System with no seals, 5 Patents

Easy-Roof DATASHEET Model “g” type 1257*977 PORTRAIT

Version 1.0 du 12/05/11

Innovation Pass “Green Light” n° 2010-07

Eligible for CEIAB 2011-2012 accreditation

The Easy-Roof system is insured if the module received the IEC 61215 and IEC 61730 agreements

Industry, Private Individuals, Agriculture

IRFTS

Institut de recherche fondamentale en technologies solaires

CSTB

le futur en construction

Distributor 's stamp

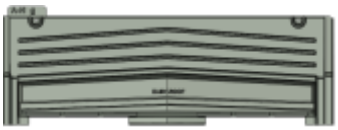
Data sheet for Easy-Roof for built-in integration of system IRFTS

Parts provided in the kit	
Number	**Designation**
1	Superior frame panel Mark (S)
2	Inferior frame panel Mark (I)
3	Central frame panel Mark (C)
4	Inferior superior frame panel Mark (SI)
5	Left flashing
6	Right flashing
7	Double fixing flange
8	Simple fixing flange
9	Double clamp
10	Simple clamp
11	Top flashing
12	Stainless-steel rounded end screw 6x40
13	Stainless-steel hexagon screw 5x35 stainless-steel
14	Stainless-steel square nut
Optionnal Parts	
15	Top Left flashing (assembling in L)
16	Top central flashing (assembling in H)
17	Top right flashing (assembling in L)

Parts not provided in the kit	
Number	**Designation**
a	Counter sunk head screw six lobes 5x60 stainless-steel (wood)
b	Verge
c	Wood 180x18 (verge)
d	Wood 100x27 (support panel, length see page 10)
f	Wood 40x13,5
g	Wood 60x18
h	Stainless-steel rounded end screw six lobes 5x30 (flashing)

Représentation des pièces

11



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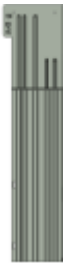

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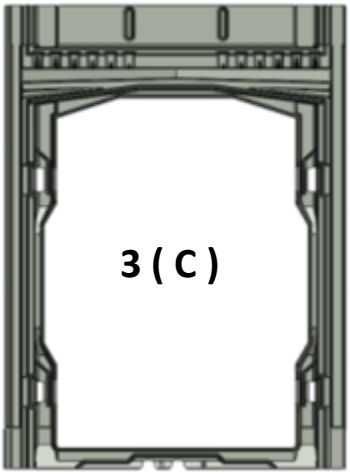

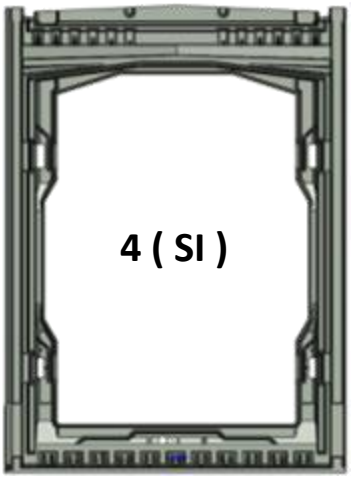

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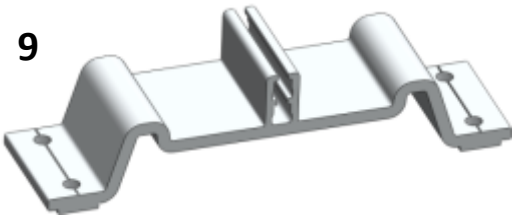

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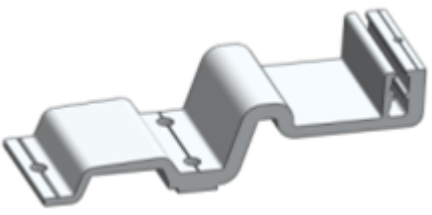

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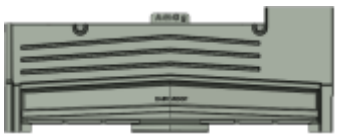

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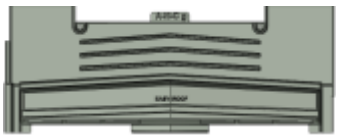

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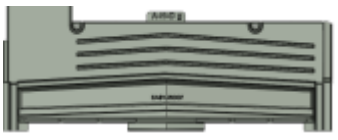


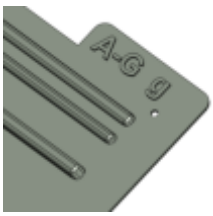
Film under the roof

From a 40 degrees slope, we require the use of a film under the roof before fixing the Easy roof integration system . This under roof film must comply with regulations. Under 40 degrees please refer to roofing regulations

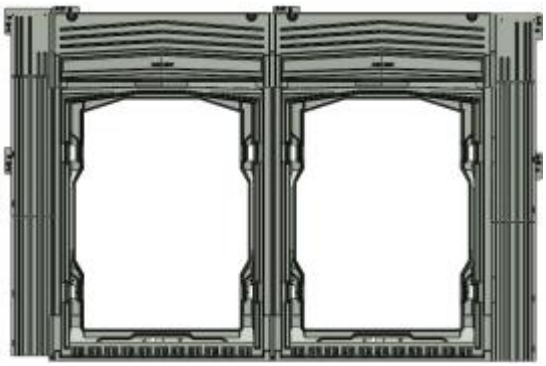
GLOSSARY

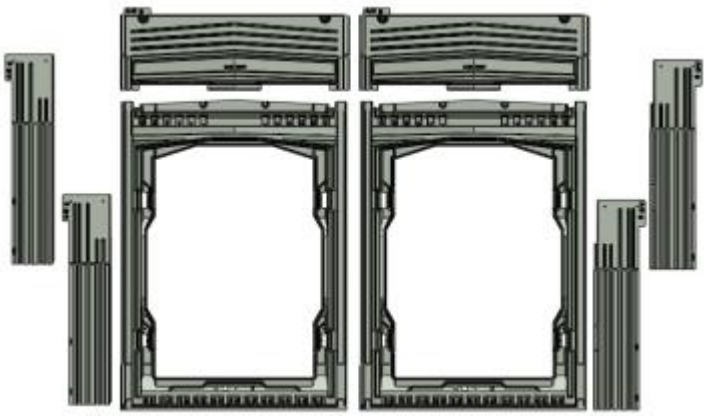
Marking of moulded parts – capital letters	Definition
I	(I)nferior frame
C	(C)entral frame
S	(S)uperior frame
SI	(S)uperior and (I)nferior frame
A-D	Right flashing
A-G	Left flashing
A-H	Top fasling
A-H-D	Top right flashing
A-H-G	Top left flashing
A-H-C	Top central flashing

Marking of moulded parts – small letters	assembling	Definition
a	Portrait	size frame 1580 x 808
b	Portrait	size frame 1650 x 993
c	Portrait	size frame 1351 x 1001
d	Portrait	size frame 1676 x 1001
f	landscape	size frame 1580 x 808
g	Portrait	size frame 1257 x 997



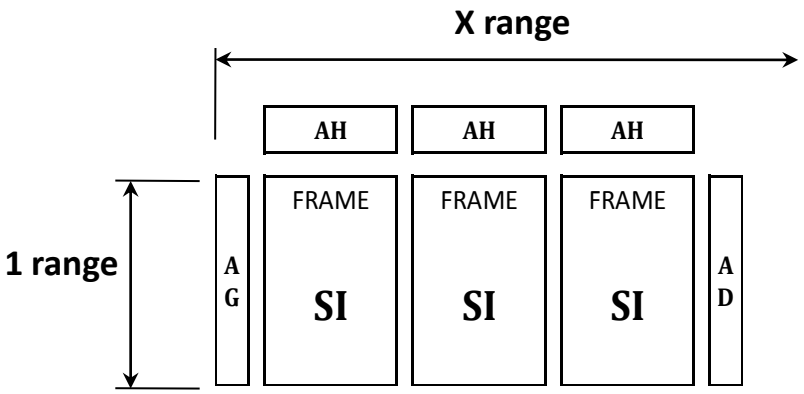
2 lateral flashings by frame height

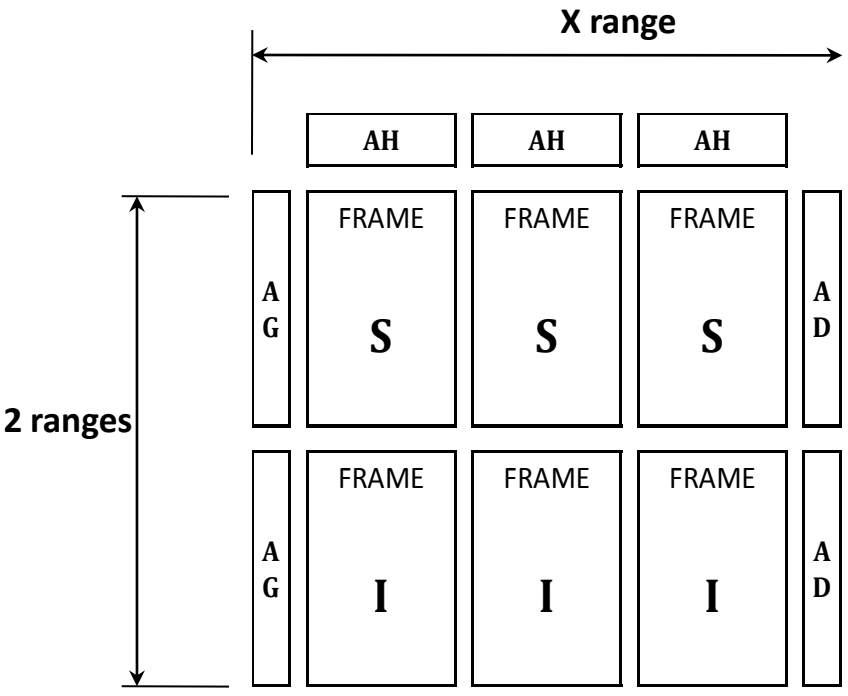




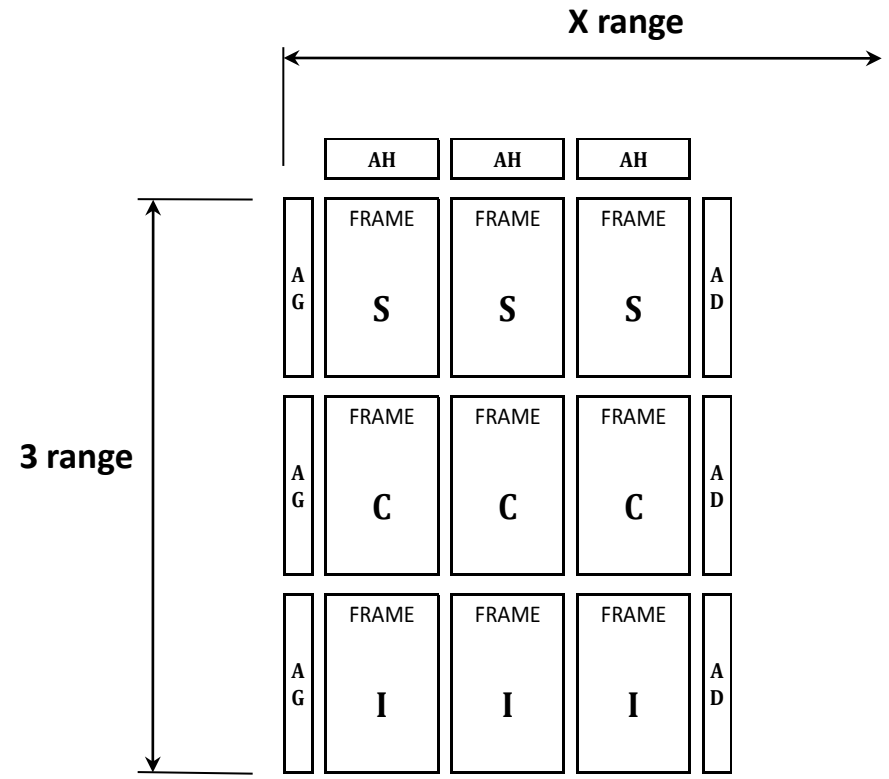
(exploded view)

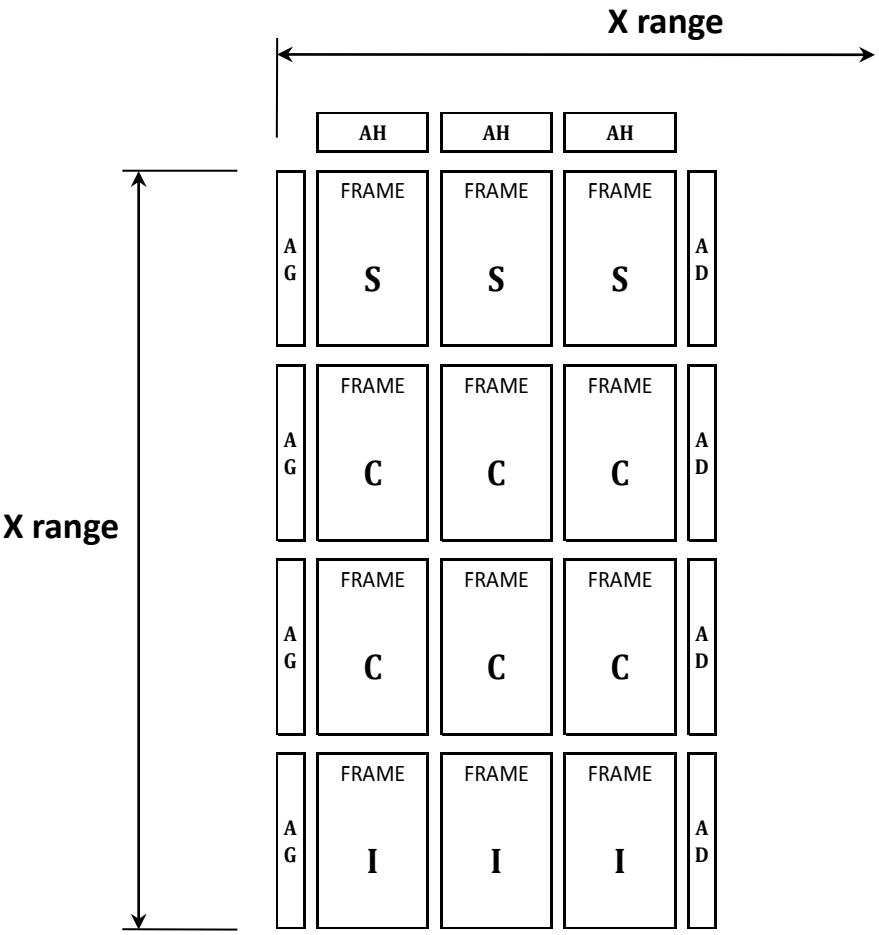
Using different frames according to the configuration of the photovoltaic field





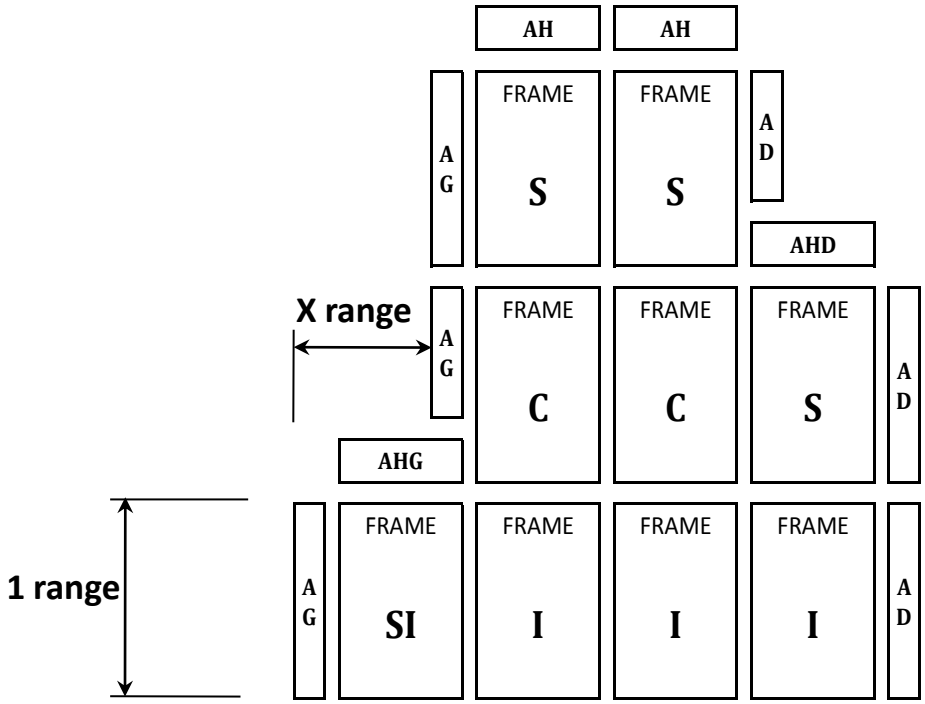
Using different frames according to the configuration of the photovoltaic field



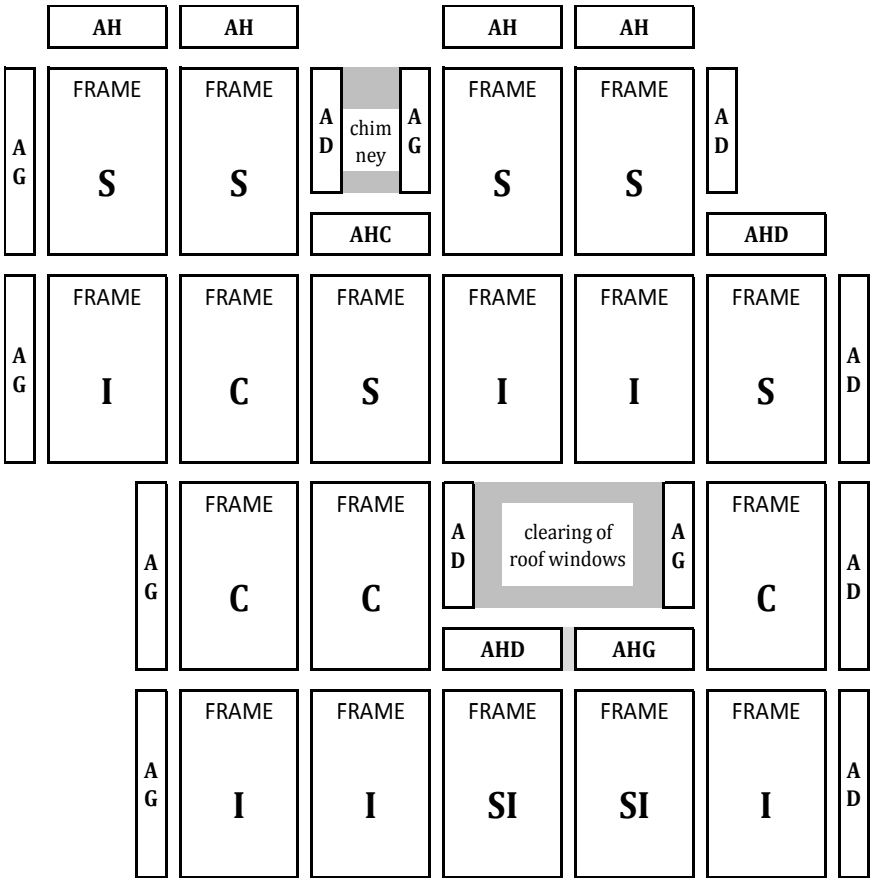


Model “g” 1257 x 977 Portrait

Using different frames according to the configuration of the photovoltaic field

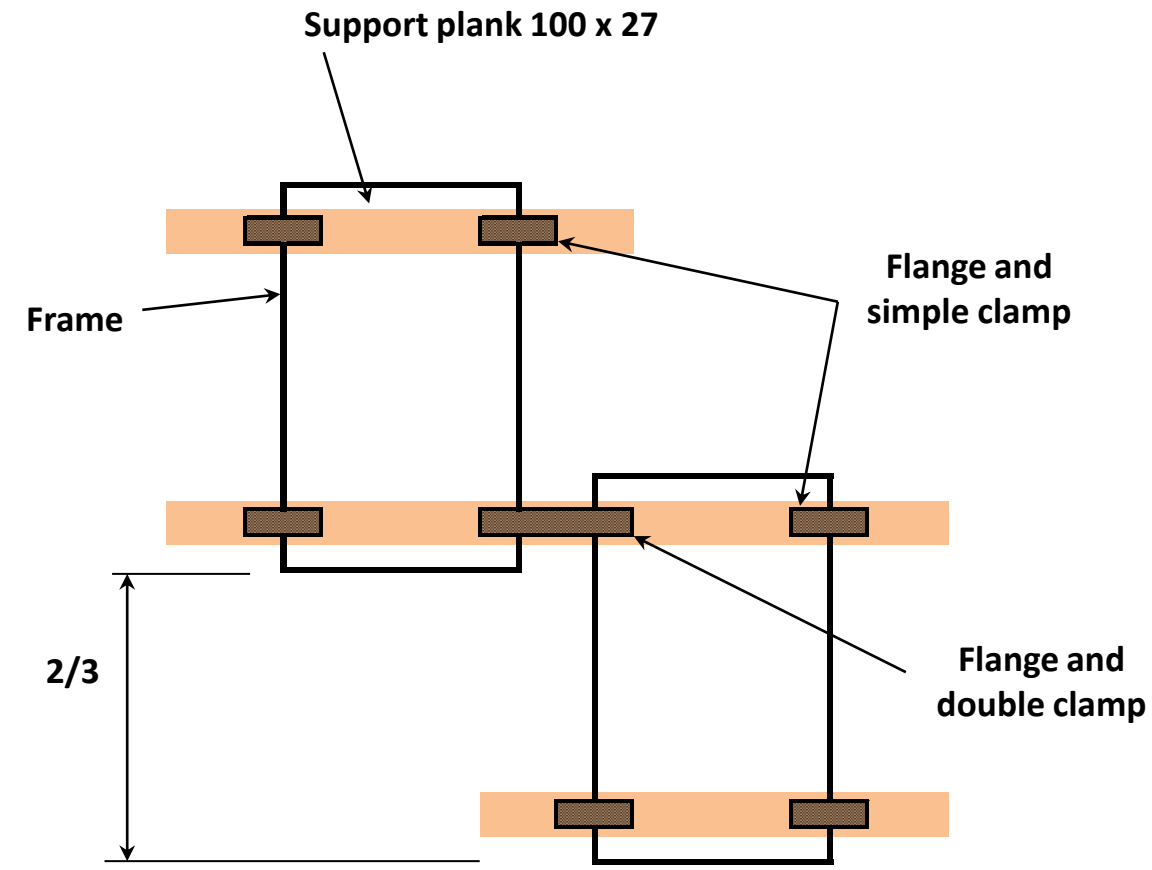


Multiple combination for the clearing of roof windows, or chimney

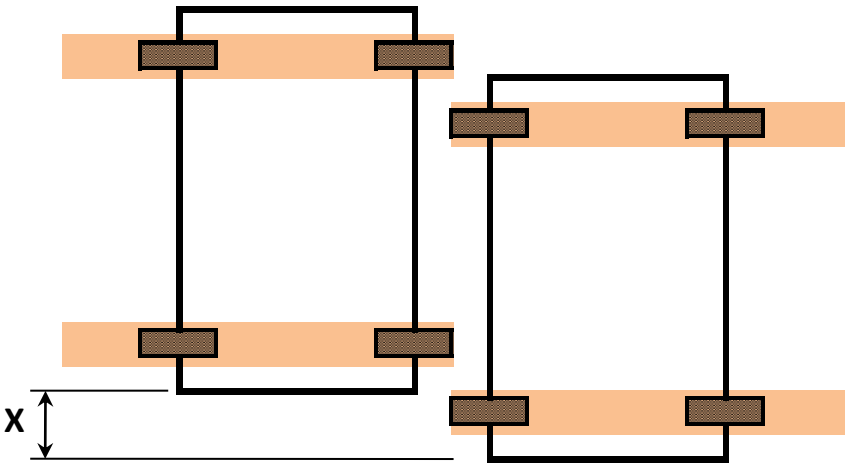


Possible shift from modules in vertical position

Constant shift

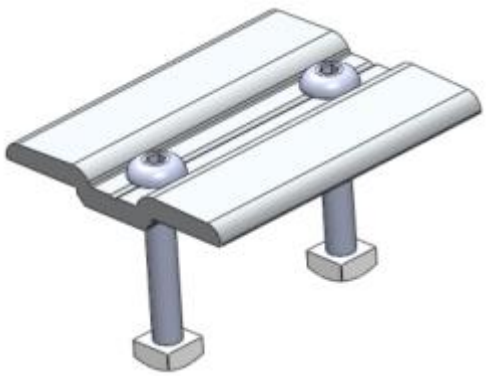


Variable shift

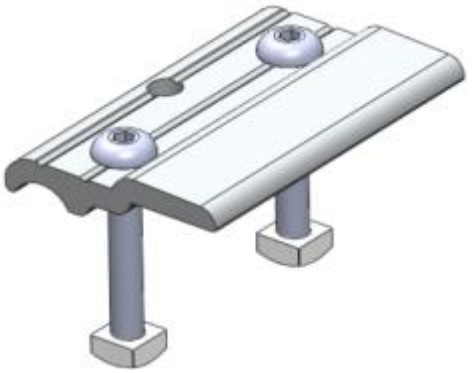


Parts to prepare before assembling the kit

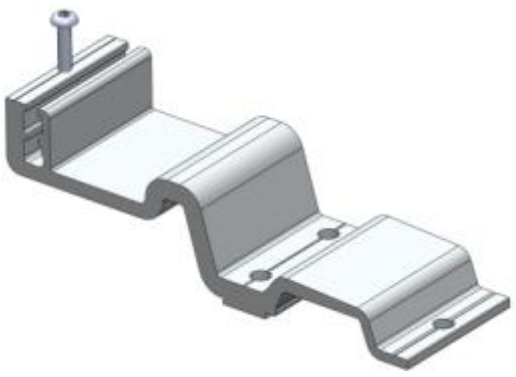
1) flange preparation



Pre-assemble the double flanges (7) with the M5*35 TBHC (13) screws and with square nuts (14)



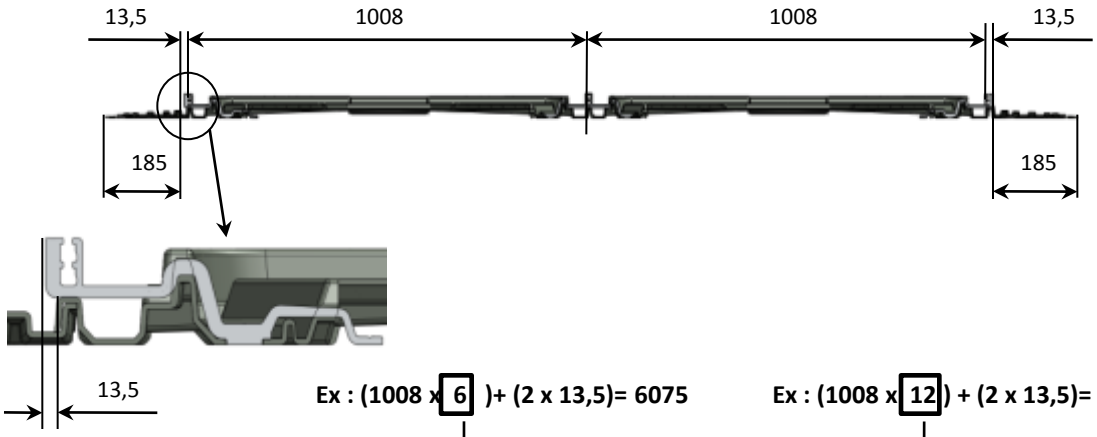
Pre-assemble simple flanges (8) with the M5*35 TBHC (13) screws and square nuts (14)



Pre-assemble each simple clamp (10) with M5*35 TBHC (13) screws

Dimension of the photovoltaic field
Visible part of installation

Dimension Features of photovoltaic field	
Nby Number of modules in the rake direction	
Nbx number of modules perpendicular to the rake	
Height of the field (mm)	(1268*Nby)+140
Width of the field (mm)	(1008*Nbx)+(2 x 13,5)



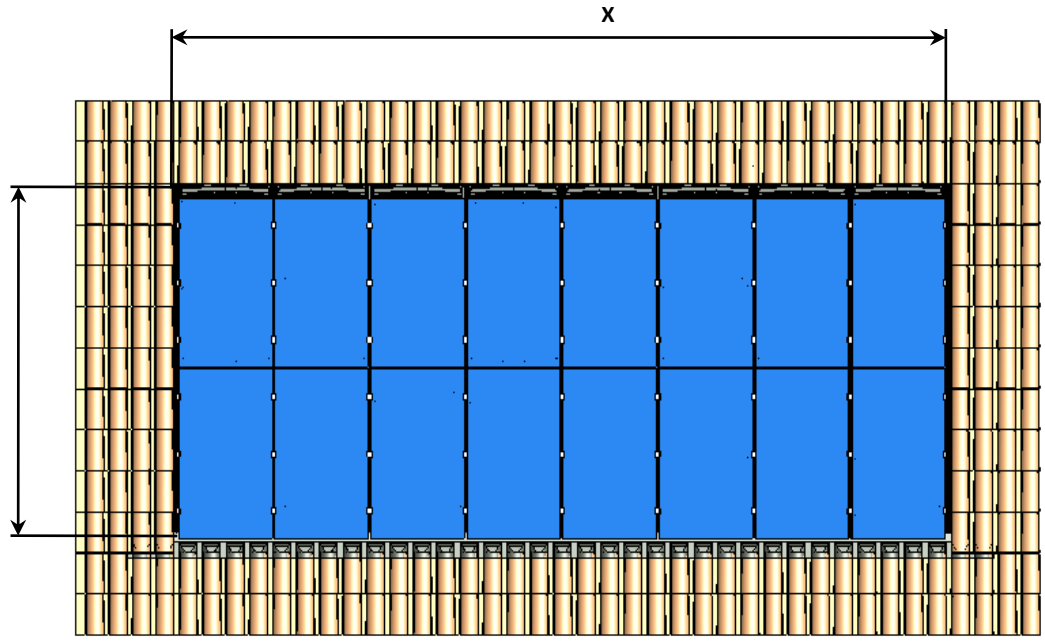
Ex : (1008 x 6)+ (2 x 13,5)= 6075

Ex : (1008 x 12) + (2 x 13,5)= 12123

	Module number in length															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
X	1035	2043	3051	4059	5067	6075	7083	8091	9099	10107	11115	12123	13131	14139	15147	16155

Ex : (1268 x 3) + 140= 3943

		Cote Y
Module number in height	1	1407
	2	2675
	3	3943
	4	5211
	5	6479
	6	7747
	7	9015



Dimension of the Easy - Roof system

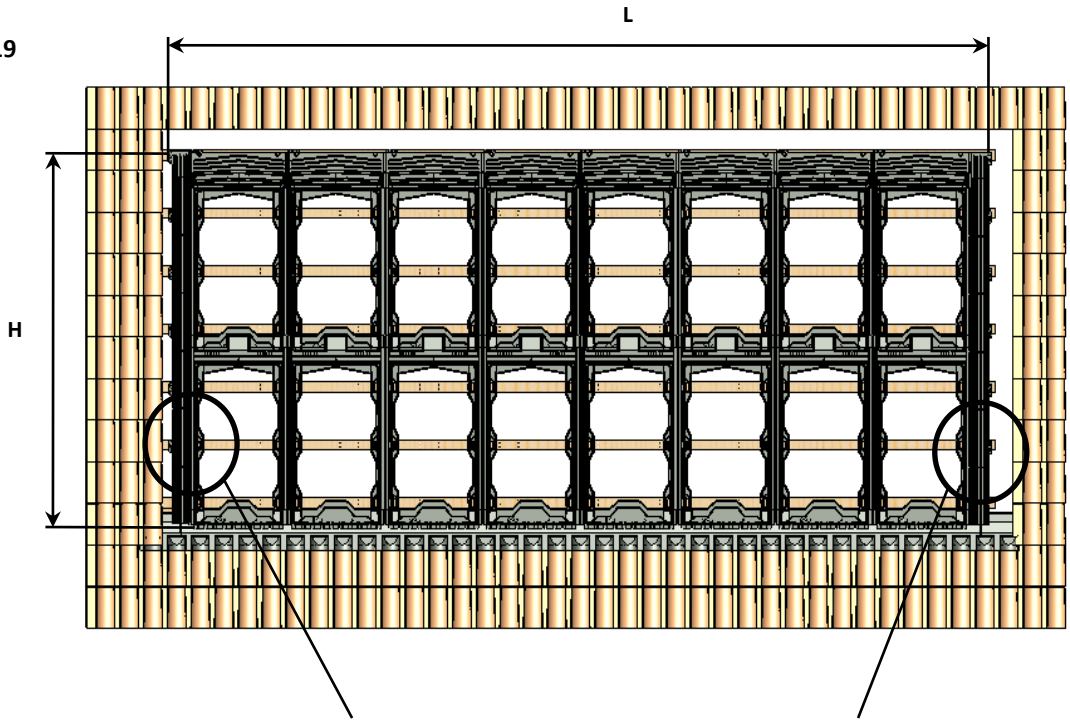
Ex :(1008 x 3)+ (2 x 13,5) + (2 x 185) = 3421

Ex : (1008 x 12) + (2 x 13,5) + (2 x 185) = 12493

	Module number in length															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L	1405	2413	3421	4429	5437	6445	7453	8461	9469	10477	11485	12493	13501	14509	15517	16525

Ex : (1268 x 3)+ 315= 4119

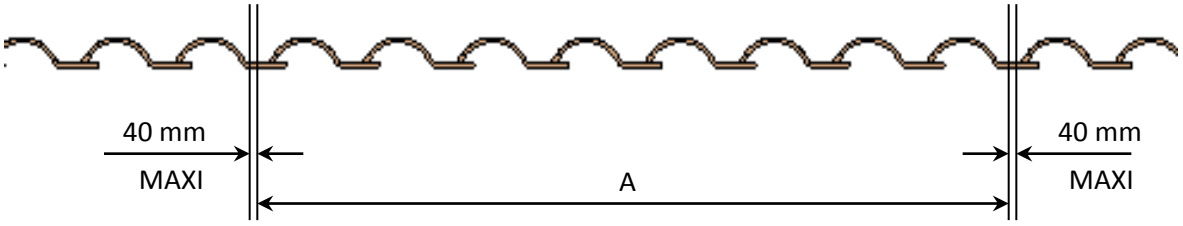
Module number in height	H
1	1583
2	2851
3	4119
4	5387
5	6655
6	7923
7	9191



The length of the wood 100x27 is the same as the measurement L + sufficient length on each side for being in support on the rafters exterior to the frame

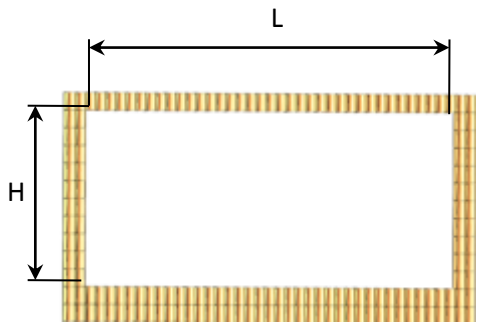
Position of the field on the roof

1) Looking for the position of the photovoltaic field



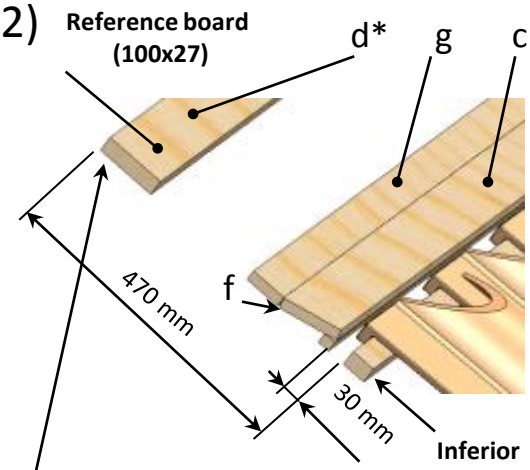
The measurement A should be positioned on the concave part of the tiles.
A > measurement X (for X value see on page 10)

1)



Remove the tiles from the photovoltaic field, dimensions L x H (for L and H see page 11)

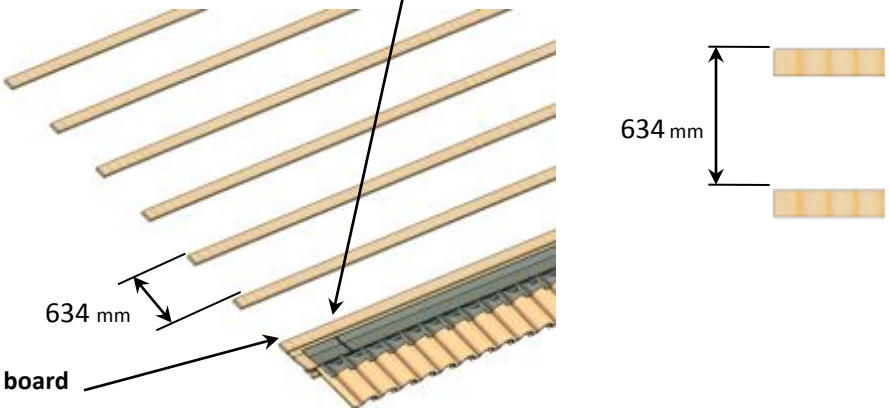
2)



Put the decking of the verge. screw it with stainless-steel screws 5*60 with countersunk head

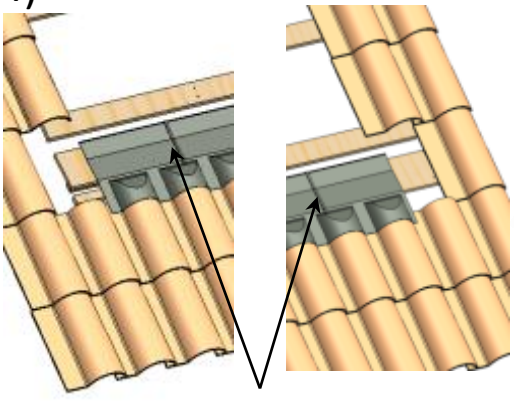
*** Nomenclature reference**

3)



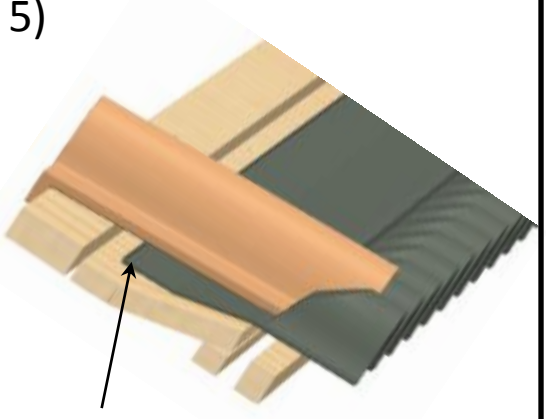
Put the horizontal decking for the frame support with a number of boards 100*27 equal to (2*modules Numbers PV) +1 for the top flashing support. The board's step is 634 mm. Put the verge (recommendation 320 mm mini)

4)



Do not stick the verge to the extremities in order to make a fold when fixing the flashings

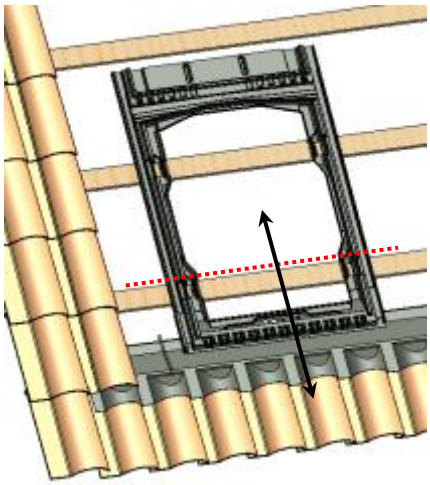
5)

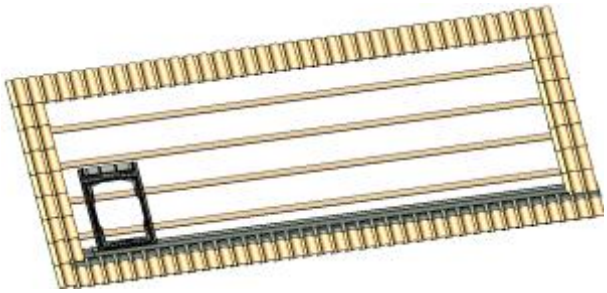


Do a return on the verge

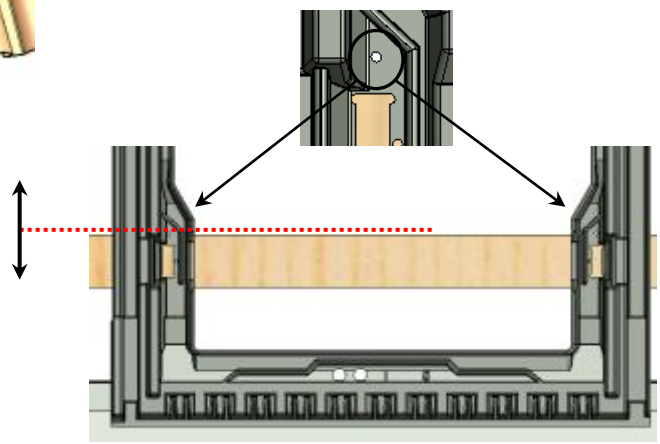
Stick the verge on the boards and give it the shape of the tiles

6)



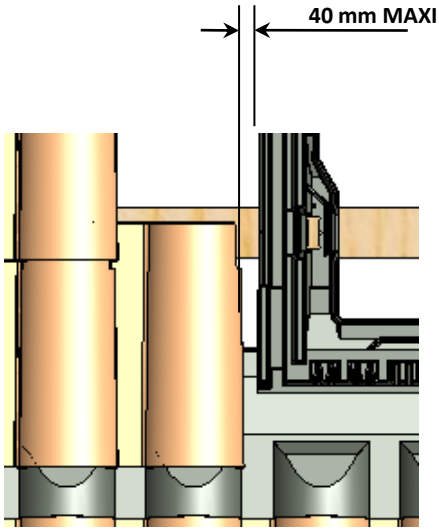


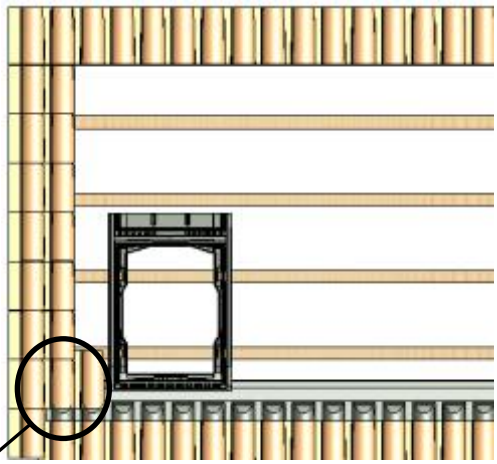
Put two screws of 6 mm for frame positioning, they will be removed afterwards



Position the inferior frame (2) in the rake direction using two screw 6 mm in indicated places and lean them against the board 100*27

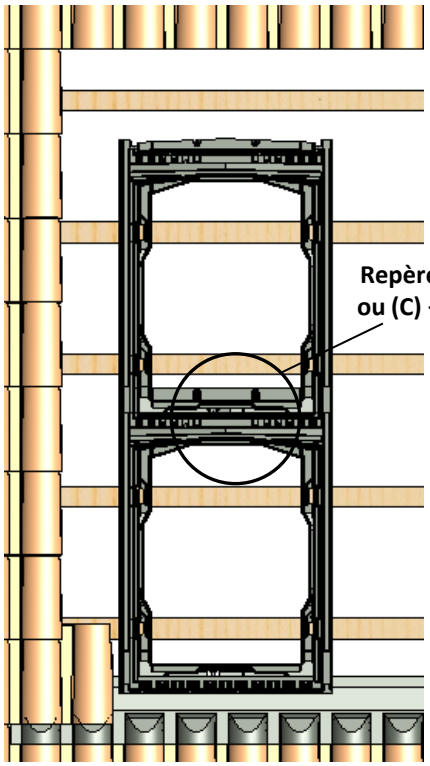
7)





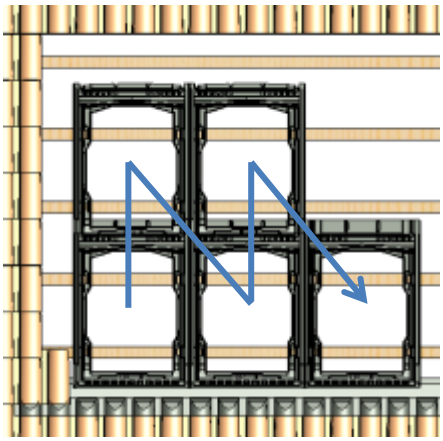
Re-position the first tile in the left inferior corner, and position the first inferior frame at 40 mm max from the edge of the tile

8)



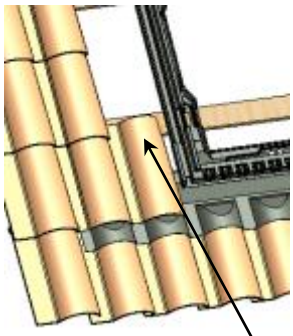
Insert the superior frame (1) (S) for 2 vertical modules or central frame (3) (C) then the superior frame (1) (S) for 3 vertical modules

9)



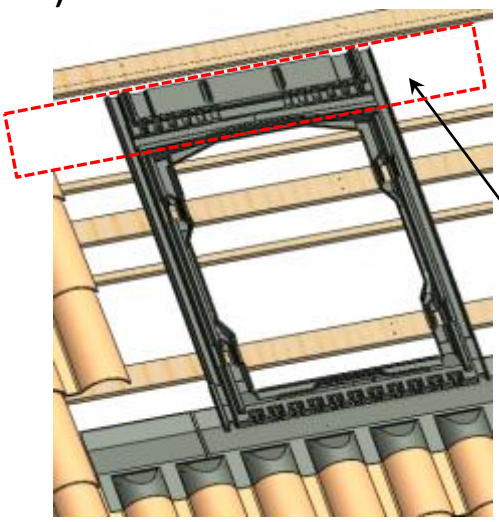
Insert the next column starting with the inferior frame (2) (I) by using two screws to align the frames (2) (I) as shown on picture N°6 page 13

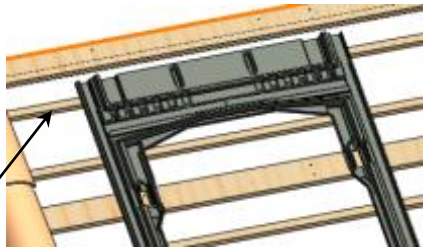
10)



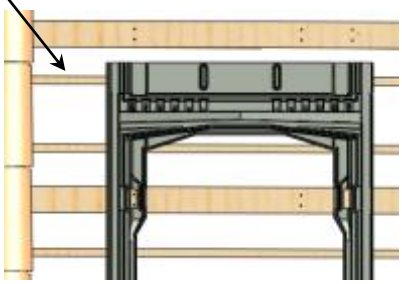
Remove the tile used for positioning the first frame

11)

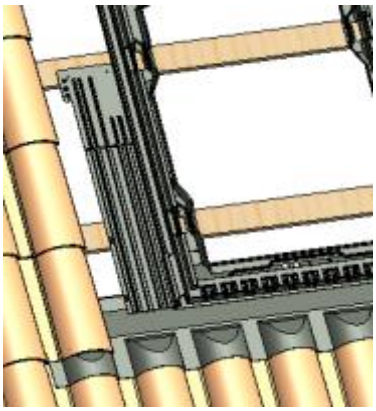




If the superior part of the frames does not lay on existing batten, add one 30 x 27 batten on the whole width of the field

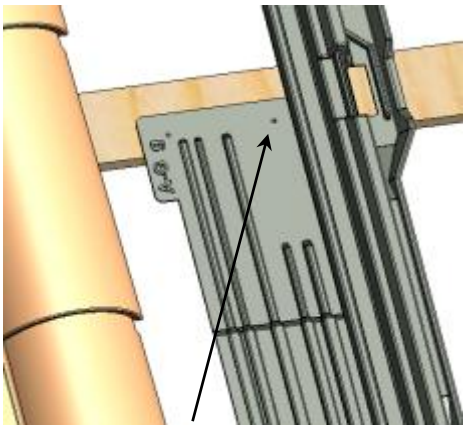


12)



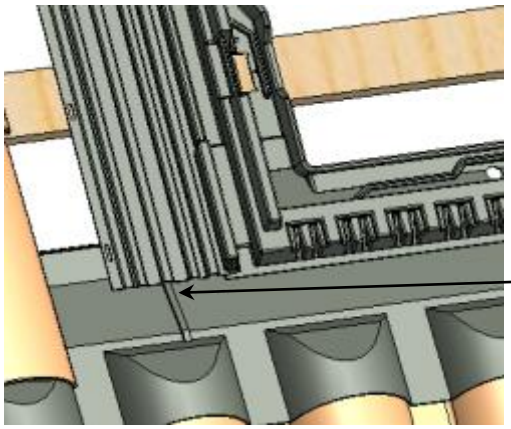
Lift gently the frame and fit the first left flashing (5)

13)



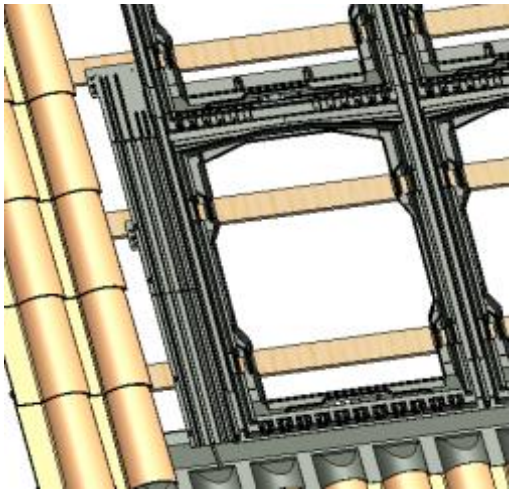
Put a stainless-steel domed head screw 5x30 (h)

14)

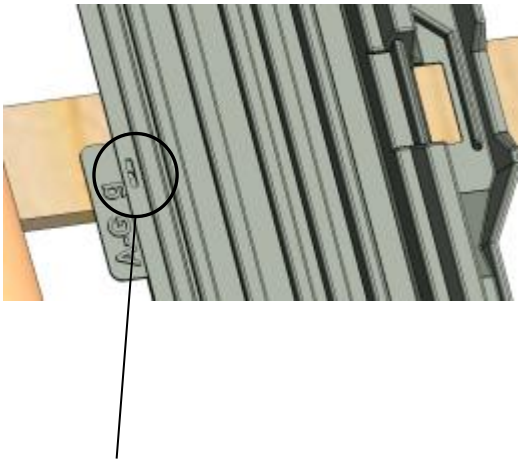


Make a 2 cm high weatherstrip with the verge at the extremity of the verge in front the flashing

15)

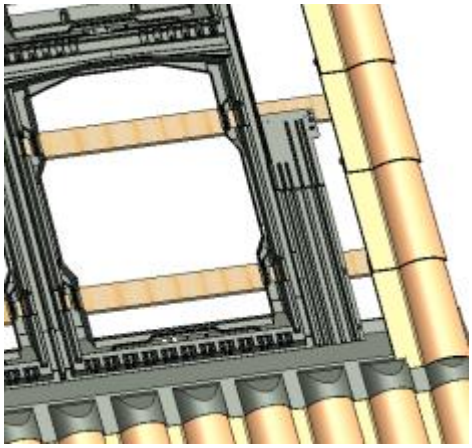


Fix the following flashings by repeating the operations 12 and 13



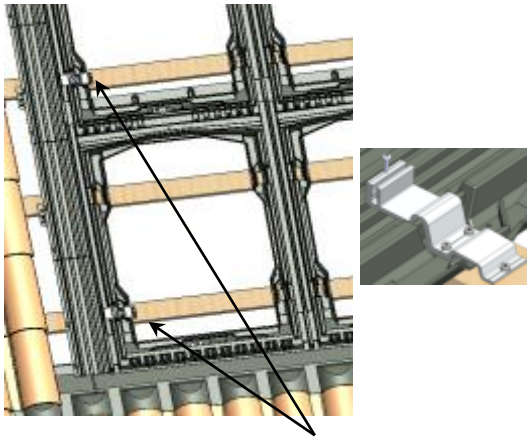
Center the oblong of the superior flashing on the inferior flashing hole, put a screw TB 5x30 stainless-steel (h) and unscrew it one turn

16)



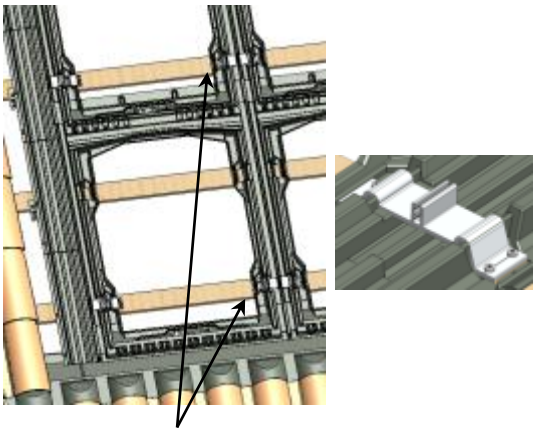
Place the right flashing by repeating the steps 12 to 15 page 15

17)



Position the inferior simple fixing clamps (10) screw with the stainless-steel 6*40 screws (12)

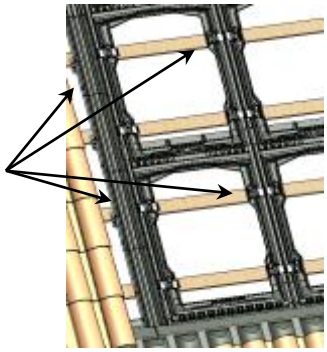
18)



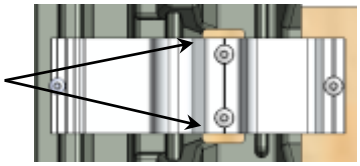
Position the inferior central double fixing clamps (9) and screw with stainless-steel 6*40 screws (12)

19)

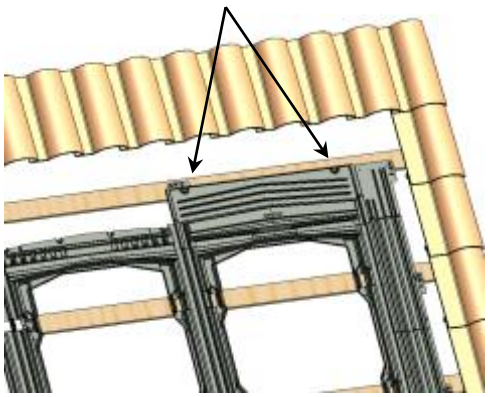
Then fix all the remaining simple and double clamp. Connect the earth cables for two PV modules to a double fixation clamp



Centre the clamp in the positioning hole (for dilatation)

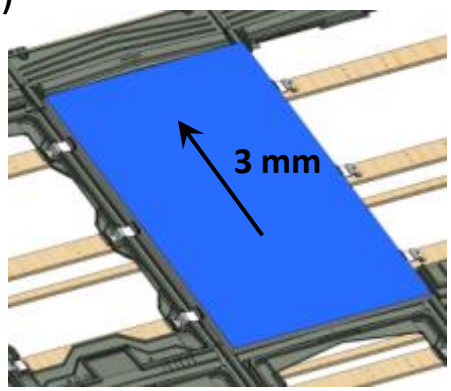


20) TB 5x30 stainless-steel screw (h)



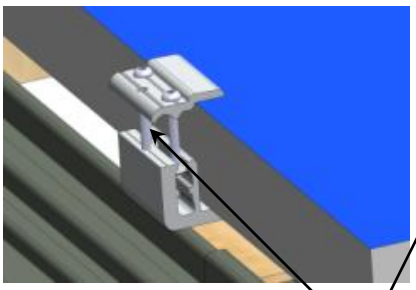
Fit the top flashings (11) starting on the right using stainless-steel domed head TB 5*30 (h) and unscrew 1 turn

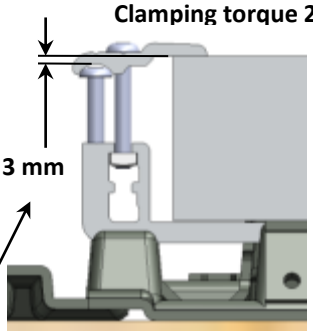
21)

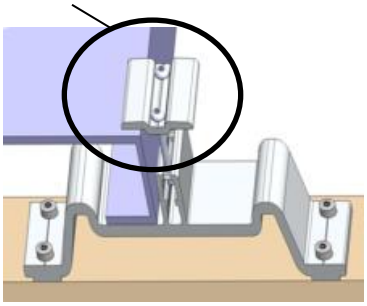


Position and fit the photovoltaic modules, before clamping rise the PV by approx 3 mm to avoid it to butt up against the top (gap necessary for dilatation)

22)



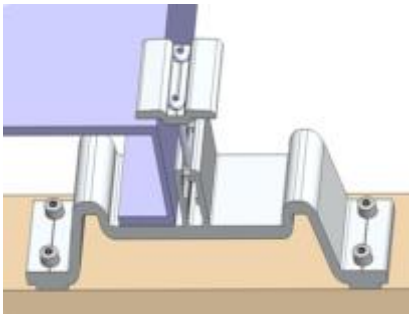




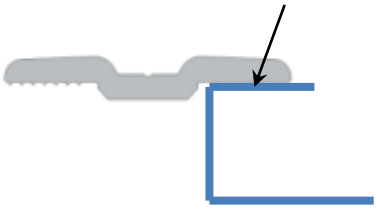
Fix the butt screw at 3 mm under the height of photovoltaic module

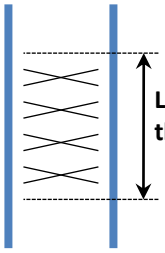
Fix the photovoltaic modules with the flanges, use the simple flanges (8) of the edge of the fields and the double flanges (7) for the centre, using M5*35 TBHC (13) and square nuts (14). Before tightening, rise the PV by a few mm so that it does not lean against the top

23)



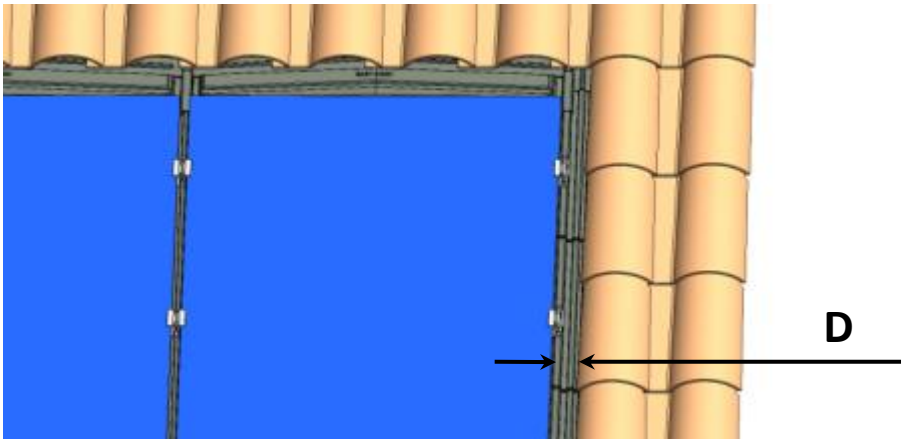
Draw a grid here on the module frame with the scriber





Make a grid by scratching the PV module frame where the clamp connected to earth is located. This enables the connexion of the frames to the earth via the grooves located on the clamp. Then make sure that the connection is done between the PV module and the double flange (7) and that this connection is lower 0.1 Ohms.

24)



You only have to put back the tiles by covering at the maximum the top flashings (11). For the side flashing (5) and (6) covering the D measurement have to be lower than 40 mm as indicated on the diagram