durability. It can be used in prestigious structure roof and wall cladding.

### Plastisol:

It has excellent ability to take form. It is resistant to moisture and abrasion and can be preferred in applications that comply with food regulations. It shows superior performance in cold, humid climate conditions.

### PVC Film:

It is applied by lamination method. It is suitable for intensive shaping and flexibility. Thanks to its hygienic and easy-to-clean feature, it can be preferred in applications that comply with food regulations.

PAINT	SCRATCH RESISTANCE	CORROSION RESISTANCE		AVERAGE THICKNESS	TEMPERATURE RESISTANCE
		SALT	MOISTURE		
Polyester	2800 gms	500 hours	1000 hours	25	120 °C
PVdF	3000 gms	500 hours	1000 hours	27	120 °C
Plastisol	3500 gms	1000 hours	1000 hours	100-200	60 °C
PVC Film	3500 gms	1000 hours	1000 hours	200	60 °C

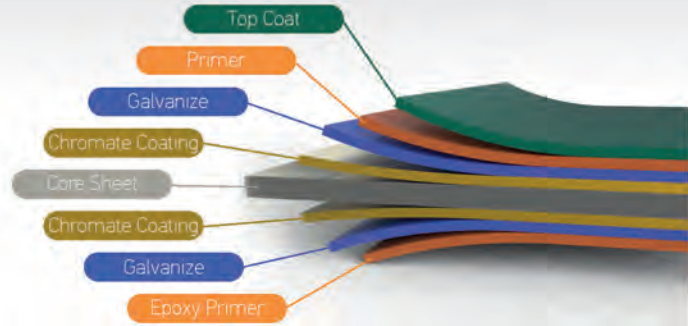


Note: The colors used in the catalog may differ from the colors in the RAL catalogue.



## Painted Galvanized Sheet

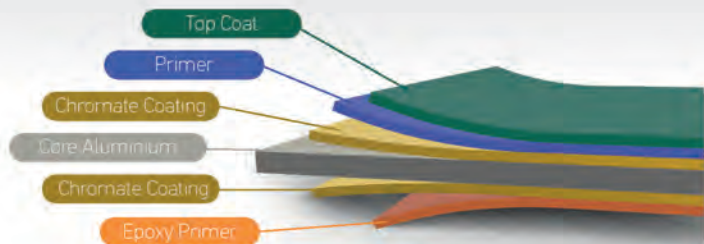
Painted and galvanized sheet coils, which are supplied from the world's leading sheet metal manufacturers and produced in accordance with ECCA (European Coat Coil Association) norms, are used in Mekpan Panel products.



SHEET QUALITY	DX51D+Z	EN 10327
THICKNESS GTOLERANCE	± 0,05 mm (0,4 mm < Sheet thickness ≤ 0,6 mm)	EN 10143
TENSILE STRENGTH	500 Mpa (max)	EN 10327
% ELONGATION AT BREAK	22 (min)	EN 10327
AMOUNT OF COATING	100-275 gr/m <sup>2</sup>	EN 10327
TYPE OF PAINT	Polyester, PVdF, Plastisol, PVC, Polyurethan, etc.	

## Painted Aluminium

In MEKPAN Panel products, the aluminium supplied from the world's leading painted aluminium manufacturers in accordance with the EN, ASTM, and ISO norms is used in the production of single layer and sandwich panels.



ALLOY	AV 3000 Series	EN 573-3
CONDITION	H 16 - H 26	EN 485-2
THICKNESS TOLERANCE	± 0,05 mm (0,4 mm < Sheet thickness ≤ 0,6 mm)	EN 485-4
YIELDING POINT	150 Mpa	EN 485-2
ULTIMATE TENSILE STRESS	175 Mpa	EN 485-2
% ELONGATION AT BREAK	3 (min)	EN 485-2
SURFACE APPEARANCE	Embossed or Painted	EN 485-2

### CHEMICAL COMPOSITION OF ALUMINIUMS USED IN SANDWICH PANEL PRODUCTION

Limit	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Zr
Min (%)	---	---	---	0,30	0,20	---	---	---	---
Max (%)	0,60	0,70	0,30	0,80	0,80	0,20	0,40	0,10	---

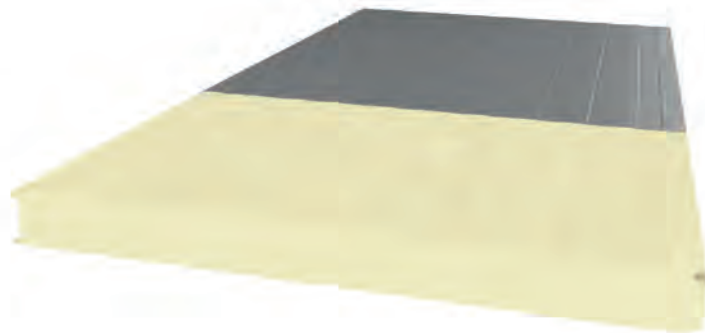
## Membrane

PVC and TPO Membrane used in Roof Panels is a soft waterproofing membrane resistant to atmospheric conditions and sunlight, polyester reinforced, geotextile felt laminated, jointed with hot air welding. It has high dimensional stability and high tear resistance thanks to its polyester reinforcement. The geotextile felt lamination layer provides strong adhesion to the insulation layer on the panel and prevents direct contact between the PVC or TPO layer and the polyurethane layer.



## Rigid Polyurethane Foam

Polyurethane (B2) and polyisocyanurate (B1), which have the best thermal insulation values, are used in Mekpan Panel branded Sandwich Panels. The polyurethane supplied from the world's leading manufacturers is water repellent and prevents pest infestation.



TECHNICAL SPECIFICATIONS OF POLYURETHANE		
DENSITY (kg/m <sup>3</sup> )	40 (± 2)	EN 1602
THERMAL CONDUCTIVITY COEFFICIENT (W/mK)	0,022	EN 13165
CLOSED CELL PERCENTAGE (%)	95	EN 14509
VAPOUR DIFFUSION (p)	30-100	EN 12086
DIMENSIONAL STABILITY	Level DS(TH) 11	EN 13165
COMPRESSIVE STRENGTH (Mpa) (10)	min. 0,06	EN 826
WATER ABSORPTION (BY VOLUME %)	2	Manufacturer's Method
MAXIMUM OPERATING TEMPERATURE	-200/110	



## Thermal Insulation

### $\lambda$ (W/mK) Thermal Conductivity Coefficient

The thermal conductivity value ( $\lambda$ ) is the expression of how much a material transmits heat depending on its physical and chemical structure. It is a fixed value specific to each material.

The thermal conductivity value, expressed in Watts (W), is the amount of energy required to maintain a temperature difference of 1 Kelvin on the inner and outer surfaces of a wall consisting of 1 m thick material with a surface area of 1 m<sup>2</sup>.

The closer the thermal conductivity coefficient of an insulation material is to 0, the better thermal insulation it provides. In this respect, PUR/PIR filled panels perform better than others.

The thermal conductivity values and performances of different building materials are shown in the table below.

	STANDARD	AERATED CONCRETE	AERATED CONCRETE WALL	GLASS WOOL	ROCK WOOL	EPS	PUR	PIR
$\lambda$ (W/mK)	EN13162	2,2	0,16	0,045	0,040	0,038	0,022	0,022
U (W/m <sup>2</sup> K)	50 mm	44	3,2	0,9	0,8	0,76	0,44	0,44
PERFORMANCE		-	*	***	***	***	*****	*****
- (None) * (Poor) *** (Average) ***** (Excellent)								

### U (W/m<sup>2</sup>K) Thermal Transmittance Value

It is the amount of energy (W) required to maintain a temperature difference of 1 Kelvin between two parallel surfaces of a wall of certain thickness with a surface area of 1 m<sup>2</sup>. The closer the U value is to 0, the better the thermal insulation of the material. Thermal transmittance values are taken into account when determining the sandwich panel filling material thickness.

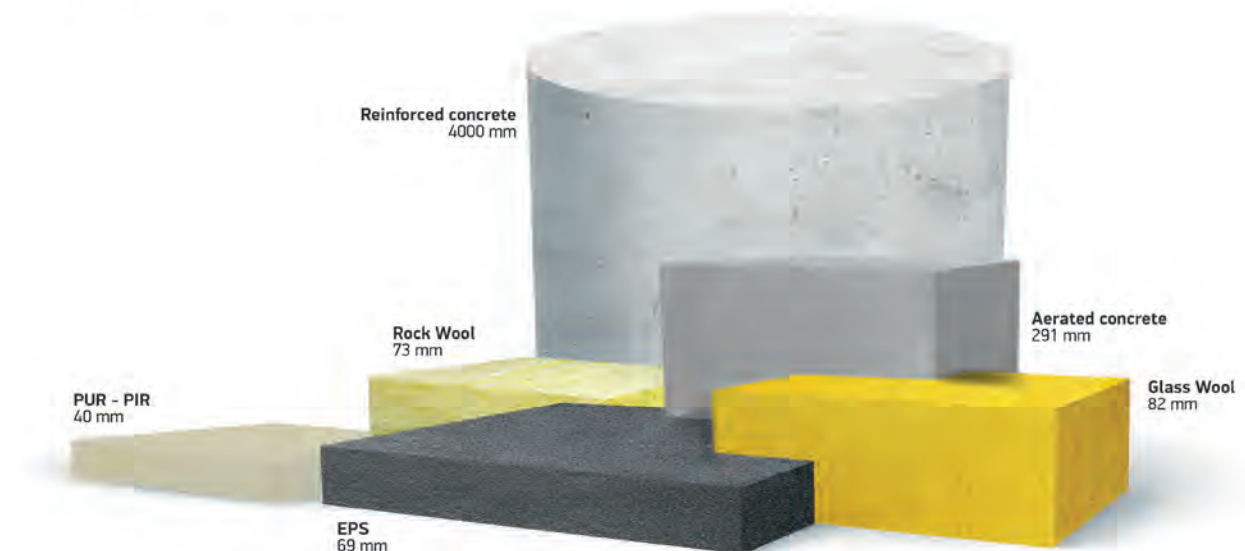
**THERMAL TRANSMITTANCE VALUE OF MEKPAN POLYURETHANE FILLED SANDWICH PANEL**

	40 mm	50 mm	60 mm	80 mm	100 mm	120 mm	150 mm	200 mm
U (W/m <sup>2</sup> K)	0,550	0,440	0,367	0,275	0,220	0,183	0,147	0,110

### R (m<sup>2</sup>K/W) Thermal Resistance

Thermal Resistance (R) is the resistance of a building material to heat transfer. The larger is the R value, less is the heat transfer, and higher is the insulation performance.

Below are the thickness comparisons of different building materials with the same thermal resistance.



## Fire Performance

The resistance of the material to fire, which is also explained by its flammability capacity, is called fire performance. Fire resistance tests are carried out by modeling the joint lines of the wall and roof panels where the fire grows the most in the building. All standards and test methods related to the fire performance of sandwich panels have been indicated in detail in TS EN 14509. Materials are classified in six different ways, starting from A1 to F. Other classes of the material are also determined according to the amount of smoke and dripping after the fire.



### IGNITABILITY TESTS (SFI - TS EN ISO11925-2)

It is a fire test method that simulates the application of a lighter-sized fire source from the corner or surface of the sample for 15 or 30 seconds.

### REACTION TO FIRE TESTS (SBI - TS EN 13823)

The reactions of materials in classes A2, B, C and D against fire are determined with the principles of this test method. On the other hand, it is classified as d0, d1, d2 according to whether there is dripping in the first 10 minutes and whether the dripping particles burn for more than 10 seconds. A separate classification is also made as s1, s2 and s3 according to the smoke released in the first 10 minutes.



### PUR/PIR

Correct chemical formulation offers advantages in terms of fire performance in plastic foams. High isocyanate ratios and flame retardant additives are decisive in the fire performance of polyurethanes.

### XPS/EPS

Both expanded polystyrene (EPS) and extruded polystyrene (XPS) are plastic foams with the lowest fire resistance. It begins to melt and form fire droplets at 100 °C.

### ROCK WOOL

Rockwool materials in the inorganic material group are classified as non-combustible. Rockwool filled panels offer the best performance in fire resistant wall, roof and interior partition wall applications. The fire resistance of the rockwool filled sandwich panel can vary between 30 and 120 minutes depending on the rockwool type, thickness and joining details.

	PUR	PIR	EPS/XPS	ROCK WOOL
Dimensional Stability Loss Temperature (°C)	-200	-200	-90-100	-
Ignition Temperature (°C)	285-310	415	245-345	-
Fire Performance	İyi	İyi	Zayıf	Çok İyi

#### FIRE PERFORMANCE VALUES IN MEKPAN PANEL PRODUCTS

PUR-PIR Filled Sandwich Panels	B.s2.d0
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## Mechanical Strength

The choice of sandwich panels in buildings is made by considering the load carrying capacity. Factors such as dead-weight, wind load, snow load, temperature affect the structures alone or in combination.

Since sandwich panels are composite material filled with polyurethane or rockwool between 2 metals, their behavior against the loads they are exposed to should be carefully evaluated. Metal surfaces and filling materials with low modulus of elasticity have difficulty even carrying their own weight independently. In the composite state, a new system is formed with a better bearing capacity than each layer, thanks to its high shear and bending strength. The trapezoidal form and the strength of the inner filling material are also very important in the carrying capacity of the sandwich panels.



## Acoustic Insulation

The desired parameters and calculation methods for the acoustic insulation of roof and wall coatings can be determined at the design stage. A portion of the sound wave striking a surface is reflected, some is absorbed, and the rest is transmitted. Reflection, absorption and transmission rates depend on the shape of the surface, the sound absorption of the material and the frequency of the sound.

FREQUENCY DEPENDENT VARIATION OF SOUND TRANSMISSION LOSS (dB)

PUR	FREQUENCY (Hz)																		
Thickness	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000
50 mm	7,3	9,3	11,7	8,5	11,4	12,3	13,3	14,1	14,7	15,9	15,3	11,5	11,8	23,4	29,2	32,4	29,8	32,5	36,9
60 mm	8,1	22,1	14,2	14,5	13,0	13,9	13,8	14,6	15,3	16,0	15,3	13,0	18,3	24,2	29,2	32,5	29,8	32,5	36,9

FREQUENCY DEPENDENT VARIATION OF SOUND ABSORPTION COEFFICIENT (dB)

PUR	FREQUENCY (Hz)											
Thickness	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000
50 mm	0,08	0,11	0,22	0,2	0,05	0,59	0,09	0,11	0,04	0,07	0,18	0,07
60 mm	0,14	0,21	0,25	0,25	0,06	0,69	0,12	0,12	0,22	0,08	0,2	0,11

## Dimensional Tolerances

DIMENSIONAL TOLERANCES IN MEKPAN PANEL PRODUCTS

THICKNESS		LENGTH		WIDTH		CUTTING DIAMETER
Thickness	Tolerance	Length(L)	Tolerance	Width (W)	Tolerance	Tolerance
100>d	± 2 mm	3000>L	± 5 mm	Tüm Enler	± 2 mm	W* ± %0,6
100≤d	± %2	3000≤L	± 10 mm			





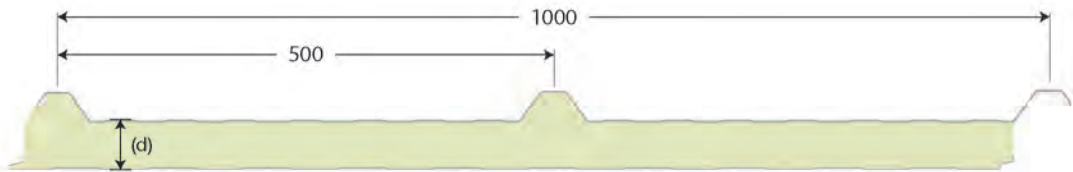
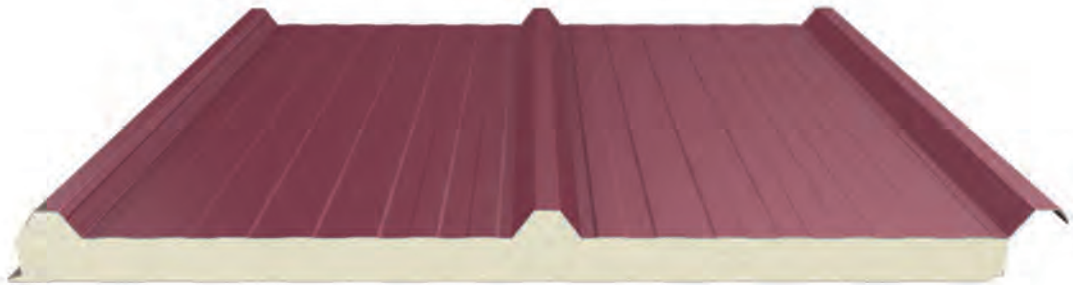
ROOF PANELS THAT  
ADDS MORE STRENGTH TO  
YOUR BUILDINGS







## 3 Ribs Roof Panel

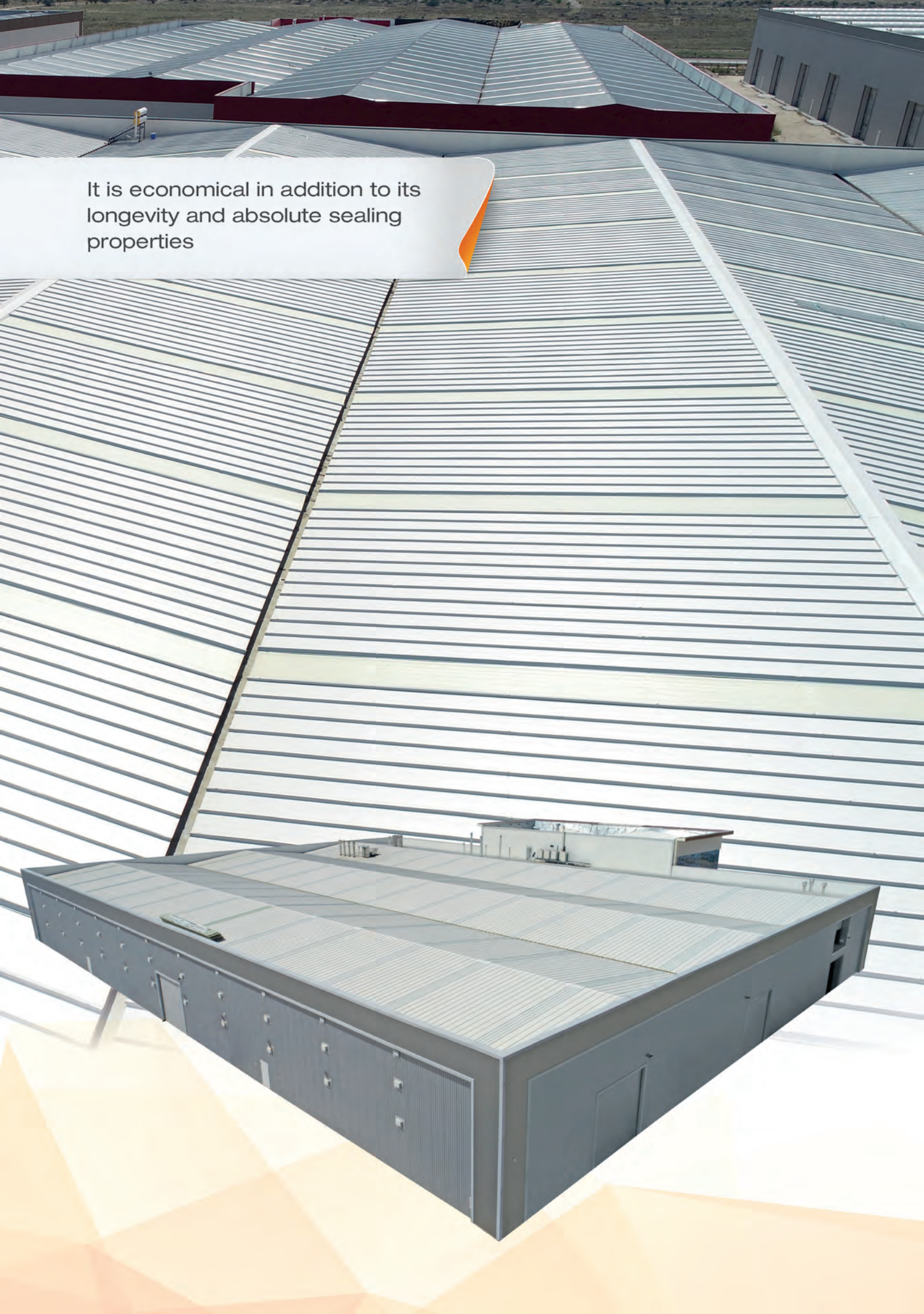


Place of Use	Roof
Useful Width	1000 mm
Minimum Length	2,4 metres
Maximum Length	Depends on Shipping Conditions
Polyurethane Density (EN 1602)	40 ( $\pm 2$ ) kg/m <sup>3</sup>
Polyurethane Thickness (d)	20-30-40-50-60-80-100 mm
Non-Combustibility Class (EN 13501)	B, s2,d0
Metal Type	Painted Galvanized Sheet or Aluminum
Standard Top Metal Thickness	0,50 mm
Standard Bottom Metal Thickness	0,40 mm



LOAD CARRYING TABLES OF PAINTED GALVANIZED SHEET (PGS)

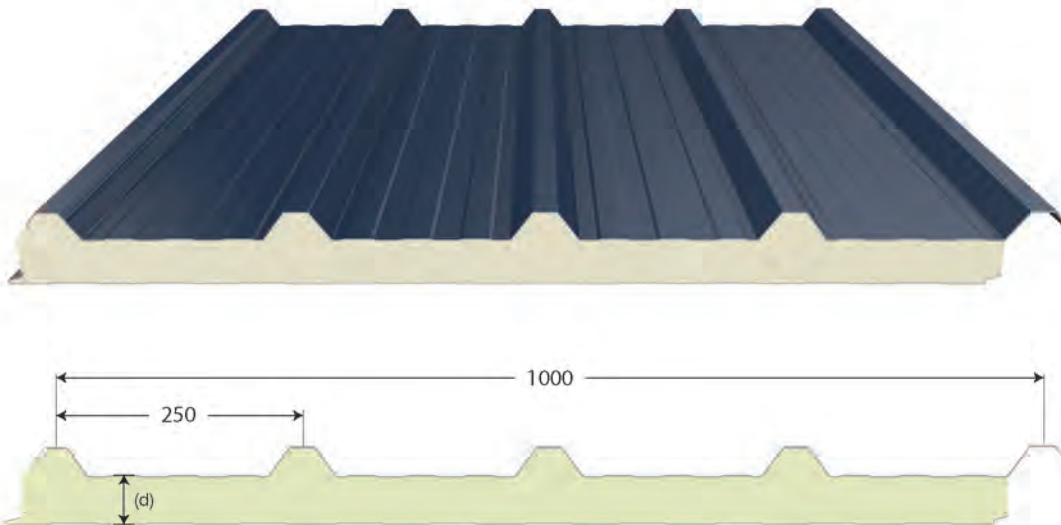
BGS Top Sheet Thickness (mm)	BGS Bottom Sheet Thickness (mm)	PUR (mm)	PURLIN SPACING						
			150 cm	175 cm	200 cm	225 cm	250 cm	275 cm	300 cm
0,50	0,40	20	136	96	65	41	33	19	11
0,50	0,40	30	186	146	115	91	73	59	47
0,50	0,40	40	267	211	169	134	111	88	74
0,50	0,40	50	375	297	238	192	159	128	107
0,50	0,40	60	489	388	313	252	213	173	140
0,50	0,40	80	669	532	430	349	292	241	198
0,50	0,40	100	737	586	474	385	322	266	219



It is economical in addition to its  
longevity and absolute sealing  
properties



## 5 Ribs Roof Panel




Place of Use	Roof
Useful Width	1000 mm
Minimum Length	2,4 metres
Maximum Length	Depends on shipping conditions
Polyurethane Density (EN 1602)	40 ( $\pm 2$ ) kg/m <sup>3</sup>
Polyurethane Thickness (d)	20-30-40-50-60-80-100 mm
Non-Combustibility Class (EN 13501)	B, s2,d0
Metal Type	Painted Galvanized Sheet or Aluminium
Standard Top Metal Thickness	0,50 mm
Standard Bottom Metal Thickness	0,40 mm



LOAD CARRYING TABLES OF PAINTED GALVANIZED SHEET (PGS)

BGS Top Sheet Thickness (mm)	BGS Bottom Sheet Thickness (mm)	PUR (mm)	PURLIN SPACING						
			150 cm	175 cm	200 cm	225 cm	250 cm	275 cm	300 cm
0,50	0,40	20	161	121	90	66	58	44	36
0,50	0,40	30	336	238	194	177	137	98	72
0,50	0,40	40	486	388	314	252	212	173	147
0,50	0,40	50	672	535	431	352	293	240	203
0,50	0,40	60	858	681	550	442	375	305	256
0,50	0,40	80	1128	899	728	593	497	412	349
0,50	0,40	100	1233	981	794	645	540	446	376



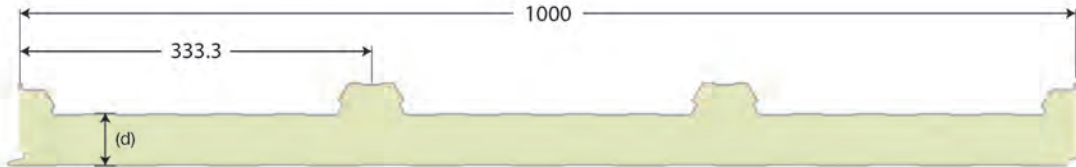
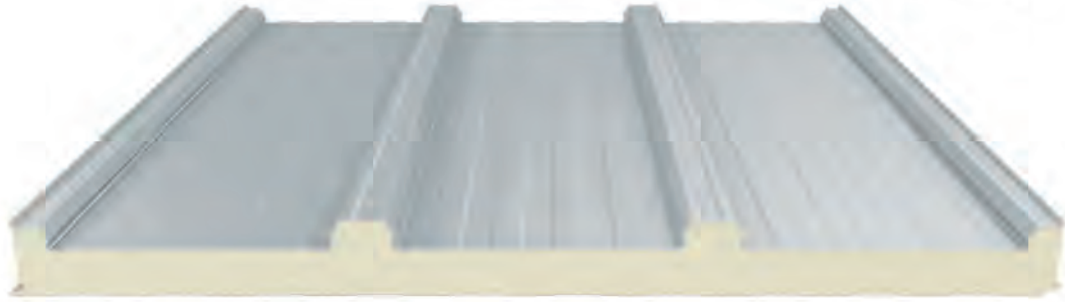
The 5 ribs roof panel, which you can use in constructions with high roof load and high rainwater flow rate, offers high strength and high sealing safety



## Roof Panels



### Solar Compatible 4 Ribs Roof Panel with Cap

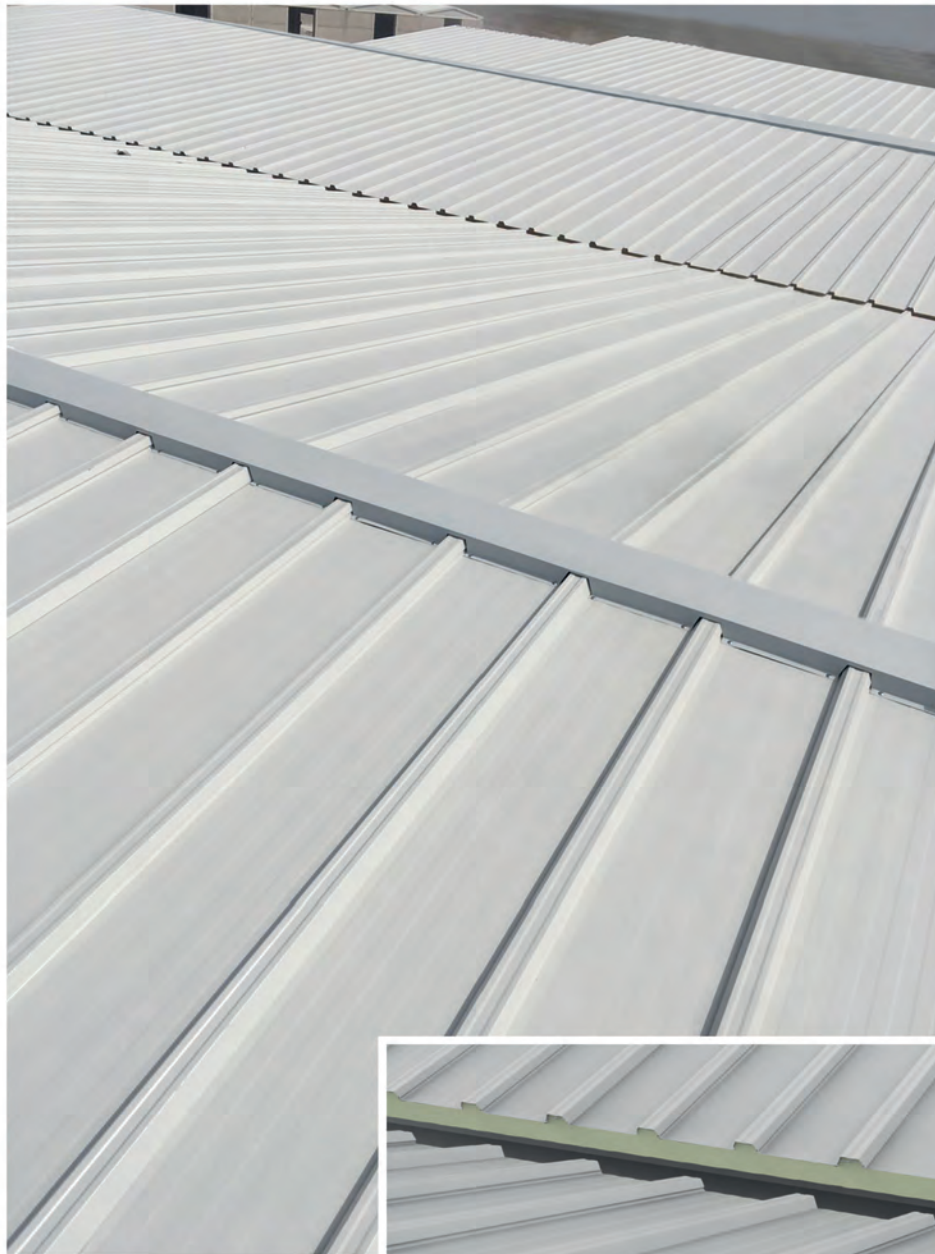


Place of Use	Roof
Useful Width	1000 mm
Minimum Length	2,4 metres
Maximum Length	Depends on shipping conditions
Polyurethane Density (EN 1602)	40 ( $\pm 2$ ) kg/m <sup>3</sup>
Polyurethane Thickness (d)	40-50 mm
Non-Combustibility Class (EN 13501)	B, s2,d0
Metal Type	Painted Galvanized Sheet or Aluminium
Standard Top Metal Thickness	0,50 mm
Standard Bottom Metal Thickness	0,40 mm



LOAD CARRYING TABLES OF PAINTED GALVANIZED SHEET (PGS)

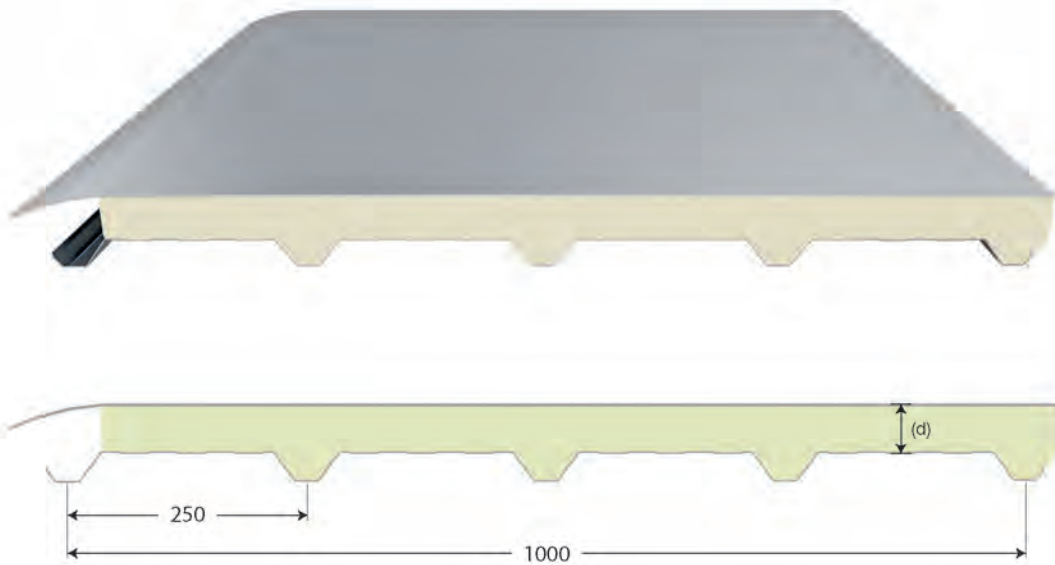
BGS Top Sheet Thickness (mm)	BGS Bottom Sheet Thickness (mm)	PUR (mm)	PURLIN SPACING						
			150 cm	175 cm	200 cm	225 cm	250 cm	275 cm	300 cm
0,50	0,40	40	395	317	258	208	176	144	124
0,50	0,40	50	547	437	354	290	243	200	171



The 4 ribs solar compatible roof panel with cap has a long life, high load carrying capacity and high sealing property.



## 5 Ribs Membrane-Coated Roof Panel

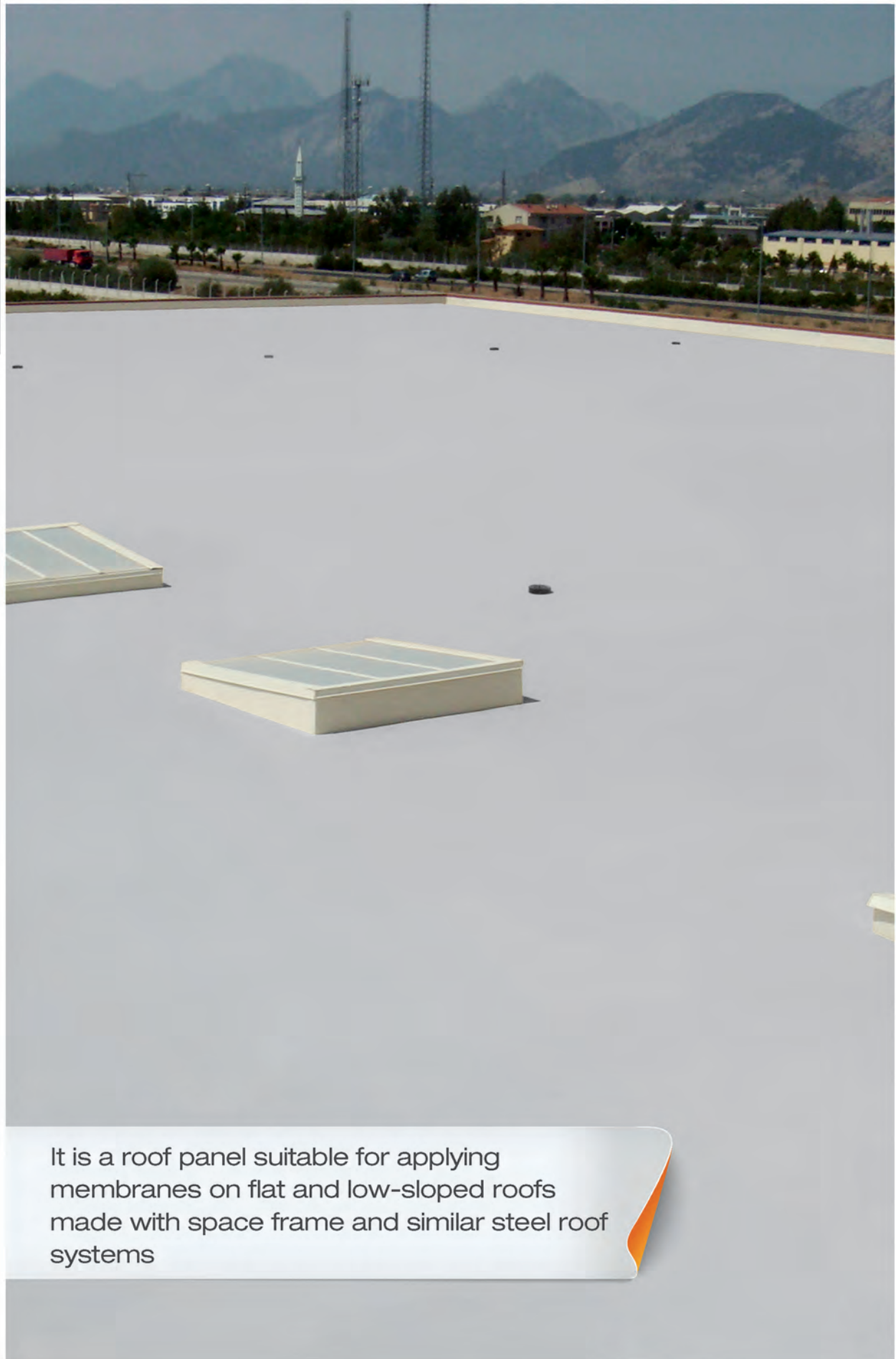


Place of Use	Roof
Useful Width	1000 mm
Minimum Length	2,4 metres
Maximum Length	Depends on shipping conditions
Polyurethane Density (EN 1602)	40 ( $\pm 2$ ) kg/m <sup>3</sup>
Polyurethane Thickness (d)	40-50-60-80-100 mm
Non-Combustibility Class (EN 13501)	B, s2,d0
Metal Type	Painted Galvanized Sheet
PVC Thickness	1,2 mm
Standard Bottom Metal Thickness	0,50 - 0,60 mm
Unit Weight in PVC Area	1,55 kg/m <sup>2</sup> $\pm 5$ %
PVC Standard Appearance	Light Grey, Dull



LOAD CARRYING TABLES OF PAINTED GALVANIZED SHEET (PGS)

PVC	BGS	PURLIN SPACING			
		150 cm	200 cm	250 cm	300 cm
Top Membrane Thickness (mm)	Bottom Membrane Thickness (mm)				
1,2	0,50	227	121	75	51
1,2	0,60	265	151	92	56
1,2	0,70	320	180	113	76
1,2	0,80	376	211	131	89



It is a roof panel suitable for applying membranes on flat and low-sloped roofs made with space frame and similar steel roof systems



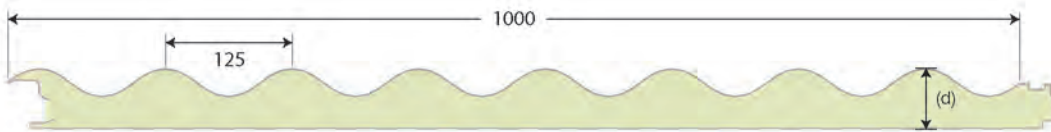
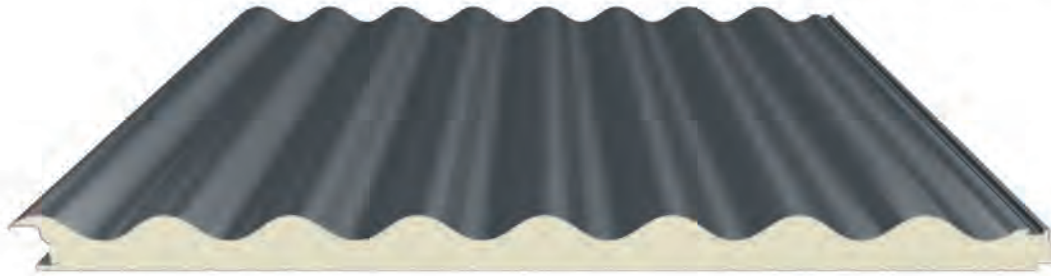


# WALL PANELS





## Sinus Wall Panel




Place of Use	Wall and Roof
Useful Width	1000 mm
Minimum Length	2,4 metres
Maximum Length	Depends on shipping conditions
Polyurethane Density (EN 1602)	40 ( $\pm 2$ ) kg/m <sup>3</sup>
Polyurethane Thickness (d)	50-60 mm
Non-Combustibility Class (EN 13501)	B, s2,d0
Metal Type	Painted Galvanized Sheet
Standard Top Metal Thickness	0,50 mm
Standard Bottom Metal Thickness	0,40 mm



LOAD CARRYING TABLES OF PAINTED GALVANIZED SHEET (PGS)

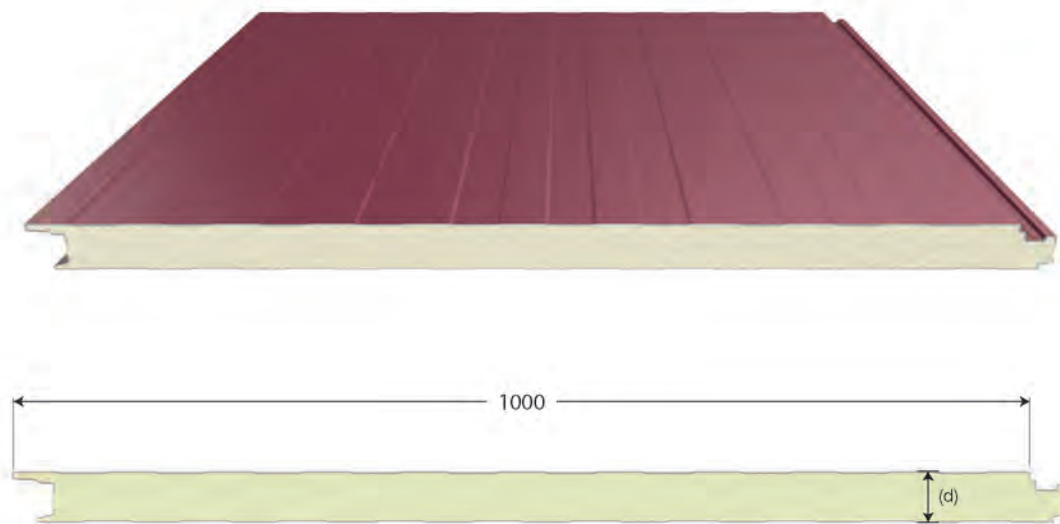
PVC Top Sheet Thickness (mm)	BGS Bottom Sheet Thickness (mm)	PUR (mm)	PURLIN SPACING			
			100 cm	150 cm	200 cm	250 cm
0,50	0,40	50	302	215	149	121
0,50	0,40	60	337	263	179	134



It has a design that can be used in roof and wall applications with its aesthetic appearance.



## Hidden Screw Wall Panel

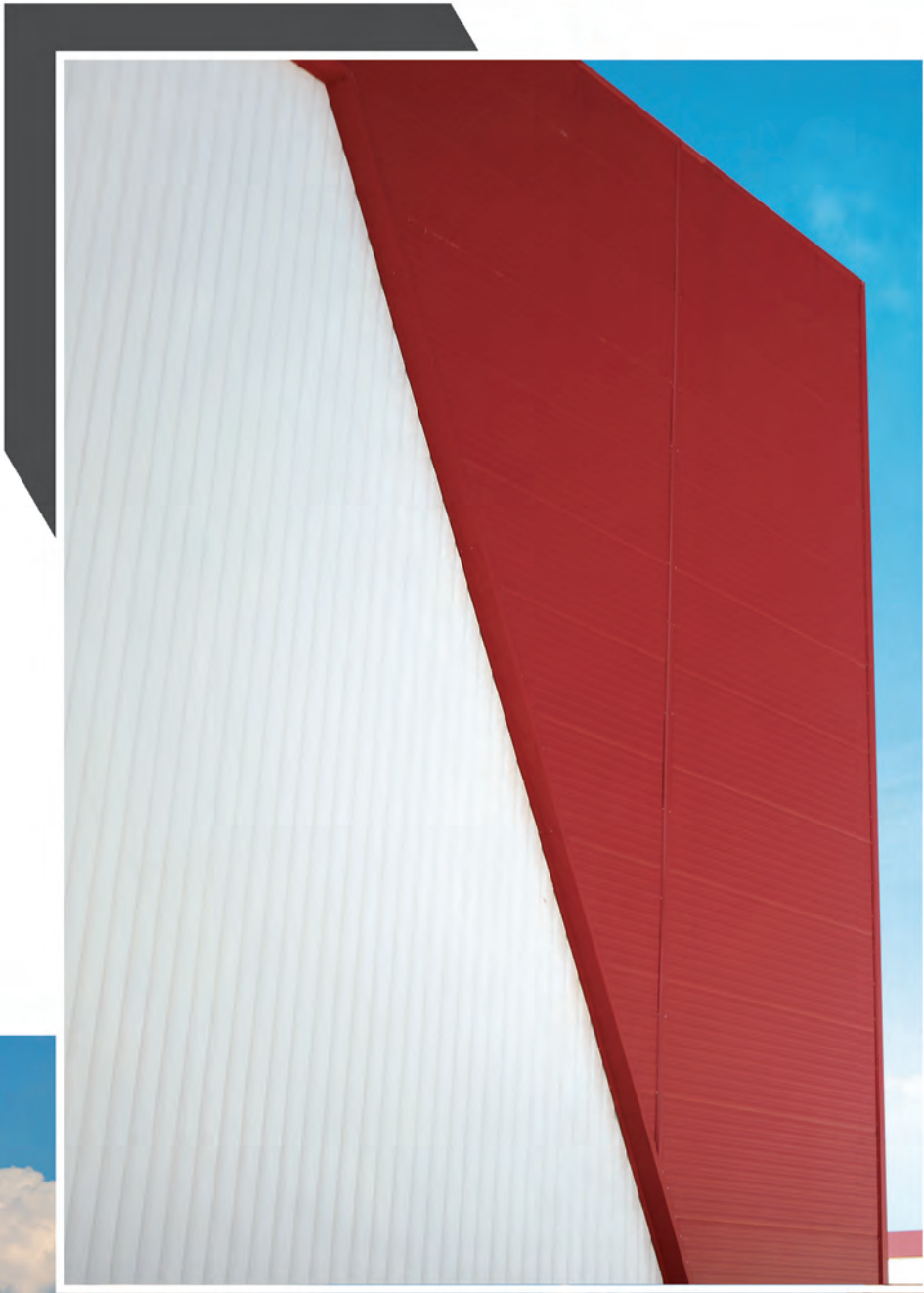


Place of Use	Wall
Useful Width	1000 mm
Minimum Length	2,4 metres
Maximum Length	Depends on shipping conditions
Polyurethane Density (EN 1602)	40 ( $\pm 2$ ) kg/m <sup>3</sup>
Polyurethane Thickness (d)	30 - 40 - 50 - 60 - 80 - 100 mm
Non-Combustibility Class (EN 13501)	B, s2,d0
Metal Type	Painted Galvanized Sheet
Standard Top Metal Thickness	0,50 mm
Standard Bottom Metal Thickness	0,40 mm



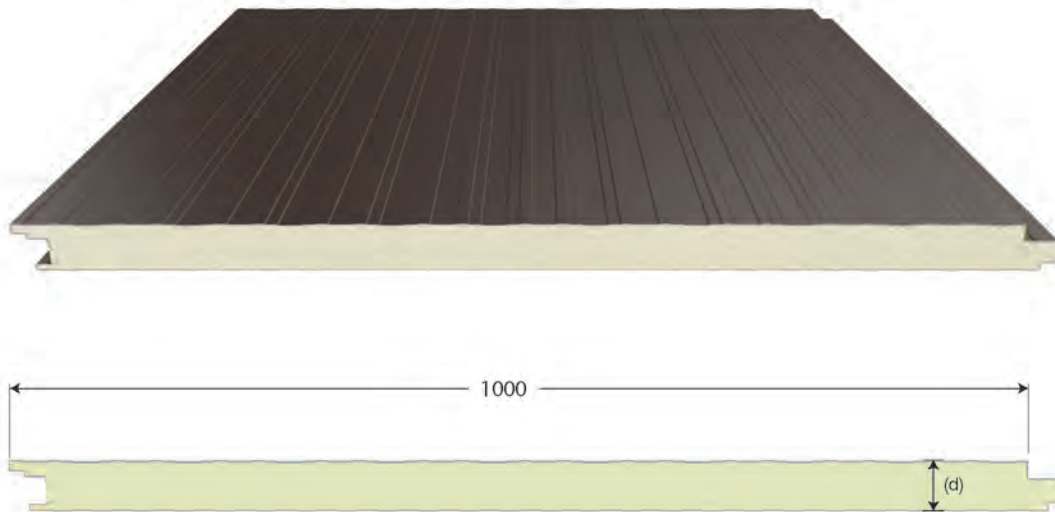
LOAD CARRYING TABLES OF PAINTED GALVANIZED SHEET (PGS)

PVC Top Sheet Thickness (mm)	BGS Bottom Sheet Thickness (mm)	PUR (mm)	PURLIN SPACING				
			100 cm	150 cm	200 cm	250 cm	300 cm
0,50	0,40	30	446	255	167	116	83
0,50	0,40	40	546	355	267	216	183
0,50	0,40	50	664	431	321	259	219
0,50	0,40	60	901	582	431	344	289
0,50	0,40	80	1135	730	536	424	353
0,50	0,40	100	1374	884	647	510	422





## Classical Hidden Screw Wall Panel



Place of Use	Wall
Useful Width	1000 mm
Minimum Length	2,4 metres
Maximum Length	Depends on shipping conditions
Polyurethane Density (EN 1602)	40 ( $\pm 2$ ) kg/m <sup>3</sup>
Polyurethane Thickness (d)	40 - 50 - 60 - 80 - 100 - 120 mm
Non-Combustibility Class (EN 13501)	B, s2,d0
Metal Type	Painted Galvanized Sheet
Standard Top Metal Thickness	0,50 mm
Standard Bottom Metal Thickness	0,40 mm



### LOAD CARRYING TABLES OF PAINTED GALVANIZED SHEET (PGS)

PVC Top Sheet Thickness (mm)	BGS Bottom Sheet Thickness (mm)	PUR (mm)	PURLIN SPACING				
			100 cm	150 cm	200 cm	250 cm	300 cm
0,50	0,40	40	428	281	212	173	148
0,50	0,40	50	546	355	267	216	183
0,50	0,40	60	664	431	321	259	219
0,50	0,40	80	901	582	431	334	289
0,50	0,40	100	1135	730	536	424	353
0,50	0,40	120	1374	884	647	510	422



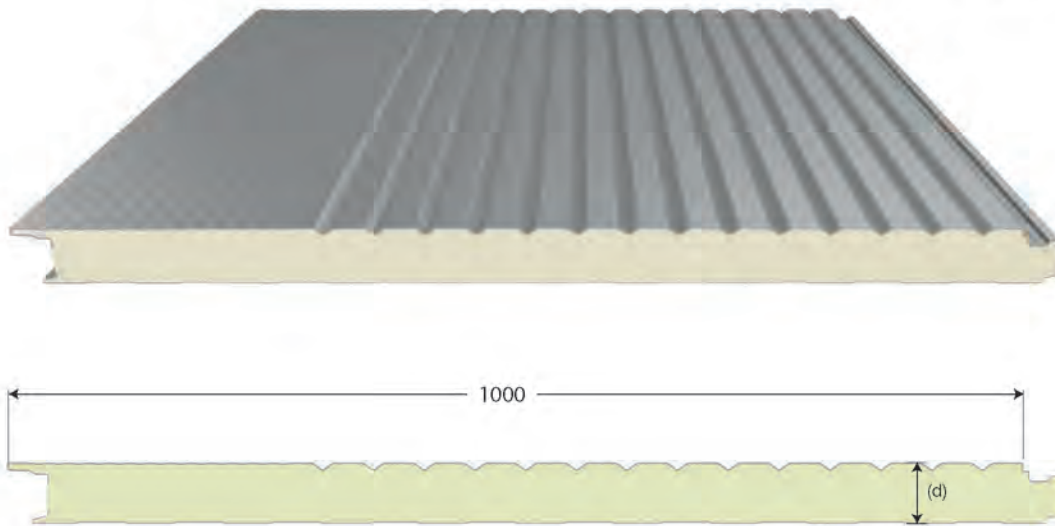
It is aesthetic and economical as well as being long lasting and has concealed fasteners and provides impermeability.







## Hidden Screw V Wall Panel



Place of Use	Wall
Useful Width	1000 mm
Minimum Length	2,4 metres
Maximum Length	Depends on shipping conditions
Polyurethane Density (EN 1602)	40 (±2) kg/m <sup>3</sup>
Polyurethane Thickness (d)	30 - 40 - 50 - 60 - 80 - 100 mm
Non-Combustibility Class (EN 13501)	B, s2,d0
Metal Type	Painted Galvanized Sheet
Standard Top Metal Thickness	0,50 mm
Standard Bottom Metal Thickness	0,40 mm



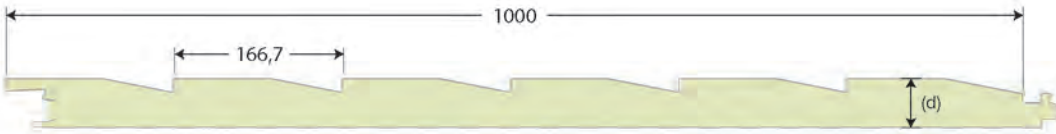
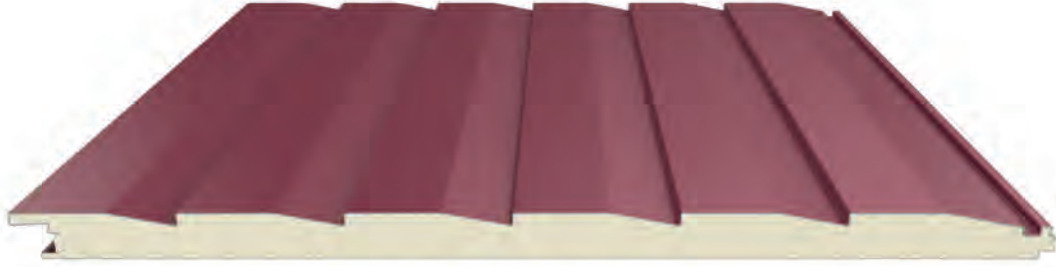
LOAD CARRYING TABLES OF PAINTED GALVANIZED SHEET (PGS)t

PVC Top Sheet Thickness (mm)	BGS Bottom Sheet Thickness (mm)	PUR (mm)	PURLIN SPACING				
			100 cm	150 cm	200 cm	250 cm	300 cm
0,50	0,40	30	466	275	187	136	103
0,50	0,40	40	566	375	287	236	203
0,50	0,40	50	684	451	341	279	239
0,50	0,40	60	921	602	451	364	309
0,50	0,40	80	1155	750	556	444	373
0,50	0,40	100	1394	904	667	530	442





## Siding Wall Panel



Place of Use	Wall
Useful Width	1000 mm
Minimum Length	2,4 metres
Maximum Length	Depends on shipping conditions
Polyurethane Density (EN 1602)	40 ( $\pm 2$ ) kg/m <sup>3</sup>
Polyurethane Thickness (d)	50-60 mm
Non-Combustibility Class (EN 13501)	B, s2,d0
Metal Type	Painted Galvanized Sheet
Standard Top Metal Thickness	0,50 mm
Standard Bottom Metal Thickness	0,40 mm



### LOAD CARRYING TABLES OF PAINTED GALVANIZED SHEET (PGS)

PVC	BGS	PUR	PURLIN SPACING			
			100 cm	150 cm	200 cm	250 cm
Ust Metal Kalınlığı (mm)	Alt Metal Kalınlığı (mm)	PUR (mm)				
0,50	0,40	50	302	215	149	121
0,50	0,40	60	337	263	179	134



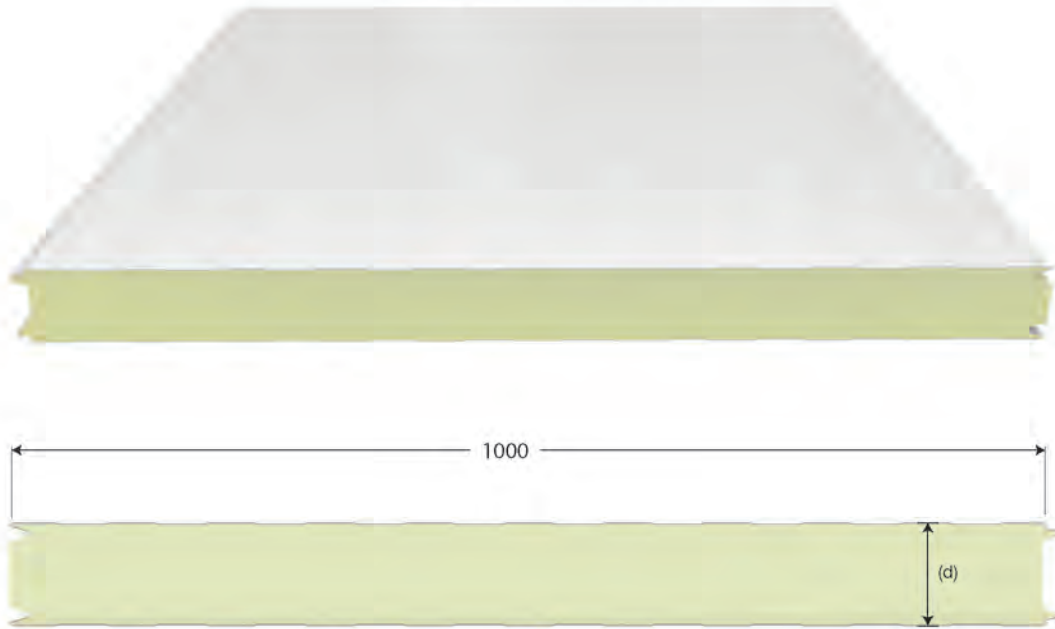
Siding Panel impresses with its aesthetic appearance on the walls of large-scale structures



# COLD ROOM PANELS



## Cold Room Panel



Place of Use	Cold Storage Depots
Useful Width	1000-1050-1130 mm
Minimum Length	2,4 metres
Maximum Length	Depends on shipping conditions
Polyurethane Density (EN 1602)	40 ( $\pm 2$ ) kg/m <sup>3</sup>
Polyurethane Thickness (d)	40-50-60-80-100-120-150-200 mm
Non-Combustibility Class (EN 13501)	B, s2,d0
Metal Type	Painted Galvanized Sheet
Standard Top Metal Thickness	0,50 mm
Standard Bottom Metal Thickness	0,40 mm



Areas of Use



### INSTALLATION DIMENSIONS

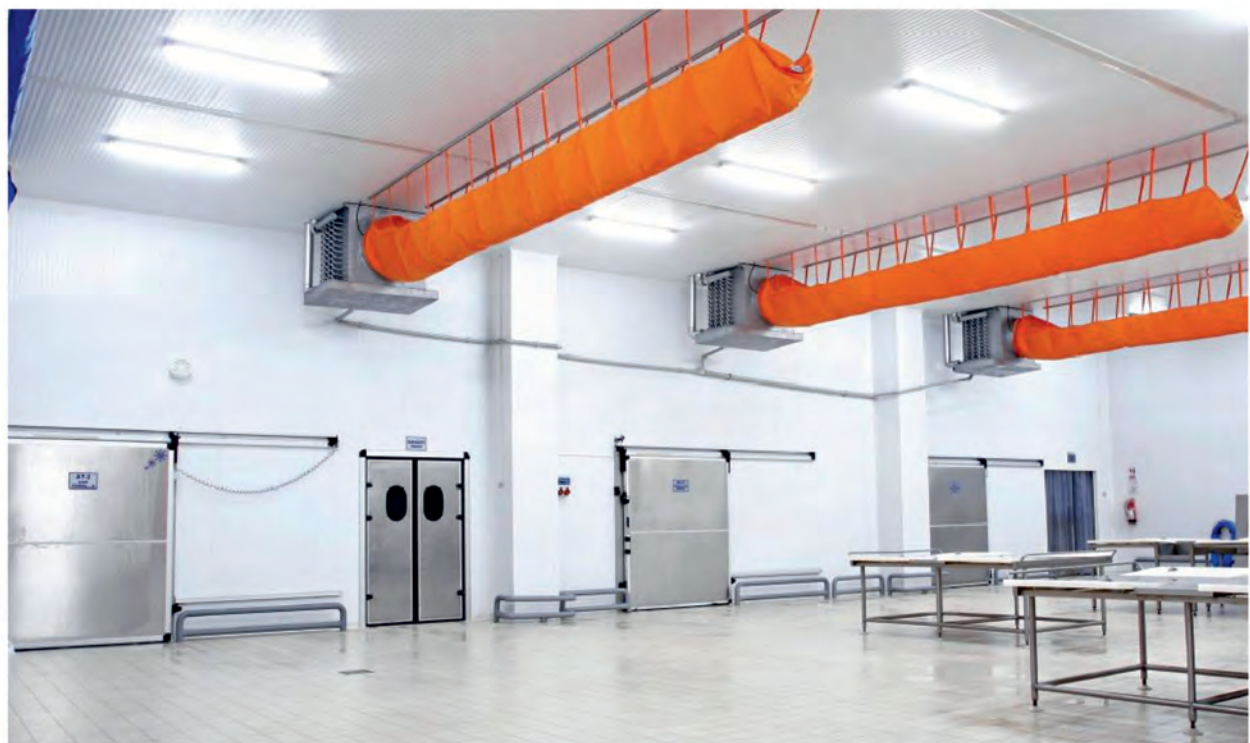
Top Sheet Thickness (mm)	Bottom Sheet Thickness (mm)	PUR (mm)	Max. Wall Height (m)	Roof Opening (m)
0,50	0,40	80	6,5	4
0,50	0,40	100	8	5
0,50	0,40	120	10	6
0,50	0,40	150	12	7

### THERMAL TRANSMITTANCE VALUES

Temperature Difference Between Inner and Outer Surface (°C)															
PUR (mm)	UCS Panel (W/m <sup>2</sup> K)	10	15	20	25	30	35	40	45	50	55	60	65	70	80
80	0,247	2,5	3,7	4,9	6,2	7,4	8,6	9,9	<10 W/m <sup>2</sup>						
100	0,177	2,0	3,0	4,0	5,0	6,0	7,0	8,0	9,0	<10 W/m <sup>2</sup>					
120	0,167	1,7	2,5	3,3	4,2	5,0	5,8	6,7	7,5	8,3	9,2	<10 W/m <sup>2</sup>			
150	0,134	1,3	2,0	2,7	3,4	4,0	4,7	5,4	6,0	6,7	7,4	8,1	8,7	9,4	<10 W/m <sup>2</sup>



The surface integrity is not deteriorated thanks to the internal level diffusion. It is long-lasting and hygienic





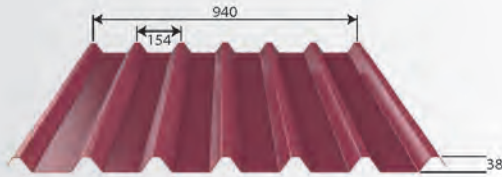


# COMPLEMENTARY PRODUCTS AND ACCESSORIES



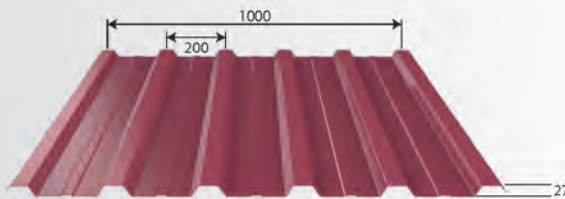
# Single Layer Trapezoidal Sheets

Areas of Use



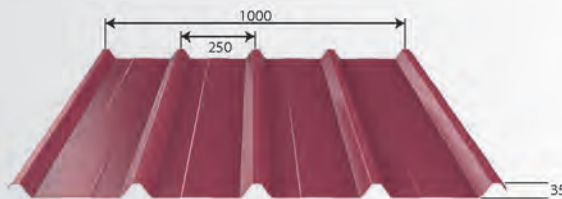
## 38/154 TRAPEZOIDAL SHEET

Metal Type	Painted Galvanized Sheet
Sheet Thickness	Min. 0.50 mm. Max. 0.80 mm.
Useful Width	940 mm.



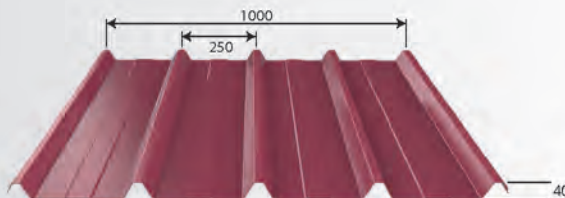
## 27/200 TRAPEZOIDAL SHEET

Metal Type	Painted Galvanized Sheet
Sheet Thickness	Min. 0.50 mm. Max. 0.80 mm.
Useful Width	1000 mm.



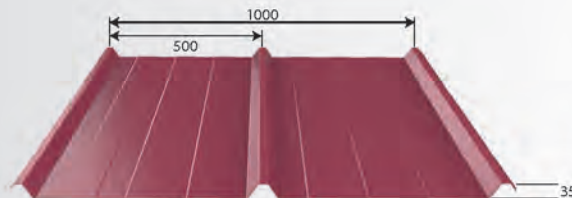
## 35/250 TRAPEZOIDAL SHEET

Metal Type	Painted Galvanized Sheet
Sheet Thickness	Min. 0.50 mm. Max. 0.80 mm.
Useful Width	1000 mm.



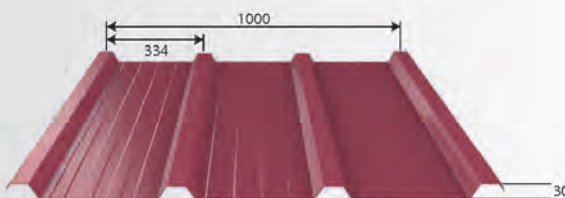
## 40/250 TRAPEZOIDAL SHEET

Metal Type	Painted Galvanized Sheet
Sheet Thickness	Min. 0.50 mm. Max. 0.80 mm.
Useful Width	1000 mm.



## 35/500 TRAPEZOIDAL SHEET

Metal Type	Painted Galvanized Sheet
Sheet Thickness	Min. 0.50 mm. Max. 0.80 mm.
Useful Width	1000 mm.

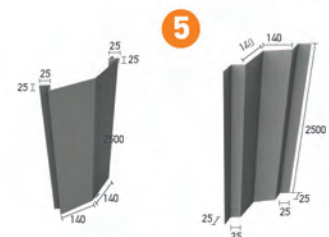
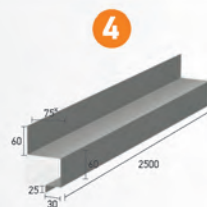
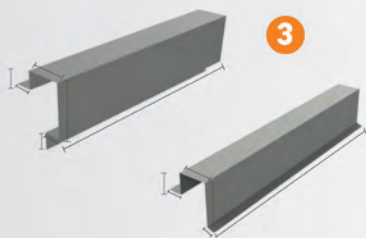
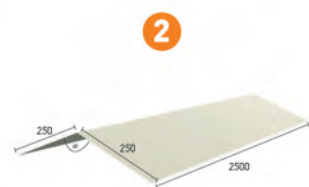
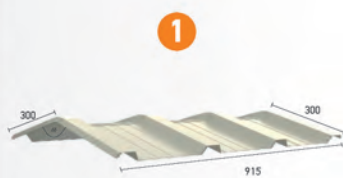
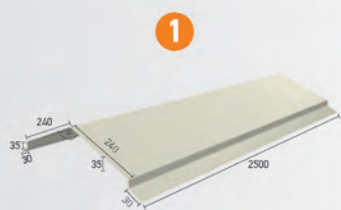
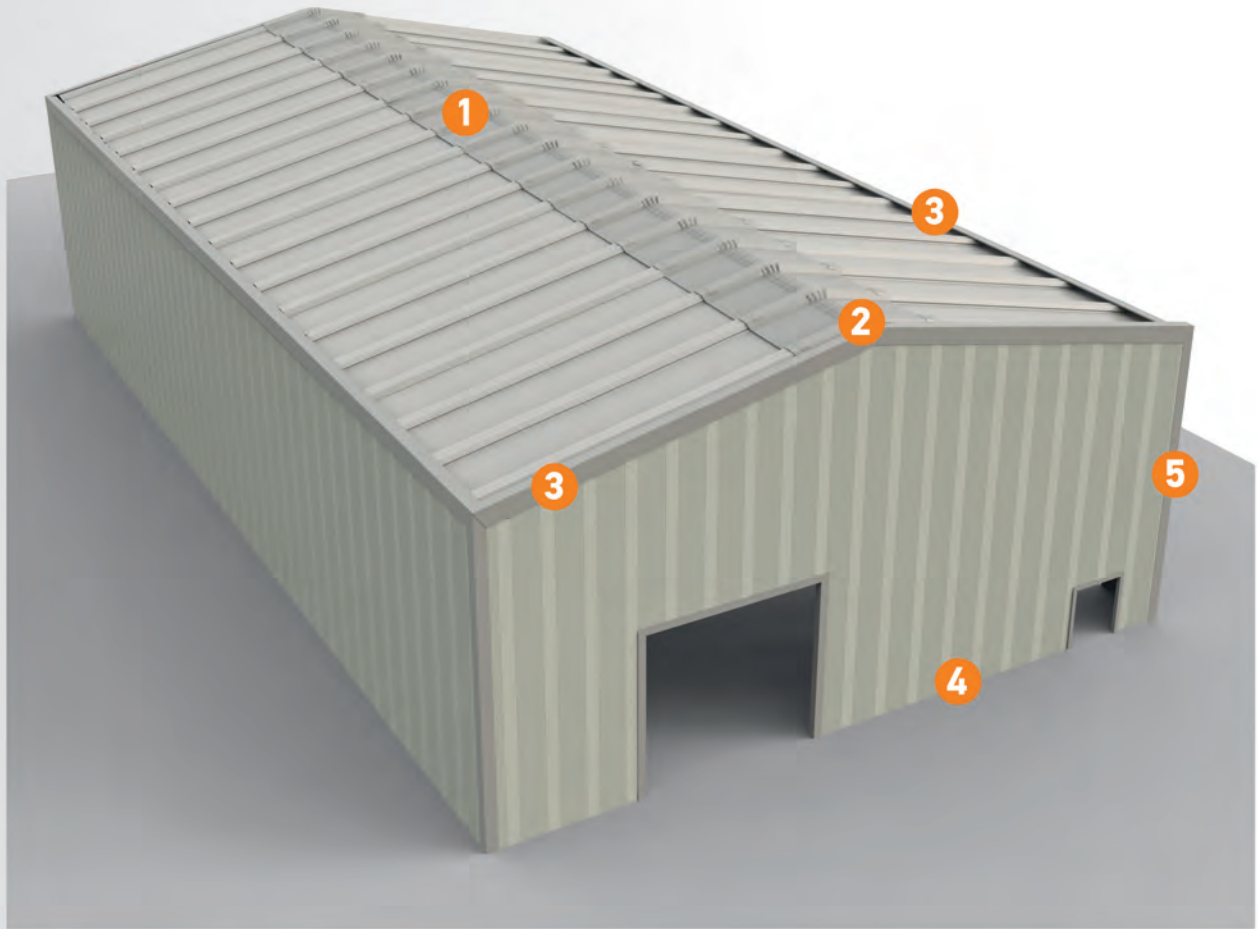


## 30/334 TRAPEZOIDAL SHEET

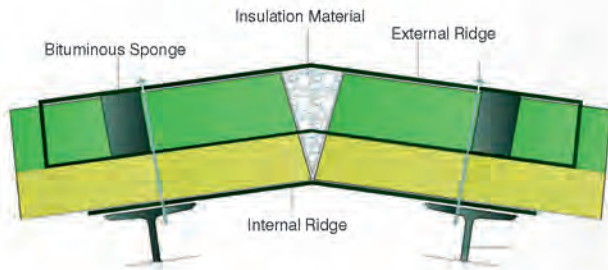
Metal Type	Painted Galvanized Sheet
Sheet Thickness	Min. 0.50 mm. Max. 0.80 mm.
Useful Width	1000 mm.



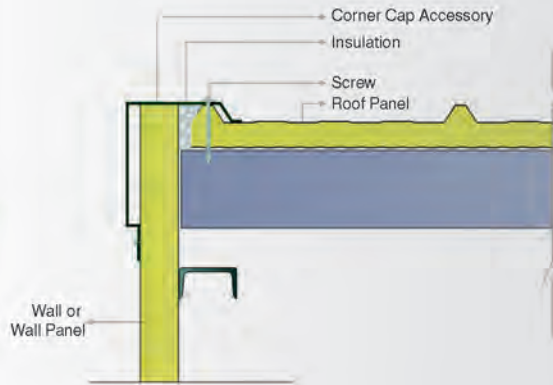
# Accessories



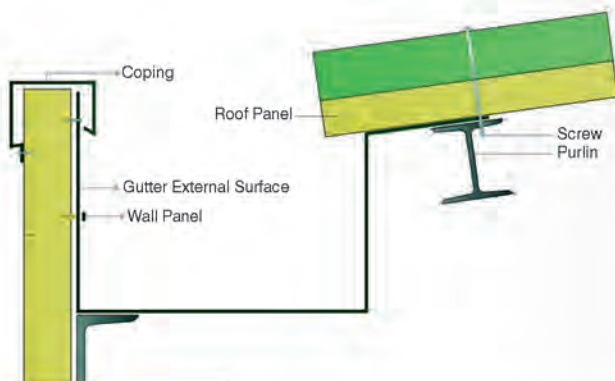
### RIDGE JOINING DETAILS



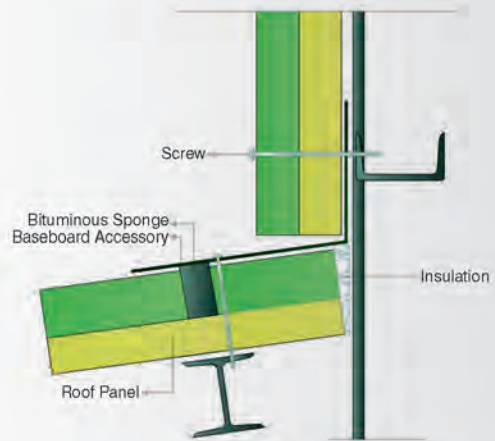
### ROOF WALL JOINING DETAILS



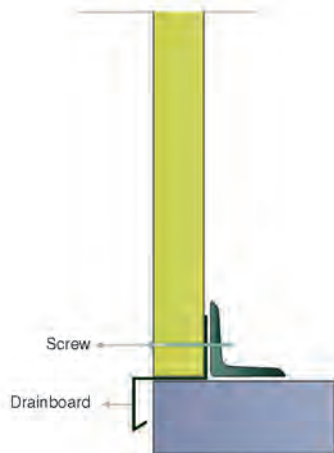
### GUTTER JOINT DETAILS



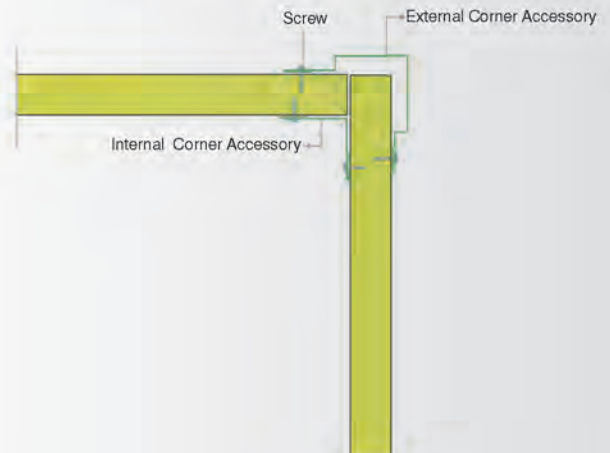
### WALL ROOF JOINING DETAILS



### INNER FINISHING ON WALL DETAILS



### WALL CORNER JOINING DETAILS



# FASTENERS



LOOSE



NORMAL



FORCEFUL



SADDLE



SCREW CAP



SCREWS



DRILL BIT



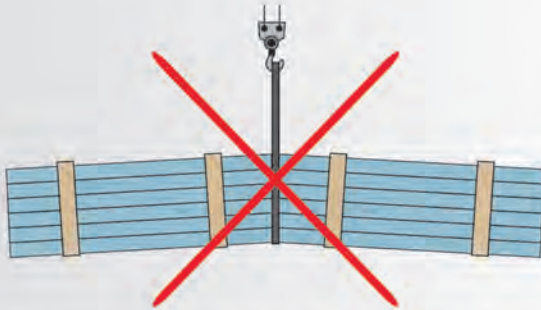
MATERIAL DESCRIPTION	PANEL THICKNESS	5 mm SAC (6 mm deler)	10 mm SAC (12 mm deler)	WOOD	CONCRETE
Roof Panel	30	5,5 x 75	5,5 x 75	6,3 x 105	6,3 x 105
Roof Panel	40	5,5 x 105	5,5 x 105	6,3 x 105	6,3 x 105
Roof Panel	50	5,5 x 135	5,5 x 135	6,3 x 120	6,3 x 120
Roof Panel	60	5,5 x 135	5,5 x 135	6,3 x 135	6,3 x 135
Roof Panel	80	5,5 x 150	5,5 x 150	6,3 x 150	6,3 x 150
Roof Panel	100	5,5 x 175	5,5 x 175	6,3 x 175	6,3 x 175
Concealed Fastener Wall Panel	40	5,5 x 60	5,5 x 60	-	-
Concealed Fastener Wall Panel	50	5,5 x 60	5,5 x 60	-	-
Concealed Fastener Wall Panel	60	5,5 x 75	5,5 x 75	-	-
Concealed Fastener Wall Panel	80	5,5 x 105	5,5 x 105	-	-
Siding Panel	50	5,5 x 75	5,5 x 75	-	-
Siding Panel	60	5,5 x 75	5,5 x 75	-	-
Sinus Panel	50	5,5 x 75	5,5 x 75	-	-
Sinus Panel	60	5,5 x 75	5,5 x 75	-	-

Connection Apparatus for SolarCompatible  
4 Ribs Roof Panel With Cap



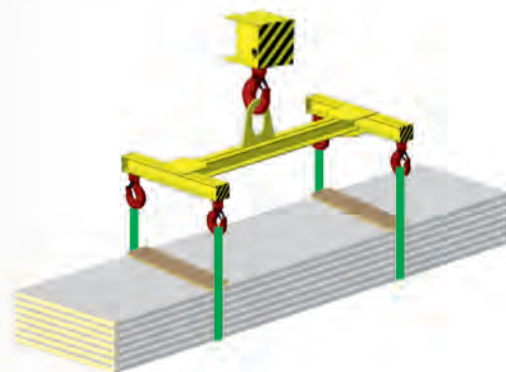


## Unloading



The number of packages varies according to the characteristics of the sandwich panel or trapezoidal sheets shipped by road. Packages are separated from each other by EPS (Expanded Polystyrene) wedges. These wedges provide space for the forklift fork or winch strap to fit between the packages. It also prevents the hard contact of the panels with each other. For ex-works sales, it is the customer's responsibility to provide equipment and labor for unloading packages. When unloading the packages from the vehicle, forklifts or cranes are used depending on their length and weight. The edges of the Sandwich Panels or Trapezoidal Sheets should be well protected when being lifted to the roof. Flat belts or slings should be used while lifting by crane, chains or steel ropes should never be used. When pulling the material to the roof with belts, its edges should be well protected. Care should be taken that the pressure on the sheets does not cause deterioration. If possible, an apparatus to distribute the center of gravity uniformly should be used under the packages. Pulling trapezoidal sheets or sandwich panels over a pile will cause them to scratch the others, so they should be lifted by turning them sideways. When the panels are removed from the vehicle or taken to the roof, they should not be held by the side lugs, but should be held as a whole.

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## Handling

Panels up to 6 meters can be lifted by forklift or crane. When lifting packages, if a forklift is used, care must be taken so that the bottom panels are not damaged by the forklift fork; if a crane belt is used, care must be taken not to damage the panel edges. Panels longer than 6 meters must be lifted with a crane and a lifting beam. Generally, roofs up to 15 m in length and wall panels up to 8 m in length can be assembled by manpower. Longer panels should be mounted with a crane. When taking the panels from the package one by one, they should not be lifted by dragging them over each other, and the corners should be prevented from scratching the bottom panel. While carrying the panels, they should not be lifted by holding the side edges or metal lugs, it may cause deformation. If the panels have protective foils on them, they must be removed immediately after the panel is mounted. If the panels need to be stored for a long time, it is recommended to wait for the foil for a maximum of 2 weeks. Otherwise, it will stick on the metal under the influence of the sun and cannot be removed.

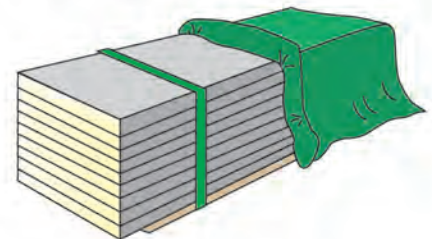
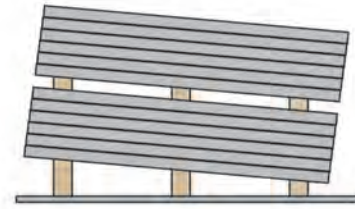




## Storage

At the construction site, panels are often stored for some time before assembly. Storage should be done by taking the following precautions:

- ▶ Packages should be placed on wooden wedges 2 meters apart. EPS wedges between the packages should be used here as well; care should be taken to keep the overlapping wedges aligned.
- ▶ It should be stacked at an inclined angle to prevent rainwater from accumulating on the packages and getting inside.
- ▶ Stocks should be kept indoors
- ▶ If the stocks are not to be protected in a closed place, they should be covered with a waterproof cover in such a way that a pool is not formed on them. But at the same time, care should be taken to leave a free space for air circulation between the cover and the sheets.
- ▶ It should be checked whether the stocks absorb moisture or water despite the precautions taken.
- ▶ Care should be taken to ensure that the panels are stored in a safe area against theft and impact, and that they are not on the passageways.
- ▶ Before and during the assembly, contact of substances that may cause corrosion such as soil, lime, mortar, fertilizer, acid, salt and alkali with sheets or panels should be prevented.
- ▶ Operations that will create scratches on the material should be avoided. Plates or panels should not be left in areas where it is possible to walk on them.
- ▶ Surface protective films on the material surface should be removed after assembly. Surface protective films on the materials kept indoors should be removed within 6 months.



## Installation

- ▶ Sandwich panels prepared in desired lengths are shipped to the construction site by trucks or articulated lorries.
- ▶ Roofing materials are usually taken to the roof with the help of a crane. Care should be taken to spread the packages on the roof surface so that they do not cause a point load. Also, they must be tied tightly against flying in the wind. If the roof slope is so high that it may cause the panels to slide, precautions should be taken.
- ▶ The accessories that should remain under the Roof Panel (internal ridge, soffit, eaves trough, gutter, etc.) are mounted before the panel.
- ▶ Gloves should be used to prevent cuts and injuries.
- ▶ The installation staff should always use rubber-soled shoes in order not to damage the panel surfaces.
- ▶ If the panels need to be cut, either a suitable saw or jigsaw must be used. The saw surface must be cold in order not to damage the panel surface.
- ▶ Painted surfaces must be protected while welding or cutting
- ▶ Metal wastes generated during cutting and drilling should be swept away with a brush immediately. Otherwise, they may cause corrosion within a few months.
- ▶ When working on the roof, flat work shoes with rubber soles and a walking plank should be used in order not to crush the sheets or panels.
- ▶ The number of fasteners/screws required in assembly is determined according to the wind condition and the amount required by the details. It should not be used less than 2 per square meter in Roof Panel and 1.5 in Wall Panel.
- ▶ Before installation, it should be determined from which direction the wind is blowing. Installation should be done against the prevailing wind.
- ▶ In the case of side overlaps, the lower part is mounted first and then the upper part.
- ▶ The panel is screwed to the carrier below. Screws with EPDM gasket must be used.
- ▶ After the entire roof surface is covered with the panel, it is proceeded to the accessories that will remain on top
- ▶ All connection elements should be insulated without creating thermal bridges.
- ▶ Dirt accumulated on painted metal surfaces during or after installation can be removed using conventional cleaning agents and water. Chemical solvents should not be used as they may damage the coating.





**ROOF PANELS**

**WALL PANELS**

**COLD ROOM PANELS**

**TRAPEZOIDAL SHEETS**

**ACCESSORIES**

**MEK PAN**  
**PANEL**

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