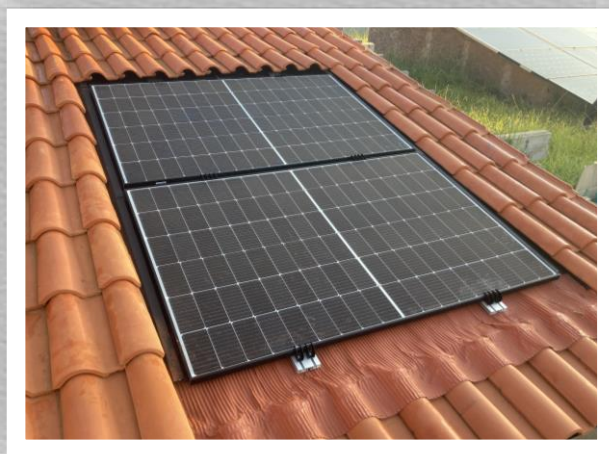




GSE **IN-ROOF SYSTEM**™

LANDSCAPE EVOLUTION Installation Manual – **50mm Battens**

V 1.0



MADE IN FRANCE

www.gseintegration.com

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**Mandatory installation step in Germany and in the Netherlands*

1. System presentation

1.1 GSE IN-ROOF SYSTEM integration system

GSE IN-ROOF SYSTEM allows photovoltaic modules to be installed **on all types of roof coverings (curved tiles, interlocking tiles, flat tiles, slates)**, on new buildings or retrofit buildings.

It can be installed in **Portrait or Landscape format** using a wooden support batten specific to each format, on both small installations and large roofs.

GSE IN-ROOF SYSTEM is installed on timber frames and fixed to battens adapted to the climatic conditions and the structure of the frame. It can be mounted on slopes between **12° and 50°**.

Complementary manuals available:

- **GSE INTEGRATION IN-ROOF SYSTEM** – Portrait
- **GSE SUN ROOF** – South Tile version (TS v.)
- **GSE EVO SUN ROOF** – South Tile version (TS v.)
- **GSE SUN ROOF** – Slate Version (A v.)
- **GSE EVO SUN ROOF** – Slate Version (A v.)
- **GSE SUN ROOF** – North Tile Version (TN v.)
- **GSE EVO SUN ROOF** – North Tile Version (TN v.)
- **VELUX Solar Integrator ODL** – GSE IN-ROOF SYSTEM Portrait Evolution

1.2 Kit contents

Mounting frames



GSE IN-ROOF SYSTEM
Landscape Evolution frame

Mounting clamps



Self-drilling
wood screws
6.5 x 60*



End clamp
Landscape +
EPDM wedge



Middle clamp
Landscape +
EPDM wedge



Bottom Rail



Screw + bolt
rail

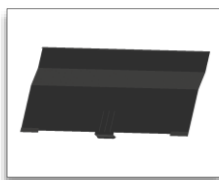
Flashings



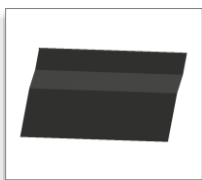
Fixing
hook**



Lateral flashing
Landscape



Top flashing
central



Junction piece



Flashing left
corner

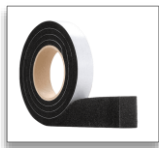


Flashing right
corner

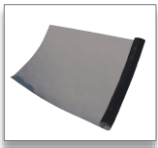
Sealing



Flexalu 500 mm
or eq.



Pre-compressed
joint



HPV roof
underlay

* A 60 mm screw is adapted to an installation with a vertical counter batten and GSE In-Roof horizontal support battens. In case of a different installation principle, it is the responsibility of the installer to use a screw with adapted length.

** Nails/screws for fixing the flashing hooks are not sourced by GSE Integration.

1.3 Tools required for installation

Screwdriver



10 mm Wood and metal drill bits



Hex bits – 8 mm & 10 mm



Adjustable tightening torque mandatory

Shears



Hammer



Tape measure



Chalk line



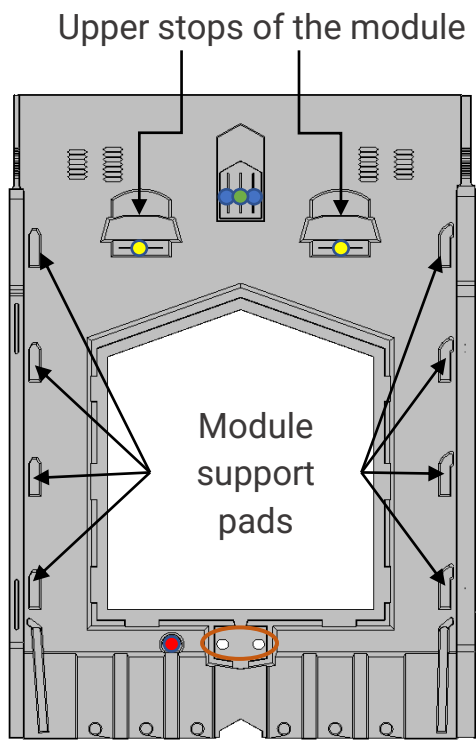
Marking accessories



White marker, pencil, etc.

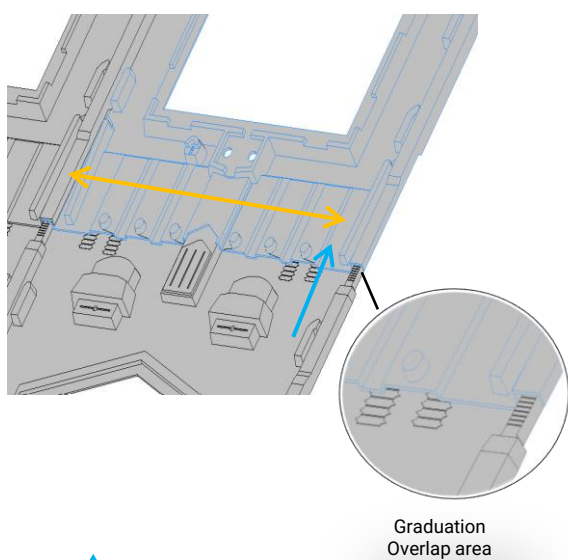
1.4 GSE IN-ROOF SYSTEM Landscape Evolution frame

Two half-frames placed side by side are required to install a PV module.



- Frame fixing
- Frame fixing (pre-drilled to 10 mm)
- Fixing 4 clamps per module (pre-drilled to 10 mm)
- Fixing 8 clamps per module (pre-drilled to 10 mm)
- Fixing rail base of array

Landscape Evolution frame references – module size

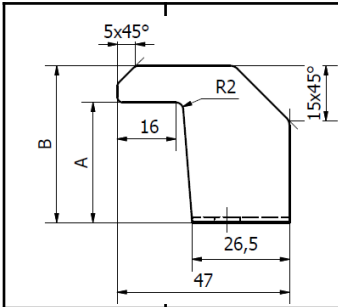


↑ Height tolerance
↔ Width tolerance

Réf.	PV module dimensions			
	Height		Width	
	Min. suggested	Max.	Min. suggested	Max.
DPa_1690_1090	1090	1150	1686	1690
DPa_1725_1090	1090	1150	1721	1725
DPa_1755_1090	1090	1150	1751	1755
DPa_1760_1090	1090	1150	1756	1760
DPa_1765_1090	1090	1150	1761	1765
DPa_1800_1090	1090	1150	1796	1800
DPa_1810_1090	1090	1150	1806	1810
DPa_1815_1090	1090	1150	1811	1815
DPa_1990_1090	1090	1150	1986	1990

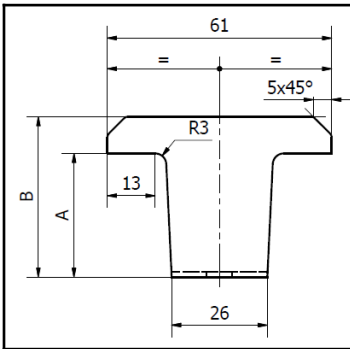
1.5 Clamps – Landscape Evolution

End clamps Landscape



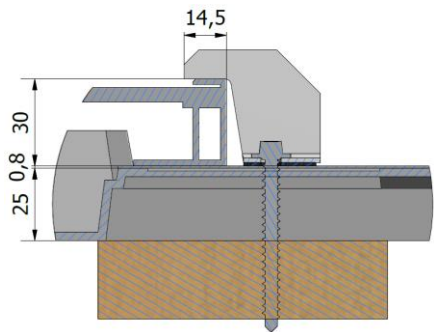
Description	A (mm)	B (mm)
End clamp H27	28.8	38.8
End clamp H31	32.8	42.8

Middle clamps Landscape



Description	A (mm)	B (mm)
Middle clamp H27	29.6	39.6
Middle clamp H31	33.6	43.6

Correlation with PV module thickness



Module thickness (mm)	
Clamp size	GSE IN-ROOF SYSTEM Landscape Evolution
H27	30-32 mm
H31	33-35 mm

2. Site preparation

The installer must proceed to a measurement work beforehand, in order to guarantee the durability and performance of the PV array installed. Climatic conditions of the project (ie. wind and snow¹) and PV array layout should be considered according to current regulations (Eurocodes and BS 5534).

This data will help to **check if the system is suitable for the project conditions**. The thickness of the support battens must be adapted to the roof battens to ensure the junction with the roof covering is watertight

2.1 Climatic conditions

Maps of wind zones in the UK defined by the Eurocodes 1

Climatic load according to Eurocode 1 and BS 5534 :

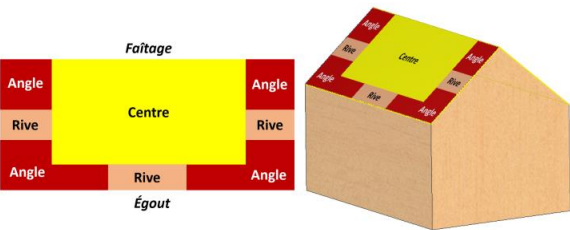


Geographical wind zone	Wind speed (m/s)	Design Wind Pressure (kN/m²)
1	22	0,820
2	24	0,975
3	26	1,150
4	28	1,330
5	30	1,600

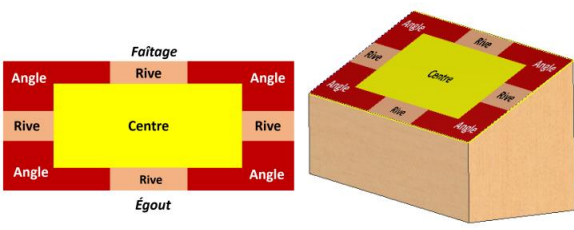
¹The seismic resistance of the GSE In-Roof System is validated on the whole European territory. This criterion is not to be taken into account.

2.2 Layout of the photovoltaic array

The position of the PV array on the roof affects the wind load value if it is in the centre, at the edge or at a corner. The most unfavourable location should be considered.



Two-sided roof



Single-sided roof

2.3 Choice of number of clamps

To calculate the wind load on the PV array, you need to priorly know the following parameters:

- Location of the project
- Altitude
- Type of terrain
- Distance from the shoreline
- Ridge height
- Roof pitch
- Roof zone (Centre, Edge, Corner)

Ideally, climatic load (and especially wind load) should be calculated for each project, but you can refer to the tables below, if all conditions matches with those of the project.

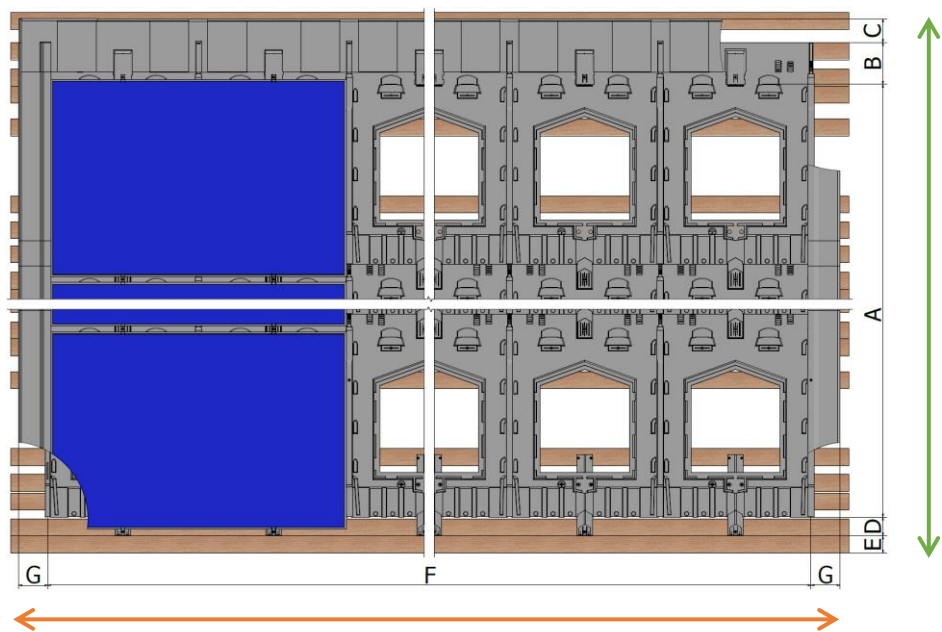
Fixed Conditions:

- Terrain category: **Country terrain** (including Town Terrain)
- Distance from the shoreline: **10 km**
- Battens dimension: **25 x 50mm**

GSE In-Roof Wind Uplift Resistance (MCS012 Testing in process) for 4 & 8 clamps

2.3 Calculating the size of the PV array

The dimensions of the PV array can be calculated using the GSE IN-ROOF SYSTEM Landscape frame reference (refer to sections 1.4, 1.5 and 1.6 to determine the frame compatible with the module):



Array height (mm) =

Height ref. x no. lines + (graduations + 35) x (no. lines -1) + 243 + 140 + 110 + E*

A + B + C + D + E

Array width (mm) =

((Width ref. + 35.5) x no. columns) + (2 x 170)

F + 2 x G

Plaques GSE - LANDSCAPE EVOLUTION								
Height Ref	1090	1090	1090	1090	1090	1090	1090	1090
Width Ref	1690	1725	1755	1765	1800	1810	1815	1990

*If installed in the middle of the roof, add a plank to compensate for the curvature of the tile (see 3.4)

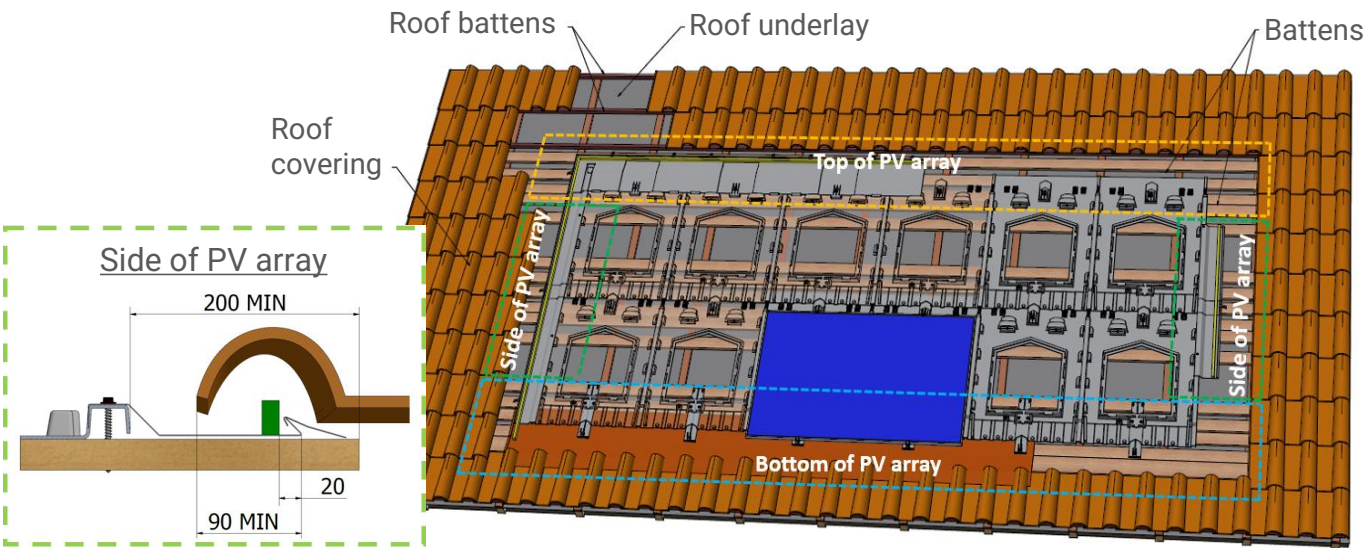
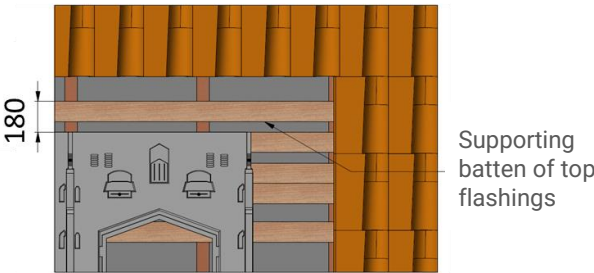
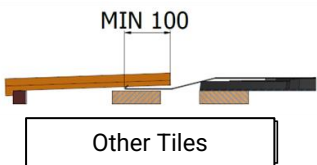
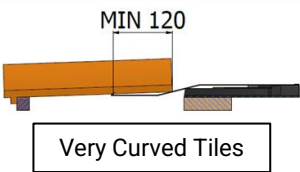
3. Installation

3.1 Presentation of the GSE IN-ROOF SYSTEM Landscape Evolution

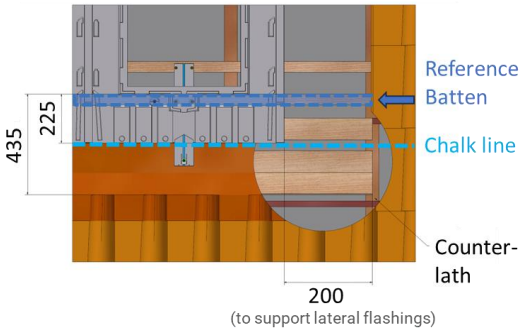
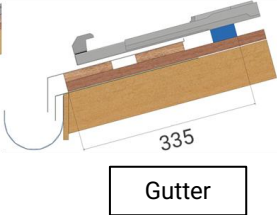
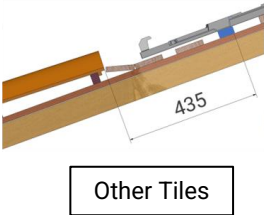
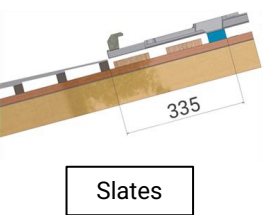
OVERALL PRESENTATION OF THE INSTALLATION STEPS OF THE KIT:

- 1/ Positioning of the support battens
- 2/ Installing the Landscape frames
- 3/ Installing the rails at the base of array
- 4/ Installing the flashings
- 5/ Installing PV modules and fixing brackets
- 6/ Installing the cover at base of array, at top of array and on sides

Top of PV array

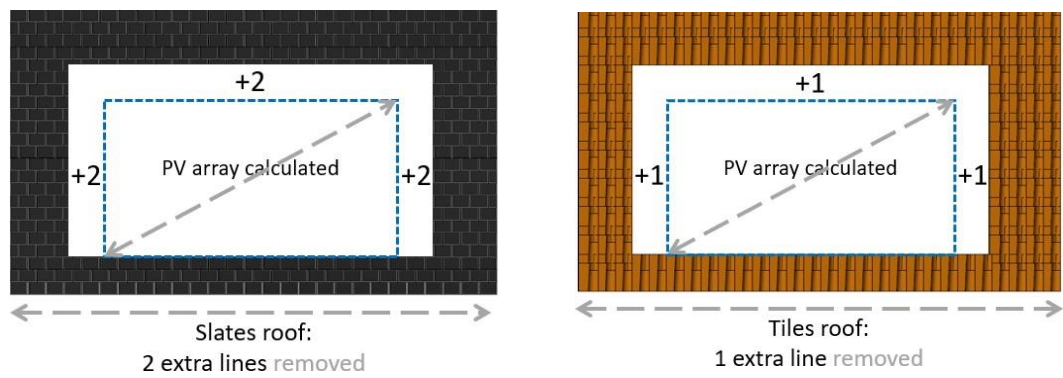


Bottom of PV array



3.2 Positioning the support battens

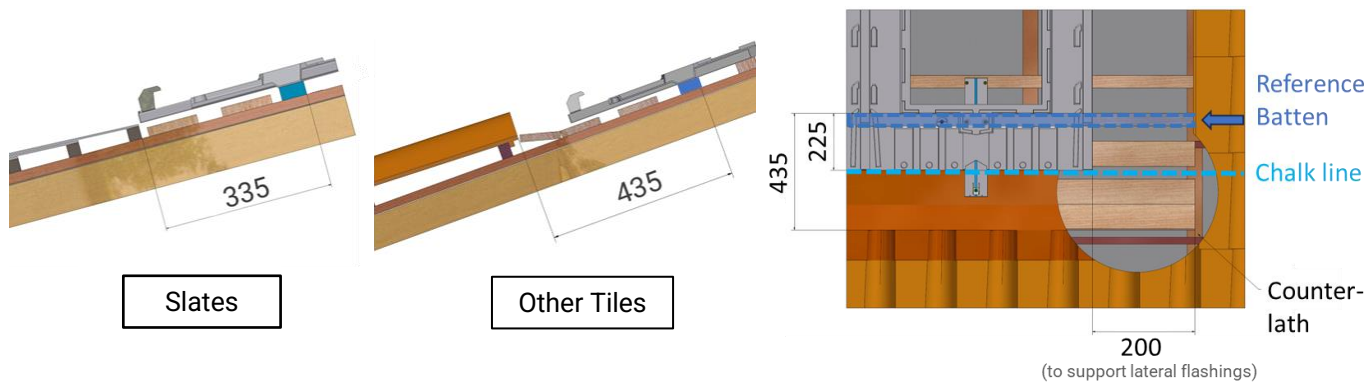
If the roof is covered, uncover the roof to the dimensions of the array calculated above by removing 1 extra row of tiles, and 2 rows for slate or flat tile roofing, on the sides and top:



CAUTION : before any work is carried out, the installation engineer must ensure that the frame structure is flat and that a roof underlay is in place, or if not, that one has been installed in accordance with the conditions described in DTU (code of practice) 40.29. This screen must be CSTB certified or QB certified.

If **not**, check that the dimensions of the array calculated above are compatible with the dimensions of the roof. Use the dimensions of the PV array to centre it horizontally and vertically on the roof, particularly if it is installed in the middle of the roof.

- 1 First determine the number of brackets and the **appropriate batten section** (see section 2).
- 2 **A/** In the case of **mid-roof installation** position the reference batten (in blue below) of the first line of half-frames in relation to the lower line of tiles/slates, according to the diagrams below, for all installations on roofs with a slope greater than 16°:

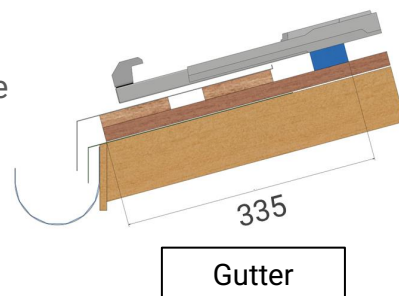


For installation on roofs with a slope of less than 16°, please refer to the table on p.16 to define the required spacing between the reference batten and the bottom row of tiles.



Batten fixing: We recommend using 5 x 80 mm self-drilling wood screws.

B/ In the case of **gutter installation** position the reference batten (in blue below) of the first line of half-frames in relation to the gutter according to the diagram below:



- 3** Arrange the other support battens for the Landscape panels in relation to the first reference batten installed:

- 1/ Battens for fixing brackets and rails at the base of the PV array
- 2/ Battens for frame fixing points
- 3/ Battens to support the frames (in the centre and at the overlaps of the frames)¹
- 4/ Battens for flat support of the **18 mm thick** bottom sealing strip.²
- 5/ Battens to support the top flashings

Follow the battening plan shown on the next page.

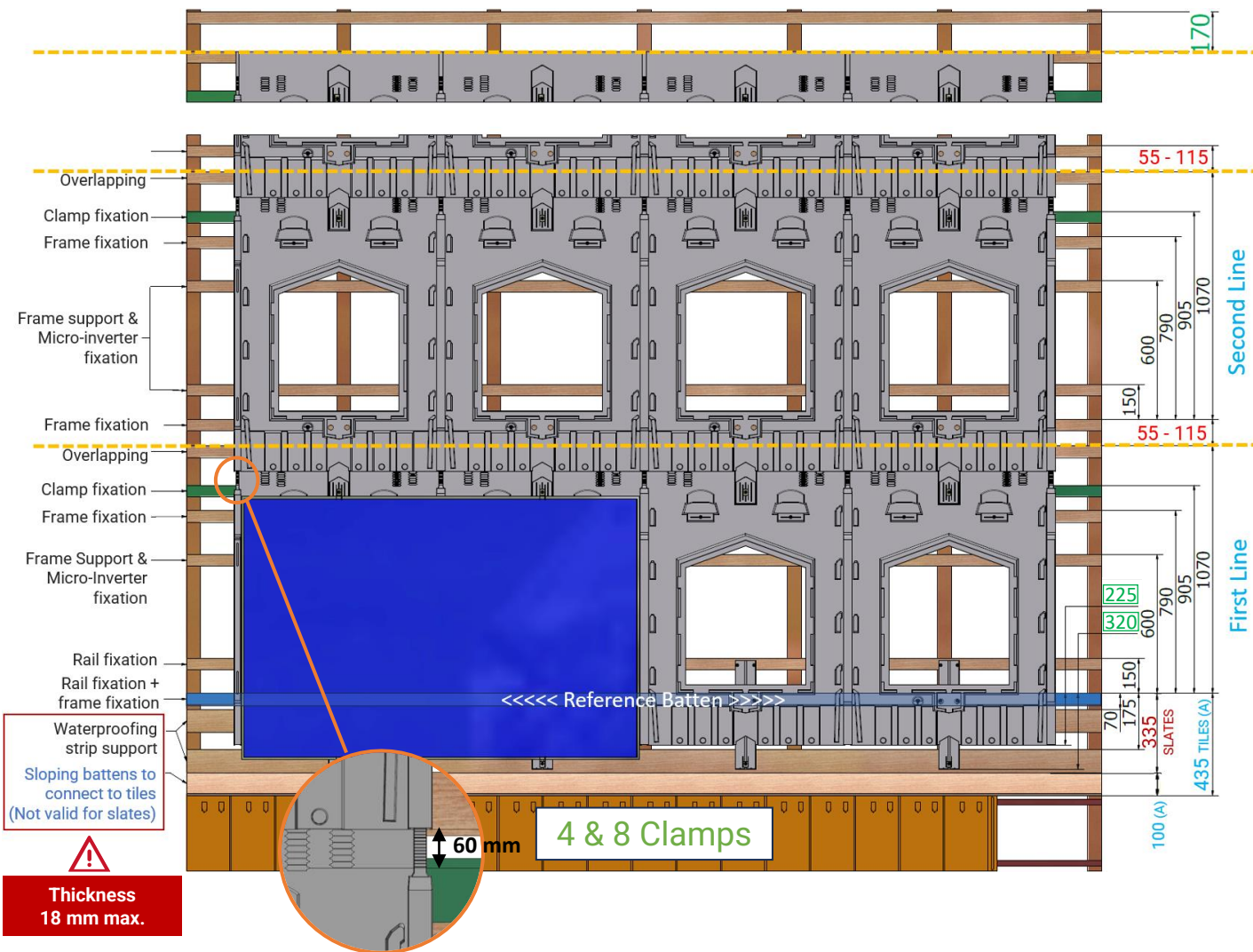


1 - Since these elements play no role in the mechanical system resistance, the width of the timber could be different from that calculated for the brackets. **Only the thickness must be the same.**



2 - The thickness of the battens supporting the bottom sealing strip must be max 18 mm to avoid creating any excess thickness (via the sealing strip) below the lever arm. See diagram on page 17.

Batten plan for Landscape Evolution frames reference height 1090 mm
with 4 and 8 brackets – 25x50MM BATTENS



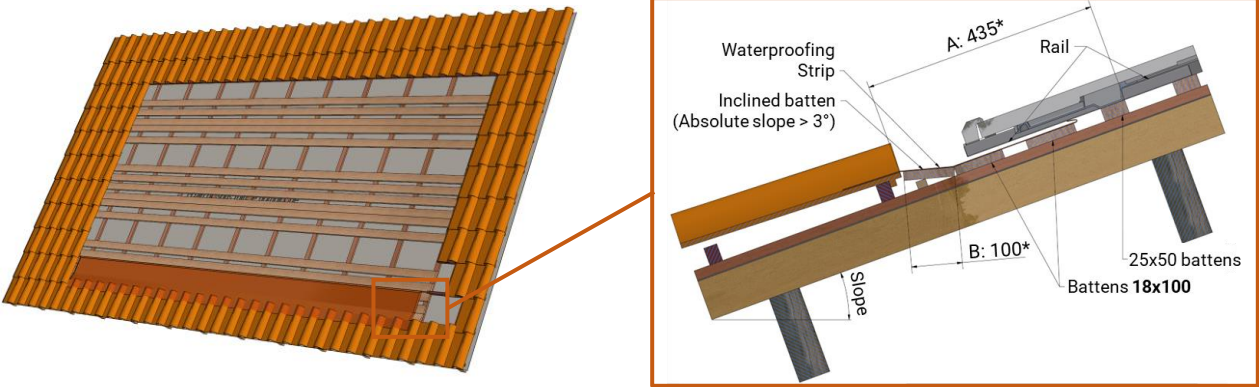
Define the **line spacing marked in red** in the plan above (between **55 and 115 mm**) in relation to the length of the PV module installed (and thus the adjustment needed between the half-frames).
Please refer to the adjacent table:

Panel width	First row	Additional row	Half-frame adjustment
1090	435 (or 335) + 1070	55 + 1070	0
1095	435 (or 335) + 1070	60 + 1070	5
1100	435 (or 335) + 1070	65 + 1070	10
1105	435 (or 335) + 1070	70 + 1070	15
1110	435 (or 335) + 1070	75 + 1070	20
1115	435 (or 335) + 1070	80 + 1070	25
1120	435 (or 335) + 1070	85 + 1070	30
1125	435 (or 335) + 1070	90 + 1070	35
1130	435 (or 335) + 1070	95 + 1070	40
1135	435 (or 335) + 1070	100 + 1070	45
1140	435 (or 335) + 1070	105 + 1070	50
1145	435 (or 335) + 1070	110 + 1070	55
1150	435 (or 335) + 1070	115 + 1070	60

3.3 Installing the bottom sealing strip

3.3.1 Installing the sloping batten (except on slate roofs or gutter installation)

The sealing strip is positioned so that it joins the roof covering at the base (PV array at centre of the roof). For roofs with mechanical tiles, flat tiles or steep curves, a “chamfered” type batten is laid to compensate for the curvature and thickness of the tile and provide a flat support for the sealing strip.

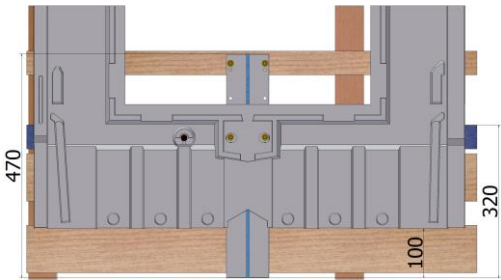


The width of the inclined batten is determined by the slope of the roof and by definition determines the distance required between the array battens and the row of tiles at the base of the PV array. **It must be maximum 20mm thick.**

Roof pitch		Min. width of inclined batten	Min. distance reference batten/tiles	Min. sealing strip width
(°)	(%)	SIDE B (mm)	SIDE A (mm)	(mm)
12 to 19	21 to 35	200	535	590
20 to 23	36 to 43	130	465	520
24 to 50	44 to 50	100	435	500

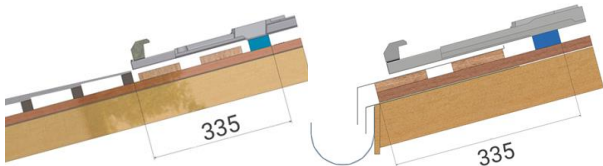


CAUTION: The 10 cm overhang of the rail at the base of the array is taken into account in the calculations in the table above. Make sure you take its dimensions into account when installing the inclined batten.

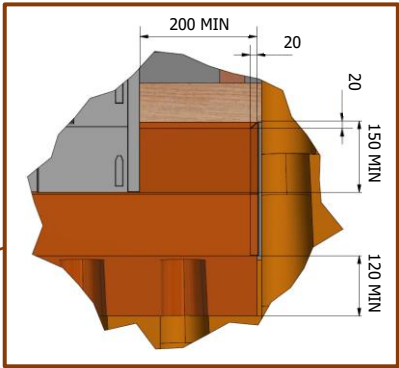
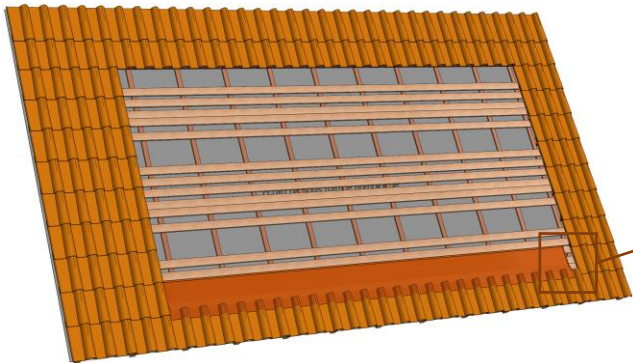


If steeply curved tiles are installed, the inclined batten is laid flush with the current tiles. In the case of tiles with very steep curves, it may be advisable to chamfer the top of the tile curve.

There is no need for a sloping batten for slate or gutter installations.



3.3.2 Installing the sealing strip



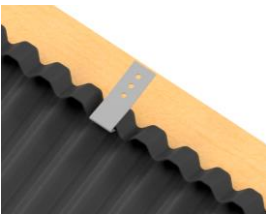
CAUTION:

- A sealing strip at least 500 mm wide must be installed.
- The inclined batten and the battens supporting the sealing strip must be no more than 20 mm thick.

1 Cut the sealing strip to the correct length of the PV array, adding 20 cm on either side of the array (see diagram above). Make a fold of **approximately 20 mm** at the top and sides to prevent water from rising.



2 Remove the plastic film from the small butyl strip and stick it to the support battens. **If the battens are wet, do not hesitate to fold it in place at the top using fixing hooks.**



3 Remove the plastic film from the wide butyl strip and stick it to the tiles. Be sure to press it down firmly to fit the shape of the tile.



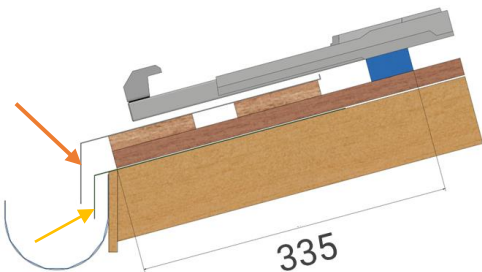
Make sure you lay the sealing strip in the right place

TOP: The small butyl strip of 2 cm is installed under the frames.

BOTTOM: The large butyl strip of 10 cm is laid over the tiles.



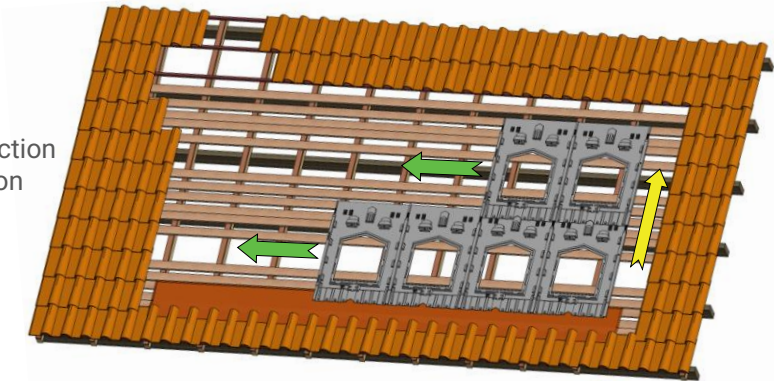
When the PV installation is directly installed at the gutter, we recommend to connect the array to the gutter with a **drip flashing** for the photovoltaic array, and a **drip flashing** for the roof underlay.



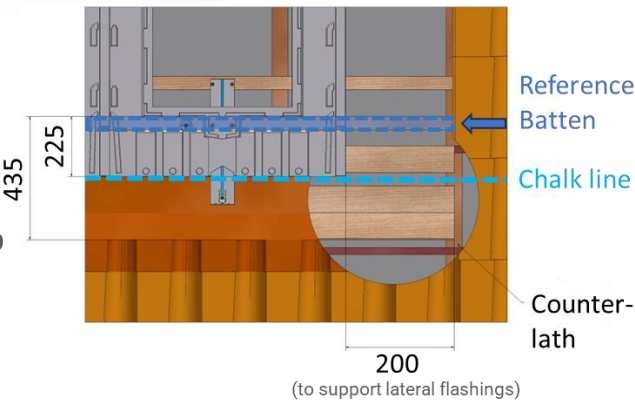
3.4 Installing the Landscape frames

Landscape frames are installed line by line, from right to left and from bottom to top.

- ➡ Horizontal mounting direction
- ➡ Vertical mounting direction

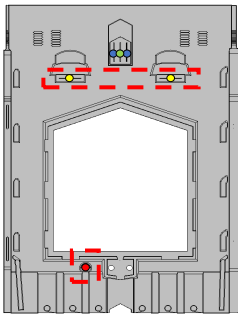


- 1 Position the first frame at the bottom right of the PV array. Position it **vertically in relation to the reference batten** (the base of the frame must be 250 mm from the top of the reference batten). Position it **horizontally 20 cm from the edge of the batten** and/or from the **minimum 9 cm overlap of the tiles on the flashing** (which will be laid on the corrugation of the half-frame in the next step). Make sure that it is straight.



-  You can mark the bottom of the first row with a chalk line, 250 mm from the reference batten. To do this, make sure the sealing strip is stable and fixed.

- 2 Fix the first frame at its three fixing points: its central fixing point and the two other **pre-drilled** fixing points.

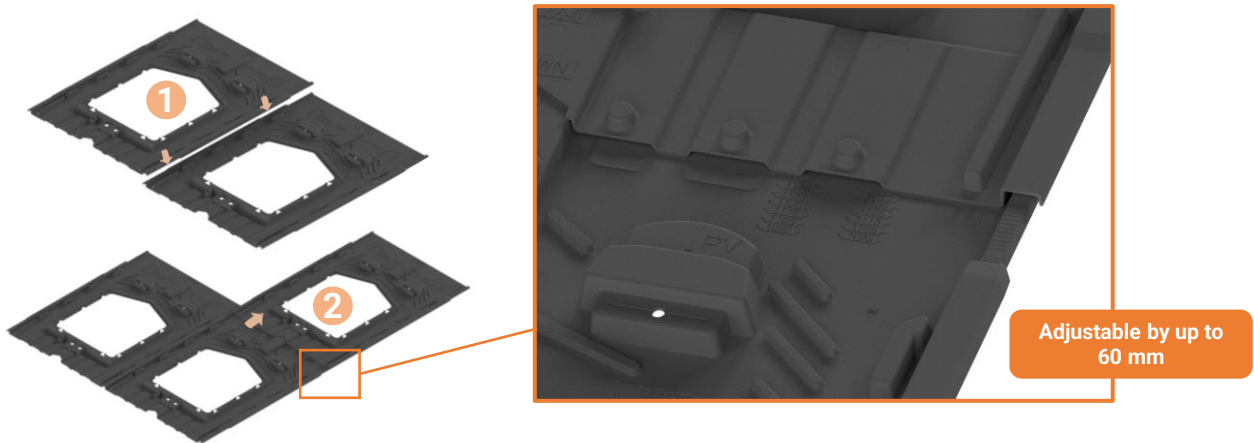


Be careful not to press the screws too far into the frame.

- 3 Assemble the other frames in the first row of the PV array horizontally using the internal lug on the landscape frames. Fix them at their 3 fixing points.



- 4 Assemble the half-frames of the upper lines at the correct graduation according to the width of the PV module to be installed. Fix them at their 3 fixing points.

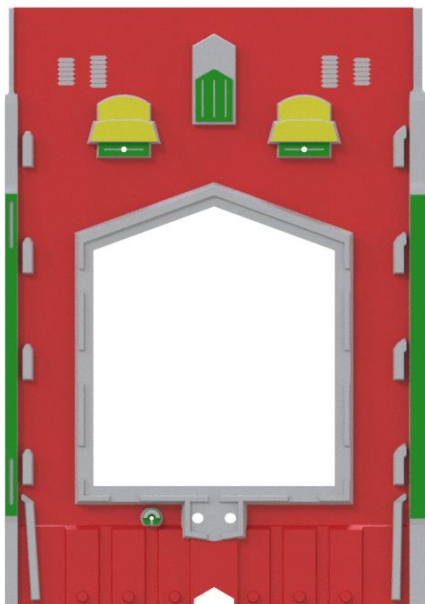


The screw length can be reduced to 45 mm* at the frame fixing points if, and only if, the substructure does not include counter battens. Otherwise, you must use the standard GSE integration screw length of 60 mm with the GSE IN-ROOF SYSTEM.



Reminder: It is forbidden to drill in the drainage areas and on the high points of the half-frame, as this could damage the integrity of the photovoltaic system and its sealing.

Refer to the drawings on p.6 for the location of the frame fixing points.



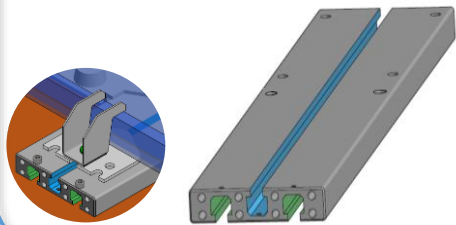
-  Drainage area
Drilling prohibited
-  Highest zones
Drilling prohibited
-  Fixing zones
Drilling permitted

3.5 Installing the rails at the base of the PV array

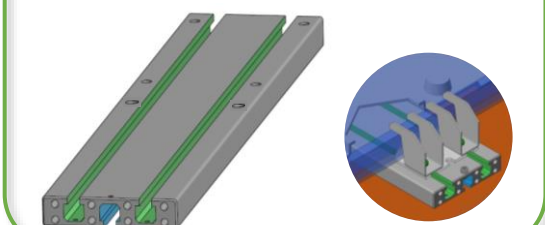
The rails are reversible and hold the brackets at the base of the array without piercing the sealing strip. They are essential for the wind resistance of PV modules located at the base of the array.

Reversible rail:

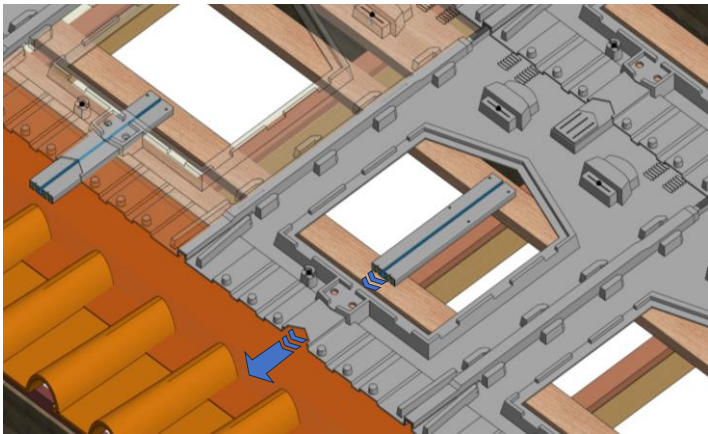
Position 4 clamps



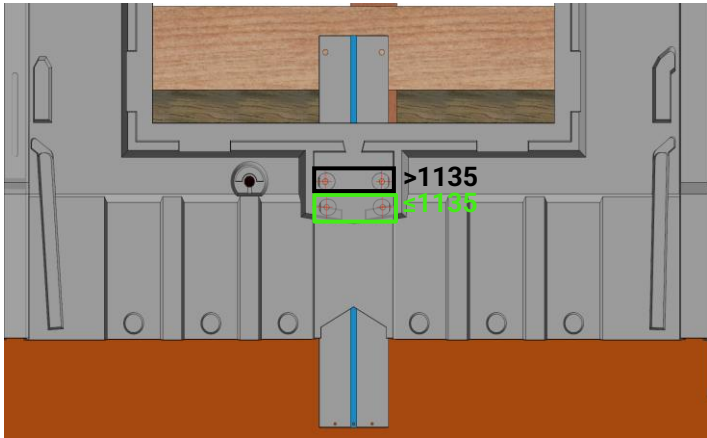
Position 8 clamps



- 1 For the row of half-frames at the base of the array, slide the rails from inside the frame (entry in the central hole) to the outside (exit on the sealing strip side) in the guides located at the bottom of the half-frames.

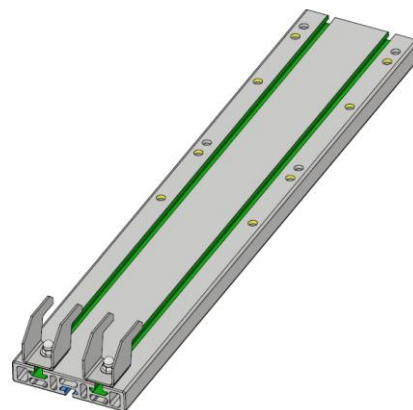
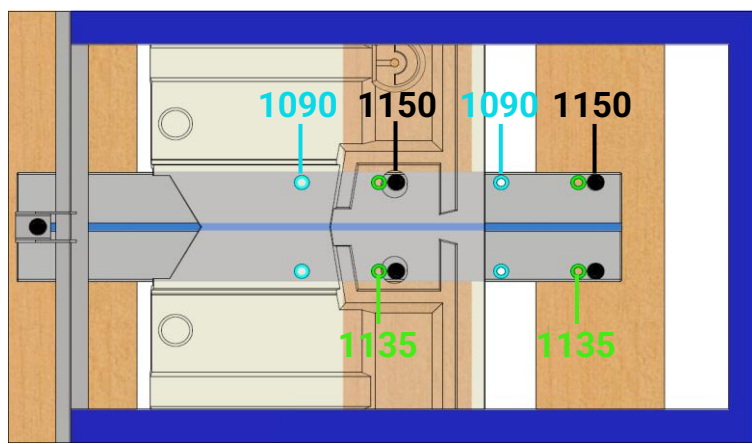


- 2 Align the fastening points of the bottom rail with the screw holes in the half-frame guide, according to the right PV module width installed (see next page)

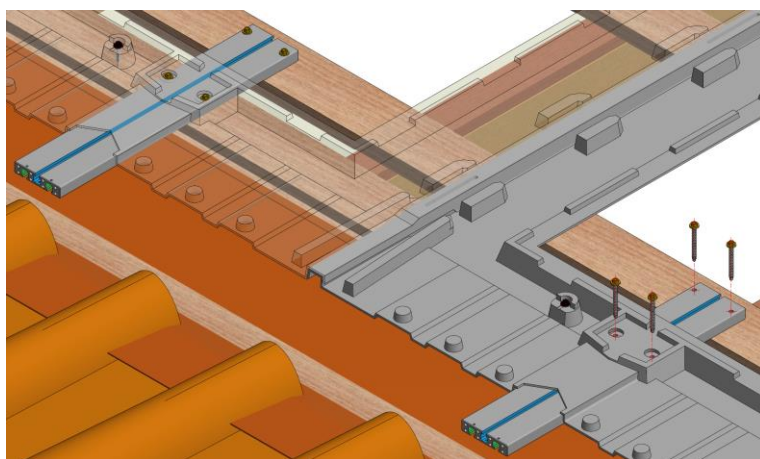


For a PV Module width:

- **Between 1150mm and 1136mm**, align the **black holes of the rail** below with the guide holes of the frame.
- **Between 1135mm and 1091mm**, align the **green holes of the rail** below with the guide holes of the frame.
- **1090mm**, align the **blue holes of the rail** below with the guide holes of the frame.

**3 Fix the rail at the 4 fixing points.**

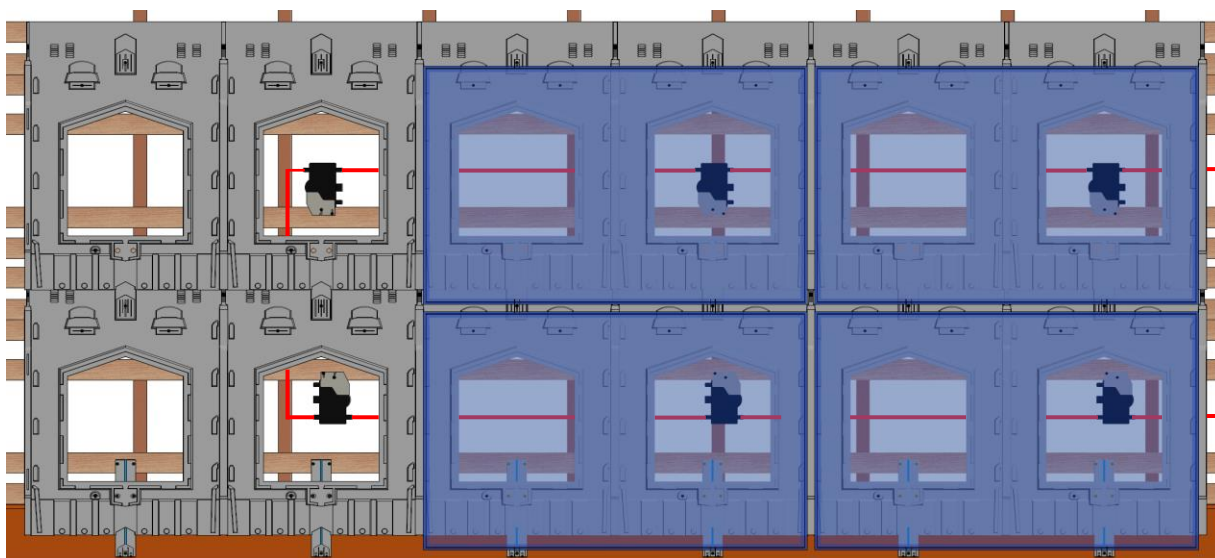
CAUTION: Do not pinch the half-frame when fixing the rail at its low points. The screws must pass through the pre-drilled holes in the half-frame.



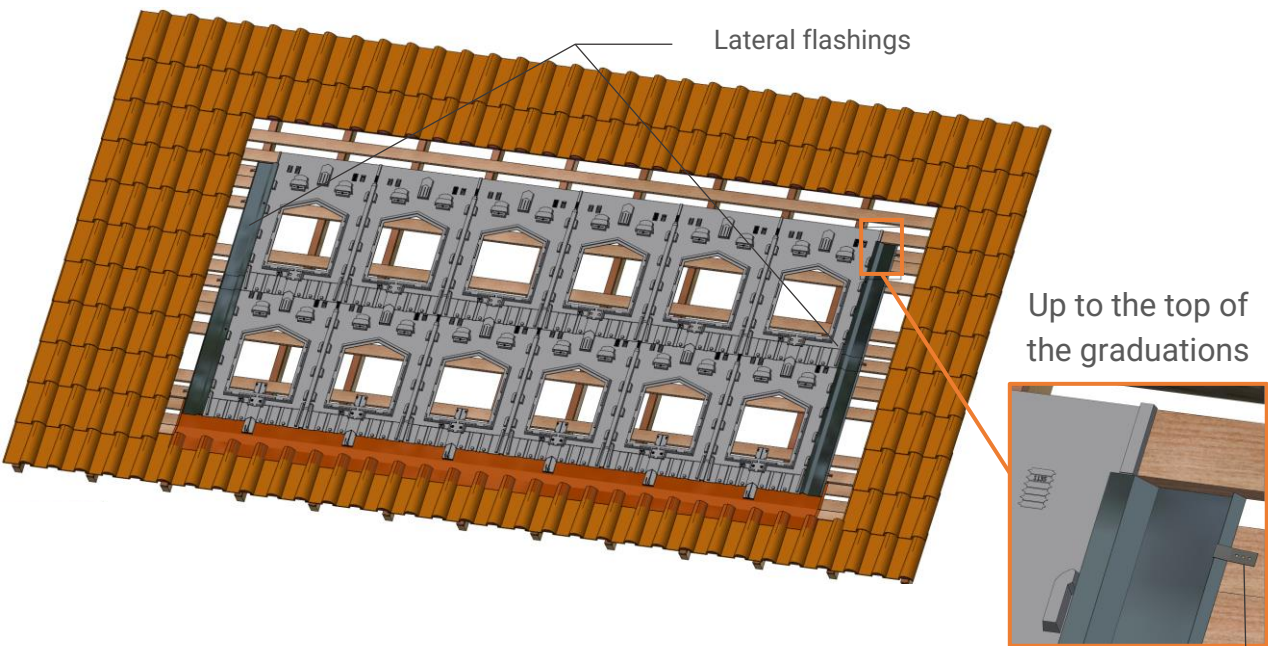
3.6 Installing microinverters and cabling

- 1 If using micro-inverters, attach them to a batten in the central hole of the Landscape Evolution panel.
- 2 Interconnect the microinverters using connection cables that must pass beneath the half-frames.

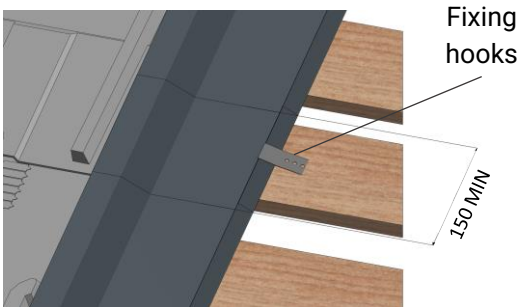
Ensure that the installation complies with the manufacturer's recommendations.

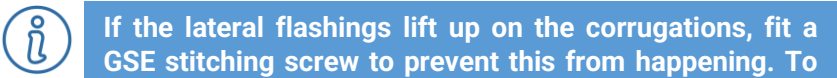


3.7 Installing the Landscape lateral flashings



- 1 Position the lateral flashings at the right and left ends of the PV array. Position them from bottom to top, making sure there is a minimum overlap of **150 mm** between 2 flashings.
- 2 Fix the flashings using 2 fixing hooks.

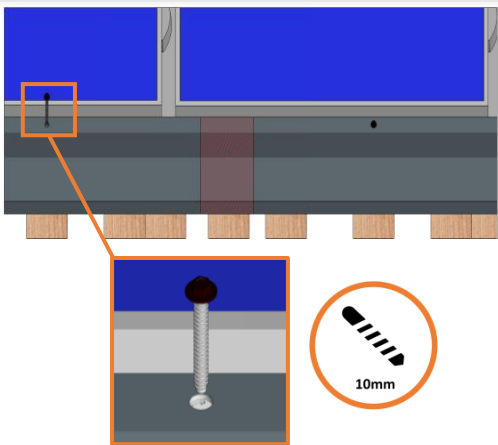


 If the lateral flashings lift up on the corrugations, fit a GSE stitching screw to prevent this from happening. To do so, pre-drill the screw location with a 10 mm drill bit.



CAUTION:

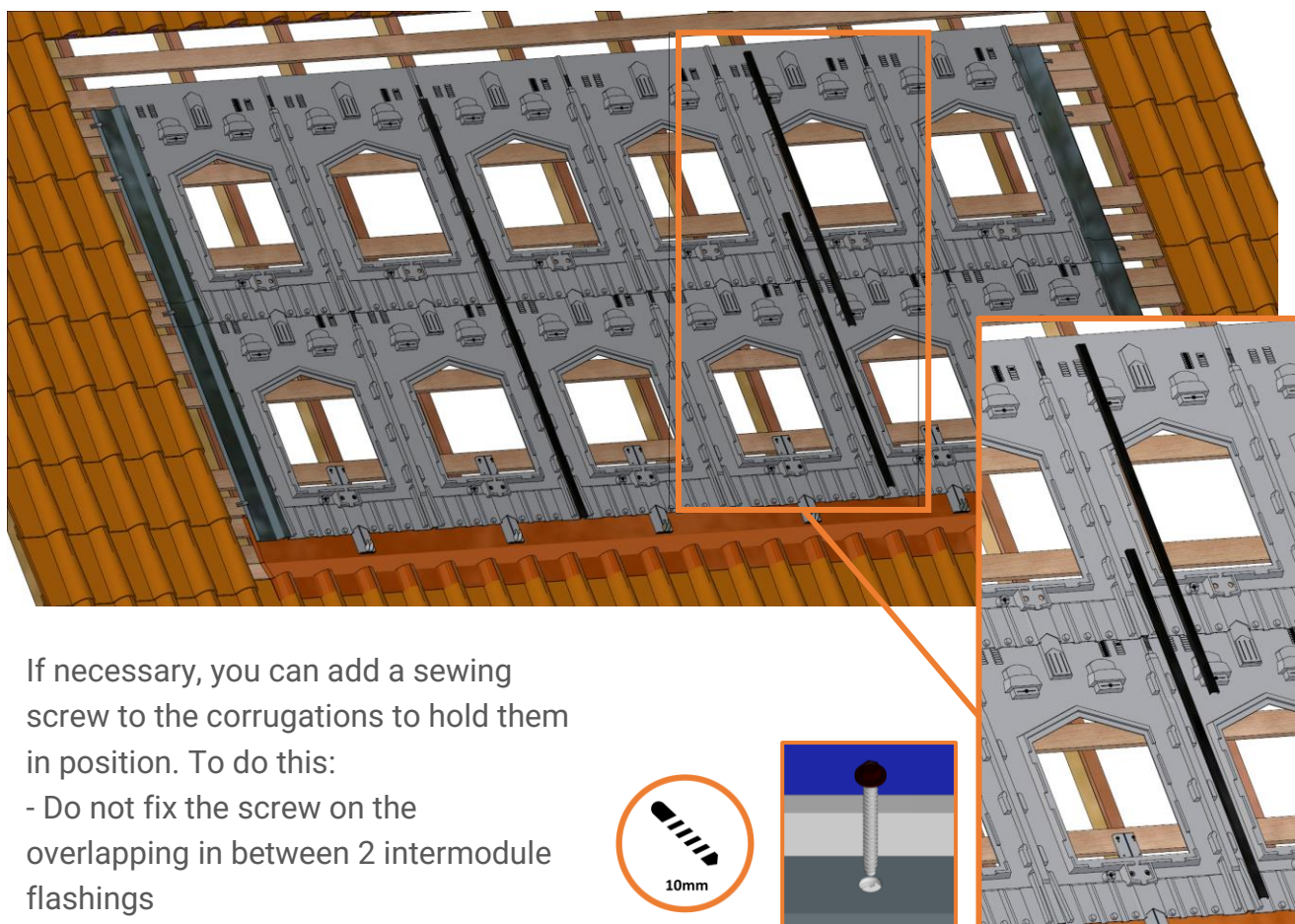
- Be sure to pre-drill the location of the stitching screw using a 10 mm drill bit.
- Do not use stitching screws on the overlap of 2 side flashings



3.8 OPTION* – Installing the intermodule flashings

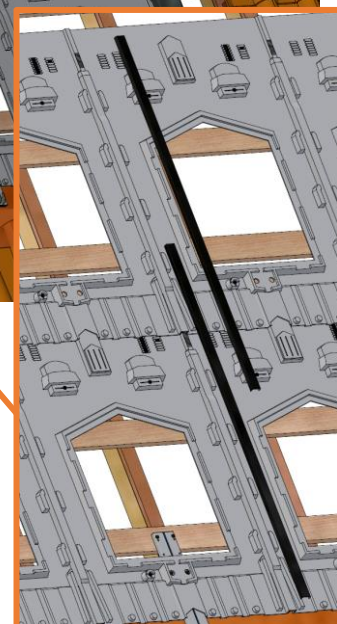
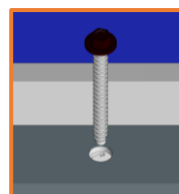
**Mandatory installation step in Germany and the Netherlands*

- 1 Place the **inter-column flashings** from bottom to top on the frames' corrugations, so that the overlap between 2 flashings is of minimum 150mm.



If necessary, you can add a sewing screw to the corrugations to hold them in position. To do this:

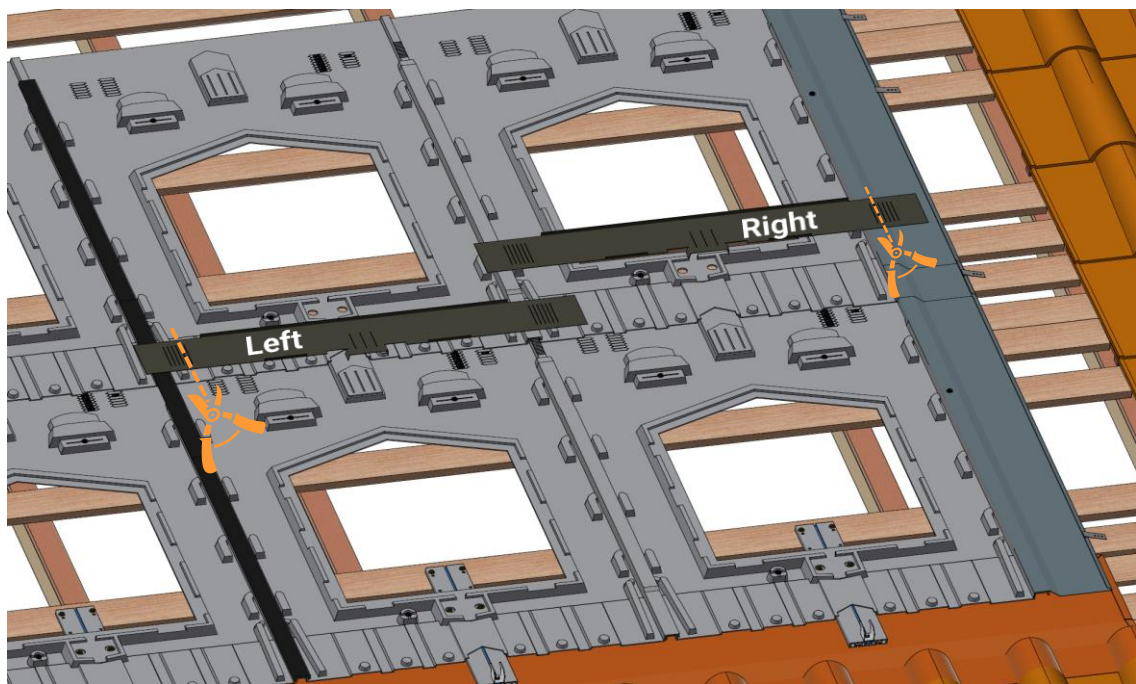
- Do not fix the screw on the overlapping in between 2 intermodule flashings
- Make sure you pre-drill the location of the sewing screw with a 10mm drill bit.



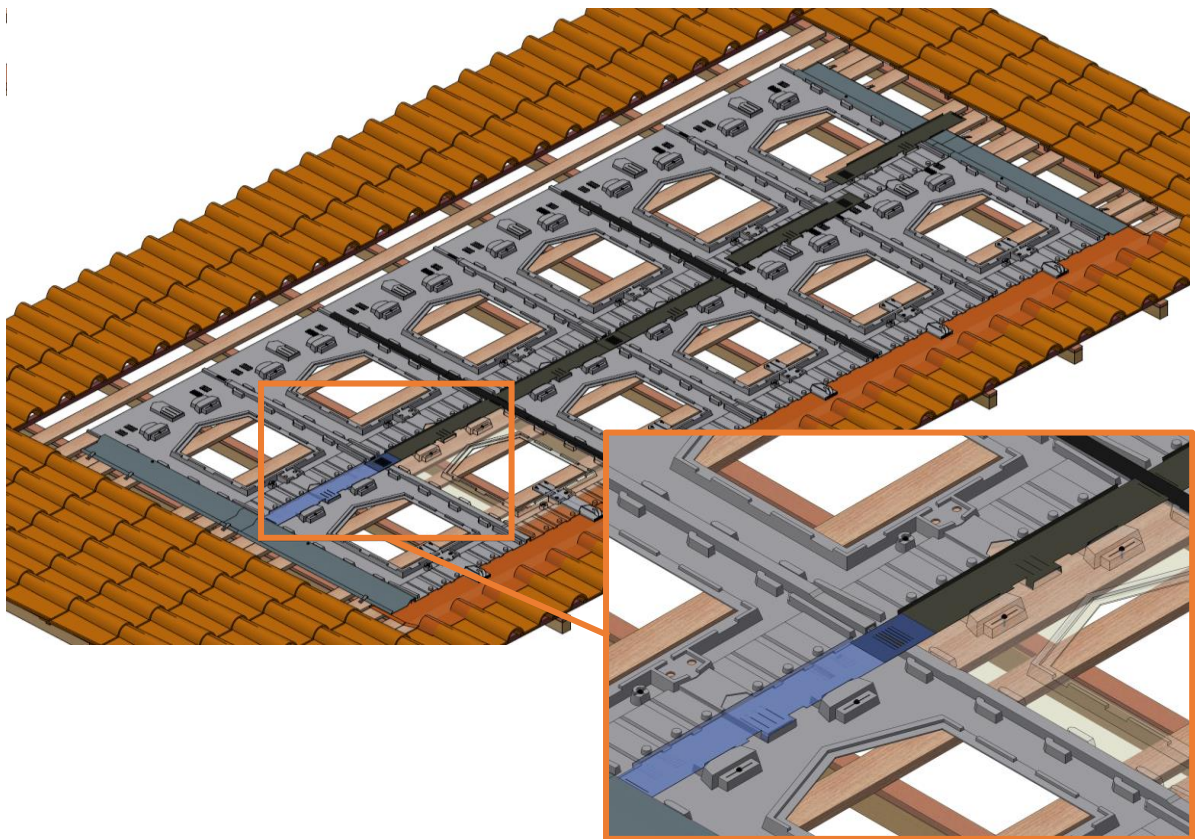
- 2 Prepare the **inter-line flashings to the correct PV module length:**

- On the left of the clamp support pad, cut out the **inter-line flashings** that will be fitted on the left half-frame of the PV module, taking into account the PV module's length = **LEFT inter-line flashings** .
- On the right of the clamps support pads, cut out the **inter-line flashings** that will be fitted on the right half-frame of the PV module, taking into account the PV module's length = **RIGHT inter-line flashings** .

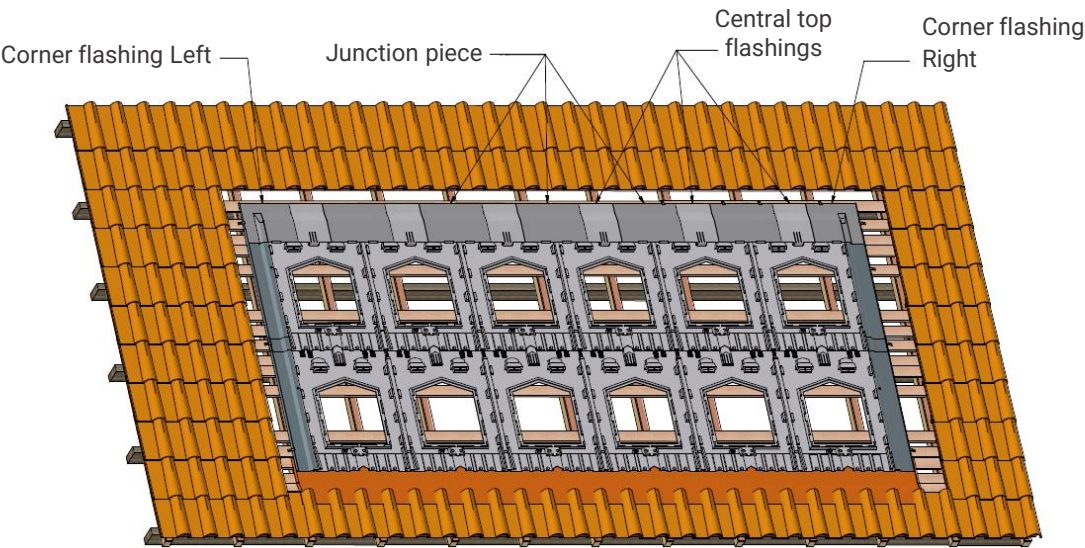
(See illustrations next page)



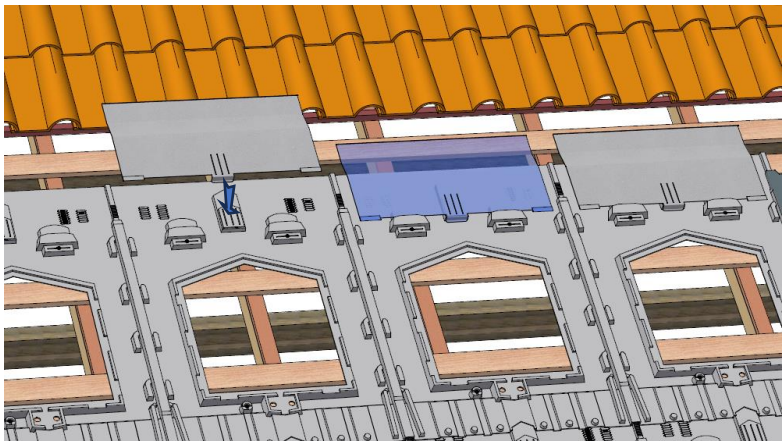
Assemble the 2 inter-line flashings **LEFT** and **RIGHT**, centering them on the clamps support pad of their respective left and right half-frame. Do this for each individual inter-line spacing.



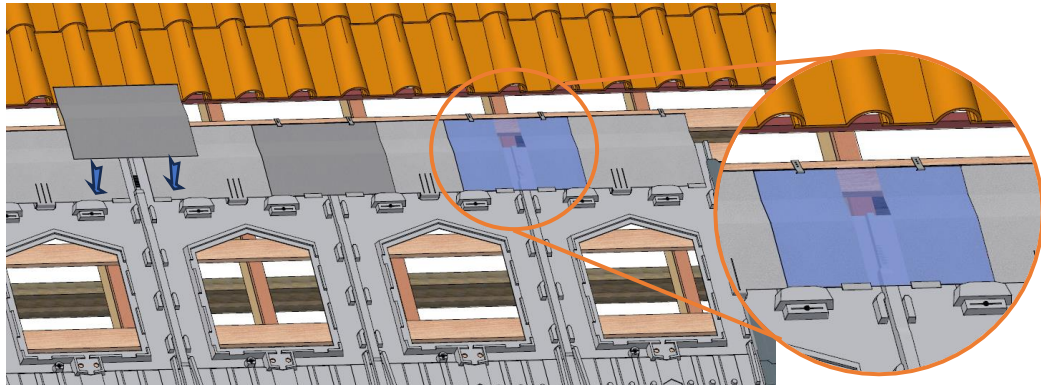
3.9 Installing the top flashings



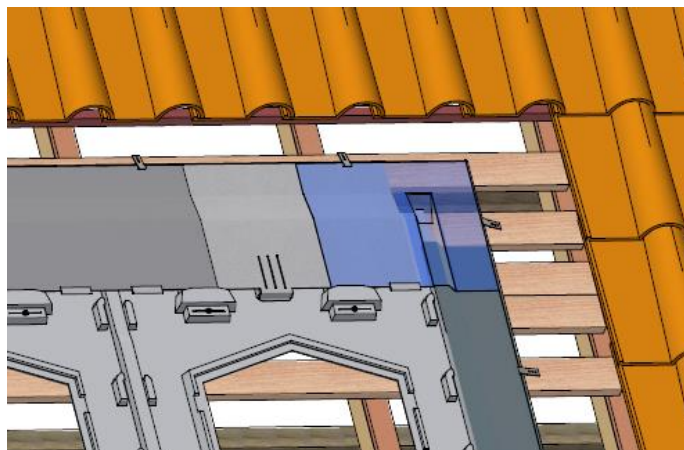
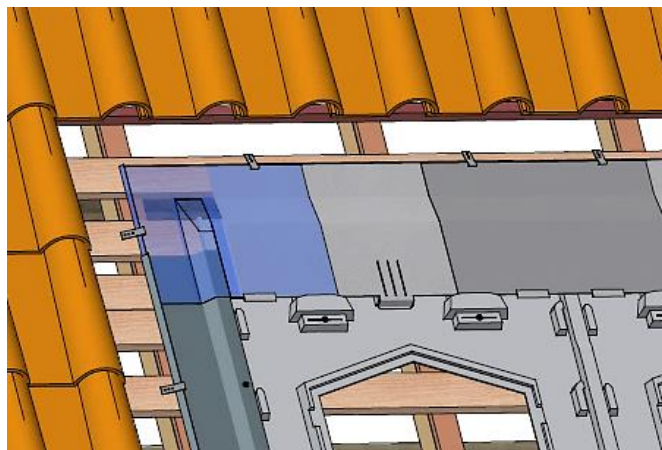
- 1 Position the central top flashings by placing the frame's clamps support pad against the flashing's central guide. Secure them with 2 hooks.



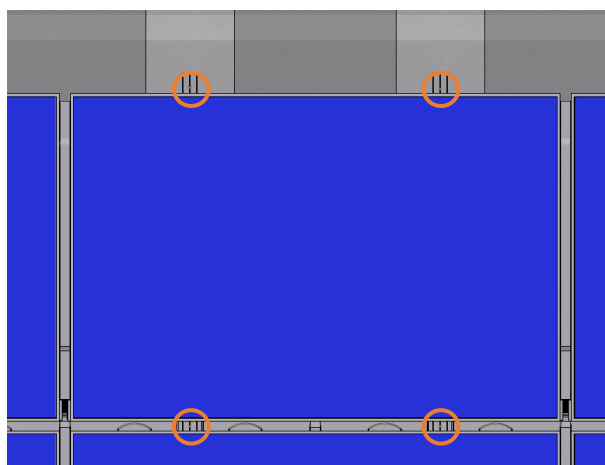
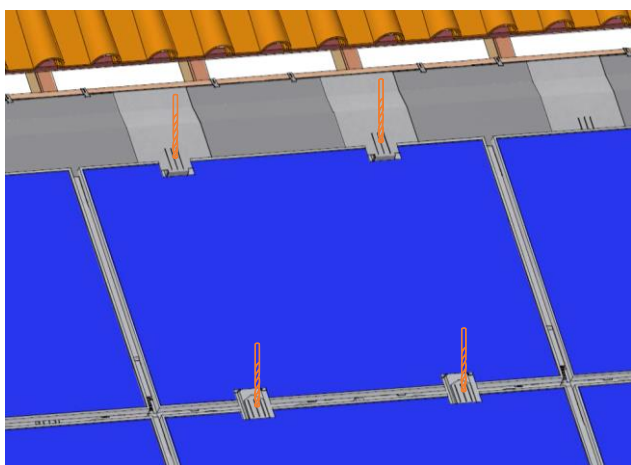
- 2 Position the junction pieces by sliding them into the side folds of the central flashings provided for this purpose. Also slide the upper lip of the junction flashing into the upper lip of the central flashing. Secure each of them with 2 hooks (you can use the same hooks for the junction and the central flashings).



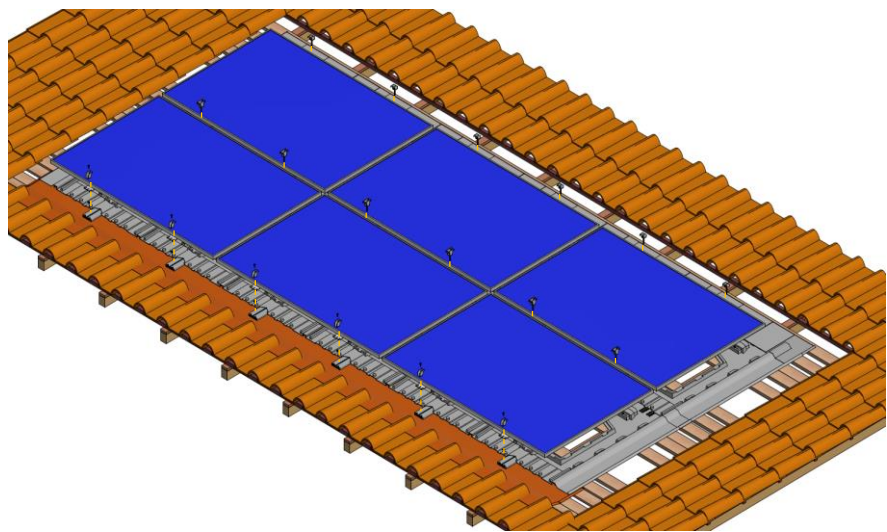
- 3 Position the corner flashings on the lateral flashings and slide them into the central top pieces folds located at the edges of the PV field. Secure with 2 hooks.



- 4 Pre-drill the fixing points for the end clamps (on the top flashings) and middle clamps (on the frame support pads between the modules) with a 10 mm drill bit.

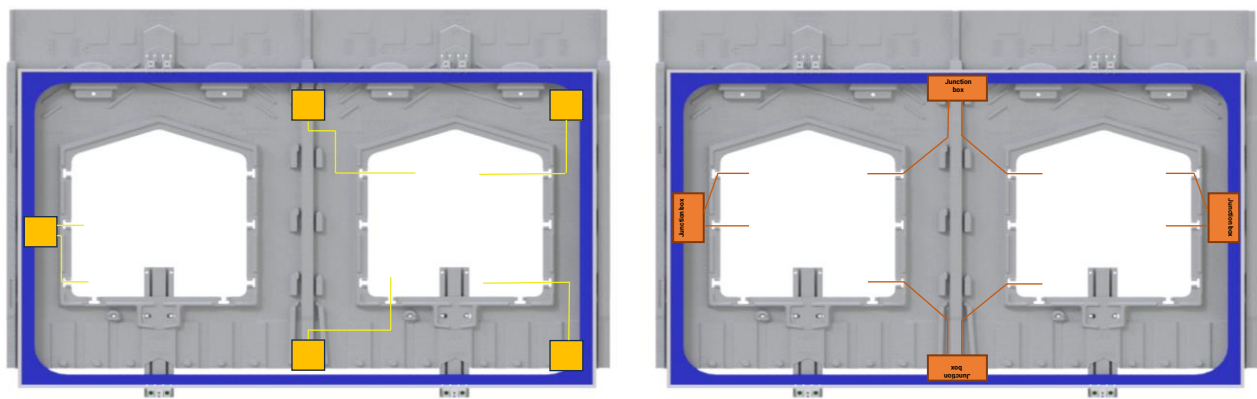


3.10 Installing the photovoltaic modules



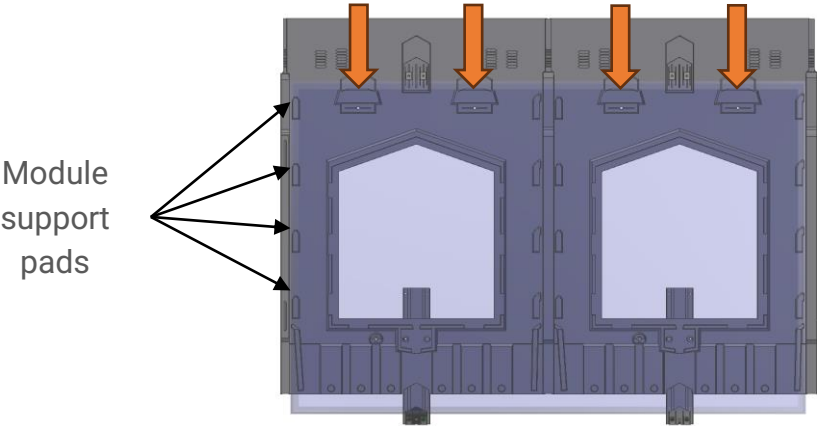
3.10.1 Installing PV modules and fixing clamps in the middle and at the top of the PV array

Positioning junction boxes



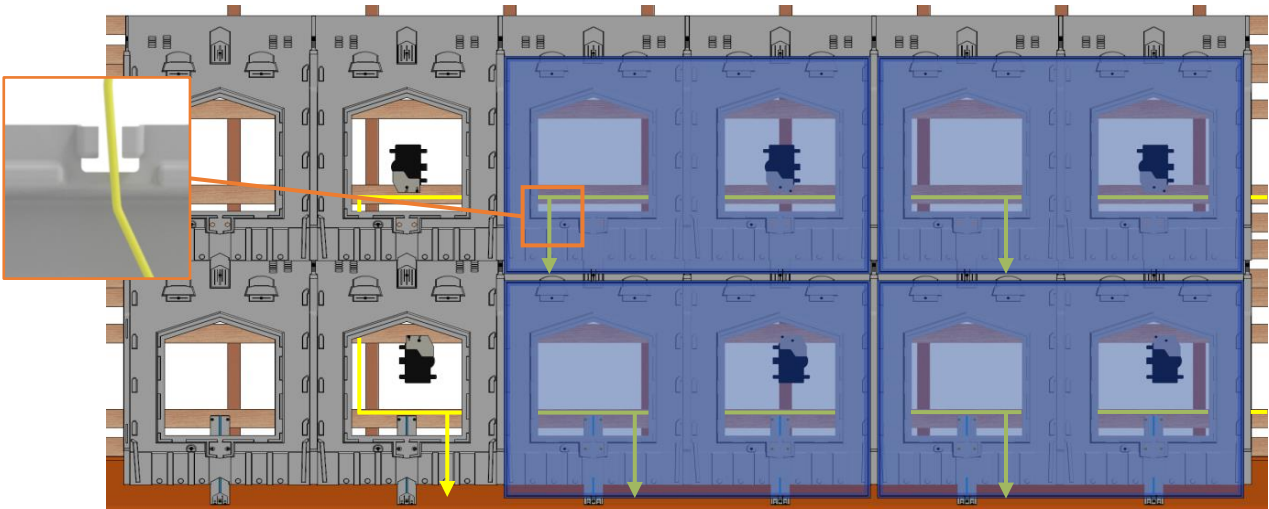
Position the module in such a way that the cables of the junction box pass through the designated space.

- 1 Position the modules so that they rest on the support pads (yellow) and abut the top protrusions of the frames (orange arrows). The module must pass over the central corrugation.

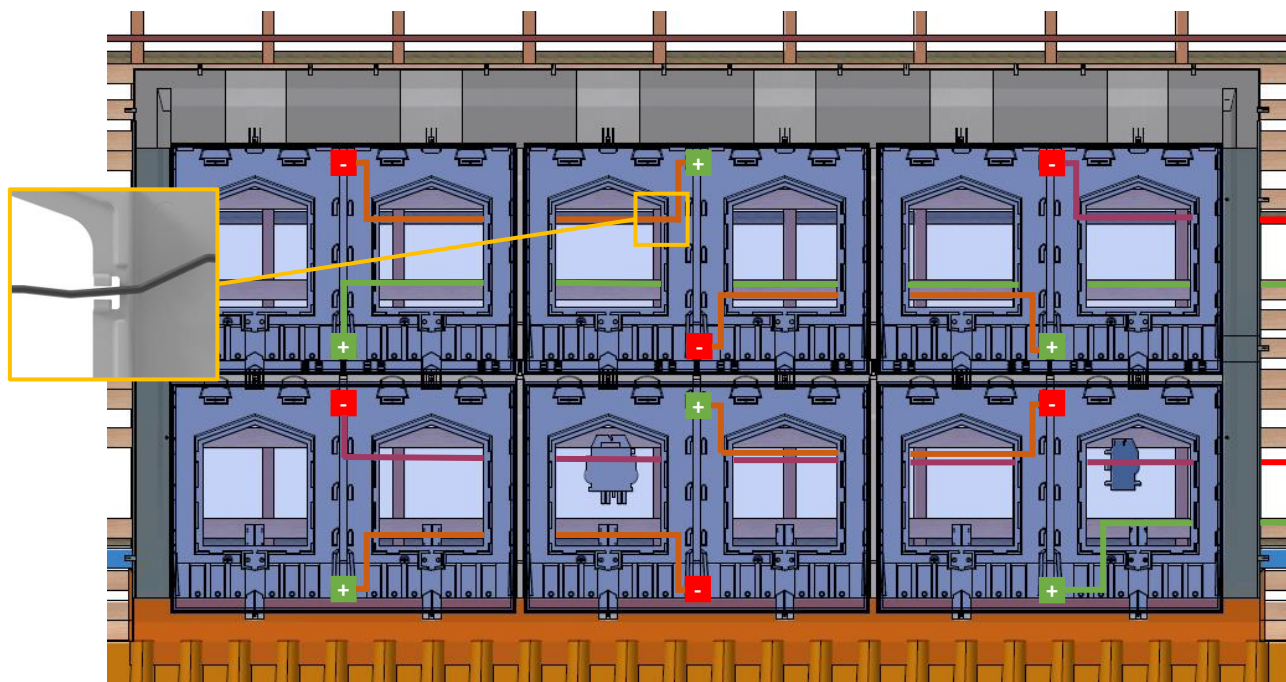


CAUTION: Always ensure that the modules are centred in relation to the 2 half-frames. The module frame must rest against the top protrusions/stops of the frame to prevent slipping.

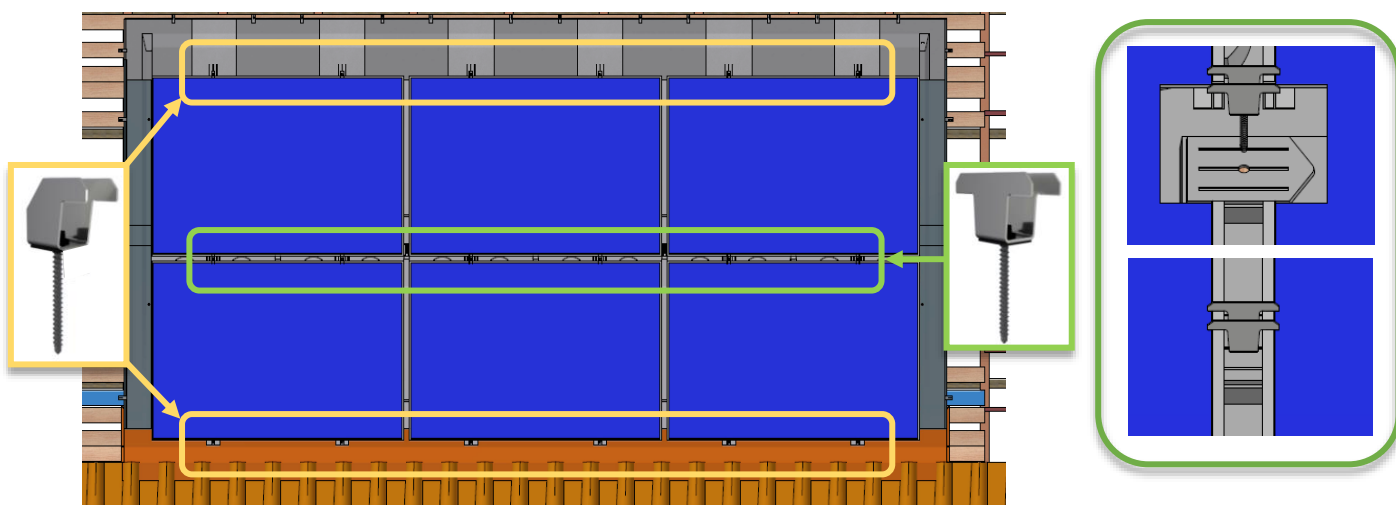
- 2 Make sure to pass the earthing cables beneath the half-frames, using the folds in the central holes.



- To **interconnect the PV modules** or to **connect to the microinverter** fixed in one of the central holes of the GSE IN-ROOF SYSTEM Landscape Evolution, make sure to pass the cables beneath the frames via the folds in the central windows.



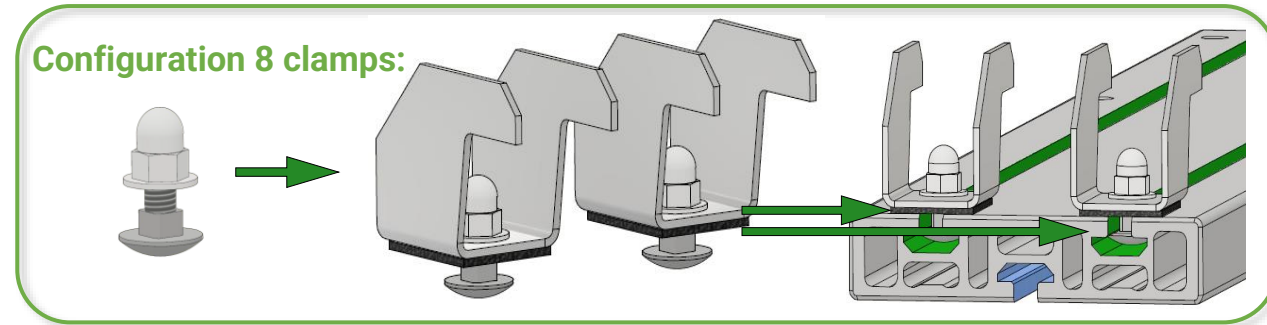
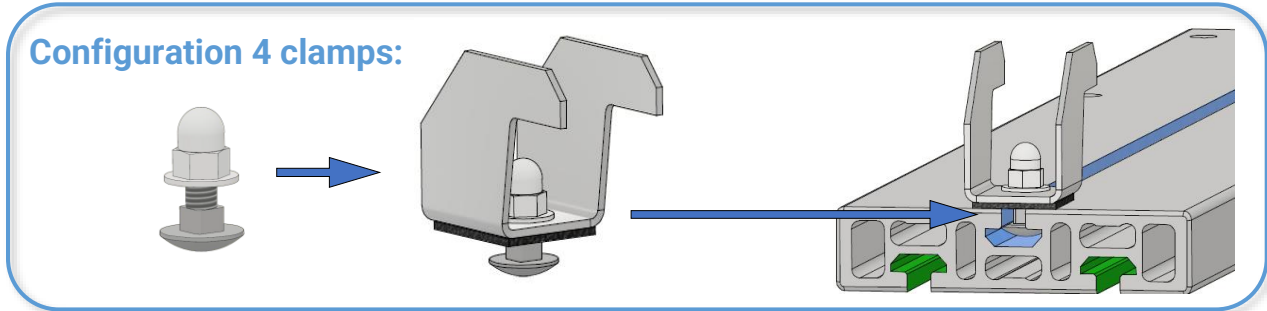
- 3 Screw the clamps in the centre and top of the PV array to the pre-drilled holes in the previous step (with GSE Integration sealed screws), until the clamp touches the frame of the PV module.



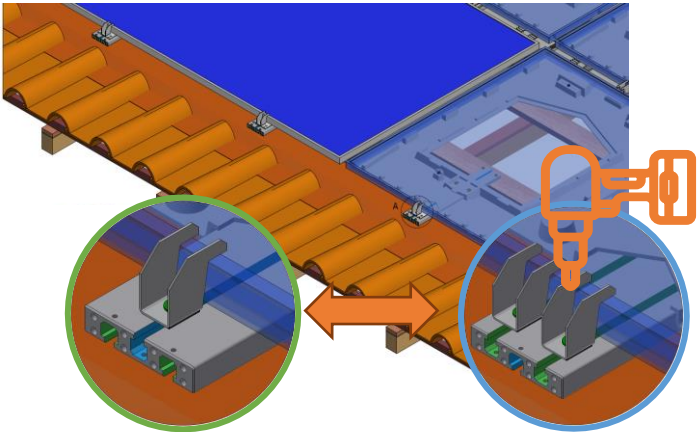
DO NOT USE AN IMPACT SCREWDRIVER TO FIX THE CLAMPS. USE A NORMAL SCREWDRIVER (WITH DIFFERENT SPEEDS AND TIGHTENING TORQUES) TO ENSURE THAT THE CLAMPS STAY IN PLACE OVERTIME.

3.10.2 Installing the clamps in the rails at the base of the PV array

- 1 Insert the clamps into the rails at the bottom of the field. To do this, first put the screw into the bracket, and then bolt the nut on it.

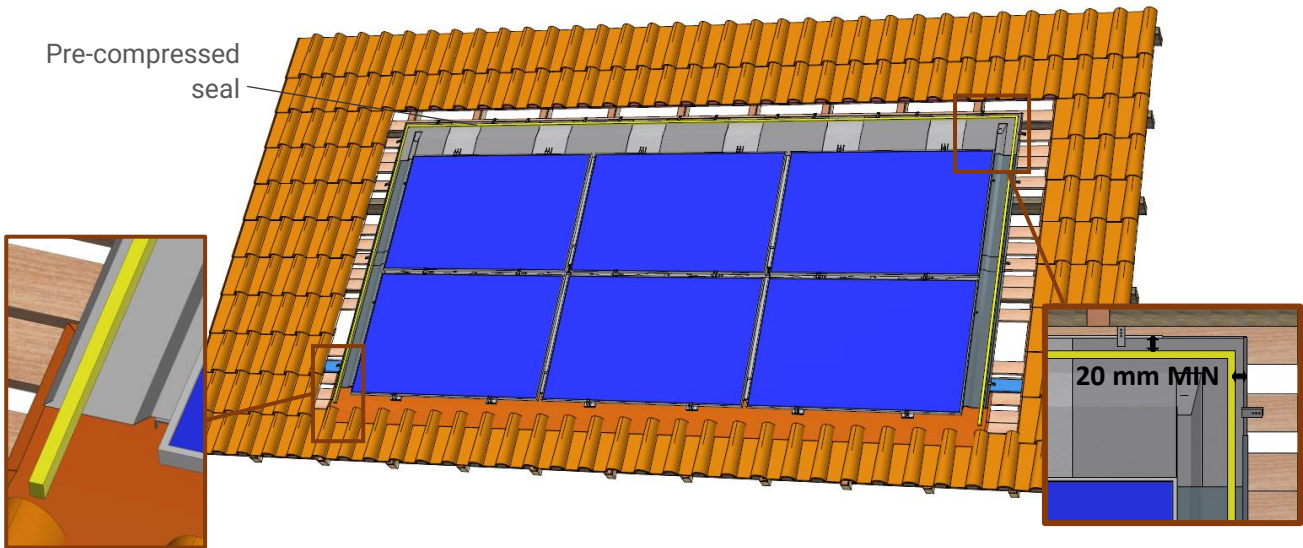


- 2 Tighten the clamps on the PV module frame.



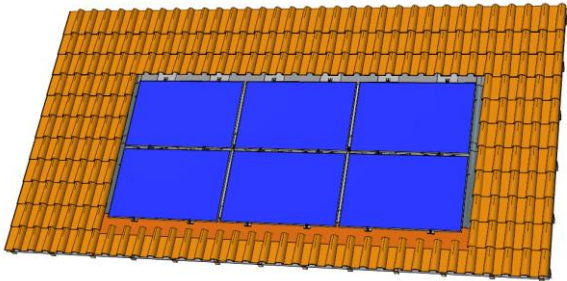
3.11 Connection to the roof covering

- 1 Place the pre-compressed joint on the flashings around the side and top of the array (at approx. 2cm from the edges of the flashings).



The seal must reach the bottom of the flexible flashing strip to prevent possible seepage of water or solid particles.

- 2 Reposition the side and top sections of the roofing elements to make a continuous connection with the roof.



It may be necessary to cut the tiles to ensure an effective covering that complies with the DTU (code of practice for building works). Ensure that these elements are mechanically fixed as described in the DTU roofing regulations.



Cutting tiles for left connection

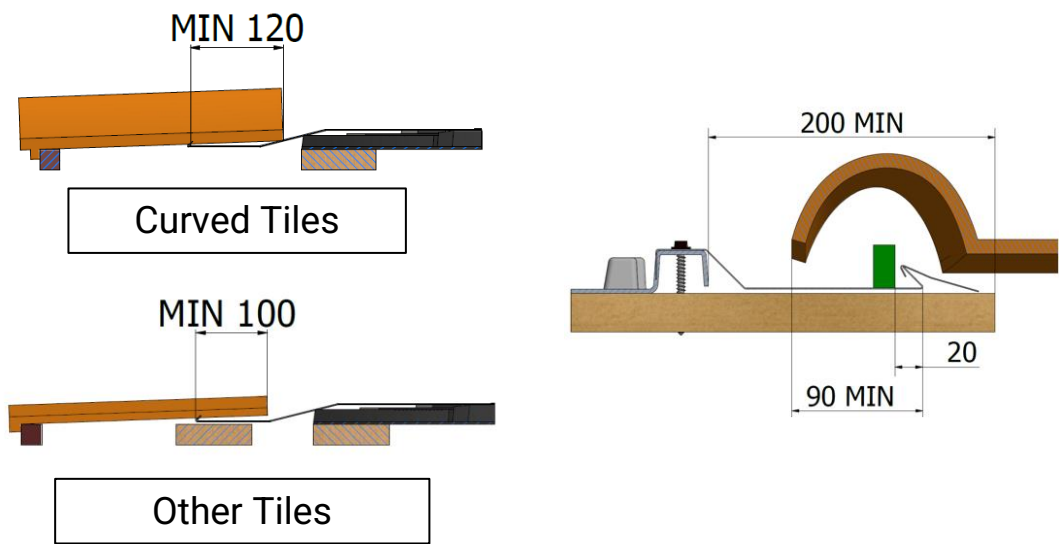


Cutting tiles for connection at top of array



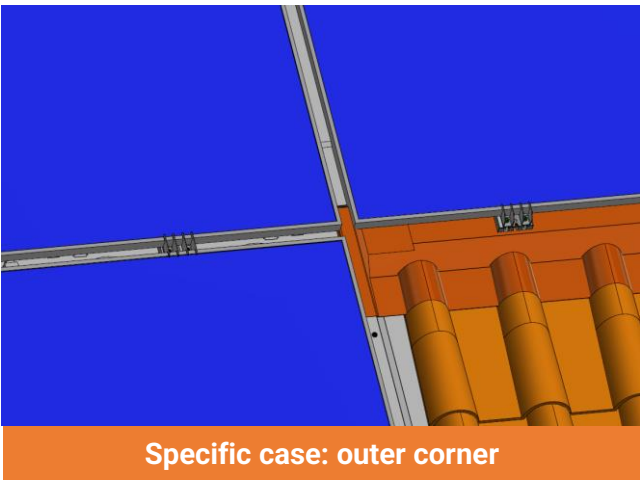
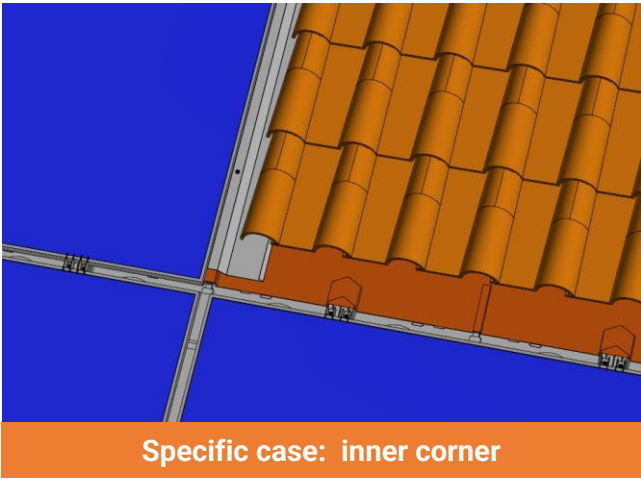
You can use double tiles or half tiles for the side connection.

The upper part of the tile must rest on the top flashing with sufficient overlap to meet the requirements of the DTU roofing standards.

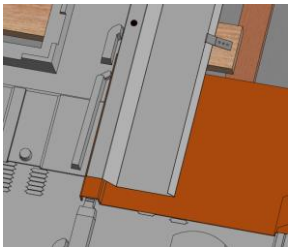


3.12 Specific case: PV array with inner/outer corners

In the case of non-rectangular PV array, inner and outer corners must be connected to the roofing using a flexible flashing strip compliant with the code of practice for building works.

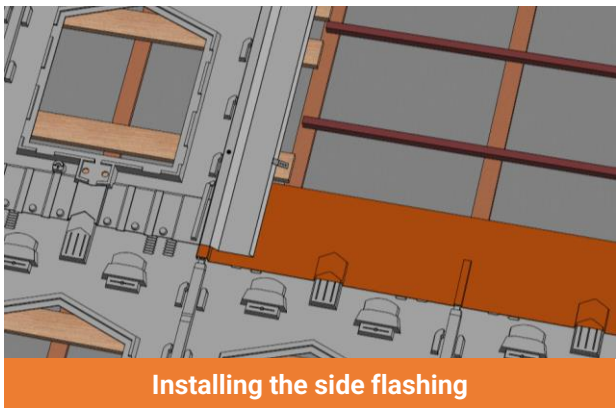


CAUTION: In both cases, the flexible strip clamped between the flashing and the frame corrugation must be positioned on top of the corrugation to prevent tearing.



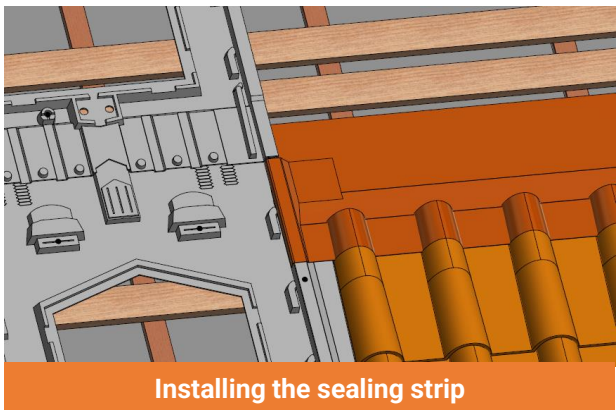
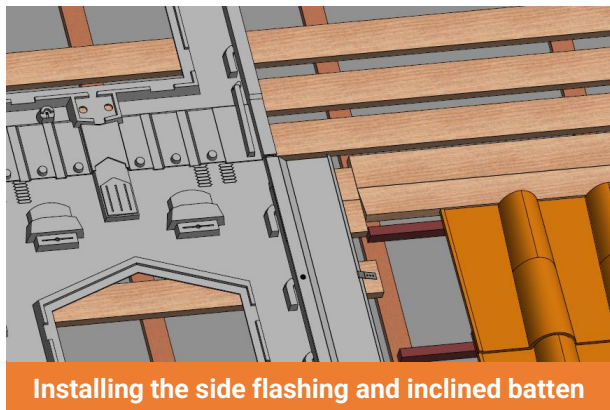
3.12.1 Inner corner (L-shaped)

Place the flashing strip, overlapping the frames in the bottom row up to the corrugation of the adjacent frame, then cover the strip with the side flashing.



3.12.2 Outer corner (T-shaped)

Place the side flashing on the lower-row panel. Replace the adjacent column of tiles to cover the side flashing, then lay the sealing strip on a sloping batten provided for this purpose, overlapping the last row of tiles (make sure you make a 2 cm fold at the top).



Fit the **half-frame** and the bottom array rail on the sealing strip, following the installation instructions on page 20.



CAUTION : Make sure you have the right spacing between the base of the frame and the tiles to position the rail correctly.

Be sure to comply with the overlap rules in the relevant DTU roofing standard and the recommendations in paragraph 3.2.2 of this document.

4. Maintenance and servicing

4.1 Verification

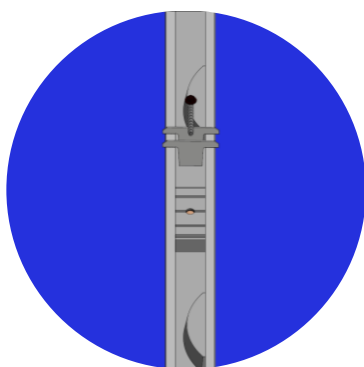


Once a year, it is important to check whether leaves and/or other elements have settled beneath the photovoltaic unit or between the panels. You can use a compressed air blower to remove any items that have settled beneath the photovoltaic unit. Do not use solvents to clean polypropylene surfaces.

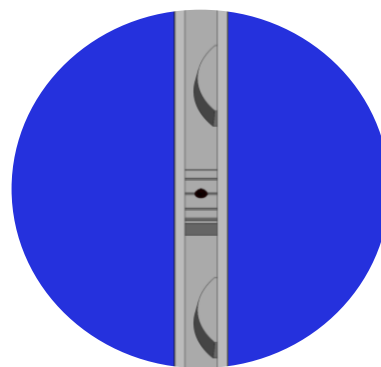
We recommend having a maintenance contract including an annual inspection to check production, electrical parts, panels, panel supports, fixings, pre-stressed joints, sealing strip.

4.2 Module replacement

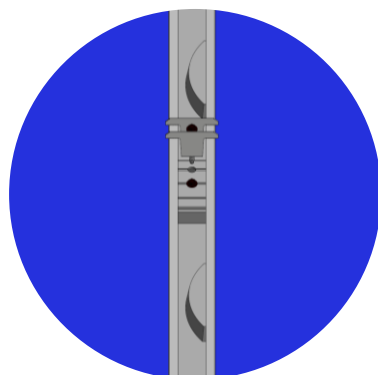
Disconnect the PV array from the AC box and proceed as follows:



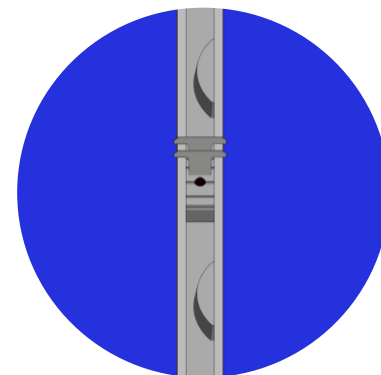
1. Unscrew the clamp.



2. Screw in a GSE Integration screw where the old hole was drilled.



3. Pre-drill a new hole in the support pad at one of the other positions pre-marked on the pad (at least 25 mm from the old hole).



4. Place the module and fix the new assemblies (clamp + EPDM foam + GSE Integration screws) .

5. Assistance and Contact

5.1 Training

The GSE Integration team offers technical training sessions on the product with practical application on a demonstration model at your request and subject to a sufficient number of participants being present.

For further information, please contact your sales manager or distributor.



5.2 Technical service/assistance

Technical assistance is available
Monday to Friday
9:30 a.m. to 6:00 p.m.

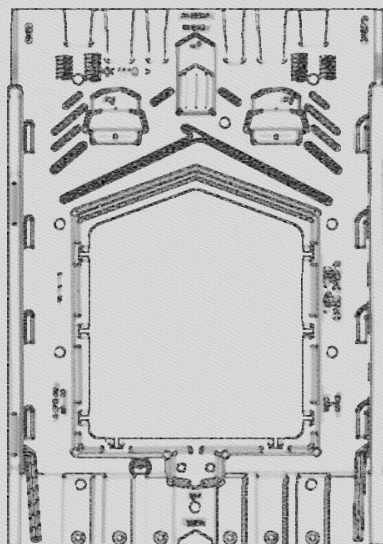


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GSE

Intégration



GSE **IN-ROOF SYSTEM**™

*Photovoltaic panel mounting system
integrated into the roof*

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