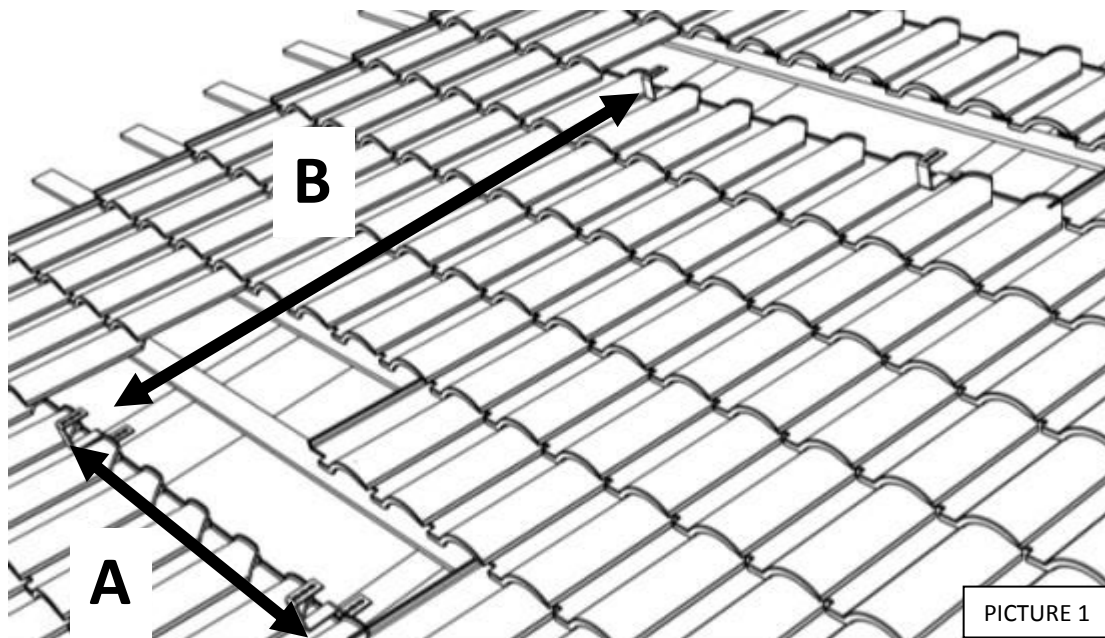
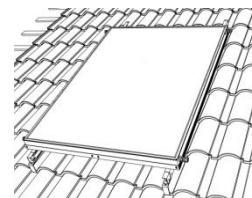
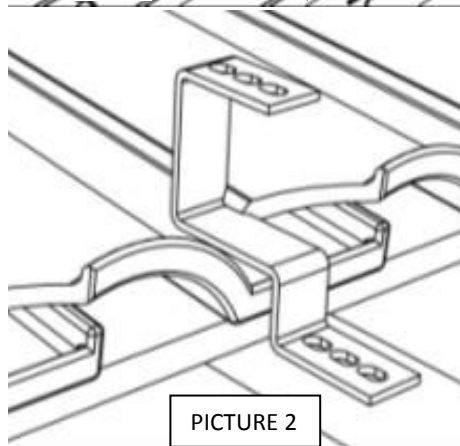


XII) INSTALLATION OF STAND ALONE COLLECTOR ON INCLINED ROOF

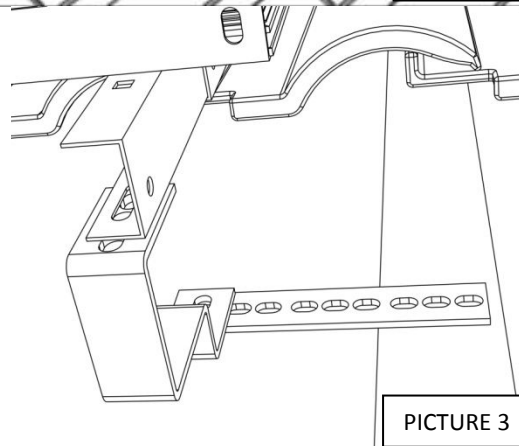
CAUTION: Check the capacity of the roof structure to bear the solar heater load in operation with the constructor of the building or contact the local authorities.



PICTURE 1



PICTURE 2



PICTURE 3

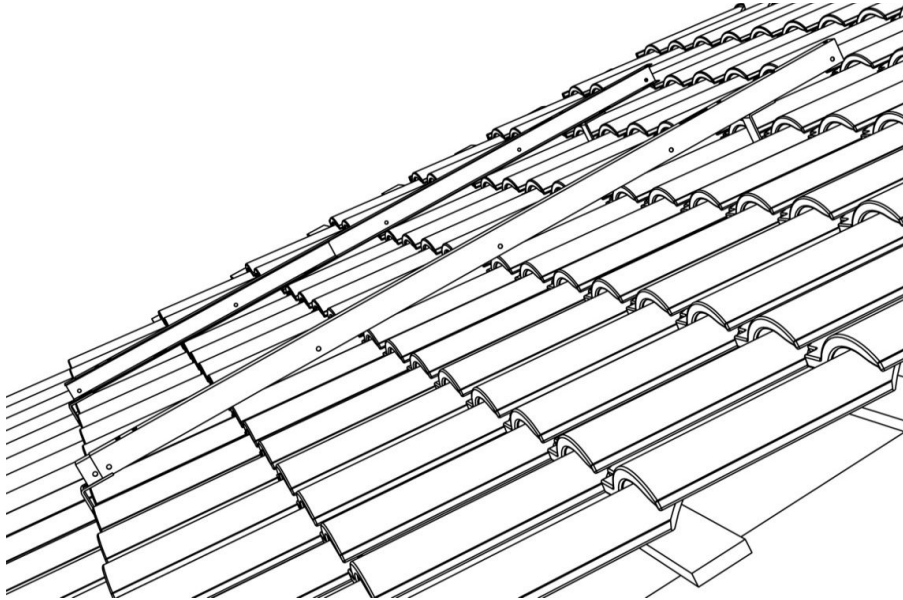
STEP 1

Uncover the roof tiles at the lowest and the highest part of the area where the thermosiphonic system will be installed. Install the 4 AGG brackets (or the AT – triangular type or the AR – special screw, if needed) on the vertical, load bearing beams with appropriate screws, as shown on the drawing above (pic.2). Make sure that the distances A and B (pic.1) between any of the top holes on each bracket are set according to Table 1. You may take advantage of the fact that there are 3 holes on the top of each bracket to accommodate for different tile sizes. In case the AGG brackets do not coincide with the roof beams, use the additional 20 cm extension piece for AGG brackets (pic.3).

TABLE 1

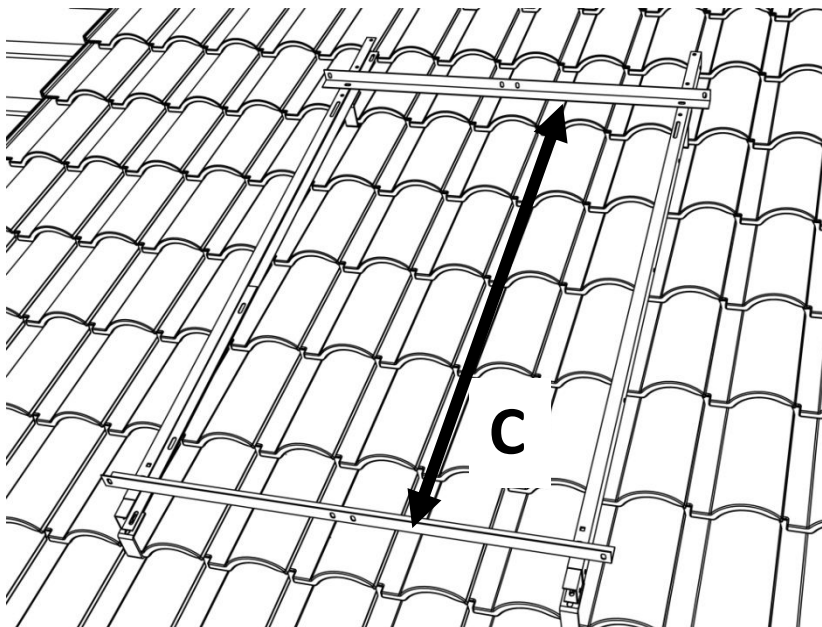
COLLECTOR (S)	M4-200	M4-210	M4-260	M4-260H	M4-300	M4-300H	2x M4-200	2x M4-210	2x M4-260
DIMENSION A [MM]	940	940	940	940	940	940	1160	1160	1160
DIMENSION B [MM]	2000	1930	2050	1700	2050	1770	2000	1930	2050

Note: The dimension B may be extended up to 700 mm so that the AGG enter the finishing tiles.



STEP 2

Replace the roof tiles and install the two longitudinal base sections onto the AGG brackets. Make use of the telescopic feature of the sections to adjust them to the appropriate length.

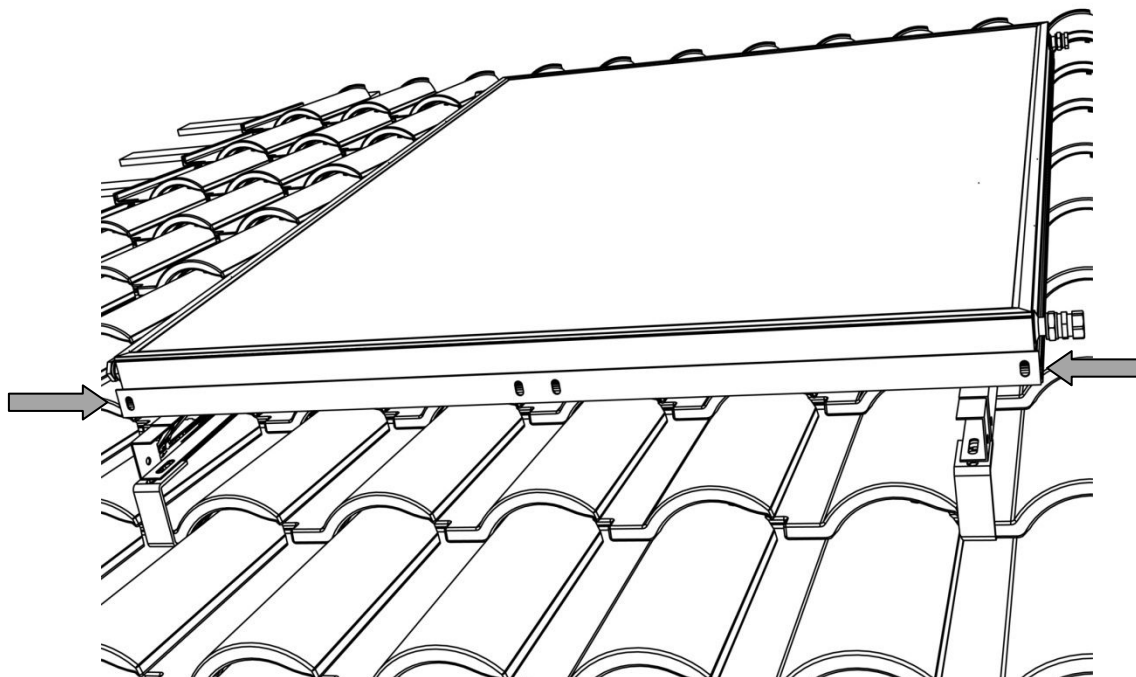


STEP 3

Install the two L beams supporting the collector. The distance C between the vertical mounting faces of two beams should be set according to Table 2 to fit the height of the collector. Secure only the bottom beam and slide the top beam upwards to ease collector installation.

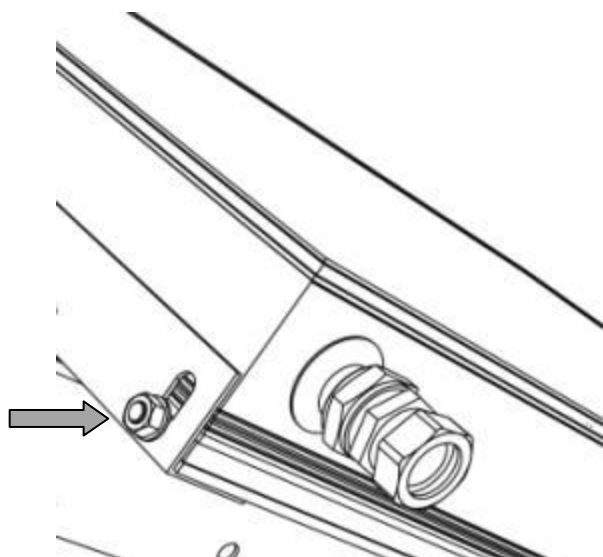
TABLE 2

COLLECTOR (S)	M4-200	M4-210	M4-260	M4-260H	M4-300	M4-300H	2x M4-200	2x M4-210	2x M4-260
DIMENSION C [MM]	2070	1711	2121	1244	2011	1514	2070	1711	2121
	ES 195	ES 200	ES 250				2x 200ES		
DIMENSION C [MM]	1503	2006	2006				2006		



STEP 4

Place the collector(s) on the base assembly. Tighten the bottom securing bolts against the bottom support beam.



STEP 5

Slide the top support beam against the collector and tighten the support bolts. Tighten the support beam onto the longitudinal base sections.

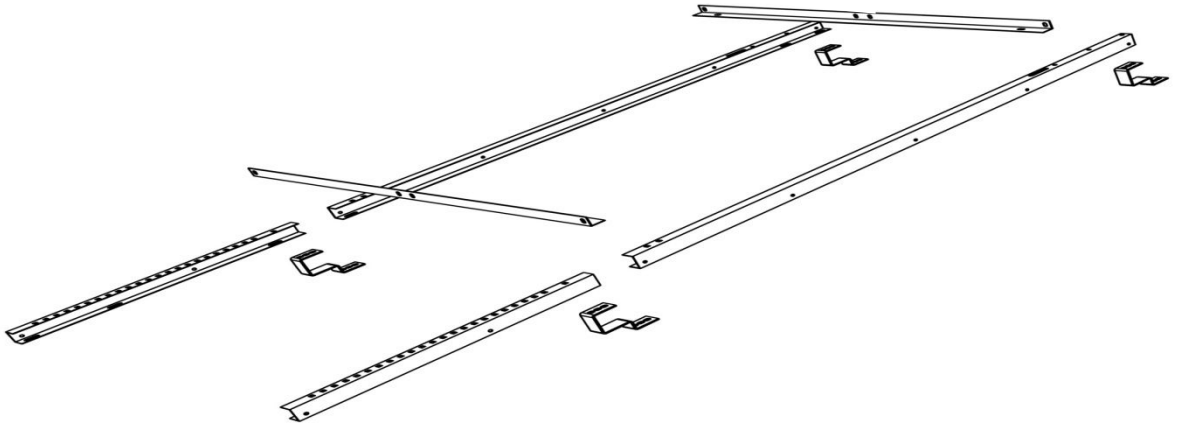


Figure 1: Components of the inclined roof base system.

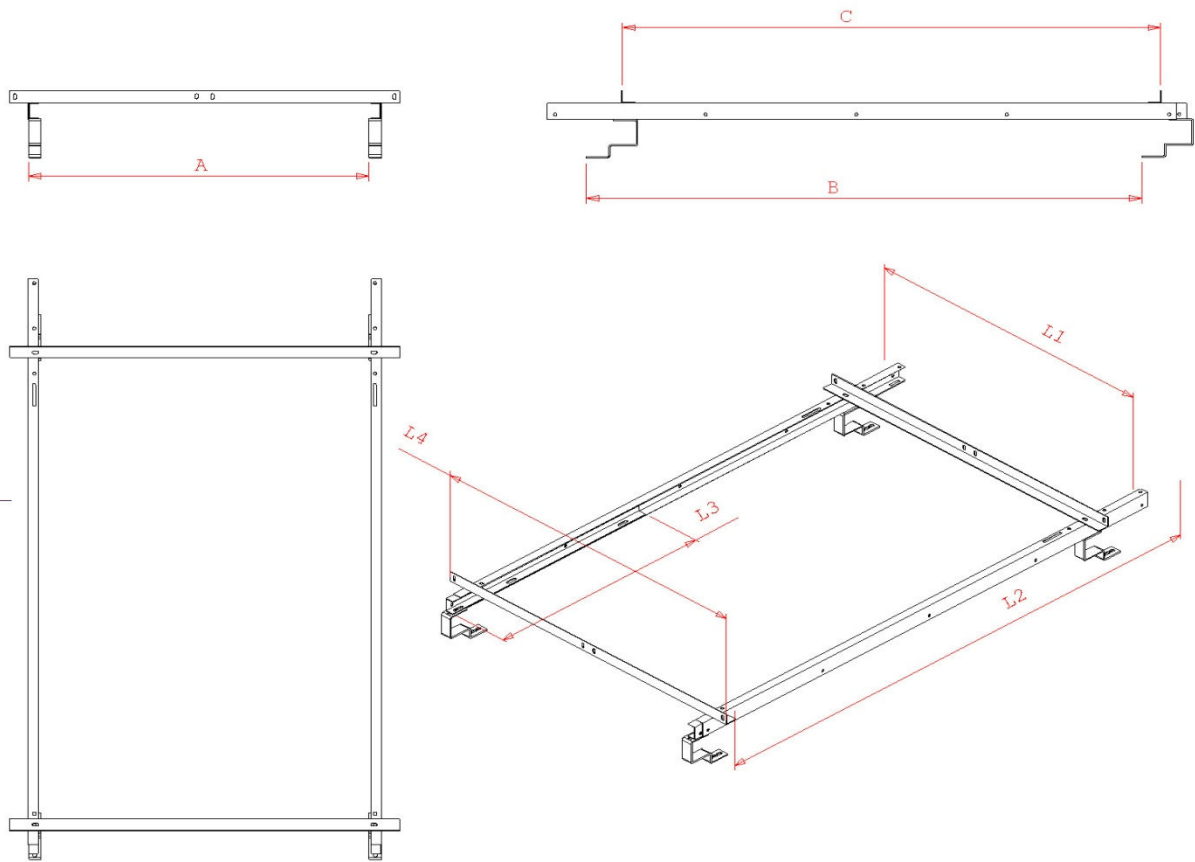


Figure 2: Installation and base system dimensions.

COLLECTOR (S)	M4-200	M4-210	M4-260	M4-260H	M4-300	M4-300H	2x M4-200	2x M4-210	2x M4-260
DIMENSION A [MM]	940	940	940	940	940	940	1160	1160	1160
DIMENSION B [MM]	2000	1930	2050	1700	2050	1770	2000	1930	2050
DIMENSION C [MM]	2070	1711	2121	1244	2011	1514	2070	1711	2121
COLLECTOR (S)	ES 195	ES 200	ES 250				2x 200ES		
DIMENSION A [MM]	940	940	940				1160		
DIMENSION B [MM]	1770	2000	2000				2000		
DIMENSION C [MM]	1503	2006	2006				2006		

COLLECTOR(S)	BASE DIMENSIONS			
	L1	L2	L3	L4
M4 200	974	2000	866	1240
M4 210	974	2000	866	1240
M4 260	974	2000	866	1240
M4 260H	974	1720	866	1240
M4 300	974	2000	866	1240
M4 300H	974	2000	866	1240
2 x M4 200	1194	2000	866	2000
2 x M4 210	1194	2000	866	2000
2 x M4 260	1194	2000	866	2000
195 ES	974	2000	866	1240
200 ES	974	2000	866	1240
250 ES	974	2000	866	1240
2 x 200 ES	1194	2000	866	2000