AssanPanel

EASY, FAST, AND HIGH ENERGY EFFICIENT BUILDING SOLUTIONS WITH SOLAR CAPPED PANEL

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As renewable energy is even more important today, in order to conserve natural resources, SOLAR CAPPED PANEL helps you build facilities that generate their own energy.

Thanks to its special clamp system, **Solar Capped Panel** is easily mounted on the surface of Assan Sandwich Panel without drilling any screw holes. As it is installed without drilling on the roof, it offers excellent waterproofing performance and high corrosion resistance **as well as extending the economic life of the buildings** by maintaining the structural integrity of the roofs. In addition, it **offers cost efficiency** in steel construction with its design allowing for low slope installation.

Solar Capped Panel, **with a warranty of up to 10 years,** also offers a high degree of fire protection in addition to unprecedented thermal efficiency and energy conservation. With advanced daylight lighting and integrated roof solar energy system, it offers a **100% sustainable** alternative for buildings. It aims to help mitigate the impacts of the climate change for future generations.

WHY SHOULD YOU PREFER SOLAR CAPPED PANEL?

Durability

Our solar capped panel system eliminates all problems caused by screws used on roofs and allows for installation using a special clamp system to attach the solar panel to PIR insulated sandwich roof panel without drilling. The economic life of the material is extended as there is no application on the surface of the material.

Easy installation

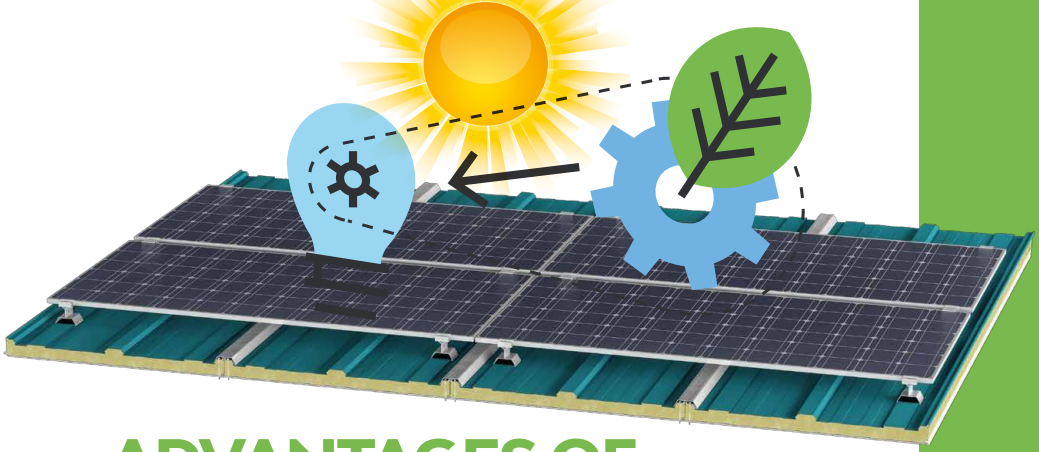
Photovoltaic solar panels in all dimensions, mounted by a fully compatible special apparatus on Solar Capped Panel, offer a great number of technical and economic advantages. The apparatus, mounting the solar panel on the roof panel, eliminates the need for drilling 4 screw holes by using a single apparatus. In this way, it allows for installation of both your roof panel and solar panel, as well as any other fittings, without screws and insulation risks.

Insulation / Watertightness

With to the capped panel system in addition to a special clamp system, it offers fast and easy installation and high corrosion resistance without drilling the Sandwich Panel surface.

Cost efficiency

It has a better cost efficiency compared to all other existing systems. It offers a cost reduction by up to 50% in the cost of screws and fittings. Thanks to installation systematics, it minimizes the time required for project design, planning, and installation.



ADVANTAGES OF SOLAR ENERGY!

Electric power generation as of the initial installation

The greatest advantage of solar panels is quite simple: As soon as you install a solar energy system, you begin generating your own electric power, become less dependent on your usual electricity service provider, and reduce the amount of your monthly electric bill. The economic life of a solar panel system is typically from about 25 to 40 years, meaning that you will reduce your electric costs for decades by resorting to solar energy.

Reduction in power line costs thanks to distributed power systems

Solar energy is a self-sufficient system, which is capable of operating systems independent from electric network and can be implemented based on the principle of on-site production and consumption.

Petroleum, coal, and gas, which are used for central electric power generation by conventional methods, are generally transferred from the production plant to the consumption location by using transmission and distribution lines. Such transfer operations come with additional costs and none of such costs are incurred in solar energy systems. This advantage allows for implementation of solar energy systems in a more sustainable manner.

Off-grid electric power generation advantage

In conventional network architecture, major power plants where electric power is generated are often located far from the consumption centers. Distributed power generation is used for small-scale electric production in multiple locations near the load. With the growth of solar energy, distributed power generation would significantly reduce power line investments and bring down the total costs of electric power generation.

SOLAR CAPPED PANEL SYSTEM PERFORMANCE EVALUATION

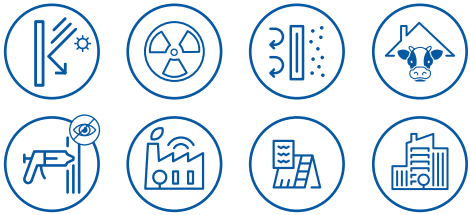
This is one of the **first** solar capped sandwich panel systems manufactured in Türkiye. The greatest advantage of solar capped panel is protection against external factors due to a cap profile covering the fittings in the joints and elimination of water leakage problem, which would otherwise occur in panel joints and fittings over time. It is compatible with **all photovoltaic modules** thanks to special ribs system.

It offers high waterproofing performance and high **corrosion resistance** thanks to **fast and easy** installation by a special clamp system without drilling the sandwich panel.

It also offers **cost efficiency** in steel construction with its design allowing for low slope installation.

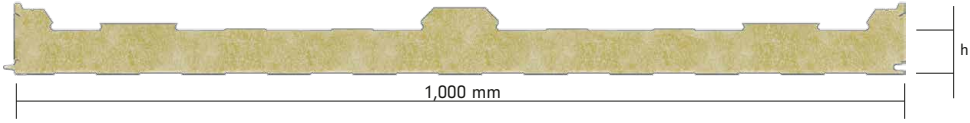
Fields of Application

- **Industrial structures**
- **Military structures**
- **Social structures**
- **Agricultural structures**
- **Sports facilities**
- **Construction site facilities**
- **Bunkers**
- **Hypermarkets**
- **Shopping malls**
- **Storehouse halls**
- **Administrative buildings**



etc. as typically used in building structures with steel or prefabricated concrete load-bearing systems.

Dimensions



h: 40-50-60-70-80-100-150 mm

Useful Width	1,000 mm
Minimum Length	3 meters
Maximum Length	Depends on Transport Conditions.

Density (EN 1602)	PIR: 40 (± 2) kg/m^3 & PIR Elite-SmartCore: 41 (± 2) kg/m^3
Thickness	40-50-60-70-80-100-150 mm
Thermal Conductivity λ (EN 13165)	PIR Elite-PIR: 0,022-0,024 & SmartCore: 0,019 W/mK
Dimensional Stability (EN 13165)	Level DS (TH) 11
Reaction to Fire (EN 13501)	PIR Elite: B-s1,d0 & PIR: B-s2,d0
Water Absorption (EN ISO 354)	By volume 2% (168 hours)
Closed Cell Percentage (EN 14509)	95%
Vapor Diffusion Resistance (EN 12086)	30-100
Heat Resistance	-200 /+110 °C

Metal Surface from Dyed Galvanized Sheet

Metal Type	Dyed Galvanized Sheet
Upper Metal Thickness	0.50-0.70 mm
Lower Metal Thickness	0.40-0.70 mm
Thickness Tolerance (EN 10143)	Nominal
Sheet Quality (EN 10327)	DX51 D+Z Dyed Galvanized (polyester powder finish on primer)
Dye Type	Polyester, PVDF, Plastisol, PVC

Range of Application - Metal Surfaces

PPGS	PPGS	Wide Range					
Upper Metal Thickness (mm)	Lower Metal Thickness (mm)	PIR (mm)	150 cm	200 cm	250 cm	300 cm	350 cm
0.5	0.4	40	353	176	104	67	45
0.5	0.4	50	385	198	121	80	56
0.5	0.4	60	413	219	136	92	66
0.5	0.4	70	448	240	147	103	75
0.5	0.4	80	470	259	167	118	86
0.5	0.5	100	713	433	297	218	166

Load: kg/m² • Deflection: L/200 • PPGS: Prepainted galvanized sheet

Thermal Conductivity Limits

Panel Thickness	U Thermal Conductivity (W/m^2K)	R Thermal Conductivity (m^2K/W)	R Thermal Conductivity ($ft^2\ ^oF\ h/Btu$)
40 mm	0.550	2.818	10.324
50 mm	0.440	2.273	12.905
60 mm	0.367	2.727	15.485
70 mm	0.314	3.182	18.066
80 mm	0.275	3.636	20.647
100 mm	0.220	4.545	25.809
150 mm	0.147	6.817	38.705

Mechanical Properties

Steel Surfaces Yield Strength	min. 220 N/mm^2
Core Material Shear Strength	min. 0.11 MPa
Core Material Shear Modulus	min. 2.0 MPa
Core Material Compressive Strength	min. 0.095 MPa
Creep (Yield) Coefficient	t=100,000 hours (Free Load): 7.0 t=100,000 hours (Snow Load): 2.4
Shear Strength After Sustained Load	t: 1,000 hours min. 0.04 MPa t: 2,000 hours min. 0.03 MPa t: 100,000 hours min. 0.01 MPa
Free Bending Moment Capacity	min. 2.3 KNm/m (Straight) min. 2.0 KNm/m (Reverse)
Free Torsional Stress	min. 100 MPa (Reverse) min. 115 MPa (Straight)

According to EN 14509

Tolerance Limits

Panel Length	Panel Thickness	Panel Cover Width	Deviation From Squareness
If L < = 3,000 mm ± 5 mm If L > 3,000 mm ± 10 mm	D ≤ 100 mm ± 2 mm	For all profiles ± 2 mm	0.6% of s ≤ nominal cover thickness / (Width (w) x 0.006)

Standard Package Quantity

Thickness (mm)	40	50	60	70	80	100	150
Quantity	20	16	14	12	10	8	6

Standard Ral Options

RAL 3009 RAL 5010 RAL 5018 RAL 6021 RAL 7016 RAL 9002 RAL 9006

Solar Capped Panel & Solar Panel Installation Method

1. Solar Capped Panel Installation

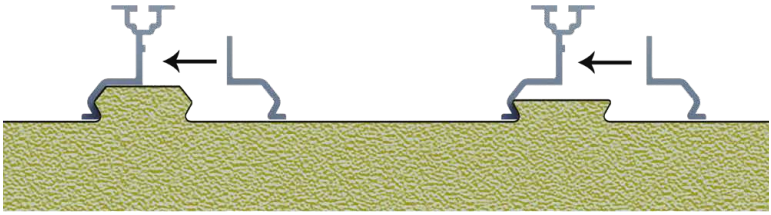
Solar capped panels are installed on the purlins based on the installation direction.

Screws and EPDM sealing gaskets to be used in panel joints are required to be installed on the ribs. Afterwards, special cap profiles are installed throughout the fittings.

2. Aluminum Profile Installation

Aluminum profiles are bolted to each other and simultaneously compressed into roof panel ribs. No screw is used for the upper sheet of the roof panel during application, therefore preventing any potential water leakage problems.

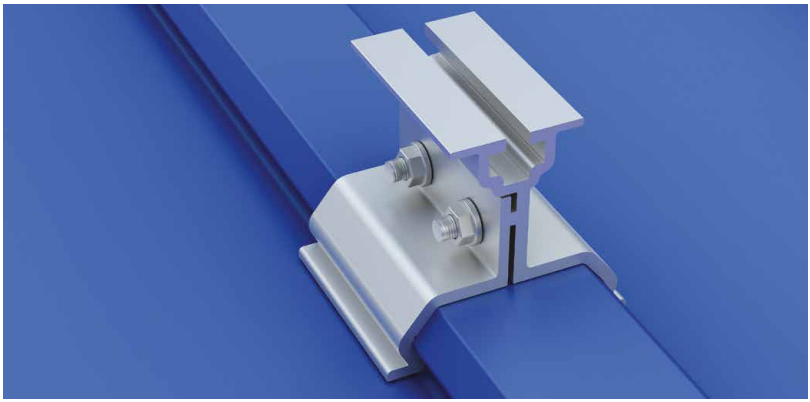
Profiles are compatible with both rib heights.



3. Solar Panel & Clamp Installation

At the final stage, the solar panel and mounting clamps are installed on the aluminum profiles.

Bearing distances should be determined in line with the declaration of the manufacturer of the solar panels.



Note: For solar panel applications envisaged with a vertical design, please contact Assan Panel.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INNOVATIVE SOLAR ENERGY PLATFORM SOLAR CAPPED PANEL FOR ROOFS

WARRANTY UP TO 10 YEARS

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