

PRODUCT DATA SHEET

Sika® SolarMount-1

Mounting System for Photovoltaic (PV) Panels on Flat Roofs

DESCRIPTION

Sika® SolarMount-1 (SSM1) is an aero dynamic, light-weight mounting system designed for the installation of framed, 60-cell, rigid Photovoltaic (PV) panels to mechanically fastened or fully adhered Sika® single-ply membranes on flat roofs. It can be installed in South configuration or in East-West configuration. Sika® SolarMount-1 is installed with Sika® SolarClick fasteners for the transfer of horizontal loads to the roof structure. They are hot-air welded directly onto the Sika® roof waterproofing membranes by Sika trained and experienced contractors. Sika® SolarMount-1 includes the Sika® PV panel mounts, Sika® SolarClick fasteners, panel mounting rails, wind deflectors and accessories to provide a stable PV array. The PV panels and electrical components as well as ballast are not included in the Sika® SolarMount-1 system. These are selected according to the project performance and parameters.

USES

Sika® SolarMount-1 can be applied to the the following Sika® roofing membranes:

- Sarnafil® T FPO membranes, glass or polyester reinforced, min. thickness 1.5 mm, mechanically fastened (even for ballasted or Green Roofs) or fully adhered.
- Sikaplan® G PVC membranes, glass or polyester reinforced, min. thickness 1.5 mm, mechanically fastened.

PRODUCT INFORMATION

Packaging

All Sika® SolarMount-1 components are packed and supplied on pallets or in cardboard boxes according to the predefined specific project requirements.

Appearance and colour

There are several Sika® SolarMount-1 variants for holding 1 to 4 PV panels (South configuration) and 2 to 8 PV panels (East-West configuration). The selection of any particular variant is dependent on the available space on the roof as well as the static requirements arising from the relevant wind

FEATURES

- Welded to the membrane - no horizontal displacement of PV installation
- No dependency from friction values for horizontal fastening
- No ballast required against horizontal loads - suited for lightweight roofs
- Optional ballast against uplift loads dependent on wind zone and roof height
- No resulting uplift loads - no vertical movement of membrane and PV installation
- No waterproofing membrane penetrations required - safe roof installations
- Integrated system - full compatibility with designated Sika® roofing membranes
- Versatility - South and East-West installations with the same components
- Modular installation - suits the individual roof layout and requirements
- Natural ventilation - increased efficiency at lower PV panel temperatures
- Few components - fast and easy installation
- Large contact area with the membrane - low compression to thermal insulation

PRODUCT DATA SHEET

Sika® SolarMount-1

January 2026, Version 01.01

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and snow loading requirements.



Sika® SolarMount-1 4.4 variant (South configuration), with 4 Sika SolarClick per mount.



Sika® SolarMount-1 8.8 variant (East-West configuration), with optional ballast.

Surface Aspect	All surfaces have a smooth, matt finish
Colour	
Sika® PV panel mount:	black
Sika® SolarClick and base plates FPO	beige
Sika® SolarClick and base plates PVC	white
Accessories	silver (natural metal colour)

Shelf life The Sika® SolarMount-1 components do not expire during correct storage.

Storage conditions The Sika® SolarMount-1 components shall be stored in dry conditions.

Dimensions	Length	1.5–6 m (just Sika® SolarMount-1 without PV panels) Max. length with 4 installed PV panels @ 1.65 m length: 6.6 m
	Depth	
	South configuration:	~1.2 m
	East-West configuration:	~2.2 m
	Height	0.42 m (South and East-West configuration)
	Tilt Angle (Mount)	15°, not adjustable (for South and East-West configurations)
	PV Panels (60 cells) to be used	
	Width	0.973–1.013 m
	Length	1.63–1.67 m
	Frame height	30–50 mm
	Weight	max. 25 kg

Max. operating pressure

Local dead load with PV panels:

- South systems ~18 kg/m²
- East-West systems ~15 kg/m² (Sika® SolarMount-1 with typical framed 60-cell PV panels, but without ballast)
- The local loads on the Sika® SolarMount-1 covered area will be somewhat higher, dependent on the ballast required.

Gross roof load in case of no ballast:

- South systems ~9 kg/m² (typically)
- East-West systems ~12 kg/m² (typically)

Gross roof load, ballasted systems:

- 10–30 kg/m² approx.

These loads are calculated from the sum of the dead load of all installed Sika® SolarMount-1 systems plus PV panels and ballast, divided by the entire roof area.

There is a large variation in the gross roof load due to different roof coverage between South and East-West systems, and due to areas on the roofs not covered by PV systems.

Weight**South configuration:**

Sika® SolarMount-1 1.2	~16 kg (w/o PV panels)	~36 kg (with PV panels *)
Sika® SolarMount-1 1.3	~20 kg (w/o PV panels)	~40 kg (with PV panels *)
Sika® SolarMount-1 2.2	~22 kg (w/o PV panels)	~62 kg (with PV panels *)
Sika® SolarMount-1 2.3	~27 kg (w/o PV panels)	~67 kg (with PV panels *)
Sika® SolarMount-1 2.4	~32 kg (w/o PV panels)	~72 kg (with PV panels *)
Sika® SolarMount-1 3.3	~33 kg (w/o PV panels)	~93 kg (with PV panels *)
Sika® SolarMount-1 3.4	~38 kg (w/o PV panels)	~98 kg (with PV panels *)
Sika® SolarMount-1 3.5	~44 kg (w/o PV panels)	~104 kg (with PV panels *)
Sika® SolarMount-1 4.4	~44 kg (w/o PV panels)	~124 kg (with PV panels *)
Sika® SolarMount-1 4.5	~49 kg (w/o PV panels)	~129 kg (with PV panels *)
Sika® SolarMount-1 4.6	~54 kg (w/o PV panels)	~134 kg (with PV panels *)
Sika® SolarMount-1 4.7	~60 kg (w/o PV panels)	~140 kg (with PV panels *)

East-West configuration:

Sika® SolarMount-1 2.4 EW	~23 kg (w/o panels)	~63 kg (with PV panels *)
Sika® SolarMount-1 4.4 EW	~28 kg (w/o panels)	~108 kg (with PV panels *)
Sika® SolarMount-1 4.6 EW	~37 kg (w/o panels)	~117 kg (with PV panels *)
Sika® SolarMount-1 6.6 EW	~42 kg (w/o panels)	~162 kg (with PV panels *)
Sika® SolarMount-1 6.8 EW	~51 kg (w/o panels)	~171 kg (with PV panels *)
Sika® SolarMount-1 6.10 EW	~60 kg (w/o panels)	~180 kg (with PV panels *)
Sika® SolarMount-1 8.8 EW	~56 kg (w/o panels)	~216 kg (with PV panels *)
Sika® SolarMount-1 8.10 EW	~65 kg (w/o panels)	~225 kg (with PV panels *)

* typical framed 60-cell PV panel weight is approx. 20 kg

Reaction to fire

Sika® SolarMount-1 PV panel mount: Class E

(EN 13501-1)

APPLICATION INFORMATION**Substrate temperature**

Temperature limits for the installation of Sika® SolarClick fasteners:

- Substrate temperature: 0 °C min. / +60 °C max.
- The Sika® SolarClick will quickly adapt to the substrate temperature. Low temperatures can lead to reduced application speed. Additional limitations may apply for installation below +5 °C ambient temperature, due to health and safety requirements and in accordance with national regulations.

SYSTEM INFORMATION**System structure**

The Sika® SolarMount-1 system consists of the following components:

- Sika® PV panel mount (polypropylene based)
- Sika® SolarClick FPO or PVC fasteners (as appropriate for the roof membrane) and base plates
- Accessories (panel mounting rails, wind deflectors, PV panel clamps, base plates, metal brackets, screws etc.)

The PV panels, inverters and cables are not part of the Sika® SolarMount-1 system.

PRODUCT DATA SHEET

Sika® SolarMount-1

January 2026, Version 01.01

02094505130000005

South configuration:

The spacing distance that is required between rows of Sika® SolarMount-1 in order to avoid shading, will vary according to the geographical latitude of the roof and be between 1.5 and 2.5 meters.

Sika® SolarMount-1 1.2	for 1 PV panel on 2 mounts	
Sika® SolarMount-1 1.3	for 1 PV panel on 3 mounts	
Sika® SolarMount-1 2.2	for 2 PV panels on 2 mounts	("standard")
Sika® SolarMount-1 2.3	for 2 PV panels on 3 mounts	
Sika® SolarMount-1 2.4	for 2 PV panels on 4 mounts	
Sika® SolarMount-1 3.3	for 3 PV panels on 3 mounts	("standard")
Sika® SolarMount-1 3.4	for 3 PV panels on 4 mounts	
Sika® SolarMount-1 3.5	for 3 PV panels on 5 mounts	
Sika® SolarMount-1 4.4	for 4 PV panels on 4 mounts	("standard")
Sika® SolarMount-1 4.5	for 4 PV panels on 5 mounts	
Sika® SolarMount-1 4.6	for 4 PV panels on 6 mounts	
Sika® SolarMount-1 4.7	for 4 PV panels on 7 mounts	

East-West configuration:

The distance that is required between rows of Sika® SolarMount-1 is typically 0.5 meters for maintenance access.

Sika® SolarMount-1 2.4 EW	for 2 PV panels on 4 mounts (2 pairs)	
Sika® SolarMount-1 4.4 EW	for 4 PV panels on 4 mounts (2 pairs)	("standard")
Sika® SolarMount-1 4.6 EW	for 4 PV panels on 6 mounts (3 pairs)	
Sika® SolarMount-1 6.6 EW	for 6 PV panels on 6 mounts (3 pairs)	("standard")
Sika® SolarMount-1 6.8 EW	for 6 PV panels on 8 mounts (4 pairs)	
Sika® SolarMount-1 6.10 EW	for 6 PV panels on 10 mounts (5 pairs)	
Sika® SolarMount-1 8.8 EW	for 8 PV panels on 8 mounts (4 pairs)	("standard")
Sika® SolarMount-1 8.10 EW	for 8 PV panels on 10 mounts (5 pairs)	

The most suitable combination of these variants and the number of Sika SolarClick and base plates per mount (for South configurations), as well as metal brackets (South and East-West configurations) is selected on an individual project basis; the design and layout shall be made by the PV system designer. The PV system designer and the roof installer are responsible for ensuring the correct fixing of the PV panels onto Sika® SolarMount-1.

Compatibility

Sika® SolarMount-1 fixed with Sika® SolarClick FPO is chemically compatible with Sika Sarnafil® FPO membranes. Sika® SolarMount-1 fixed with Sika® SolarClick PVC is chemically compatible with Sika Sarnafil® and Sika-plan® PVC membranes.

BASIS OF PRODUCT DATA

All technical data stated in this Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

ECOLOGY, HEALTH AND SAFETY

REGULATION (EC) NO 1907/2006 - REACH

This product is an article as defined in article 3 of regulation (EC) No 1907/2006 (REACH). It contains no substances which are intended to be released from the article under normal or reasonably foreseeable conditions of use. A safety data sheet following article 31 of the same regulation is not needed to bring the product to the market, to transport or to use it. For safe use follow the instructions given in the product data sheet. Based on our current knowledge, this product does not contain SVHC (substances of very high concern) as listed in Annex XIV of the REACH regulation or on the candidate list published by the European Chemicals Agency in concentrations above 0,1 % (w/w).

SUBSTRATE QUALITY

Sika® SolarMount-1 shall be mounted on newly installed Sika® roof waterproofing membranes. The minimum compression strength of the thermal insulation is 70 kPa. For any exception please consult Sika Technical Service.

APPLICATION

Notes for installing Sika® SolarClick fasteners:

The installation of Sika® SolarClick fasteners on Sika® membranes must only be carried out by Sika® trained and experienced membrane installers.

The welding parameters for Sika® SolarClick FPO systems are as those used for Sarnafil® TS; for Sika® SolarClick PVC systems they shall be the same as those used for Sarnafil® S327 / G410 or Sikaplan® G (according to the membrane type in use).

Roof Slope:

The Sika® SolarMount-1 system is designed for installation on flat roofs with a pitch of max. 5° (pitch of max. 10° possible with limitation of the design loads).

The Sika® SolarMount-1 can't cross high or low points (e.g. around crickets) on the roof. The module mounting profile is therefore always parallel too the roof membranes.

Design:

The project specific Sika® SolarMount-1 lay-out and ballast plan, as well as the wind and snow load design for the PV installation, has to be carried out by a Sika trained and experienced PV system designer.

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PRODUCT DATA SHEET

Sika® SolarMount-1

January 2026, Version 01.01

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APPLICATION METHOD / TOOLS

Method of Installing Sika® SolarClick Fasteners: Sika® SolarMount-1 systems must be installed according to the detailed procedures given in the respective Sika Method Statement and Installation Instructions, the most important being:

- The Sika® SolarClick fasteners must be hooked into the recesses of the lateral profiles of the mounts. The number of Sika SolarClick, base plates and metal brackets on the Sika SolarClick shall strictly follow the details given by the PV system designer.
- The Sika® SolarClick fastener flaps must be welded to the roof membrane along their whole length (between the arrow marks) and depth using the same welding process as is used for the relevant Sika® roof waterproofing membranes.
- Moving of the rack assembly during the welding process must be avoided.

LOCAL RESTRICTIONS

Note that as a result of specific local regulations the declared data and recommended uses for this product may vary from country to country. Consult the local Product Data Sheet for the exact product data and uses.

LEGAL NOTES

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.

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