

# SUNSTYLE® SOLAR ROOF

## Installation instructions



Version 1.5 – March 2016 / English

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1 Remarks concerning this document





1.1 *Scope of Application*

These instructions are only applicable for the SUNSTYLE® solar roof. Please read this instruction completely and in detail before starting the installation of your solar roof. This document doesn't describe the preparation of the sub roof in order to satisfy the specification of the solar roof SUNSTYLE®. Neither does this document explain how to obtain the electrical string layout of the solar field. To obtain an electrical layout, please contact directly SUNSTYLE LTD.

1.2 *Target group for these instructions*

These installation instructions are intended for a roofer of the solar roof SUNSTYLE®. The installation of the solar roof should only be executed by a certificated or a trained worker by SUNSTYLE LTD.

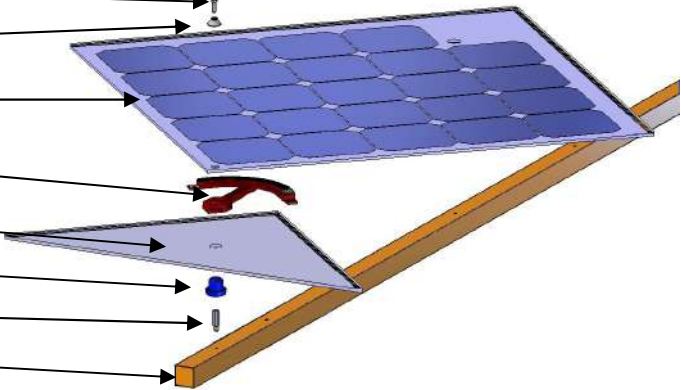
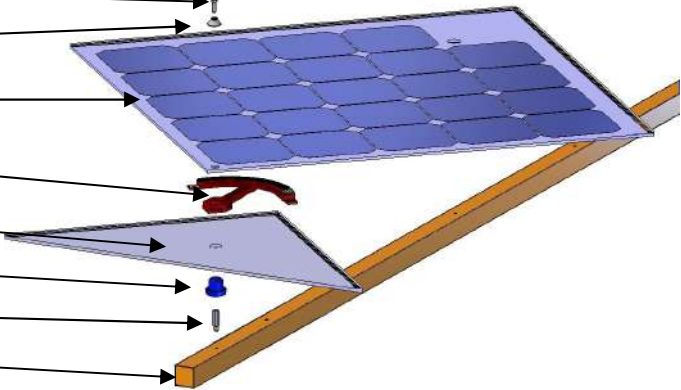
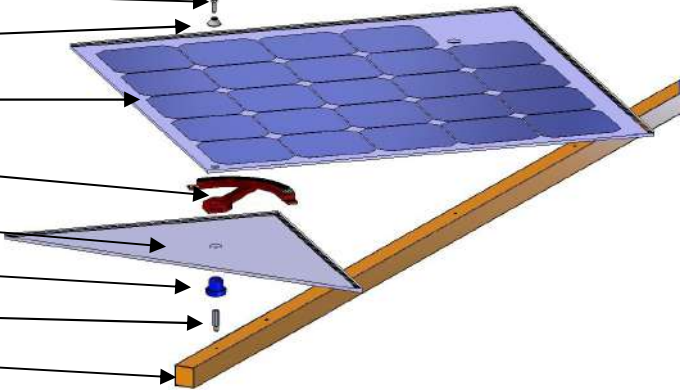
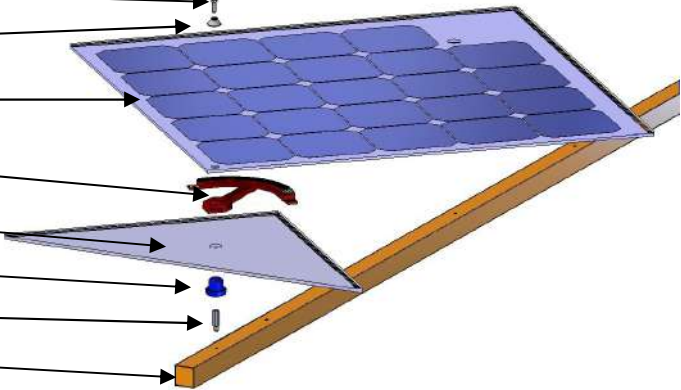
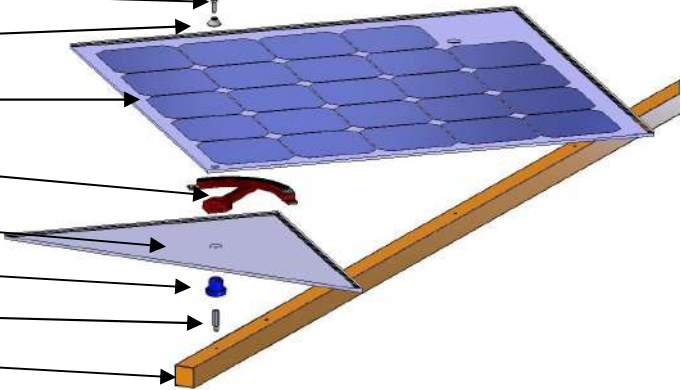
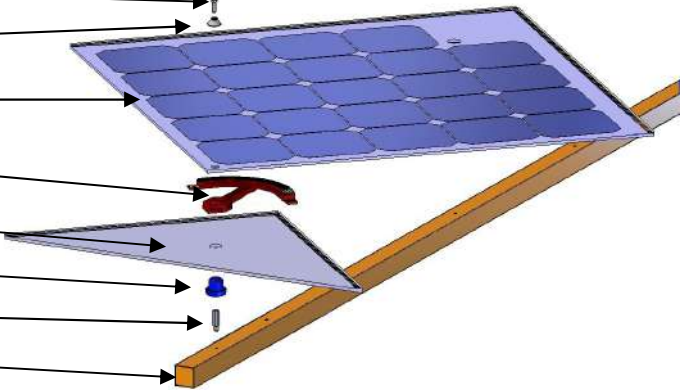
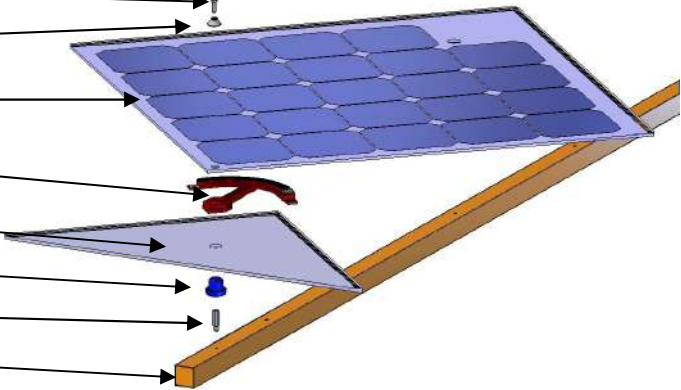
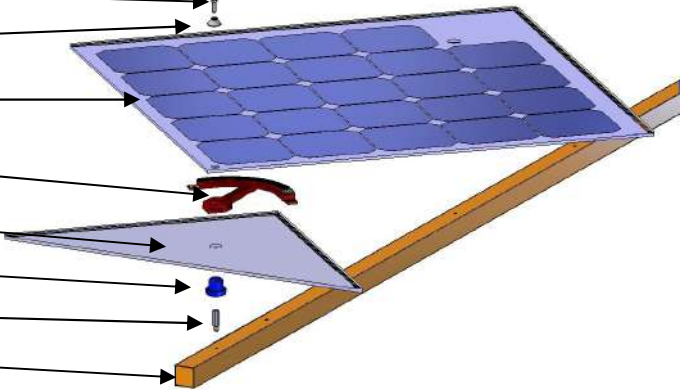
1.3 *Used Symbols*

	<p><b>DANGER</b></p> <p>The symbol DANGER indicates a safety regulation. The non-observation of this indication can cause heavy injuries.</p>
	<p><b>ATTENTION</b></p> <p>The symbol ATTENTION indicates a safety instruction. The non-observation of this indication can cause injuries.</p>
	<p><b>IMPORTANT</b></p> <p>The symbol IMPORTANT describes an instruction which is important for the correct functioning of the solar power plant.</p>
	<p><b>ATTENTION TENSION</b></p> <p>The symbol TENSION indicates of the presence of a high voltage. The non-respect of this instruction can cause an important electrical discharge.</p>

## 2 Preparation

### 2.1 Delivery list

Before the installation of the solar roof, it must be assured that all needed elements are presents on the construction site. The number of the part depends on the overall surface of the roof. The delivery list can be requested in advance. For specific questions concerning the installation contact directly the technical support of SUNSTYLE LTD.

Description	Drawing
Mounting screw	
Screw sealing cap	
Tile SUNSTYLE	
Sealing corner	
Dummies (2 types)	
Support	
Mounting bolt (2 types)	
Wooden slat (2 types)	
Solar clip (not shown)	
Distance socket (not shown)	


### 2.2 Installation tools and accessories parts

Before starting the installation, the roof worker must check that the following tools and accessories parts are available.

- Torque wrench adjustable between 1 Nm and 20 Nm
  - o Hexagonal inputs for M8
- Wood screw in function of the sub roof structure



### 2.3 Examination of damages in transit

The SUNSTYLE® solar tile should be examined for handling and transport damage before its installation. The surface of the glass should not be scratched and the edges should not have any fragmentation.

	<p><b>IMPORTANT</b></p> <p>During unpacking, the solar tiles must be manipulated with care. The corner and the edge must never touch a hard surface otherwise a protection must be used. It is prohibited to put down the solar tile on its corner.</p>
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### 2.4 Preparation of the proof prior installation

Before starting to assemble the solar roof, the requirement of the underroof and its flatness must be ensured. Any existing roof covering must be removed before the installation of the solar roof.


	<p><b>IMPORTANT</b></p> <p>The removing of the existing roof is not covered in this document. This step should only be performed by a specialised enterprise.</p>
	<p><b>IMPORTANT</b></p> <p>The requirement to the sub-roof must fulfil the local regulations and is not part of this document.</p>

### 2.5 Accessibility of the solar roof SUNSTYLE®

The SUNSTYLE® solar roof is walkable after proper installation. However, the general safety precautions must be ensured.


In addition, the following regulations must be respected:


- Roof walk-on is only permitted when the tiles are dry
- A load of more than 150 kg/m<sup>2</sup> is not allowed
- No sharp or heavy objects are allowed to be placed on the glass

	<p><b>ATTENTION</b></p> <p>Access to the solar roof is only allowed in its dry state. Not respecting this instruction can result in serious accidents. In any case, the safety regulations of accessing a roof must be respected (safety net, safety rope, aso)</p>
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### 3 Assembly

#### 3.1 Assembly of the solar roof substructure

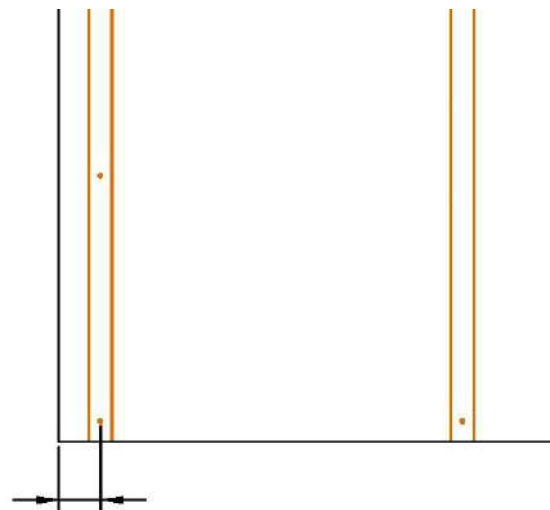
	<p><b>DANGER</b></p> <p>The installation of the substructure and the solar roof must be performed in compliance with the general safety requirements. The security conditions must be fulfilled prior the starting of the construction.</p>
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	<p><b>DANGER</b></p> <p>The installation of the roof access (scaffolding, ladders, etc.) must be built in accordance with the general regulations. This work must be carried out by a specialized enterprise. The incorrect installation of the roof access can lead to accidents.</p>
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##### 3.1.1.1 Positioning of the first wooden slat

The first slat will be positioned on one side of the roof. The distance of the slat to the lateral edge of the roof is given by the technical drawing and it must be aligned perpendicular to the rain gutter.

As soon as the alignment is correct, it has be fixed by the wood screw to the sub structure or directly to the sub roof.



	<p><b>IMPORTANT</b></p> <p>It is important that the angle of the first wooden slat is precisely aligned to the building line of the roof.</p>
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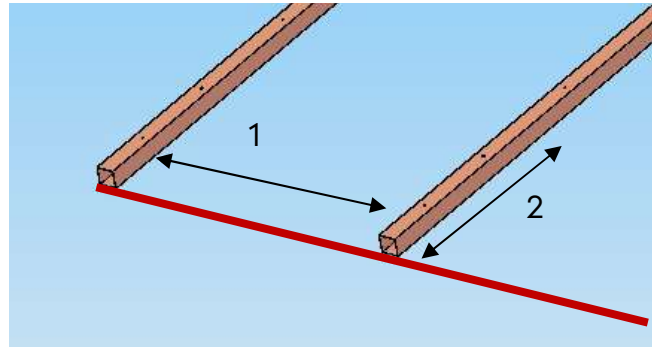
**3.1.1.2 Installation and alignment of the wooden slat**

**Step 1:**

The next slat is placed parallel to the previous one. The type of the slat and the distance between them are given in the implementation plans and must be followed precisely.

**Step 2:**

The slat is aligned horizontally compared to the previous slat and to the building line of the roof and then fixed by the wooden screw.



This procedure is repeated for the whole width of the roof. The correct alternation between the two types of slat must be ensured.

	<p><b>IMPORTANT</b></p> <p>The distance between two slats must respect a tolerance of +/- 1 mm.</p> <p>Additionally, it is important to check in regular intervals the position of the tubes with respect to the starting point in accordance to the technical drawings.</p>
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	<p><b>IMPORTANT</b></p> <p>The types of the slat must be alternated correctly. If the slat are mounted in the wrong order, it must be corrected before the installation of solar tiles.</p>
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## 3.1.2 Attaching the mounting bolts

The mounting bolts are screwed into the M6 screw thread of the wooden slat.  
 This is repeated for every M6 screw thread on all the wooden slats.

The shorter mounting bolts are only used for the half tile of the roof ridge and the eaves.  
 This is shown on the sketch below.

The torque for screwing the mounting bolts should be at least 10 Nm.



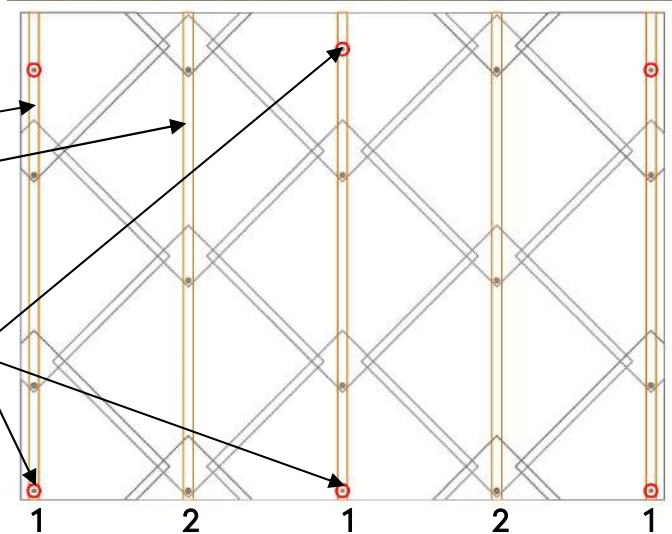
Definition of the position of the short mounting bolts:

Wooden slat typ 1

Wooden slat typ 2

Mounting bolts

Short mounting bolt and a distance socket positioned only on the half tile bottom and top as well as on the big corner dummy



Example of a correct placed wooden sub structure.





## 3.2 Installation of the solar roof

### 3.2.1 Installation of the lower edge dummies

The dummy bottom small will be equipped with a support unit as shown for the solar tile and it will be placed on the mounting bolt on the corresponding wooden slat as indicated on the implementation plan.

This will be repeated for every position.

Subsequently the dummy corner bottom will be placed on both side. The correct type of dummy corner is shown on the technical layout.

Thereafter the half tile bottom will be placed on the slats.

The elements have to be adjusted until the lower edge of the solar roof forms a continuous line.

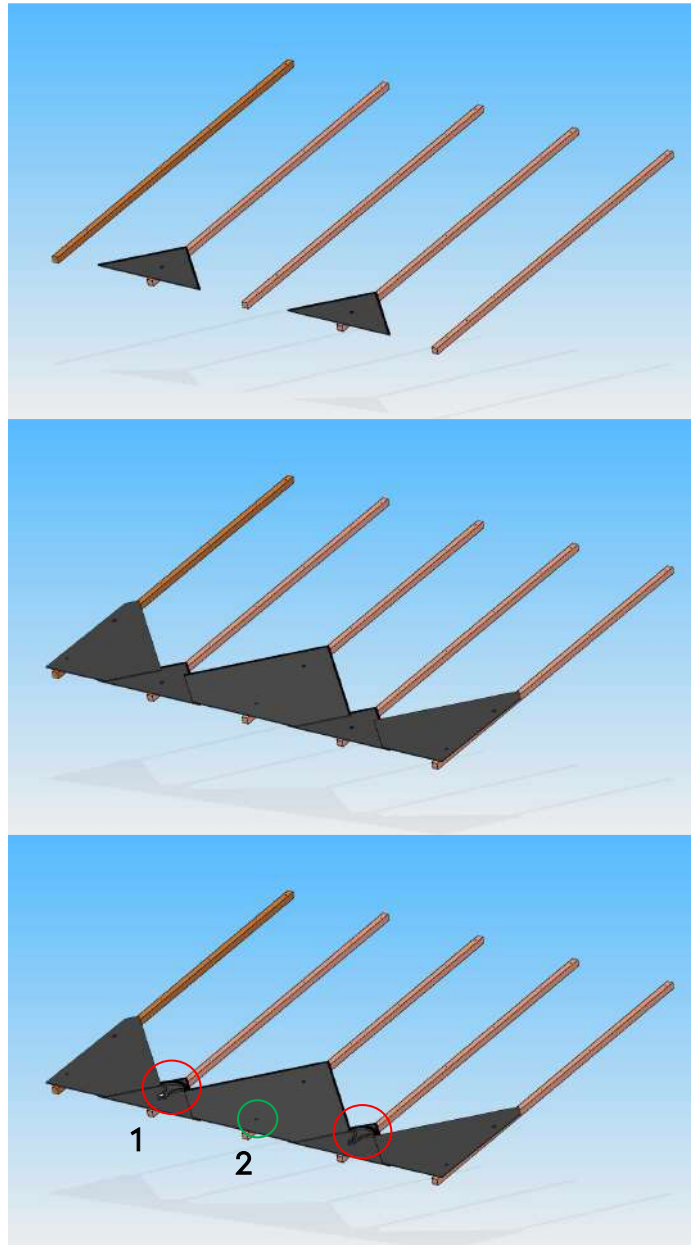
#### Step 1:

A sealing corner will be placed on the “dummy bottom small”

A particular attention must be paid to the correct positioning of the two wings under the neighbour element. The correct procedure of placing the Sealing corner will be described in the next paragraph.

#### Step 2:

The half tile can then be attached by fastening the lower point by a screw and its sealing element.



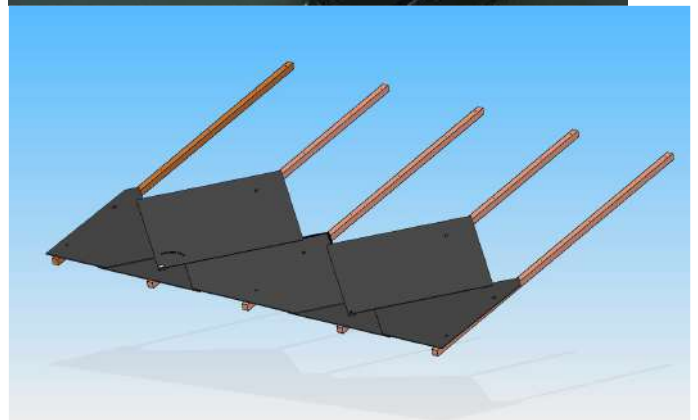
## 3.2.2 Installation of the solar tiles

Before the solar tiles can be installed, the support unit must be correctly inserted into the bigger hole.

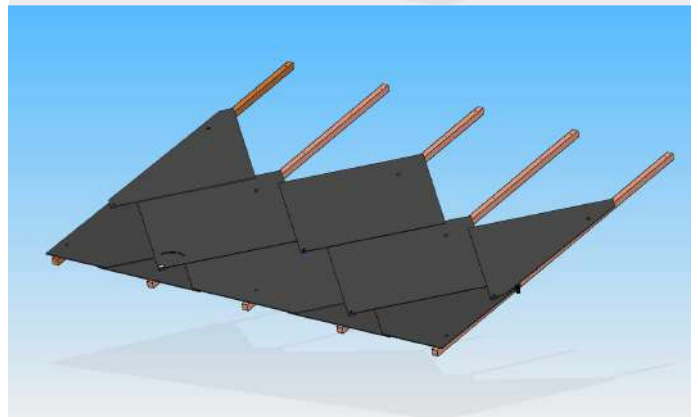
It is important that the bearing surface is on the back side of the solar tile as shown on the image beside.



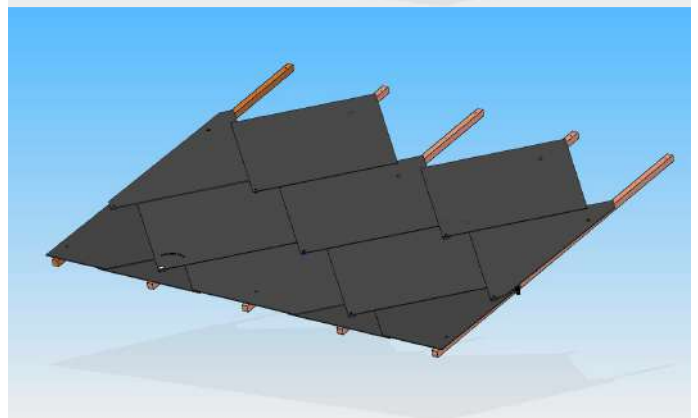
The solar tiles are then placed with the support unit over the mounting bolt. The smaller hole will be centred on the lower mounting bolt and fasten with a screw and its sealing element. For the screwing a torque wrench with a limitation of 4 Nm will be used. As soon as the solar tile is fixed, it is electrically connected with its neighbour tile.



Then a sealing corner has to be placed on the top corner of each installed tile (next paragraph). The lateral part of the roof is terminated with a half tile right / left installed in the same way as a tile with the difference that the sealing corner has to be cut off the long of the edge.



The described procedure has to be repeated up to the top of the roof.



### 3.2.3 Installation of the upper edge elements

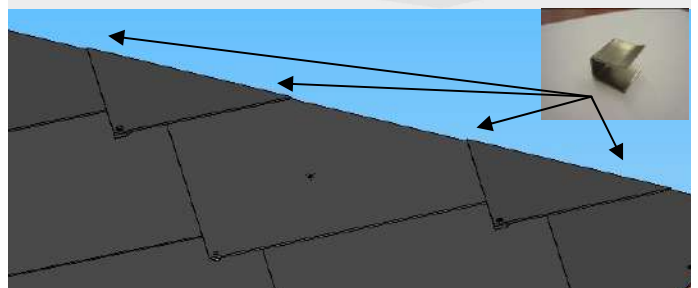
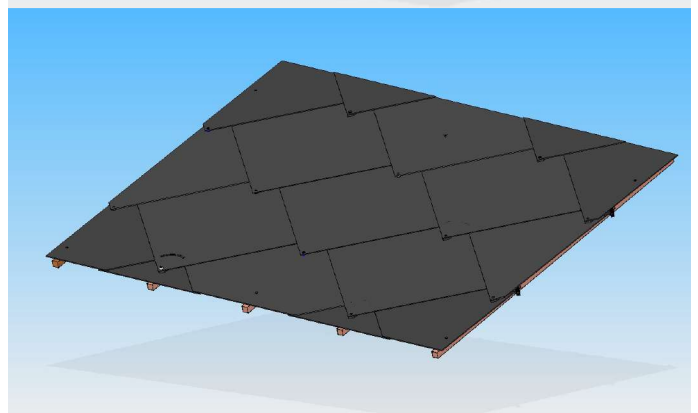
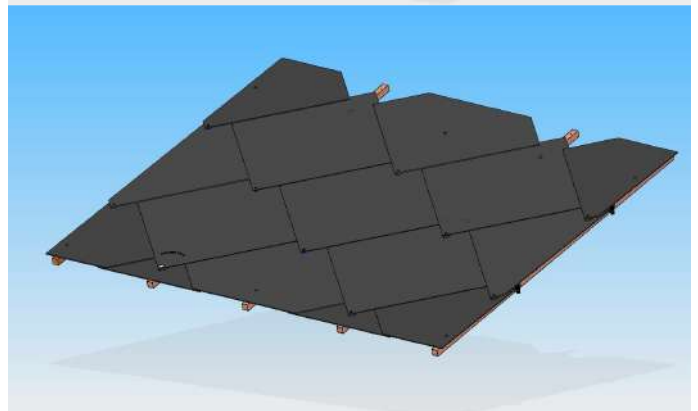
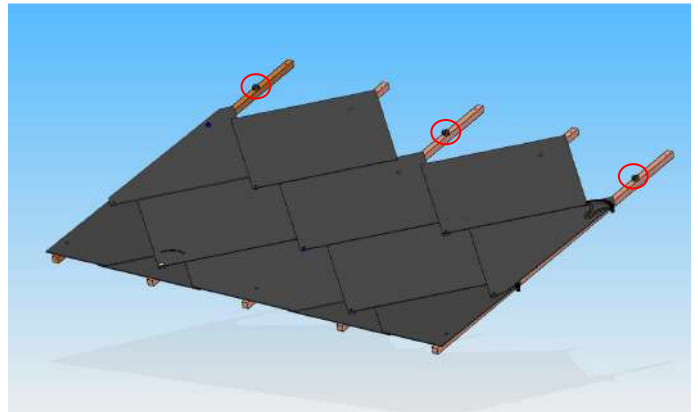
Prior to the installation of the upper edge elements, it must be verified that on the position of the half tile top a short mounting bolt with a support unit is installed (shown by the red circle).

After this verification, the half tile top can be installed and fixed with the screw and its sealing part.

The corresponding corner is shown in the layout drawing and it is installed as a normal big or small dummy.

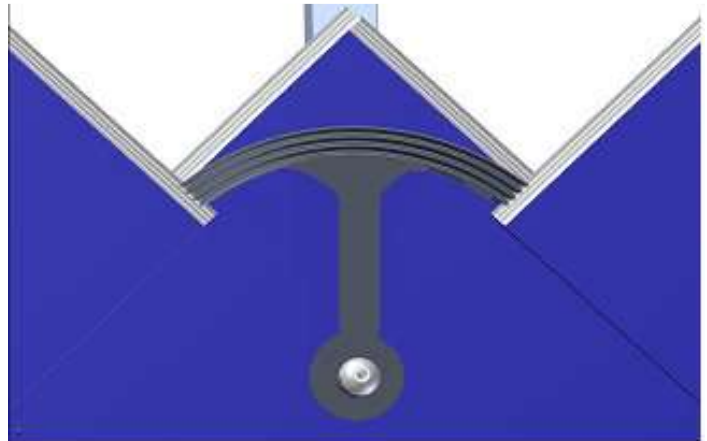
Between the half tile top, a sealing corner will be place and after that the dummies top small can be fixed on the remaining places as a normal element.

After the fixing of the dummy top small, the solar clips have to be attached as shown on the adjacent figure between the upper dummy and underlying half tile.



### 3.3 Positioning of the sealing corner

The sealing corner is positioned with its aperture over the support unit and it must be pressed firmly down to the surface of the underlying tile. The sealing corner must be positioned with the top as shown in the adjacent figure. Each wing of the Sealing corner is then inserted under the adjacent solar tiles until it touches the sealing profile of the bottom tile.



#### IMPORTANT

It is important that the two wings of the Sealing corner are placed correctly. They must lie under the lateral tiles and touch the profile of the base tile, so that the sealing is guaranteed.

### 3.4 Electrical connection of the solar tiles



#### Attention voltage

The solar tiles can be under voltage. When connecting the solar tiles to each other, never touch the metallic parts of the plug connector under any circumstances.

The end of the cable will be freed from its transportation position above the tile and this is repeated from the second solar tile. Then the male connector is plugged into the female connector of the neighbour tile in the direction of the string. You have to refer to the electrical layout for the right connection.

The mechanical locking of the cable is achieved when the two plugs are pushed until the end point. In this case click is audible.

Then the connector is placed beside the slate.



## 4 Contact

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