



# SUNSTYLE<sup>®</sup> SOLAR ROOF

COMPLETELY SATISFIED.



# SUNSTYLE<sup>®</sup> SOLAR ROOF

## INSPIRED BY NATURE.

*THE SUNSTYLE SOLAR ROOF IS INSPIRED BY THE INGENIOUS STRUCTURE OF FISH SKIN: THE SCALE-LIKE ARRANGEMENT OF THE SOLAR TILES ENSURES THE NATURAL FLOW OF WATER. IT IS DESIGNED TO BE COMPLETELY WATERPROOF AND WITHSTAND THE HARSHTEST ENVIRONMENTAL CONDITIONS. BECAUSE IT DOES NOT NEED A FRAME, IT'S ALSO JUST AS ELEGANT AS FISH SCALES.*



# NEW PERSPECTIVES FOR REAL ESTATE OWNERS AND DEVELOPERS.

Solar power systems often fail to satisfy aesthetic requirements. The unique SUNSTYLE solar roof, which is integrated into the building, sets new standards. Quadratic solar roof tiles with a fitted sub-construction are laid directly onto the sub-roof structure in a fish-scale pattern, replacing conventional roof tiles. The solar roof tiles fulfil all the functions of the roof cladding in terms of strength, durability and weather resistance – with the clear benefit of clean electricity production. Thanks to its elegant appearance, the patented SUNSTYLE solar roof blends seamlessly into the roofscape, making it the ideal solution for new buildings and energy-efficient renovations.

SUNSTYLE is equally suitable for large-scale industrial buildings as for residential buildings, and can be integrated with different roof shapes. Transparent roof tiles that bring light into the building, together with end tiles, complete the system.

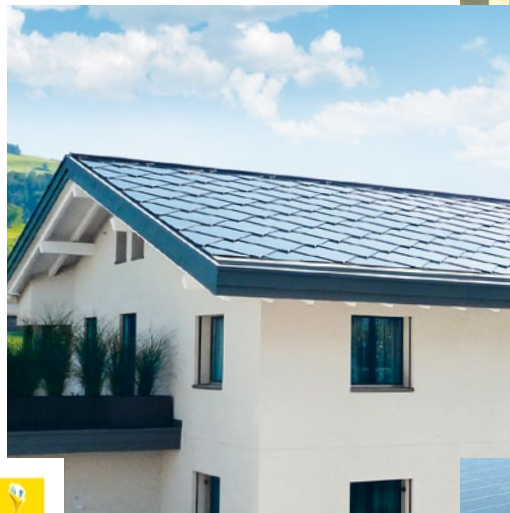
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## SOLAR ROOF TILES: A DURABLE CONSTRUCTION ELEMENT

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SUNSTYLE solar roof tiles have been developed as an energy-producing and long-lasting construction element. The crystalline solar cells integrated into the tiles are embedded in a flexible though robust polyvinyl acetate (PVAc) layer. They are protected on the front by six millimetres of hardened solar glass and on the back by a layer of resistant synthetic material (Tedlar). An aluminium frame is unnecessary, as the edges of the tile are sealed in order to keep out moisture. This design makes SUNSTYLE an extremely durable construction element.

SUNSTYLE solar roof tiles are manufactured according to the quality criteria standard EN 61215 and the requirements of Protection Class II (proof of the solar roof tile's strength and resistance to cold, heat, moisture, hail, wind and snow).



- ◆ Solar tiles replace conventional tiles
- ◆ Can be used from a roof pitch of three degrees (if necessary with a sub-roof)
- ◆ Output per square metre: up to 162 watts peak
- ◆ Performance guarantee: 25 years



# SUNSTYLE® AND THE WORLD'S LARGEST BUILDING-INTEGRATED SOLAR POWER PLANT.

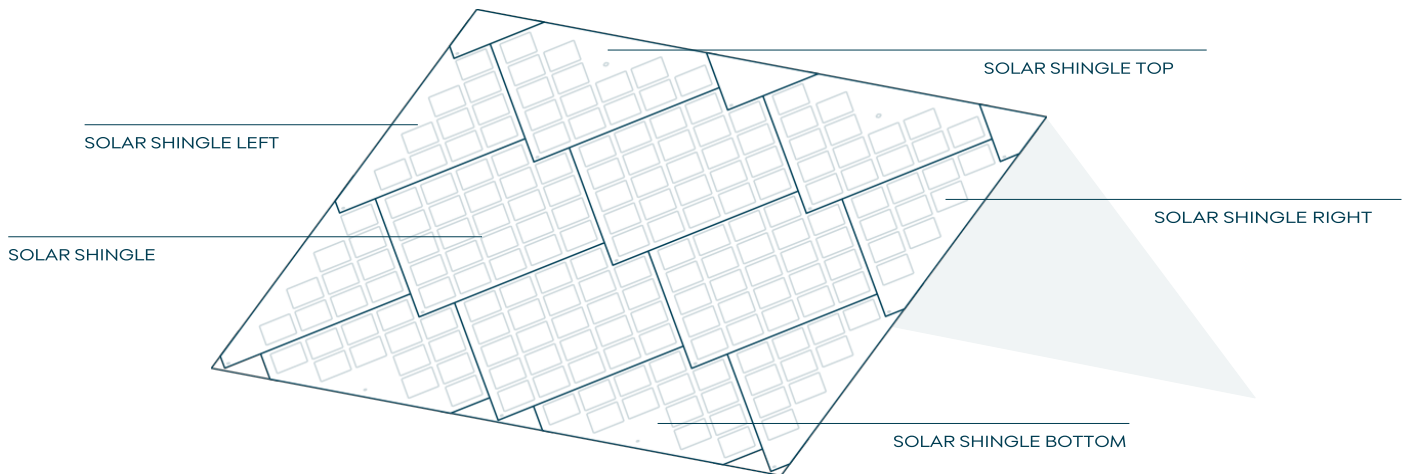
70 000 m<sup>2</sup> of roof area, 97 000 solar roof tiles, 8 800 kilowatts of power. Every day, our solar roof tiles reliably produce electricity for 10 000 people. Saint Charles Solaire in Perpignan (France) selected the SUNSTYLE solar roof for the world's largest building-integrated solar power plant. All previous roofs of the international logistics centre were replaced using SUNSTYLE solar roof tiles.





# SUNSTYLE® SOLAR ROOF

## TECHNICAL DATA



### GENERAL CHARACTERISTICS

Dimension solar shingles	870 × 870 mm
Glass properties	Transmission optimized solar glass (ESG)
Glass thickness	6 mm
Solar cell type	Monocrystalline silicon cells
Laminate structure	Glass   EVA   Cells   EVA   Back sheet
Junction box	according to IEC 62790
Bypass diodes	3 diodes per shingle
Connection cable	Solar cable 4 mm <sup>2</sup> , 800 mm length
Connector	Original Multi-Contact (MC4)
System weight	19.5 kg / m <sup>2</sup>
Substructure	Wooden slats or steel tubes
Temperature range	-40°C bis +85°C
System power	Up to 173 W <sub>P</sub> /m <sup>2</sup>

### QUALITY AND WARRANTY

Product guarantee	10 years
Performance guarantee	10 years at 90 % of the nominal output 25 years at 80 % of the nominal output
Quality criteria production	IEC 61215
Quality criteria safety	IEC 61730 (protection class II)
Fire safety	DIN-EN 13501-5
Hail resistance class	HW 4 (withstands 40 mm Ø hailstones)
Certified pressure load	5 400 N/m <sup>2</sup>
Certified pressure load alpine	15 400 N/m <sup>2</sup>
Accessibility	Can be accessed without any guarantee restrictions
Water tightness	Min. slope 3° (cf. notice sheet: requirement roof-buildup)

### ELECTRICAL PROPERTIES AT STC (1000 W/m<sup>2</sup>, 25°C and AM 1.5)

Type of solar shingle	Solar shingle	Solar shingle bottom	Solar shingle top	Solar shingle left	Solar shingle right
Nominal output	115 W <sub>P</sub>	62 W <sub>P</sub>	67 W <sub>P</sub>	48 W <sub>P</sub>	48 W <sub>P</sub>
Voltage V <sub>mpp</sub>	13.6 V	7.3 V	7.9 V	5.7 V	5.7 V
Current I <sub>mpp</sub>	8.5 A	8.5 A	8.5 A	8.5 A	8.5 A
Open circuit voltage V <sub>oc</sub>	17.0 V	8.9 V	9.6 V	6.8 V	6.8 V
Short circuit current I <sub>sc</sub>	9.0 A	9.0 A	9.0 A	9.0 A	9.0 A
Maximum system voltage	1000 V DC	1000 V DC	1000 V DC	1000 V DC	1000 V DC
Reverse current overload	18 A	18 A	18 A	18 A	18 A
Tolerance nominal output	+5/-0 %	+5/-0 %	+5/-0 %	+5/-0 %	+5/-0 %

### TEMPERATURE COEFFICIENTS

Temperatur coefficient $\alpha$ for short circuit current (I <sub>sc</sub> )	+0,038 %/K
Temperatur coefficient $\beta$ for open circuit voltage (V <sub>oc</sub> )	-0,269 %/K
Temperatur coefficient $\gamma$ for nominal output (P <sub>MPP</sub> )	-0,375 %/K

### SYSTEMERWEITERUNGEN

Complementary shingles fixed size	SUNSTYLE®-shingle (screenprint)
Customizable shingles	SUNSTYLE®-compound metal
Snow stopper	Stainless steel, black
Support lath for alpine applications	Wood

WWW.SUNSTYLE.COM



SUNSTYLE Ltd  
Bernstrasse 54  
3072 Ostermundigen  
Switzerland  
Phone +41 (0)31 300 30 20  
contact@sunstyle.com  
www.sunstyle.com