Version 2

Sika SolaRoof®
WITH PHOTOVOLTAICS

CONCEPT FOR DURABLE INSTALLATION OF
SikaRoof® Solar Mount-2 (SSM2) AND PHOTOVOLTAIC MODULES ON FLAT ROOFS

FM APPROVED

Specific variations of Sika SolaRoof® are
FM Approved per Approval Standard 4478

BUILDING TRUST

WORLDWIDE CONSTRUCTION AND INDUSTRY SOLUTIONS

Sika's history began in 1910 with the electrification of the Gotthard railway tunnels. The Swiss company founded by Kaspar Winkler played a decisive role in this momentous project. A revolutionary new waterproofing mortar was developed, marking the beginning of Sika's global reputation for high quality.

Today the Sika Group is a leading global manufacturer of construction chemical products and systems as well as industrial sealants and adhesives. The Group's core competencies – sealing, bonding, damping, reinforcing and protecting load-bearing structures – have been enabling a wide range of applications in the construction sector and in industrial production for over 100 years. The high-quality product range includes concrete admixtures, special mortars, sealants and adhesives, damping and reinforcing materials, floor coating systems, sealing membranes and corrosion protection products.

Sika annually produces a volume of roofing membrane that could cover the entire area of Manhattan.
More than 10,000 roofing contractors in over 85 countries are Sika-trained and certified, which ensures qualified installation.

All our customers – developers, building owners, architects, engineers, consultants and contractors – receive expert advice from our highly competent team. Building on a foundation of trust, we offer our experience and knowledge to provide recommendations and long-lasting solutions for any project you may have.

Roofing can be selected and designed to meet the specific technical requirements and budget of almost any roofing project. Our tailored solutions allow freedom of design and form, with no limitations on geometry or color, to meet the specific requirements of any type of roof.

STRATEGIC SUCCESS THROUGH GLOBAL PRESENCE

- With subsidiaries in over 100 countries, Sika offers local presence worldwide
- Sika operates over 400+ production sites and sales locations
- Sika employs approximately 33,000 people worldwide
- The Sika umbrella brand covers some 930 Sika product trademarks
- In fiscal year 2025 the Sika Group achieved sales of approximately CHF 11.20 billion

SIKA SolaRoof® WITH PHOTOVOLTAIC MOUNTING SYSTEM SSM2

THE COMPLETE SOLUTION FROM THE ROOFING EXPERT

THE Sika SolaRoof® SYSTEM is a lightweight, integrated solar solution for thermoplastic roofs that outperforms conventional mounting systems. It combines the proven performance of a Sika roofing system with SikaRoof® Solar Mount-2 (SSM2) – the result is an innovative, engineered solution for long term securement of rooftop photovoltaic (PV) modules which complies with the roof membrane, avoiding damage and loss of warranty.

ROOFTOP PHOTOVOLTAIC – THE PERFECT USE OF UNUSED ROOF SPACE

Rooftop solar installations are becoming increasingly popular worldwide, and empty flat roofs are perfect space resources. More and more building owners realize the opportunity to make effective use of their roof space and to improve their environmental footprint through sustainable electricity production. PV installations are sound investments, designed to provide a return over the long term. In addition, they reduce dependency on utility providers thanks to on-site power generation for in-house consumption, based on a service life expectancy of 20+ years. The correct roof build-up is key for durability. Sika has 50+ years of experience in the manufacture of single-ply membranes which are an ideal substrate for the SSM2 system.

LIGHT WEIGHT SOLAR ROOF SYSTEM (< 15 KG/M²)
- Optimized for roofs with limited load capacity
- Ideal for existing buildings

FULL SYSTEM INTEGRATION WITH SIKA ROOFING SYSTEMS
- Perfectly aligned with Sika roofing systems for maximum safety, compatibility and system performance
- Hot-air welded system solution without penetrations of roof waterproofing membranes

CERTIFIED FM (FACTORY MUTUAL) SOLUTION
- Approved quality, safety and insurance accpetance

FAST AND EFFICIENT SOLAR INSTALLATION
- Efficient installation processes, reducing installation time and costs

Required Construction Elements	
Sika roofing membrane	New membrane for optimal roof situation. The life expectancy of a Sika roof build-up and photovoltaic system match perfectly. FPO and PVC membranes, minimum thickness 1.80 mm (2.00 mm for maximum guarantee coverage).
Membrane fastening	Mechanically fastened or selected fully adhered roof system*
Thermal insulation	■ PIR, EPS or XPS thermal insulation boards (depending on local availability) ■ Mineral wool thermal insulation board with compressive strength ≥ 70 kPa at 10% deformation (per EN 826) ■ Roof coverboards are an option for optimum load distribution, roof protection and enhancement of the fire class
Vapour control layer / barrier	According to specific building physics requirements
Roof structure	■ Steel deck (trapezoidal), concrete or timber ■ Composite panels and standing seam metal roofs are not suitable for Sika SolaRoof® Systems ■ The life expectancy of the roof structure should be at least as long as the one of the photovoltaic system

* Sika fastening system (spot fastening or induction welding) and adhesives.
Please consult Sika to assess whether your specific roof is suitable to become a Sika SolaRoof® System.

Architectural and Structural Requirements	
Building height	Not restricted – the limit for the installation of SSM2 are the resulting wind forces
Roof slope	Up to 5° (1:12 or 8%) as standard Up to 10° with additional measure
Roof load bearing capacity	Sufficient for SSM2: this can be determined by a structural engineer once the system has been planned in detail

SikaRoof® Solar Mount-2 (SSM2)

PHOTOVOLTAIC MOUNTING SYSTEM ON SIKA ROOFING MEMBRANES

SSM2 IS THE PHOTOVOLTAIC (PV) RELATED PART OF THE Sika SolaRoof® CONCEPT. It is an innovative, lightweight, aerodynamic PV racking system for the durable installation of rigid PV modules on flat or low-slope roofs.

MAIN SSM2 SYSTEM COMPONENTS

- **SikaRoof® Mount-2**: produced from a corrosion protected (Magnelis® ZM430) steel sheet with an angle of inclination of 7°.
- **SikaRoof® Click**: the injection molded welding flanges are made from Sika's own FPO and PVC plastic compounds. They are chemically compatible with the roofing membrane and are hot-air welded to the membrane, to provide permanent and secure attachment. The flanges are mechanically fastened to the mount and transfer the wind loads into the membrane and the the roof structure. No leaks from screw penetrations or mount shifting in heavy winds will occur.
- **Short (60 cm) PV module mounting rails**: they are mechanically fastened to the mount and hold the PV modules in place. Different rail cross sections are available for various PV module frame heights.

Key Features of SSM2	
Module inclination angle	7° to the roof plane (not adjustable)
PV module orientation	PV modules on SSM2 mounts can be installed with as of now just east-west orientation
PV module types	Framed crystalline PV panels, width up to 1,135 mm and frame height 30 and 35 mm
Average areal weight	Approximately 10–18 kg/m² (including PV modules, depending on the layout)
Stable positioning	With SSM2, there are no slip sheets, separation layers or friction enhancers required. The fixation of the SSM2 to the membrane avoids moving of the PV system on the roof
Protective measures	No membrane penetration of the roof build-up required, and chemical compatibility between the Sika-produced components ensured.

SikaRoof® Mount-2 with SikaRoof® Clicks, pads, metal bracket securements and short rails for the east-west installation.

SUITABLE SITUATIONS FOR SSM2 (SOME REQUIREMENTS SHALL BE RESPECTED)

- New membrane and fasteners from Sika, or specifically released other fastening methods.
- Wind load calculations confirm the suitability of the build-up for the specific situation on the roof at the location in mind.
- The SSM2 components will be delivered only to projects with a layout and that have been calculated according to the local guidelines.
- Grounding and lightning concepts shall be designed by a specialist, according to the local regulations.

LONG TERM MONITORING PROGRAM

SSM2 is the successor of the "SSM1" PV system which is based on the same SikaRoof® Click flanges. Since 2014, Sika conducts a monitoring program for the most exposed SSM1 installations. Annual examinations are conducted to check for material changes or other irregularities of membranes and fasteners. The positive results underline the durability of the concept.

Please consult your Sika representative for more details.

SSM2 – SYSTEM TESTING, APPROVAL AND DESIGN

THOROUGH EVALUATION AND CONFIRMATION BY APPROVAL BODIES

THOROUGH FULL-SYSTEM TESTING OF SSM2 HAS BEEN CONDUCTED IN RECOGNIZED INTERNATIONAL LABS. The Engineering focus is on the site-specific conditions and influences such as wind and snow loads and solar exposure. The PV solution must take these factors into account to meet the client's expectations on the long run.

SYSTEM TESTING

Mechanical, dynamic testing of all components and connections on original Sika roof build-ups with Sika roofing membranes has been conducted in different renown laboratories and construction institutes.

FM 4478 APPROVAL

Having passed the stringent testing requirements of FM standard 4478, some variants of Sika SolaRoof® with SSM2 are the only solar solution for FM-insured buildings and those customers who are not insured by FM but view FM as the industry benchmark for performance, durability, and safety. The program involves fire and wind uplift testing for the roof assembly and PV system. Additionally, the PV modules are tested against hail and gravity loads.

FM APPROVED

The selection of roof build-up components and SSM2 with a FM 4478 approval is strictly limited. They are governed by the approval documents and can't be chosen arbitrary.

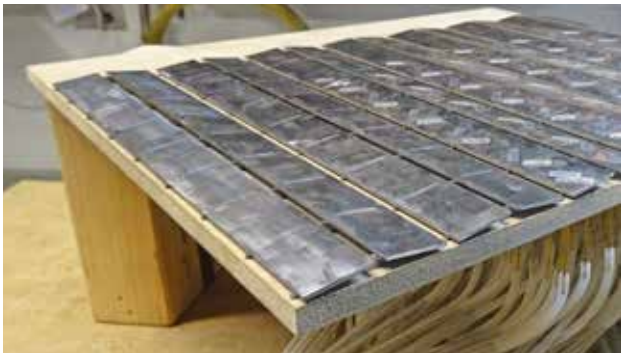
DESIGN

The SSM2 layouts are designed by a commercial software which is customized for SSM2. It contains the specific values and findings from the wind tunnel evaluations by the "I.F.I. Institut für Indstrieaerodynamik GmbH" in Aachen, Germany. The reports were peer-reviewed by the US based Wind Engineering Consultants "cpp". For every potential project, a suitable PV layout is generated. Inputs are crucial project specific input parameters like location, building specific parameters and the selection of the Sika membrane and fastening type and geometry. The maximum wind loads are calculated according to the common standards and shall be within the limits of the SSM2 system.

Uplift test to SSM2 with pneumatic cylinders.

Wind uplift test with east-west oriented SSM2.

Mechanically applied uplift loads to a PV module on two SSM2 mounts.



Wind tunnel test model.

SSM2 – APPLICATION

FAST, EASY, SAFE, FEW COMPONENTS AND NO ROOF PENETRATIONS

A UNIQUE FEATURE OF SSM2 IS THAT THE SSM2 PLANT CANNOT MOVE ON THE ROOF SURFACE OVER THE LONG TERM. The SikaRoof® Click flanges are attached to the roofing membrane by hot-air welding and transfer the loads to the roof structure. Strong emphasis is put on the training of authorized applicators to weld Sika roofing components.

TWO WAYS OF APPLICATOR COMPANY INVOLVEMENT

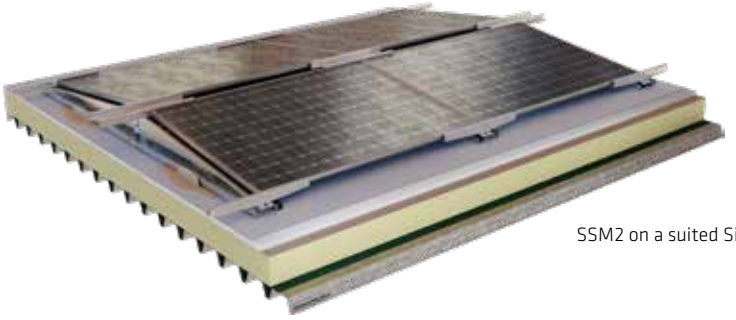
- **Roof applicator**: To achieve the highest flexibility during application, the roofer who installed the roof structure can assemble the SSM2 system, after completing special training. The advantage of this is that the same company can also weld the SikaRoof® Clicks (FPO and PVC) to the roofing membrane. The electrical installations are usually done by a specialized company, afterwards.
- **Solar installer:** Assembly and installation of SSM2 can also be done by a solar installer to be trained – ideally the same installer which will carry out the electrical installation of PV modules, inverters etc. on the same job site later. However, the welding process of the SikaRoof® Clicks shall be carried out by a Sika Sales Organisation certified roof applicator.

Application of the SSM2 system requires only a limited number of components to be assembled on site. This allows fast and easy setup of the PV plant. Application manuals with step-by-step illustrations are provided by Sika.

Mount positioning along the chalk lines.

Hot-air welding of a SikaRoof® Click flange with a semi-automated welding machine.

Video:
Sika SolaRoof® with SSM2



SSM2 on a suited Sika roof build-up on a steel deck.

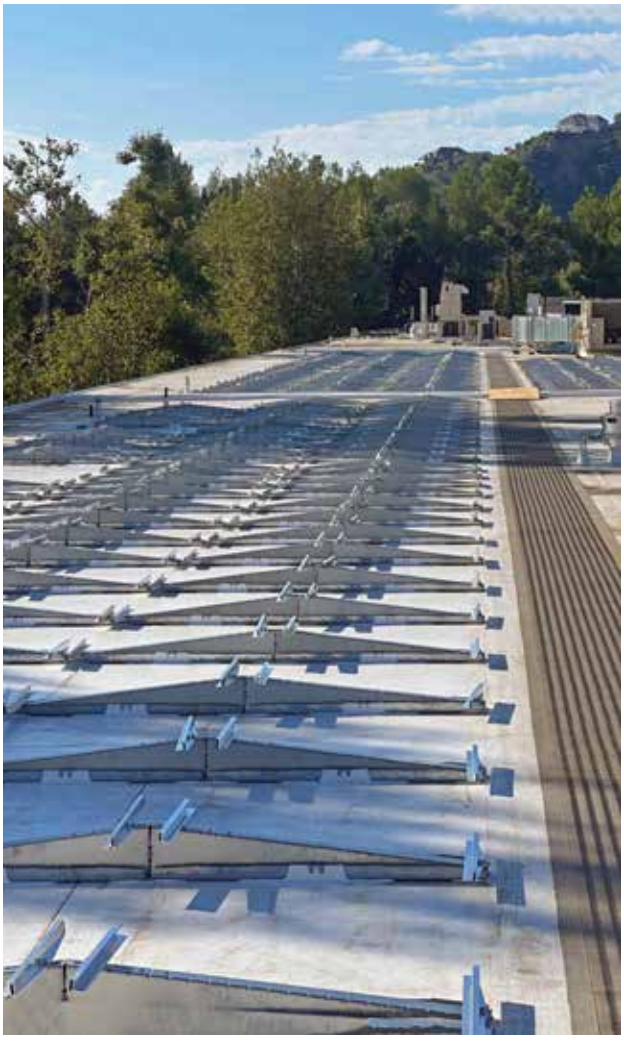
SSM2 – EXPERIENCE

SSM INSTALLATIONS ARE IN OPERATION SINCE 2023

Switzerland

Germany

Portugal



USA

China

A GLOBAL COMPANY BUT LOCAL PARTNER

FOR MORE ROOFING INFORMATION:

WE ARE SIKA
Sika is a specialty chemicals company with a leading position in the development and production of systems and products for bonding, sealing, damping, reinforcing and protecting in the building sector and the motor vehicle industry. Sika's product lines feature concrete admixtures, mortars, sealants and adhesives, structural strengthening systems, flooring as well as roofing and waterproofing systems.

Our most current General Sales Conditions shall apply. Please consult the most current local Product Data Sheet prior to any use.

© SIKA SERVICES AG / ROOFING / SIKA SolaRoof® WITH PHOTOVOLTAICS / 06.2026

SIKA SERVICES AG
Tueffenwies 16
CH-8048 Zurich
Switzerland

Contact
Phone +41 58 436 40 40
www.sika.com

BUILDING TRUST