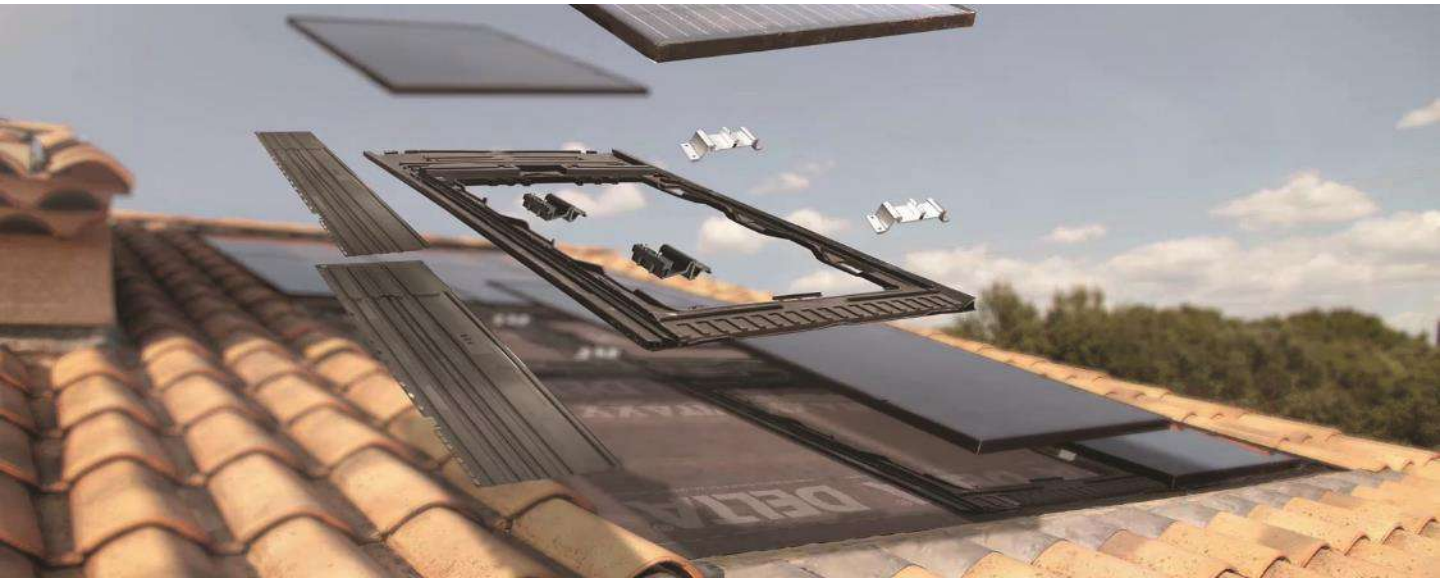
EASY ROOF EVOLUTION

BUILDING INTEGRATION SYSTEM
For 60 cell modules -6“ PORTRAIT

ASSEMBLY INSTRUCTIONS
Instructions applying to frames with markings P-1“
INS-IN02-18-075 – version 1.4 of 2022



Document validated by ENQUETE TECHNIQUE NOUVELLE No. L19.4580

Complies with building integration criteria*
***Except for flat profiled slate and tile roofs, according to the thickness of the tile**

The EASY ROOF EVOLUTION frame is insured provided that the modules have IEC 61215 and IEC 61730 approvals

Module compatibilities: www.edilians.co.uk

Contents

Inhoud

User advice sheet: Use, maintenance and repairs

SMQ-F0-13-180724

Congratulations, you have become the proud owner of an EASY ROOF EVOLUTION system!

With EASY ROOF EVOLUTION you have chosen a practical, reliable and aesthetic solution for your roof photovoltaic project.

For an optimal use of the system , please read and keep the following cleaning and maintenance instructions:

All photovoltaic systems must be regularly monitored and cleaned. To this end, your installer can provide you with a maintenance contract. If you are interested please ask him for details.

All maintenance and repair operations on IRFTS products must be carried out by qualified technicians trained by IRFTS. These operations require electrical and roofing skills.

System maintenance or repair operations must be carried out in compliance with work regulations and, in particular, regulations for work at height. To avoid putting direct weight onto the modules, do not walk on them. Putting weight on the clamps and fixing brackets is acceptable.

In the case of a maintenance or repair operation that requires the removal of a photovoltaic module, the electric disconnection and reconnection procedure applicable for the replacement of a module must be adhered to.

- **Photovoltaic field maintenance**

At least once a month (before summer to optimise electricity production) as part of the roof maintenance:

- ✓ The photovoltaic modules must be cleaned with a hosepipe (without using pressure or a concentrated stream of water)
- ✓ Visual inspection, spotting damage
- ✓ Waterproofing check: check the condition of the different waterproofing parts and that the water runs freely through the flashing channels. Clear out the channels if necessary.
- ✓ Check the wiring
- ✓ Check the fixing points: check that all the screws and bolts are present and properly fixed in place

- **Electrical maintenance**

If, once the real amount of sunshine has been taken into account, a measurable reduction in yearly production from one year to the next is observed, the inverter and the individual modules should be checked to see if they are working properly.

- **Module replacement**

If the glass of the photovoltaic panel or the panel itself is damaged, please follow this procedure:

1. Disconnect the inverter (s) from the network by opening the AC circuit breaker located between the inverter (s) and the meter.
2. Disconnect the photovoltaic field by opening the DC switch/breaker located between the modules and the inverter. If the system is equipped with micro-inverters they automatically disconnect the photovoltaic field after step 1.
3. Dismantle the parts of the assembly system in reverse installation order to gain access to the module's wiring. Never withdraw the connectors in the rain.
4. Assemble the new module in compliance with its installation instructions (see *Installation instructions*) Reconnect the equipotential connection to the new installed module.
5. Check that the modules concerned are working properly:
    a. Measure their open-circuit voltage range
    b. Check the compatibility of this range with the inverter's input range
6. Reconnect the photovoltaic field by closing the DC switch/breaker (except if there are micro-inverters), then the AC circuit breaker.

1) EASY ROOF EVOLUTION

1.1) Parts List

Parts supplied in the kit		
Number	Description	Code Article
1	P-1 Evolution frame	P001PV40...(*)
2	Left flashing L-1 Evolution	P002LV40...(*)
3	Right flashing L-1 Evolution	P003LV40...(*)
4	Evolution single fixing clamp	A001V40
5	Evolution double fixing clamp (1)	A002V41
6	Evolution (Wide) double fixing clamp (1)	A009V40
7	Evolution double bracket	A004V40
8	Evolution single bracket	A003V40
9	A2 dome head stainless steel screw 6x40	V003V02
10	Clamp screw Chc M6 x 40 stainless steel A2 (PV module PV thickness 40 to 50) (2)	V013V02
11	Clamp screw Chc M6 x 30 stainless steel A2 (PV module PV thickness 30 to 40) (2)	V012V02
12	EASY ROOF EVOLUTION mounting tool	OUT0P00765AB
Optional parts		
13	Evolution black double fixing clamp (1)	A002V42N
14	Evolution black (Wide) double fixing clamp (1)	A009V40N
15	Evolution black single fixing clamp	A001V40N
16	Evolution black single bracket	A003V40N
17	Side border strip	F001V40
18	EASY GROUNDING	PRT0P00340AA
19	Left / right aluminium flashing	PRT0P00556AA
20	Single aluminium flashing G/D L-1/0-1	PRT0P00692AA

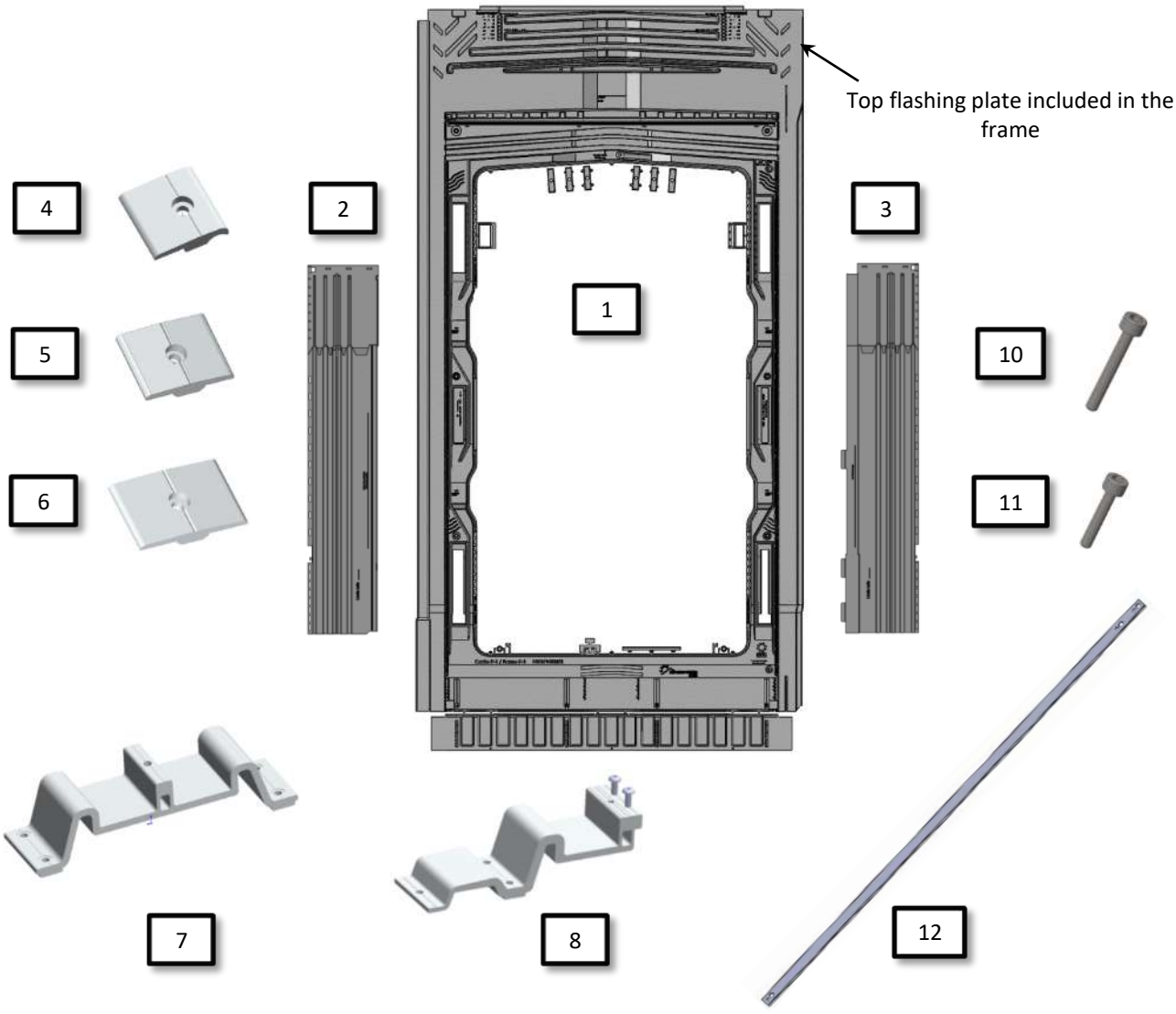
*: Codification varies depending on the choice of material

1.2)

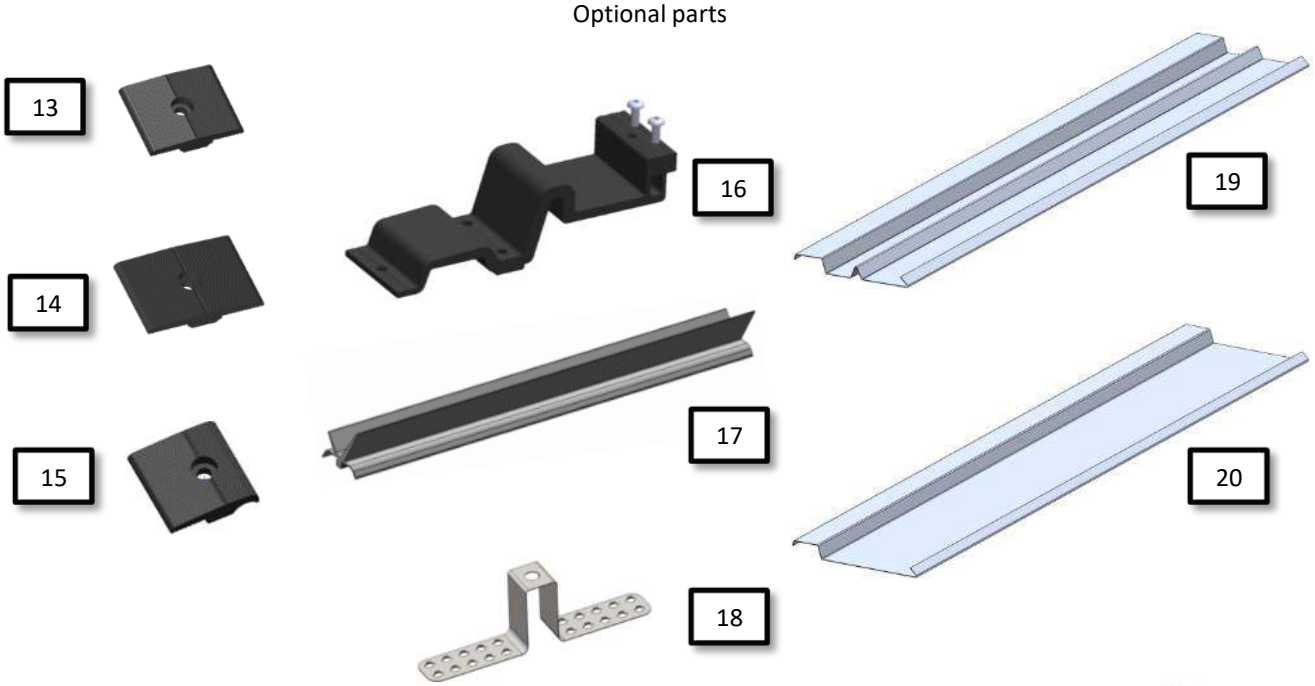
Parts not supplied in the kit	
Number	Description
a	Countersunk screw six lobes 5x60 stainless steel A2 (wood)
b	Dome head screw six lobes 5x30 stainless steel A2 (flashing)
c	Flashing
d	Wood 120x27 (3)
e	Wood 30x27 (3)
f	Wood 40x15 (to be trimmed) (4)
g	Wood 150x18 (4)
k	Wood 180x18 (flashing) (4)
m	Drip edge (5)

(1) Use wide clamps for PV modules with a width of less than 992mm.
(2) Choose the type of screw to be used according to the thickness of the PV module used.
(3) The dimensions of this board used to support the panel may vary depending on the design of the structure and the geographical location of the site, see table p. 22 to 25. These plates must be the same thickness as the battens already assembled on the roof undergoing work.
(4) The dimensions of this board used to support the flashing may vary depending on the slope of the roof undergoing work, see table p. 27.
(5) For assembly along the guttering.

1.3) Representation of parts



Optional parts



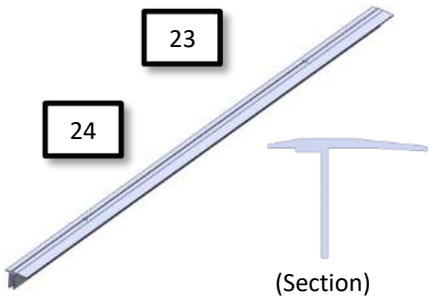
2) EASY ROOF EVOLUTION with GLAZING STOPS AND DEFLECTORS

2.1) Parts List

Assembly with deflectors and glazing stops		
Parts supplied in the kit		
Number	Description	Code Article
21	Cap head screw M4 x 35 TX 20 stainless steel A2	V085V02
22	Deflector clamp	A033V40
23	Deflector P-1	A036V40
25	Middle glazing stop	A037V40
27	Side glazing stop	A038V40
29	Glazing stop blanking cover	PRT0P00412AC
31	Socket headed screw CHC M5x35 Stainless steel A2	V001V02
32	Blanking cover bolt	A034V40
33	Glazing stop mounting tool P-1	OUT0P00773AA
Optional parts		
24	Black deflector P-1	A036V40N
26	Black wide glazing stop P-1	A037V40N
28	Black ended glazing stop P-1	A038V40N
30	Black glazing stop blanking cover	PRT0P00412NCA

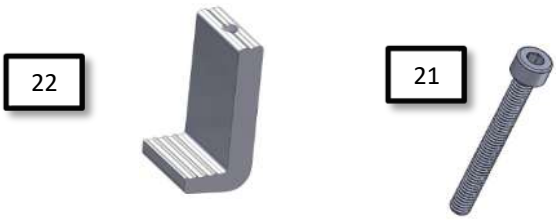
2.2) Representation of parts

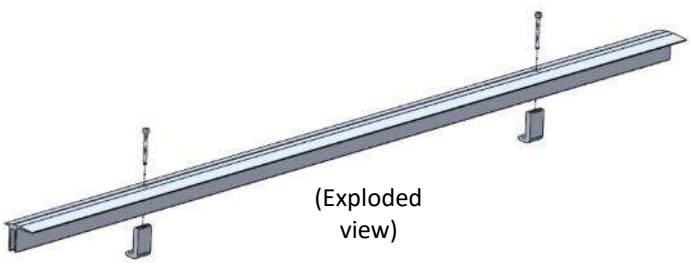
- Deflector: part that is assembled at a right angle to the roof slope where two modules join.



(Section)

- Deflector clamp: part that is used to clamp the deflector onto the PV module





(Exploded view)

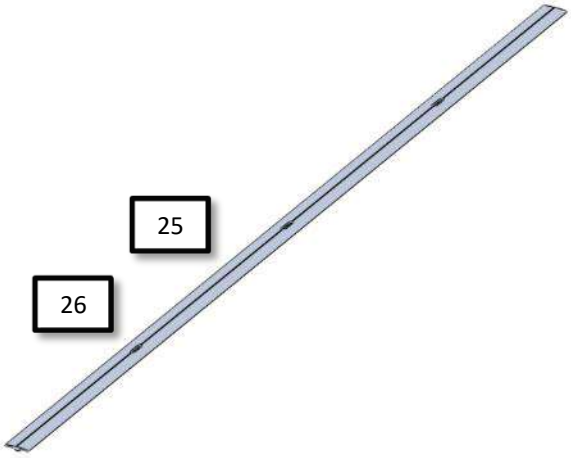
These three components are delivered separately
Pre-assemble the deflector before starting work as shown

2) EASY ROOF EVOLUTION with GLAZING STOPS AND DEFLECTORS

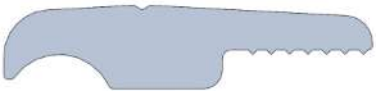
2.2) Representation of parts

- Middle glazing stop: part that is assembled in the same direction as the roof slope where two modules join

(Section)



- Side glazing strop: part that is assembled in the same direction as the roof slope on each side of the PV field



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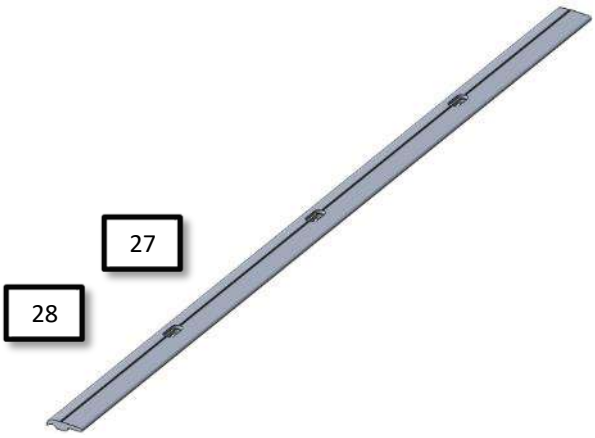
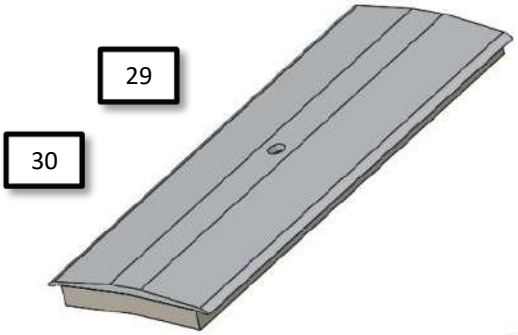
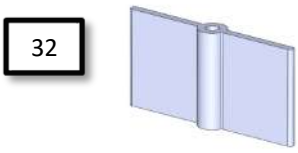
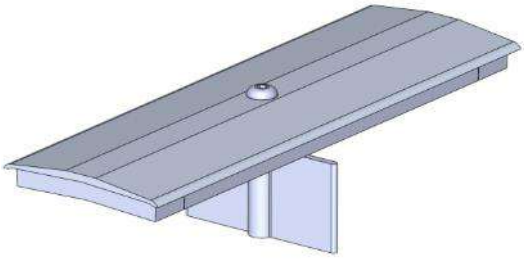


- Glazing stop blanking cover: part that is assembled in the same direction as the roof slope where two glazing stops meet

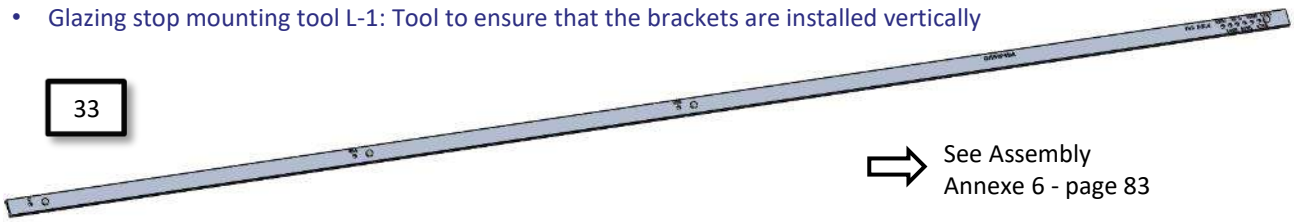






<u>These three components are delivered separately</u>
<u>Pre-assemble the blanking cover before starting work as shown</u>

- Glazing stop mounting tool L-1: Tool to ensure that the brackets are installed vertically



See Assembly
Annexe 6 - page 83

3) EASY ROOF EVOLUTION on SLATE roofs with METAL FLASHING

Metal flashing is made to order and is not included

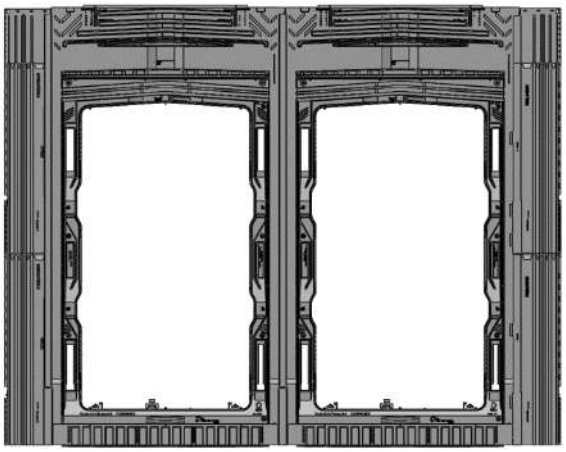
⇨ See Diagrams and Assembly Annexe 8 - page 93

4) EASY ROOF EVOLUTION on TILED roofs (minimum 30mm curve) with METAL FLASHING

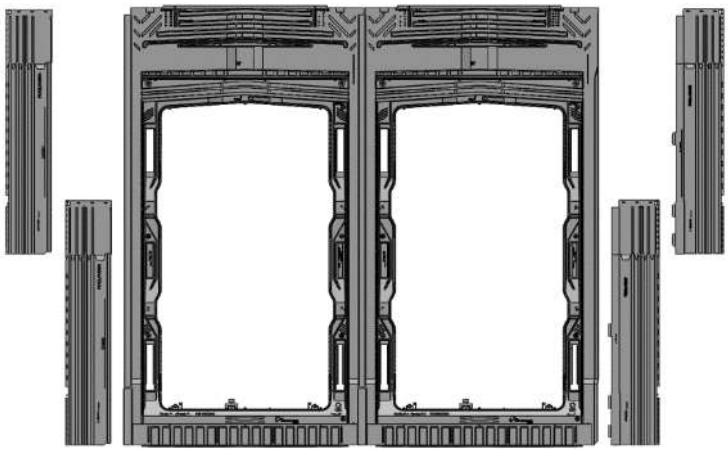
Metal flashing is either made to order or included

⇨ See Diagram and Assembly Annexe 9 - page 114

Side flashing assembly principle



(Assembled view)

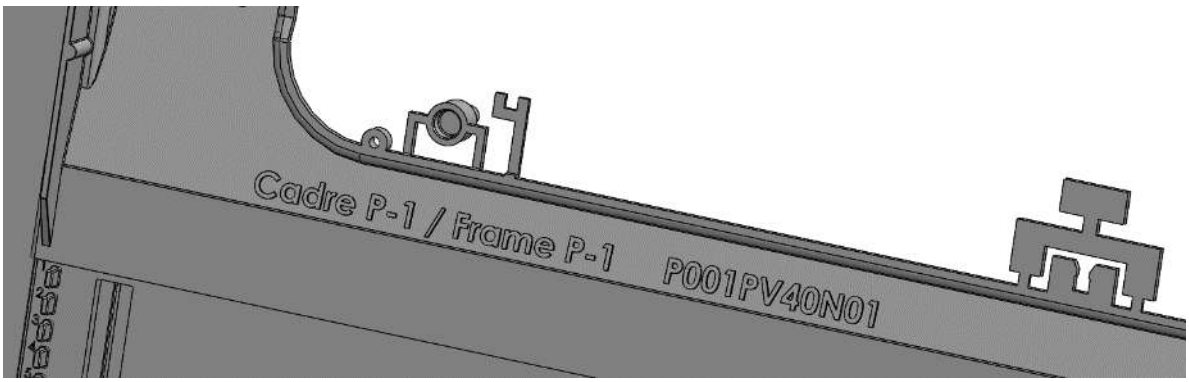


(Exploded view)

5) Part markings

Moulded part markings	Definition
P001PV40...(*)	Frame
P002LV40...(*)	Left flashing plate
P003LV40...(*)	Right flashing plate

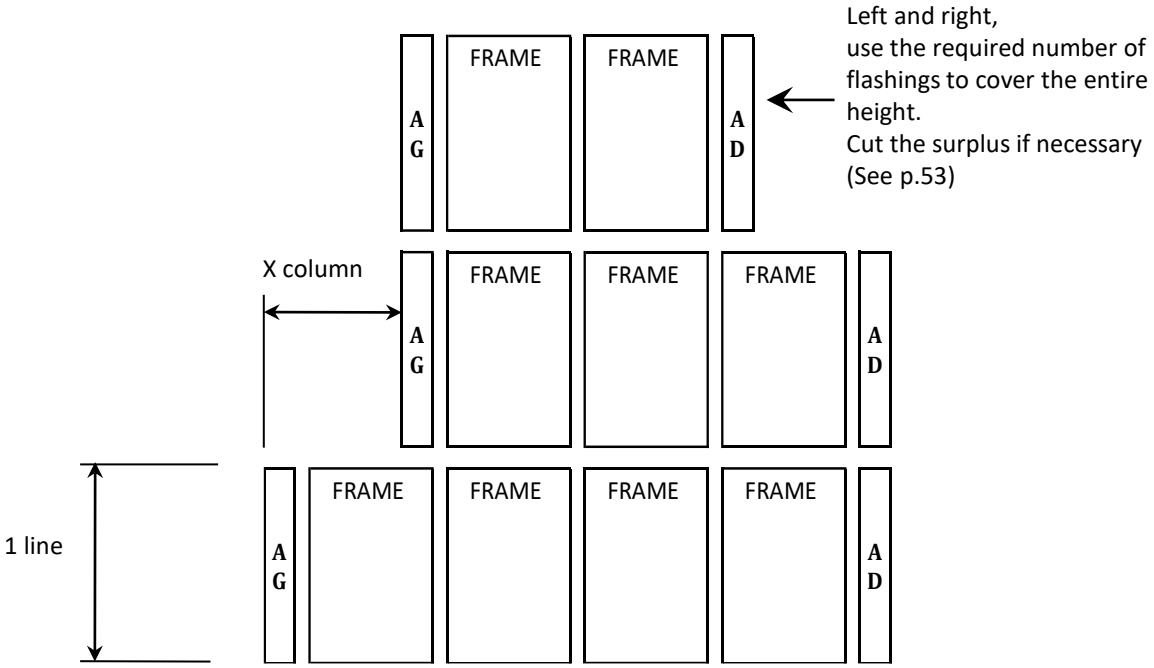
*: Codification varies depending on the choice of material



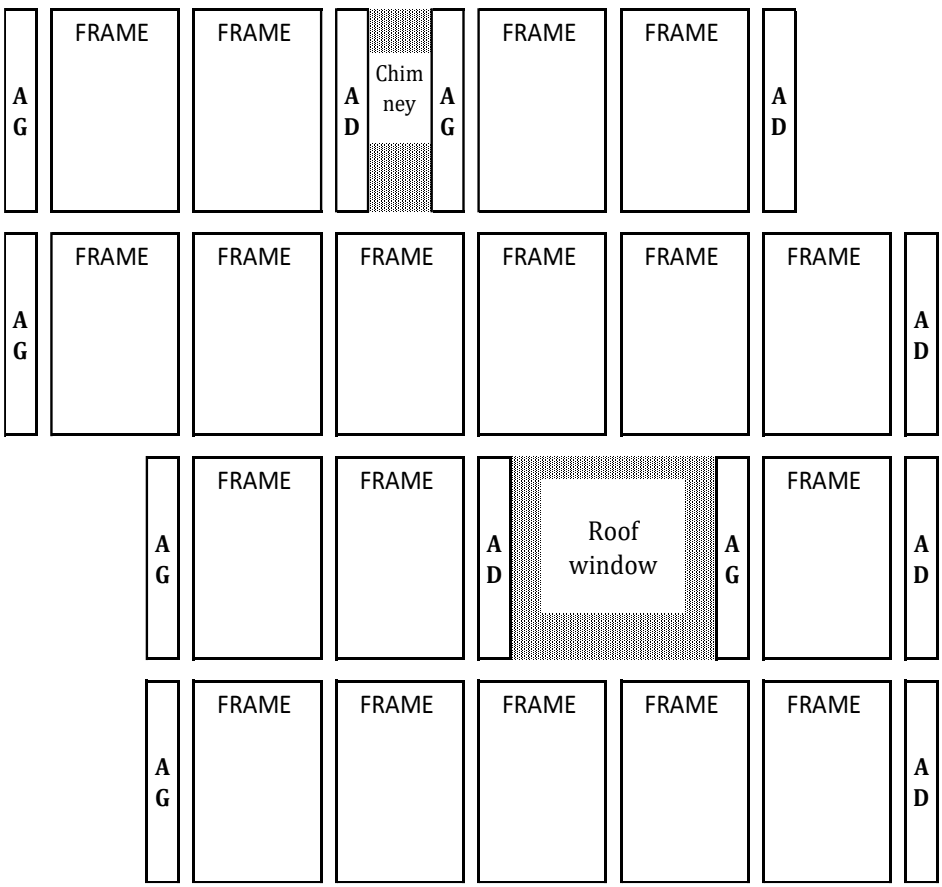
6) Breather membrane

Regardless of the slope of the roof, we require the installation of a breather membrane before the EASY ROOF integration system is put in place.
This membrane must be compliant with the E.S.T E1/Sd3/TR3 classification requirements according to NF EN 13859-1 and the membrane installation instructions.
Assemble the lengths of underlay with self-adhesive strips

7) Use of different flashings according to the configuration of the photovoltaic field

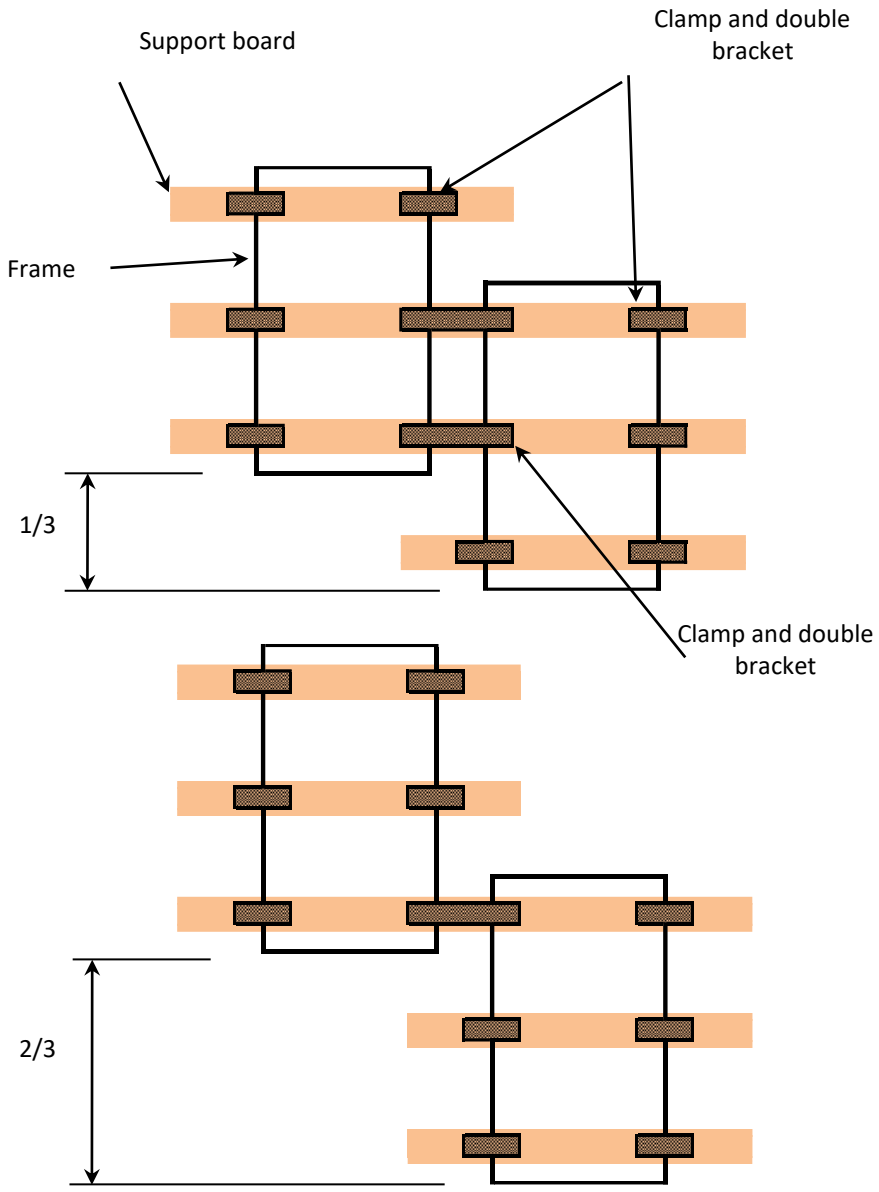


Multiple combination for roof window or chimney clearance

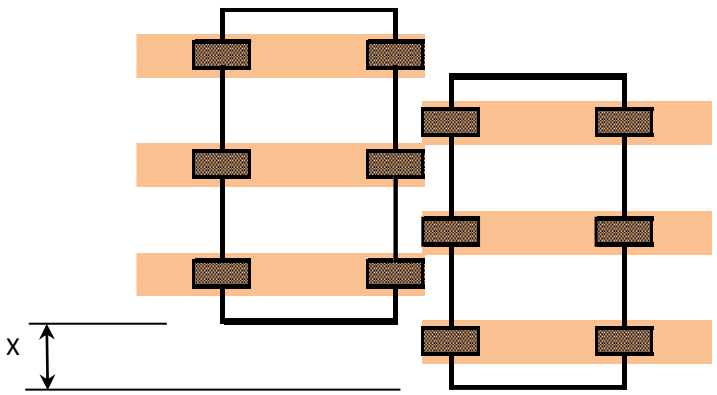


7.1) Possible vertical off-set of panels

Constant interval off-set



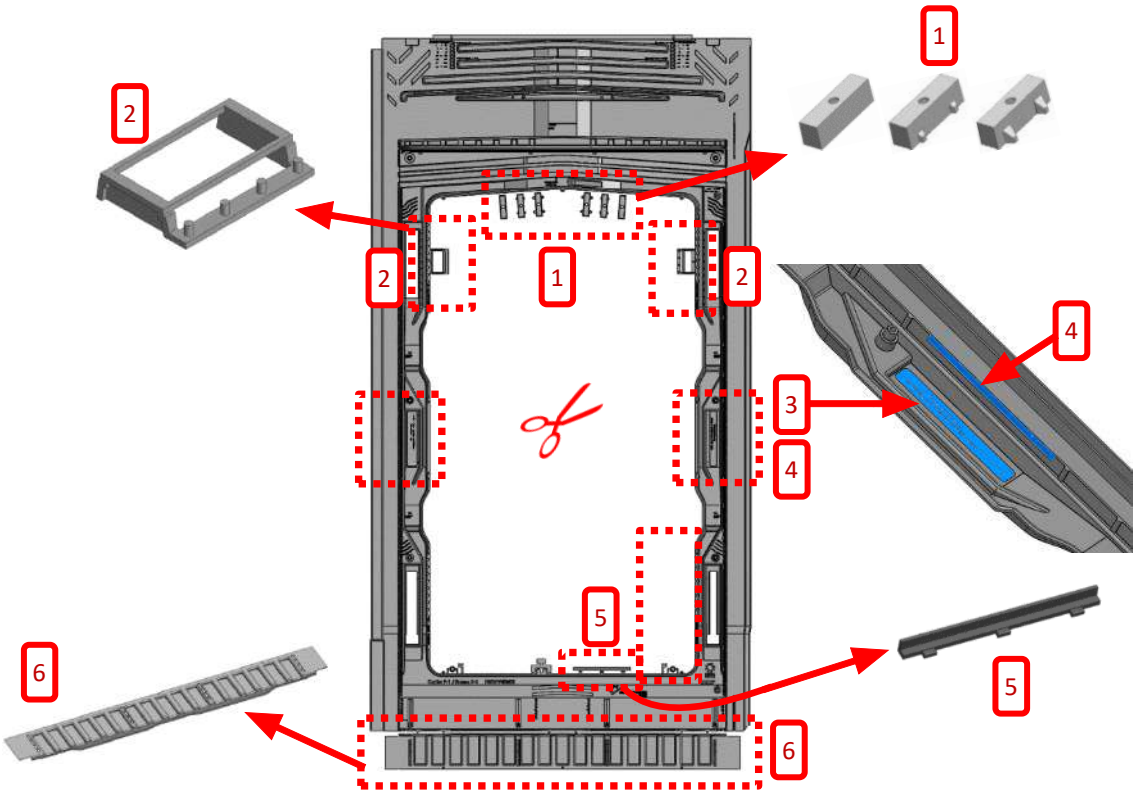
Any off-set



8) Parts to be prepared before the kit is assembled

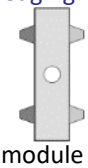
1°) Preparation of frames

1. Remove the 6 anti-rotation wedges.
2. Remove the 2 wedge positioners.
3. For assembly with six fixing brackets, remove the 2 bracket positioning plugs.
4. For PV modules with a central reinforcement follow the dividing line to remove the reinforcement channel.
   (For this type of module check the compatibility list on www.edilians.co.uk)
5. Remove the top border strip support located at the bottom inside the frame.
6. Remove the lower grid located at the bottom of the frame.

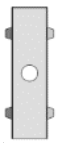


2°) Preparation of double brackets.

1. Pre-mount a module wedge on the central part of the double brackets (7).
   Select the wedging module according to the width of the PV module to be installed.

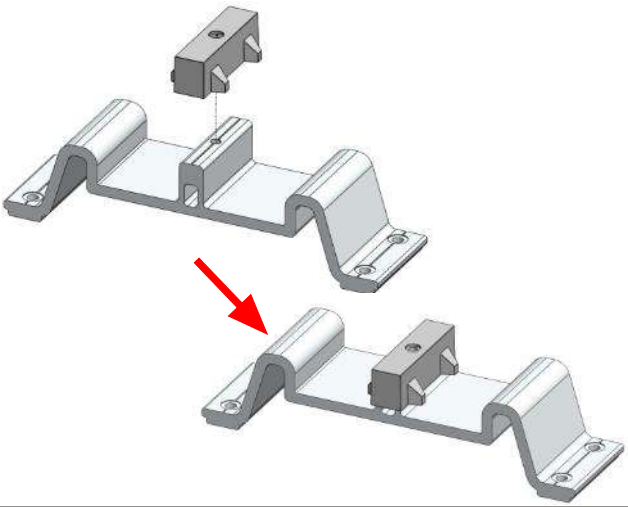


PV module width ≤ 1007



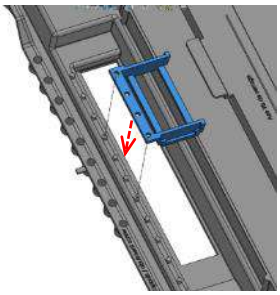
1008 ≤ PV module width ≤ 1016

1017 ≤ module width ≤ 1023

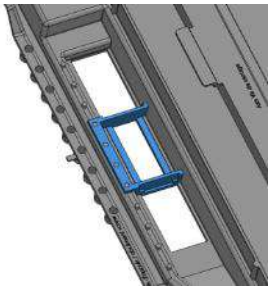


3°) Preparation of positioners

2



Select and insert the positioner in the required location.

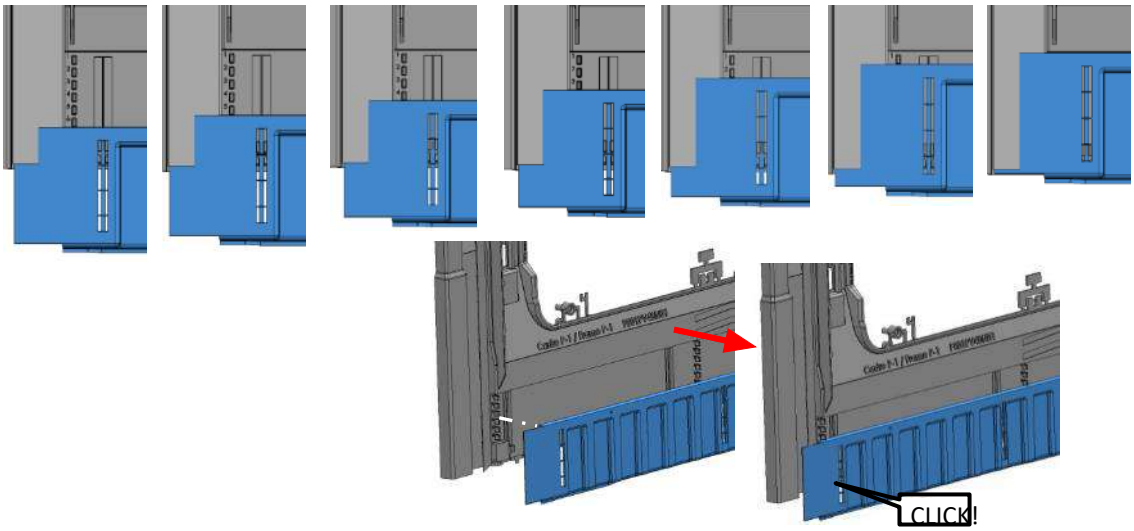


See adjustment p. 56.

4°) Preparation of grids

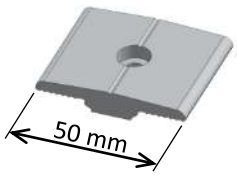
7 Insert the lower grid in the corresponding notches depending on the height of the PV module.

1721 ≤ L ≤ 1730	1711 ≤ L ≤ 1720	1701 ≤ L ≤ 1710	1691 ≤ L ≤ 1700	1681 ≤ L ≤ 1690	1671 ≤ L ≤ 1680	1661 ≤ L ≤ 1670
Position 6	Position 5	Position 4	Position 3	Position 2	Position 1	Position 0

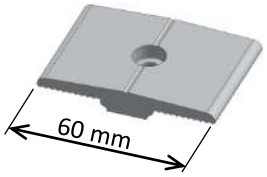


6°) Preparation of double clamps

Normal double clamp



Wide double clamp



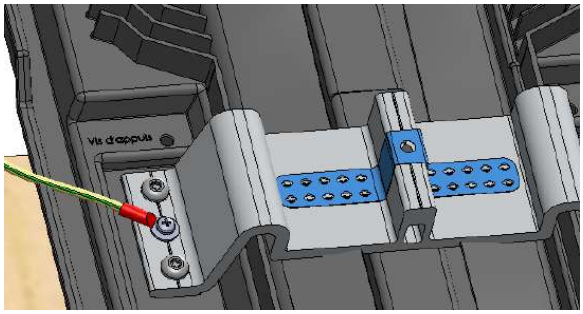
Select the double clamp according to the width of the PV module to be installed.
- if PV module width ≤ 1012 mm : WIDE double clamp.
- if PV module width ≥ 1012 mm : normal clamp.

9) Grounding preparation for the PV modules

To ground the PV module, several solutions are possible:

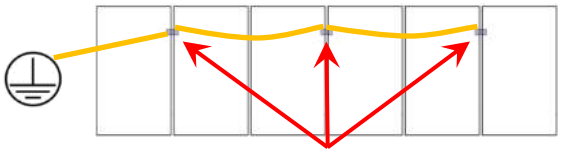
a) Method 1
Connect the ground wire to one double fixing bracket (7) for two PV modules.

It is possible to ground both the PV module and the double fixing bracket (7) by using an EASY GROUNDING (www.edilians.co.uk)



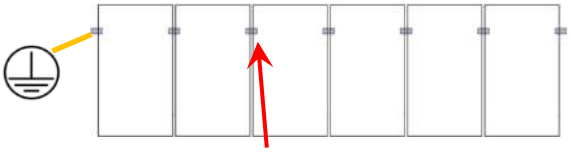
There are two ways of wiring the PV field earth, depending on the regulations in force in the country.

Possibility 1 (France)



one earthing part every two modules

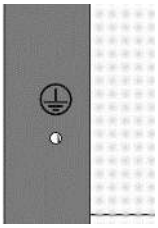
Possibility 2

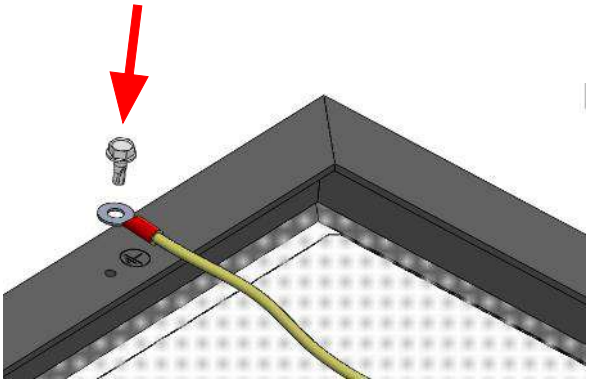


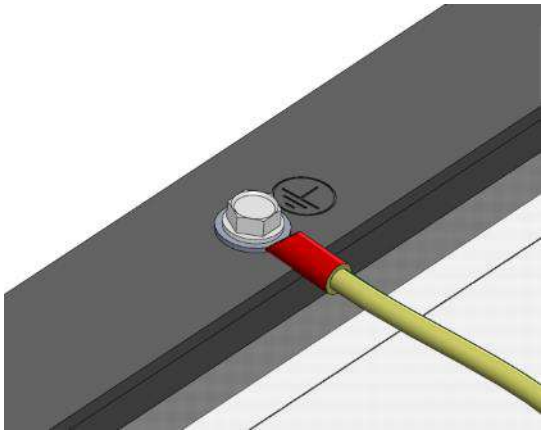
one earthing part on every module

b) Method 2
Connect the ground wire directly to the PV module

Link all the PV modules directly to the grounding wire using the holes provided by the constructor underneath the module..





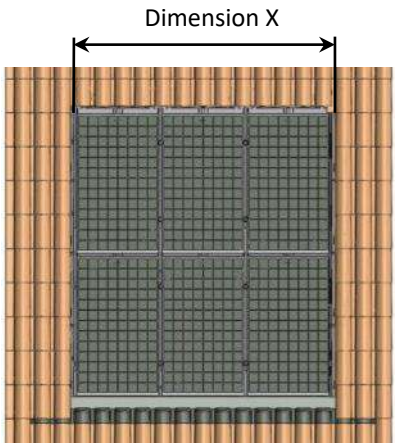


10) Overall photovoltaic field dimensions (Visible part of the installation)

1°) Calculation of the visible field width

Dimensions of the photovoltaic field	
Field width (mm)	
Main field	X = 1040 x Nbx + (2 x 20)
Side roof edge (edging)	X = 1040 x Nbx + (2 x 25)

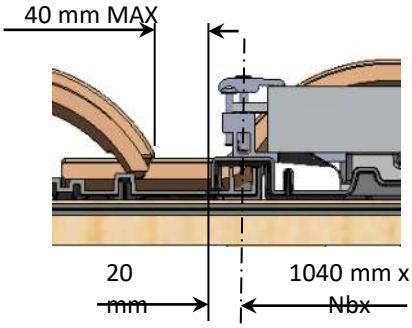
Nbx : Number of PV module columns

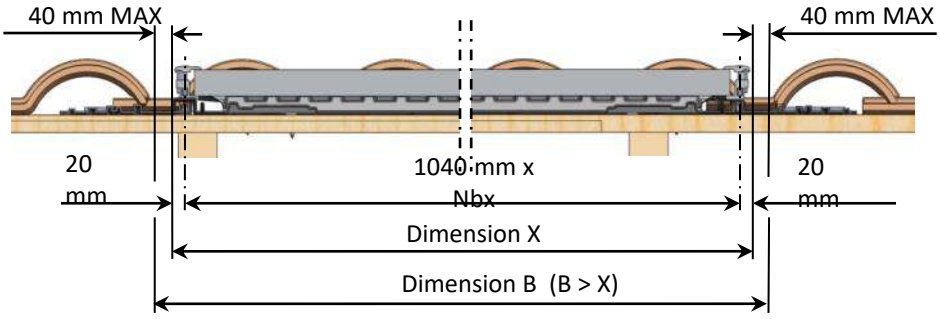


a) Main field

Ex : (1040 x 12) + (2 x 20)= 12520

Number of widthways modules with standard side flashing															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Dimension X	1080	2120	3160	4200	5240	6280	7320	8360	9400	10440	11480	12520	13560	14600	15640	16680





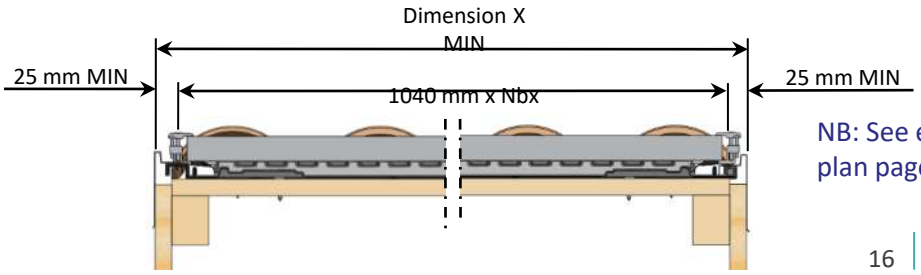
a1) Identification of the position of the photovoltaic field

Dimension B should be positioned in the hollow of the tiles.

b) Side roof edge

Ex : (1040 x 12) + (2 x 25)= 12530

Number of widthways modules with assembly up to side edges															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Dimension X MIN	1090	2130	3170	4210	5250	6290	7330	8370	9410	10450	11490	12530	13570	14610	15650	16690



NB: See edging plate plan page 69

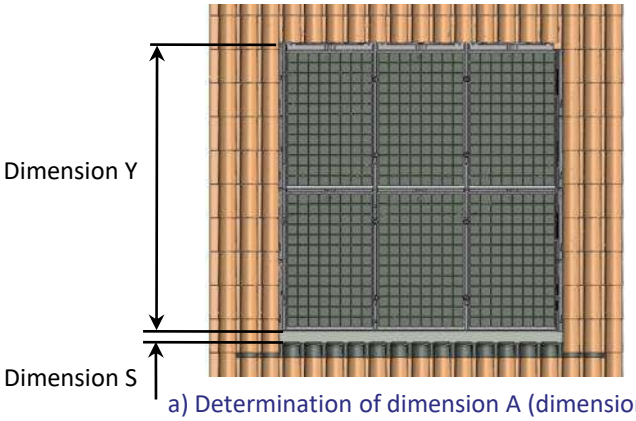
10) Overall photovoltaic field dimensions (Visible part of the installation)

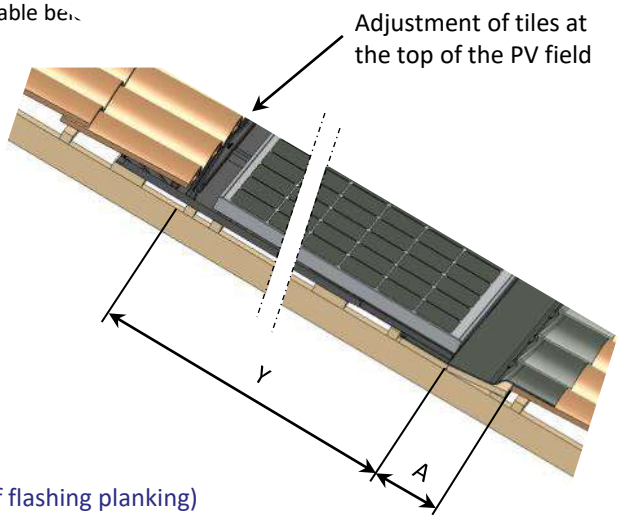
2°) Calculation of the visible field height

Dimensions of the photovoltaic field	
	Field height (mm)
Main field	Y = Pas x (Nby-1) + 1641 + 73
Bottom of roof (along the guttering)	

Interval: system interval in direction of roof slope, see table be...

Nby: Number of PV module lines

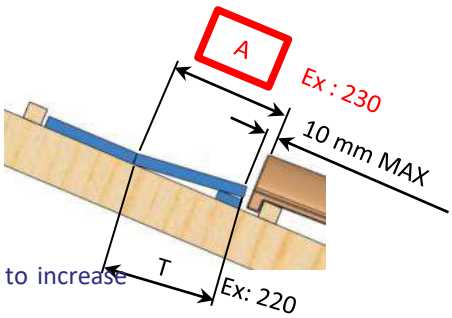




a) Determination of dimension A (dimension of flashing planking)

Dimension "T" is the MIN width of the board which can be used for a given roof slope to prevent the creation of a counter-slope. However, it is possible to create planking using boards whose width exceeds the MIN.

Roof slope (°)	Board width dimension T MIN (mm)	Dimension A Min (mm)
10 to 12	250	260
13 to 16	220	230
17 to 19	180	190
20 to 24	150	160
25 to 50	120	130



NB: in order to adjust tiles at the top of the PV field, it may be necessary to increase dimension S in order to raise the field (See Annex 3 p. 68)

b) Determination of dimension Y

NB: Check module compatibility on www.edilians.co.uk		Module length (lg)						
		1661 ≤ lg ≤ 1670	1671 ≤ lg ≤ 1680	1681 ≤ lg ≤ 1690	1691 ≤ lg ≤ 1700	1701 ≤ lg ≤ 1710	1711 ≤ lg ≤ 1720	1721 ≤ lg ≤ 1730
Vertical system adjustment		1690	1700	1710	1720	1730	1740	1750
		Dimension Y						
Number of vertical modules	1	1714	1714	1714	1714	1714	1714	1714
	2	3404	3414	3424	3434	3444	3454	3464
	3	5094	5114	5134	5154	5174	5194	5214
	4	6784	6814	6844	6874	6904	6934	6964
	5	8474	8514	8554	8594	8634	8674	8714
	6	10164	10214	10264	10314	10364	10414	10464
	7	11854	11914	11974	12034	12094	12154	12214

Ex : (1690 x (3-1)) + 1641+73 = 5094

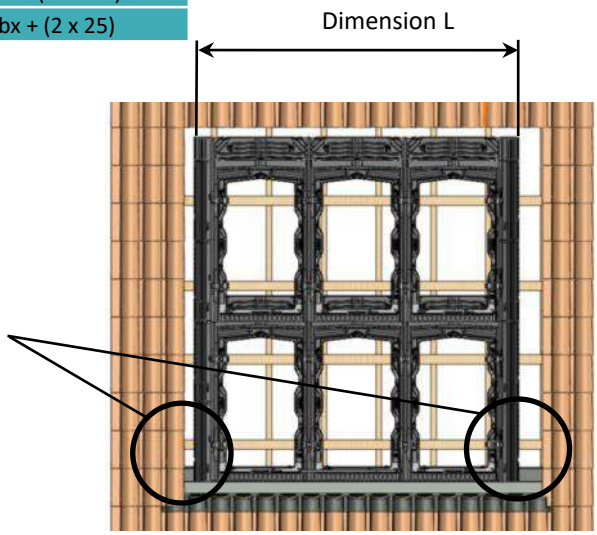
Visible field dimension = dimension Y + dimension S

10) Overall dimensions of the EASY ROOF system (With flashing)

1°) Calculation of overall width of the system to be installed

Dimensions of the photovoltaic field	
	Field width (mm)
Main field	L = 1040 x Nbx + (2 x 195)
Side roof edge (edging)	L = 1040 x Nbx + (2 x 25)

Nbx : Number of PV module columns

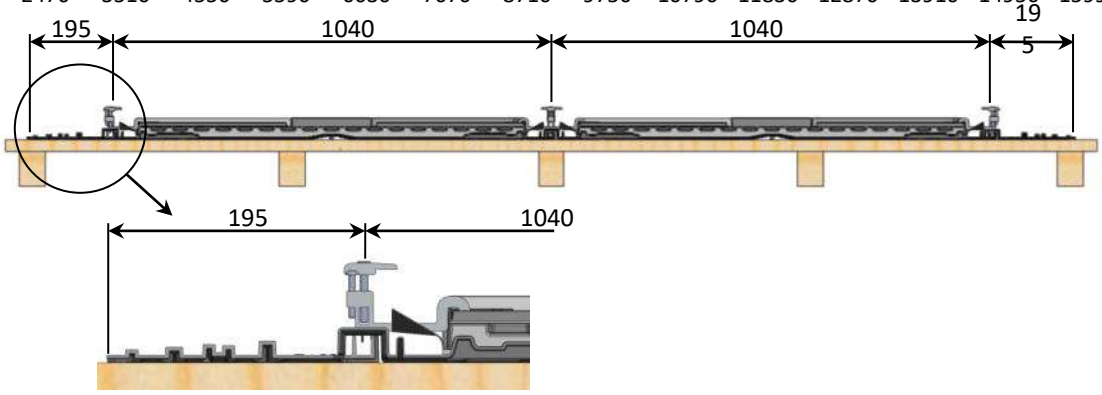


The length of the d* wood is equal to dimension L + a sufficient length on each side to rest on the external frame rafters.

a) Main field

Ex : (1040 x 12) + (2 x 195)= 12870

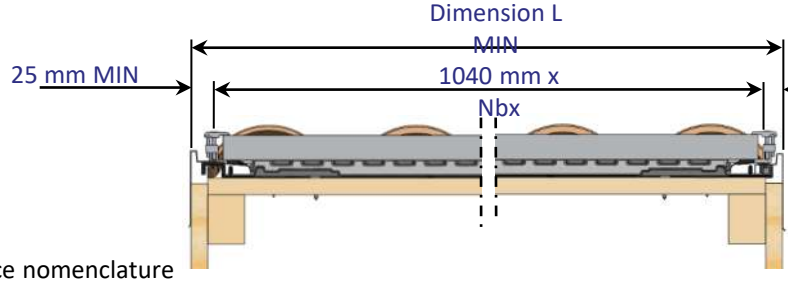
Number of widthways modules with standard side flashing															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Dimension L	1430	2470	3510	4550	5590	6630	7670	8710	9750	10790	11830	12870	13910	14950	15990	17030



b) Side roof edge

Ex : (1040 x 12) + (2 x 25)= 12530

Number of widthways modules with assembly up to side edges															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Dimension L MIN	1090	2130	3170	4210	5250	6290	7330	8370	9410	10450	11490	12530	13570	14610	15650	16690



NB: See edging plate plan page 67

* Reference nomenclature

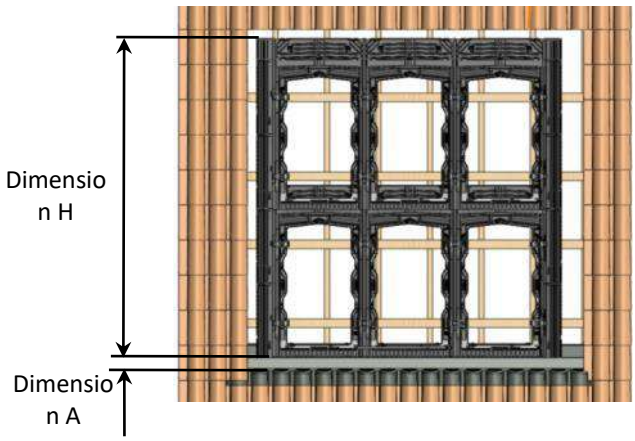
10) Overall dimensions of the EASY ROOF system (With flashing)

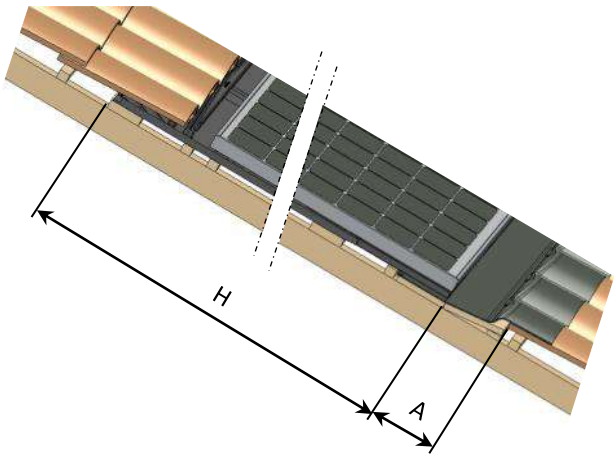
2°) Calculation of overall height of the system to be installed

Dimensions of the photovoltaic field	
	Field height (mm)
Main field	H = interval x (Nby-1) + 1641 + 321
Bottom of roof (along the guttering)	

Interval: system interval in direction of roof slope, see table below

Nby: Number of PV module lines





a) Determination of dimension A (dimension of flashing planking)

Dimension "T" is the MIN width of the board which can be used for a given roof slope to prevent the creation of a counter-slope. However, it is possible to create planking using boards whose width exceeds the MIN.

Roof slope (°)	Board width dimension T MIN (mm)	Dimension A Min (mm)
10 to 12	250	260
13 to 16	220	230
17 to 19	180	190
20 to 24	150	160
25 to 50	120	130

b) Determination of dimension H

NB: Check module compatibility on www.edilians.co.uk		Module length (lg)						
		1661 ≤ lg ≤ 1670	1671 ≤ lg ≤ 1680	1681 ≤ lg ≤ 1690	1691 ≤ lg ≤ 1700	1701 ≤ lg ≤ 1710	1711 ≤ lg ≤ 1720	1721 ≤ lg ≤ 1730
Vertical system adjustment		1690	1700	1710	1720	1730	1740	1750
		Dimension Y (en mm)						
Number of vertical modules	1	1962	1962	1962	1962	1962	1962	1962
	2	3652	3662	3672	3682	3692	3702	3712
	3	5342	5362	5382	5402	5422	5442	5462
	4	7032	7062	7092	7122	7152	7182	7212
	5	8722	8762	8802	8842	8882	8922	8962
	6	10412	10462	10512	10562	10612	10662	10712
	7	12102	12162	12222	12282	12342	12402	12462

Ex : (1690 x (3-1) + 1641 +321 = 5342

Dimension of field with flashing = dimension H + dimension A

NB: if the PV field is positioned on the ridge, it is possible to shorten the frames on the upper level by MAX 80 mm. (See annex 3 p. 69)

11) Technical definition of the EASY ROOF frame installation and sizing

The choice and sizing of the EASY ROOF system support boards is made according to the type and structure of the roof frame destined to receive the integrated system. The EASY ROOF system can only be installed on roofs with slopes ranging from 10° to 50°. The buildings must be enclosed (closed roofs).

Use the tables in the following pages to establish the dimensions of the support boards that you can use for the assembly.

The number of fixing points per PV panel can vary between 4 or 6 depending on the boards that have been chosen for the installation of the PV field and/or the installation zone (edge of roof, marine environment etc.)

The values set out the in the table below apply only to those geographic zones that correspond to 1 to 4 of the snow and wind regulations French Standard NF EN 1991-1-4 and for an altitude of less than 900m. For other cases, a technical and feasibility study must be carried out on a case by case basis.
It is essential to adhere to the sizing instructions The sizing software MY SOLAR PROJECT is available on the EDILIANS Website: https://fr.EDILIANS.com/supports/
For roofs with a continuous batten, an anti-abrasion underlay that is compliant with the DTU (Construction Unified Codes of Practice) is mandatory

Please note that the guarantee will only apply if the installation has been carried out in compliance with the rules provided in these instructions and in the different annexes to which they may refer.

MODULE COMPATIBILITY

This installer is responsible for ensuring that the PV module chosen for the installation is included in the compatibility list drawn up by EDILIANS (www.edilians.co.uk) and adapted to climatic loads.
If the EASY ROOF system is to be installed on a building by the sea or one used for intensive farming, it is up to the companies installing the system to make sure that all of the parts used in the installation, in particular the termination system, are compatible with either salt-spray exposure or an ammonia filled environment.
In particular, the modules must be validated according to French standards NF EN 61701 and NF EN 62716.
The assembly instructions of the photovoltaic module manufacturer must be respected. It is up to the installer to check that the photovoltaic module manufacturer's requirements are respected during the mounting of the said module into the fixing system that is the subject of the present instructions.

TRAINING

EDILIANS recommends and offers an "installer" training course, provided by itself or another company.
This training course covers the installation of the EASY ROOF system as well as all aspects relating to safety (work at height, electrical safety).
A roof structure at ground level enables the different elements of the installation to be presented and allows the participants to work under real-life conditions according to the technical regulations in force. It also serves to highlight awareness of the dangers inherent to this profession and of the importance of following safety regulations.
This training is essential in order to benefit from the 10 year manufacturer's guarantee.

SAFETY INSTRUCTIONS

Before carrying out any work on a installation, appropriate safety measures for working at height must be put in place such as, accident prevention measures using CPE or PPE for each worker.

INSTALLER QUALIFICATIONS

To become an EASY ROOF system installer you must be a professional with roofing and electricity expertise corresponding to the French designations QUALIPV BAT and ELEC.

12)

FIELD OF USE

Used in mainland France and French overseas territories.

- Rural non-polluted, normal or heavy industrial or marine environments.
- On insulated or non-insulated buildings, exclusively on a cold roof
- Only in places with low or intermediate humidity, in a healthy environment.
- Used in seismic zones up to zone 4 for category IV buildings.
- Whole or partial roof installation.
- The length between the bottom of the PV field and the roof ridge must not be more than 12m with standard assembly (discontinuous roofing).
- The procedure must be implemented in such a way that the distance between the ridge and the highest frame does not exceed 4 m.

PERFORMANCE IN DIFFICULT WEATHER CONDITIONS

- The photovoltaic panel structure does not contribute to the stability of the building
- Only the EASY ROOF system (with filling that retains its shape) is appropriate for wind zone 4 and for an altitude of less than 900m for snow loads. The system is valid for normal to 1600 Pascal wind loads and normal to 2400 Pascal snow loads.
- Moreover, it is the installer's responsibility to ensure that the photovoltaic module used is appropriate for the climate loads.
- Any modifications to loads for renovation projects must be studied by a specialist design office in compliance with current calculation regulations. In any event, the solidity of the existing structure must be tested by a certified testing body or by a specialist design office.

ELECTRICAL SAFETY OF THE PHOTOVOLTAIC FIELD

- The electrical standards in force must be complied with. In particular, in France, standards NF C15-100 and NF C15-712 are mandatory

- The documentation supplied with the different modules makes it possible to confirm that they comply with French standards EN 61 215 and EN 61 730 (guaranteed electric and thermal performances: category A according to French standard NF EN 61 730 up to 1000 V DC).

- Some technical data sheets from module manufacturers mention that the characteristics of the parts can be changed without prior notice. It is the installer's responsibility to ensure that the panels are always category A.

- The photovoltaic modules are equipped with detachable connectors, classed IP65 and category A

- The installer must ensure that all the PV modules are of the same brand and same type.

- So as to guarantee the safety of the roof-integrated photovoltaic field, we recommend the use of PV modules equipped with junction boxes that comply to standard CEI 62790:2014

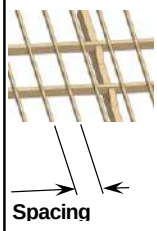
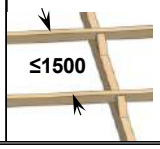
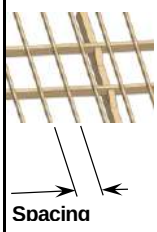
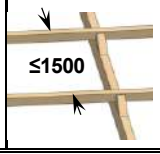
- Bearing in mind the mention made in the technical data sheets, it is the installer's responsibility to make sure that the category of the equipment and the protection rating are A and IP65 respectively.

Technical definition of the EASY ROOF frame installation and sizing

12.1) Normal zone, installation in the standard area or lower edge

Normal

NB: dimensions in mm

		10° to 50° normal site (IIIa category) gable roof														
		Zone 1				Zone 2				Zone 3				Zone 4				**Countersunk screw stainless steel A2 MIN length** (structural connecting screw)
		No. brackets	Batten thickness	min board width	No. screws / intersection	No. brackets	Batten thickness	min board width	No. screws / intersection	No. brackets	Batten thickness	min board width	No. screws / intersection	No. brackets	Batten thickness	min board width	No. screws / intersection	
Main field	 Spacing	Spacing ≤ 600 Spacing of trusses or rafters	4	15	210	2	4	15	260	2	6	15	220	2	6	15	240	2	5x60/32
			4	22	110	2	4	22	120	2	4	22	150	2	4	22	170	2	5x60/32
			4	27	100	2	4	27	100	2	4	27	100	2	4	27	110	2	5x60/33
			4	40	100	2	4	40	100	2	4	40	100	2	4	40	100	2	5x70/32
		600<Spacing ≤ 900 Spacing of trusses or rafters	4	22	150	2	4	22	200	2	4	22	220	2	4	22	250	2	5x60/32
			4	27	100	2	4	27	120	2	4	27	140	2	4	27	170	2	5x60/32
			4	40	100	2	4	40	100	2	4	40	100	2	4	40	100	2	5x70/32
		Spacing ≤ 1500 Metallic truss	4	40	130	2	4	40	130	2	4	40	130	2	4	40	130	2	Win 6,3x70 (2)
			6	40	100	2	6	40	100	2	6	40	100	2	6	40	100	2	Win 6,3x70 (2)
	 ≤1500	Spacing ≤ 1500 (1) Structure with built-in battening Following roof slope (3)	4	22	150	3	4	22	150	3	4	22	150	3	4	22	150	3	5x60/32
			4	27	120	3	4	27	120	3	4	27	120	3	4	27	120	3	5x60/32
			4	40	100	3	4	40	100	3	4	40	100	3	4	40	100	3	5x70/32
		Spacing ≤ 1500 (1) Wood or metal structure	4	30	150	3	4	30	160	3	4	30	200	3	4	30	220	3	5x60/32
			4	40	100	3	4	40	100	3	4	40	120	3	4	40	130	3	5x70/32
Lower edge	 Spacing	**Spacing ≤ 600** Spacing of trusses or rafters	**4**	15	250	2	**6**	15	250	2	**6**	15	250	2	**6**	15	260	2	5x60/32
			4	22	130	2	**4**	22	140	2	**4**	22	160	2	**4**	22	180	2	5x60/32
			4	27	100	2	**4**	27	100	2	**4**	27	120	2	**4**	27	120	2	5x60/33
			4	40	100	2	**4**	40	100	2	**4**	40	100	2	**4**	40	100	2	5x70/32
		600<Spacing ≤ 900 Spacing of trusses or rafters	**4**	22	170	2	**4**	22	200	2	**4**	22	250	2	**4**	22	270	2	5x60/32
			4	27	120	2	**4**	27	140	2	**4**	27	160	2	**4**	27	180	2	5x60/32
			4	40	100	2	**4**	40	100	2	**4**	40	100	2	**4**	40	100	2	5x70/32
		Spacing ≤ 1500 Metallic truss	**4**	40	130	2	**4**	40	130	2	**4**	40	130	2	**4**	40	140	2	Win 6,3x70 (2)
			6	40	100	2	**6**	40	100	2	**6**	40	100	2	**6**	40	100	2	Win 6,3x70 (2)
	 ≤1500	**Spacing ≤ 1500 (1)** Structure with built-in battening Following roof slope (3)	**4**	22	150	3	**4**	22	200	3	**4**	22	220	3	**4**	22	250	3	5x60/32
			4	27	120	3	**4**	27	120	3	**4**	27	150	3	**4**	27	160	3	5x60/32
			4	40	100	3	**4**	40	100	3	**4**	40	100	3	**4**	40	100	3	5x70/32
		Spacing ≤ 1500 (1) Wood or metal structure	**4**	30	150	3	**4**	30	180	3	**4**	30	220	3	**4**	30	250	3	5x60/32
			4	40	100	3	**4**	40	100	3	**4**	40	120	3	**4**	40	140	3	5x70/32

(1) : Layout of wood in direction of roof slope.

(2) : Wingteks 6.3 x 70 (Reference Etanco : 288 283 or 288 889).

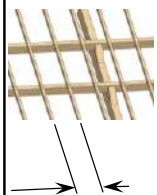
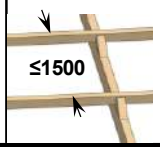
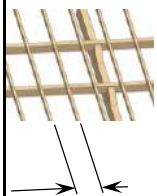
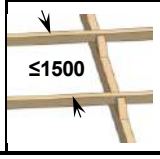
Technical definition of the EASY ROOF frame installation and sizing

12.2) Normal zone, installation on the side edge or at an angle

(3) : The support boards are attached in the truss or the rafters

Normal

NB: dimensions in mm

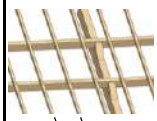
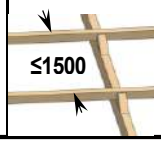
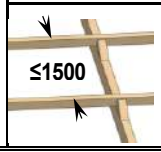
			10° to 50° normal site (IIIa category) gable roof														Countersunk screw stainless steel A2 MIN length (structural connecting screw)
			Zone 1				Zone 2				Zone 3				Zone 4		
			No. brackets	Batten thickness	min board width	No. screws / intersection	No. brackets	Batten thickness	min board width	No. screws / intersection	No. brackets	Batten thickness	min board width	No. screws / intersection	No. brackets	Batten thickness	min board width	No. screws / intersection	
Side edge	 Spacing	**Spacing ≤ 600** Spacing of trusses or rafters	**6**	15	200	2	**6**	15	220	2	**6**	15	260	2	**6**	15	300	2	5x60/32
			4	22	130	2	**4**	22	160	2	**4**	22	180	2	**4**	22	210	2	5x60/32
			4	27	100	2	**4**	27	110	2	**4**	27	120	2	**4**	27	150	2	5x60/33
			4	40	100	2	**4**	40	100	2	**4**	40	100	2	**4**	40	100	2	5x70/32
		600<Spacing ≤ 900 Spacing of trusses or rafters	**4**	22	200	2	**6**	22	160	2	**6**	22	180	2	**6**	22	210	2	5x60/32
			4	27	130	2	**4**	27	160	2	**4**	27	180	2	**6**	27	150	2	5x60/32
			4	40	100	2	**4**	40	100	2	**4**	40	100	2	**4**	40	100	2	5x70/32
		Spacing ≤ 1500 Metallic truss	**4**	40	130	2	**4**	40	130	2	**4**	40	140	2	**4**	40	160	2	Win 6,3x70 (2)
			6	40	100	2	**6**	40	100	2	**6**	40	100	2	**6**	40	120	2	Win 6,3x70 (2)
	 ≤1500	**Spacing ≤ 1500 (1)** Structure with built-in battening Following roof slope	**4**	22	150	3	**4**	22	150	3	**4**	22	160	3	**6**	22	150	3	5x60/32
			4	27	120	3	**4**	27	120	3	**4**	27	130	3	**6**	27	120	3	5x60/32
			4	40	100	3	**4**	40	100	3	**4**	40	100	3	**6**	40	100	3	5x70/32
		Spacing ≤ 1500 (1) Wood or metal structure	**4**	30	180	3	**6**	30	160	3	**6**	30	180	3	**6**	30	200	3	5x60/32
			4	40	100	3	**4**	40	120	3	**4**	40	140	3	**4**	40	160	3	5x70/32
Angle	 Spacing	**Spacing ≤ 600** Spacing of trusses or rafters	**6**	15	200	2	**6**	15	250	2	**6**	15	280	2					5x60/32
			4	22	140	2	**4**	22	170	2	**6**	22	160	2	**6**	22	160	2	5x60/32
			4	27	100	2	**4**	27	120	2	**4**	27	140	2	**6**	27	100	2	5x60/33
			4	40	100	2	**4**	40	100	2	**4**	40	100	2	**6**	40	100	2	5x70/32
		600<Spacing ≤ 900 Spacing of trusses or rafters	**6**	22	150	2	**6**	22	170	2	**6**	22	200	2	**6**	22	230	2	5x60/32
			4	27	140	2	**4**	27	170	2	**4**	27	200	2	**6**	27	150	2	5x60/32
			4	40	100	2	**4**	40	100	2	**4**	40	100	2	**6**	40	100	2	5x70/32
		Spacing ≤ 1500 Metallic truss	**4**	40	130	2	**4**	40	130	2	**4**	40	150	2	**4**	40	180	2	Win 6,3x70 (2)
			6	40	100	2	**6**	40	100	2	**6**	40	100	2	**6**	40	120	2	Win 6,3x70 (2)
	 ≤1500	**Spacing ≤ 1500 (1)** Structure with built-in battening Following roof slope (3)	**4**	22	130	3	**4**	22	150	3	**4**	22	180	3	**6**	22	250	3	5x60/32
			4	27	100	3	**4**	27	120	3	**4**	27	140	3	**6**	27	160	3	5x60/32
			4	40	100	3	**4**	40	100	3	**4**	40	100	3	**6**	40	100	3	5x70/32
		Spacing ≤ 1500 (1) Wood or metal structure	**6**	30	140	3	**6**	30	160	3	**6**	30	200	3	**6**	30	250	3	5x60/32
			4	40	120	3	**4**	40	130	3	**4**	40	150	3	**6**	40	140	3	5x70/32

Technical definition of the EASY ROOF frame installation and sizing

12.3) Maritime zone, installation in the standard area or lower edge

Maritime

NB: dimensions in mm

			10° to 50° exposed site (category I) gable roof														
			Zone 1				Zone 2				Zone 3				Zone 4				
			No. brackets	Batten thickness	min board width	No. screws / intersectio	No. brackets	Batten thickness	min board width	No. screws / intersectio	No. brackets	Batten thickness	min board width	No. screws / intersectio	No. brackets	Batten thickness	min board width	No. screws / intersectio	Countersunk screw stainless steel A2 MIN length (structural connecting screw)
Main field	 Spacing	Spacing ≤ 600 Spacing of trusses or rafters	6	15	220	2	6	15	260	2	6	15	310	2					5x60/32
			4	22	160	2	4	22	185	2	4	22	220	2	6	22	170	2	5x60/32
			4	27	110	2	4	27	120	2	4	27	150	2	4	27	170	2	5x60/33
			4	40	100	2	4	40	100	2	4	40	100	2	4	40	100	2	5x70/32
		600<Spacing ≤ 900 Spacing of trusses or rafters	6	22	160	2	6	22	200	2	6	22	220	2	6	22	250	2	5x60/32
			4	27	160	2	4	27	180	2	4	27	220	2	6	27	170	2	5x60/32
			4	40	100	2	4	40	100	2	4	40	100	2	4	40	120	2	5x70/32
		Spacing ≤ 1500 Metallic truss	4	40	130	2	4	40	140	2	4	40	170	2	4	40	200	2	Win 6,3x70 (2)
			6	40	100	2	6	40	100	2	6	40	120	2	6	40	130	2	Win 6,3x70 (2)
	 ≤1500	Spacing ≤ 1500 (1) Structure with built-in battening	4	22	140	3	4	22	160	3	4	22	190	3	4	22	220	3	5x60/32
			4	27	110	3	4	27	130	3	4	27	150	3	4	27	180	3	5x60/32
			4	40	100	3	4	40	100	3	4	40	100	3	4	40	100	3	5x70/32
		Spacing ≤ 1500 (1) Wood or metal	6	30	140	3	6	30	170	3	6	30	200	3	6	30	230	3	5x60/32
			4	40	120	3	4	40	140	3	4	40	170	3	4	40	200	3	5x70/32
Lower edge	 Spacing	Spacing ≤ 600 Spacing of trusses or rafters	6	15	250	2	6	15	300	2	6	15	350	2					5x60/32
			4	22	180	2	4	22	210	2	6	22	160	2	6	22	200	2	5x60/32
			4	27	120	2	4	27	140	2	4	27	160	2	4	27	190	2	5x60/33
			4	40	100	2	4	40	100	2	4	40	100	2	4	40	100	2	5x70/32
		600<Spacing ≤ 900 Spacing of trusses or rafters	6	22	180	2	6	22	220	2	6	22	250	2	6	22	300	2	5x60/32
			4	27	170	2	6	27	140	2	6	27	160	2	6	27	190	2	5x60/32
			4	40	100	2	4	40	100	2	4	40	110	2	4	40	130	2	5x70/32
		Spacing ≤ 1500 Metallic truss	4	40	130	2	4	40	160	2	4	40	200	2	4	40	220	2	Win 6,3x70 (2)
			6	40	100	2	6	40	110	2	6	40	130	2	6	40	140	2	Win 6,3x70 (2)
	 ≤1500	Spacing ≤ 1500 (1) Structure with built-in battening	4	22	150	3	4	22	190	3	4	22	220	3	4	22	250	3	5x60/32
			4	27	120	3	4	27	140	3	4	27	170	3	4	27	200	3	5x60/32
			4	40	100	3	4	40	100	3	4	40	100	3	4	40	120	3	5x70/32
		Spacing ≤ 1500 (1) Wood or metal	6	30	160	3	6	30	185	3	6	30	220	3	6	30	250	3	5x60/32
			6	40	100	3	6	40	110	3	6	40	125	3	6	40	140	3	5x70/32

(1) : Layout of wood in direction of roof slope.

(2) : Wingteks 6.3 x 70 (Reference Etanco : 288 283 or 288 889).

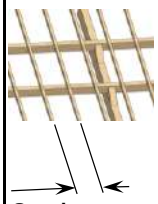
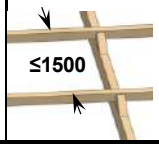
(3) : The support boards are attached in the truss or the rafters

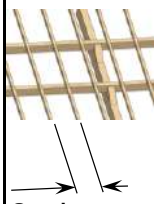
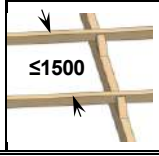
Technical definition of the EASY ROOF frame installation and sizing

12.4) Maritime zone, installation on the side edge or at an angle

Maritime

NB: dimensions in mm

			10° to 50° exposed site (category I) gable roof														
			Zone 1				Zone 2				Zone 3				Zone 4				Countersunk screw stainless steel A2 MIN length (structural connecting screw)
			No. brackets	Batten thickness	min board width	No. screws / intersection	No. brackets	Batten thickness	min board width	No. screws / intersection	No. brackets	Batten thickness	min board width	No. screws / intersection	No. brackets	Batten thickness	min board width	No. screws / intersection	
Side edge	 Spacing	**Spacing ≤ 600** Spacing of trusses or rafters	**6**	15	280	2													5x60/32
			6	22	140	2	**6**	22	160	2	**6**	22	190	2	**6**	22	220	2	5x60/32
			6	27	100	2	**6**	27	110	2	**6**	27	130	2	**6**	27	150	2	5x60/33
			4	40	100	2	**4**	40	100	2	**4**	40	100	2	**4**	40	100	2	5x70/32
		600<Spacing ≤ 900 Spacing of trusses or rafters	**6**	22	200	2	**6**	22	250	2	**6**	22	300	2	**6**	22	340	2	5x60/32
			6	27	130	2	**6**	27	160	2	**6**	27	190	2	**6**	27	220	2	5x60/32
			4	40	100	2	**4**	40	110	2	**4**	40	130	2	**4**	40	150	2	5x70/32
		Spacing ≤ 1500 Metallic truss	**4**	40	150	2	**4**	40	180	2	**4**	40	210	2	**4**	40	250	2	Win 6,3x70 (2)
			6	40	100	2	**6**	40	130	2	**6**	40	150	2	**6**	40	170	2	Win 6,3x70 (2)
	 ≤1500	**Spacing ≤ 1500 (1)** Structure with built-in battening Following roof slope (3)	**6**	22	150	3	**6**	22	150	3	**6**	22	170	3	**6**	22	200	3	5x60/32
			4	27	140	3	**4**	27	170	3	**4**	27	200	3	**4**	27	220	3	5x60/32
			4	40	100	3	**4**	40	100	3	**4**	40	110	3	**4**	40	130	3	5x70/32
		Spacing ≤ 1500 (1) Wood or metal structure	**6**	30	180	3	**6**	30	220	3	**6**	30	250	3	**6**	30	290	3	5x60/32
			6	40	110	3	**6**	40	120	3	**6**	40	140	3	**6**	40	170	3	5x70/32

Angle	 Spacing																		5x60/32
		Spacing ≤ 600 Spacing of trusses or rafters	**6**	22	150	2	**6**	22	170	2	**6**	22	200	2	**6**	22	240	2	5x60/32
			6	27	100	2	**6**	27	120	2	**6**	27	140	2	**6**	27	160	2	5x60/33
			4	40	100	2	**6**	40	100	2	**6**	40	100	2	**6**	40	100	2	5x70/32
		600<Spacing ≤ 900 Spacing of trusses or rafters	**6**	22	220	2	**6**	22	260	2	**6**	22	300	2	**6**	22	350	2	5x60/32
			6	27	150	2	**6**	27	170	2	**6**	27	200	2	**6**	27	230	2	5x60/32
			4	40	100	2	**6**	40	100	2	**6**	40	100	2	**6**	40	110	2	5x70/32
		Spacing ≤ 1500 Metallic truss	**4**	40	170	2	**4**	40	200	2	**4**	40	230	2	**4**	40	270	2	Win 6,3x70 (2)
			6	40	110	2	**6**	40	140	2	**6**	40	160	2	**6**	40	180	2	Win 6,3x70 (2)
	 ≤1500	**Spacing ≤ 1500 (1)** Structure with built-in battening Following roof slope (3)	**6**	22	130	3	**6**	22	150	3	**6**	22	180	3	**6**	22	210	3	5x60/32
			6	27	100	3	**6**	27	120	3	**6**	27	140	3	**6**	27	160	3	5x60/32
			6	40	100	3	**6**	40	100	3	**6**	40	100	3	**6**	40	100	3	5x70/32
		Spacing ≤ 1500 (1) Wood or metal structure	**6**	30	190	3	**6**	30	230	3	**6**	30	270	3	**6**	30	310	3	5x60/32
			6	40	110	3	**6**	40	130	3	**6**	40	150	3	**6**	40	180	3	5x70/32

(1) : Layout of wood in direction of roof slope.

(2) : Wingteks 6.3 x 70 (Reference Etanco : 288 283 or 288 889).

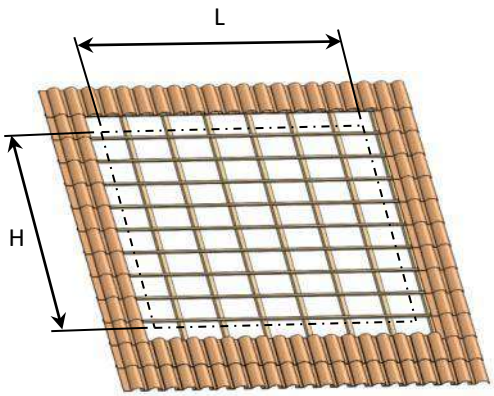
(3) : The support boards are attached in the truss or the rafters

13) EASY ROOF system assembly instructions

13.1.1) PV field centred on the roof slope

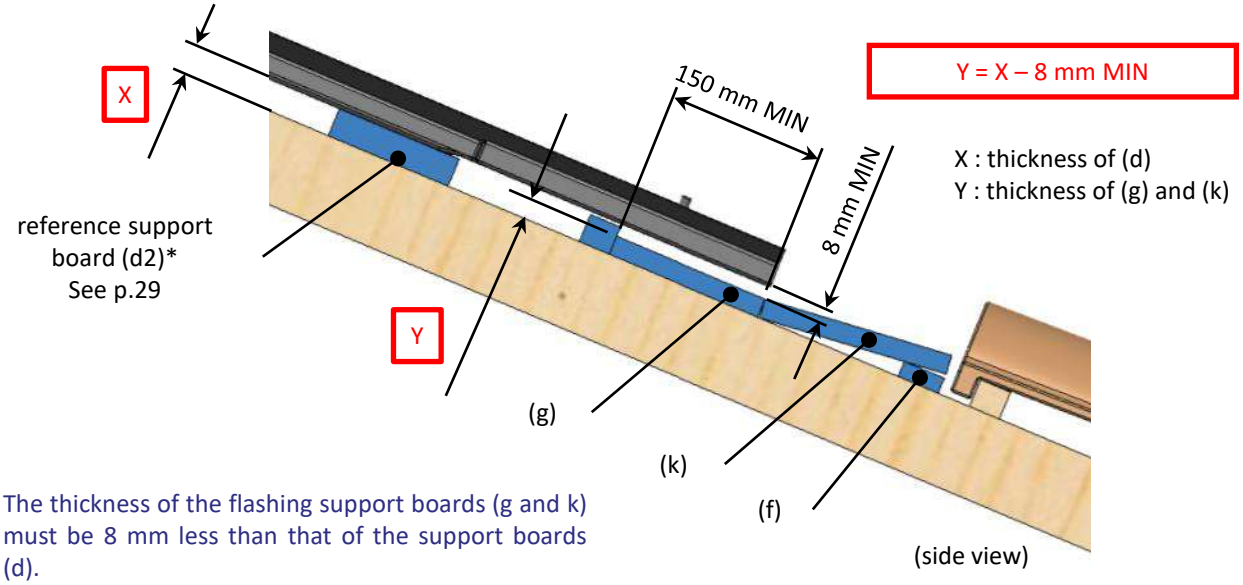
This section of the assembly instructions only concerns PV field installations in the centre of a roof slope. See page 30 of this document for installations on the edge of the roof along the guttering.

Clear tiles from the photovoltaic field installation zone, see pages 18 and 19 for L and H.



13.1.2) Definition of the wood to make the planking for the flashing at the bottom of the PV field

1°) Define the thickness of the wood forming the planking according to the thickness of the support boards (d)*.

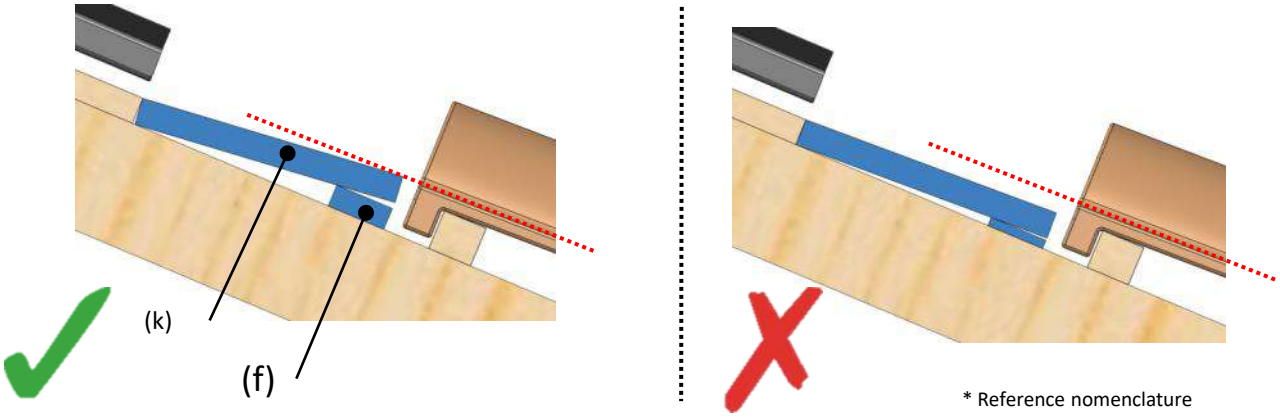


Y = X – 8 mm MIN

X : thickness of (d)
Y : thickness of (g) and (k)

The thickness of the flashing support boards (g and k) must be 8 mm less than that of the support boards (d).

2°) Position the board (f) so that the top of the board (k) is flush with the run-off surface of the tile or a few millimetres higher.



* Reference nomenclature

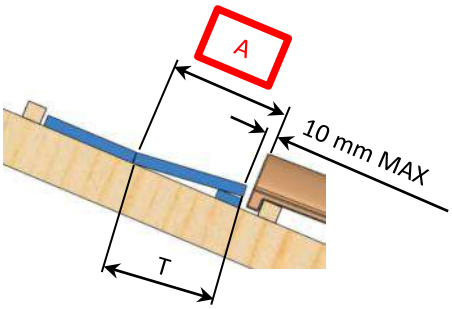
PV field centred on the roof slope

13.1.3) Installation of the planking for the flashing and the reference boards

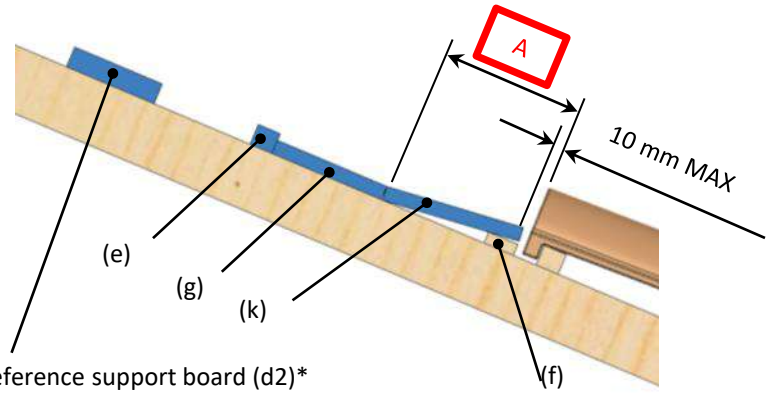
1°) Determination of dimension A (dimension of flashing planking)

Dimension "T" is the MIN width of the board which can be used for a given roof slope to prevent the creation of a counter-slope. However, it is possible to create planking using boards whose width exceeds the MIN.

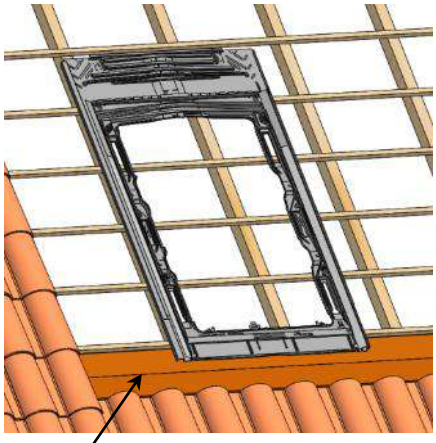
Roof slope (°)	Board width dimension T MIN (mm)	Dimension A Min (mm)
10 to 12	250	260
13 to 16	220	230
17 to 19	180	190
20 to 24	150	160
25 to 50	120	130



2°) Position the flashing planking MAX 10 mm from the top of the first tile at the bottom of the PV field. Use the wood (g) and (k) defined during the previous operation. Place the batten (e) against the board (g). Screw with 5x60 countersunk stainless steel screws.

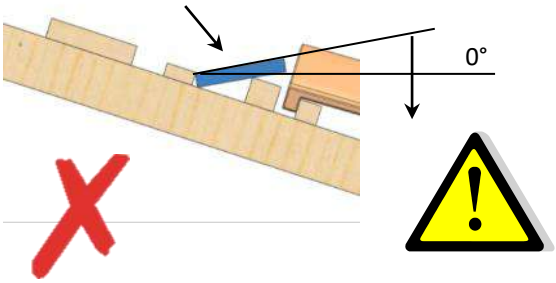


reference support board (d2)*
See p.31



The planking and the flashing must overhang each side of the PV field by at least 2 tiles.

Counter-slope PROHIBITED



* Reference nomenclature

13.1.3) Installation of the planking for the flashing and the reference boards

3°) For the following PV modules, the determination of the support board positions can be obtained directly from the SIMPLIFIED SIZING SHEETS (p. 117 to 120):

- LG NEON 2
- LG NEON R
- HECKERT Solar NeMo 2.0 60 M
- HECKERT Solar NeMo 2.0 60 M Black
- HECKERT Solar NeMo 2.0 60 P
- AUO SunBravo PM060MW4
- AUO SunBravo PM060MB4
- AUO SunBravo PM060MW5

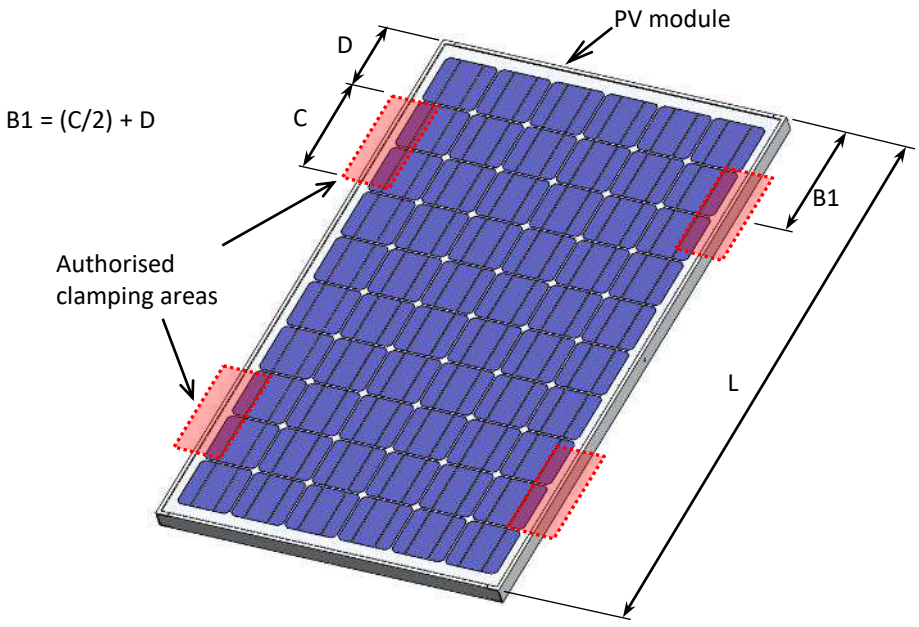
4°) GENERAL CASE for the determination of the positions of the reference support boards:

➢ a) Determination of dimension B1

Find value B1 in the manufacturer's INSTALLATION MANUAL INSTRUCTIONS or the data sheets for the PV module.

If this value cannot be found directly, it can be obtained using the following calculation:

B1 = (C/2) + D



- B1 : Distance between the top of the PV module and the centre of the authorised clamping area.
- L : PV module length.

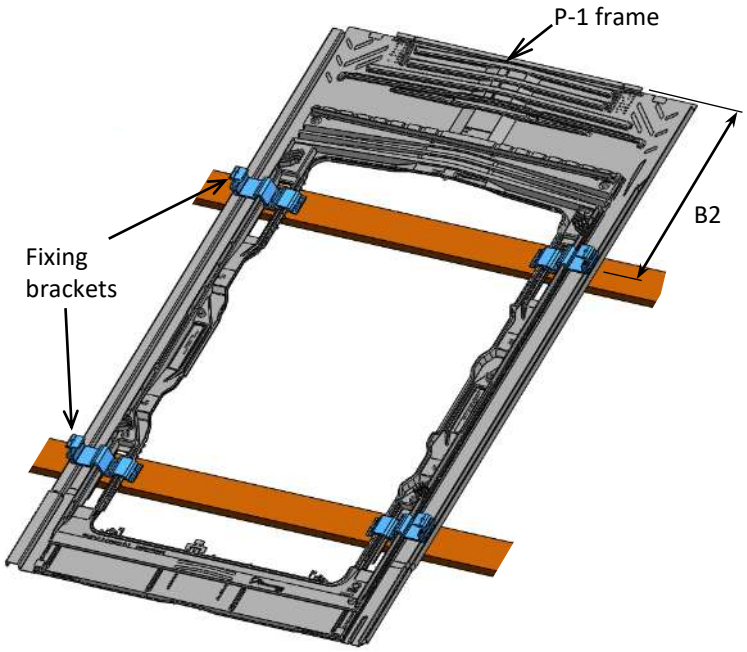
13.1.3) Installation of the planking for the flashing and the reference boards

➢ b) Determination of dimension B2

Refer to the table below depending on the result obtained in the previous paragraph.
Only the nominal dimension B2 should be used.

B1 (in mm) Tolerance range	B2 (in mm) Nominal
B1 < 308	585
309 < B1 < 328	605
329 < B1 < 348	625
349 < B1 < 368	645
369 <B1 < 388	665
389 < B1 < 408	685
409 < B1	705

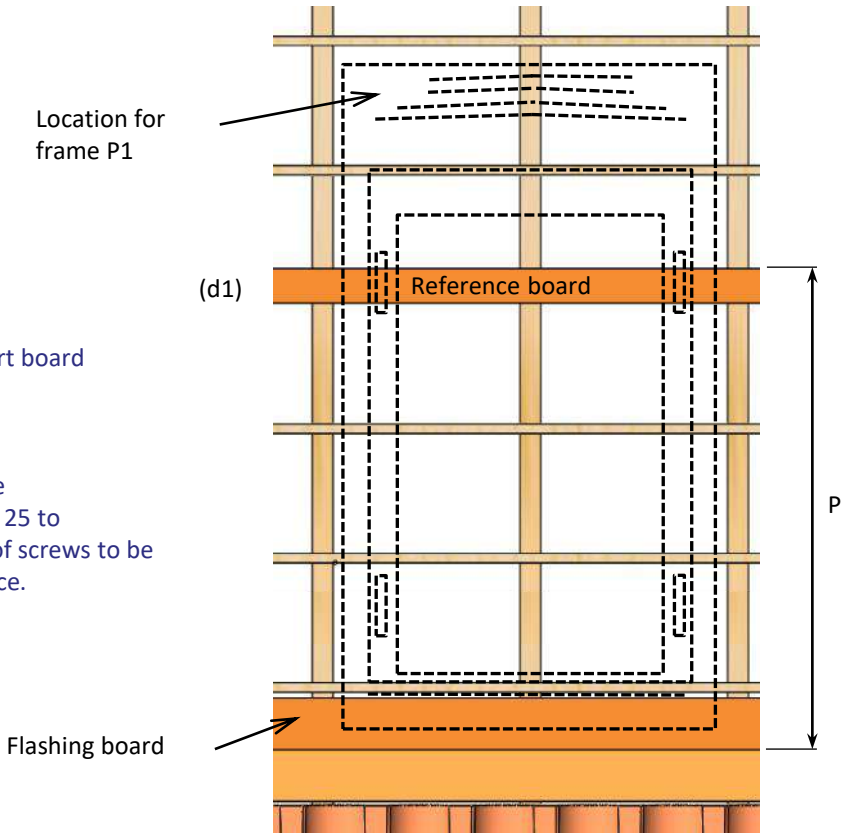
E.g.: if in manufacturer's INSTALLATION MANUAL INSTRUCTIONS
B1 = 364 mm,
⇨ it is accepted that B2 = 645 mm



- B2 : Distance between top of frame P-1 and centre of top fixing bracket.

13.1.3) Installation of the planking for the flashing and the reference boards

➢ c) Determination of positioning dimension P
from the first batten (anti-tilt)
or the edging board.



Position the first reference support board (d1) according to dimension P in the table below.

Screw the boards according to the recommendations on pages 22 to 25 to determine the type and number of screws to be used on each supporting crosspiece.

P values (in mm) according to B2:

B2 (in mm) Nominal dimensions	P (in mm)
A	1475
605	1455
625	1435
645	1415
665	1395
685	1375
705	1355

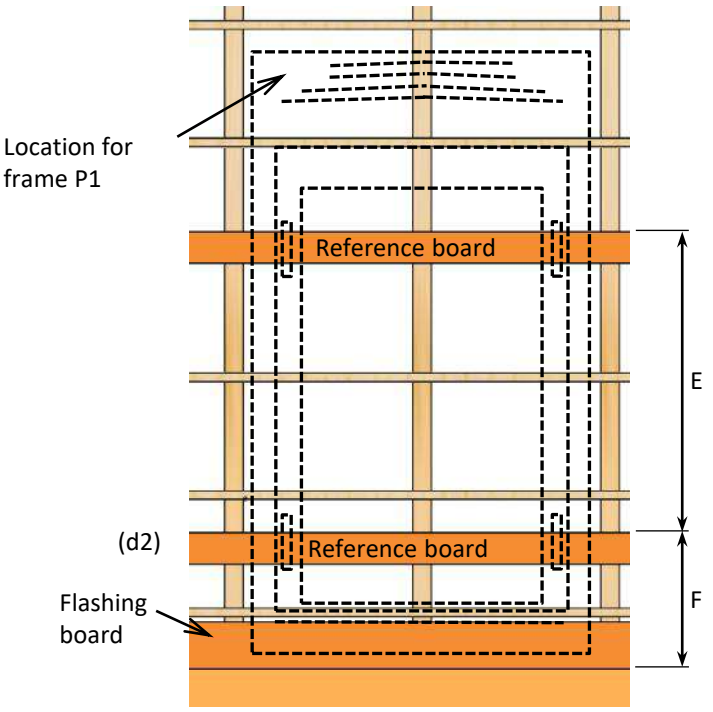
Ex : B2 = 645 mm.
⇨ P = 1415 mm.

13.1.3) Installation of the planking for the flashing and the reference boards

➢ d) Determination of centre distances of support boards E

Position the second reference support board (d2) according to dimension E in the table below.

Screw the boards according to the recommendations on pages 22 to 25 to determine the type and number of screws to be used on each supporting crosspiece.



B2	Distance between top of frame P-1 and centre of top fixing bracket. (mm).
L	PV module length (mm).
E	support board spacing (mm).

			B2						
		Interval	585	605	625	645	665	685	705
L	1661 ≤ L ≤ 1670	1690	1060	1020	1000	960	920	880	860
	1671 ≤ L ≤ 1680	1700	1060	1040	1000	960	920	880	860
	1681 ≤ L ≤ 1690	1710	1060	1040	1020	980	920	880	860
	1691 ≤ L ≤ 1700	1720	1060	1040	1020	980	940	900	880
	1701 ≤ L ≤ 1710	1730	1060	1040	1020	980	940	900	880
	1711 ≤ L ≤ 1720	1740	1060	1040	1020	1000	960	920	900
	1721 ≤ L ≤ 1730	1750	1060	1040	1020	1000	960	940	900

Ex : B2 = 645 and L = 1685

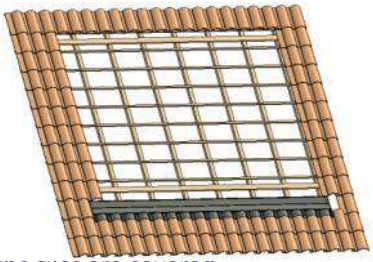
⇨ NB: Select the nominal value E indicated in the table above.

E = 980 mm.

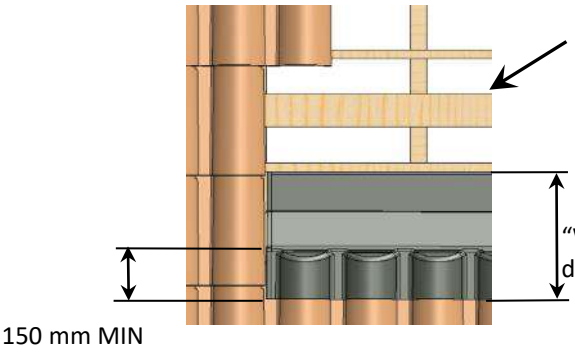
PV field centred on the roof slope

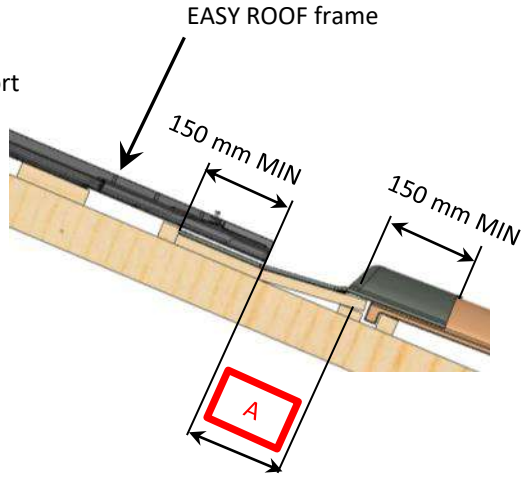
13.1.4) Installation of the flashing

Position the flashing band. Take care not to glue the ends and the upper edge so that they can be folded back.
The overlap of the tiles will depend on the choice of flashing.



Make sure that MIN 150 mm of the tiles are covered.

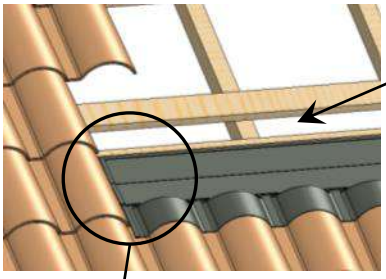


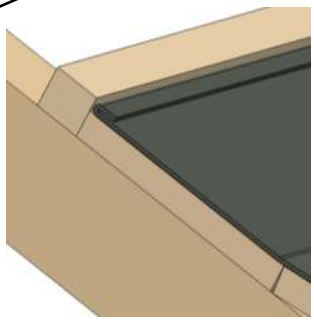


MIN "width" = (2 x 150) + dimension A

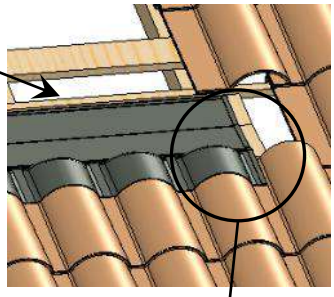
Fold back the upper edge of the flashing by 10 to 15 mm in line with the upper batten over the entire width of the PV field

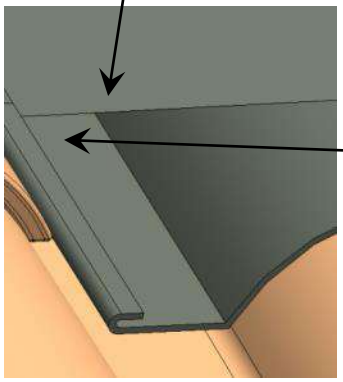
(Left side of PV field)



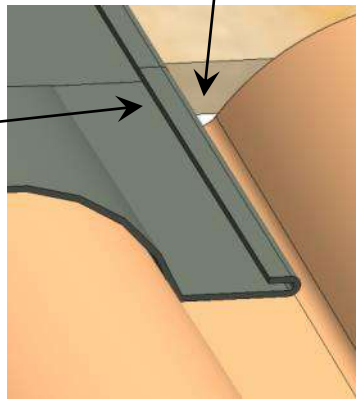


(Right side of PV field)





Fold back the right and left edges of the flashing by 10 to 15 mm over the entire height

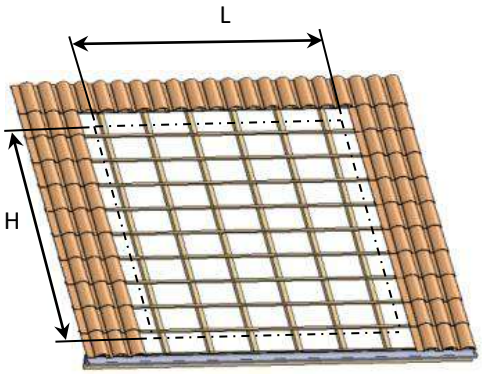


* Reference nomenclature

PV field positioned along the guttering

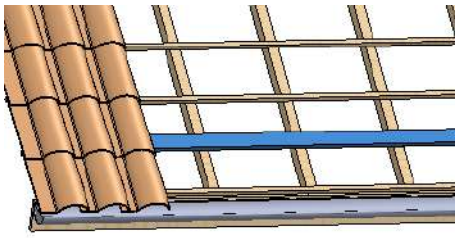
13.2.1) PV field positioned along the guttering

This section of the assembly instructions only concerns PV field installations along the guttering

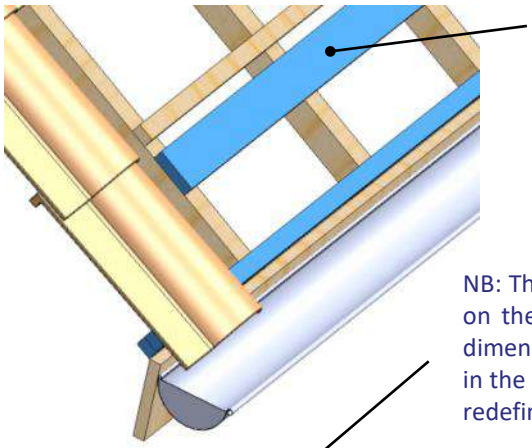


Clear tiles from the photovoltaic field installation zone, see pages 18 and 19 for L and H.

13.2.2) Positioning of the planking along the guttering



Position the reference support board s (d1) and (d2) (see pages 30-31) in line with the first batten (anti-tilt) or the edging board.
When screwing the board, follow the recommendations on pages 222 to 25 to determine the type and number of screws to be used on each supporting crosspiece.

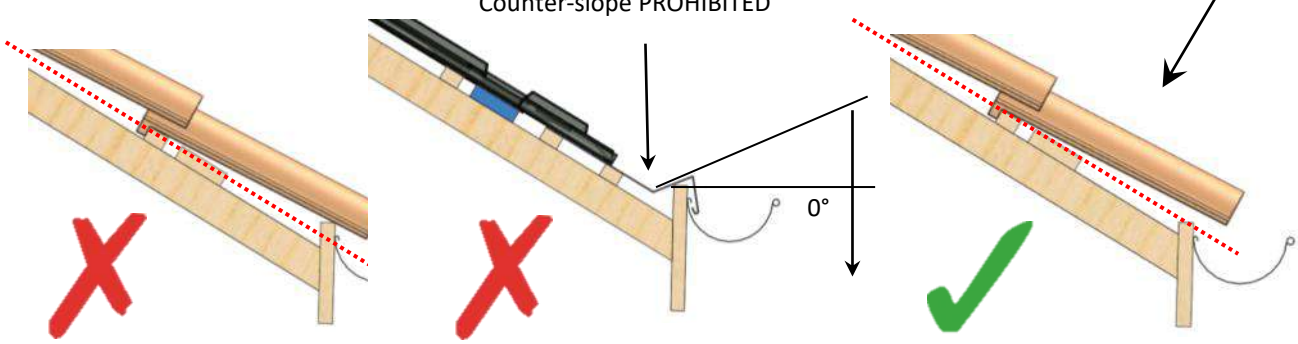


reference support board (d2)*

* Reference nomenclature

NB: The lower part of the PV field (along the guttering) must be located on the same plane as the system planking. Otherwise the positioning dimension P will no longer be applicable. The PV field needs to be raised in the direction of the roof slope. The positioning dimension needs to be redefined, see page 34.

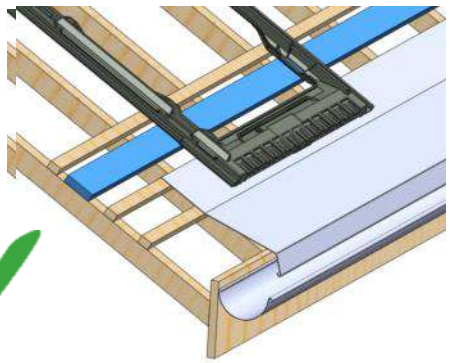
Counter-slope PROHIBITED

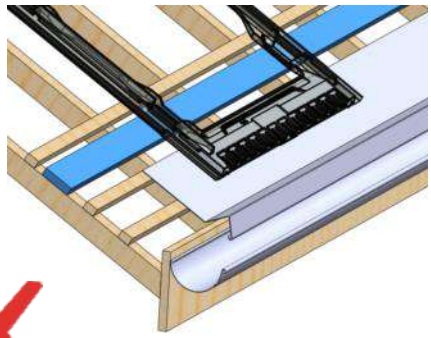


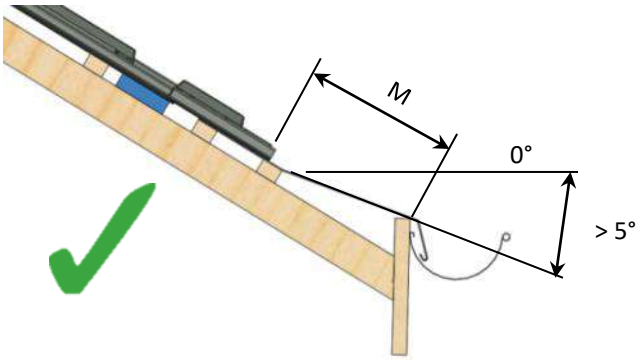
PV field positioned along the guttering

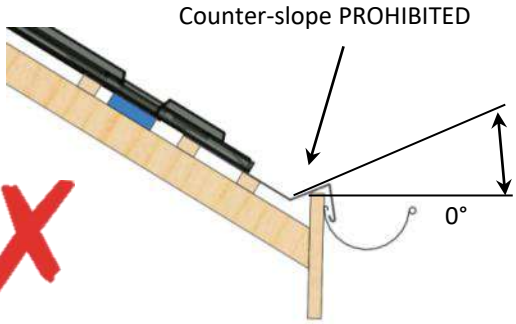
13.2.3) Specific positioning of the planking along the guttering

If the lower part of the PV field (along the guttering) is not located on the same plane as the system planking, the PV field will have to be raised in the direction of the roof slope.
The positioning dimension P needs to be redefined.

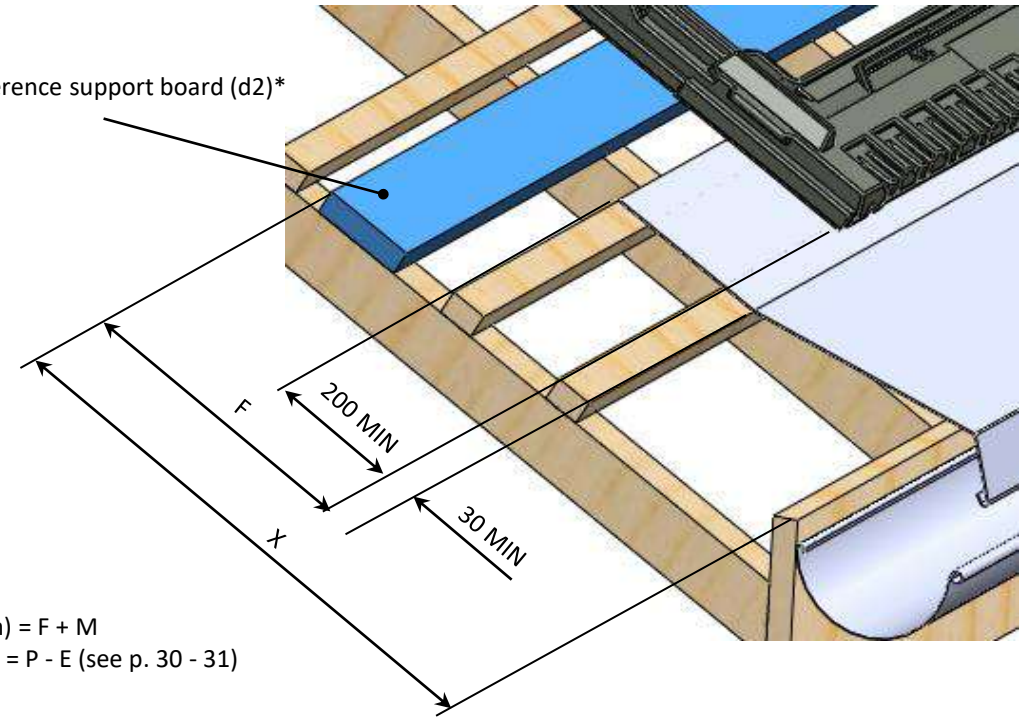








"M" to be measured on the roof according to the conditions described here

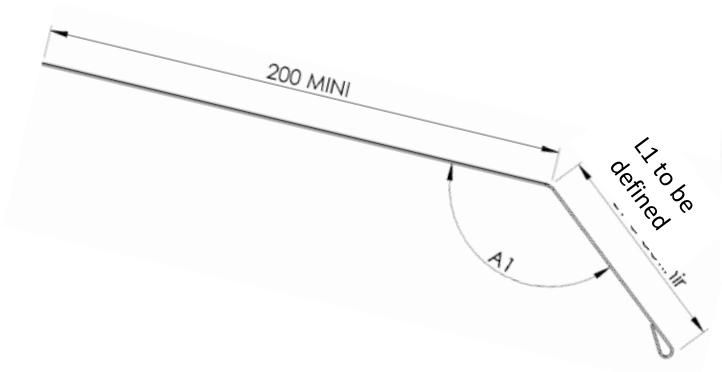


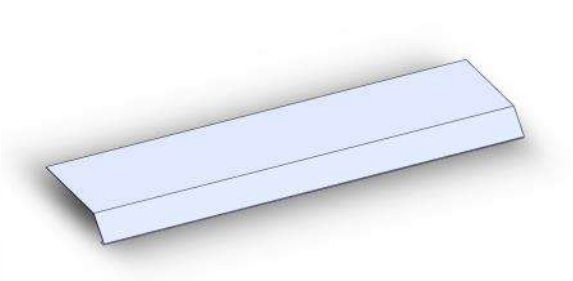
X (mm) = F + M
with F = P - E (see p. 30 - 31)

* Reference nomenclature

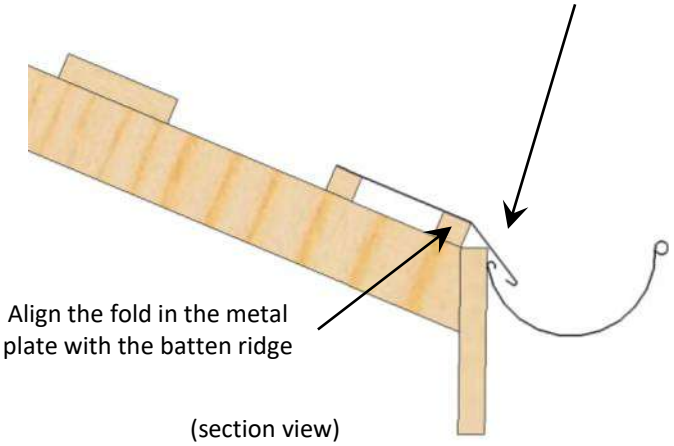
PV field positioned along the guttering

13.2.4) **Installation of the PV field lower, custom-made, metal plate**

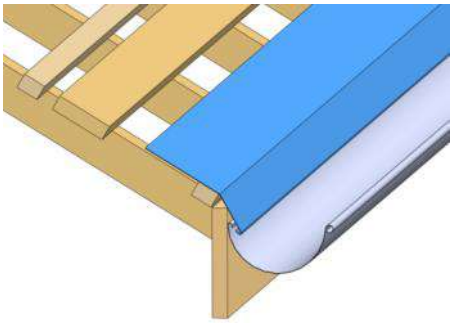




For the creation of the lower metal plate, angle A1 is equal to 115° + the tilt angle of the roof undergoing work. Example: A1 = 115° +30° = 145°
Dimension L1 is defined by the position of the guttering on the roof undergoing work. Define L1 so that the lower edge of the metal plate is at least 20 mm in the guttering.
NB: This type of metal plate is only applicable for a PV field flush with the guttering. See paragraph 13.2.2 page 33.

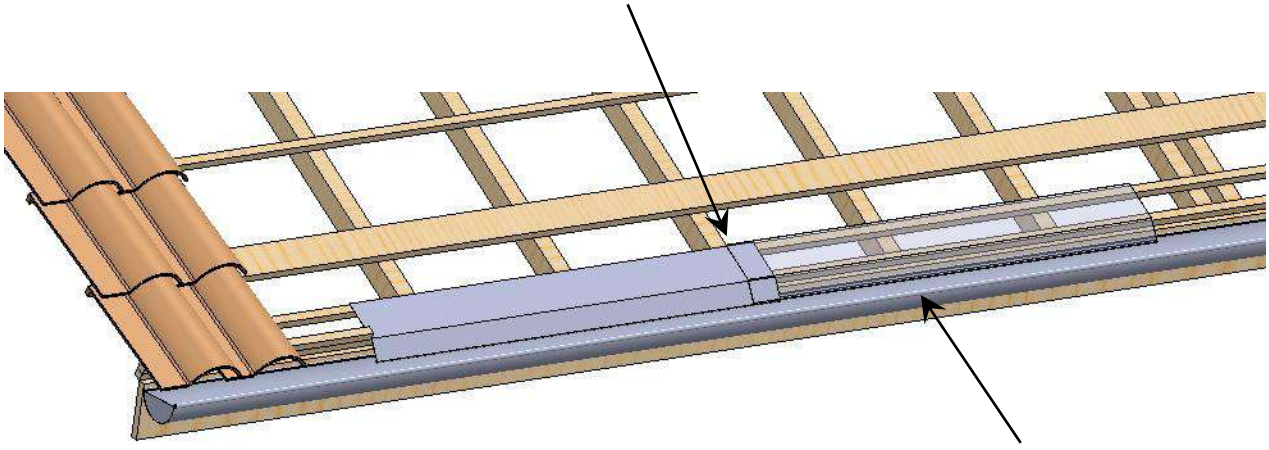


(section view)



(section view)

The length of the metal plate may vary. If the bottom of the roof consists of several metal plates, they must overlap by MIN 100 mm when installed.

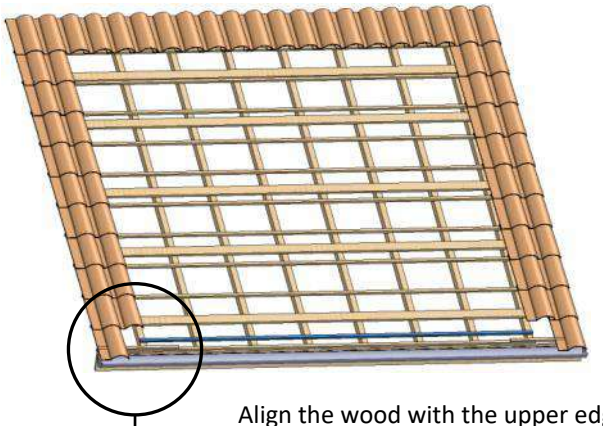


PV field positioned along the guttering

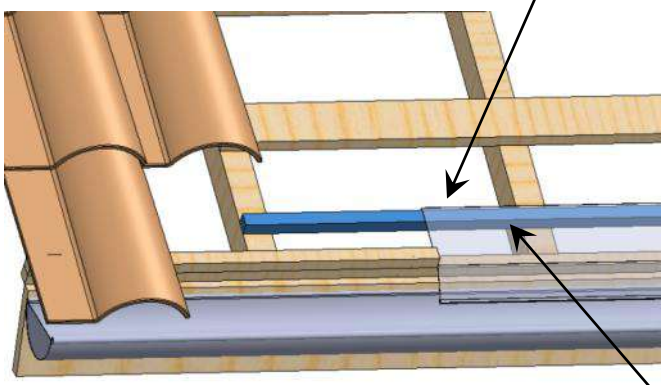
13.2.4) Installation of the PV field lower, custom-made, metal plate

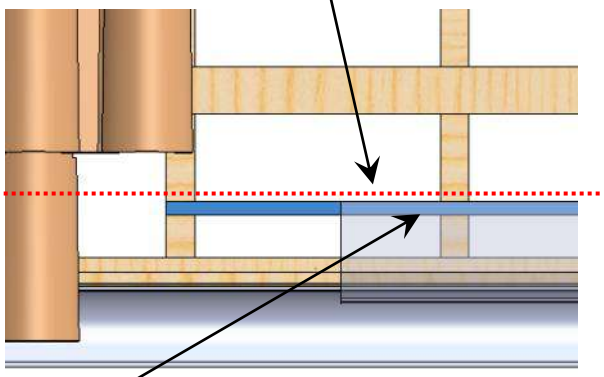
Add a batten or a board underneath the flat part of the metal plate to create a support for the latter. This wood should be at least as wide as the PV field used. The thickness of the wood used to create the support for the metal plate must be identical to that of the support boards (d1) (d2)*.

* Reference nomenclature



Align the wood with the upper edge of the metal plate

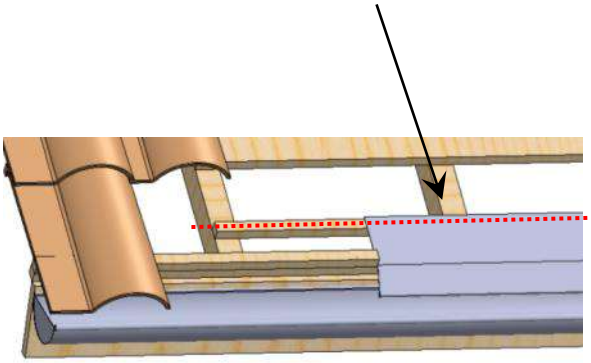


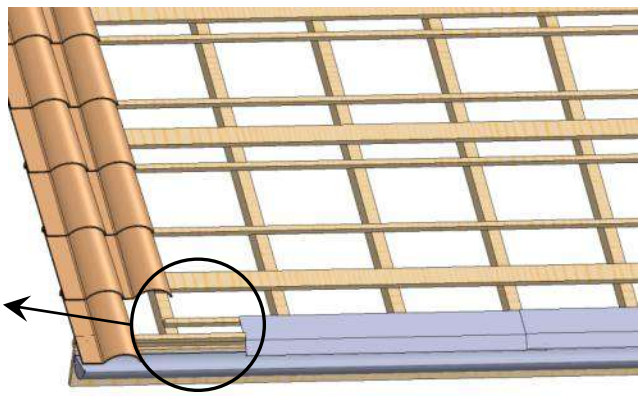


(top view)

Transparent metal plate

Position and staple the metal plates to the bottom of the roof over the entire width of the PV field. Only staple to the top part of the metal plate.

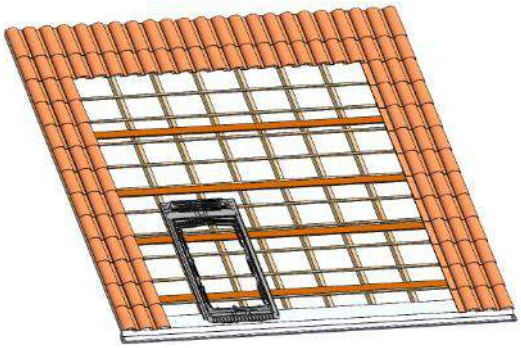


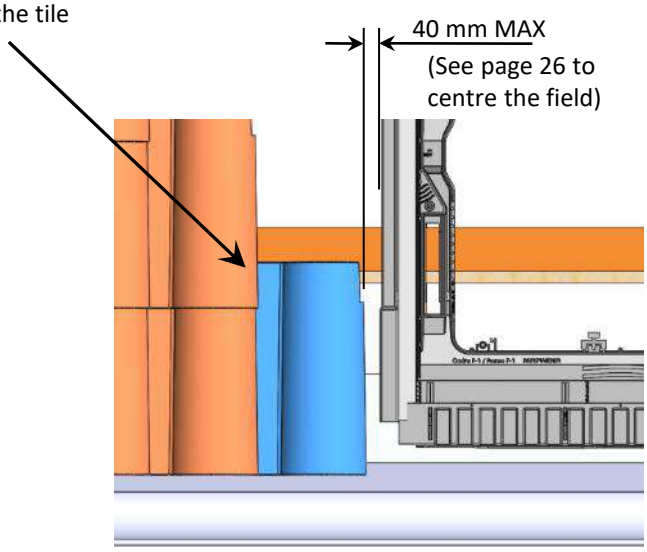


PV field positioned along the guttering

13.2.4) Installation of the PV field lower, custom-made, metal plate

1°) Reposition the first tile in the bottom left-hand corner, position the first frame (1) at a MAX distance of 40 mm from the edge of the tile

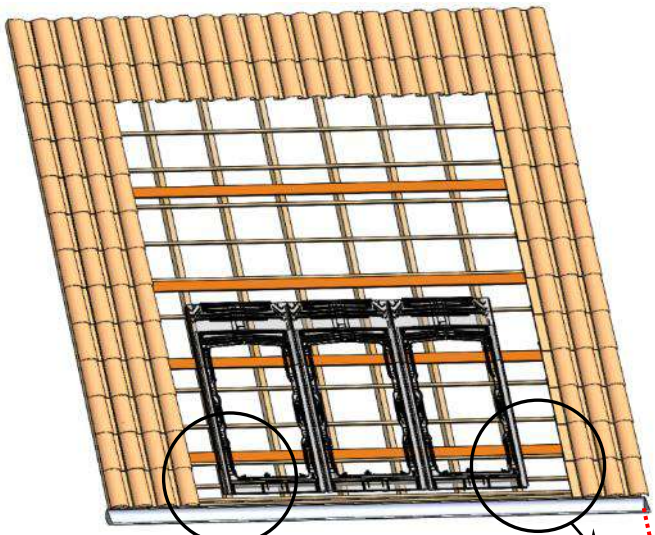




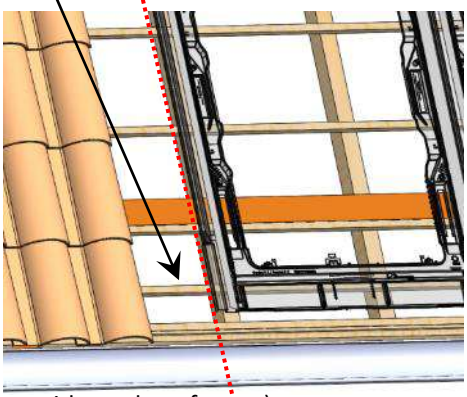
PV field positioned along the guttering

13.2.4) Installation of the PV field lower, custom-made, metal plate

The bottom metal plate must be aligned with the frames on each side of the PV field.
Position all the frames in the first row as shown on page 34. Mark each end of the wood. Remove the frames by raising them up the slope of the roof slightly.



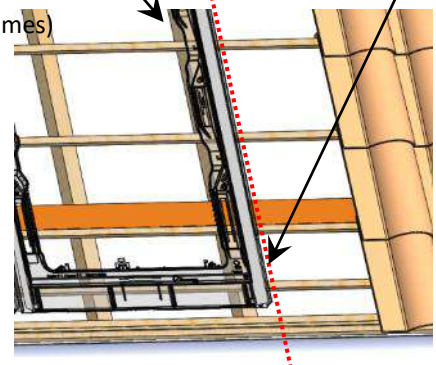
Markings



(view with mock-up frames)

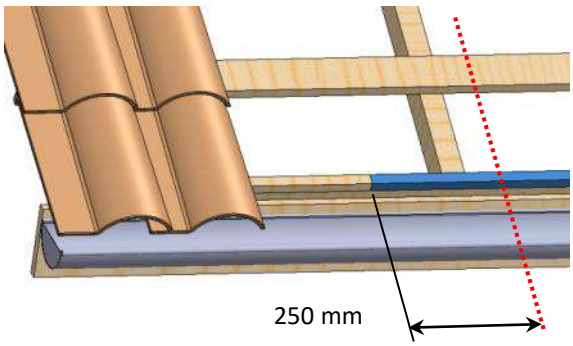
(view with mock-up frames)

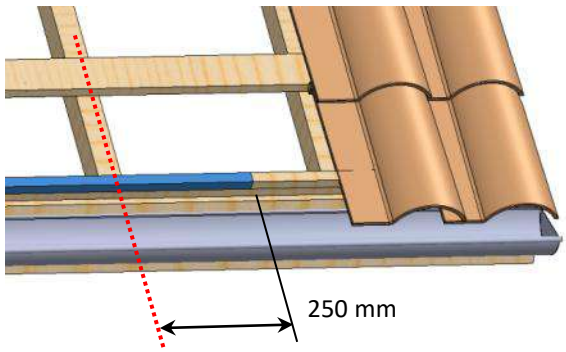
Markings



(view with mock-up frames)

Cut the upper anti-tilt batten 250 mm from each marking made and remove it so that the remaining batten is on a level with the reference board. If the barge board is too high, cut it again along all the length of the batten that was removed previously.



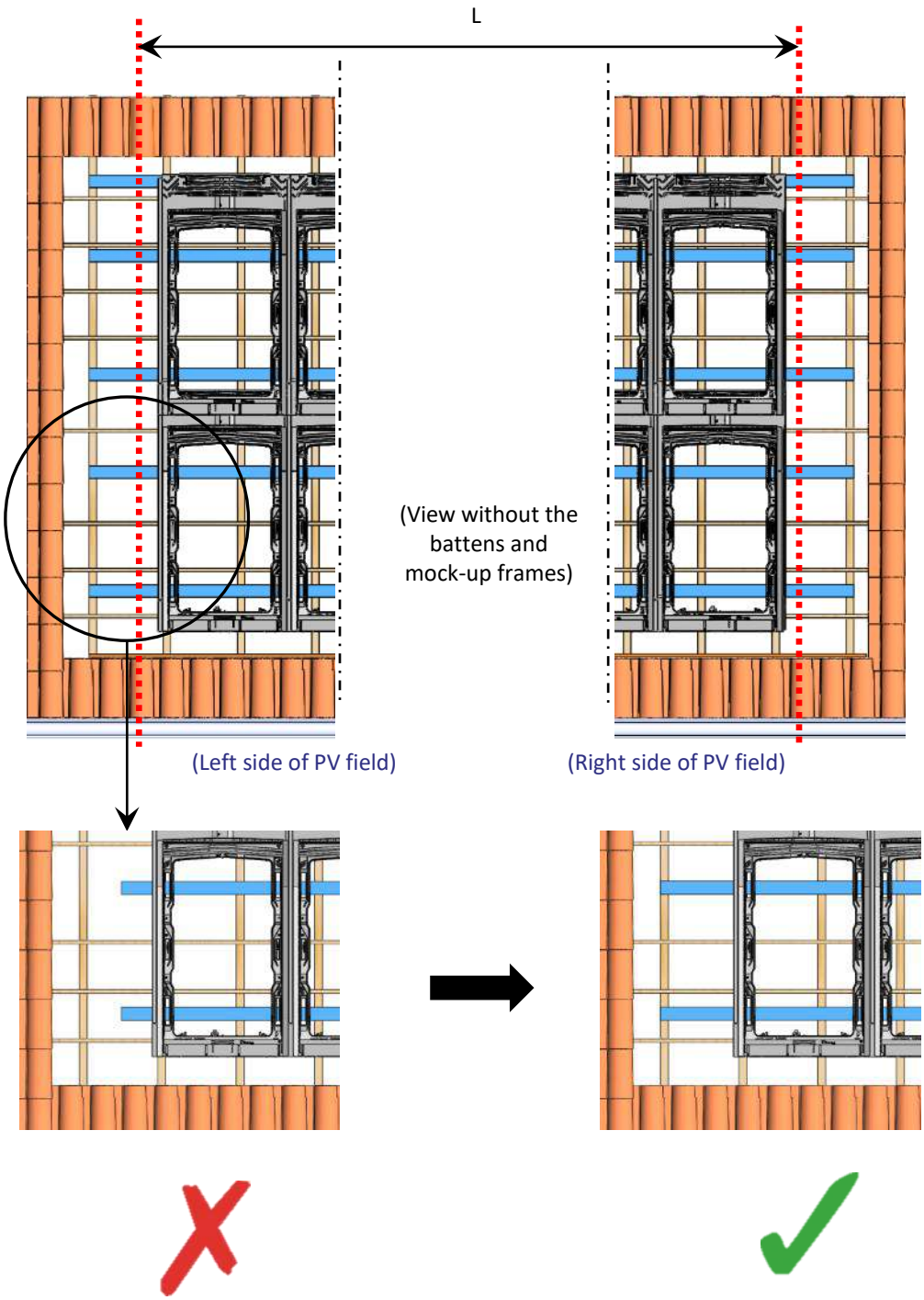


Installation of the planking

13.3) Installation of the PV field planking for all types of installation

The length "L" of the support boards (d1) and (d2)* to be used must cover the entire length of the PV used. The “L” value can be obtained from the table on page 18 of this document.
If necessary, battens of a sufficient length can be added to this “L” dimension so that the ends of the battens are supported by a truss on either side.

* Reference nomenclature



Installation of the planking

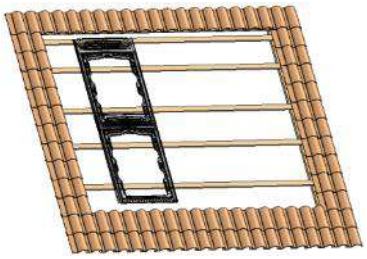
11.3) Installation of the PV field planking for all types of installation

11.3.1) Planking for assembly with 4 fixing brackets

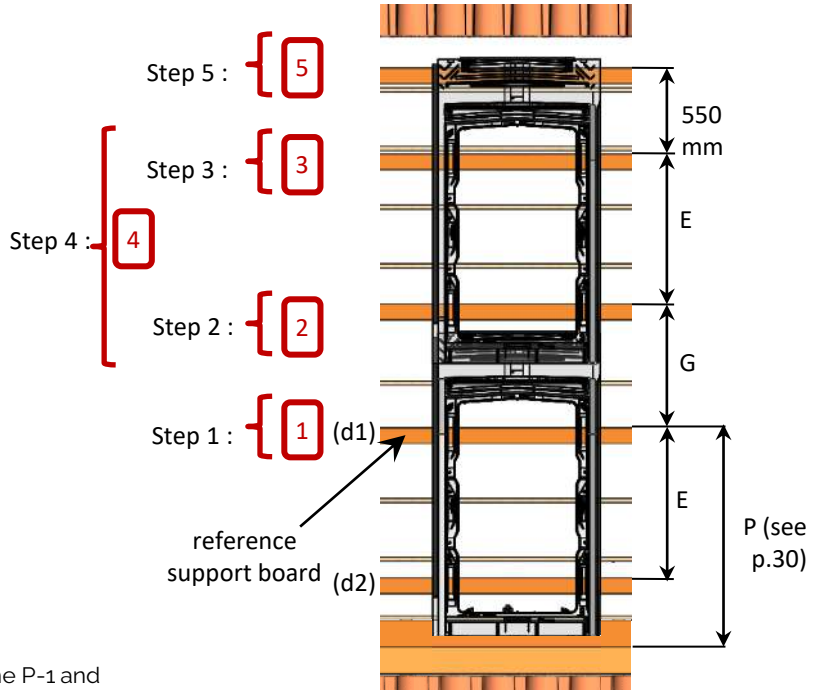
Install the horizontal planking to support the frames with the number of (d1) and (d2)* battens being equal to (2 x No. vertical PV modules) + 1 at the top to attach the upper part of the frame to the top of the PV field. When screwing the batten, follow the recommendations on pages 20 to 23 to determine the type and number of screws to be used on each supporting crosspiece. If the roof undergoing work is battened, remove the battens that are located where the support boards are to be installed.

Step 1 : Position and screw the second board (d2) at distance E from the reference board (d1) installed in the previous step. (see p.30)
Step 2 : Position and screw another board in line with dimension G of the previous one - the value of G can be obtained from the table below.
Step 3 : Position and screw another board at distance E from the previous one.
Step 4 : Repeat steps 2 and 3 as many times as necessary for the upper module lines.
Step 5 : Position and screw the final board 550 mm from the previous one.

* Reference nomenclature



(View without rafters and battens)



(View without rafters and battens)

➢ Determination of spacing G

B2	Distance between top of frame P-1 and of top fixing bracket (mm).
L	PV module length (mm).
G	support board spacing (mm).

L	B2 = 585	B2 = 605	B2 = 625	B2 = 645	B2 = 665	B2 = 685	B2 = 705
1661 ≤ L ≤ 1670	630	670	690	730	770	810	830
1671 ≤ L ≤ 1680	640	660	700	740	780	820	840
1681 ≤ L ≤ 1690	650	670	690	730	790	830	850
1691 ≤ L ≤ 1700	660	680	700	740	780	820	840
1701 ≤ L ≤ 1710	670	690	710	750	790	830	850
1711 ≤ L ≤ 1720	680	700	720	740	780	820	840
1721 ≤ L ≤ 1730	690	710	730	750	790	830	850

Ex :
B2 = 645 and
L = 1695
⇨ Position the reference support board in line with dimension G = 740 mm

Installation of the planking

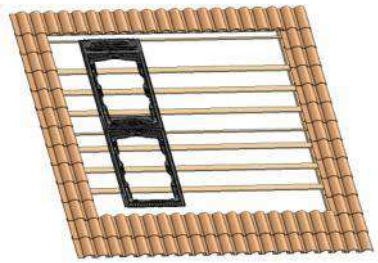
13.3) Installation of the PV field planking for all types of installation

13.3.2) Planking for assembly with 6 fixing brackets

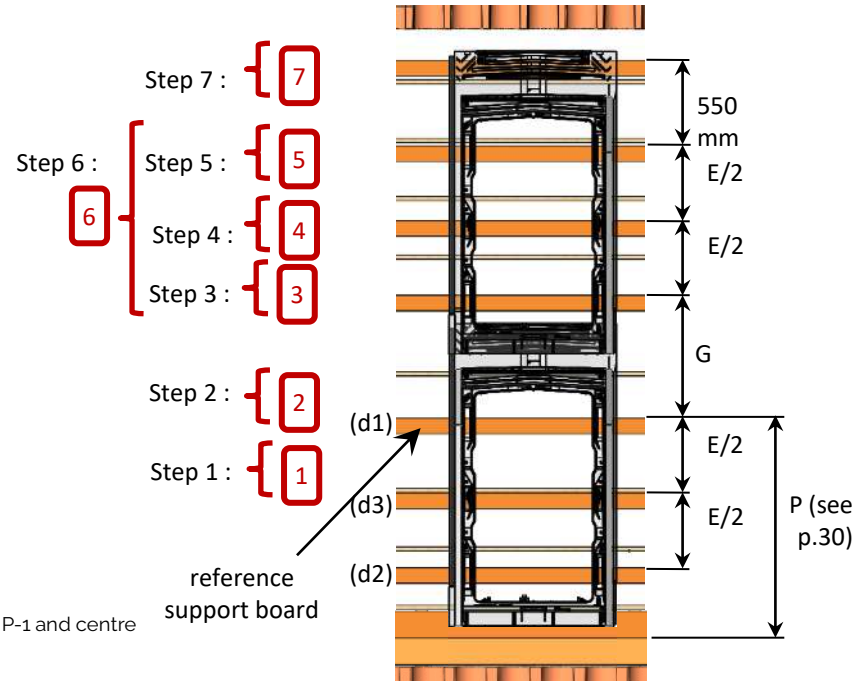
Install the horizontal planking to support the frames with the number of (d)* boards being equal to (3 x No. vertical PV modules) + 1 at the top to attach the upper part of the frame to the top of the PV field.
When screwing the board, follow the recommendations on pages 22 to 25 to determine the type and number of screws to be used on each supporting crosspiece. If the roof undergoing work is battened, remove the battens that are located where the support boards are to be installed.

Step 1 : Position and screw a board (d3) at distance E/2 from the reference board (d1) installed in the previous step. (see p.30)
Step 2 : Position and screw another board (d2) at distance E/2 from the previous one.
Step 3 : Position and screw another board in line with dimension G of the previous one - the value of G can be obtained from the table below.
Steps 4 and 5 : Position and screw another board at distance E/2 from the previous one.
Step 6 : Repeat steps 3, 4 and 5 as many times as necessary for the upper module lines.
Step 7 : Position and screw the final board 550 mm from the previous one.

* Reference nomenclature



(View without rafters and battens)



➢ Determination of spacing G

B2	Distance between top of frame P-1 and centre of top fixing bracket (mm).
L	PV module length (mm).
G	support board spacing (mm).

L	B2 = 585	605	625	645	665	685	705
1661 ≤ L ≤ 1670	630	670	690	730	770	810	830
1671 ≤ L ≤ 1680	640	660	700	740	780	820	840
1681 ≤ L ≤ 1690	650	670	690	730	790	830	850
1691 ≤ L ≤ 1700	660	680	700	740	780	820	840
1701 ≤ L ≤ 1710	670	690	710	750	790	830	850
1711 ≤ L ≤ 1720	680	700	720	740	780	820	840
1721 ≤ L ≤ 1730	690	710	730	750	790	830	850

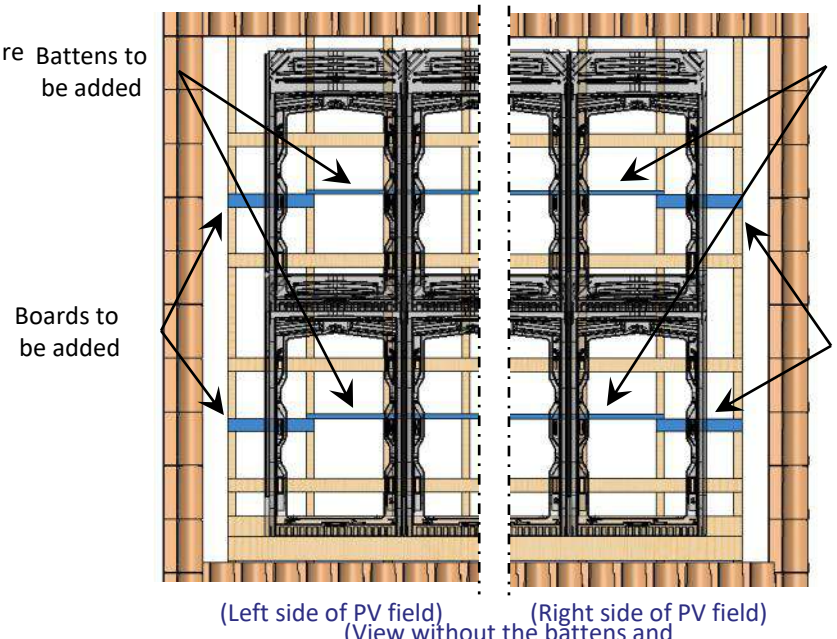
Ex :
B2 = 645 and
L = 1695
⇨ Position the reference support bo
in line with dimensio
G = 740 mm

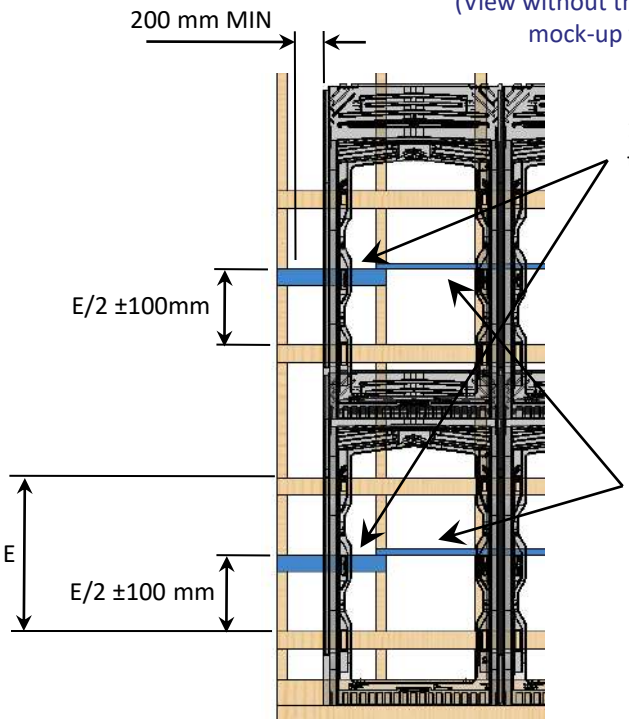
Installation of the planking

13.3.2) Installation of planking for assembly with 4 fixing brackets per PV panel

In the case of assembly with 4 fixing brackets per module, it is necessary to add and attach boards on each side of the PV field with an identical thickness and width as the support boards (d)*. Some of the flashing is to be attached to these boards.
The boards must pass underneath the frame and extend beyond it by at least 200 mm outside the PV field.
For roofs without battening, a horizontal batten with an identical thickness to the support boards (d)* must be added for each line of frames and centred at the top of each line over the entire width of the PV field.

* Reference nomenclature





1°) Position and screw a board 450 mm ±100 from the previous one in each 900 mm gap

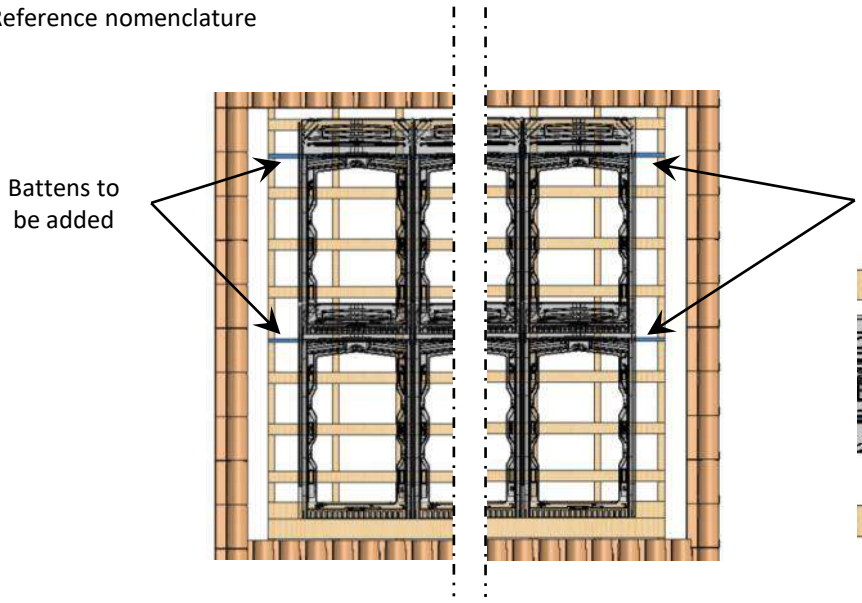
2°) Position and screw battens over the entire width of the PV field supported by the previously installed boards if required according to the recommendations.

Installation of the planking

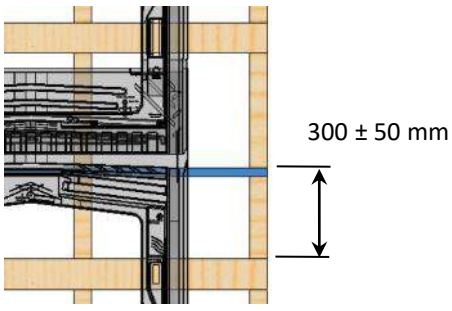
13.3.3) Installation of the support batten

In order to ensure that the frames are correctly supported, it is necessary to install and attach a horizontal batten for every three support boards (d)* for assemblies with 6 brackets and every 2 boards for assemblies with 4 brackets.
If no batten is available in the areas described below, install battens over the entire width of the PV field.
The batten thickness must be identical to that of the support boards (d)*. Position them 300 ± 50 mm from the bottom board.
This operation must be carried out for every line of frames in the PV field.

* Reference nomenclature

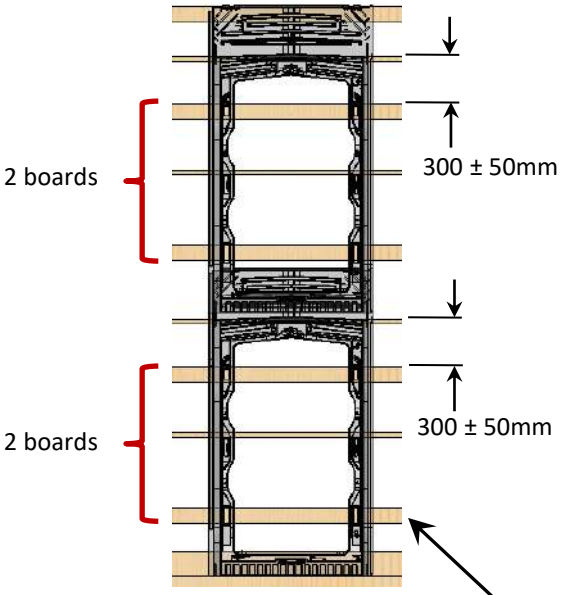


(Left side of PV field) (Right side of PV field)
(View without battens)



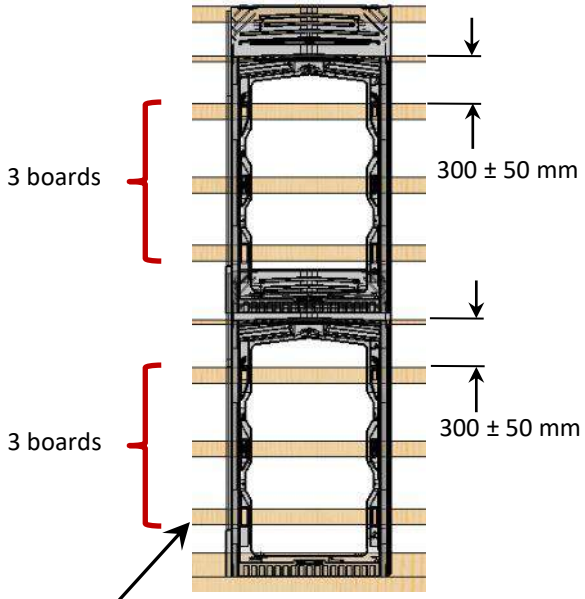
(Quotation breakdown)

Planking with 4 fixing brackets per PV board



(View without rafters and battens)

Planking with 6 fixing brackets per PV board



reference support board

(View without rafters and battens)

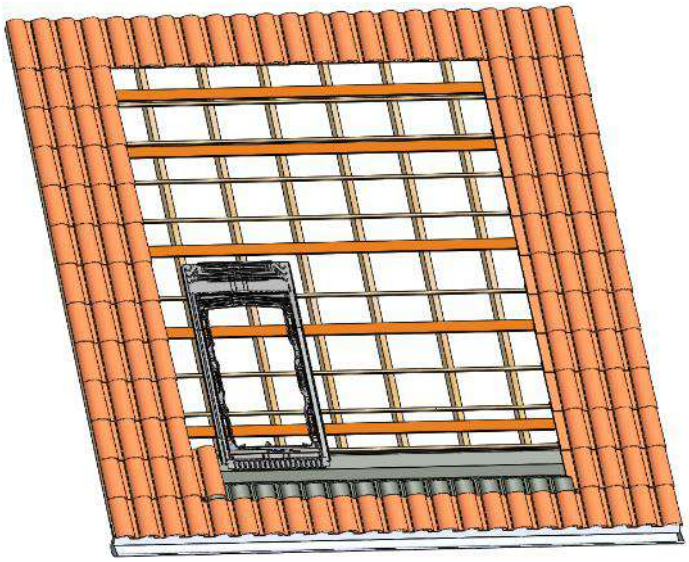
13.4) Installation of the EASYROOF system

This section of the assembly instructions only all PV field installations at the centre of the roof slope or along the guttering

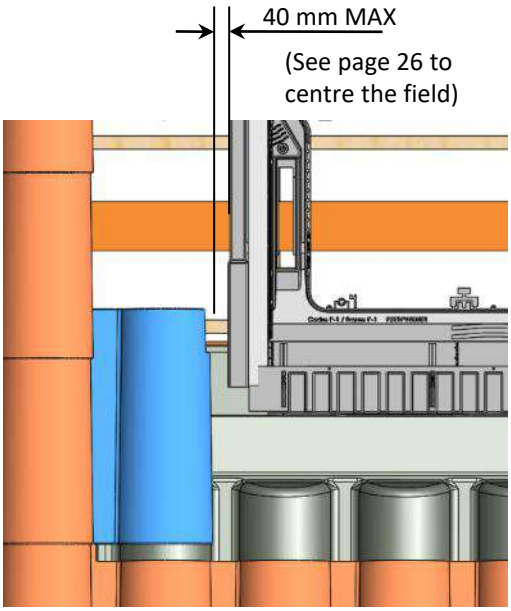
13.4.1) Installation of the breather membrane

We require the installation of a breather membrane before the EASY ROOF EVOLUTION integration system is put in frame place. Add the breather membrane if it does not already exist.
The installation of the membrane is described in a document entitled “INSTRUCTIONS AND INSTALLATION OF THE BREATHER MEMBRANE” which is available from the manufacturer of the EASY ROOF EVOLUTION frame system. Refer to this document to ensure that the installation is compliant.

13.4.2) Installation of the EASYROOF system



1°) Reposition the first tile in the bottom left-hand corner, position the first frame (1) at a MAX distance of 40 mm from the edge of the tile.



13.4.2) Installation of the EASYROOF system

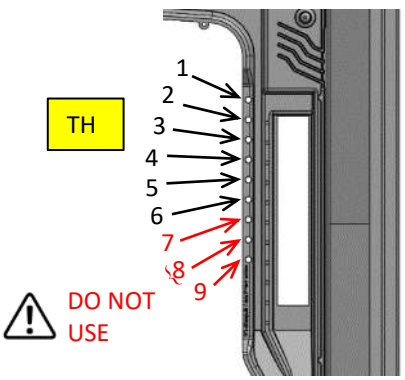
2°) Position the P1 frame in the direction of the roof slope using two Ø 5 screws placed in the holes indicated (1 to 18) and support them with the reference boards (d1) or (d2).

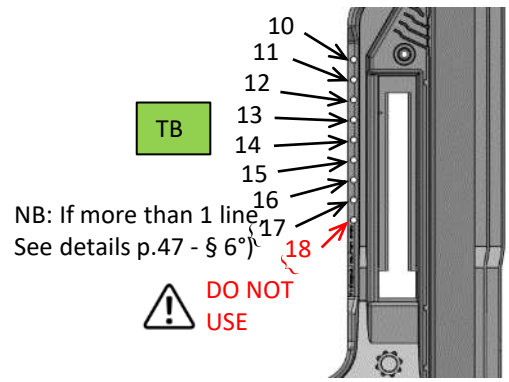
➢ Determination of holes for TH and TB support screws

	TH	1	2	3	4	5	6	
L	1661 ≤ L ≤ 1670	16	15	15	14	13	12	11
	1671 ≤ L ≤ 1680	16	16	15	14	13	12	11
	1681 ≤ L ≤ 1690	16	16	16	15	13	12	11
	1691 ≤ L ≤ 1700	16	16	16	15	14	13	12
	1701 ≤ L ≤ 1710	16	16	16	15	14	13	12
	1711 ≤ L ≤ 1720	16	16	16	16	15	14	13
	1721 ≤ L ≤ 1730	16	16	16	16	15	14	13

B2	Distance between top of PV module and centre of authorised clamping area (mm).
L	PV module length (mm).
TH	Hole number of top frame window.
TB	Hole number of bottom frame window.

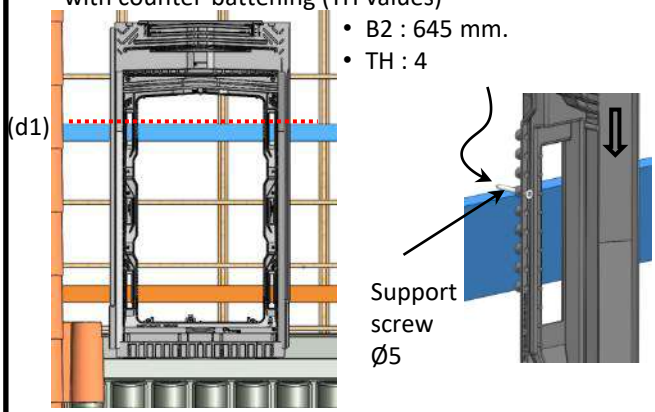
DO NOT SCREW Ø5 SCREW IN THE REFERENCE BOARD.
THE SCREWS MUST BE REMOVED BEFORE INSTALLING PV MODULES





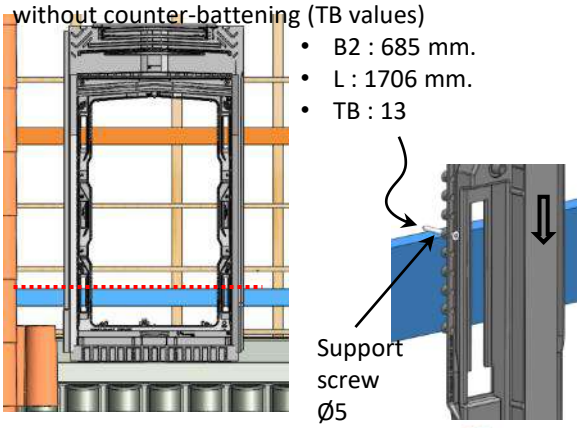
Example N°1 of assembly on a roof with counter-battening (TH values)

- B2 : 645 mm.
- TH : 4



Example N°2 of assembly on a roof without counter-battening (TB values)

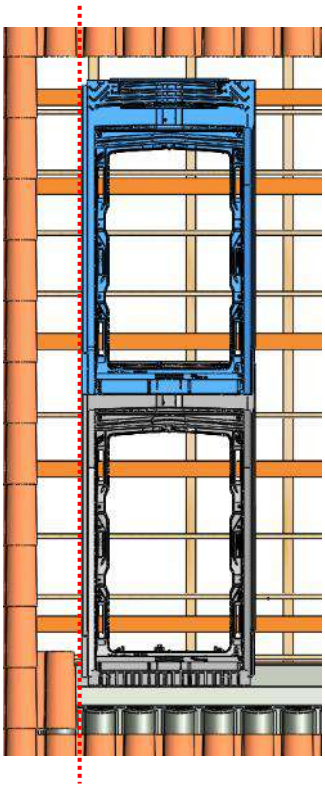
- B2 : 685 mm.
- L : 1706 mm.
- TB : 13



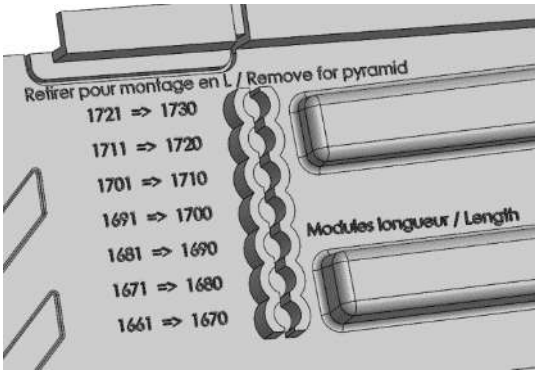
13.4.2)

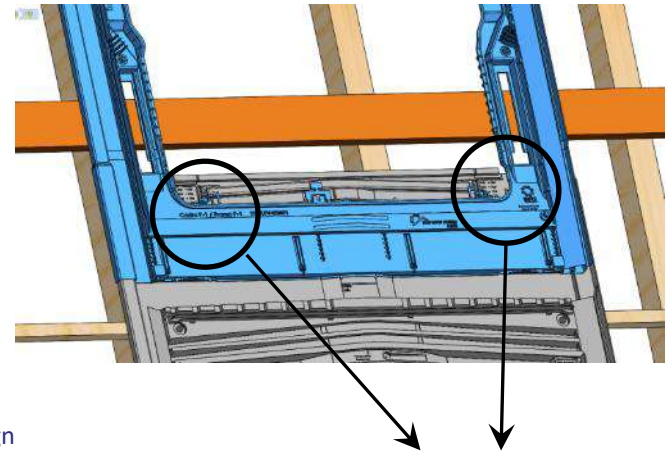
Installation of the EASY ROOF EVOLUTION system

3°) Install and interlock another frame above the previous one. Carefully align the frames vertically. (make a line with the cord)

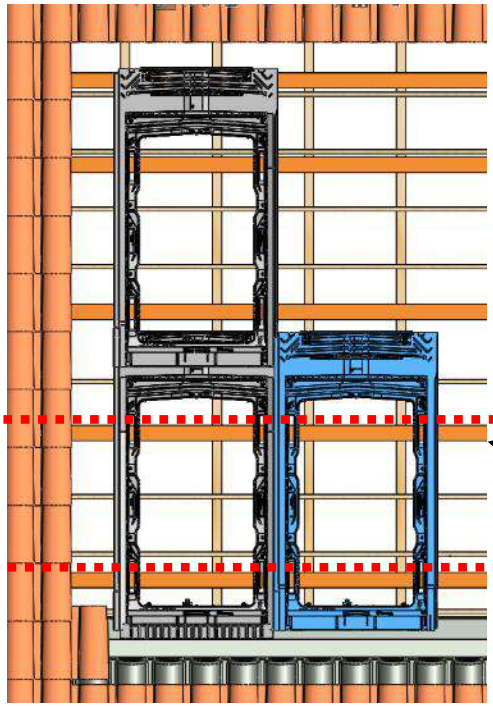


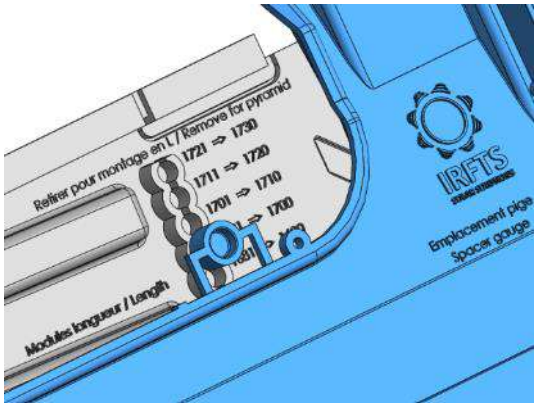
4°) Adjust the vertical interval between the frames according to the lengths of the modules to be installed. Use one of the 7 predefined indexing systems on each side of the frame.





5°) Install another frame on the same line. Align the latter with the reference board as shown on the following page.





Reference board (d1)* for roof with counter-battening

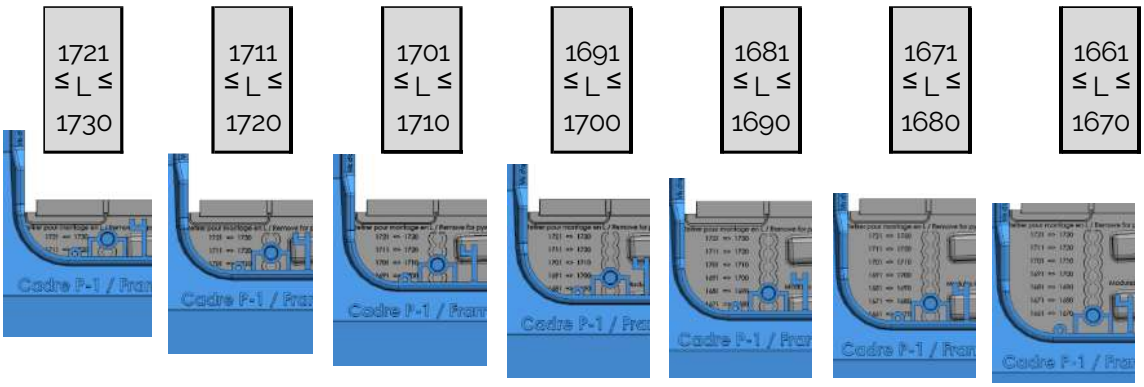
Reference board (d2)* for roof without counter-battening

* Reference nomenclature

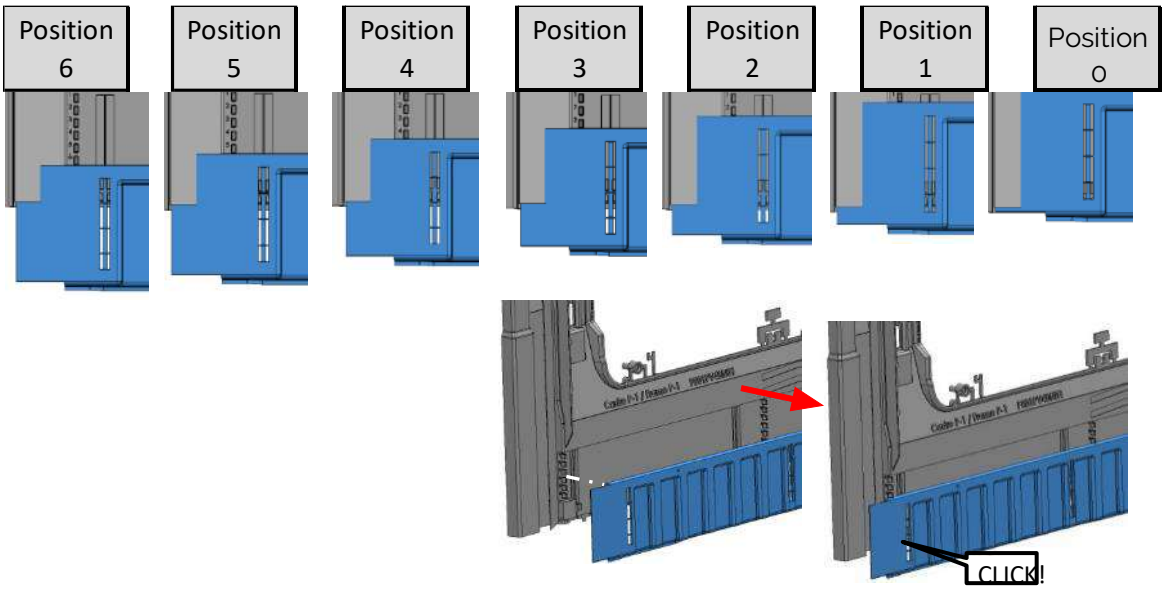
13.4.2)

Installation of the EASY ROOF EVOLUTION system

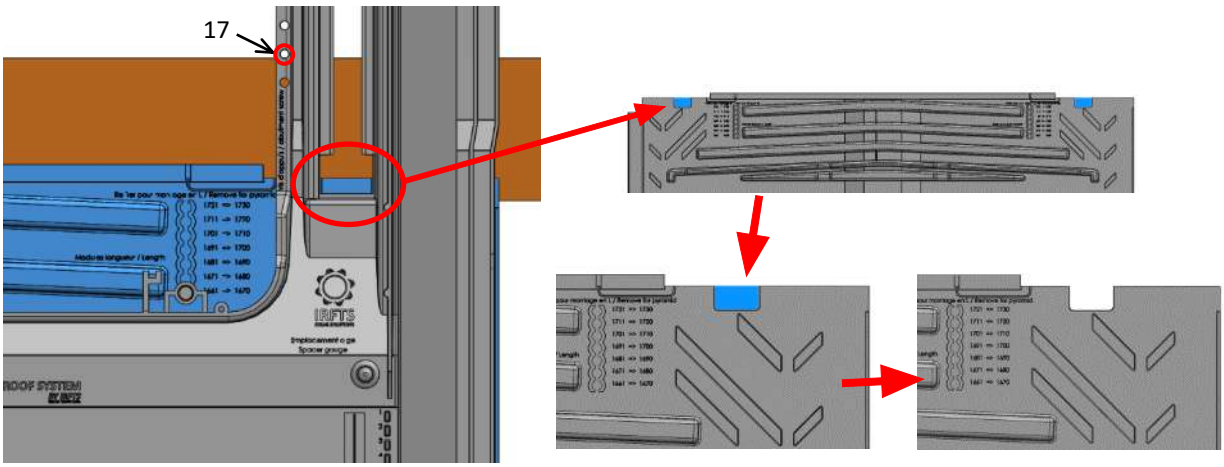
- Adjust the vertical interval between the frames according to the lengths of the PV modules.



- Make sure that the position of the stud is in line with the lower grid.

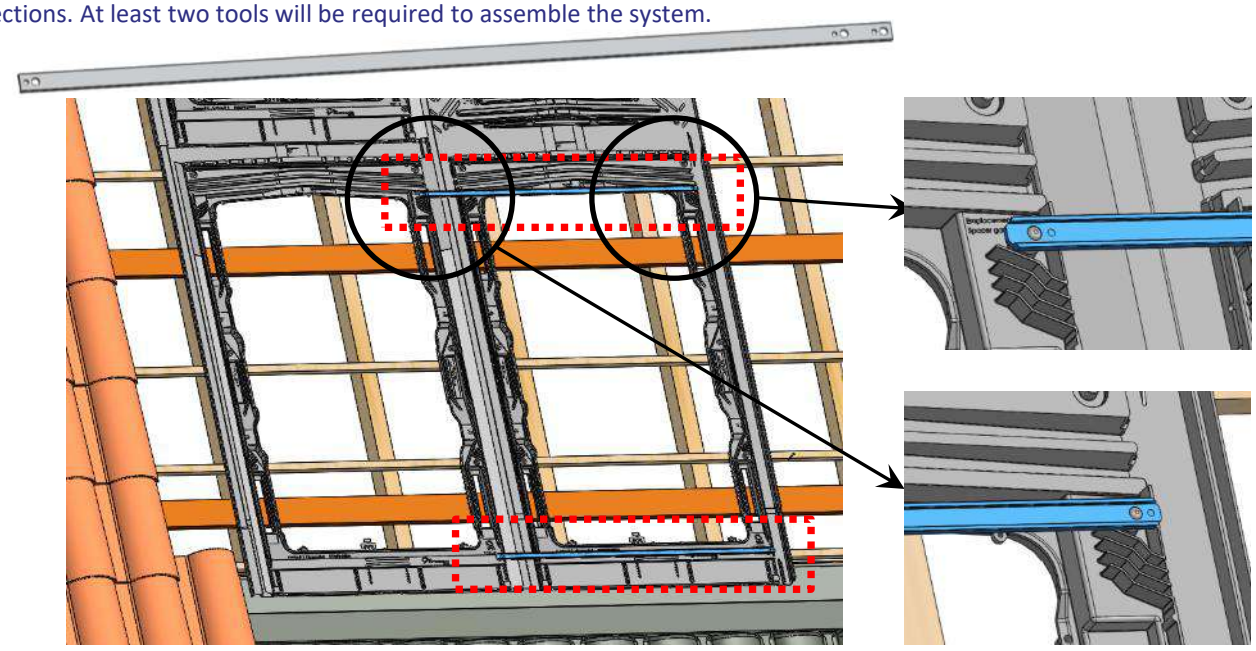


6°) If the indexing system is adjusted to
1661 ≤ L ≤ 1670 and the support board is wedged into the hole for the support screw N° 17, the detachable parts at the top of the frame will have to be removed



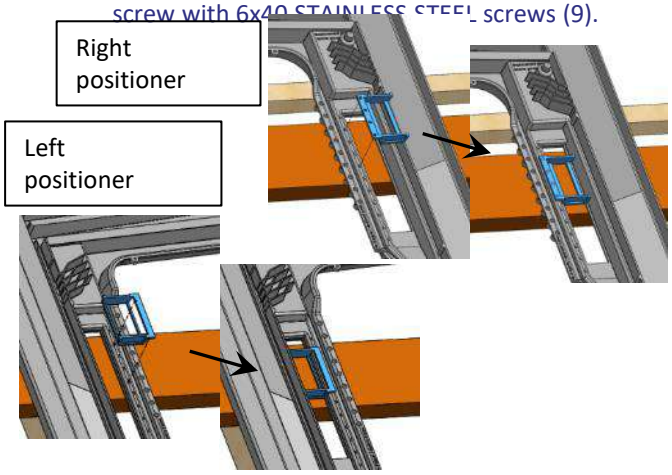
13.4.2) Installation of the EASYROOF system

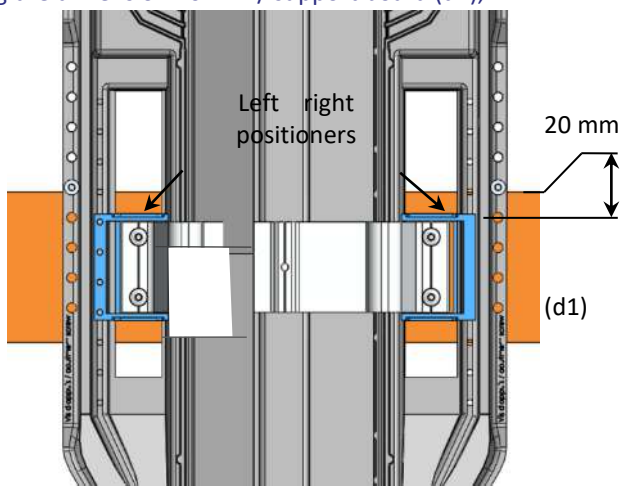
7°) Install and interlock two mounting tools between the two bottom frames in the upper and lower sections. At least two tools will be required to assemble the system.



THE USE OF MOUNTING TOOLS IS MANDATORY FOR THE ASSEMBLY OF THE WHOLE SYSTEM.
FOR ASSEMBLY WITH A GLAZING STOP THE USE OF A THIRDMOUNTING TOOL IS MANDATORY SEE ANNEXE 6 OF THE DOCUMENT PAGE 83.

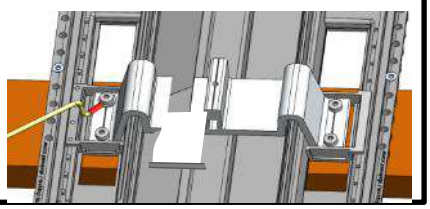
8°) a°) Install the right and left positioners in the upper windows of the frame P1,
followed by the upper double bracket (7) respecting the dimension 20 mm / support board (d1),
screw with 6x40 STAINLESS STEEL screws (9).





b°) Follow the same procedure for the bottom windows in frame P1 but without
the positioners, install the lower double bracket (7) and screw with 6x40 STAINLESS STEEL screws (9)
Do not install the other fixing brackets straight away. This operation will be carried out at a later stage.
DO NOT REMOVE THE MOUNTING BRACKETS STRAIGHT AWAY.
NB: The central double bracket can also be installed if necessary for 6 bracket assembly.

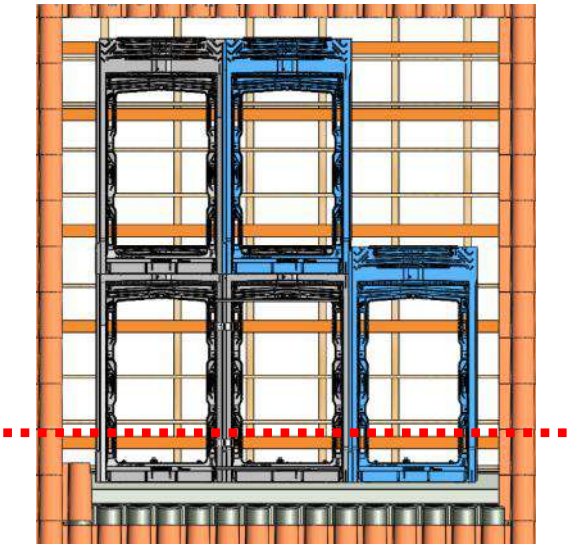
9°) If grounding is not carried out by connecting the cable directly to the PV module, a wire can be connected to the double brackets in order to make this connection (7). Two PV modules can be grounded in this way. Connect one fixing bracket per PV module. Make this connection for every two modules on each module line.

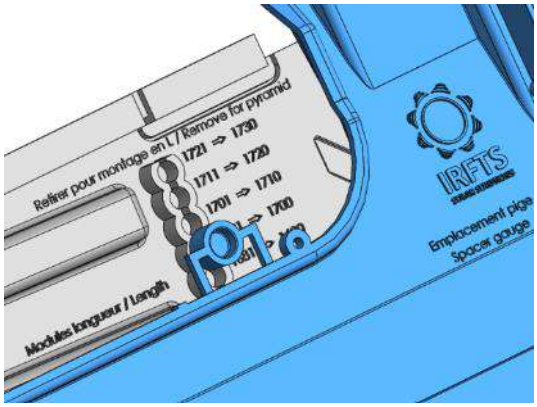


13.4.2)

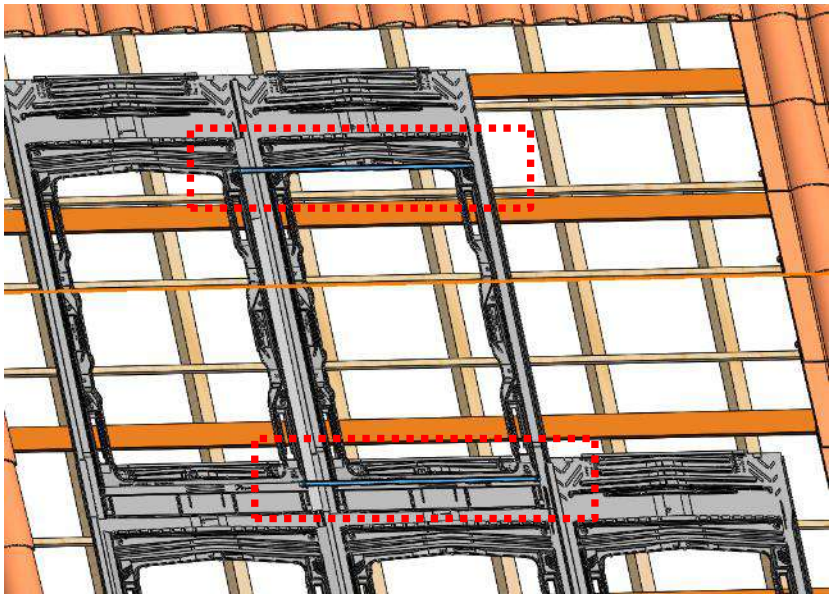
Installation of the EASYROOF system

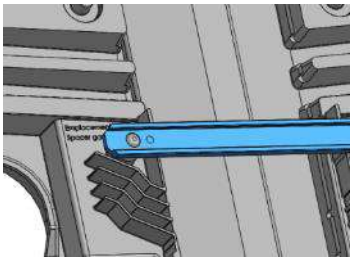
10°) Install and interlock a frame on the first line to the right of the previous one. Align the frame with the reference board (see pages 44 - 45).
11°) Install and interlock a frame on the second line to the right of the previous one.
12°) Adjust the vertical interval between the frames using one of the seven predefined indexing systems on each side of the frame with the same interval as the previous frames. (see details on pages 46 - 47)

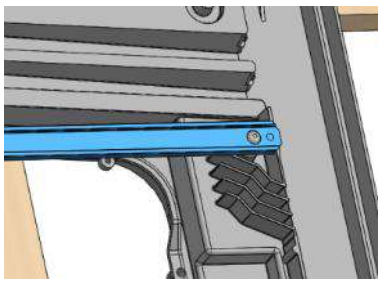




13°) Install and interlock two mounting tools between the two top frames in the upper and lower sections.



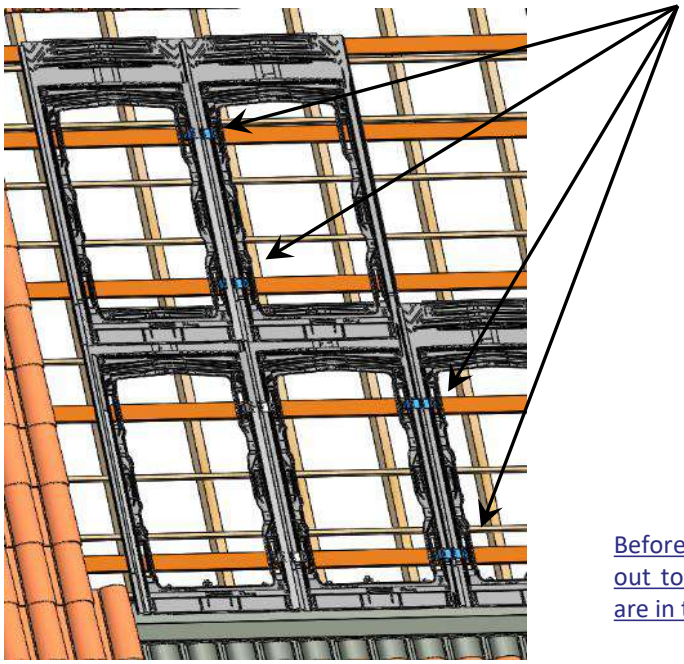


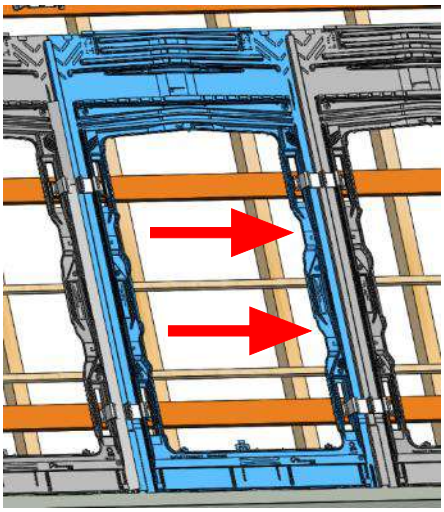


13.4.2)

Installation of the EASYROOF system

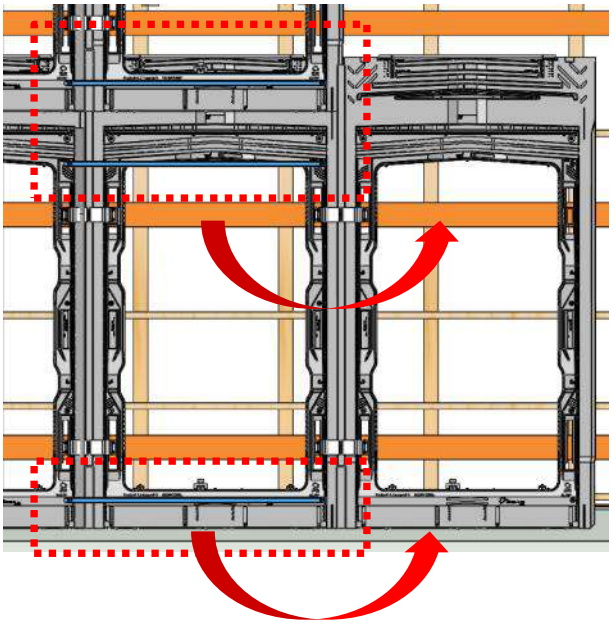
14°) Install the upper and lower double brackets (7) and screw with 6x40 STAINLESS STEEL screws (9).
Do not install the other fixing brackets straight away. This operation will be carried out at a later stage.
Do not forget the earthing.
NB: the central double brackets should also be installed for 6 bracket assembly.

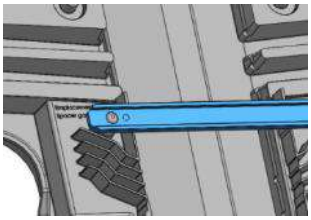




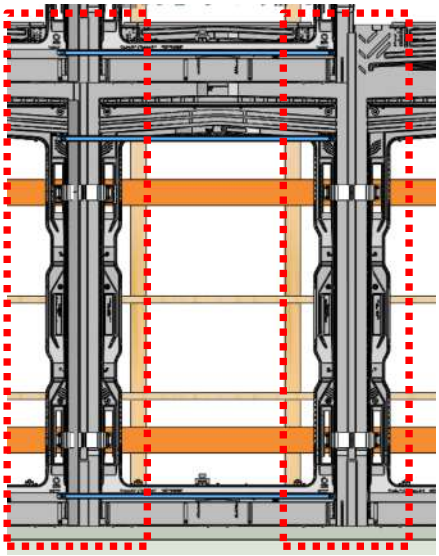
Before screwing the double brackets, pull the frame out to the right to ensure that the positioning tools are in the correct place.

15°) Move the two mounting tools on the bottom line to the right frames.





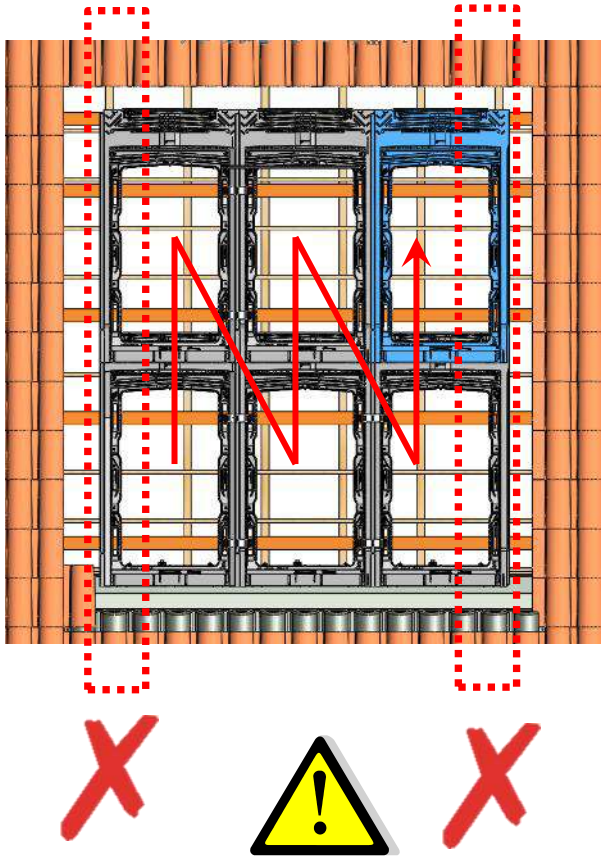
THE MOUNTING TOOLS CAN ONLY BE MOVED IF THE 4 (OR 6) BRACKETS HAVE BEEN ASSEMBLED.



13.4.2)

Installation of the EASYROOF system

16°) Install and interlock on all the other frames in the PV field which are still to be assembled by repeating the operations on pages 46 to 50.

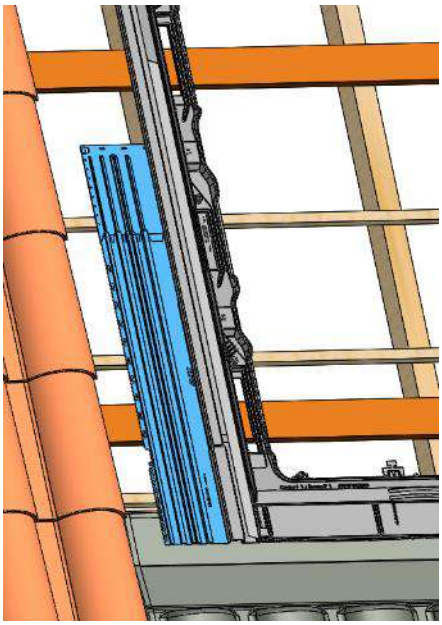


DO NOT INSTALL THE SINGLE SIDE BRACKETS ON THE SYSTEM AS THIS OPERATION WILL BE CARRIED OUT AT A LATER STAGE AFTER THE INSTALLATION OF THE SIDE FLASHING.

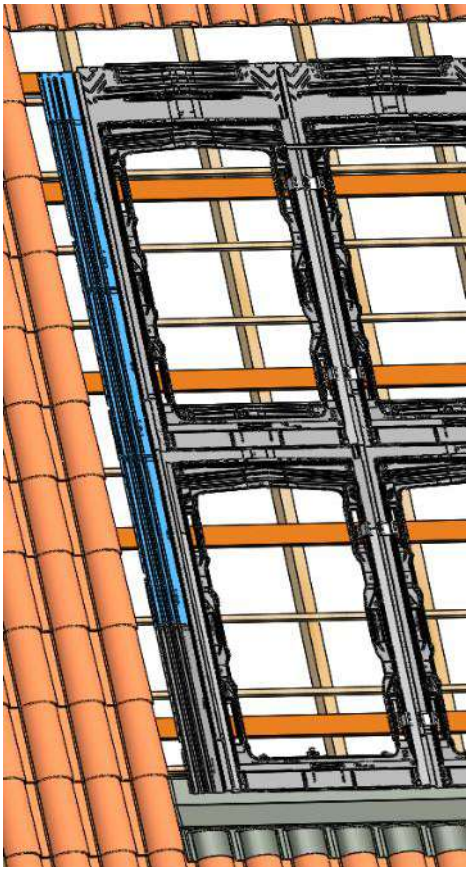
13.4.3)

Installation of the EASYROOF system

1°) Position the first left flashing beside the first frame.

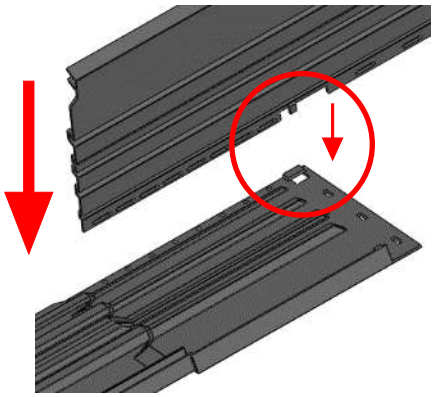


2°) Install the other flashing plates by interlocking them into one another (see opposite).

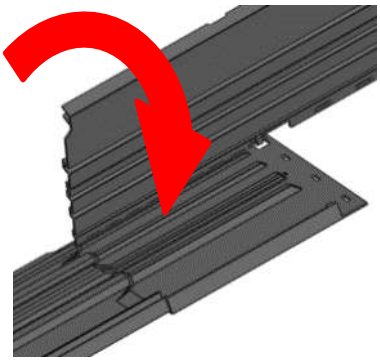


Flashing assembly

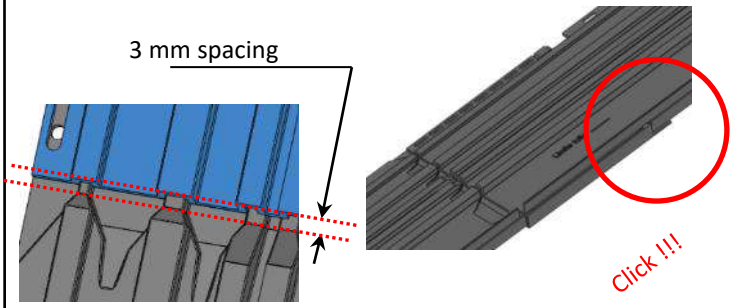
a°) Interlock the pin on the second flashing into the first.



b°) Rotate the second flashing.



c°) Clip the second flashing to the other.
Position the two flashing plates 3 mm apart.

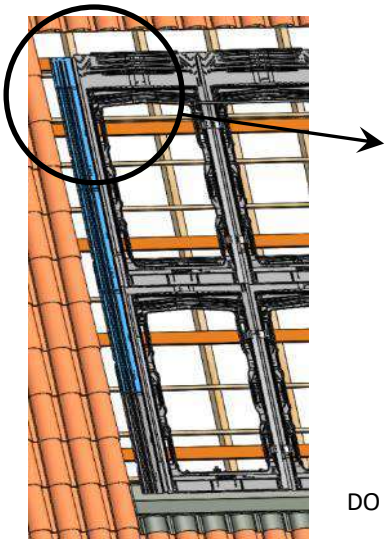


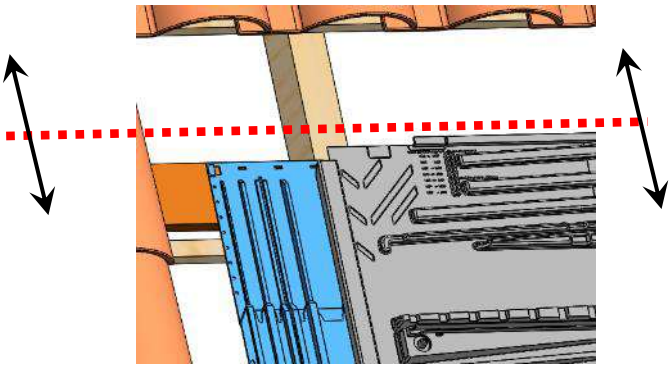
13.4.3)

Installation of the EASYROOF system

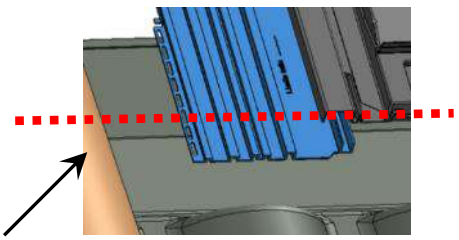
3°) Slightly raise the frames on the left and slide the row of flashing underneath the frames.

4°) Align the final flashing plate with the top of the frame.



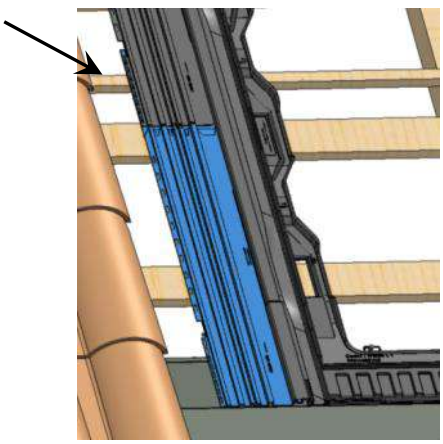


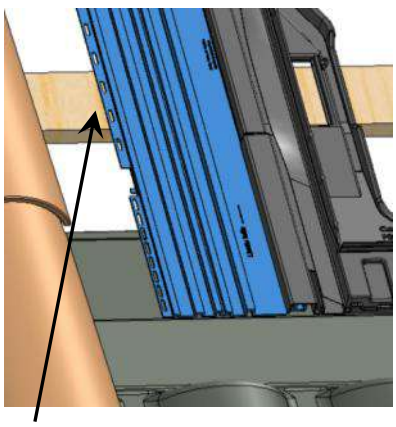
DO NOT TOUCH THE FLASHING

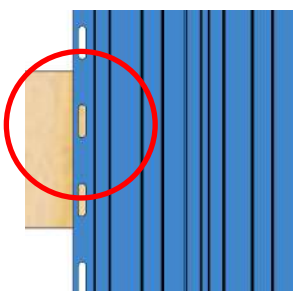


5°) Cut the part of the flashing which overhangs the frame at the bottom of the field on the first flashing plate if necessary.

6°) Position a dome head 5x30 stainless steel screw (b) on each flashing overlap. Tighten slightly.

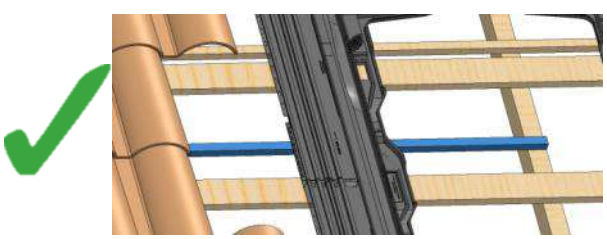


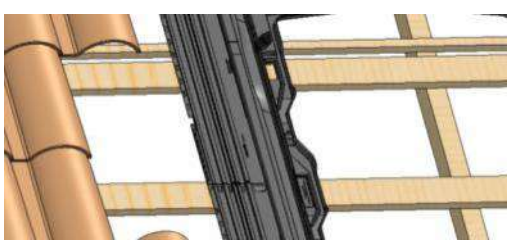




7°) Position a dome head 5x30 stainless steel screw (b) at the centre of the oblong hole. Tighten slightly. NB: it is essential to unscrew with one turn to allow the part to dilate.

8°) Add a batten underneath the overlap if there are none in this position.





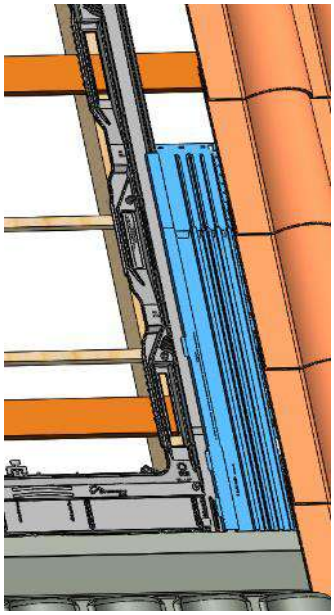
9°) Attach all the left flashing plates following the instructions in 6, 7 and 8 above.

13.4.4)

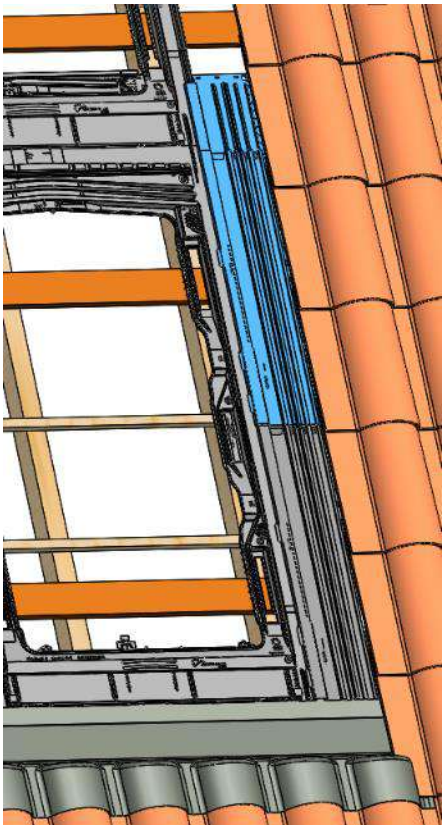
Installation of the EASYROOF system

Flashing assembly

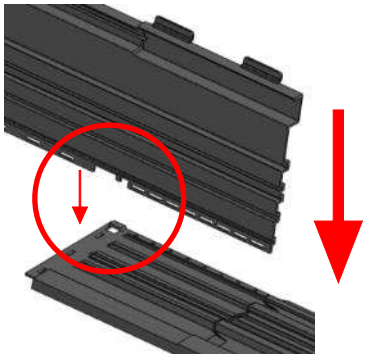
1°) Position the first right flashing plate above the frame.



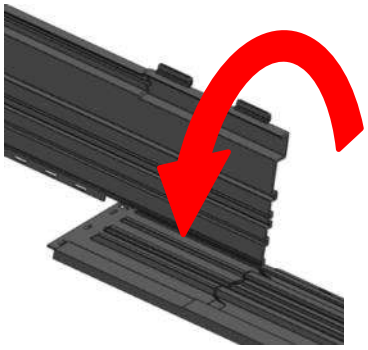
2°) Install the other flashing plates by interlocking them into the previous ones (see opposite).



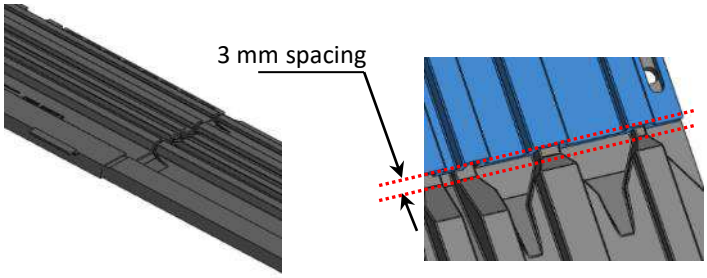
a°) Interlock the pin on the second flashing into the first.



b°) Rotate the second flashing.



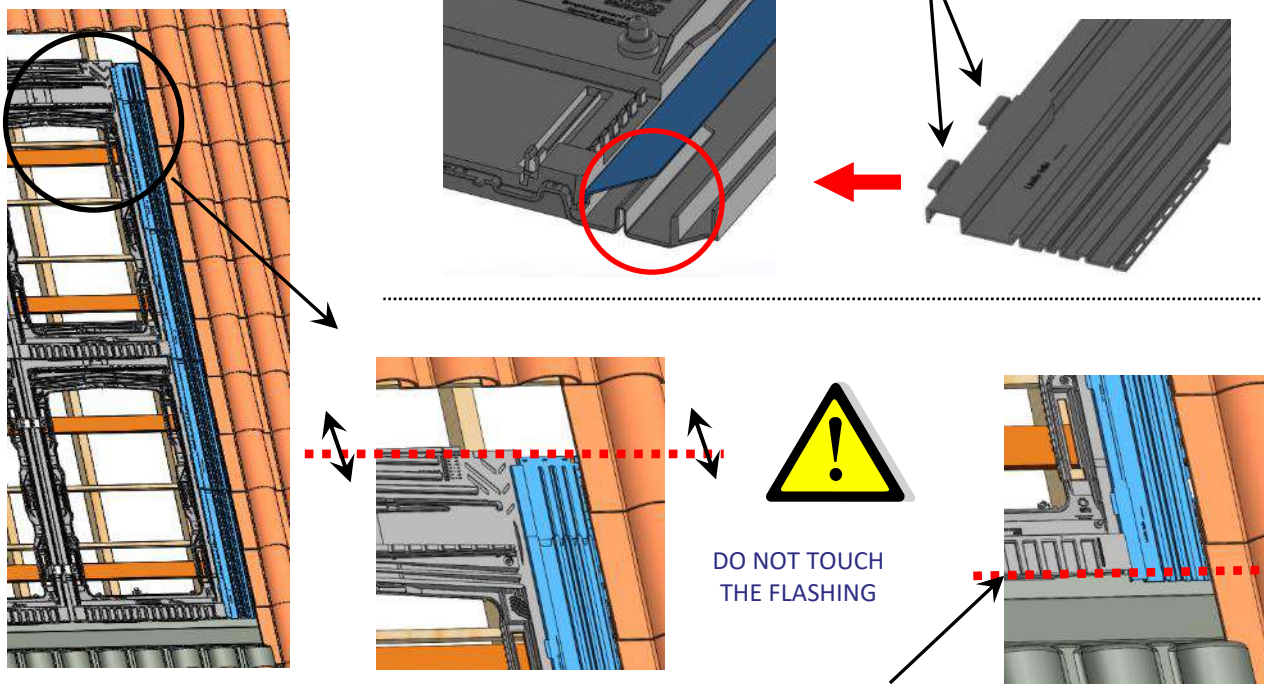
c°) Flatten the second flashing onto the other.
Position the two flashing plates 3 mm apart.



13.4.4)

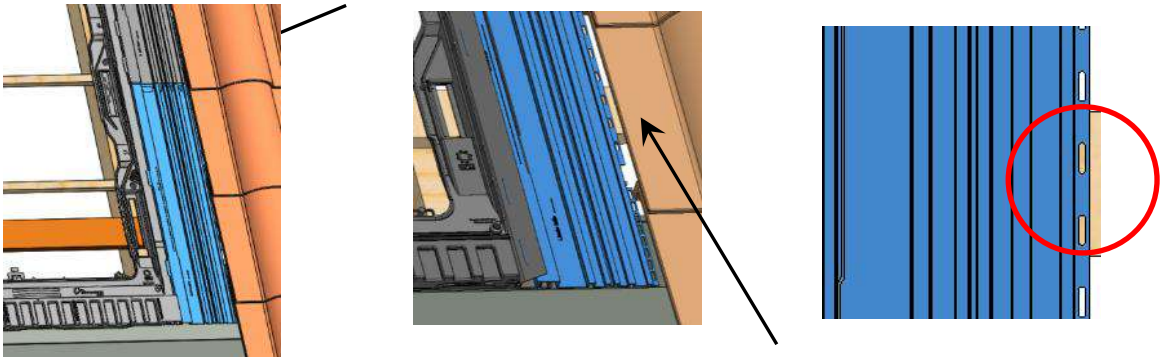
Installation of the EASYROOF system

3°) Align the final flashing plate with the top of the frame. Place the flashing lugs underneath the flexible frame flap.



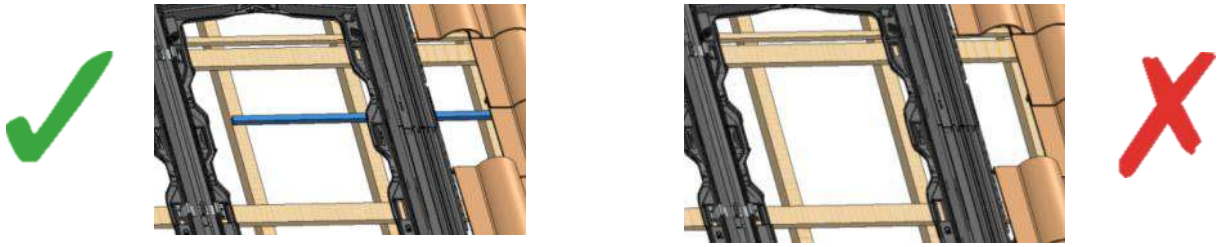
4°) Cut the part of the flashing which overhangs the frame at the bottom of the field on the first flashing plate if necessary.

5°) Position a dome head 5x30 stainless steel screw (b) on each flashing overlap. Tighten slightly.



6°) Position a dome head 5x30 stainless steel screw (b) at the centre of the oblong hole. Tighten slightly. NB: it is essential to unscrew with one turn to allow the part to dilate.

7°) Add a batten underneath the overlap if there are none in this position.

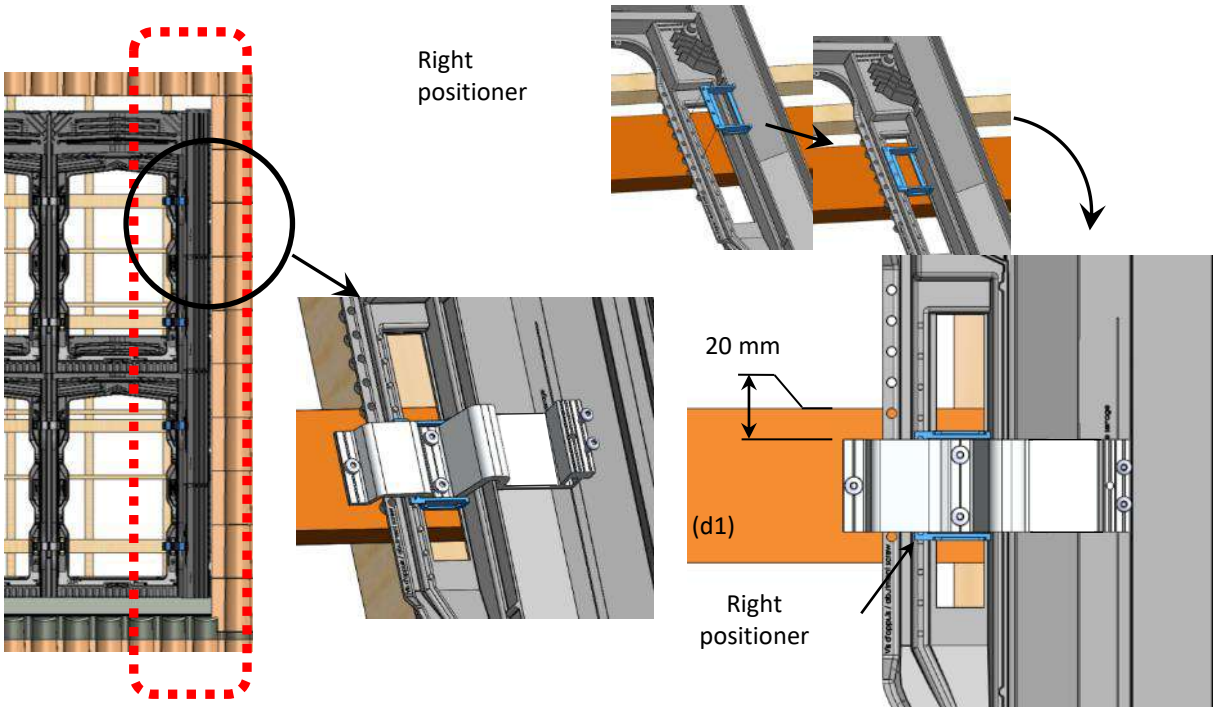


8°) Attach all the left flashing plates following the instructions in 5.6 and 7 above.

13.4.5)

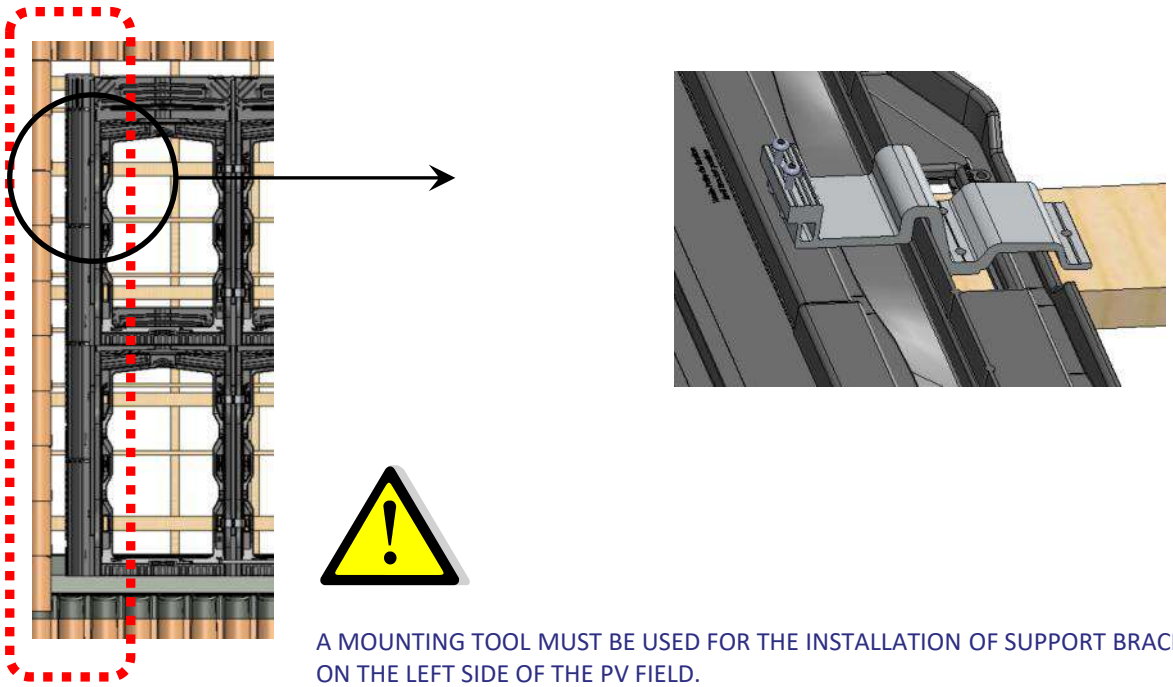
Installation of the EASYROOF system

1°) Position all the single brackets (8) to the right of the PV field using a mounting tool
interlock them in the right positioners following the procedure described below.
Respect the dimension 20 mm / support board (d1) and screw with 6x40 STAINLESS STEEL screws (9) with 2 or 3 brackets per frame according to the technical recommendations.



13.4.5)

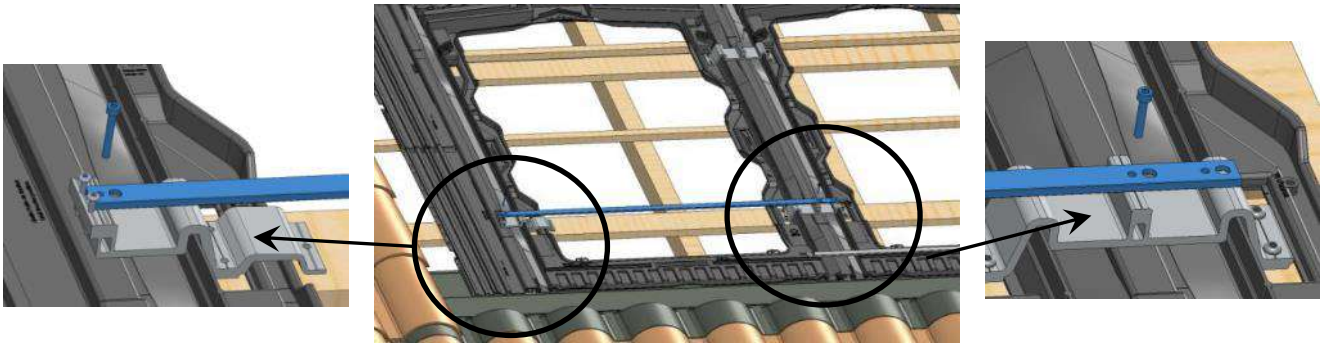
1°) Position all the single brackets (8) to the left of the PV field using a mounting tool following the procedure described below.

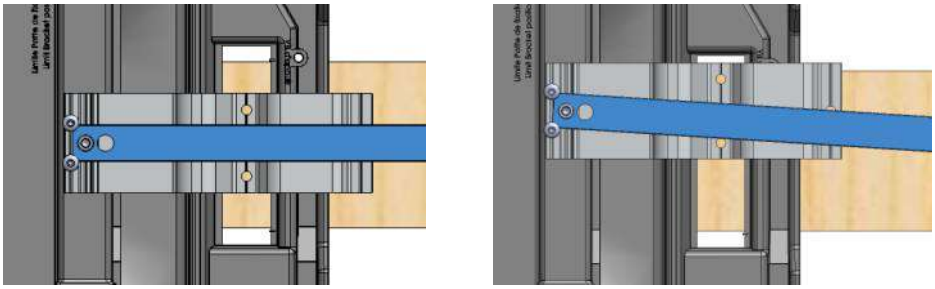


A MOUNTING TOOL MUST BE USED FOR THE INSTALLATION OF SUPPORT BRACKETS ON THE LEFT SIDE OF THE PV FIELD.

13.4.5) Installation of the EASYROOF system

1°) Attach one end of the tool to the double brackets on the same frame using a CHc M6 screw (10 or 11) Screw loosely.
2°) Position a single support bracket (8) in the gap provided on the frame.
3°) Attach the other end of the tool to the single bracket on the same frame using a CHc M6 screw (10 or 11). Screw loosely.
4°) Align the single bracket with the tool.
5°) Screw the bracket with 6x40 STAINLESS STEEL screws (9).
6°) Remove the two screws and the tool.
7°) Install the other single brackets on the left side of the PV field by repeating operations 1 to 6.



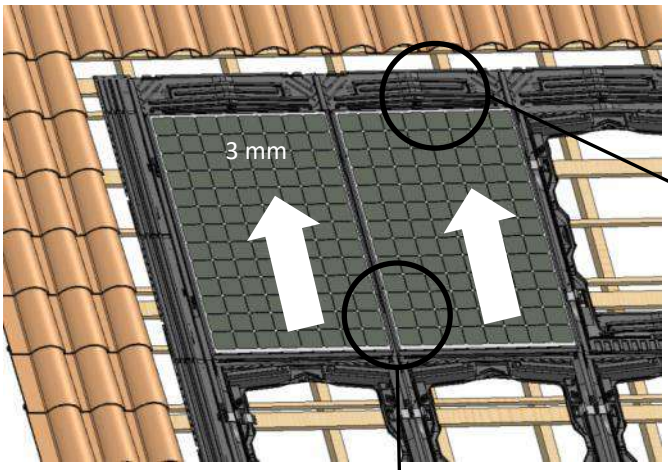


13.5) Installation of the PV modules

The PV connectors are fixed and secured in a dry zone on the top of the support boards (mandatory for the EASY ROOF EVOLUTION system). Moreover they must not touch nor interfere with the breather membrane situated underneath.

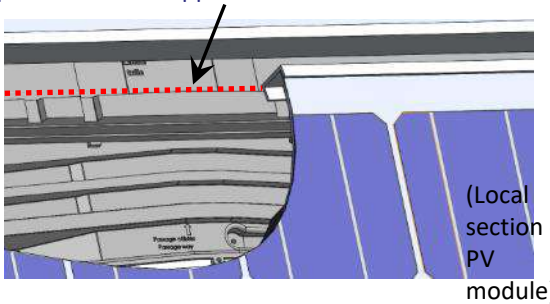
13.5) Installation of the PV modules

1°) Position and interlock the photovoltaic modules. To ground the modules see page 58.

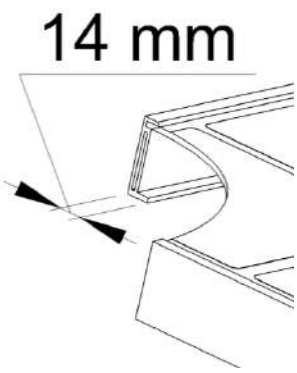


a°) For PV modules with a frame overlap of ≥ 31 mm, raise the module by 3 mm.

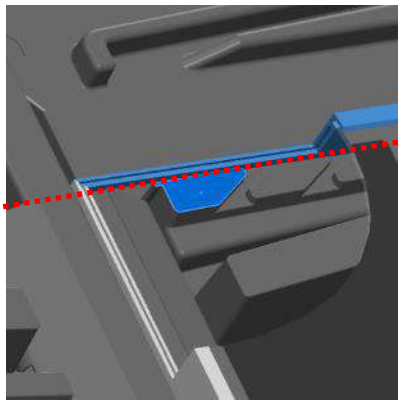
b°) For PV modules with a frame overlap of > 14 and < 31 mm, align the upper edge of the module with the tip of the frame support.



(Local section of PV module)



b°) For PV modules with a frame overlap of ≤ 14 mm, align the inside edge of the frame overlap as shown on each side of the frame.

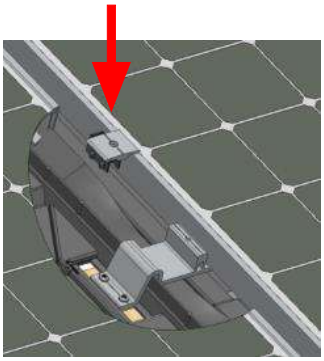


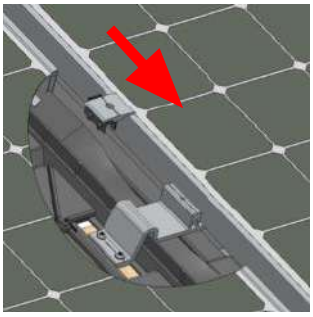
(Local section of PV module)

2°) Position the double clamp (5 or 6) with the anti-rotation wedge above the double bracket and between two modules with the clamp supported by the PV modules.
3°) Slide everything downwards to interlock the fixing bracket.

4°) Flatten the modules against the anti-rotation wedges.

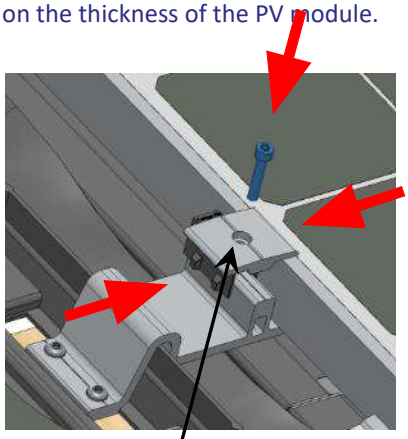
5°) Screw in place with a CHC M6 x 30 (11) or CHC M6 x 40 (10) screw depending on the thickness of the PV module.





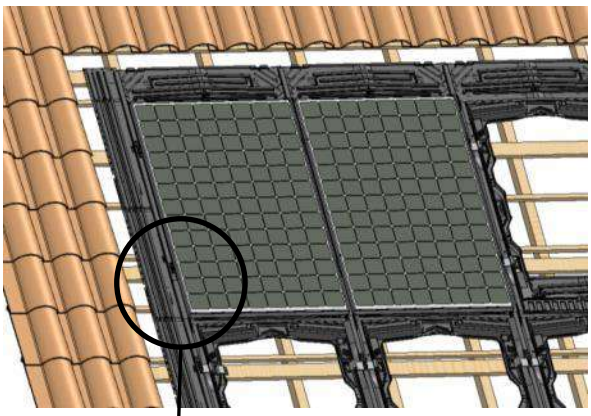
(Local section of PV module)

6°) Put all the PV field double clamps in place

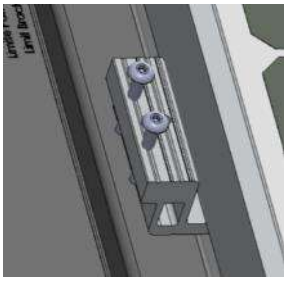


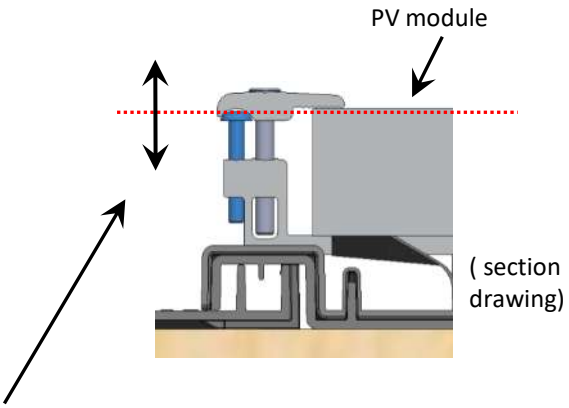
Tightening torque 8.8 Nm

13.5) Installation of the PV modules



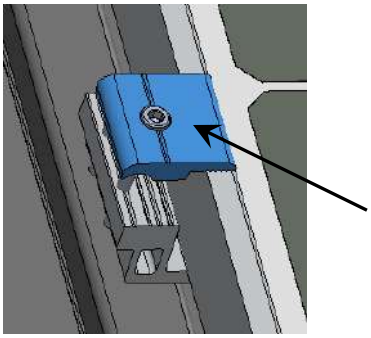
(Single bracket)





1°) Adjust the height of the single clamp support screws so that they are flush with the top of the PV module.

2°) Fix the photovoltaic modules in place at the bottom of the field with single clamps (16) using socket headed screws CHC M6 x 30 (11) or CHC M6 x 40 (10) depending on the thickness of the PV module.



(Single clamp)

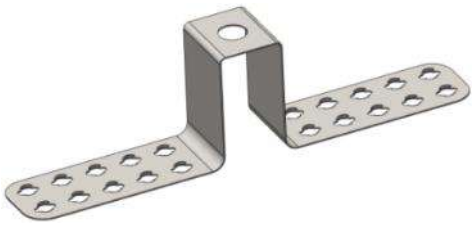
13.5.1)

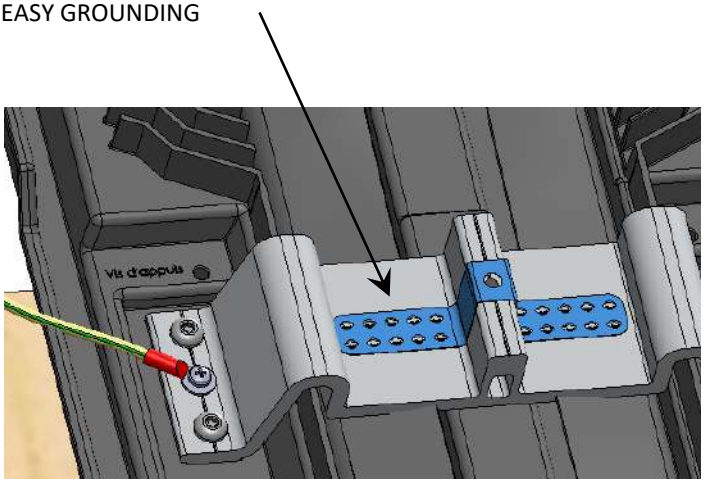
Grounding

If grounding is not carried out by connecting the cable directly to the PV module, the following operations should be carried out.

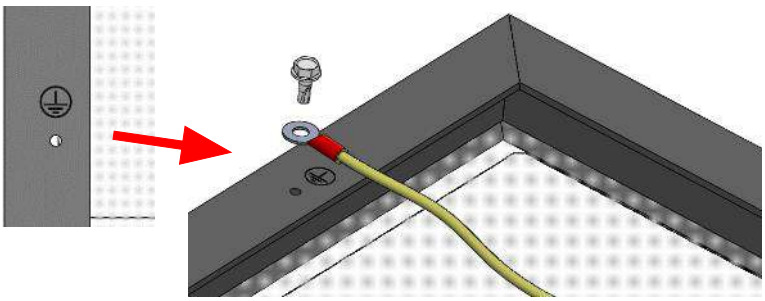
1°) Identify the grounded double brackets during assembly. (See p. 50)

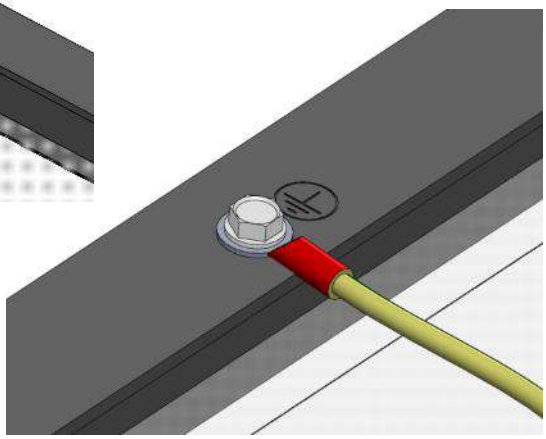
Option 1°)
Position the EASY GROUNDING on the fixing bracket





Option 2°)
Link the PV module directly to the grounding wire using the holes provided by the constructor underneath the module.



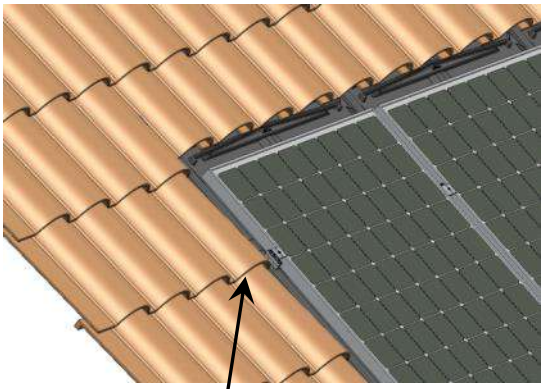


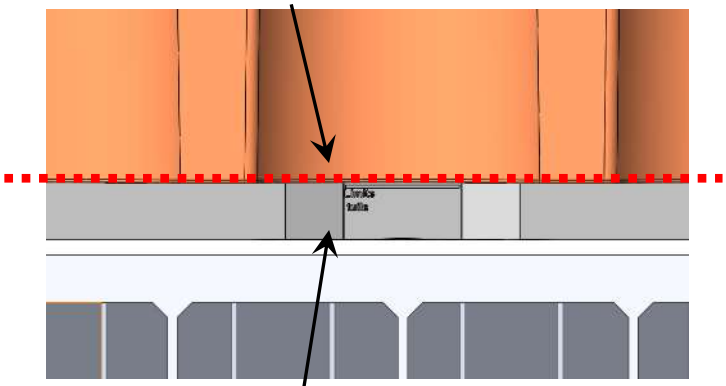
2°) Ensure that a connection has been established between the PV module and the double clamp (5) and that the connection is less than 2 Ohms.

13.6) Replacing the tiles

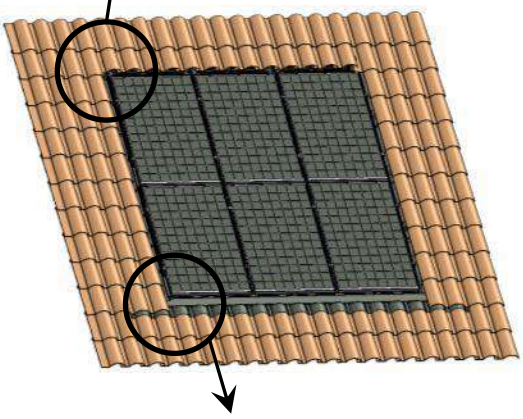
Replace the tiles by covering the flashing at the top of the PV field as much as possible.
The bottom of the tiles must be at a tangent to the “tile limit” marking.

IMPORTANT: For tiles with a significant curve, a self-adhesive foam strip must be applied to the top flashing before replacing the tiles.



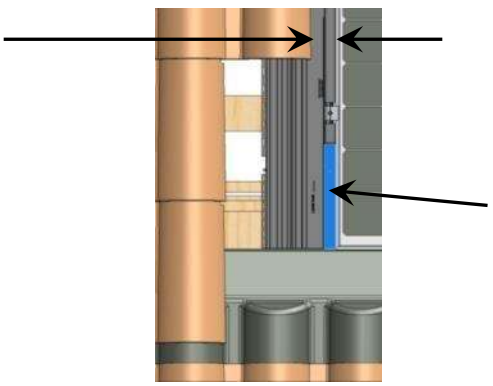


“Tile limit” marking



For the overlap of the side flashing (2) and (3), the edge of the files must be at a tangent to the “tile limit” marking.
The dimension D must be 40 mm MAX as shown in the diagram (DTU standard).

Dimension D



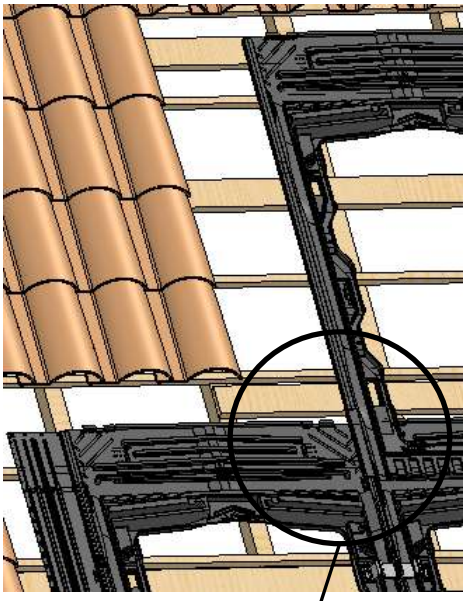
“Tile limit” marking

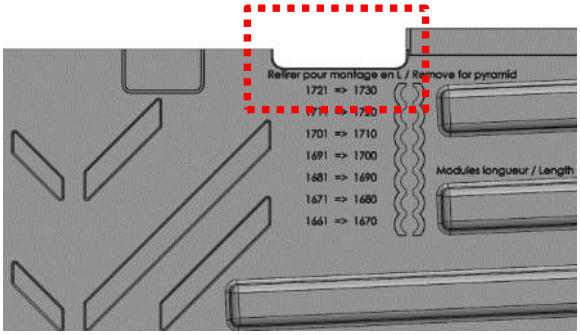
Annex n° 1

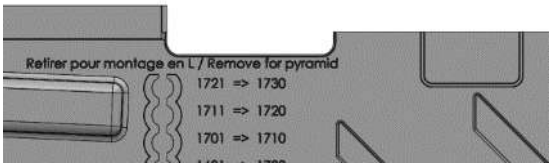
Pyramid assembly

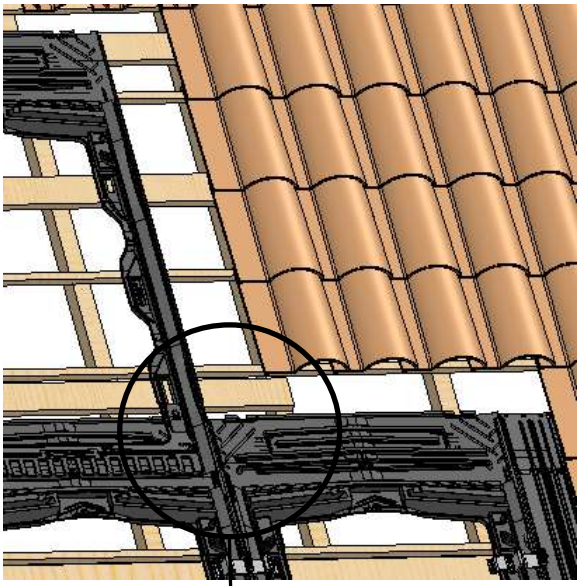
A°) Install flashing in "L" shape left or right

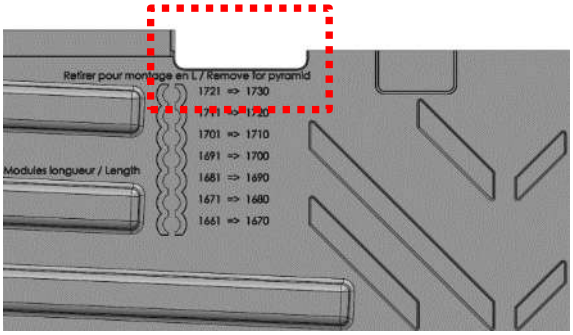
1°) Remove the detachable part from the top of the frame.

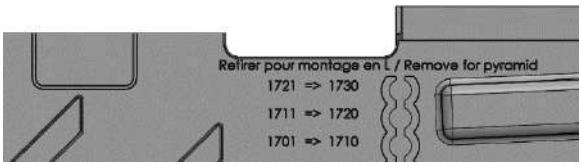










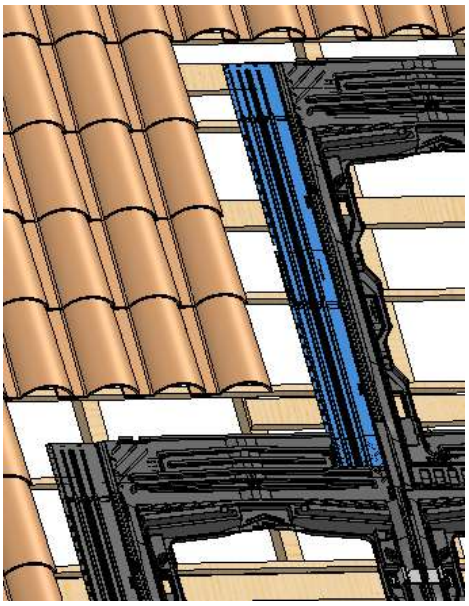


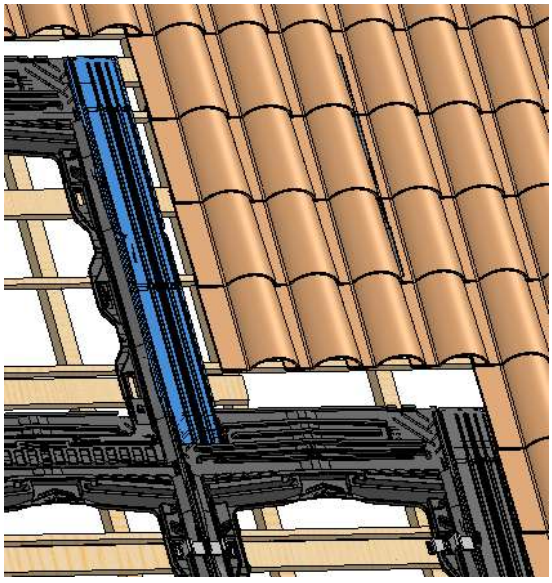
Annex n° 1

Pyramid assembly

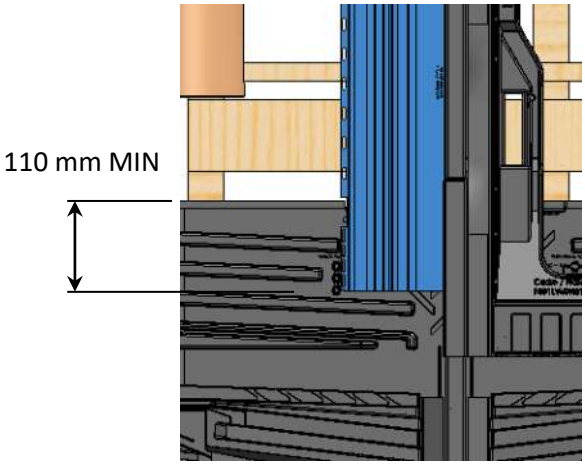
A°) Install flashing in "L" shape left or right

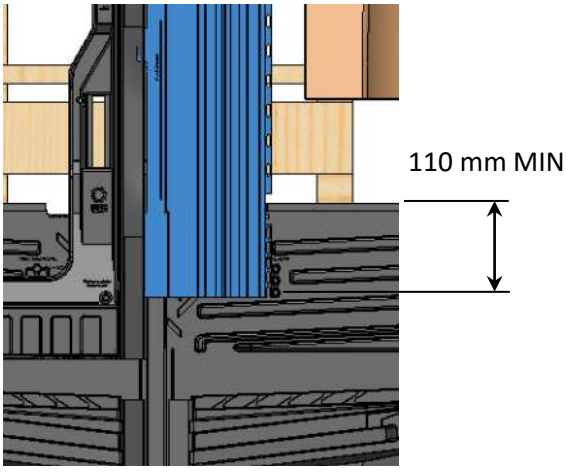
2°) Assemble and install the flashing as explained on pages 52 to 55 of the general instructions.





3°) Cut the bottom flashing so that it covers the lower frame by 110 mm MIN.



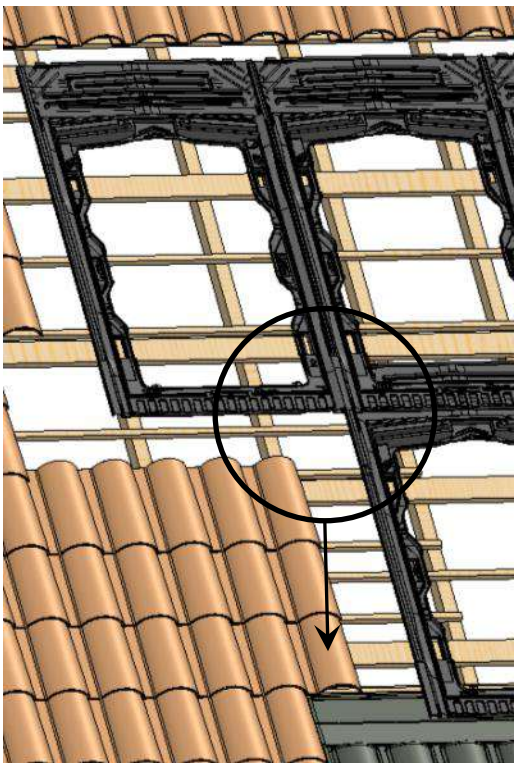


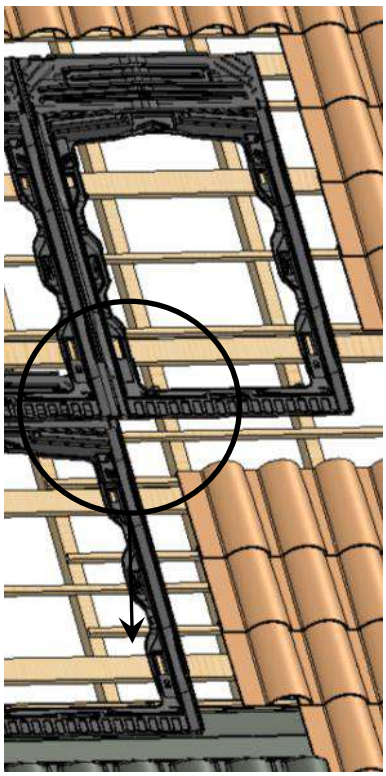
Annex n° 1

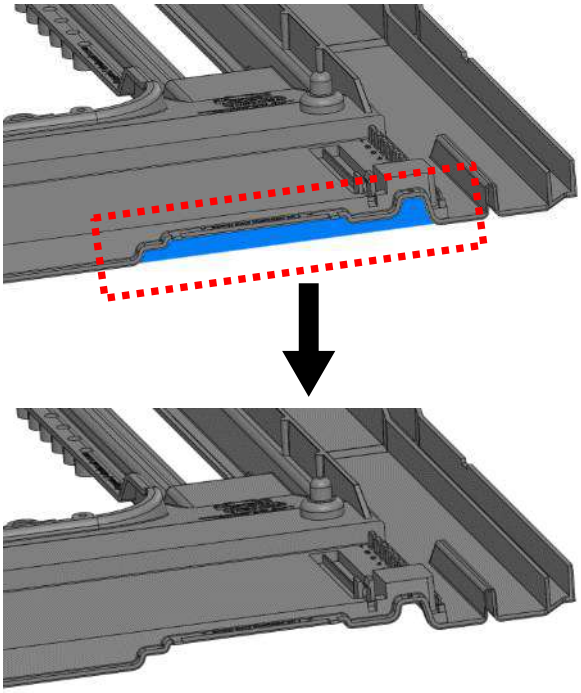
Pyramid assembly

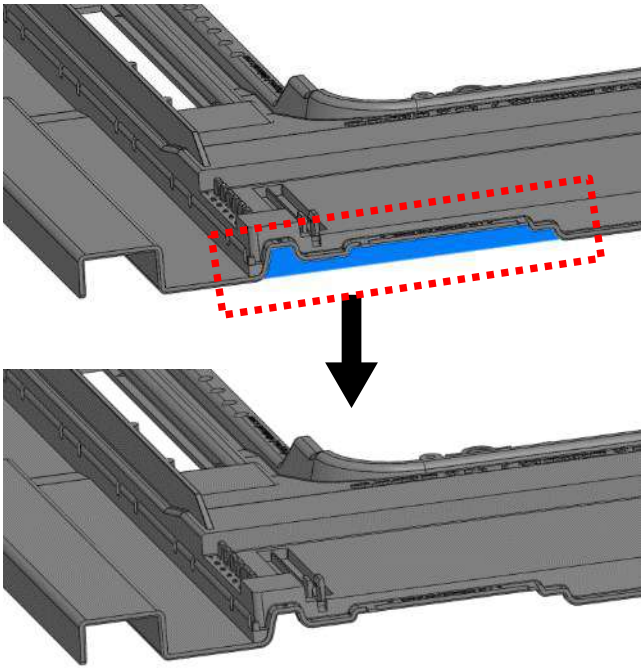
B°) Install flashing in "T" shape left or right

1°) Remove the detachable part from the bottom of the frame on the right or left as required.







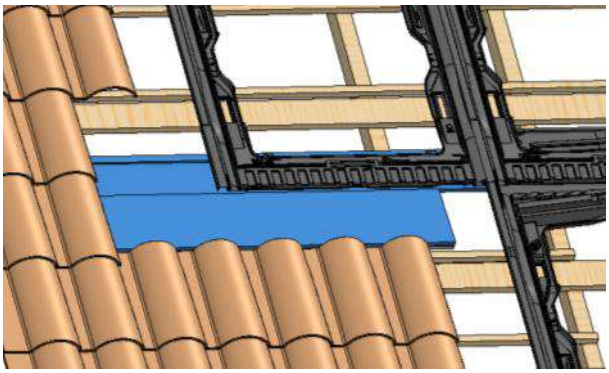


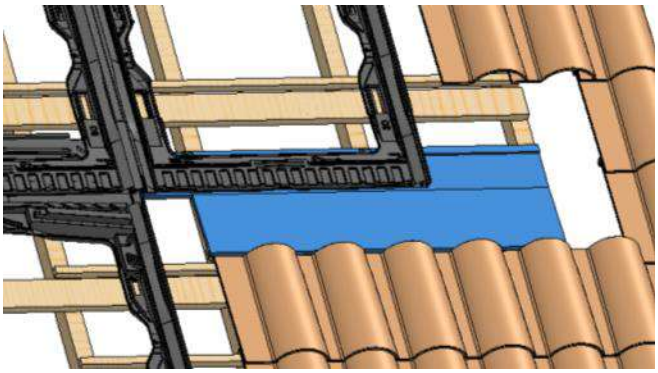
Annex n° 1

Pyramid assembly

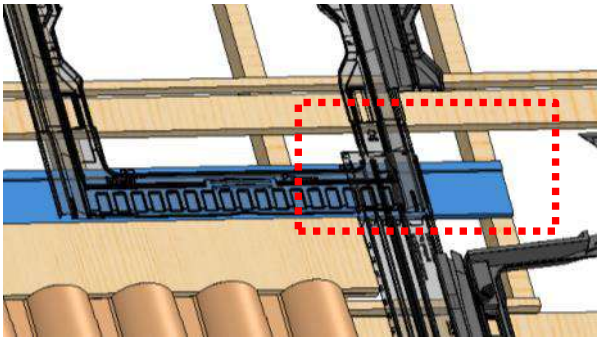
B°) Install flashing in "T" shape left or right

2°) Apply the planking to the flashing. See the general instructions on pages 26 - 27 for the sizing of the wood.

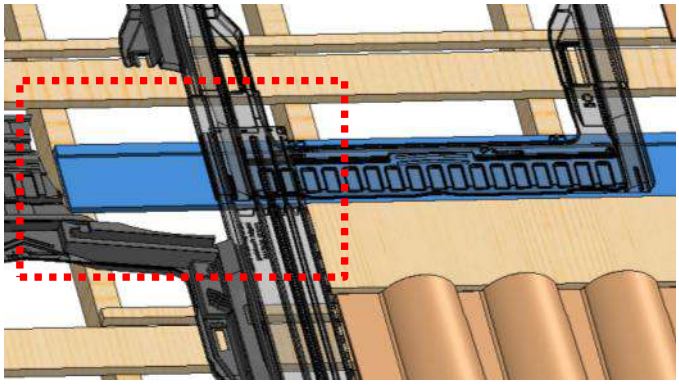




3°) Extend the batten and the horizontal board to support the flashing to be assembled underneath the frame.

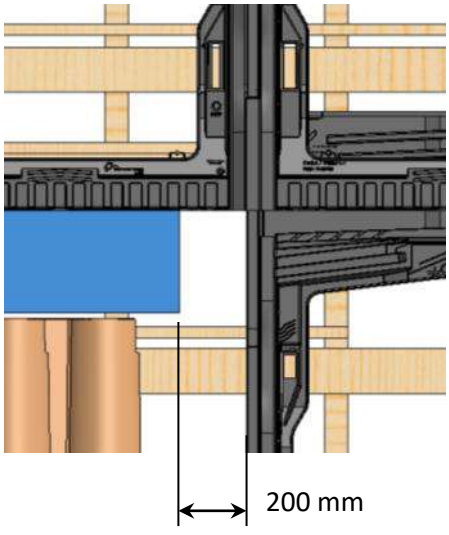


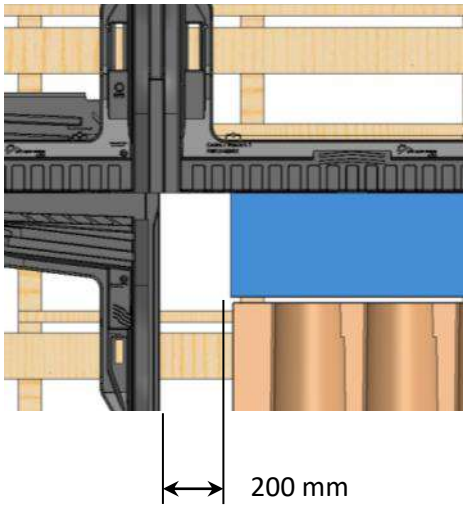
(frame local cut view)



(frame local cut view)

4°) Position the tilted board 200 mm from the frame (insertion of the flashing to be assembled)



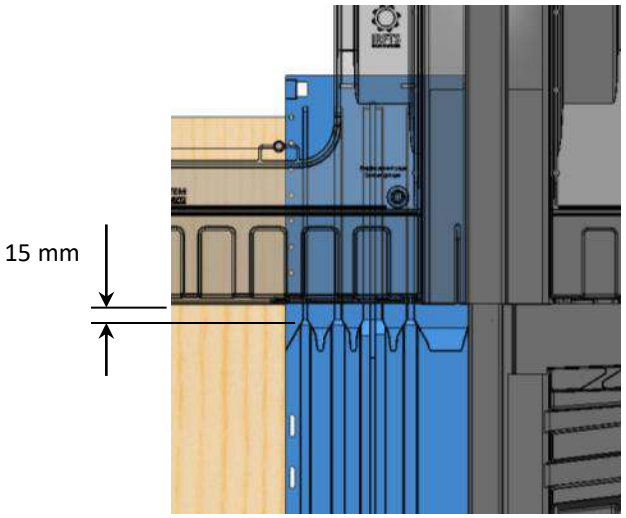


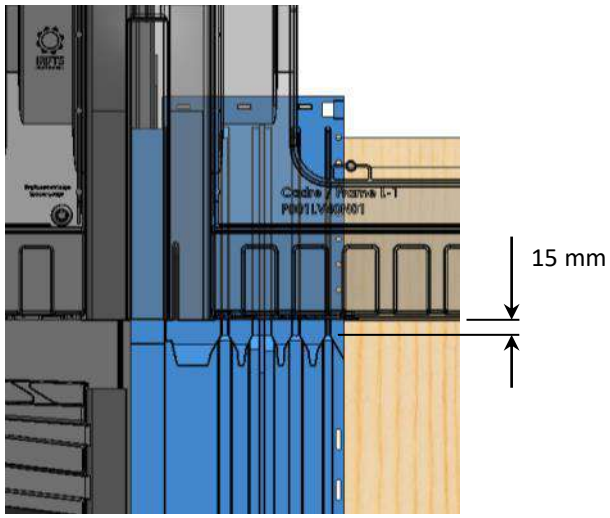
Annex n° 1

Pyramid assembly

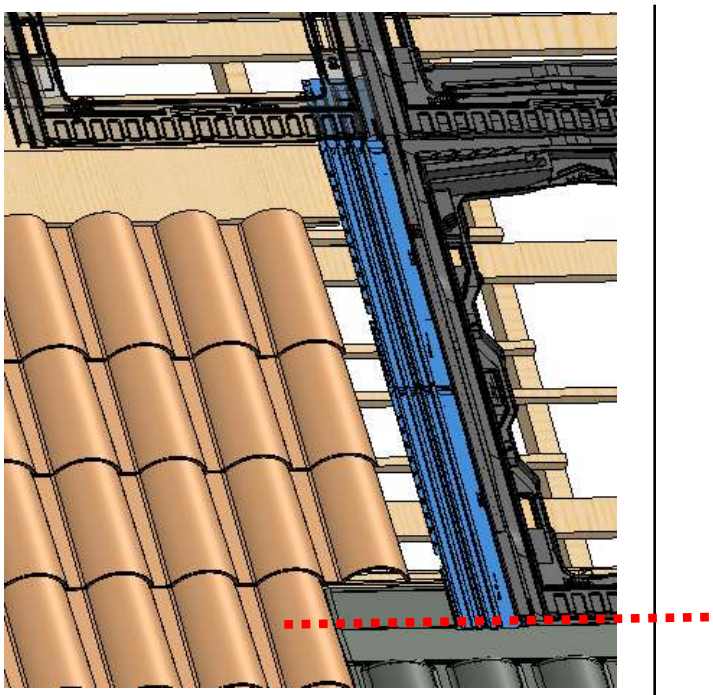
B°) Install flashing in "T" shape left or right

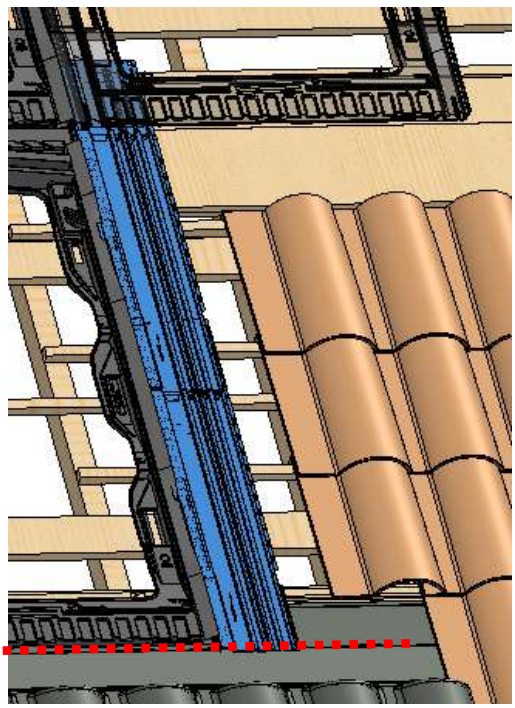
5°) Position the flashing at the top of the column 15 mm from the bottom of the frame.





6°) Assemble and install the flashing as explained on pages 52 to 55 of the general instructions.
7°) Cut the flashing at the bottom of the column in line with the bottom of the frame.



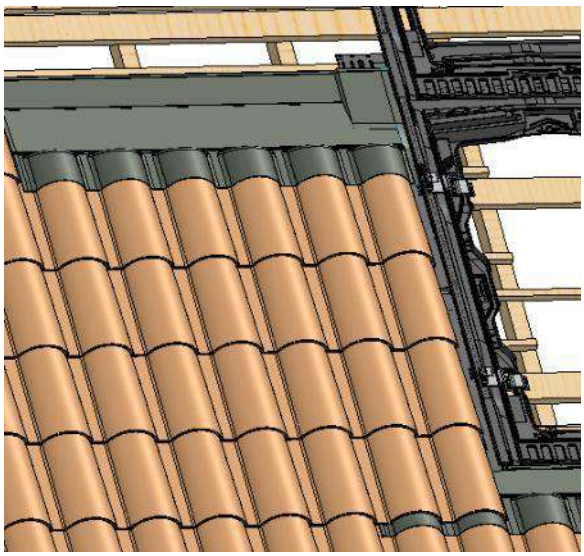


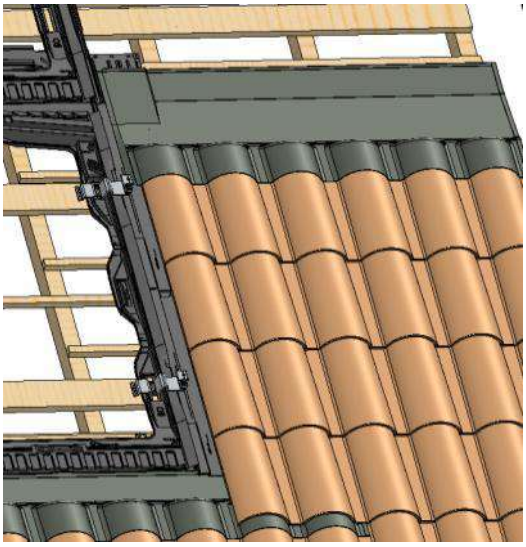
Annex n° 1

Pyramid assembly

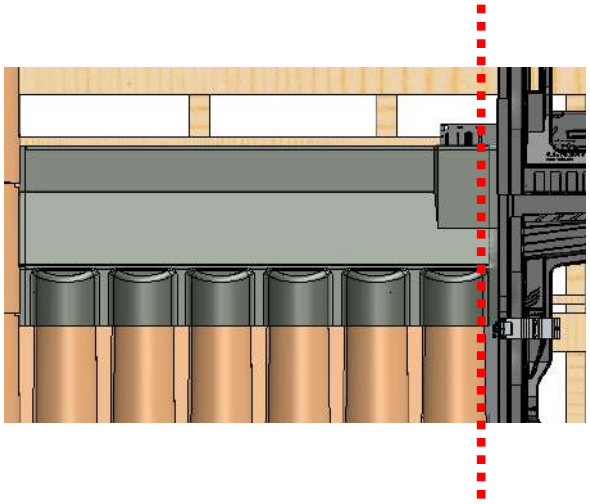
B°) Install flashing in "T" shape left or right

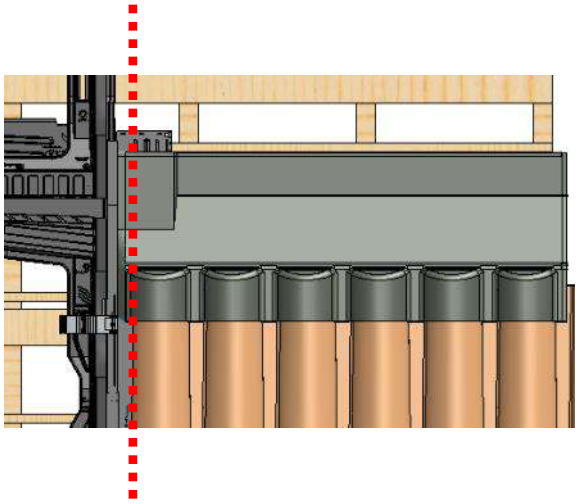
8°) Position the single brackets on the lower frame.
9°) Replace the tiles on the flashing.
10°) Position the flashing respecting the MIN overlaps stipulated in the general instructions on page 32.





11°) Cover the top of the flashing in line with the edge of the last tile.



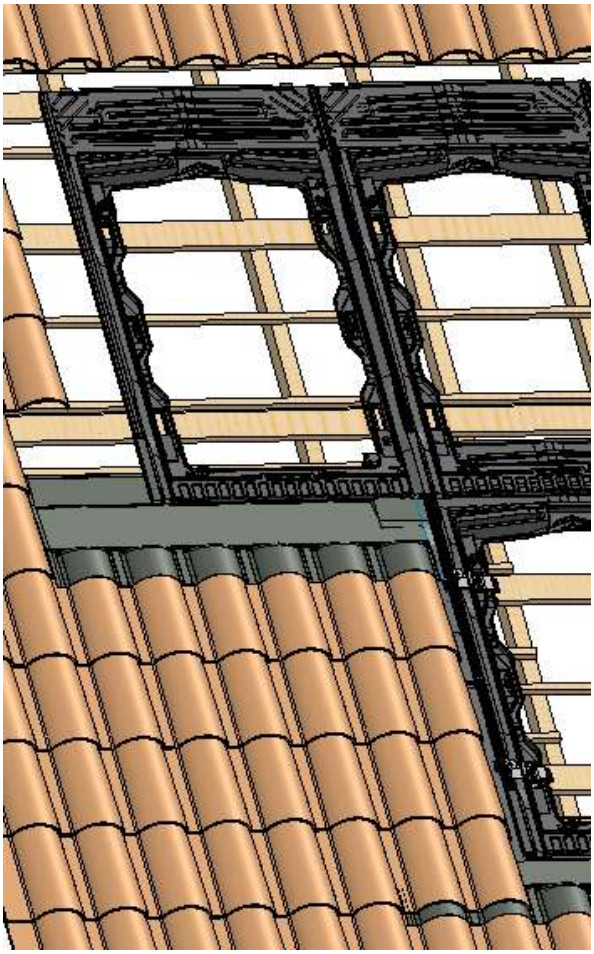


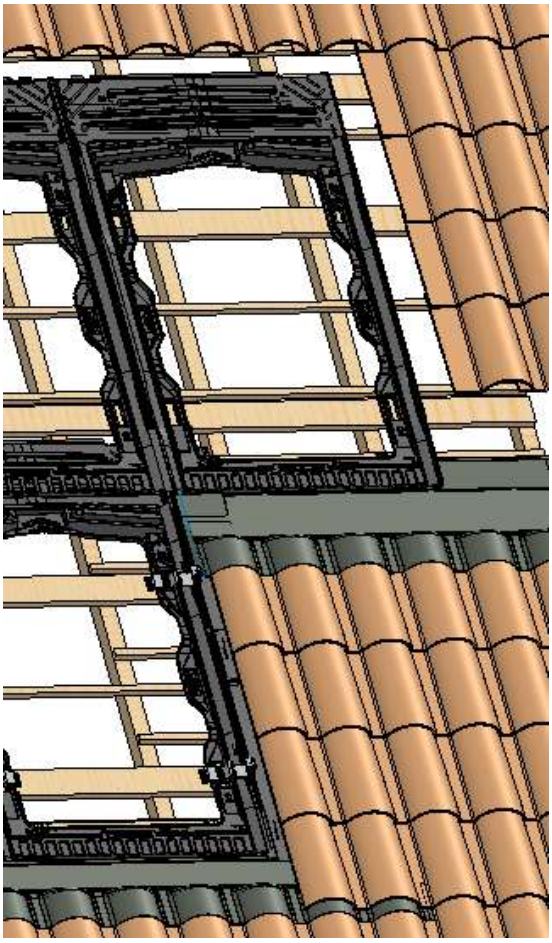
Annex n° 1

Pyramid assembly

B°) Install flashing in "T" shape left or right

12°) Position the upper frame to continue the installation following the indications in the general instructions to position and attach the remaining elements in the system.





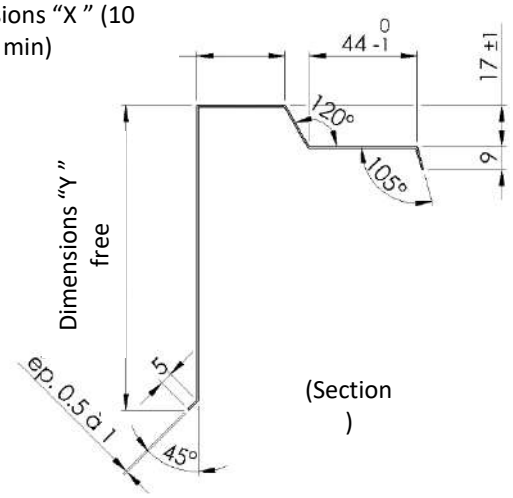
Annex n° 2

Side edge assembly

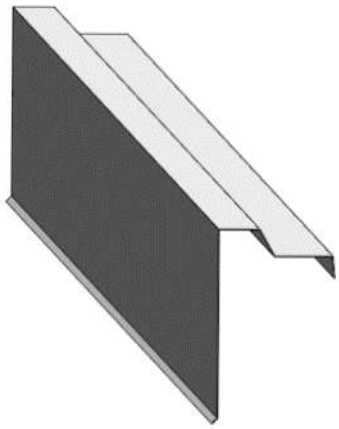
A°) Definition of the edging plate

The metal sheets on the left and right sides are of the same shape.
The “X” dimension may vary between the left and right depending on the gap between the frame and the edge board (field position). "X" must not be less than 10 mm.
The "Y" dimension must be adapted to the required overlap.
The metal sheets must be installed before the single brackets.

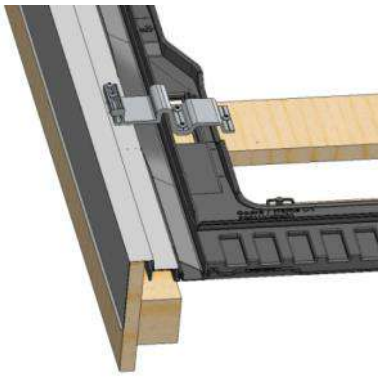
Dimensions “X ” (10 min)

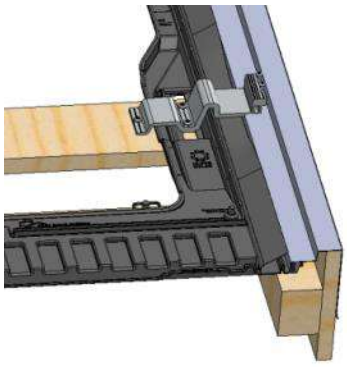


(Section)

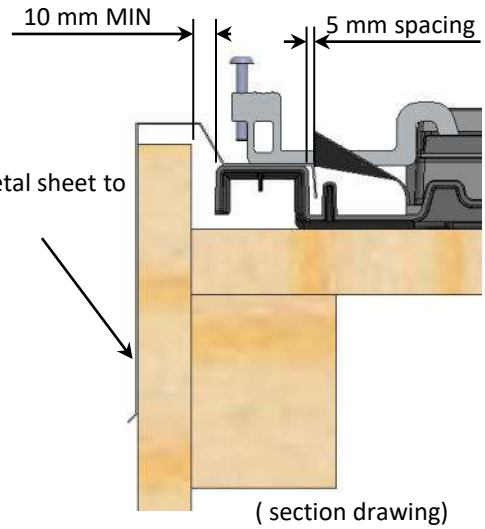


(section drawing)

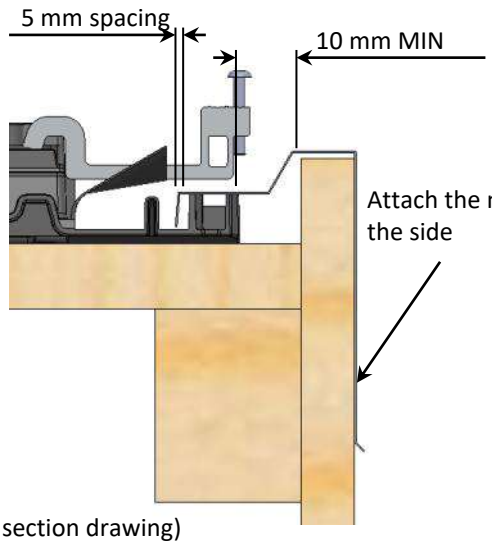




(section drawing)



(section drawing)

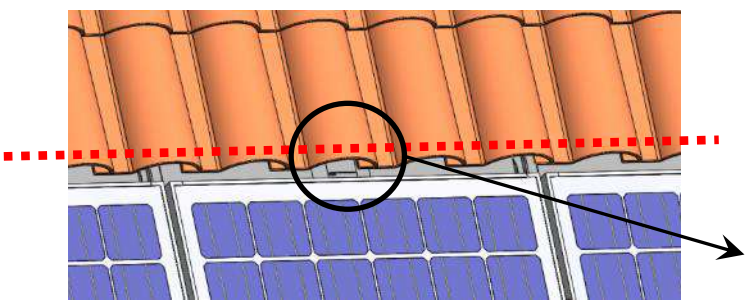


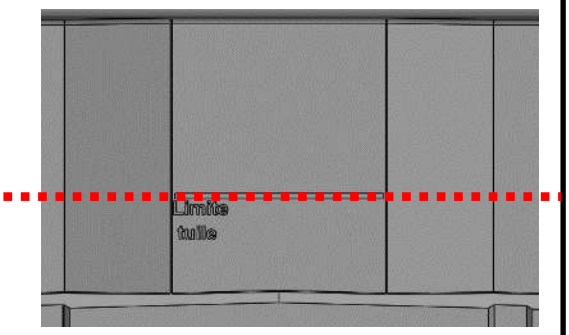
(section drawing)

Annex n° 3 Alignment of tiles at the top of the PV field

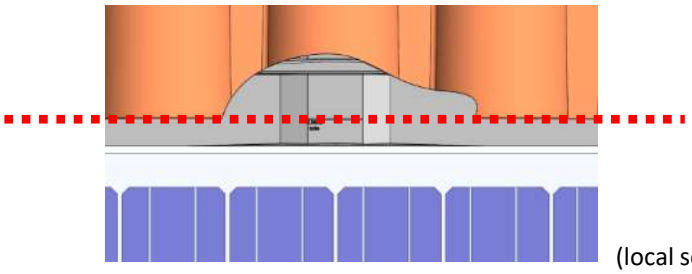
A°) 3 situations may arise

Locating the “tile limit” marking on the EASY ROOF frame



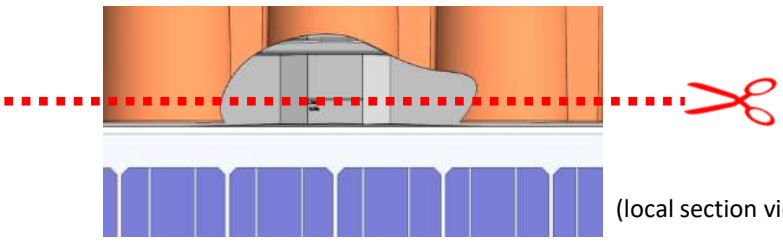


1°) The bottom of the tile is at a tangent to the “tile limit” marking.
Optimum overlap following the manufacturer's instructions.



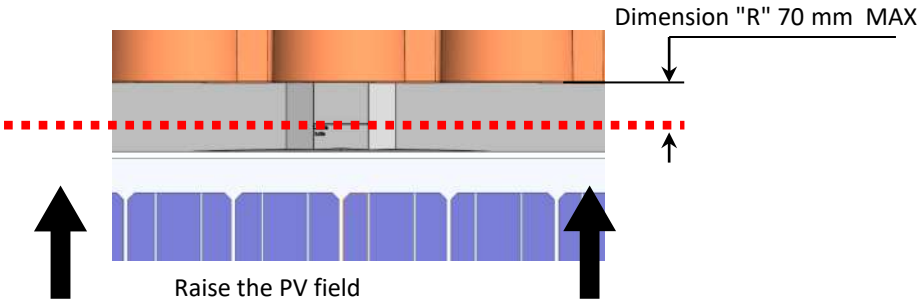
(local section view)

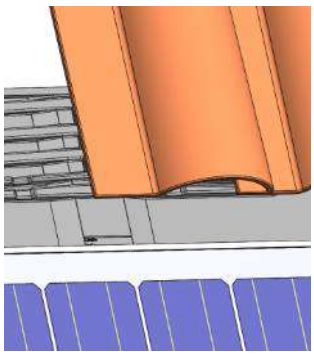
2°) The tile is too long.
Cut the tile to align the lower edge with the “tile limit” marking.



(local section view)

3°) The tile is too short.
The tile must cover the top of the frame by 150 mm MIN.
If the “R” dimension is greater than 70 mm when positioning the PV field on the roof, raise the field position in the direction of the roof slope.
It will be necessary to increase the value of the “S” dimension defined on page 17 to raise the first reference boards (d1) or (d2) in the system.

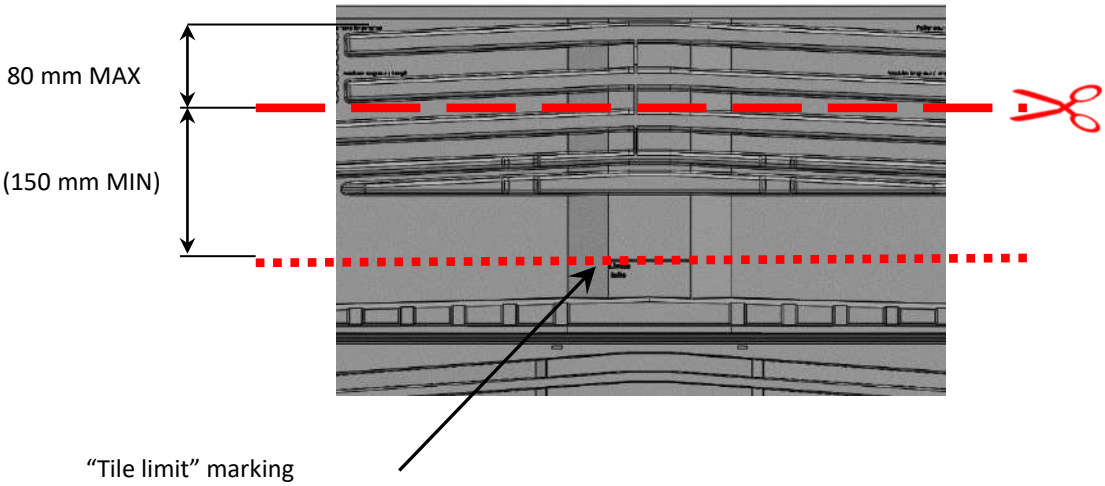




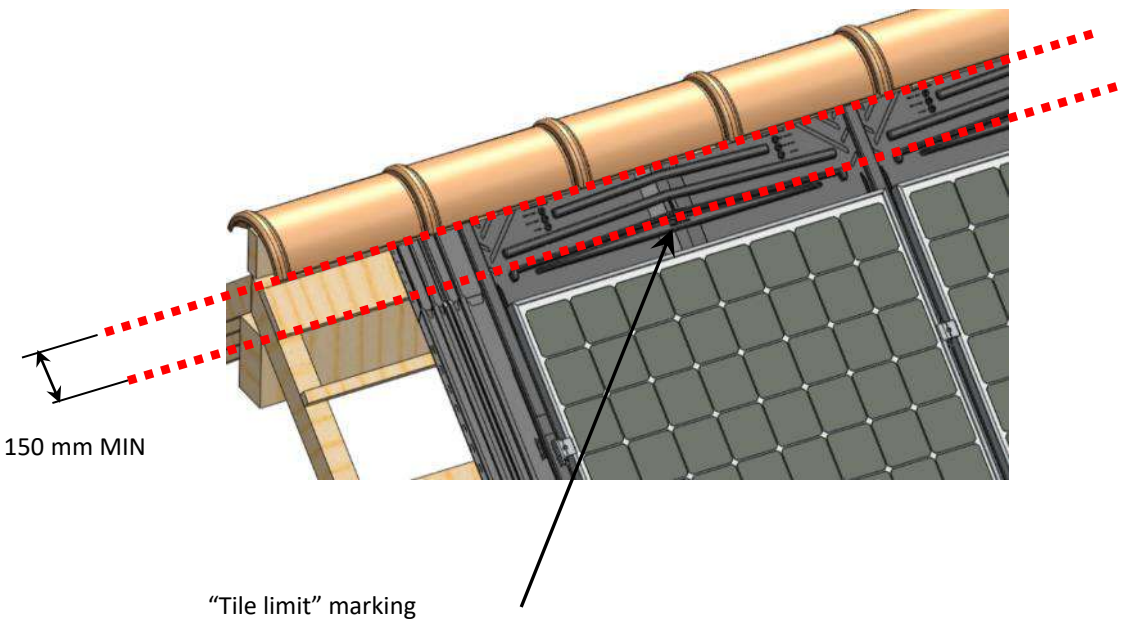
Annex n° 3 Alignment of tiles at the top of the PV field

B°) Ridge assembly

1)° In the case of a limited overlap in the direction of the roof slope, it is possible to reduce the height of the frame by 80 mm MAX under certain technical conditions.
At least 150 mm of material must be maintained above the “tile limit” marking.



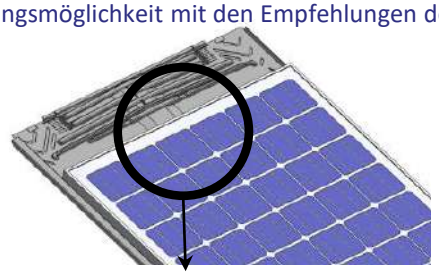
2°) Create a watertight connection between the ridge tiles and the EASY ROOF system by covering at least 150 mm of the frame from the “tile limit” marking.



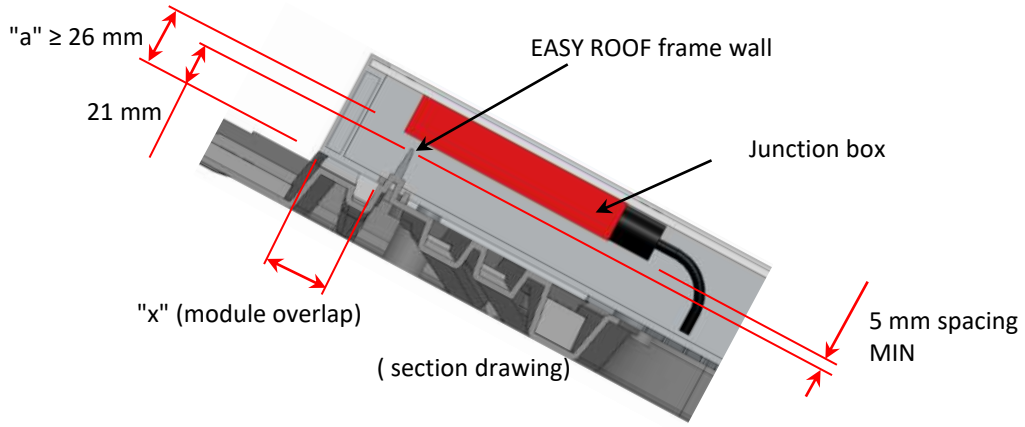
Annex n° 4

Compatibility module

Before installing the EASY ROOF system, make sure that the PV module chosen for the installation is on the compatibility list drawn up by IFRTS (www.edilians.co.uk).
Check the position of the junction box in relation to the edge of the PV module. One of the three conditions described above must be fulfilled in order to install this PV module with the junction box at the top.
Otherwise we recommend assembling the module with the junction box in the lower position in line with the roof slope*.
For junction boxes with side electric outputs, we recommend assembling the module with the junction box in the lower position in line with the roof slope*.
* Bitte prüfen Sie, ob diese Befestigungsmöglichkeit mit den Empfehlungen des Modulherstellers kompatibel ist.

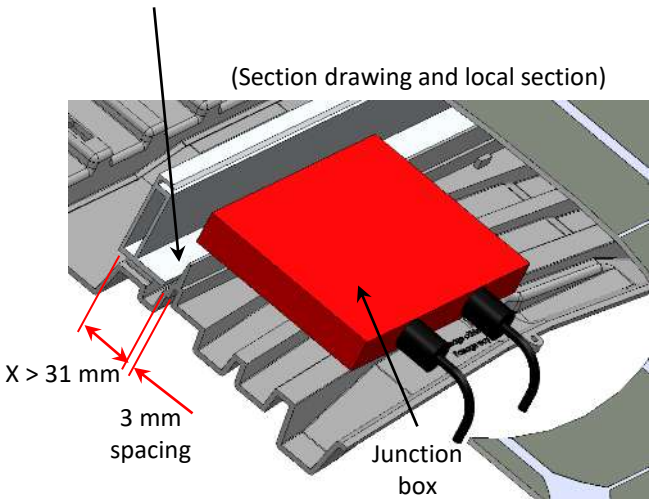


Case n° 1 : The junction box is positioned above the EASY ROOF frame wall: the "a" dimension recorded on the module must be ≥ 26 mm.

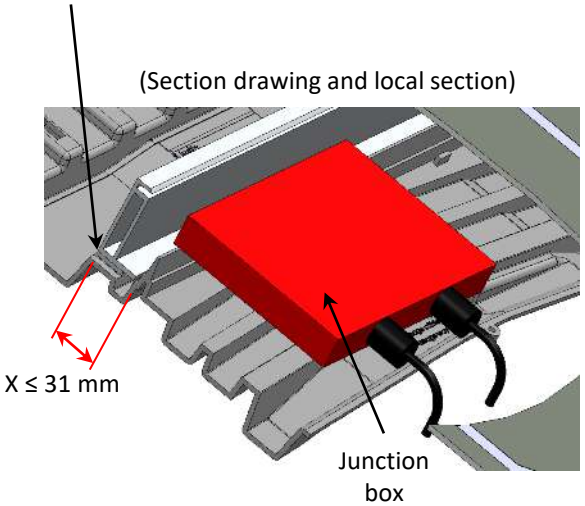


Positioning the module on the system according to the module frame overlap (“x” dimension).

a) Module frame overlap > 31 mm
- Position the edge of the module overlap 3 mm from the EASY ROOF frame.



b) Module frame overlap ≤ 31 mm
- Align the top of the module with the tip of the EASY ROOF frame.



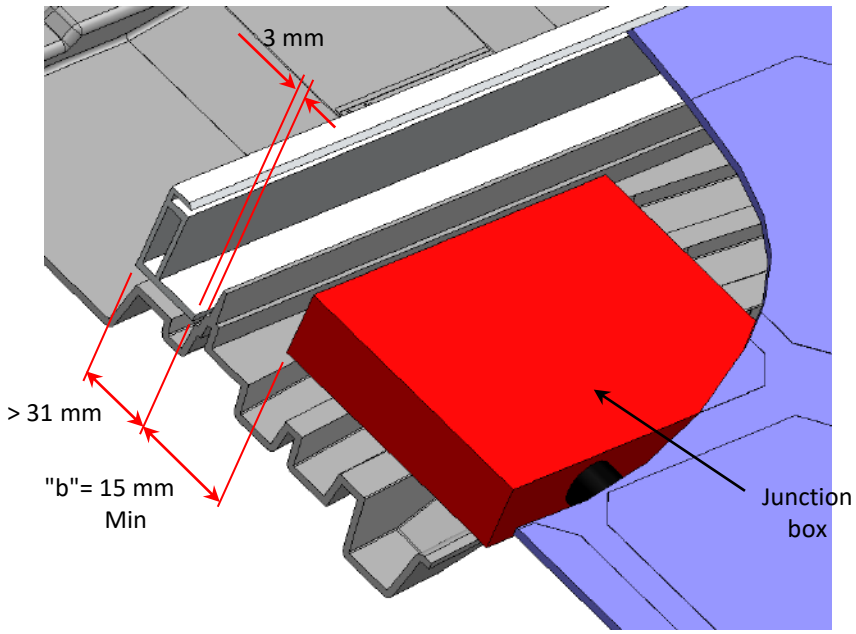
Annex n° 4

Compatibility module

Case n° 2 : If the "a" dimension is < 26 mm (case n° 1)
Module frame overlap > 31 mm : the "b" dimension must be greater than 15 mm.
(The junction box is below the EASY ROOF frame wall).

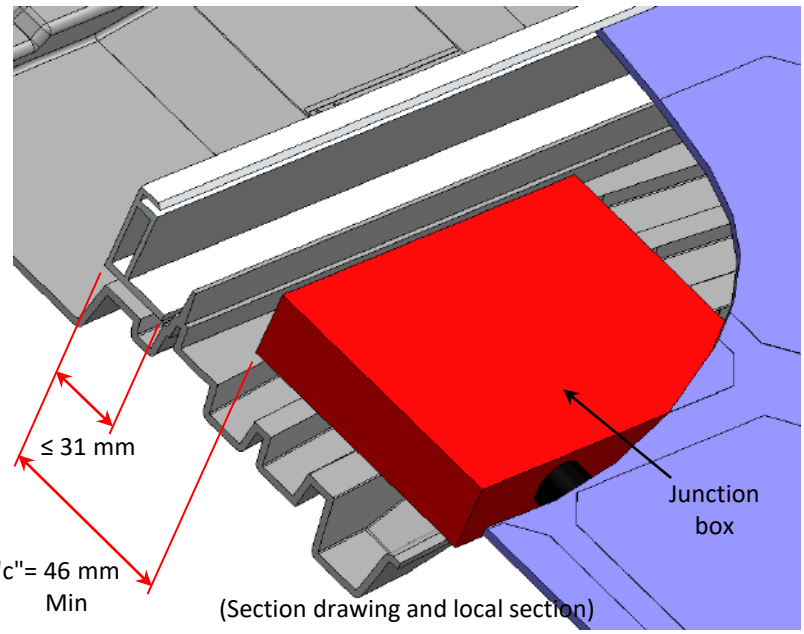
- Position the edge of the module overlap 3 mm from the EASY ROOF frame.

(Section drawing and local section)

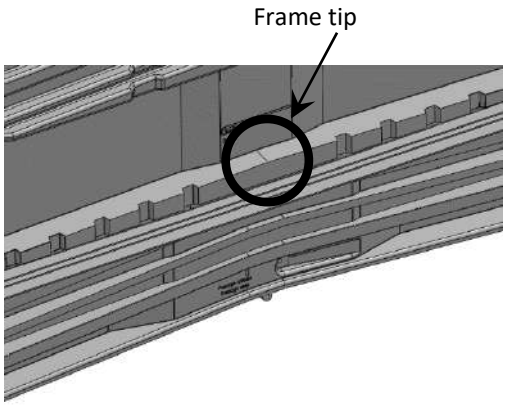


Case n° 3 : If the "a" dimension is < 26 mm (case n° 1)
Module frame ≤ 31 mm : the "c" dimension distance must be greater than 46 mm.
(The junction box is below the EASY ROOF frame wall).

- Align the top of the module with the tip of the EASY ROOF frame.



(Section drawing and local section)

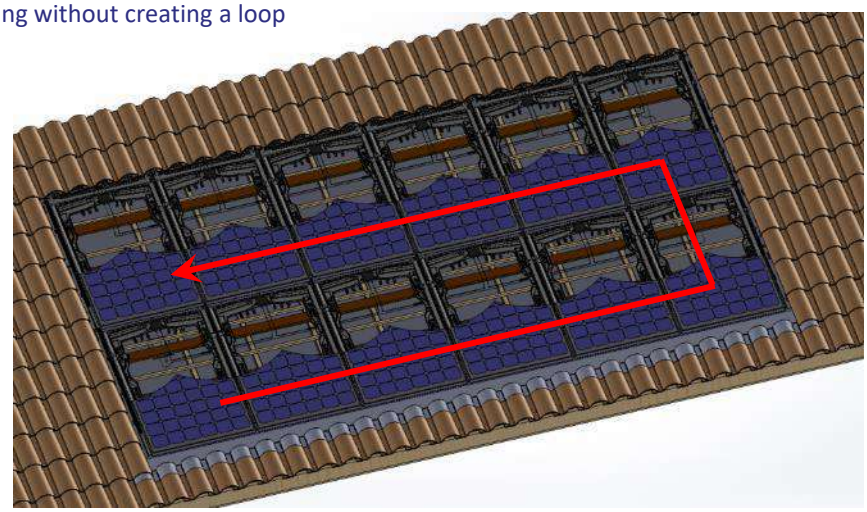


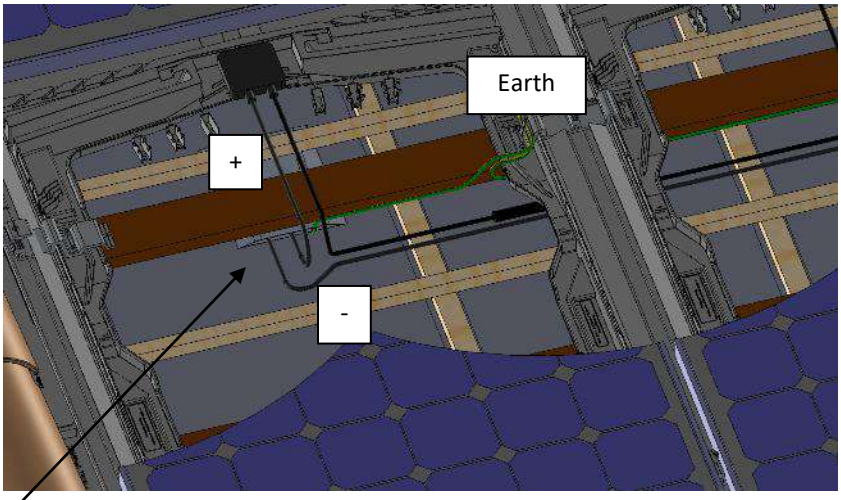
Annex n° 5

Connecting the system electric wires and grounding

1. EDILIANS claw and EDILIANS displacement claw

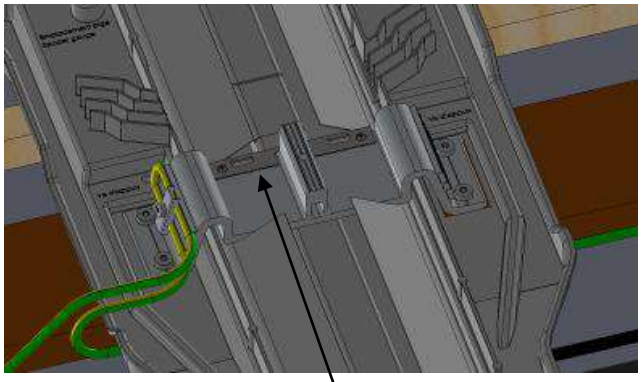
Cabling without creating a loop





Cable entry between two channels (+ / - and earth)

Cable entry downwards between two channels



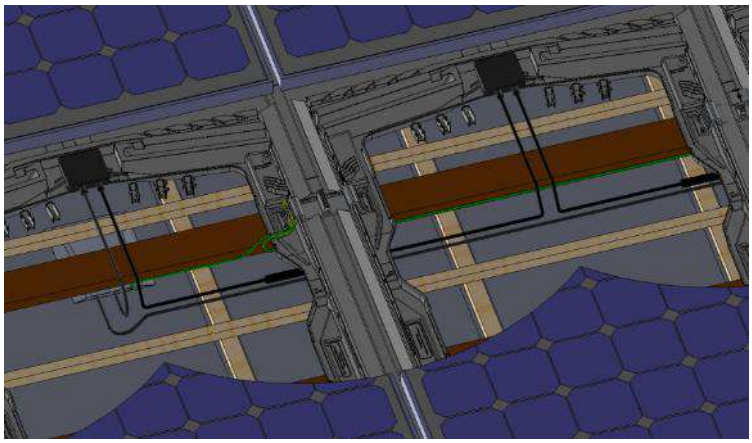
Place the ground claw on the bracket

- Connect the earth to every other bracket.
- Connect the + entry of the inverter to the - of the first module.

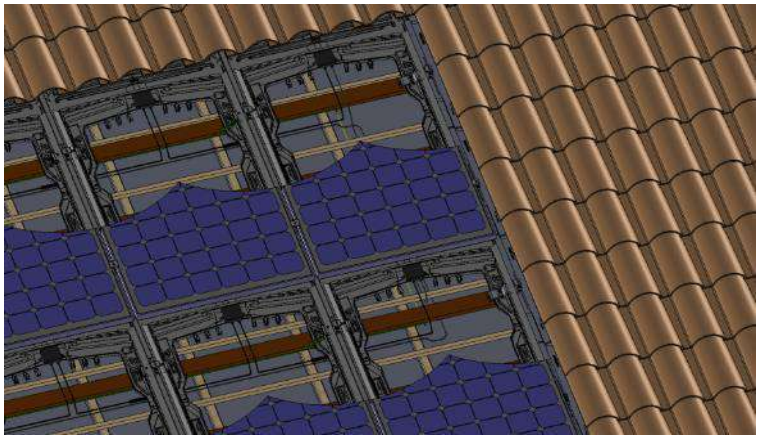
Annex n° 5

Connecting the system electric wires and grounding

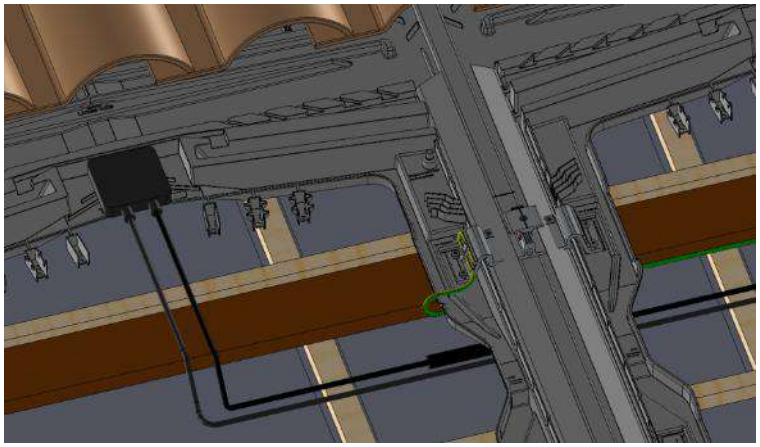
- Connect the modules together (+ cable to - cable)
- Pass the - and the earth along these cables to prevent the formation of a loop.



- Raise to the upper line



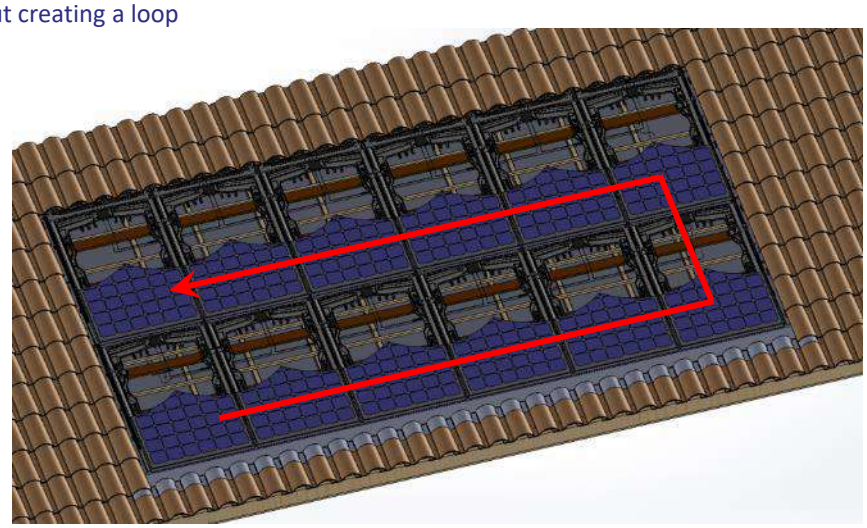
- Connect the final module

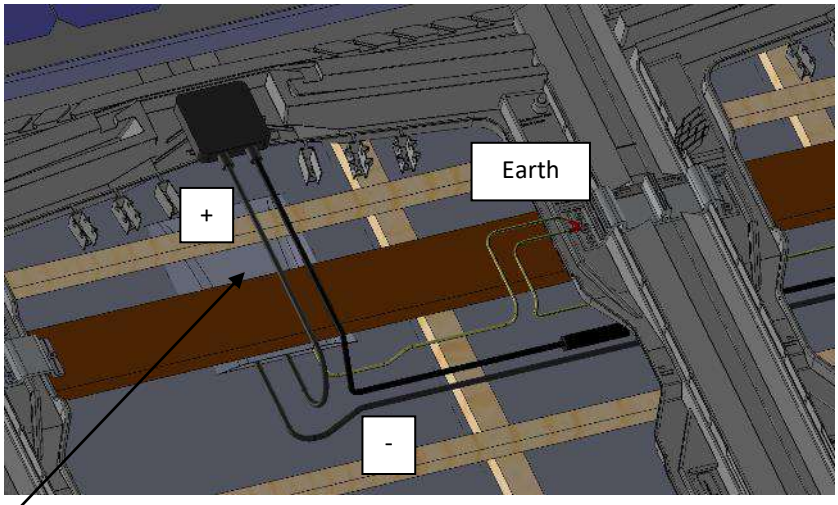


Annex n° 5

Connecting the system electric wires and grounding

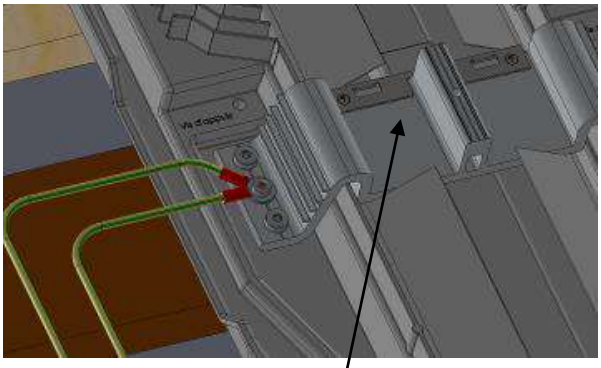
2. EDILIANS claw and self-tapping screw in the fixing bracket
   Cabling without creating a loop





Cable entry between two channels (+ / - and earth)

Cable entry downwards between two channels



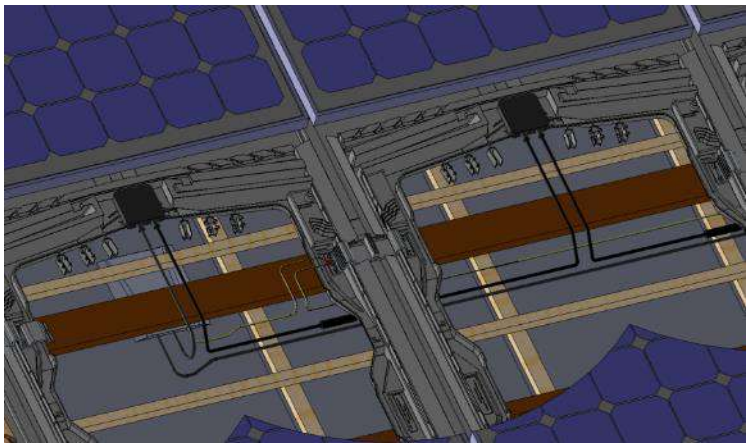
Place the ground claw on the bracket

- Connect the earth to every other bracket.
- Connect the + entry of the inverter to the - of the first module.

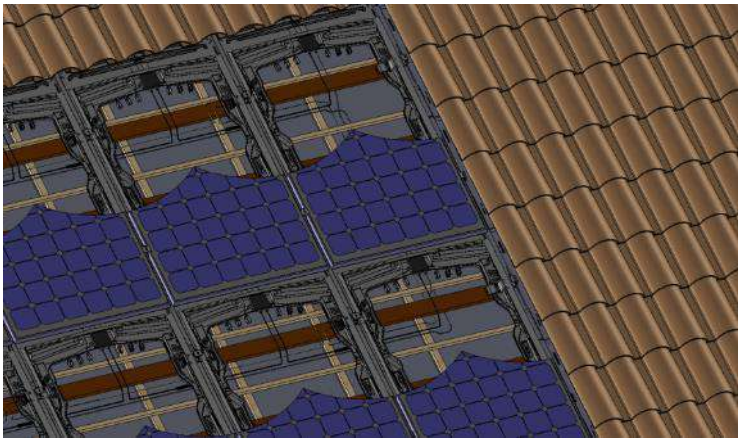
Annex n° 5

Connecting the system electric wires and grounding

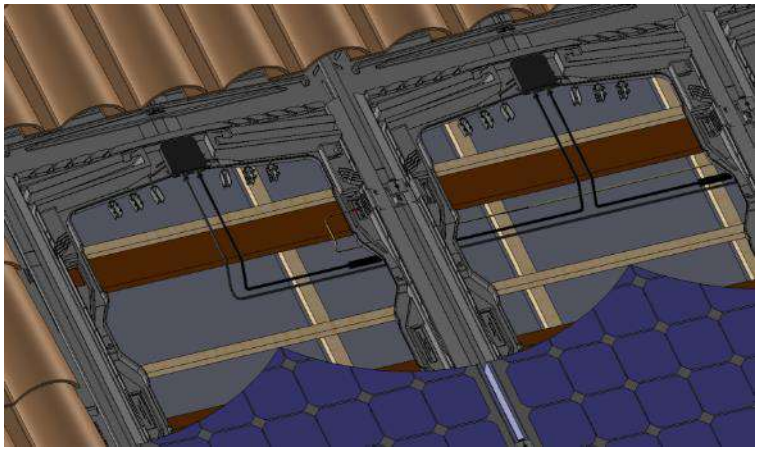
- Connect the modules together (+ cable to - cable)
- Pass the - and the earth along these cables to prevent the formation of a loop.



- Raise to the upper line



- Connect the final module

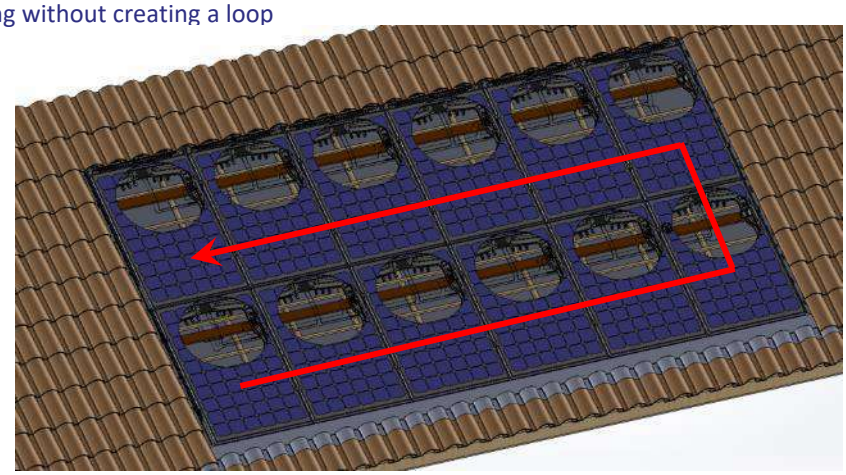


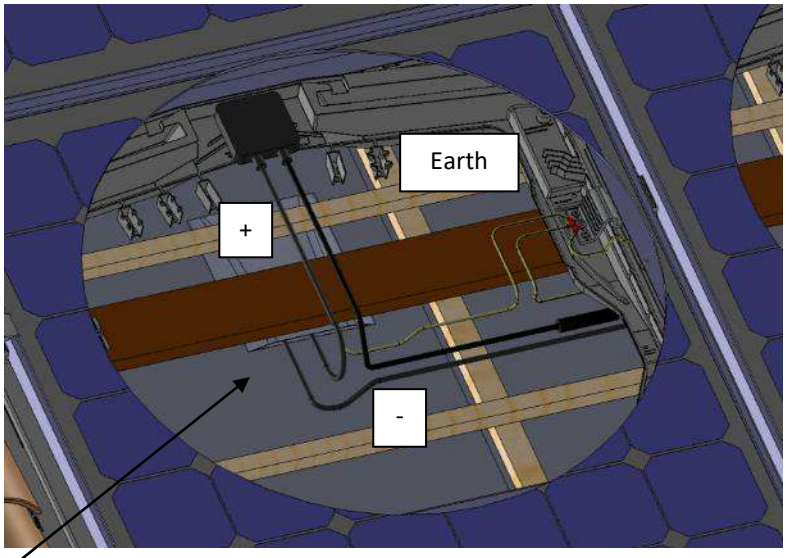
Annex n° 5

Connecting the system electric wires and grounding

3. Screw ground wire into the module frame and self-tapping screw into the mounting bracket

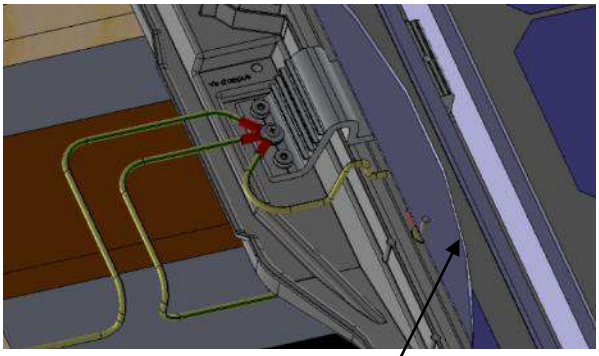
Cabling without creating a loop





Cable entry between two channels (+ / - and earth)

Cable entry downwards between two channels



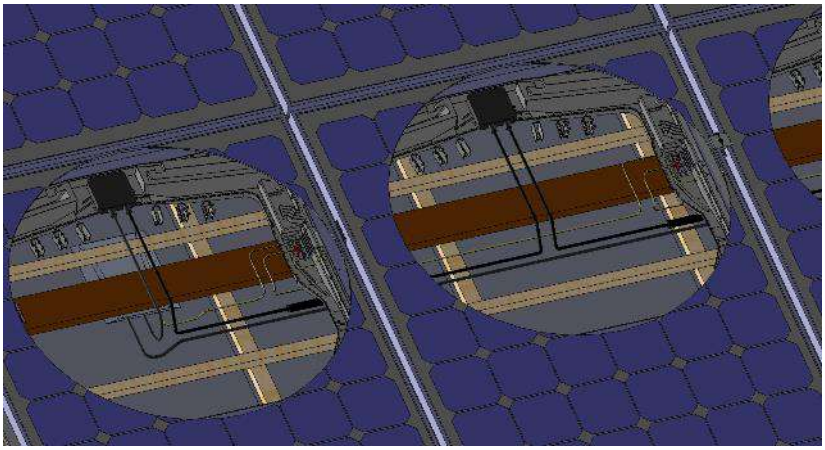
Connect the ground wire to the module frame

- Connect the earth to every other bracket.
- Connect the + entry of the inverter to the - of the first module.

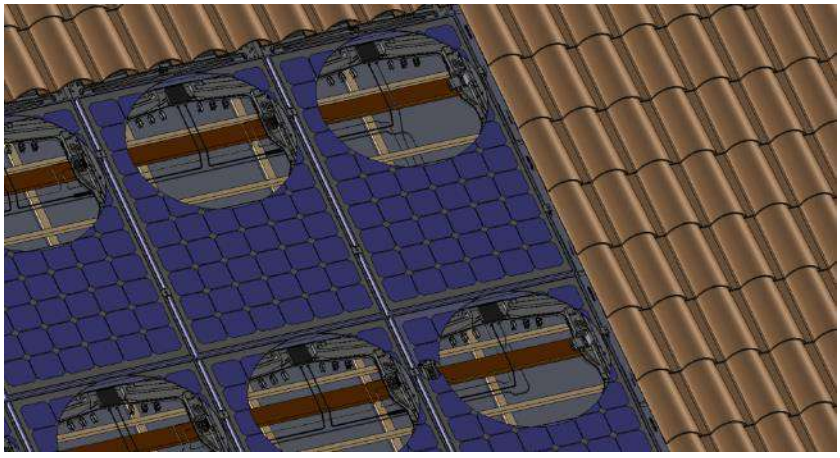
Annex n° 5

Connecting the system electric wires and grounding

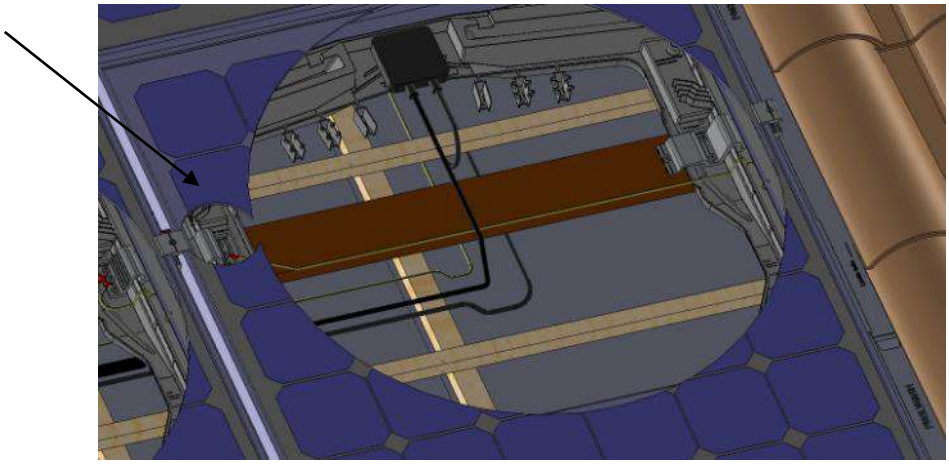
- Connect the modules together (+ cable to - cable)
- Pass the - and the earth along these cables to prevent the formation of a loop.



- Raise to the upper line



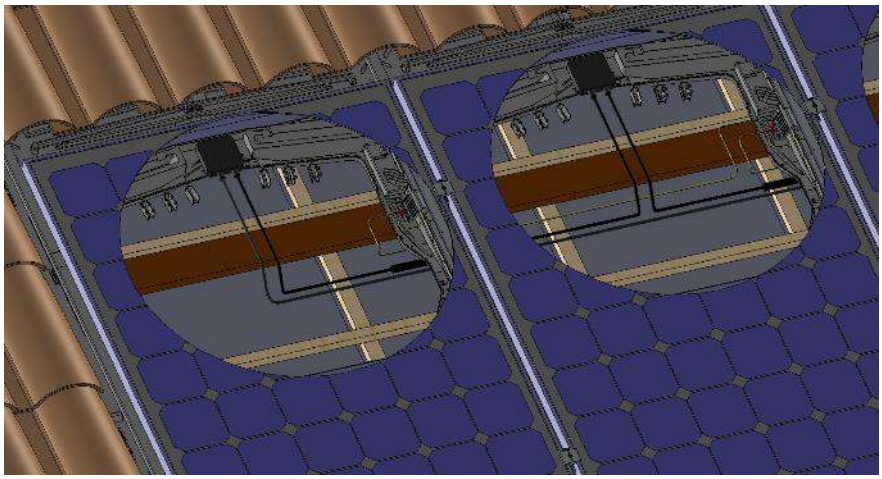
- Connect the final module in the line to the left double bracket



Annex n° 5

Connecting the system electric wires and grounding

- Connect the final module

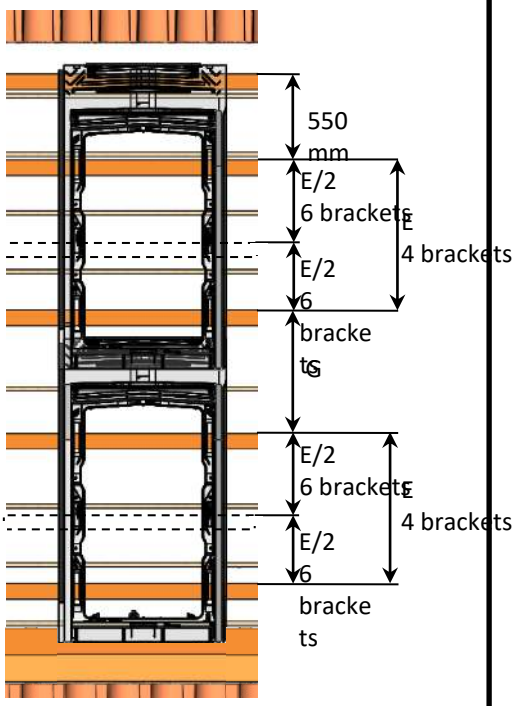


Annex n° 6 Glazing stop and deflector assembly

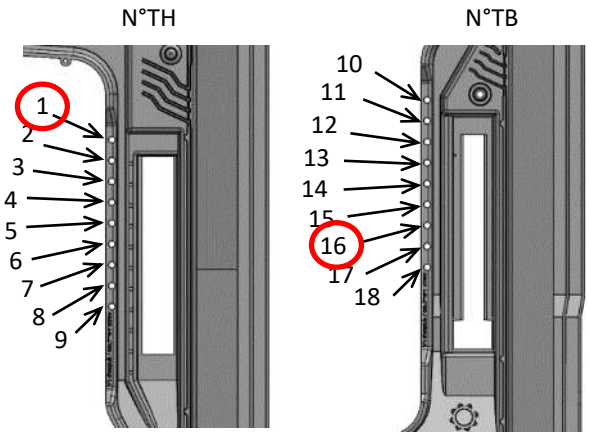
For assembly with glazing stops and 4 fixing brackets, the spacing of the support boards is E = 1060 mm for all intervals.
For assembly with glazing stops and 6 fixing brackets, the spacing of the support boards is E / 2= 530 mm for all intervals.

L	Interval	E	TH	TB	G
1661 ≤ L ≤ 1670	1690	1060	1	16	630
1671 ≤ L ≤ 1680	1700				640
1681 ≤ L ≤ 1690	1710				650
1691 ≤ L ≤ 1700	1720				660
1701 ≤ L ≤ 1710	1730				670
1711 ≤ L ≤ 1720	1740				680
1721 ≤ L ≤ 1730	1750				690

L PV module length (mm).
Interval System interval (mm).
E support board spacing (mm).
TH Hole number of top frame window.
TB Hole number of bottom frame window.



(View without rafters and battens)

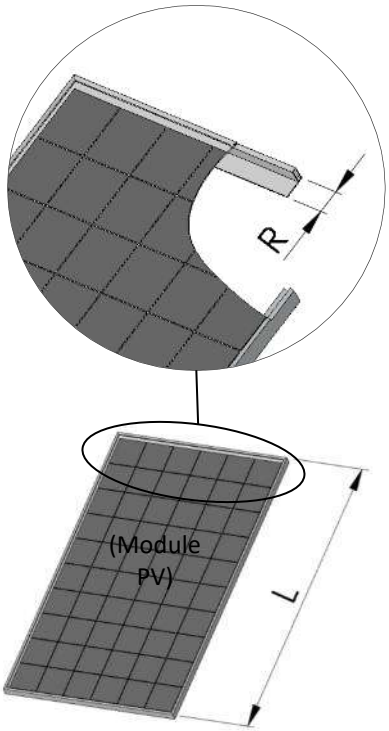


Annex n° 6 Glazing stop and deflector assembly

An EASY ROOF EVOLUTION P-1 installation with glazing stops MUST be equipped with blanking covers.

1. Modules compatible with glazing stop and deflector assembly

Deflector assembly is only compatible with modules that are 30 to 50 mm thick. For other dimensions, please consult the manufacturer.



COMPATIBILITIES

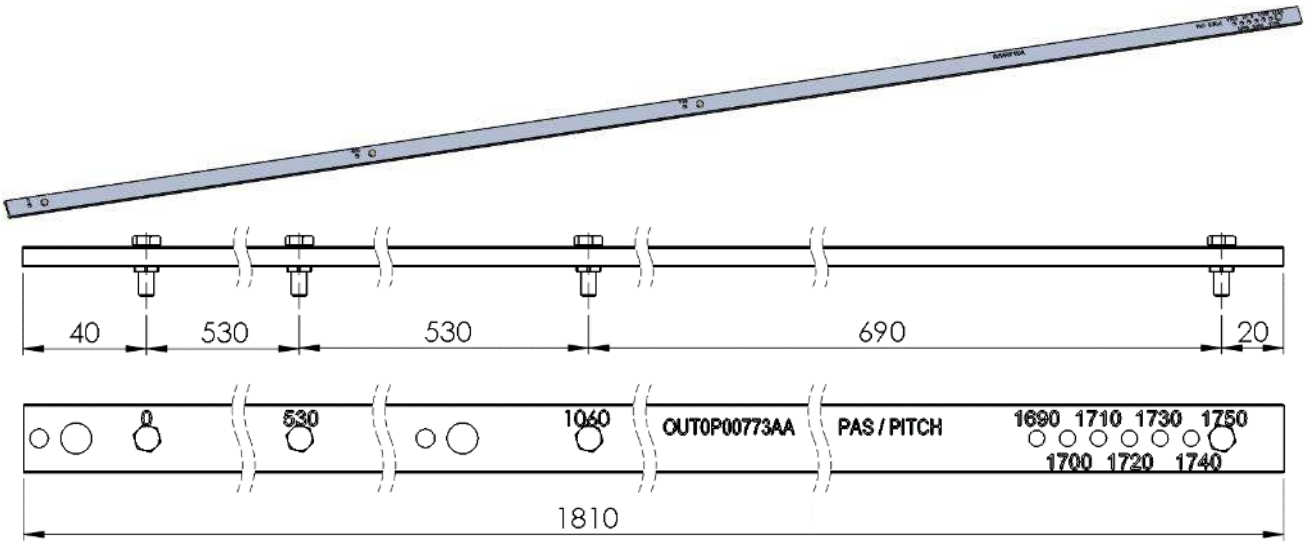
INTERVAL	Length Module	R Max	R Min	Assembly (1)	INTERVAL	Length Module	R Max	R Min	Assembly (1)
1690	1661	36	17	S	1730	1701	48	13	S
	1662	37	18	S		1702	48,5	14	S
	1663	38	19	S		1703	49	15	S
	1664	39	20	S		1704	49,5	16	S
	1665	40	21	S		1705	50	17	S
	1666	37	18	S		1706	50	18	S
	1667	38	19	S		1707	50	19	S
	1668	39	20	S		1708	50	20	S
	1669	40	21	S		1709	50	21	S
	1670	41	22	S		1710	50	22	S
1700	1671	42	13	S	1740	1711	50	13	S
	1672	43	14	S		1712	50	14	S
	1673	44	15	S		1713	50	15	S
	1674	44,5	16	S		1714	50	16	S
	1675	45	17	S		1715	50	17	S
	1676	45,5	18	S		1716	50	18	S
	1677	46	19	S		1717	50	19	S
	1678	46,5	20	S		1718	50	20	S
	1679	47	21	S		1719	50	21	S
	1680	47,5	22	S		1720	50	22	S
1710	1681	48	13	S	1750	1721	50	13	S
	1682	48,5	14	S		1722	50	14	S
	1683	49	15	S		1723	50	15	S
	1684	49,5	16	S		1724	50	16	S
	1685	50	17	S		1725	50	17	S
	1686	50	18	S		1726	50	18	S
	1687	50	19	S		1727	50	19	S
	1688	50	20	S		1728	50	20	S
	1689	50	21	S		1729	50	21	S
	1690	50	22	S		1730	50	22	S
1720	1691	48	13	S					
	1692	48,5	14	S					
	1693	49	15	S					
	1694	49,5	16	S					
	1695	50	17	S					
	1696	50	18	S					
	1697	50	19	S					
	1698	50	20	S					
	1699	50	21	S					
	1700	50	22	S					

(1) Assembly:
- S - standard, the deflectors will be positioned after the installation of the PV modules.
- N – NOT standard, the deflectors must be positioned at the same time as the PV modules.

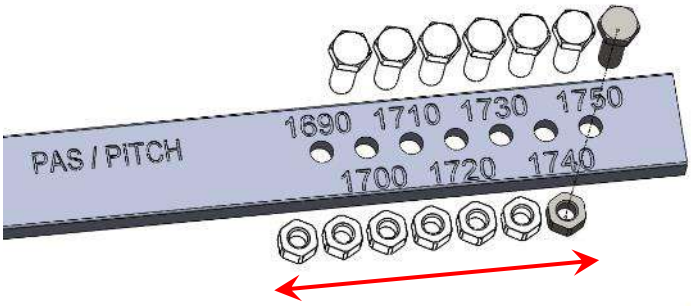
Annex n° 6 Assembly with glazing stops

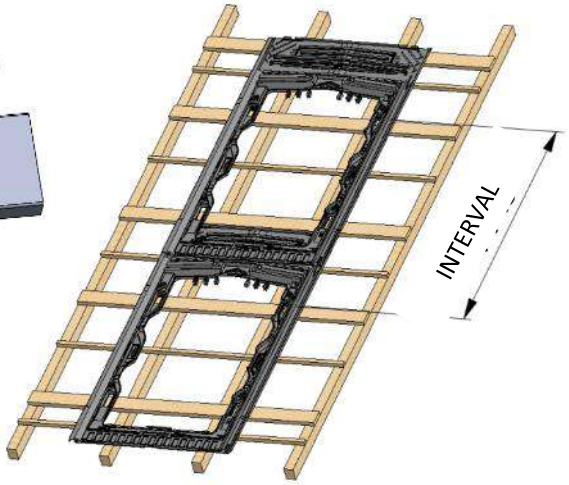
2. Preparation of the tools to be used

To install glazing stops and deflectors with the EASY P-1 system, the frames need to be positioned at precise intervals in the direction of the roof slope. The support brackets must be positioned and fixed in place at the same precise centre to centre distance in the direction of the roof slope.
To achieve this, glazing stop mounting tool P-1 must be used (33)



Unscrew the nut and put the screw in the hole corresponding to the size of the INTERVAL needed between the frames
Fully tighten the screw nut back in place.





GLAZING STOP AND DEFLECTOR ASSEMBLY							
	Module length (lg)						
	1661 ≤ lg ≤ 1670	1671 ≤ lg ≤ 1680	1681 ≤ lg ≤ 1690	1691 ≤ lg ≤ 1700	1701 ≤ lg ≤ 1710	1711 ≤ lg ≤ 1720	1721 ≤ lg ≤ 1730
Vertical system adjustment	1690	1700	1710	1720	1730	1740	1750

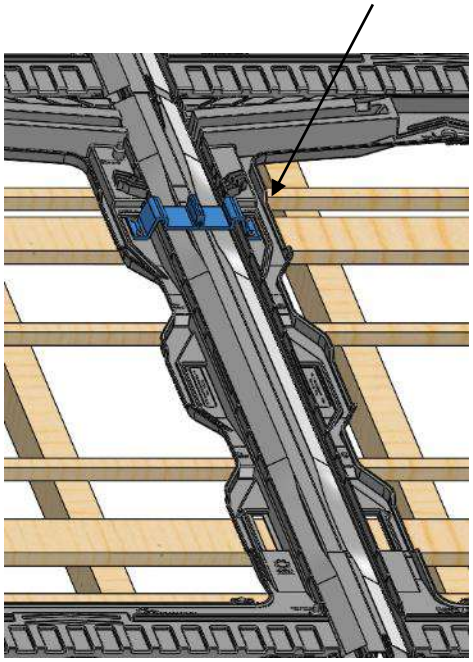
WARNING: check compatibility page 82 or on www.irfts.com

Annex n° 6

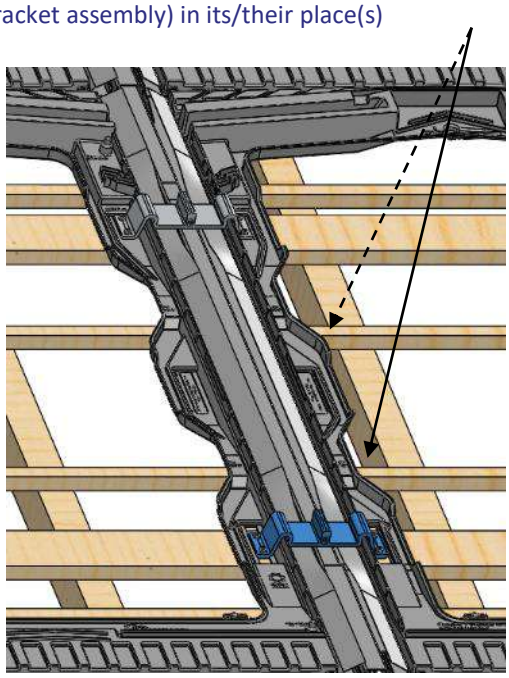
3. Double bracket assembly

Assembly with glazing stops

a) Position and screw in place the upper double bracket



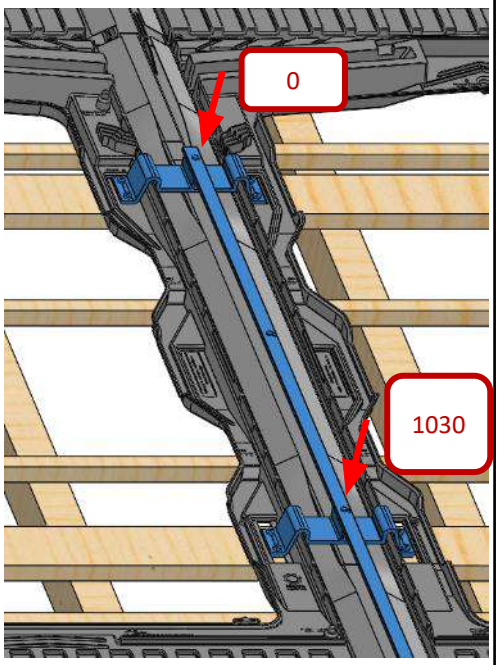
b) Position the lower double bracket (and central for a 6 bracket assembly) in its/their place(s)



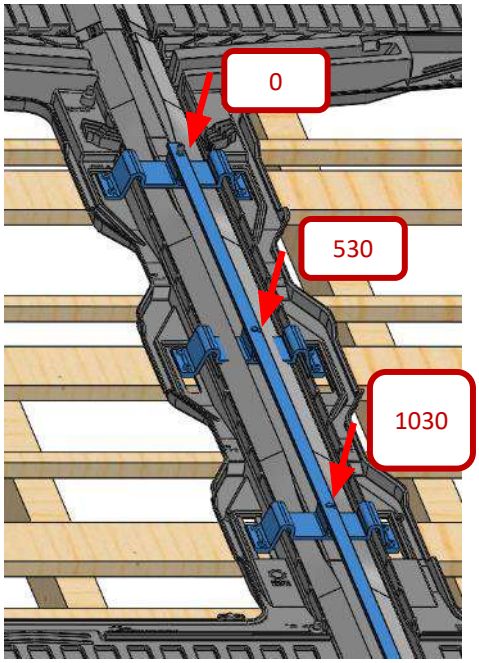
c) Put in place the glazing stop mounting tool P-1 in the (Ø6) holes of each support bracket

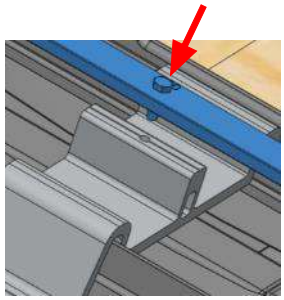
d) Screw the double bracket(s) in place, remove the glazing stop mounting tool P-1. Proceed in this manner for all the lower (and central) double brackets of each frame

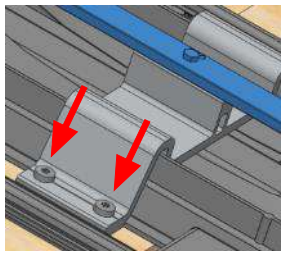
4 BRACKET ASSEMBLY



6 BRACKET ASSEMBLY







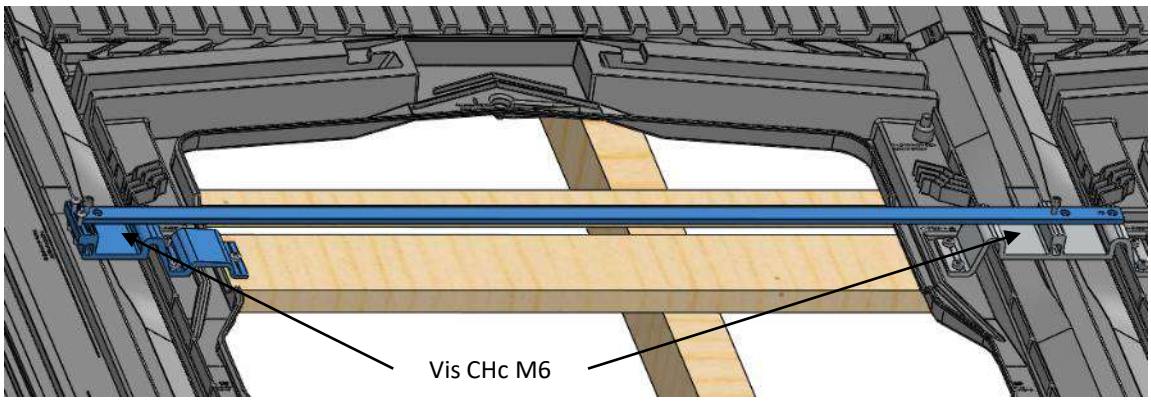
X = Graduations on the tools

Annex n° 6

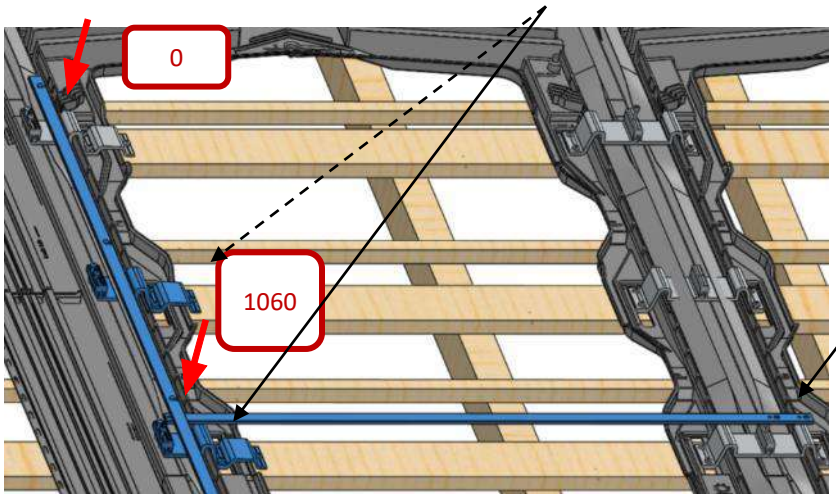
Assembly with glazing stops

4. Single bracket assembly

a) Position and screw in place the upper single bracket (see page 56)



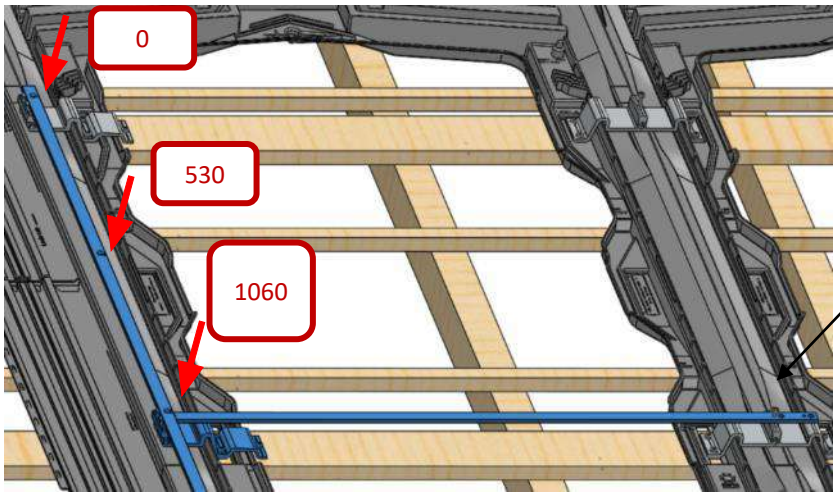
b) Position the lower single bracket (and the central one for a 6 bracket assembly) in its place
c) Put in place the horizontal assembly tool and the glazing stop assembly tool L-1 by inserting the Ø 5 screws of the assembly tool into the (Ø6) holes of each supporting bracket.



4 BRACKET ASSEMBLY

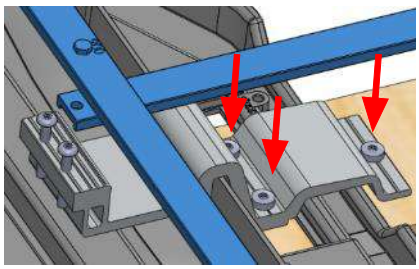
Vis CHc M6
(See page 56)

X = Graduations on the tools



6 BRACKET ASSEMBLY

Vis CHc M6
(See page 56)

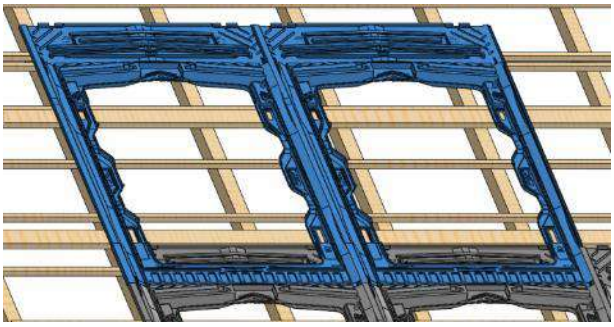


d) Screw the single bracket(s) in place, remove the mounting tools.
Proceed in this manner for all the lower single brackets of each frame to the left and to the right of the PV field

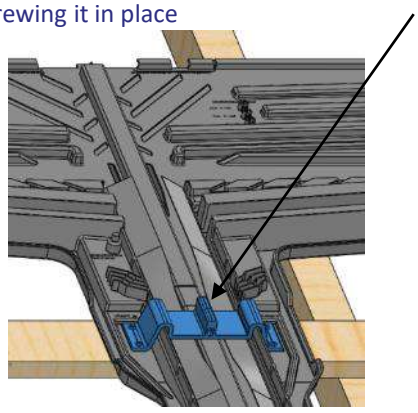
Annex n° 6 Assembly with glazing stops

5. Upper frame assembly and vertical interval adjustment

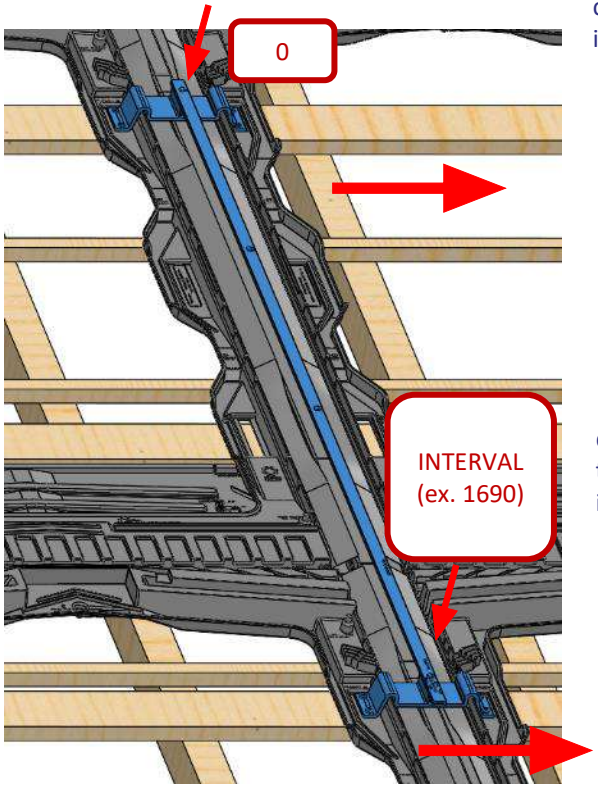
a) Position the two upper frames



b) Position the upper double bracket without screwing it in place

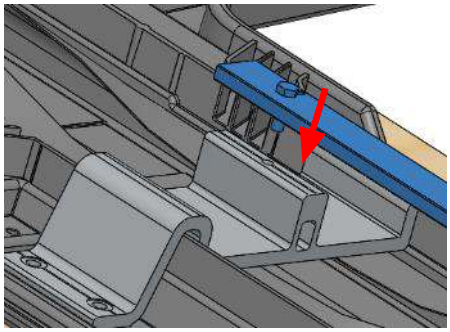


See page 83 for the definition of the right interval in accordance with the length of the module

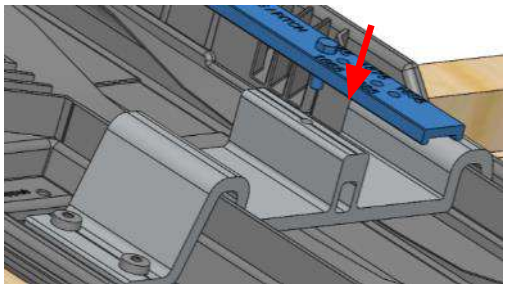


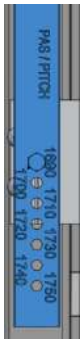
X = Graduations on the tools

c) Put in place the glazing stop mounting tool P-1 in the (Ø6) of the upper double bracket

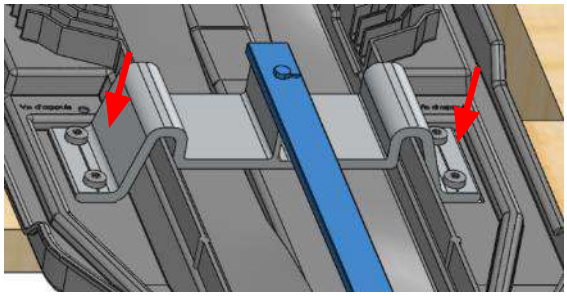


d) Put the glazing stop mounting tool P-1 in the (Ø6) hole of the lower double bracket while choosing the necessary pitch index between the frames

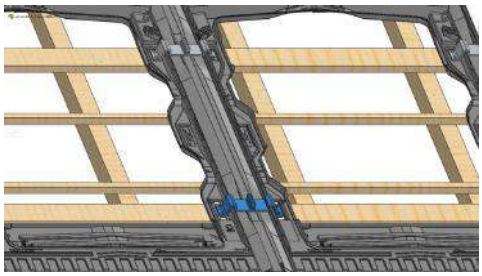




e) Screw the upper double bracket in place



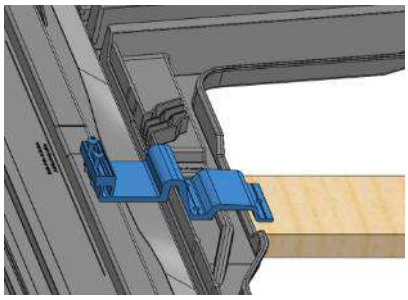
f) Put all the lower double brackets in place (and the central ones for 6 bracket assembly) for each frame (see page 84)



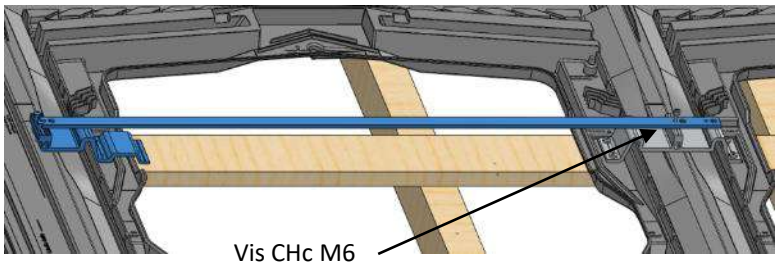
Annex n° 6 Assembly with glazing stops

5. Upper frame assembly and vertical interval adjustment

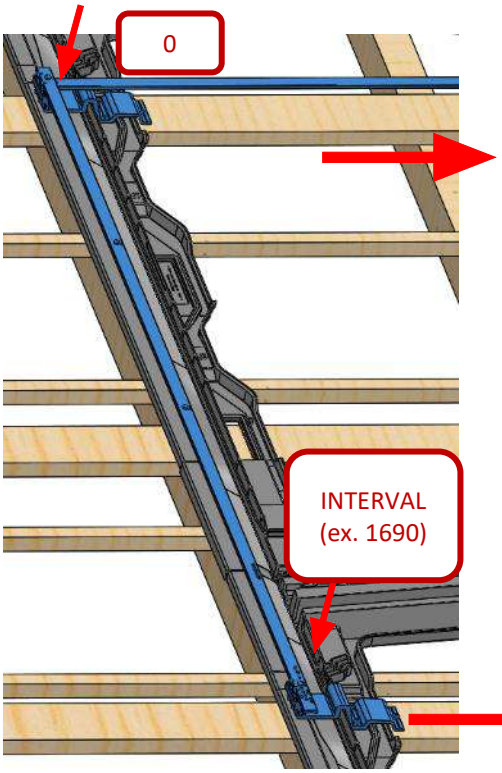
a) Position the upper single bracket without screwing it in place



b) Put in place the mounting tool P-1

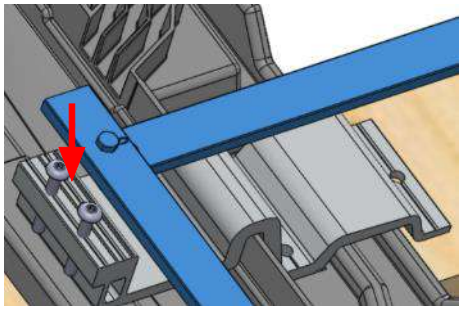


See page 83 for the definition of the right interval in accordance with the length of the module

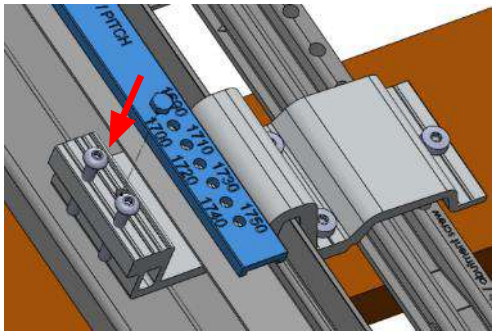


X = Graduations on the tools

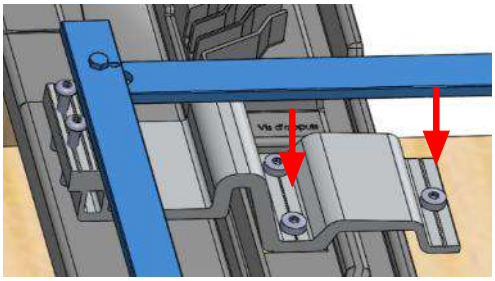
c) Put the glazing stop mounting tool L-1 into the (Ø6) hole of the upper single bracket



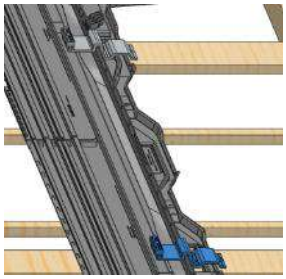
d) Put the glazing stop mounting tool P-1 in the (Ø6) hole of the lower single bracket while choosing the necessary pitch index between the frames



e) Screw the upper single bracket in place



f) Put all the lower single brackets in place (and central for 6 brackets) for each frame (see page 85)



Annex n° 6

Assembly with glazing stops

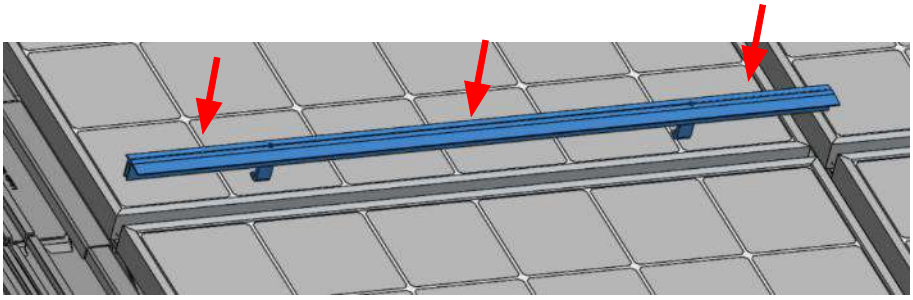
For PV fields equipped with both deflectors and glazing stops, the deflectors are to be installed first

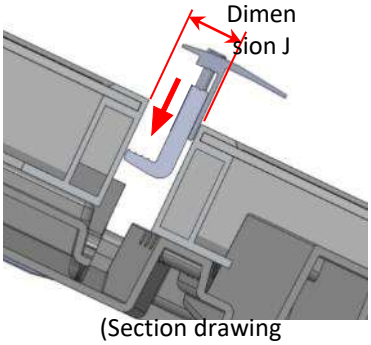
6. Deflector assembly

a) Assembly order

a1) Dimension “J” will vary according to the PV module

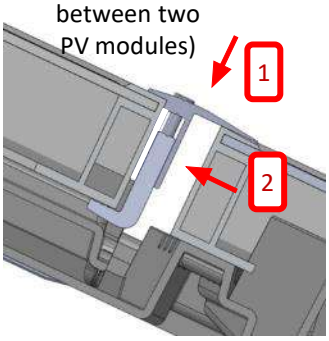
- IF “J” > 19mm: the deflectors can be installed after the PV modules have been installed
- IF “J” ≤ 19mm: the deflectors must be installed at the same time as the PV modules



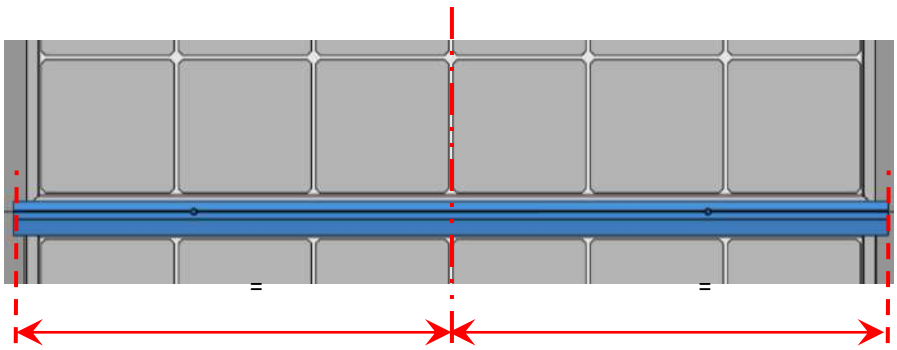


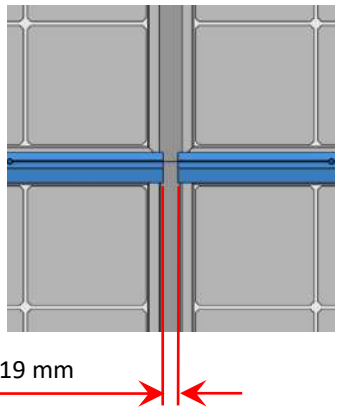
(Section drawing between two PV modules)

(Section drawing between two PV modules)



a2) Before tightening, flatten the deflector against the upper module and centre it on the width of the module





THE DEFLECTORS WILL BE CLAMPED AFTER THE GLAZING STOPS HAVE BEEN INSTALLED AND CLAMPED (for clamping see page 89)

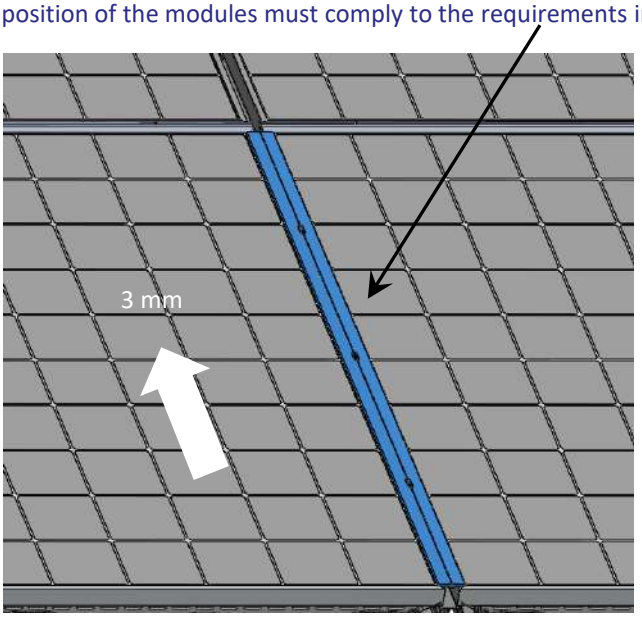
Annex n° 6 Assembly with glazing stops

7. Assembly of the middle glazing stops

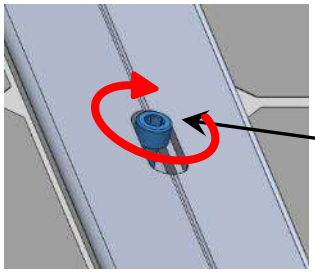
a) Position the central glazing stops making sure that they are aligned so that the drilling area is closest to the upper edge.

b) Screw in place with two CHC M6 x 30 (11) or CHC M6 x 40 (10) screws depending on the thickness of the PV module (3 screws for 6 bracket assembly)

The position of the modules must comply to the requirements in the instructions page 58

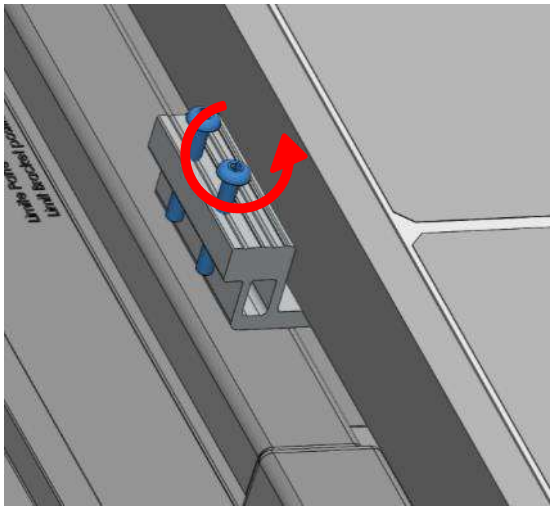


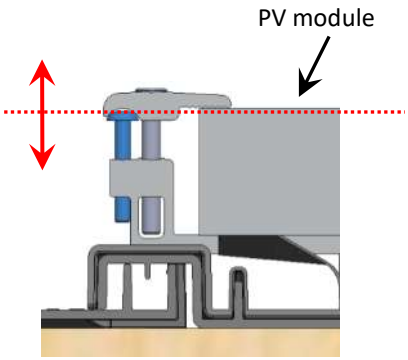
(Section)



8. Assembly of the side glazing stops

a) Adjust the height of the side single glazing stop support screws so that they are flush with the top of the PV module





Annex n° 6

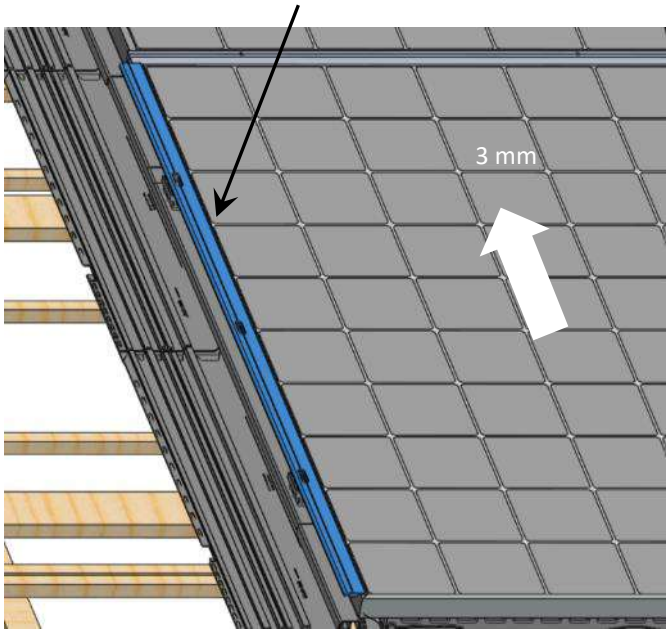
Assembly with glazing stops

8. Assembly of the side glazing stops

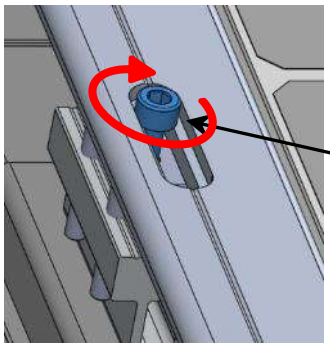
a) Position the side glazing stops

b) Screw in place with two CHC M6 x 30 (11) or CHC M6 x 40 (10) screws depending on the thickness of the PV module (3 screws for 6 bracket assembly)

The position of the modules must comply to the requirements in the instructions page 58



(Section)

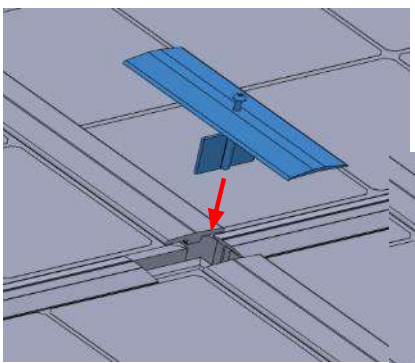


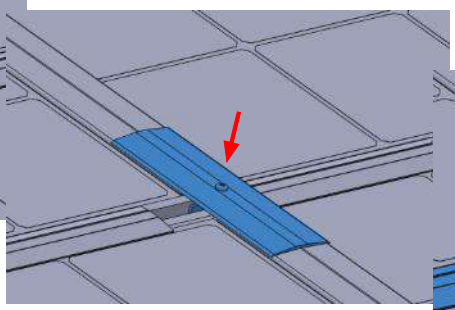
Clamping torque 8.8 Nm

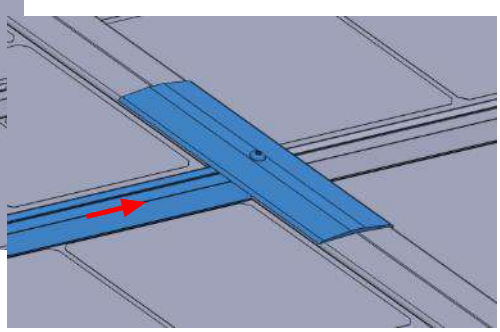
c) Screw and block in place the deflector kit screws in compliance with the instructions on page 88

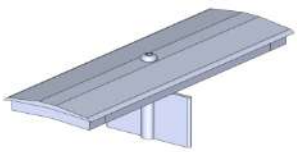
9. Blanking cover assembly

a) Position the blanking covers over the gap between the glazing stops.
b) Position them so as to be able to insert the clamping nut under the deflector.
c) Slide the left deflector underneath the blanking cover.









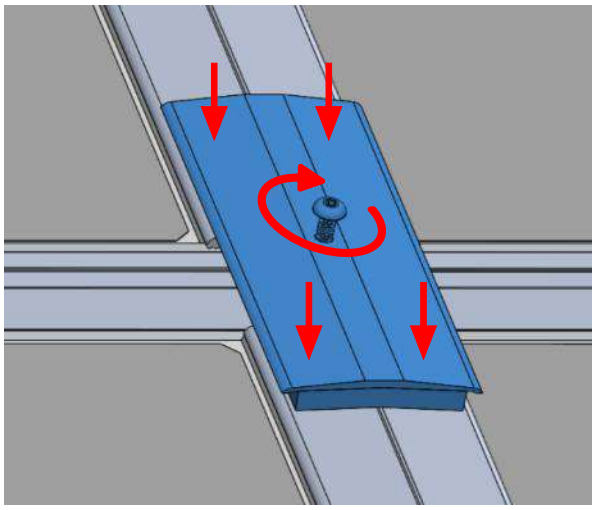
Blanking covers see page 8

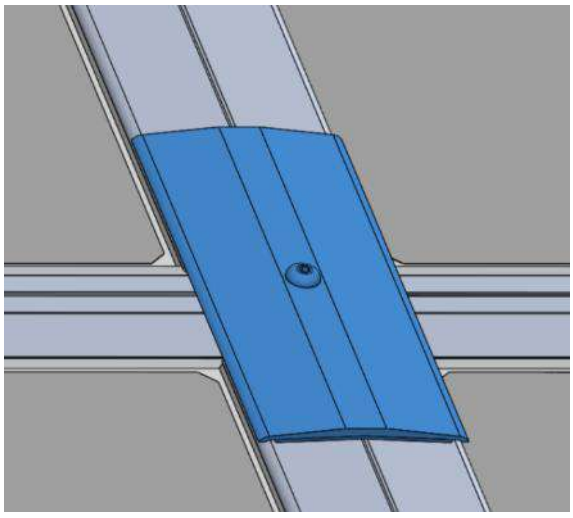
Annex n° 6

Assembly with glazing stops

9. Blanking cover assembly

c) Tighten the screw to flatten the foam and to keep it in place





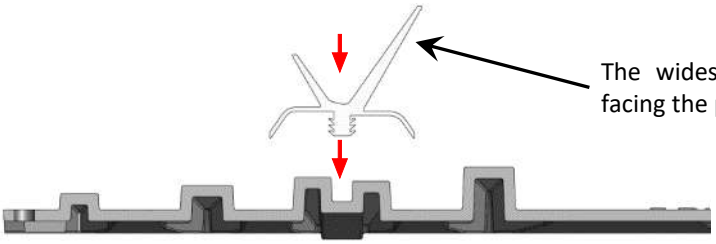
Annex n°7

SIDE BORDER STRIP OPTION

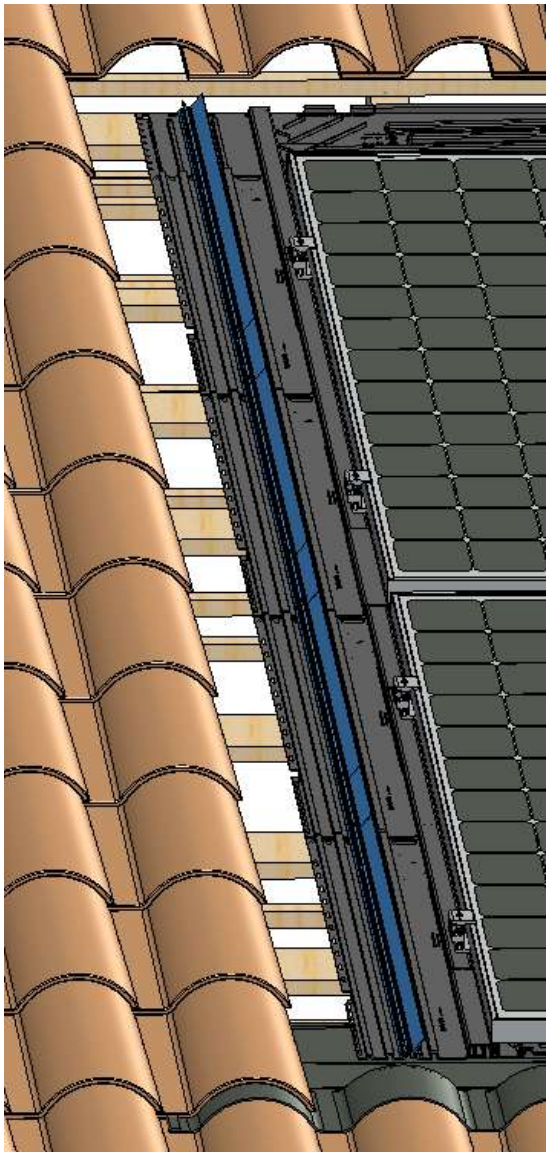
Side border strip installation

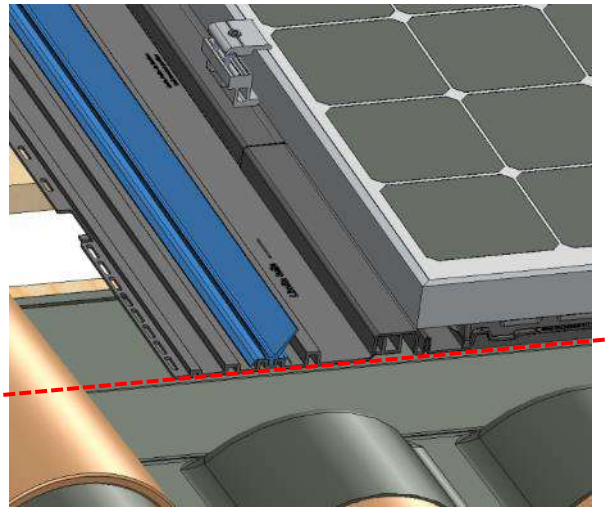
(Section)

a) Put the border strips in the grooves of the side flashing as shown below

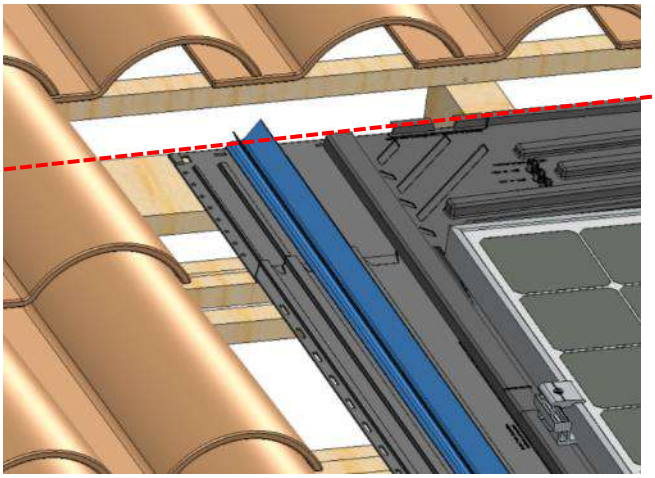


The widest lip must be positioned facing the photovoltaic field





(Bottom of the PV field)



(Bottom of the PV field)

Annex n° 8

Slate roofs
Metallic flashing

Contents

EASY ROOF EVOLUTION slates on flashing

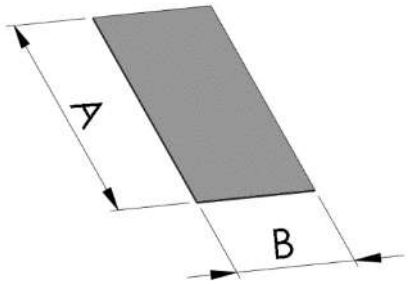
IMPORTANT
It is possible to combine the different types of flashing (EASY ROOF EVOLUTION or metallic) according to the compatibility table below

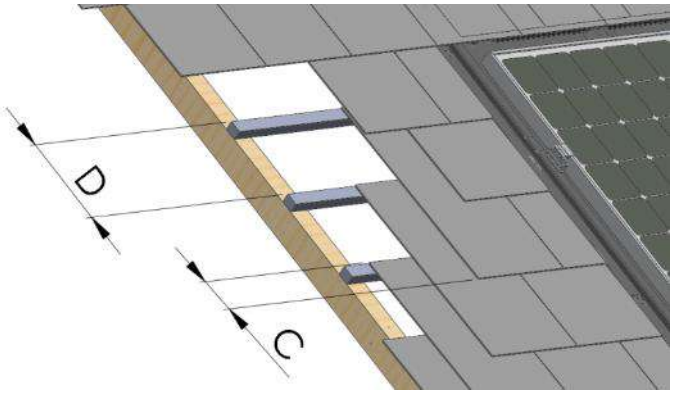
Compatibility			Flashing top of PV field		
			EASY ROOF P-1	Metallic	Zinc with standing seam
Side flashing	EASY ROOF L-1		ü (A-2+A-3)		
	Metallic	Continuous flashing	ü(B-11+B-2)	ü(B-11+B-3)	
		Soaker	ü(B-12+B-2)	ü(B-12+B-3)	
		Zinc with standing seam			ü(C)

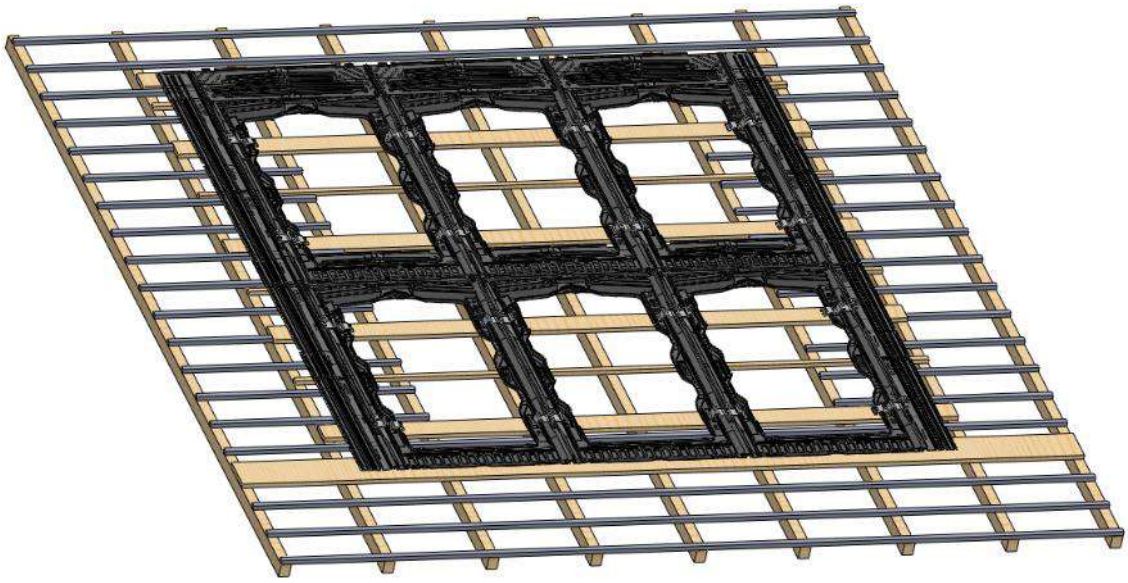
Annex n° 8

A. EASY ROOF EVOLUTION slates on flashing

For slate width: B≥140mm minimum





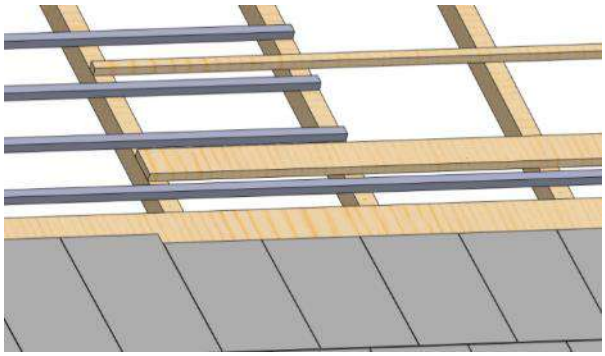


Annex n° 8

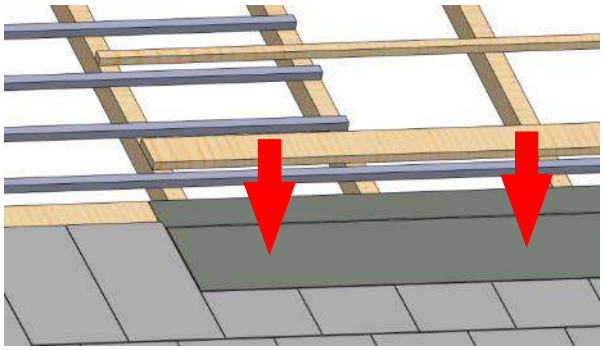
A. EASY ROOF EVOLUTION slates on flashing

A-1Bottom of the PV field

1)

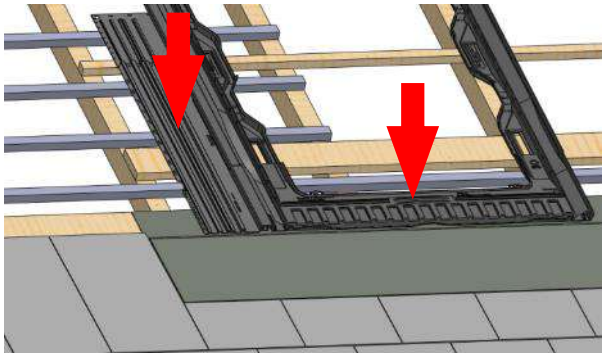


2)



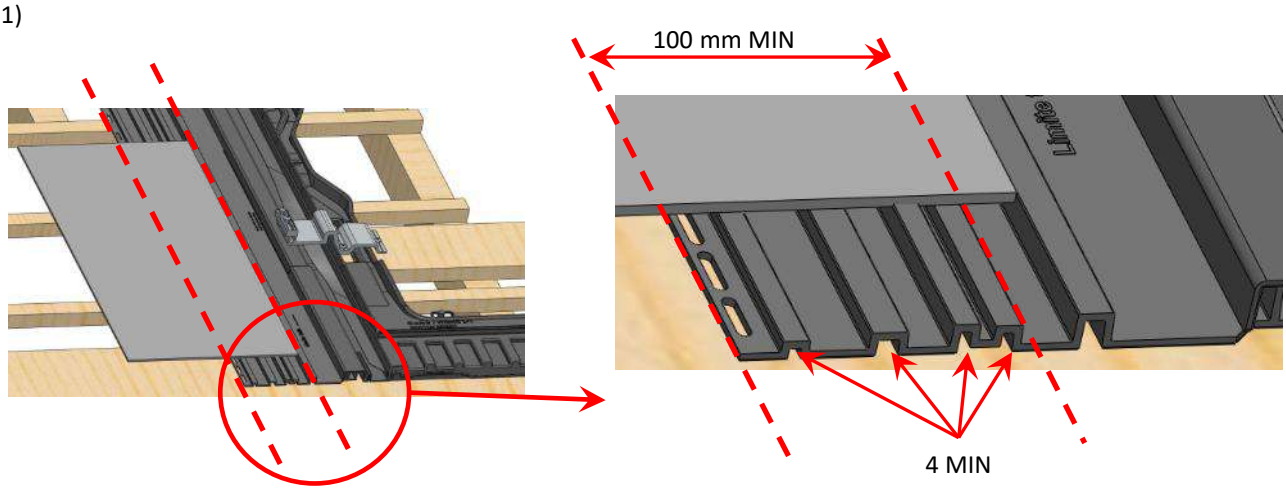
(Flashing)

3)



A-2 Side flashing

1)

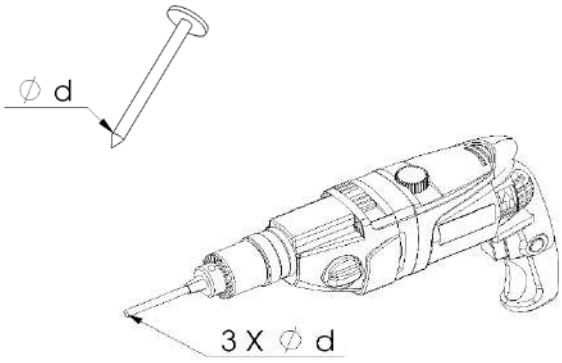


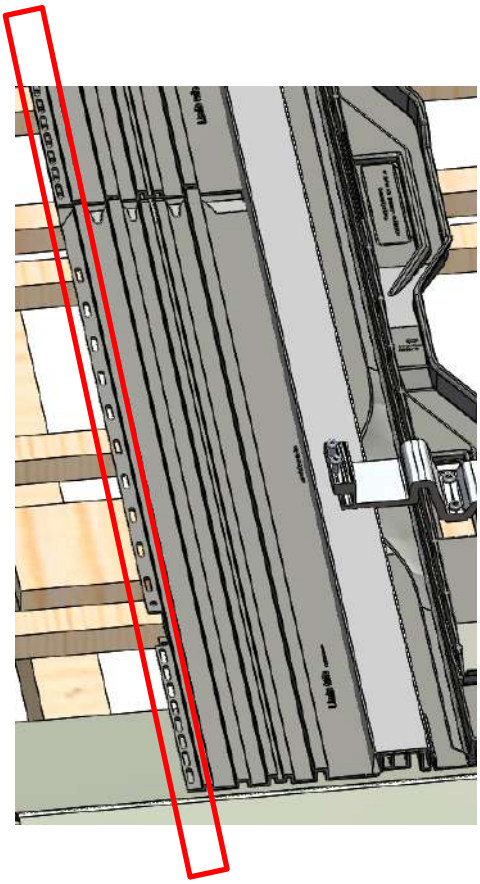
Annex n° 8

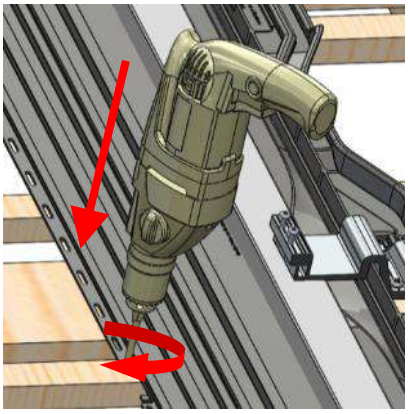
A. EASY ROOF EVOLUTION slates on flashing

A-2 Side flashing

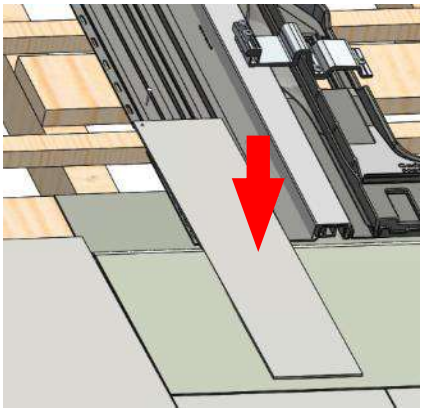
2) Drilling area

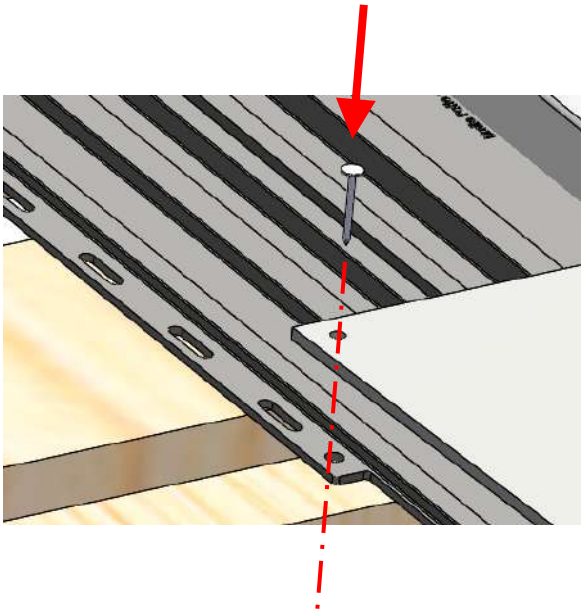






3)



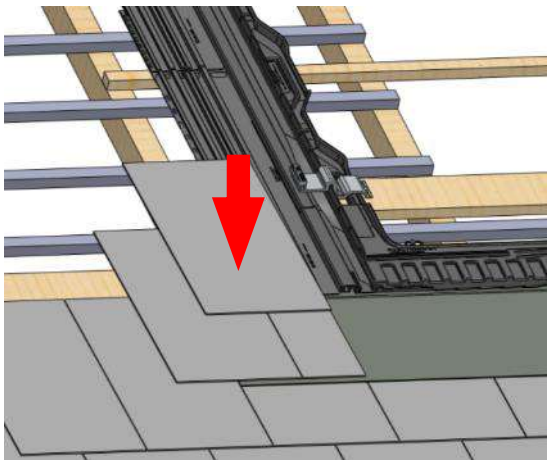


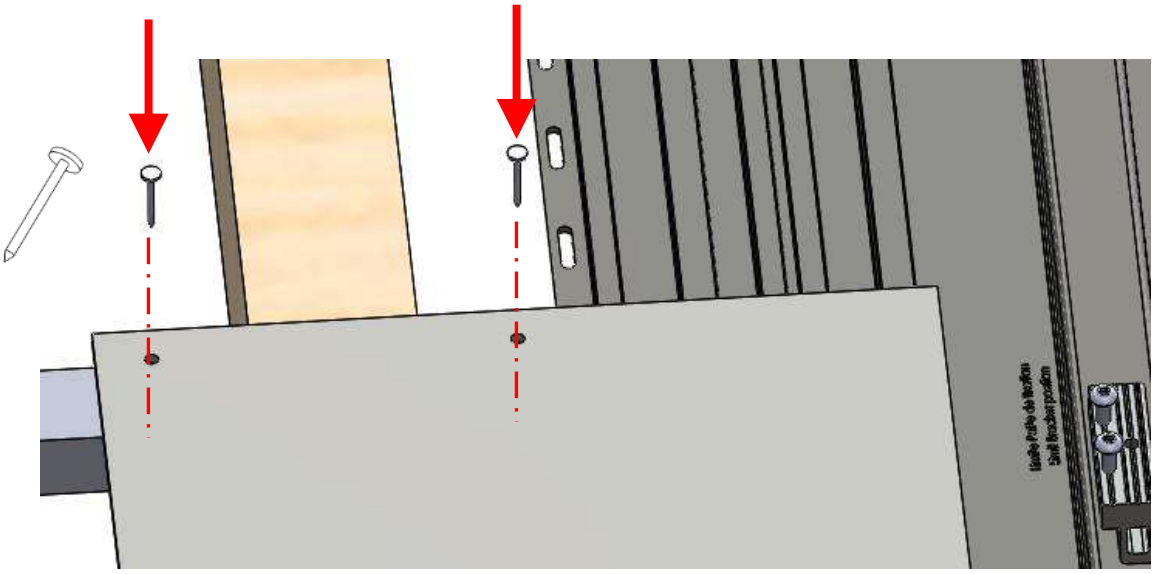
Annex n° 8

A. EASY ROOF EVOLUTION slates on flashing

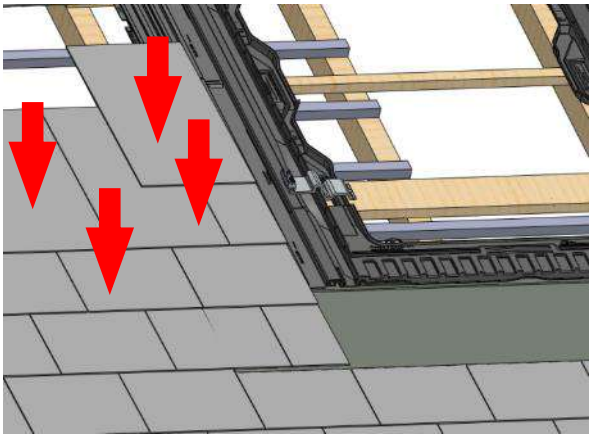
A-2 Side flashing

4)





5)

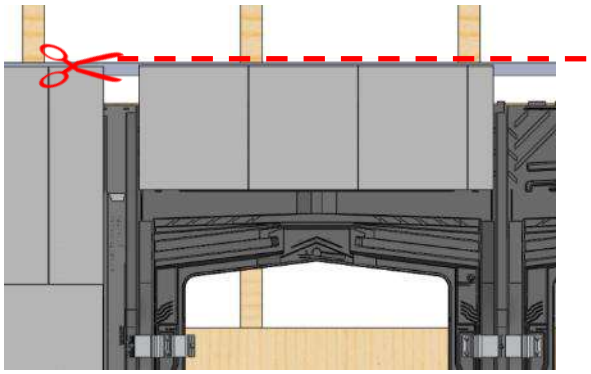


Annex n° 8

A. EASY ROOF EVOLUTION slates on flashing

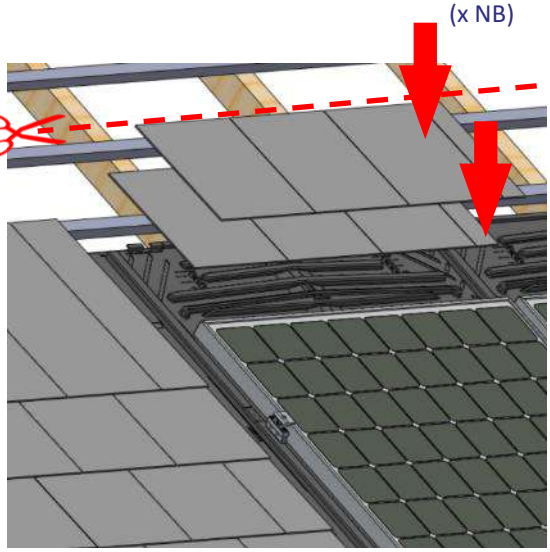
A-3 Top of PV field

1)

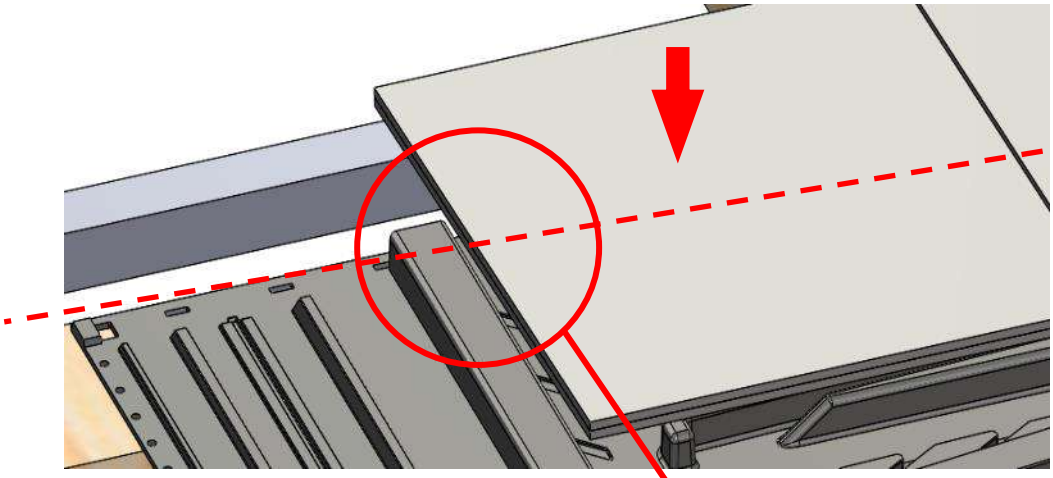


2)

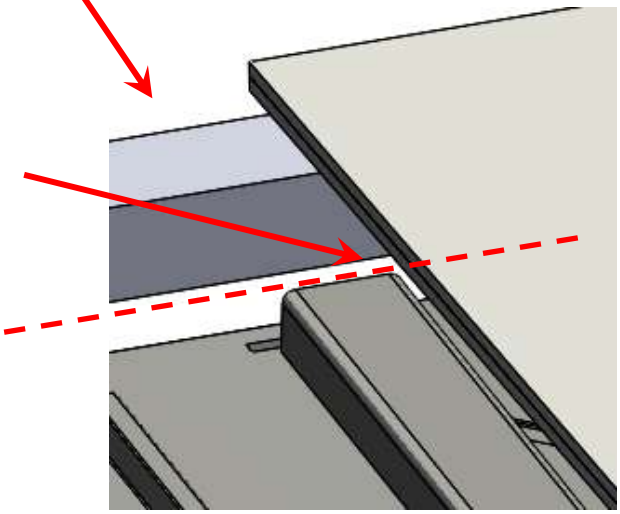
(x NB)



Stack several slates (x N)



No. slates = same level (height)

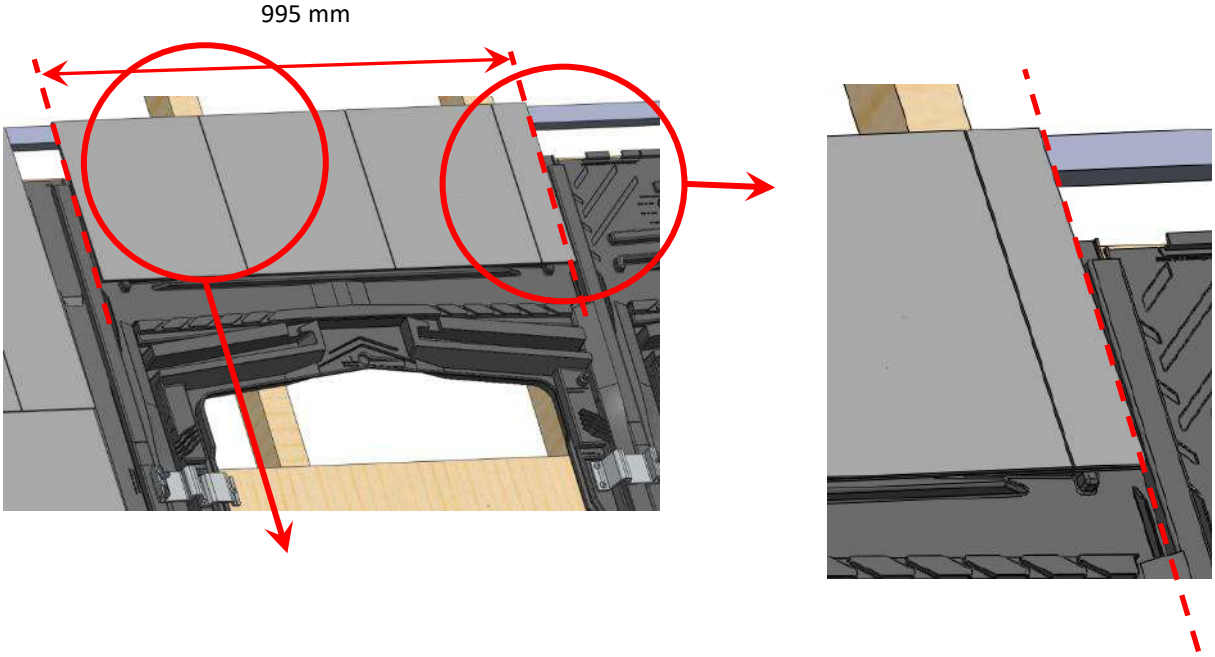


Annex n° 8

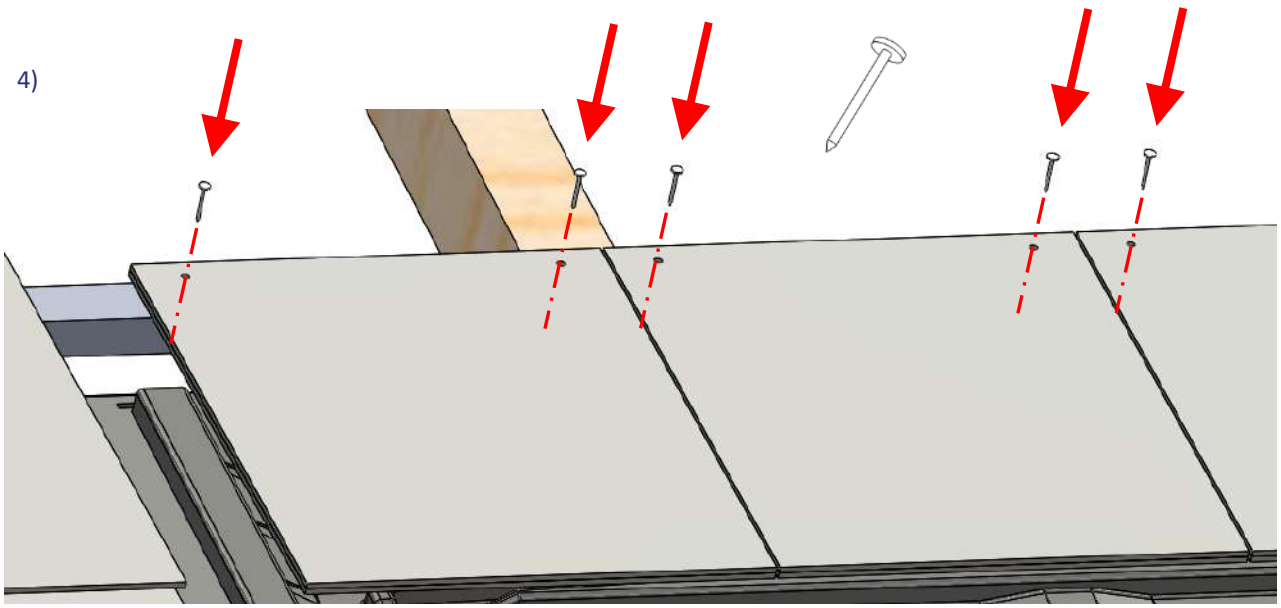
A. EASY ROOF EVOLUTION slates on flashing

A-3 Top of PV field

3)



4)

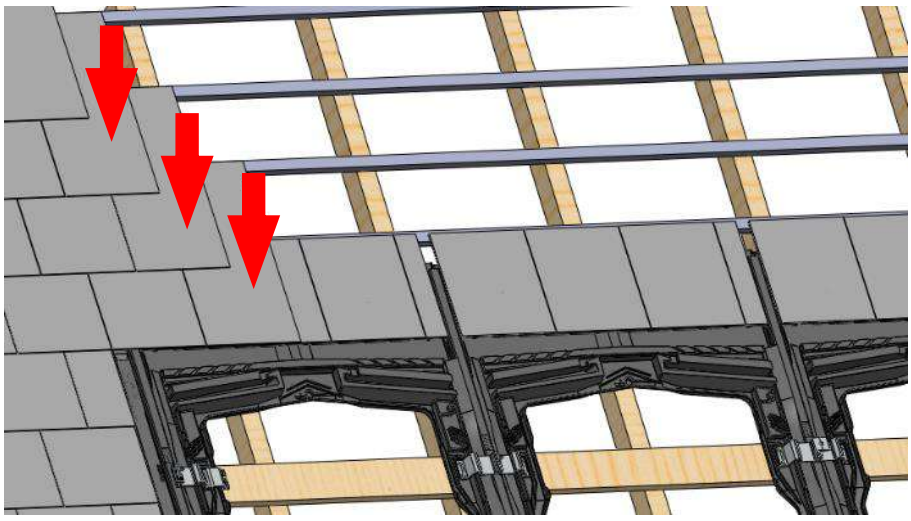


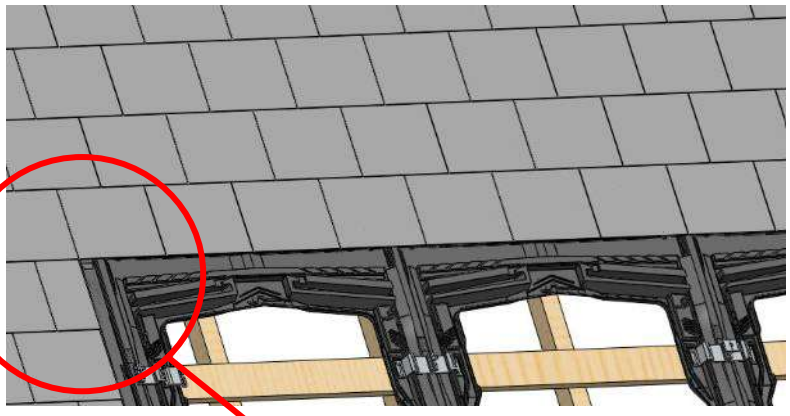
Annex n° 8

A. EASY ROOF EVOLUTION slates on flashing

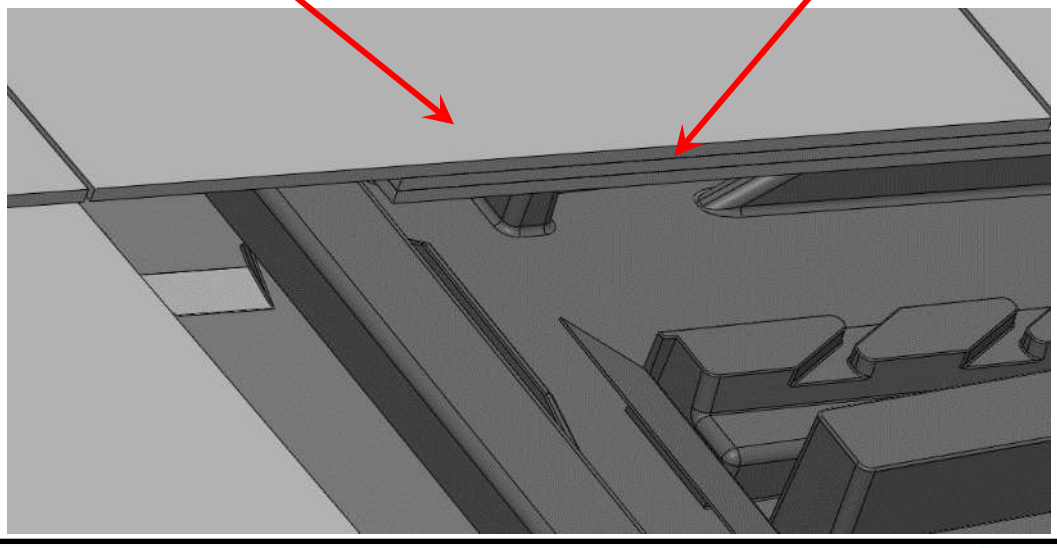
A-3 Top of PV field

5)





No. slates
See page 98

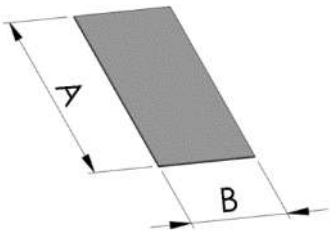


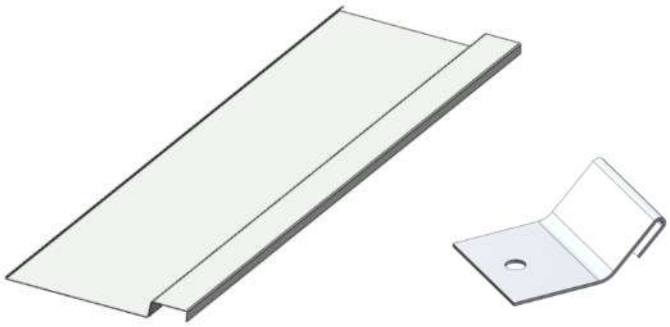
Annex n° 8

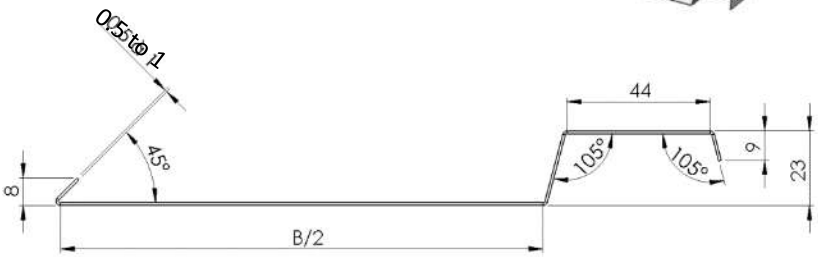
B. Custom-made metallic flashing

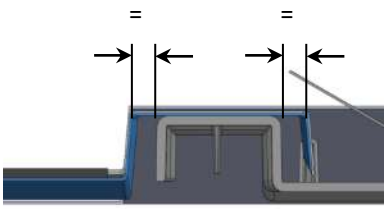
B-1 Side flashing

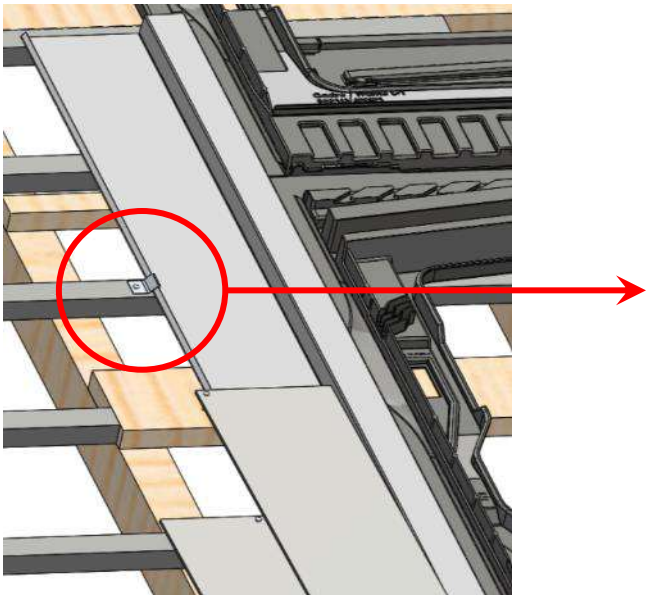
B-11 Continuous flashing

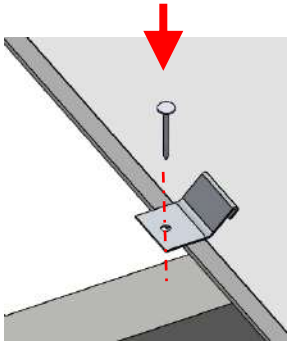


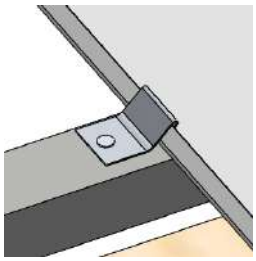










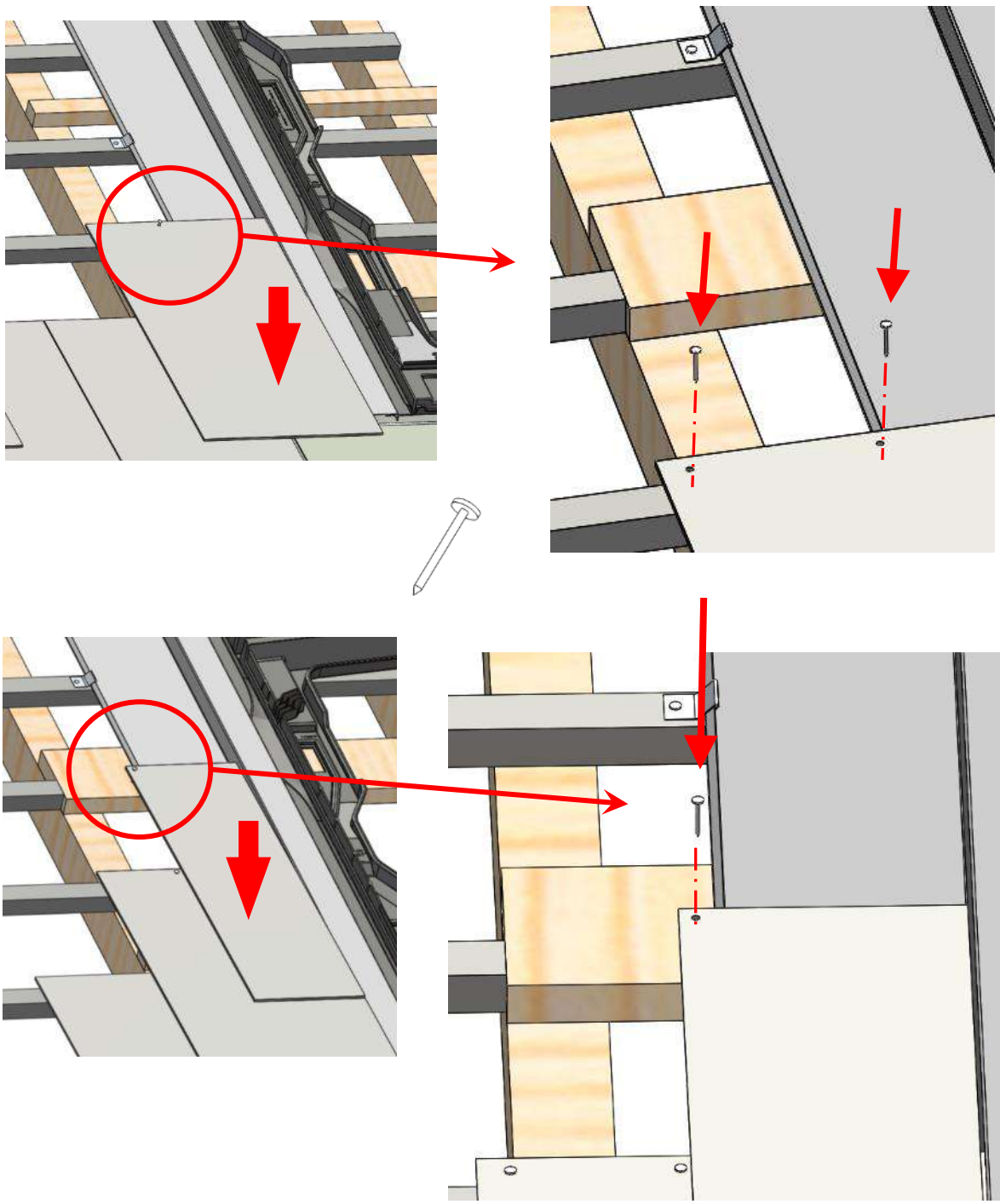


Annex n° 8

B. Custom-made metallic flashing

B-1 Side flashing

B-12 Continuous flashing

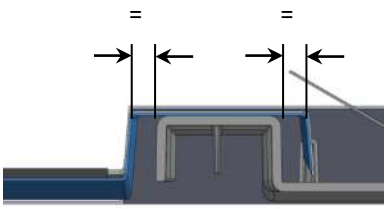


Annex n° 8

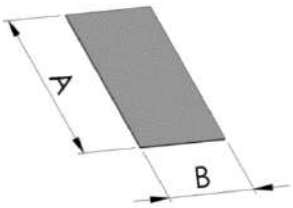
B. Custom-made metallic flashing

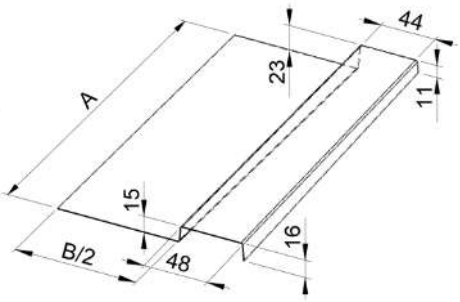
B-1 Side flashing

B-12 Soakers

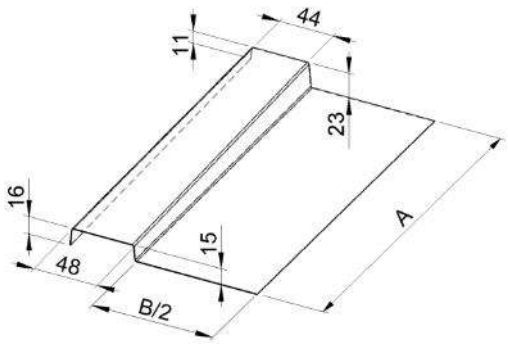


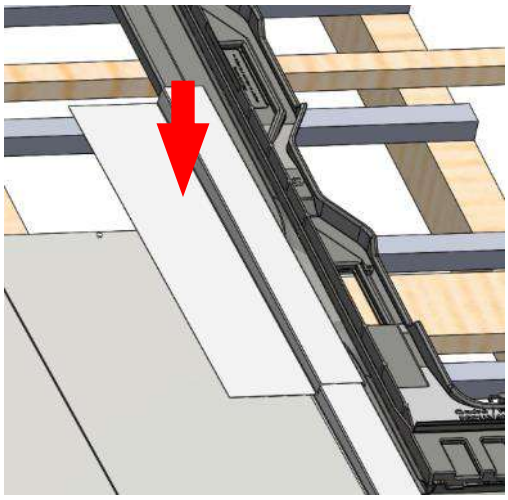
Left

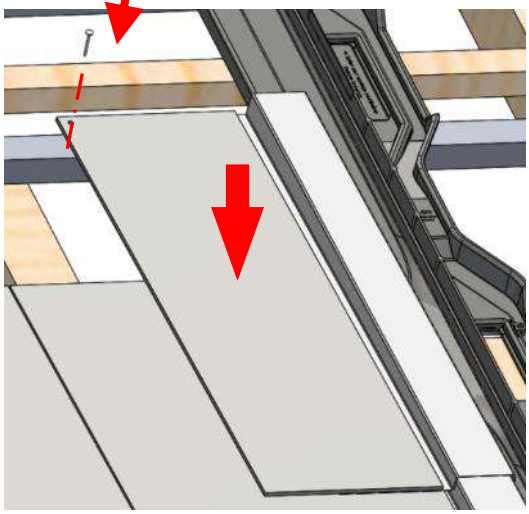


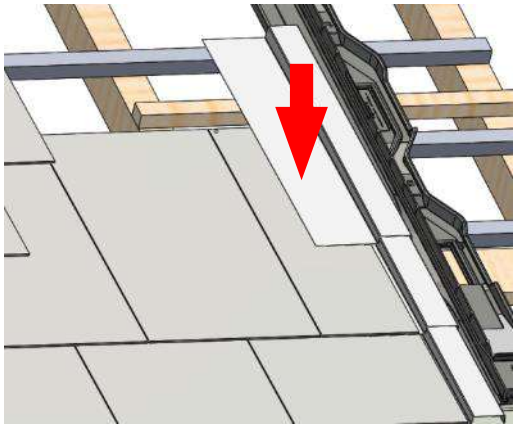


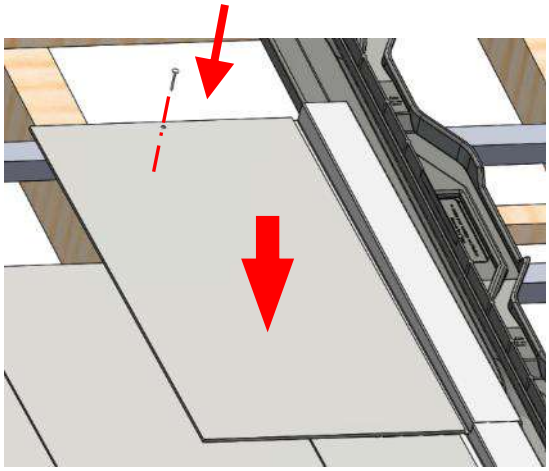
Right









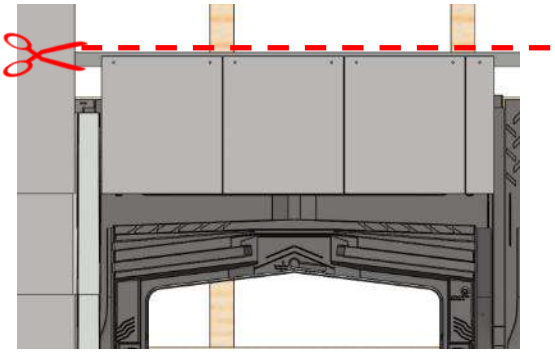


Annex n° 8

B. Custom-made metallic flashing

B-2 Top of PV field / slates

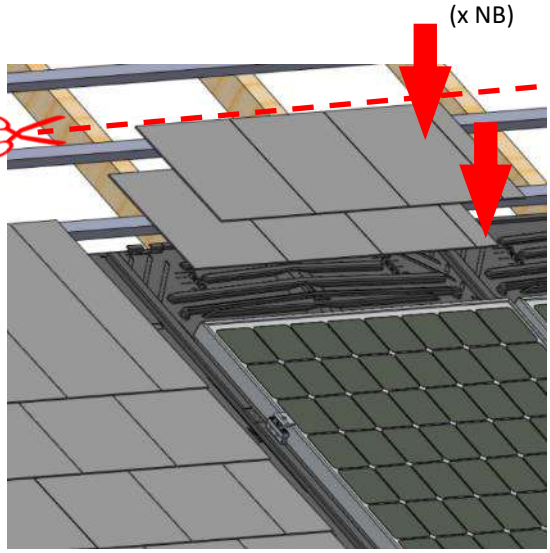
1)

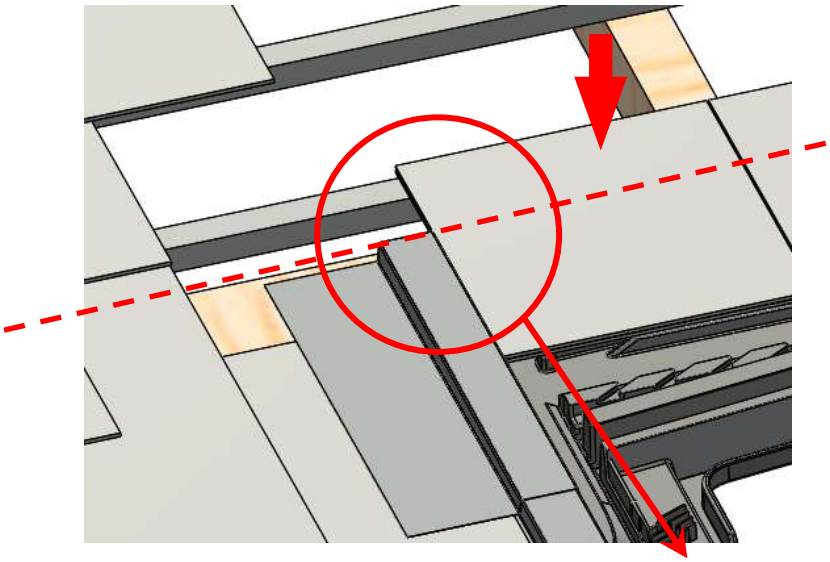


Stack several slates (x N)

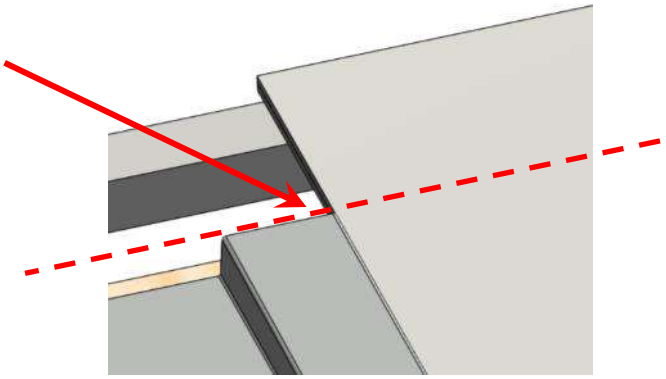
2)

(x NB)





No. slates = same level (height)
)

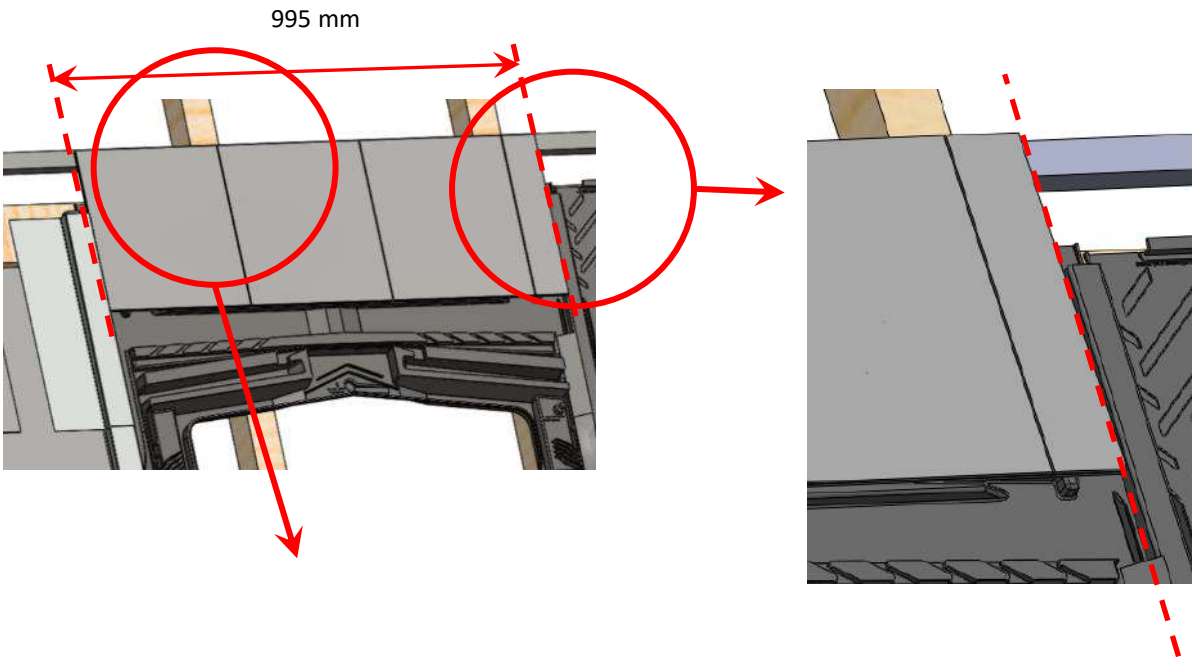


Annex n° 8

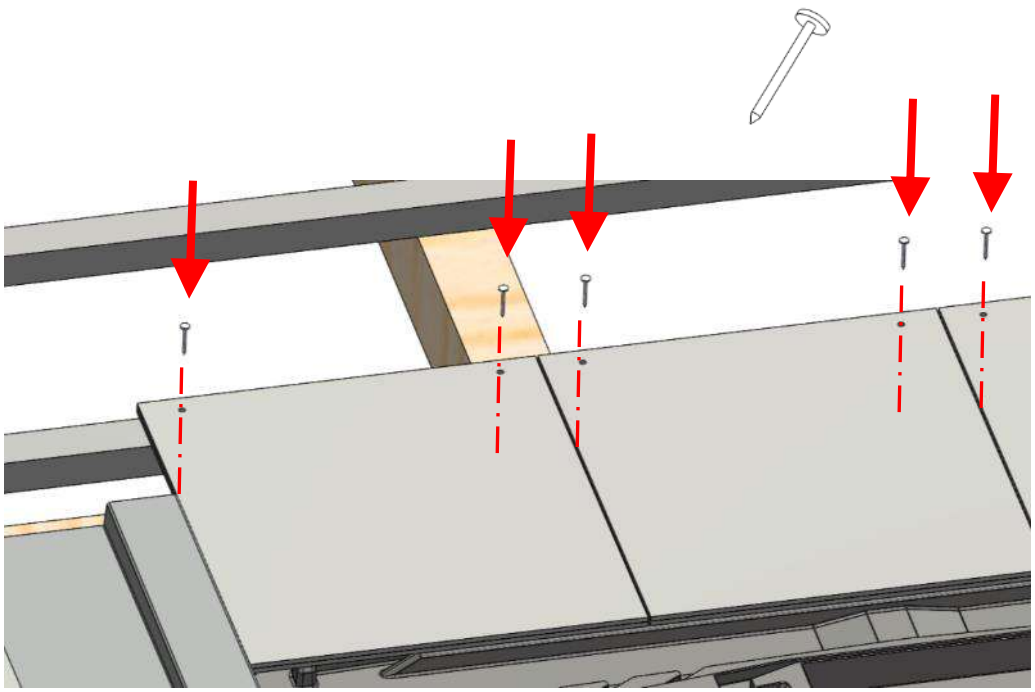
B. Custom-made metallic flashing

B-2 Top of PV field / slates

3)



4)

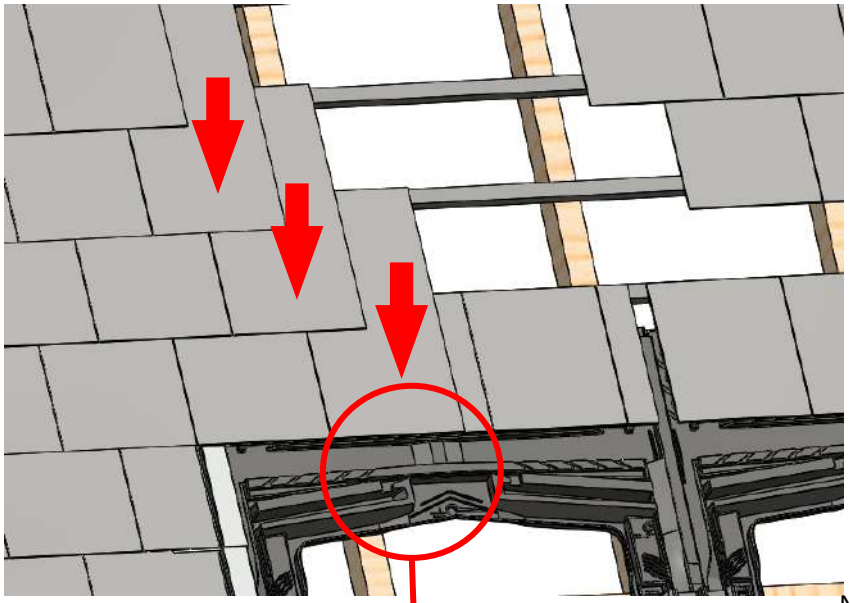


Annex n° 8

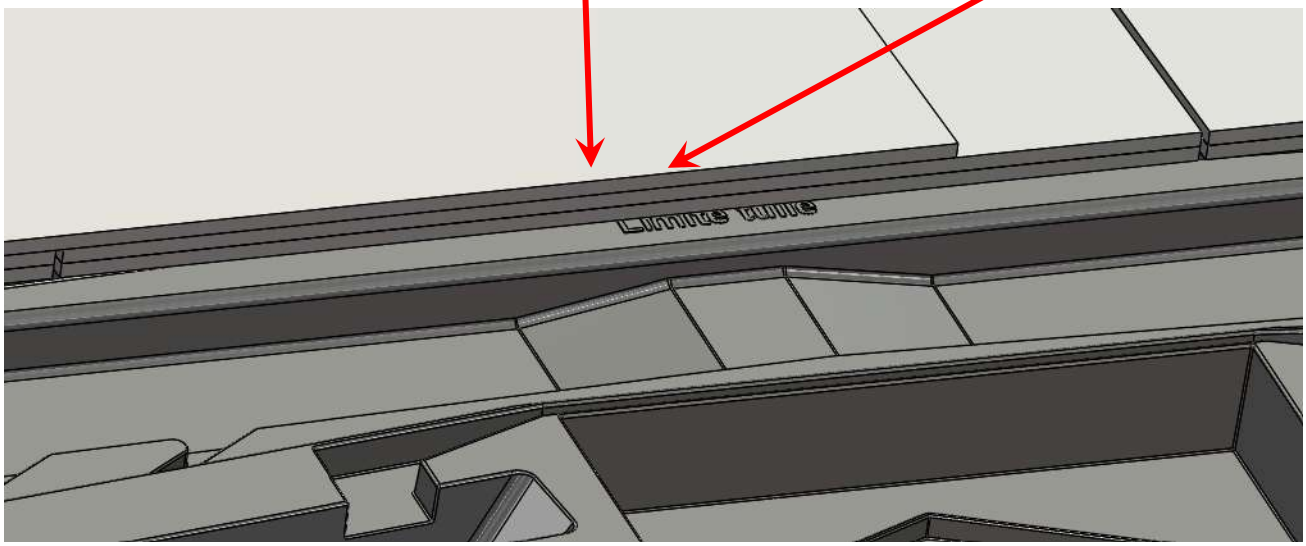
B. Custom-made metallic flashing

B-2 Top of PV field / slates

5)



No. slates
See page 98

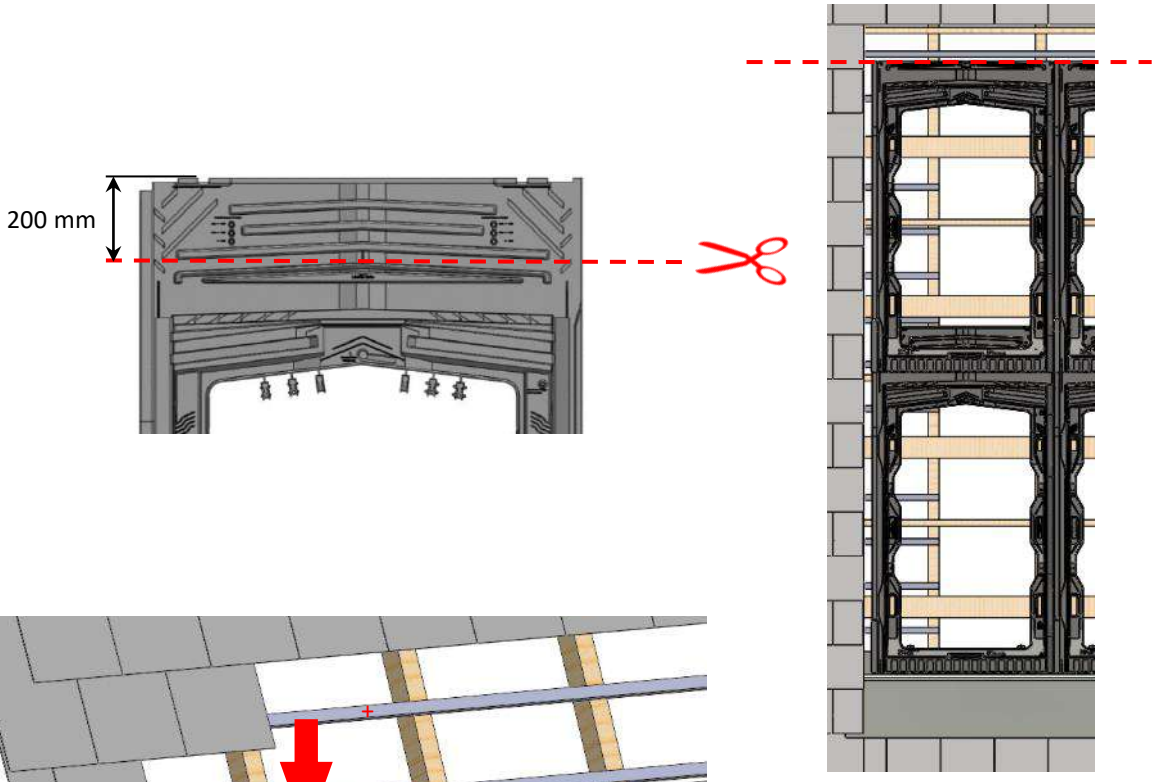


Annex n° 8

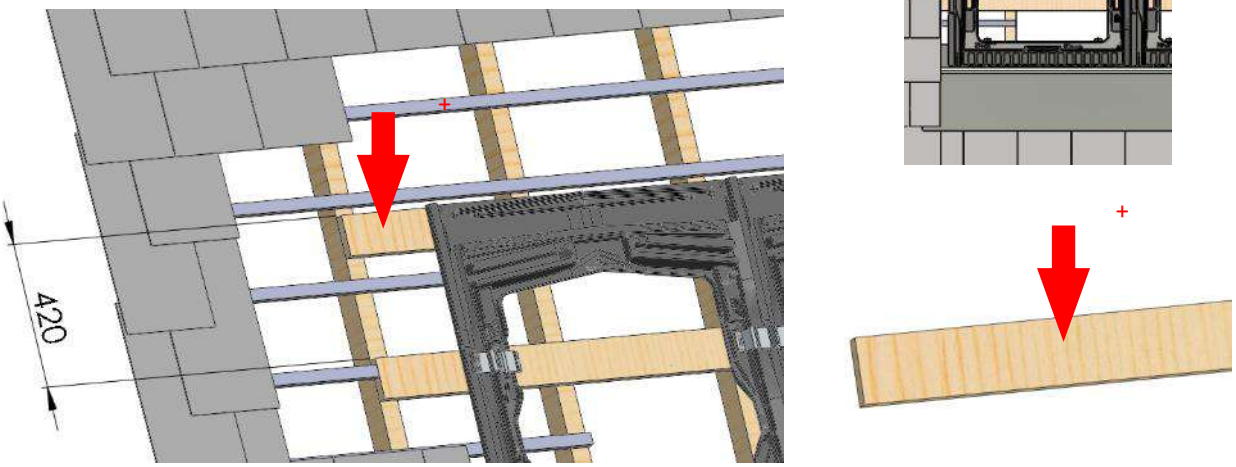
B. Custom-made metallic flashing

B -3 Top of PV field / metallic flashing

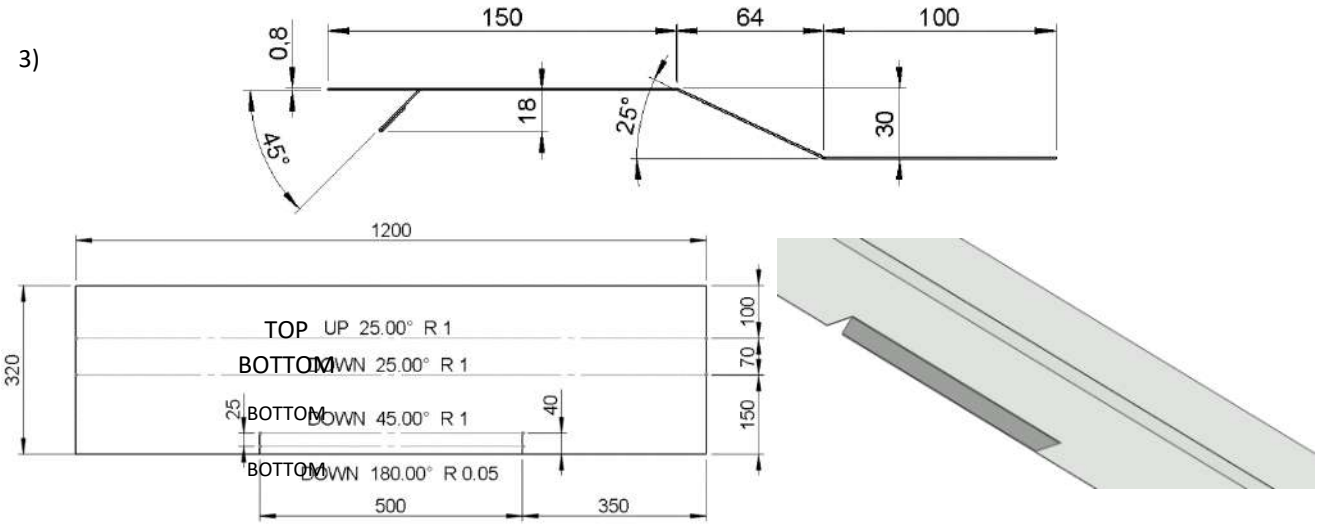
1)



2)



3)

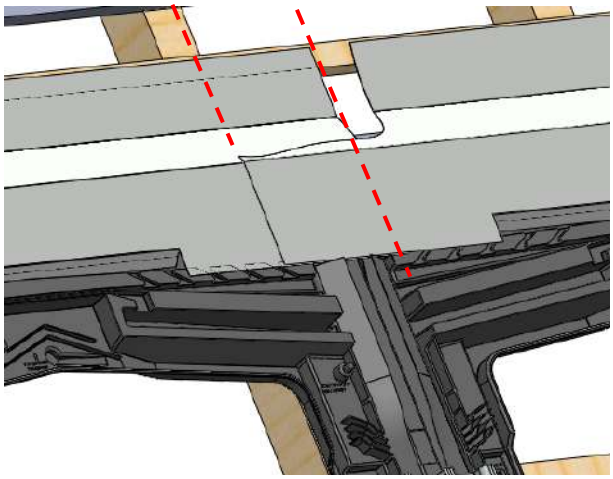


Annex n° 8

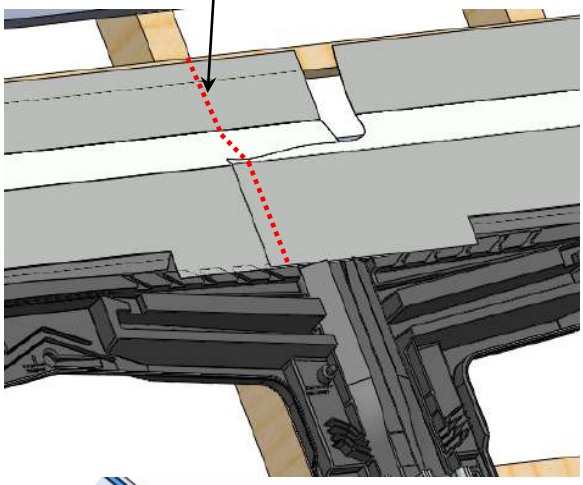
B. Custom-made metallic flashing

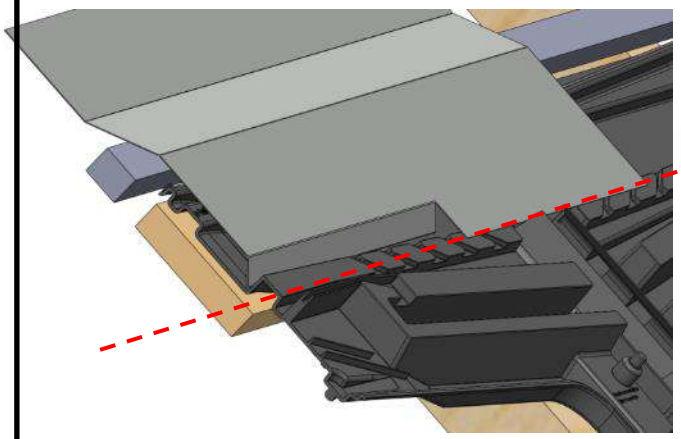
B -3 Top of PV field / metallic flashing

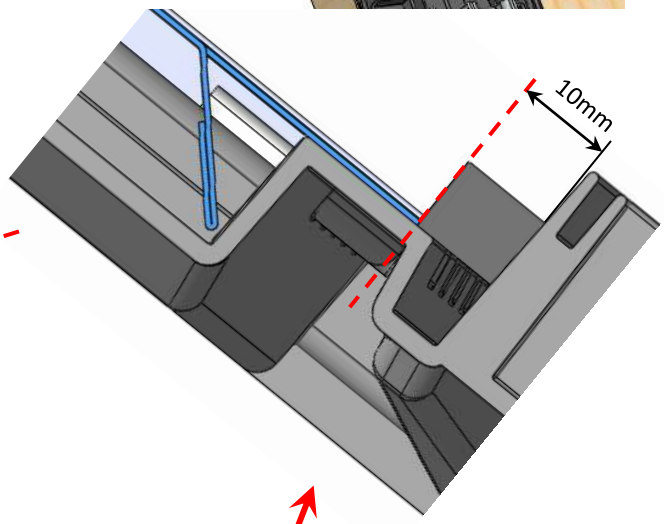
4) 200mm MIN

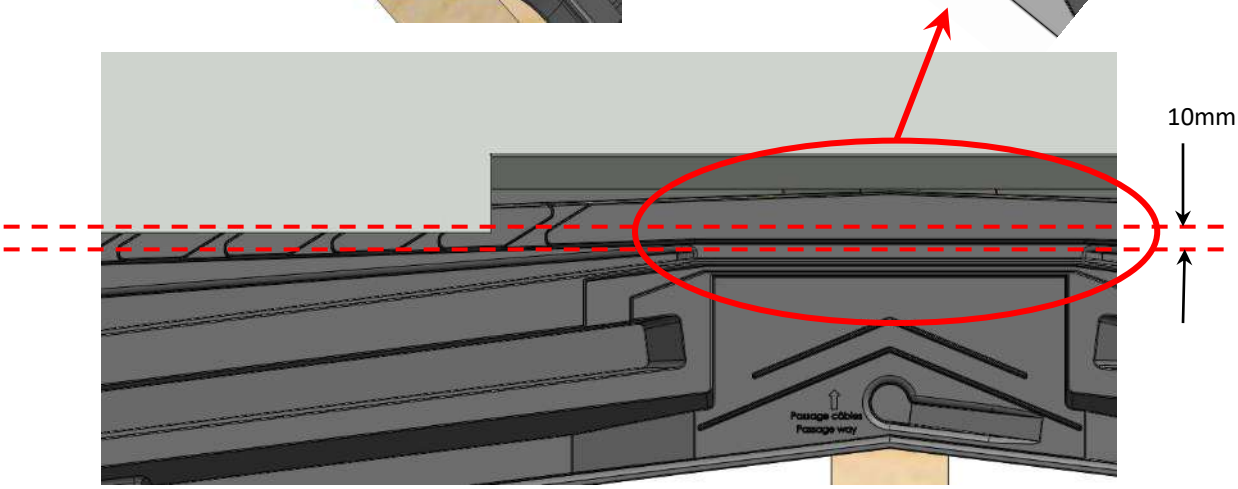


Butyl joint





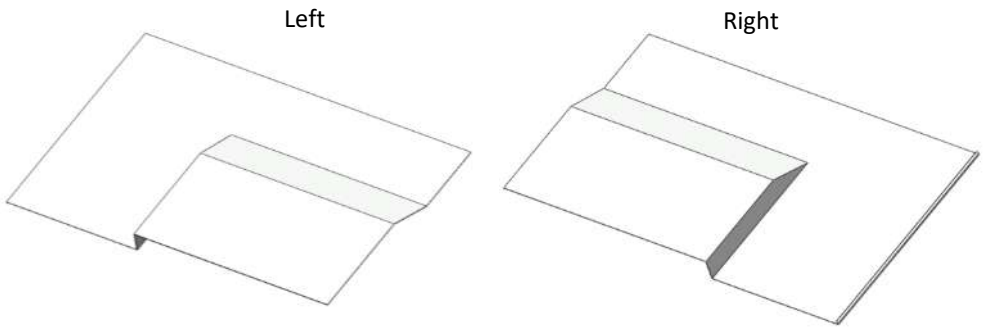


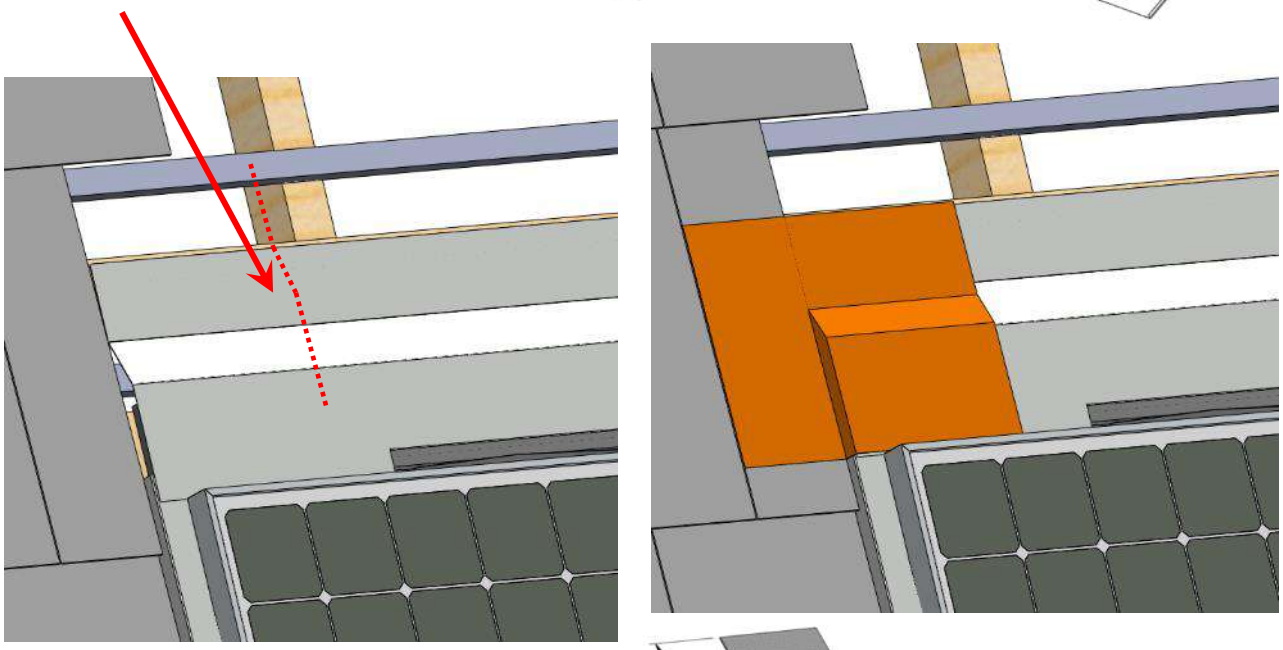


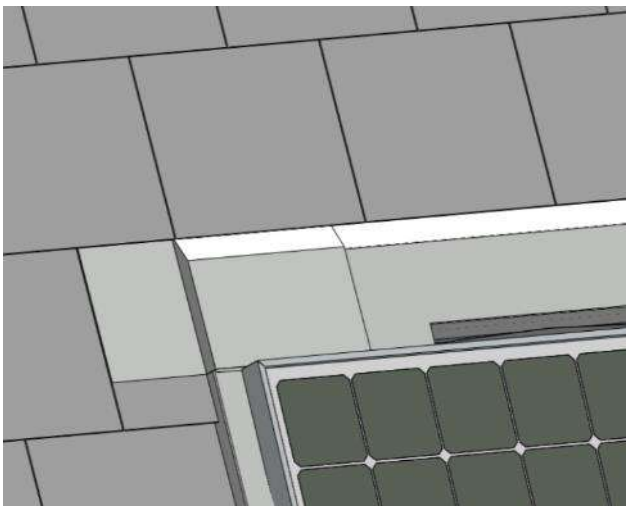
Annex n° 8

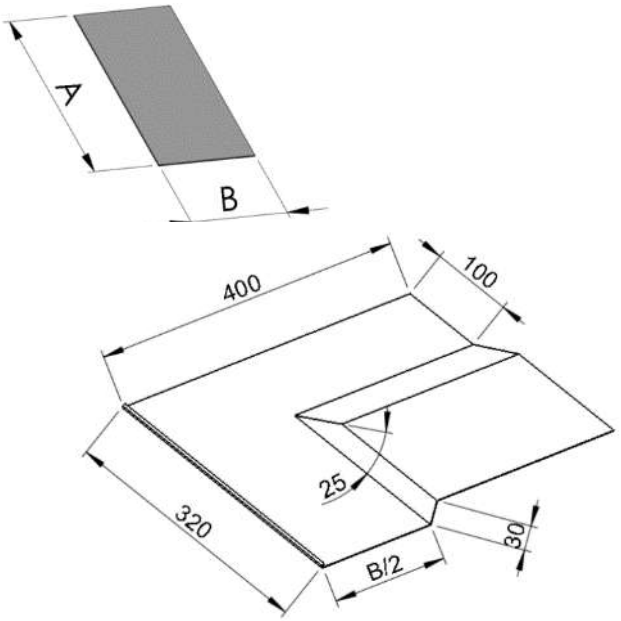
B. Custom-made metallic flashing

B -3 Top of PV field / metallic flashing







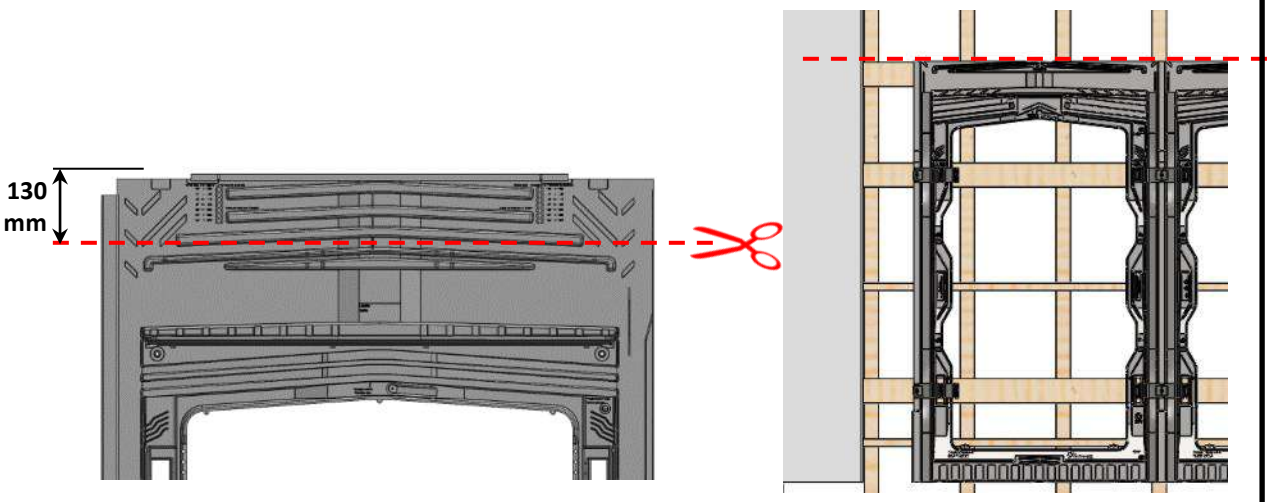


Annex n° 8

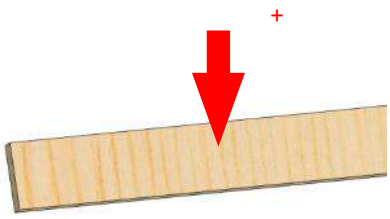
C. Zinc flashing with standing seams

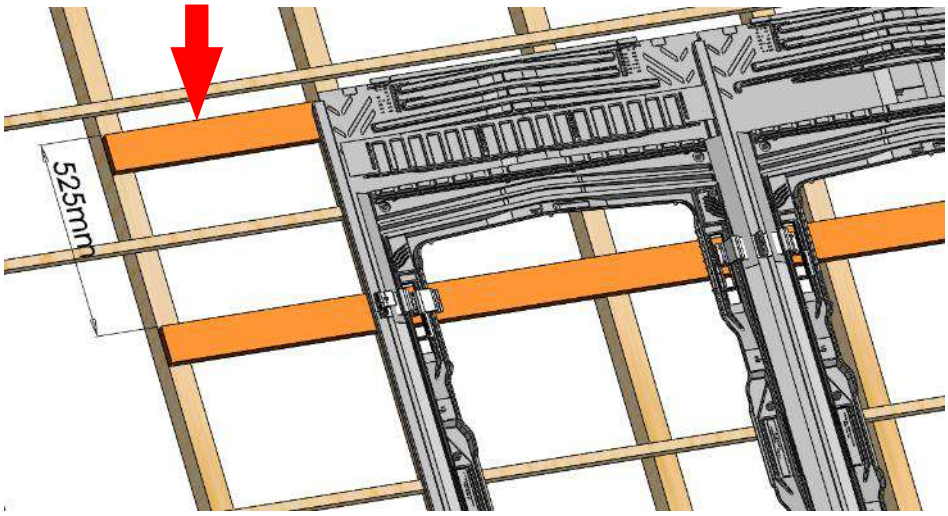
C-1 Side flashing

1)



2)

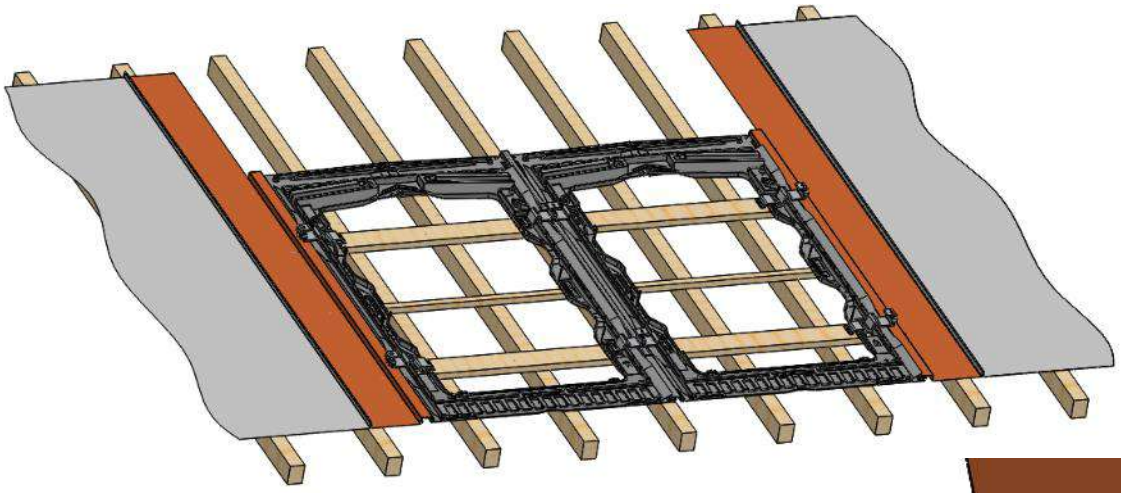


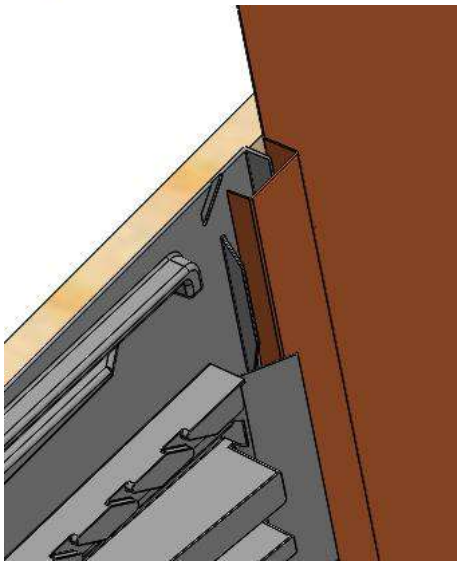


Annex n° 8

C. Zinc flashing with standing seams

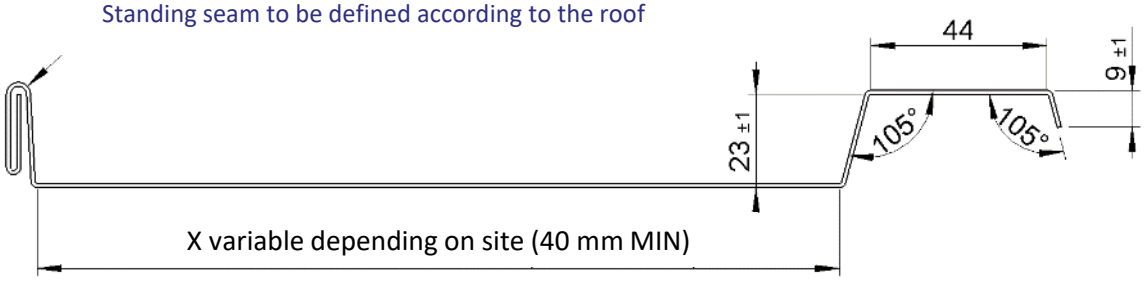
C-1 Side flashing





Top of the PV field

Standing seam to be defined according to the roof

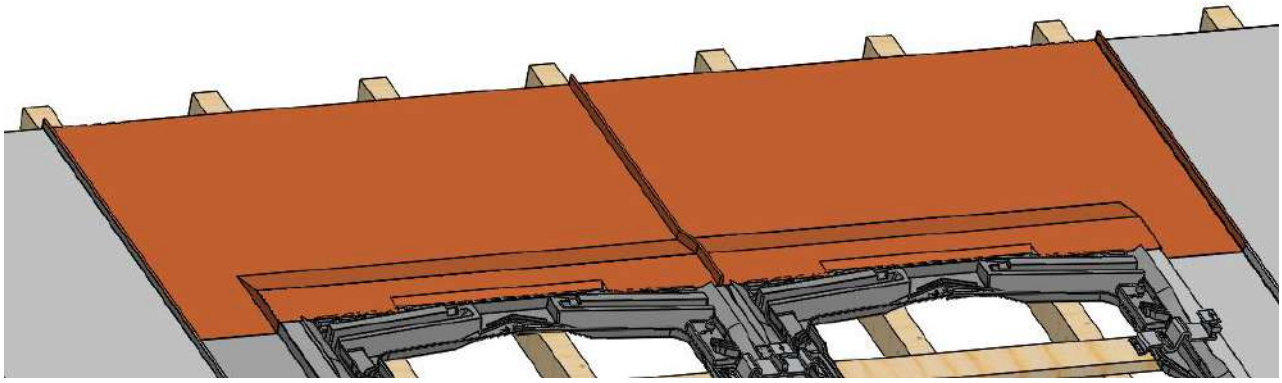


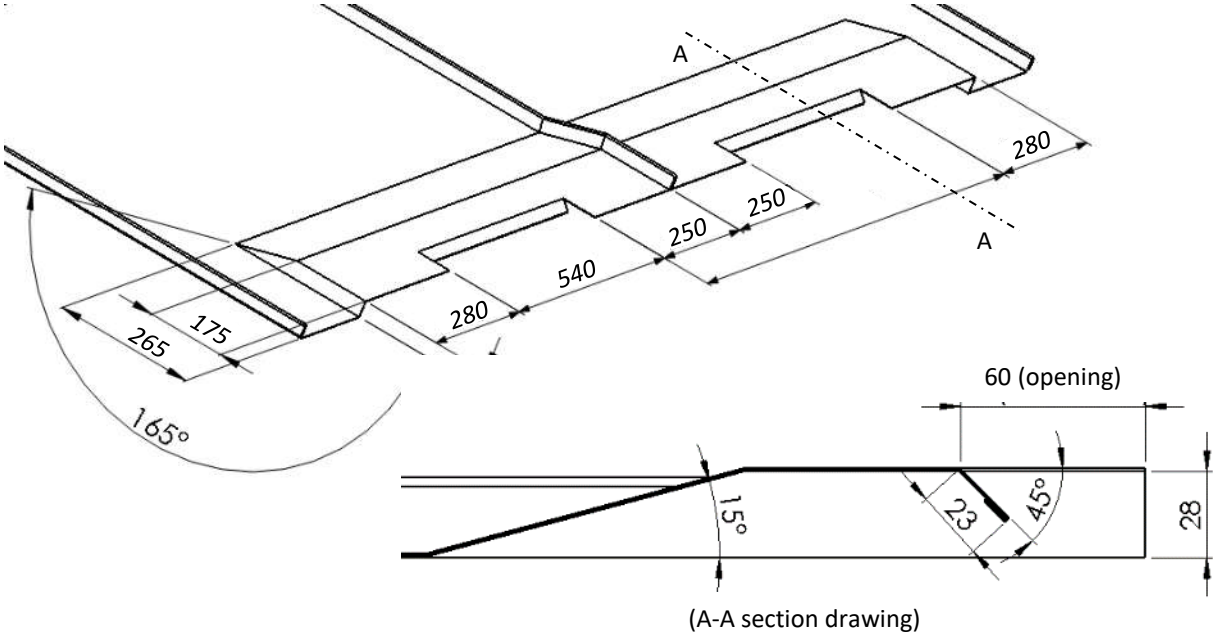
Side flashing (summetrical right and left flashing)

Annex n° 8

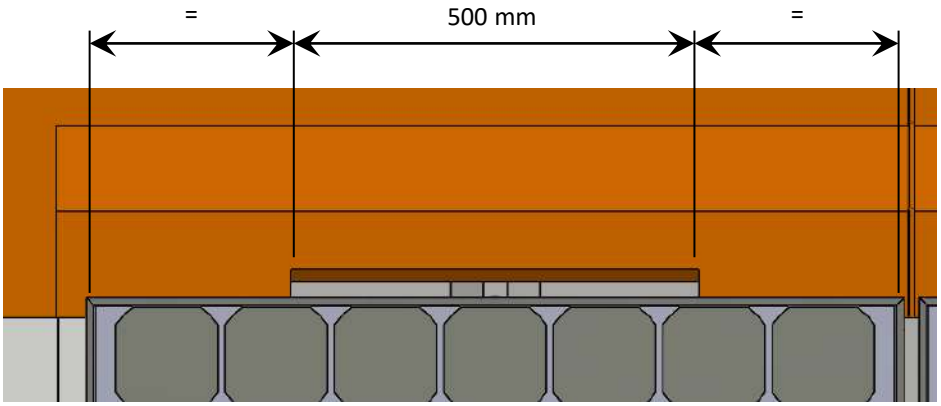
C. Zinc flashing with standing seams

C-2 Top of PV field





(A-A section drawing)

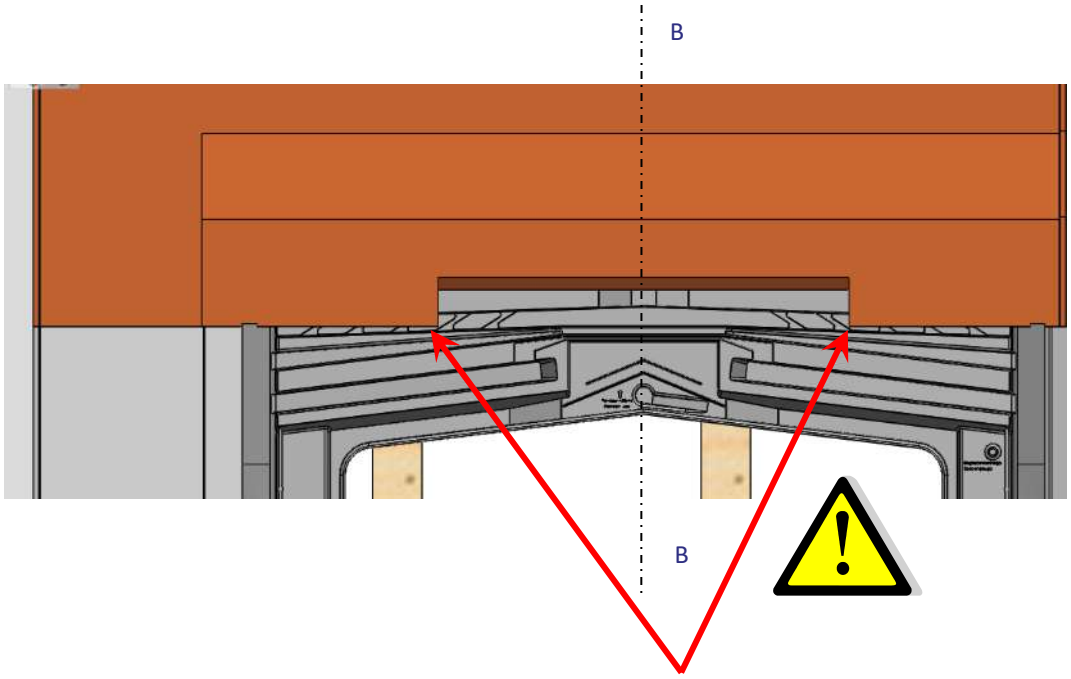


Top flashing plate

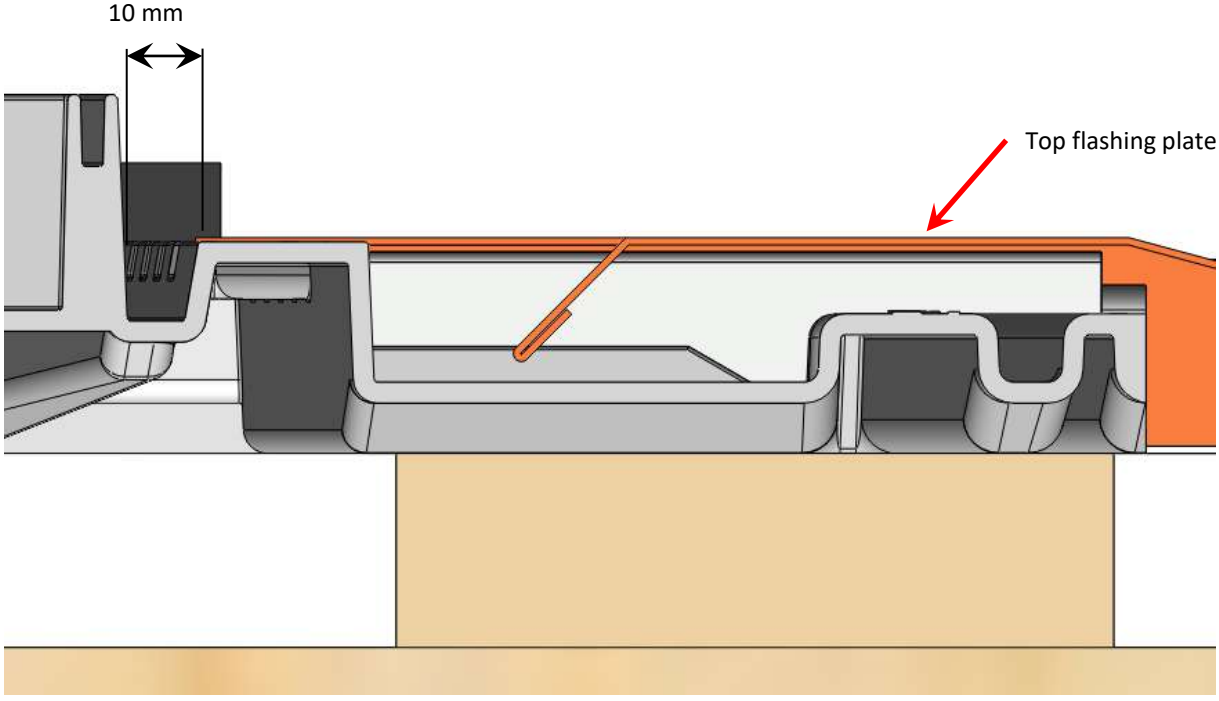
Annex n° 8

C. Zinc flashing with standing seams

C-2 Top of PV field



No contact between the metal plate and the vertical wall of the frame



(B-B section drawing)

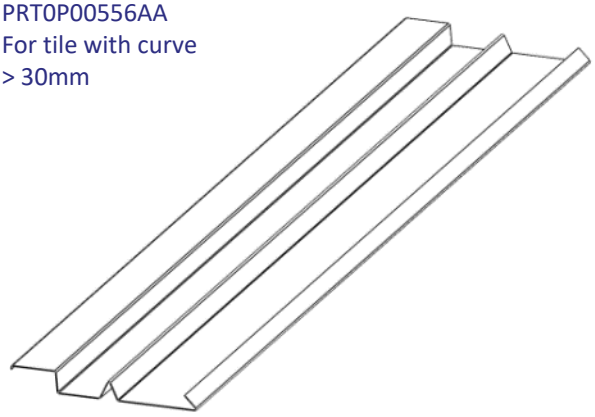
Top flashing

Annex n° 9

EDILIANS metallic flashing

Side flashing
Continuous flashing

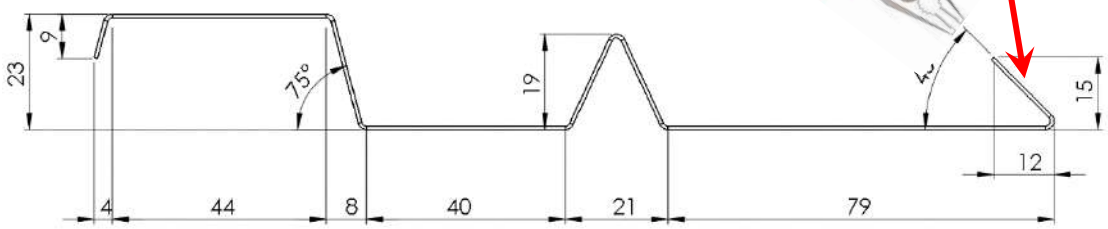
PRT0P00556AA
For tile with curve
> 30mm



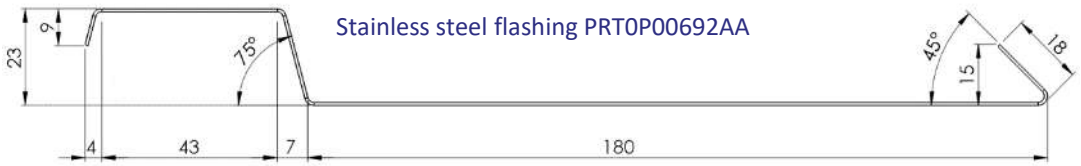
PRT0P00692AA
For tile with curve
< 30mm

The EASY ROOF EVOLUTION side flashing can be replaced by metallic channels which may be positioned either to the left or right of the field. The recommended length is 1100mm.
A 230mm overlap is necessary between the channels in the direction of the roof slope.
The overlap between two metal sheets is made by opening the fold in the lower sheet with pliers

Stainless steel flashing PRT0P00556AA



Stainless steel flashing PRT0P00692AA



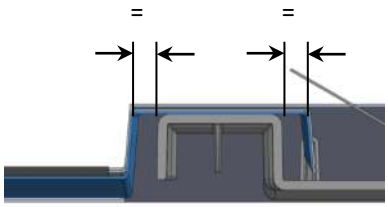
Annex n° 9

EDILIANS metallic flashing

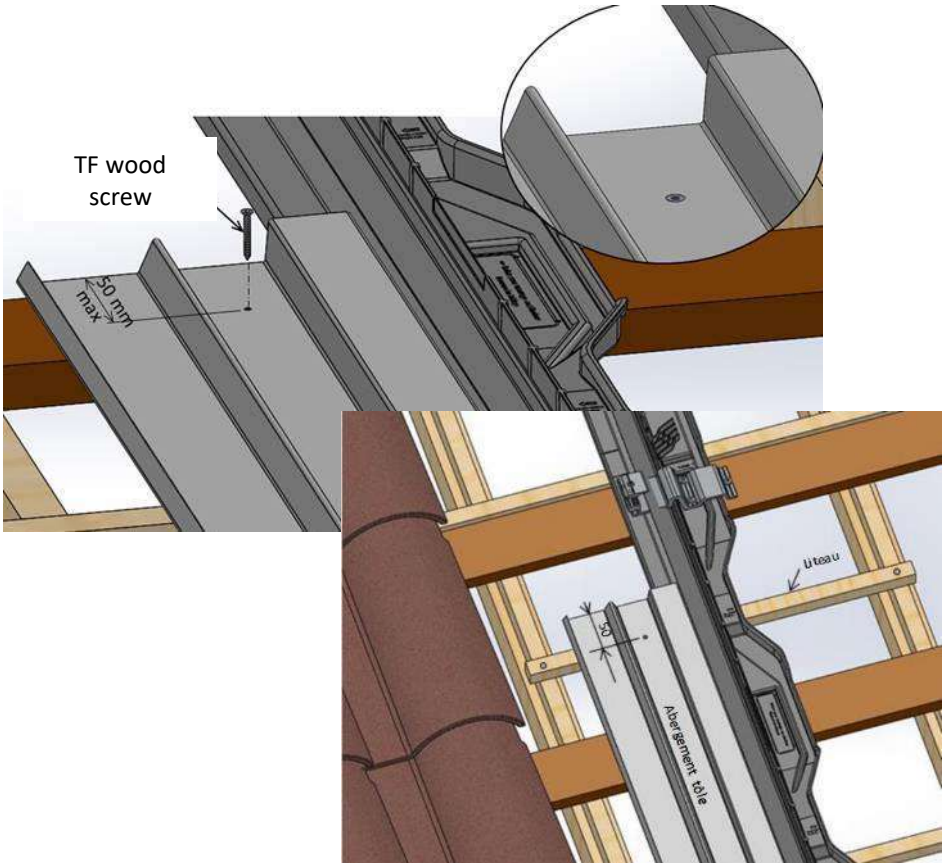
Side flashing
Continuous flashing

NB: Indications applying to stainless steel flashing
PRT0P00556AA and PRT0P00692AA

Position the flashing
on the EASY ROOF EVOLUTION frame.
Leave an even space on either side.



Drill a hole of the right size for a countersunk stainless steel wood screw (not supplied) at a maximum of 50mm from the top of the plate.
Tighten the screw until it is flush with the surface of the plate.
When it is not possible to fix the flashing to a support batten, a batten of the same thickness must be added.
This batten will rest on a rafter on either side and will be fixed in place by two wood screws.



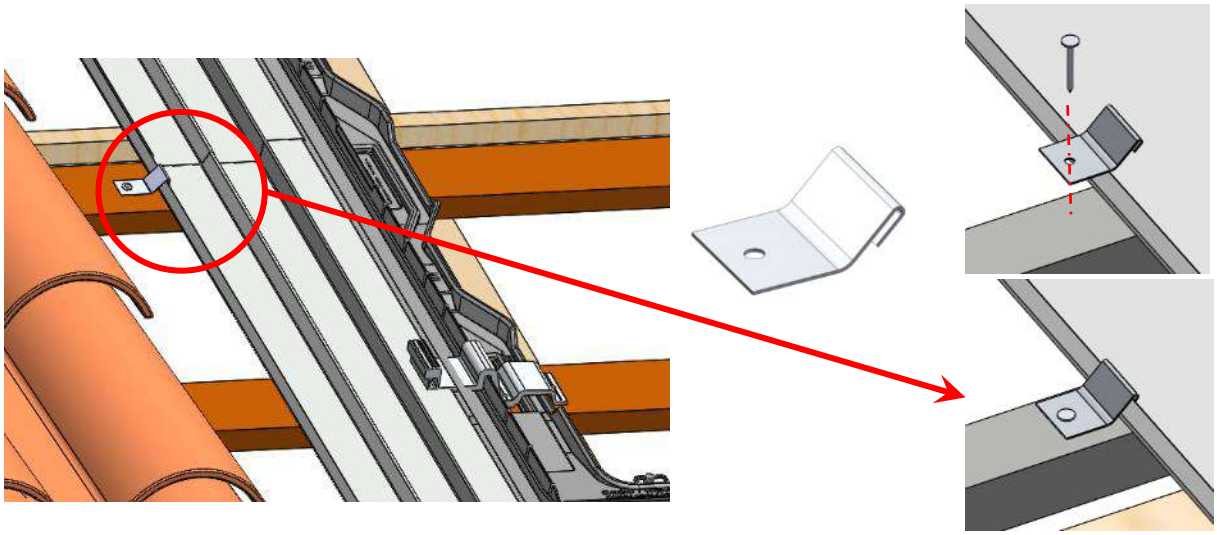
Annex n° 9

EDILIANS metallic flashing

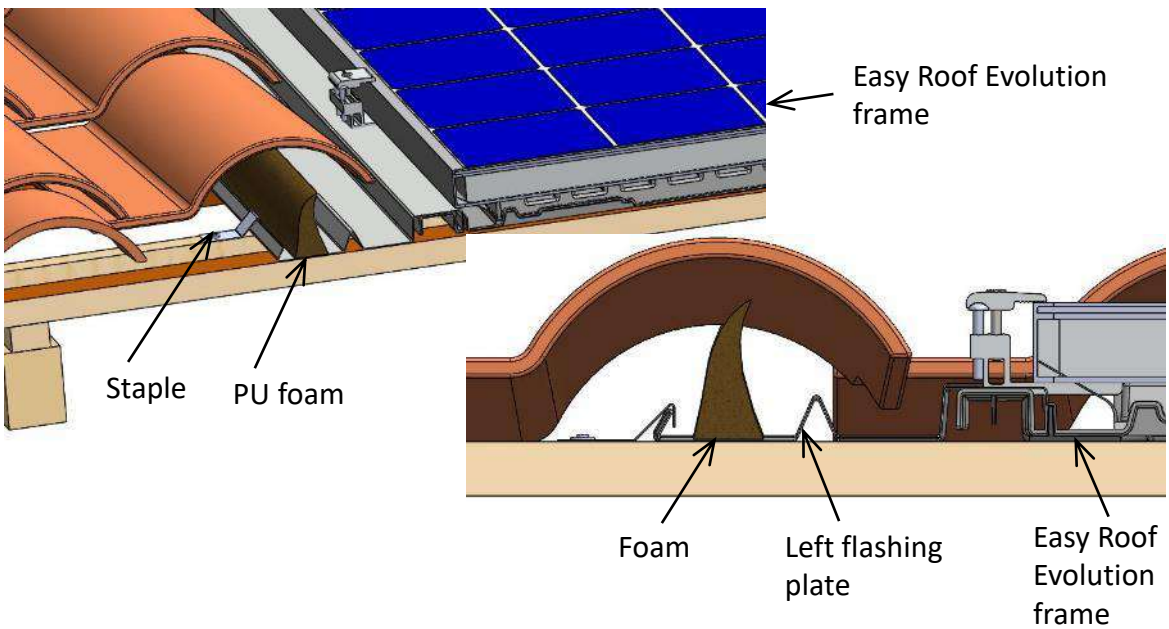
Side flashing
Continuous flashing

NB: Indications applying to stainless steel flashing PRT0P00556AA and PRT0P00692AA.

Fix the flashing plates in place with metal staples.
Nail or screw, at least 2 staples per flashing (1 at the overlap + in the middle of the flashing) onto the support batten or failing that a batten of the same thickness.



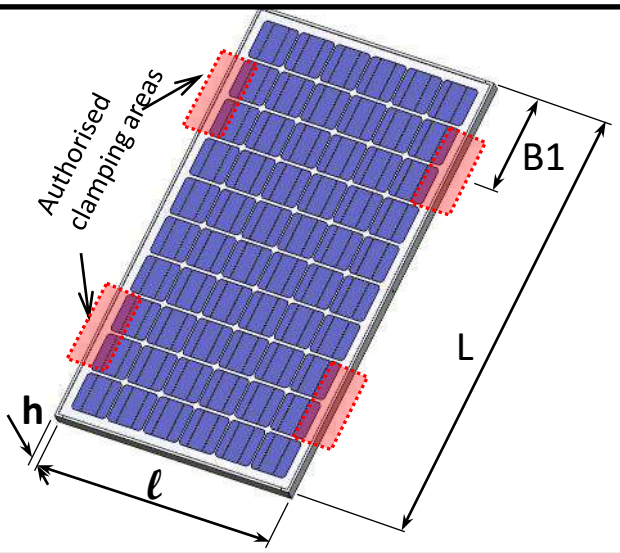
Add foam seals (of type Illmod 600 Tremco-Illbruck) between the sheet metal flashing and the bottom of the tiles.

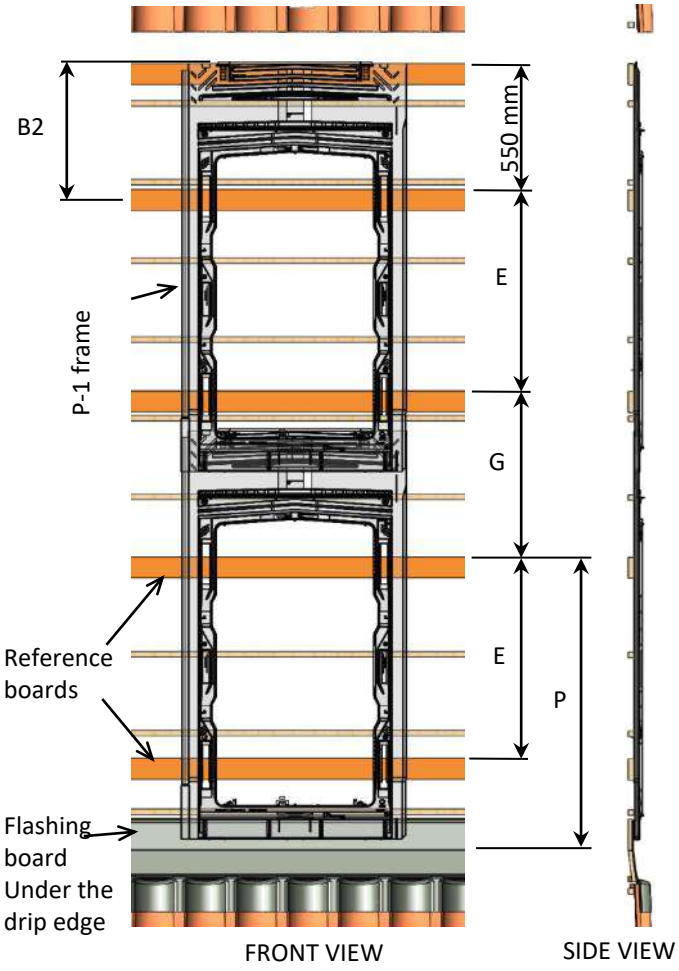


Annex n° 10

Simplified sizing sheet

Manufacturer	LG
Models	LG Neon 2
	LG Neon 2 Black
Dimensions L x l x h (mm)	1686 x 1016 x 40

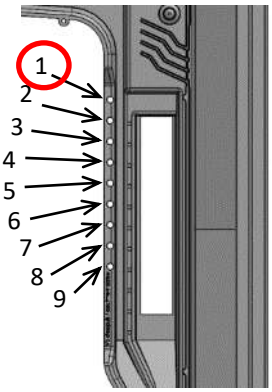




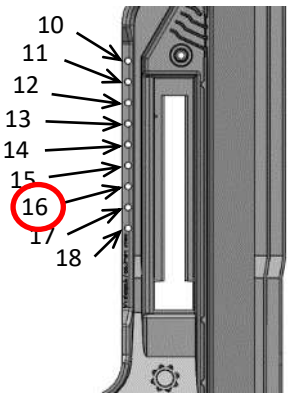
Positions of reference board and support screws		
System interval (mm)		1710
Dimensions of centre clamping area B1 (mm		275
Nominal dimensions B2 (mm)		585
P positioning dimensions (mm)		1475
E spacing dimensions (mm)		1060
G spacing dimensions (mm)		650
screws	N°TH	1
	N°TB	16

Support screw positions

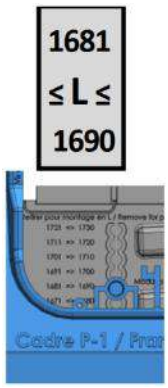
N°TH Hole in window top of frame



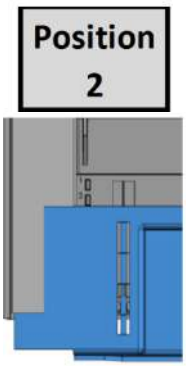
N°TB Hole in window bottom of frame



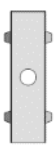
Indexing between frames



Lower grid position



Module wedge



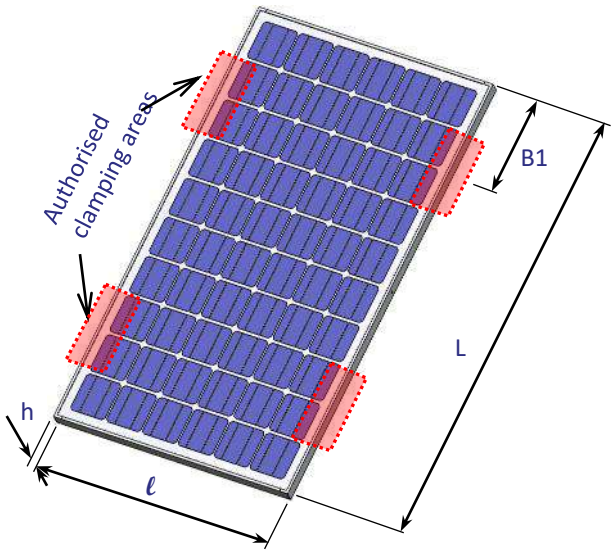
1010 ≤ PV width ≤ 1018

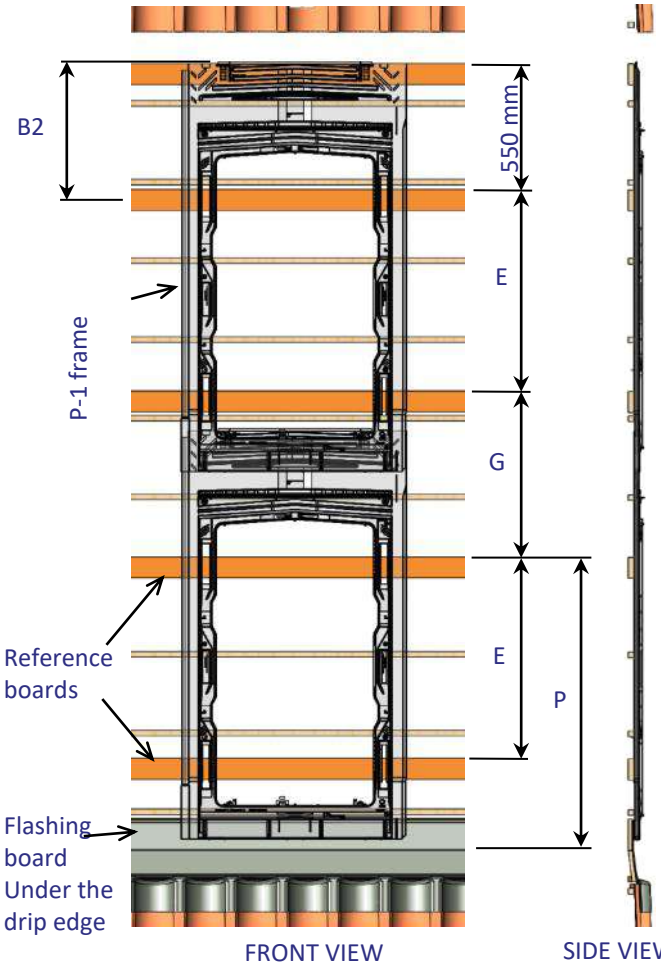
⚠ THE SUPPORT SCREWS MUST BE REMOVED BEFORE INSTALLING THE PV MODULES

Annex n° 10

Simplified sizing sheet

Manufacturer	LG
Model	LG Neon R
Dimensions L x l x h (mm)	1700 x 1016 x 40

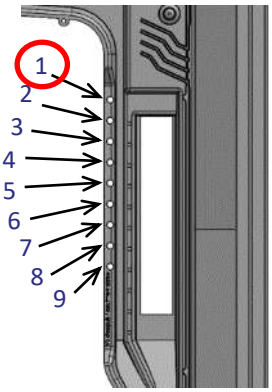




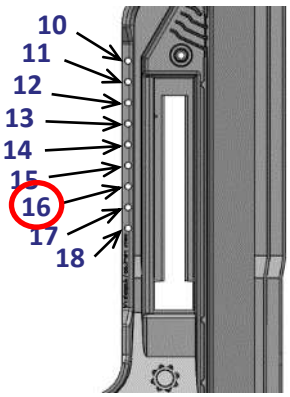
FRONT VIEW SIDE VIEW

Support screw positions

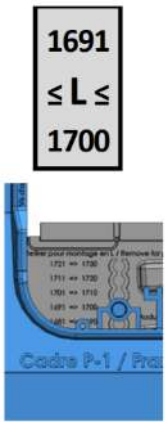
N°TH Hole in window top of frame



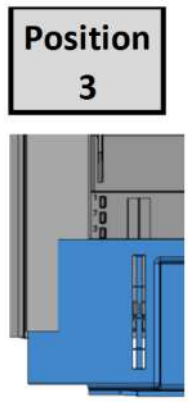
N°TB Hole in window bottom of frame



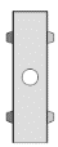
Indexing between frames



Lower grid position



Module wedge



1010 ≤ PV width ≤ 1018

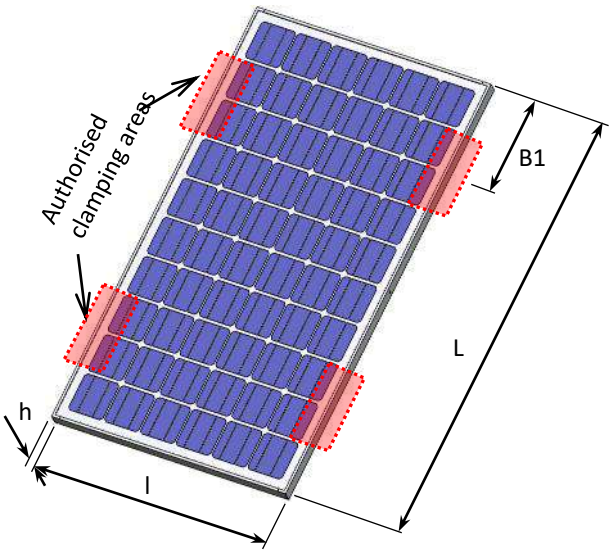
⚠ THE SUPPORT SCREWS MUST BE REMOVED BEFORE INSTALLING THE PV MODULES

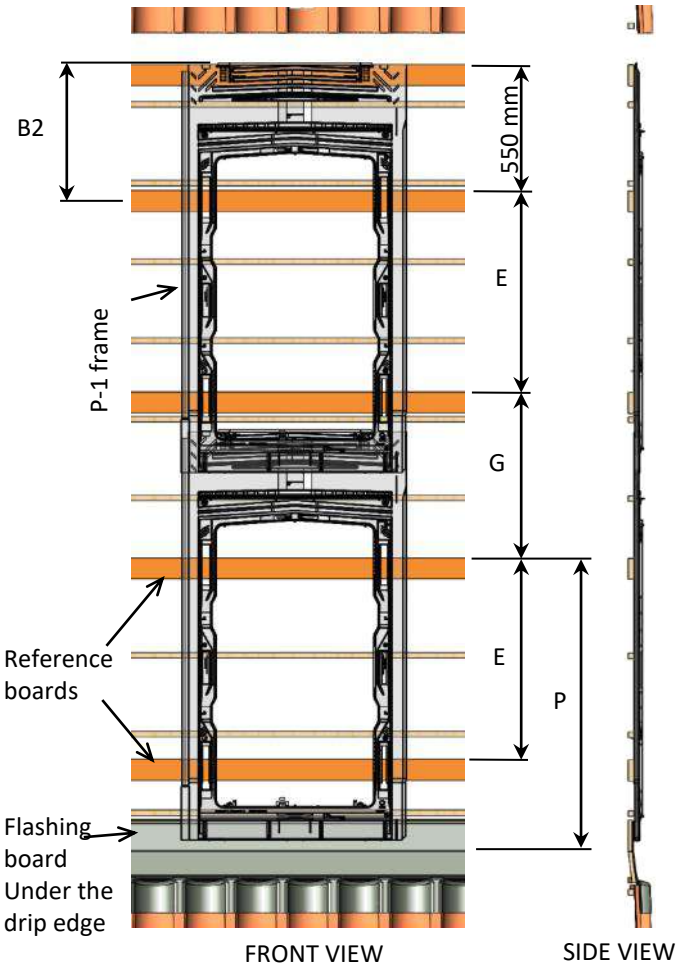
Positions of reference board and support screws		
System interval (mm)		1720
Dimensions of centre clamping area B1 (mm		275
Nominal dimensions B2 (mm)		585
P positioning dimensions (mm)		1475
E spacing dimensions (mm)		1060
G spacing dimensions (mm)		660
Holes for support screws	N°TH	1
	N°TB	16

Annex n° 10

Simplified sizing sheet

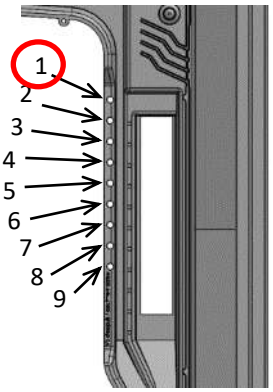
Manufacturer	AUO
Models	SUNBravo PM060MW4
	SUNBravo PM060MB4
	SUNBravo PM060MW5
Dimensions L x l x h (mm)	1696 x 1022 x 40



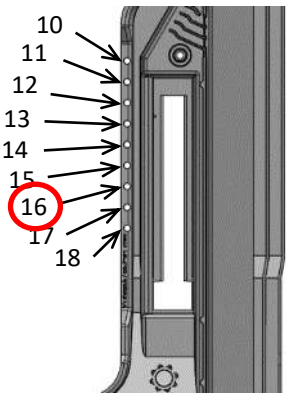


Support screw positions

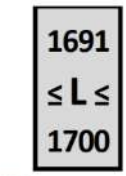
N°TH Hole in window top of frame

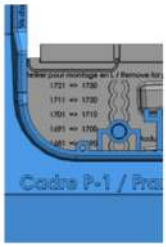


N°TB Hole in window bottom of frame

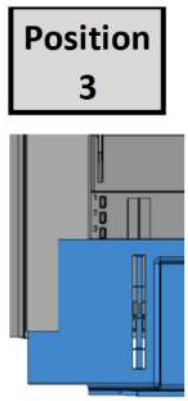


Indexing between frames





Lower grid position



Module wedge

1019 ≤ module width ≤ 1023

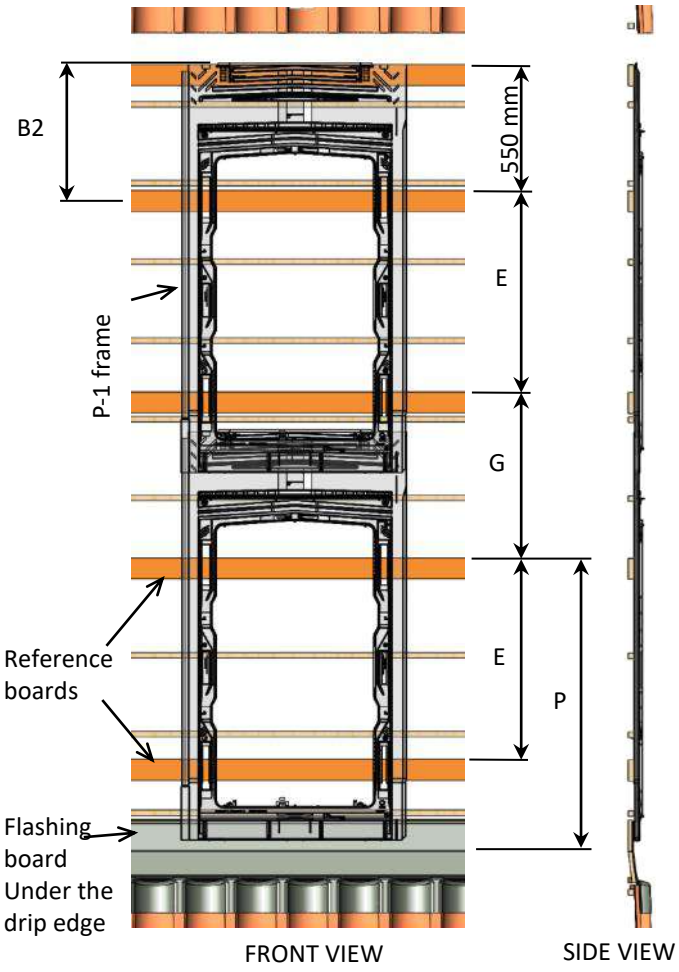
⚠ THE SUPPORT SCREWS MUST BE REMOVED BEFORE INSTALLING THE PV MODULES

Positions of reference board and support screws		
System interval (mm)		1720
Dimensions of centre clamping area B1 (mm		275
Nominal dimensions B2 (mm)		585
P positioning dimensions (mm)		1475
E spacing dimensions (mm)		1060
G spacing dimensions (mm)		660
Holes for support screws	N°TH	1
	N°TB	16

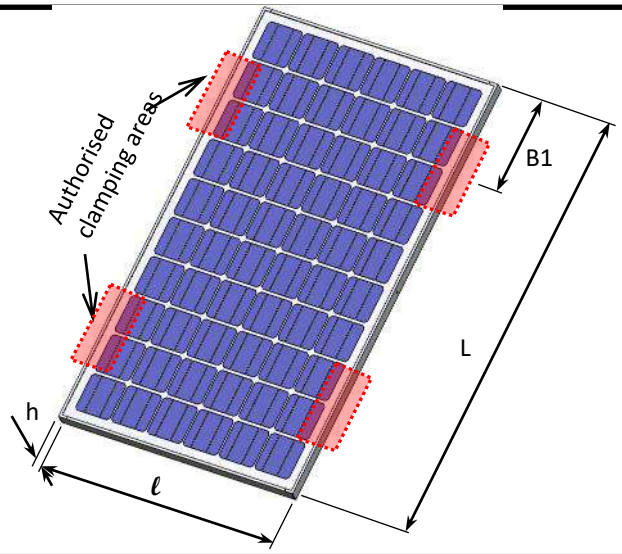
Annex n° 10

Simplified sizing sheet

Manufacturer	HECKERT Solar
Models	Nemo 2.0 60 M
	Nemo 2.0 60 M Black
	Nemo 2.0 60 P
Dimensions L x l x h (mm)	1670 x 1006 x 38

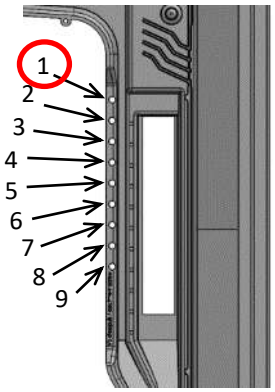


Positions of reference board and support screws		
System interval (mm)		1690
Dimensions of centre clamping area B1 (mm)		305
Nominal dimensions B2 (mm)		585
P positioning dimensions (mm)		1475
E spacing dimensions (mm)		1060
G spacing dimensions (mm)		630
Holes for support screws	N°TH	1
	N°TB	16

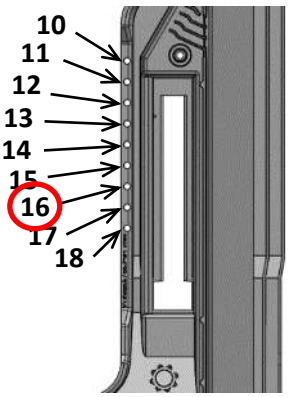


Support screw positions

N°TH Hole in window top of frame

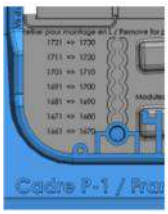


N°TB Hole in window bottom of frame



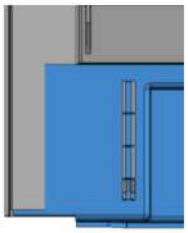
Indexing between frames

1661 ≤ L ≤ 1670



Lower grid position

Position 6



Module wedge

PV module width ≤ 1009

⚠ THE SUPPORT SCREWS MUST BE REMOVED BEFORE INSTALLING THE PV MODULES

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