Barilla Solar

Barilla F22 In-roof Mounting System

for Slate and Plain Tile Roofing

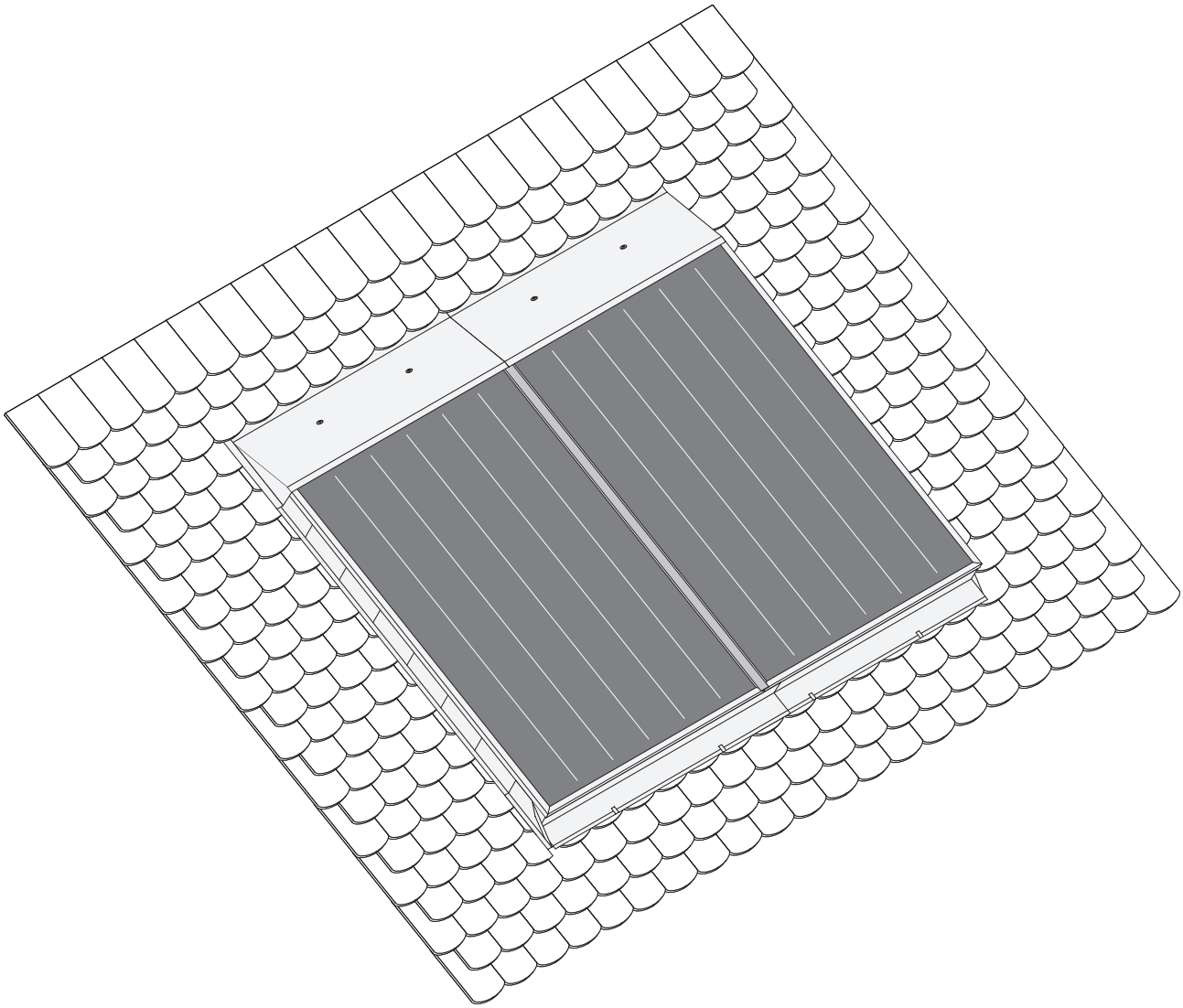

Figure 1 Partial view of roof integration with slate or plain tile roofing.

- For roof pitch > 25°
- Weather proof integration with durable aluminium cladding panels and aluminium skirting
- Pipe connections protected under upper cladding sheets

Content

1. General Safety Notes

The safety notes are supposed to protect against dangers related to the installation. Pay attention to the following symbols!

1.1 Symbols

DANGER of possibly serious personal injury

WARNING against material damage
Follow installation steps as prescribed

NOTE as additional information

1.2 Qualification of the Installer

Setup, installation and proper commissioning of the solar installation must be carried out by a qualified installer based upon the installation instructions. Failure to comply will render the warranty void.

1.3 Intended Use and Application

1. Proper Outdoor Storage of Collectors
Lay down collectors with glass up. Avoid direct ground contact (e.g. underlay square timber). Avoid scratches on glass panes by using spacers between collectors (e.g. wooden laths).
When leaning collectors against walls or similar, use a minimum inclination of 15° and apply spacers.
Do not use cardboard as underliner. If incorrectly stored, humidity can enter the collectors through the air vents.

2. Check for Proper Roof Construction
The substructure must consist of a material resistant to vapour diffusion with a properly installed back ventilation system underneath the collectors (diffusion proof sarking membrane, sufficient ventilation of the roof around collector).

3. Snow and Wind Loads
Comply with local regulations and norms related to snow and wind loads (within the EU to EN 1991-1-4 (wind actions) and EN 1991-1-3 (snow loads).
The standard in-roof system originally was designed for the following conditions: inland continental Europe up to 800 m ASL, unexposed location, max. building height of 20 m, all wind zones. Please contact our technical department for information about other cases.

4. Remove Plastic Caps
Before transferring the collectors to the roof, remove protective plastic caps from the connections (risk of melting and possible damage to absorber)

5. Work with Sharp Edged Metal Sheets
Attention – danger of open injuries!

6. Observe Overheating Protection
In the case of roof heating centrals and when 4 or more collectors with AR glass are installed, the "Technical Information Solar Thermal Systems" must be followed to avoid damage to the solar circuit.

7. Preventing Frost Damage
After pressure testing and flushing, collectors cannot be completely emptied. Make sure that no pure water remains collector during risk of frost!

1.4 Norms and Accident Prevention

The installation must be carried out according to the construction site conditions, local regulations and applicable norms.
Especially observe EN 12976 and EN V 12977: Thermal solar systems and components.
During all work on collectors (e.g. installation, commissioning, maintenance etc.) the applicable accident prevention regulations must be observed.

1.5 Recycling Note

At the end of the long operational lifetime the valuable materials of the installation should be recycled in an environmentally sound manner. If recycling is not possible, Barilla will take the scrap material back.

2. Setup and Scope of Delivery

2.1 Basic Kit

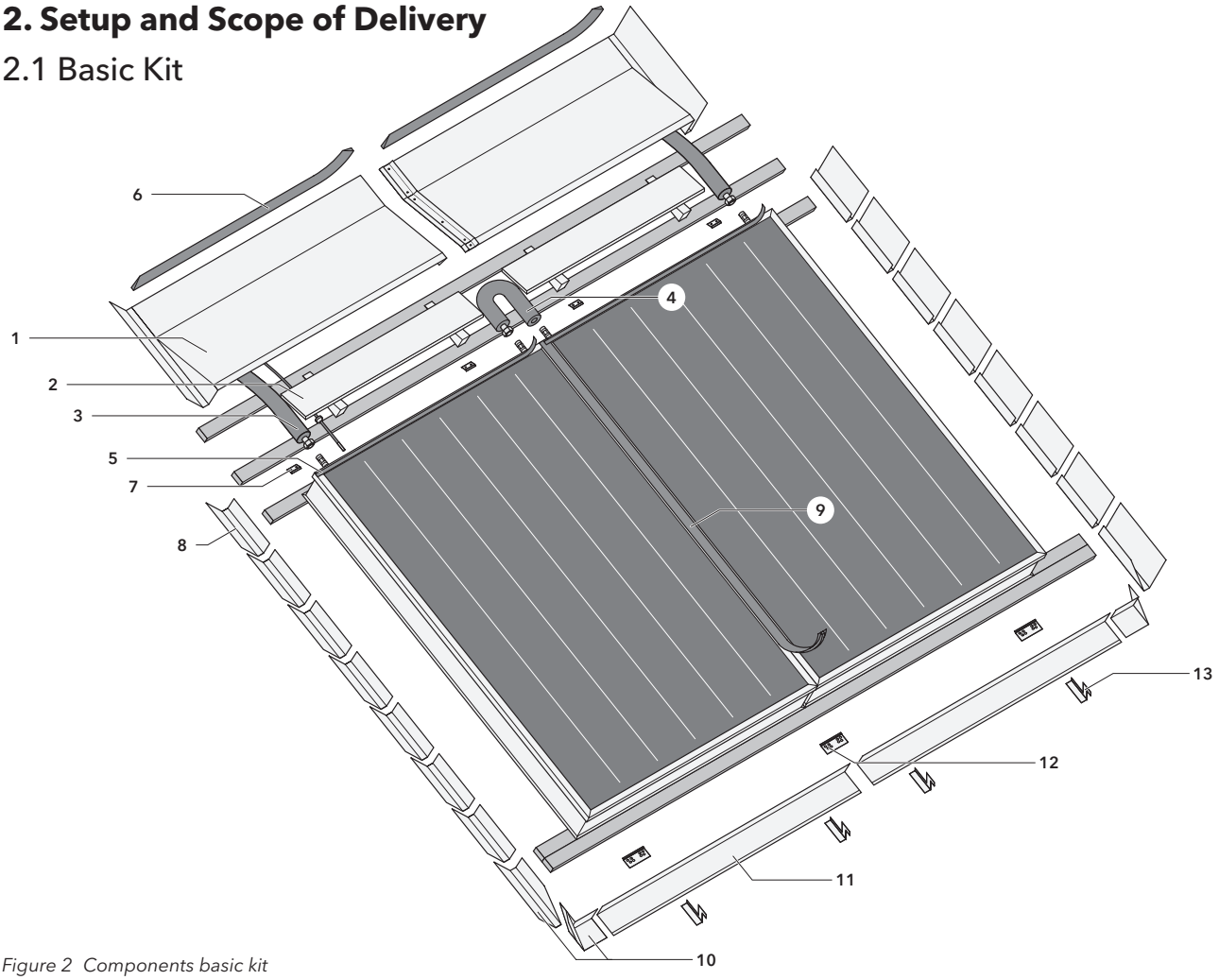

Figure 2 Components basic kit

Table 1 Fig. No.	Component	Quantity
1	Flashing sheet, top (1 x left, 1x right)	2
2	Wooden support	2
3	Collector connection hose + 1/2" to DN16 Adapter	2
4	Collector connection hose	1
5	Cellular rubber tape	2
6	Foam rubber tape (slate / plain tile)	Plain tile 3 / slate 0
7	Collector fixing clip, top	4
8	Side panels (slate / plain tile)	18/ 26
9	Silicone T-profile	1
10	Corner wedges bottom (1 x left, 1 x right)	2
11	Flashing sheets, bottom (1 x left, 1 x right)	2
12	Collector fixing clip bottom	3
13	Metal clip, bottom	4
	Gaskets ½" for collector connections	6
	Roof felt nails	35
	Self tapping screws 4 x 35 mm	24
	Self tapping screws 5 x 120 mm	4
	Sheet metal screws	4

2.2 Extension Kit

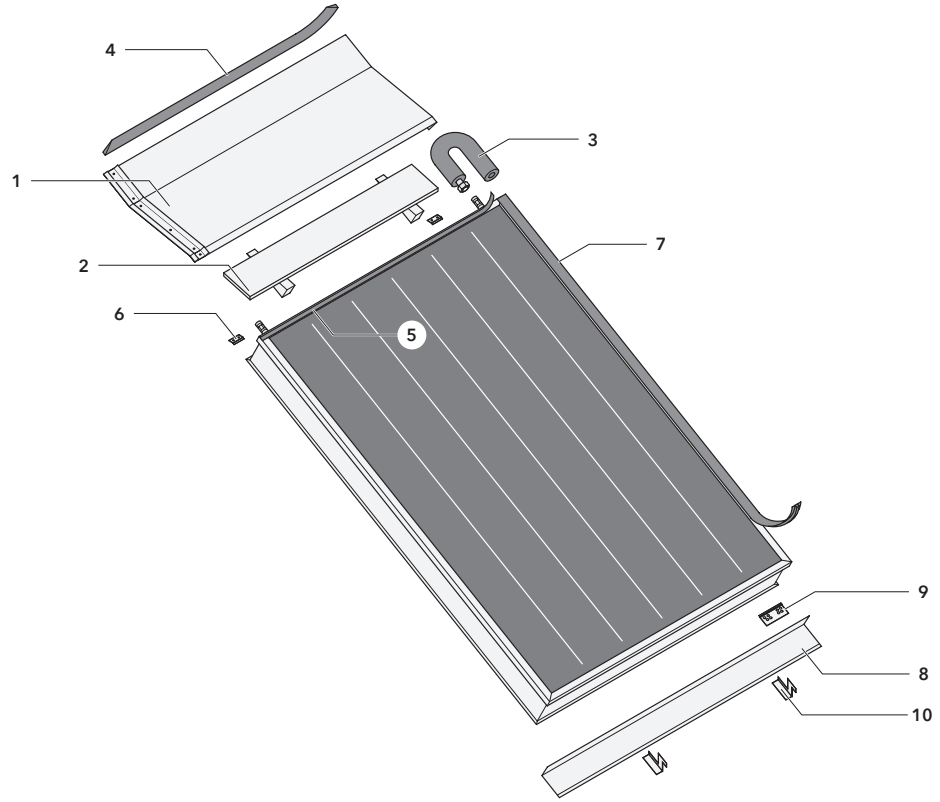

Figure 3 Components extension kit

Table 2 Fig. No.	Component	Quantity
1	Flashing sheet, top	1
2	Wooden support	1
3	Collector connection hose	1
4	Foam rubber tape	1
5	Cellular rubber tape	2
6	Collector fixing clip top	2
7	Silicone T-profile	1
8	Flashing sheet, bottom	1
9	Collector fixing clip bottom	1
10	Metal clip bottom	1
	Gaskets ½" for collector connections	2
	Roof felt nails	10
	Self tapping screws 4 x 35 mm	10
	Self tapping screws 5 x 120 mm	2
	Sheet metal screw	2

2.3 Installation Field

For plain tile or similar roofing use the existing roof battens in place as support construction. Affix the required additional laths according to the dimensions in figure 4.
For slate roofing without underlying roof battens install the collector fixing clips and all other components directly onto the base.

Ideally determine the installation field so that on one side there will be a distance of approx. 35 mm between collectors and roofing slates. On the other side cut tiles/slates to size. For large roofing areas it is recommended to average out the collector field.

Dimensions in millimetres (mm)

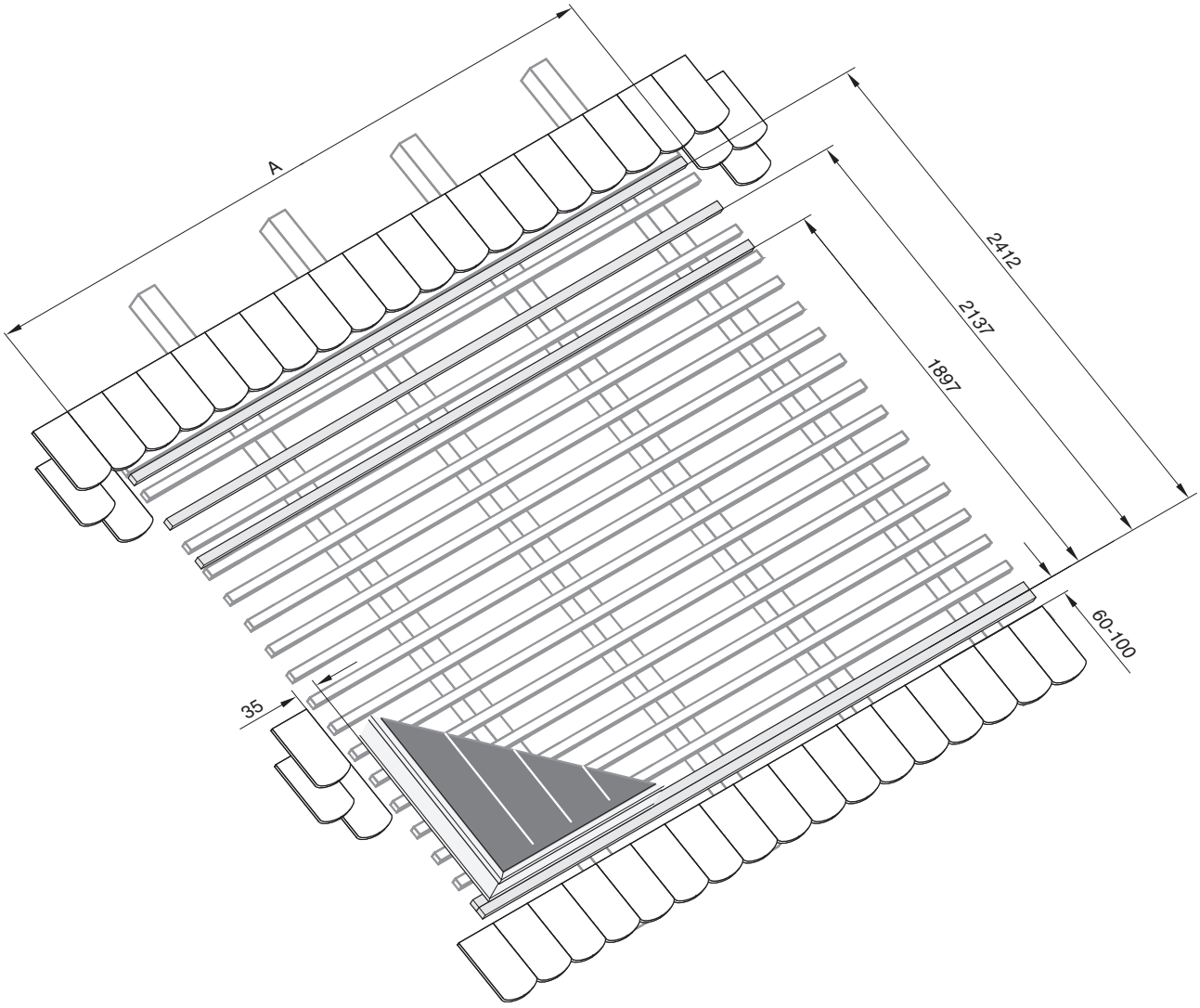

Figure 4 Dimensions of installation field and positions of installation laths in mm. Choose lath thickness based upon existing laths. Additionally required laths are coloured grey (5 pieces); lath length = A (width of installation field).

Table 3 Dimensions for Installation (mm)		
No. of collectors	Collector field width	Installation field width A
1 collector	1160	1230
2 collectors	2325	2395
3 collectors	3490	3560
4 collectors	4655	4725

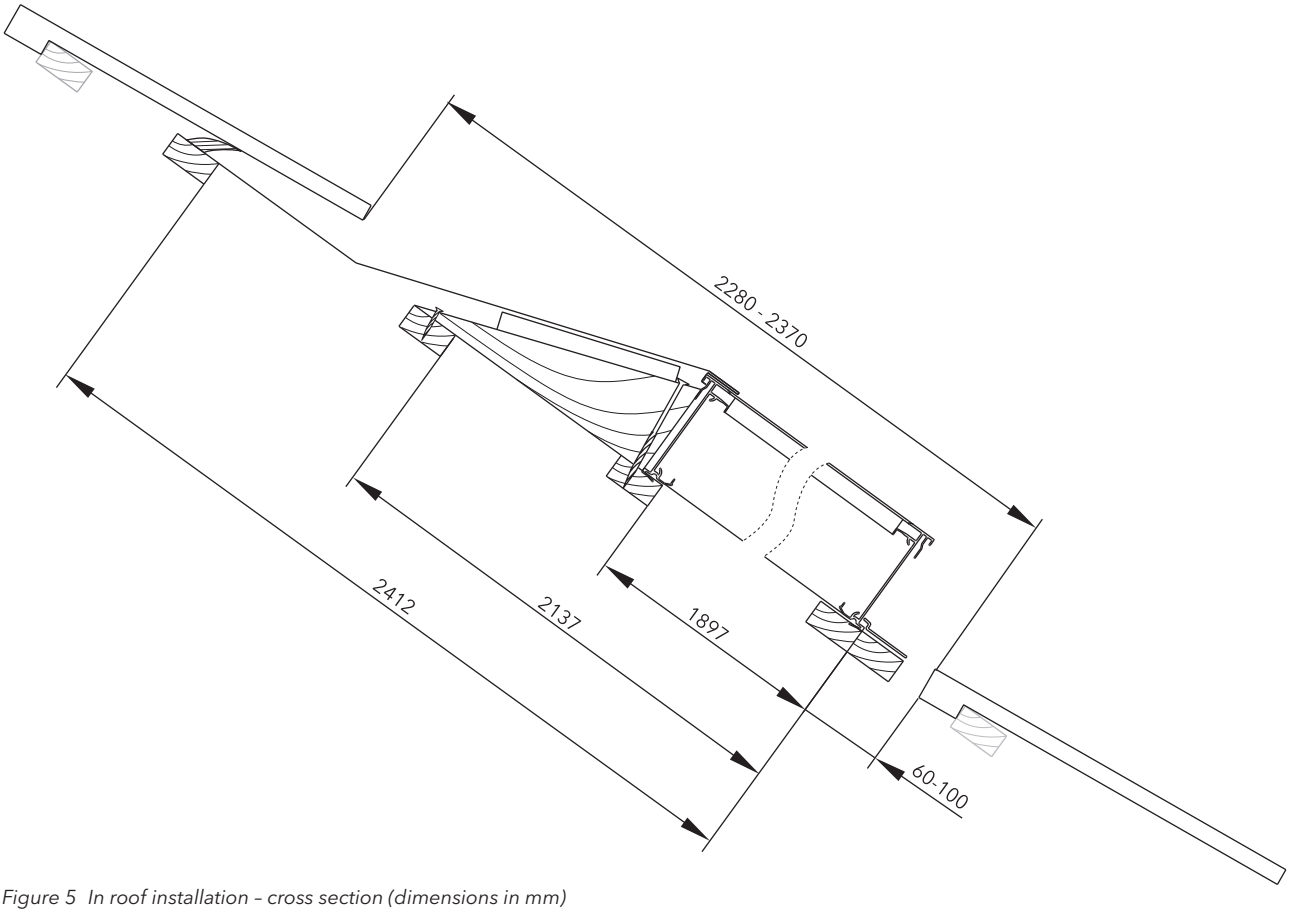

Figure 5 In roof installation – cross section (dimensions in mm)

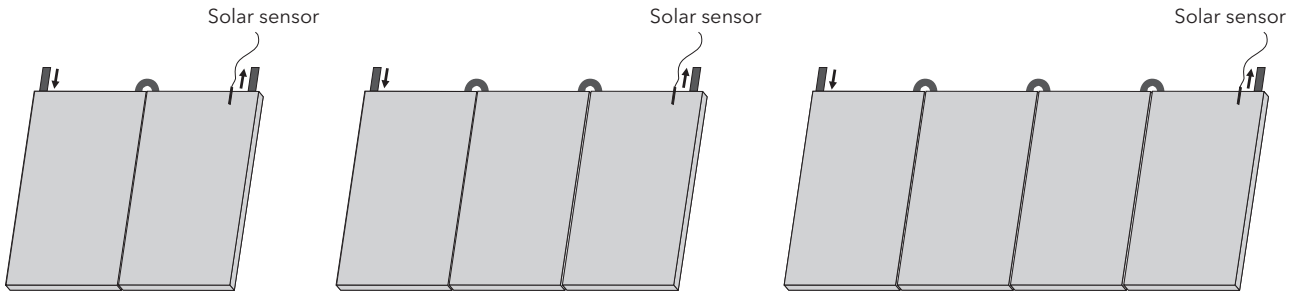

Figure 6 Vertical collector arrangement for two, three and at max. four collectors in serial connection. Connection of more than four units by combining parallel and serial connection.

3. Installation

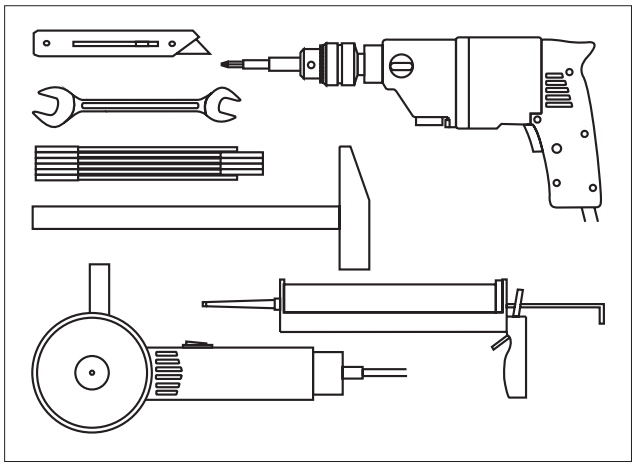

Figure 7 Installation tools: folding rule, drilling machine, Phillips-Bit PZ 2 and 3, open spanner sizes 16, 19, 24, hammer, cutter knife, silicone gun (where required angle grinder with stone cutter)

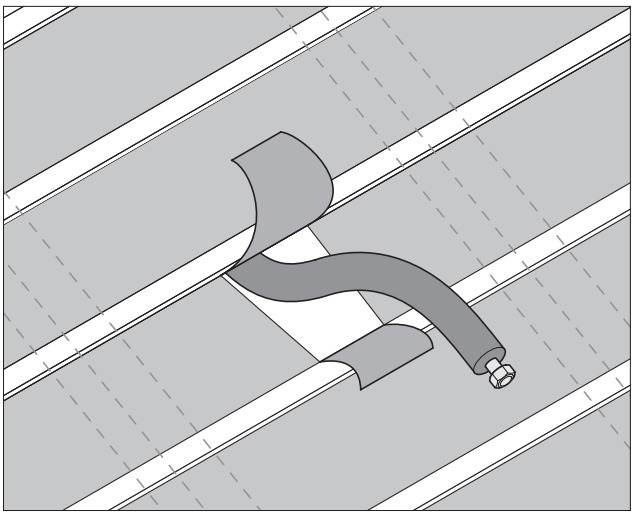

Figure 8 Lead pipe through sarking membrane: Cut V into membrane, fold wider top over the upper batten and narrower side over the lower batten; affix with tension. Moisture will run off sideways.

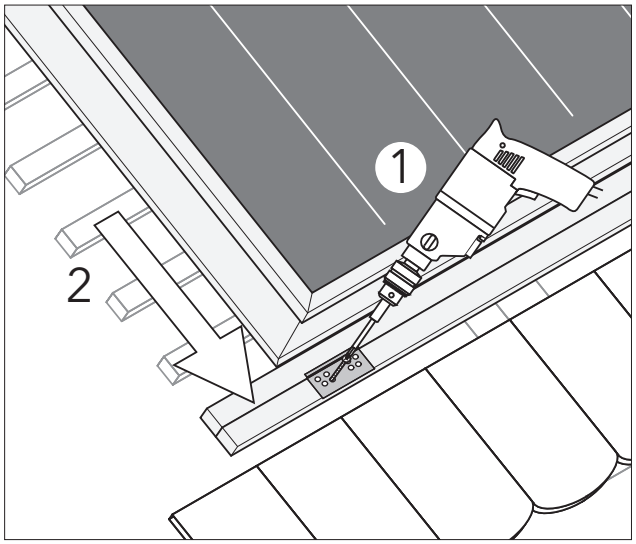

Figure 9 1. Align lower collector fixing clips with lath, fix in centre between 2 collectors and on the edges of the collector field. 2. Insert collectors (approx. 5 mm. distance between collectors).

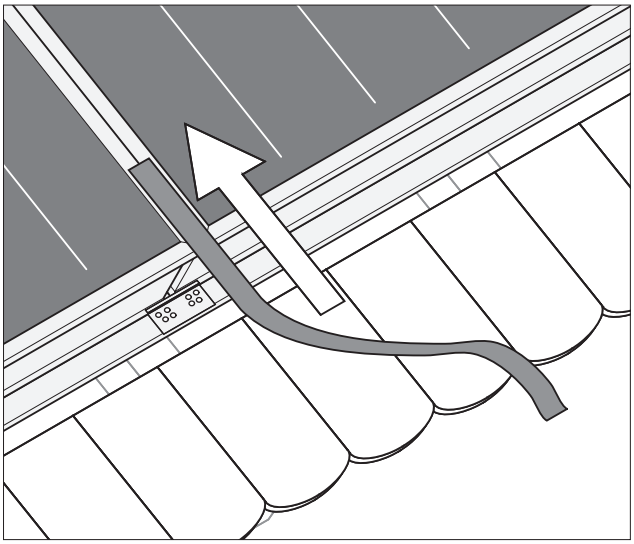

Figure 10 Insert silicone T-profile between collectors. Alternately pushing and pulling eases work. Then push collectors together until flush.

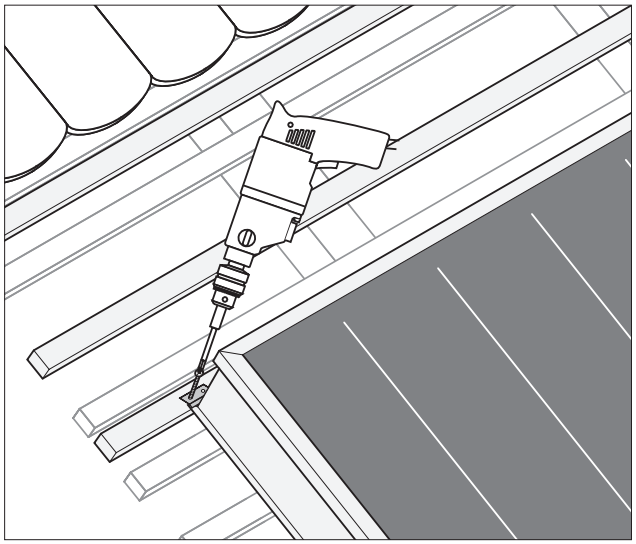

Figure 11 Screw on upper collector fixing clip on both collector edges with 2 self tapping screws 4 x 35 each.

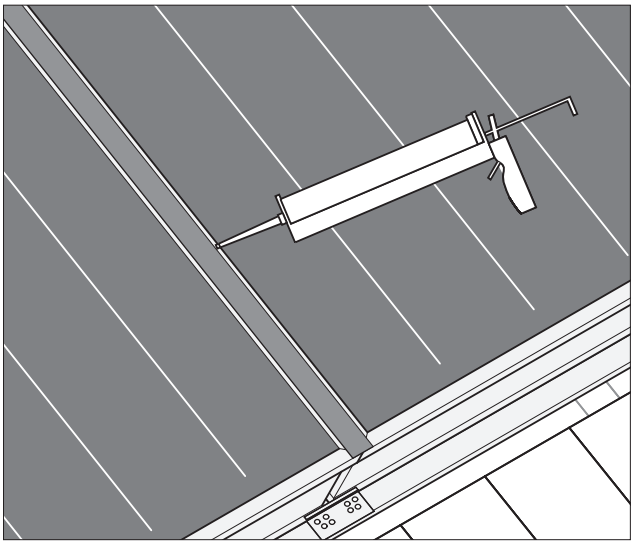

Figure 12 Apply thin layer of silicone seal between wings of T-profile and collector frame.

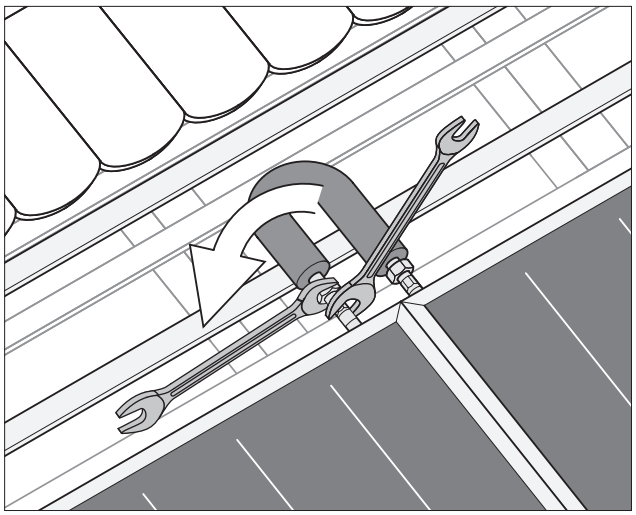

Figure 13 Connect collectors. Use 2nd wrench to secure connection and avoid damage. ATTENTION: Danger of burns at connections during solar irradiation!

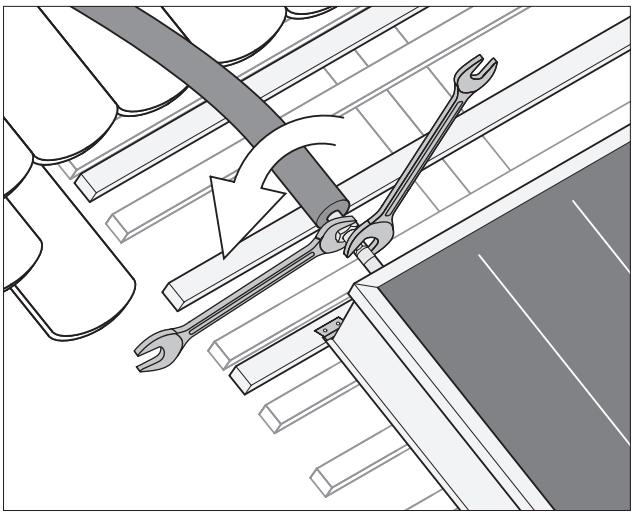

Figure 14 Connect collectors to solar circuit. Later check for leak tightness!

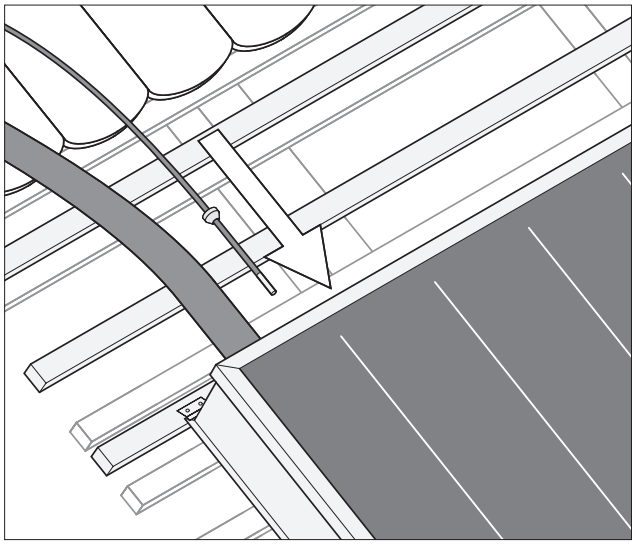

Figure 15 Slip rubber seal over cable, insert solar sensor into sensor sleeve; close opening with rubber seal and lead cable through roof.

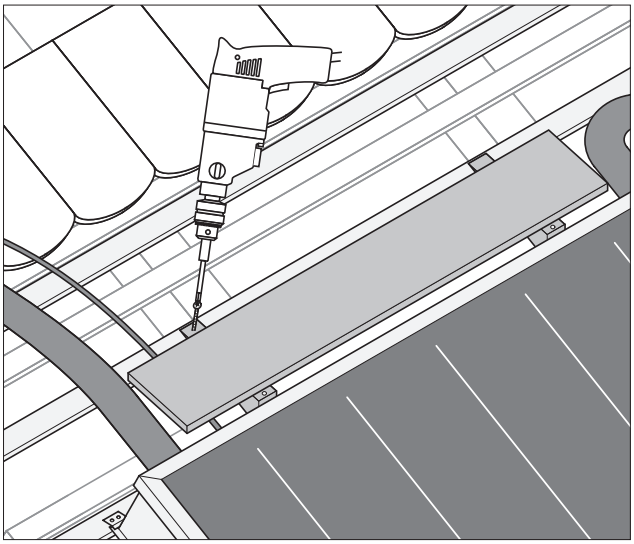

Figure 16 Position wooden support along collector and fasten with 4 x 35 and 5 x 120 self tapping screws.

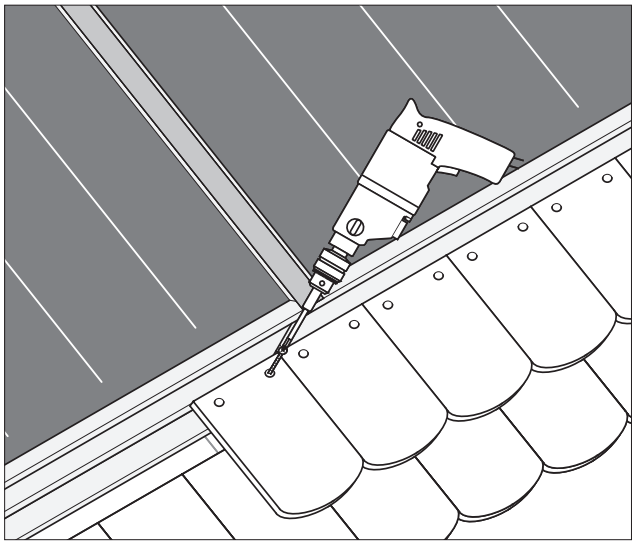

Figure 17 Adjust roof tiles/slates below collectors; fix with self tapping screws.

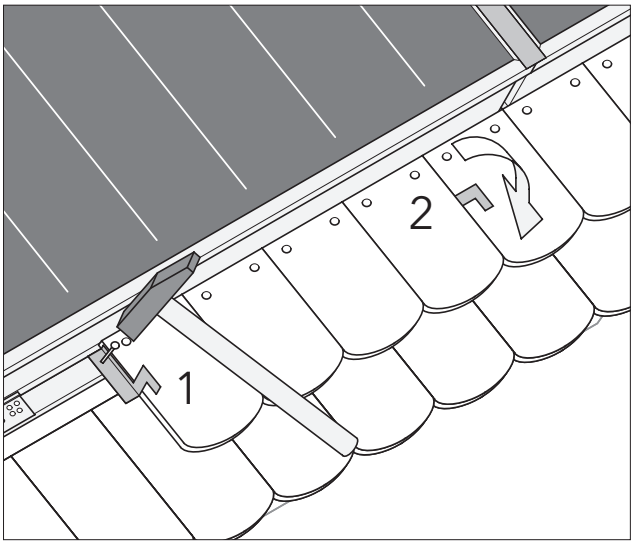

Figure 18 Fix metal clips for lower flashing sheet (1) and fold onto tile or slate (2).

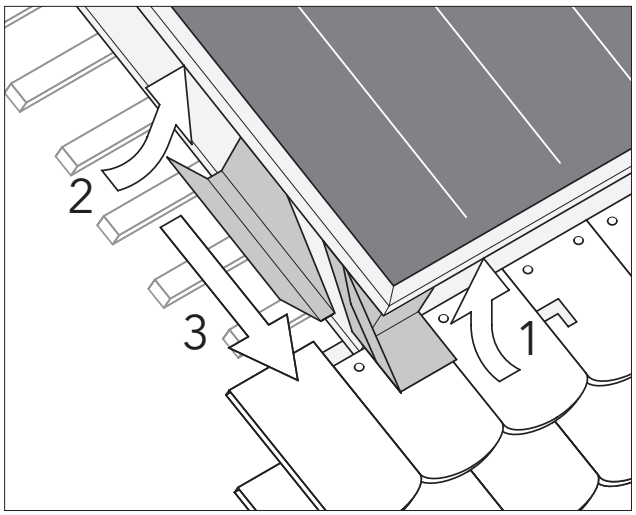

Figure 19 Insert the two pieces of the corner wedge into deeper groove at the collector (1 + 2) and slide together (3)

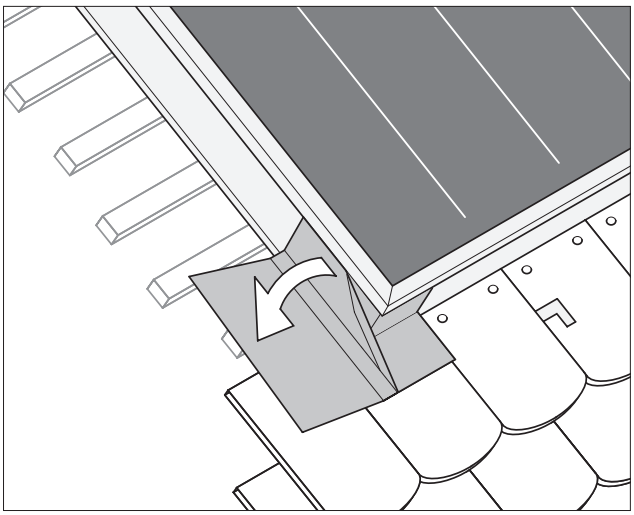

Figure 20 Fold standing up sheet flat onto roofing.

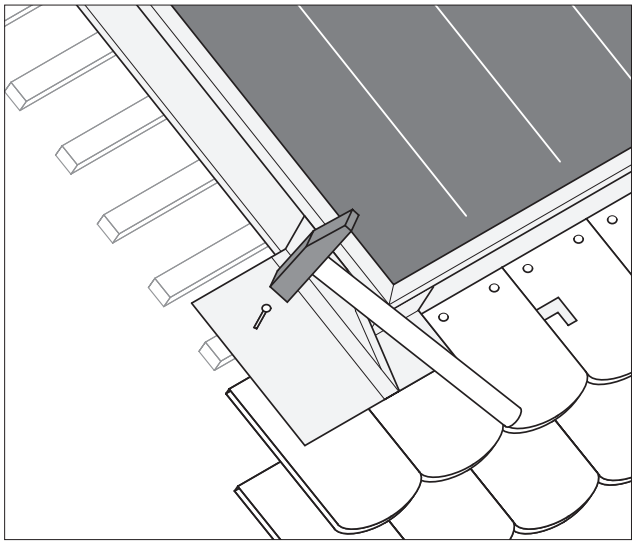

Figure 21 Fix each side panel with roofing felt nails on roof battens.

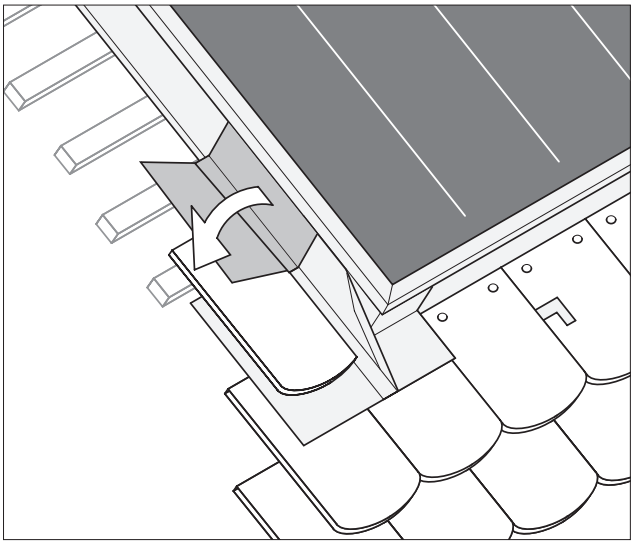

Figure 22 Insert side panels into deeper groove, adjust at upper edge of upper batten and mount overlapping from bottom up on each adjoining roof tile or slate row.

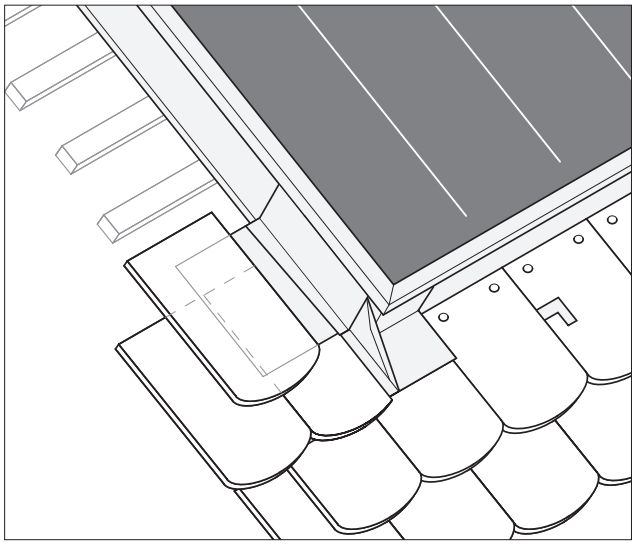

Figure 23 Cover each panel properly with a tile or slate.

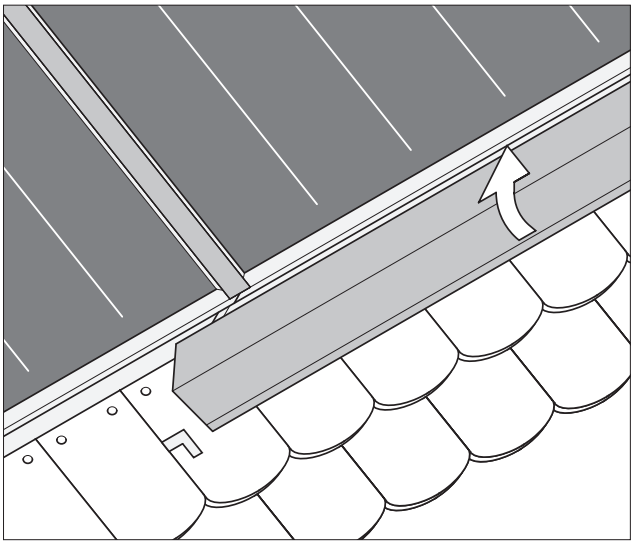

Figure 24 Insert lower connection sheets

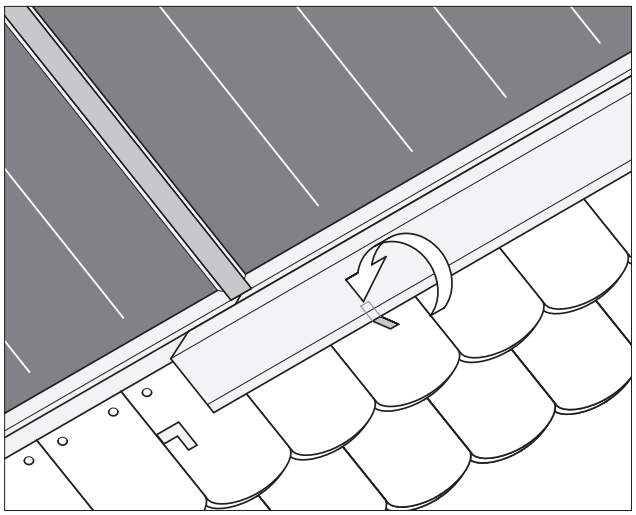

Figure 25 Fix lower connection sheets with the metal clips.

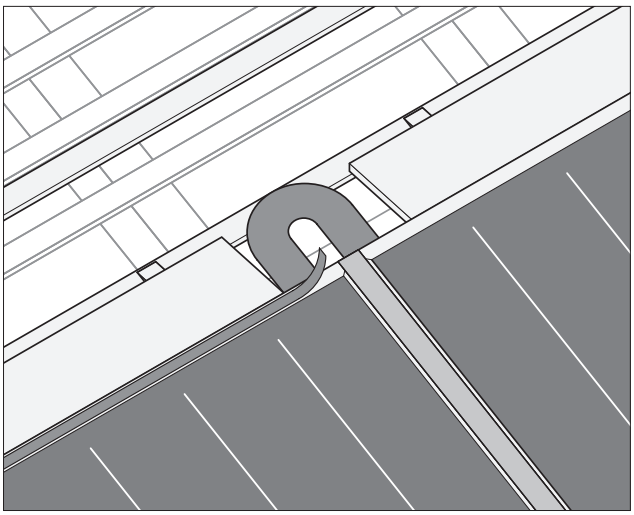

Figure 26 Affix cellular rubber strip onto upper edge of collector frame.

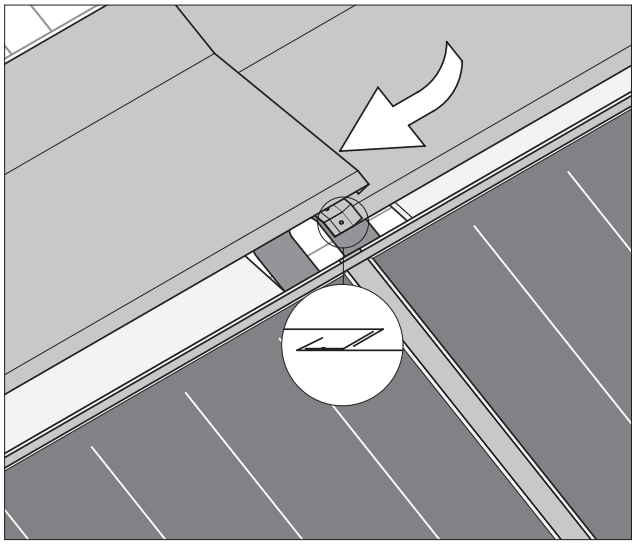

Figure 27 Interlock upper flashing sheets into one another at the crimped edges; use rear ear for fixing sheets against sliding.

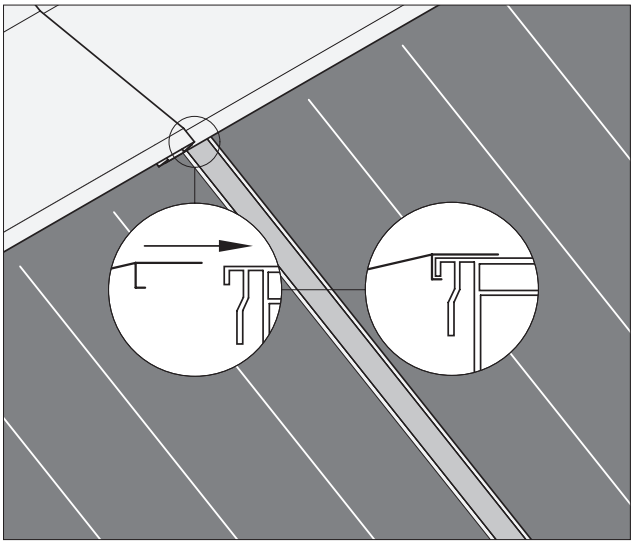

Figure 28 Lay upper flashing sheet in place and push sheet groove over collector lip.

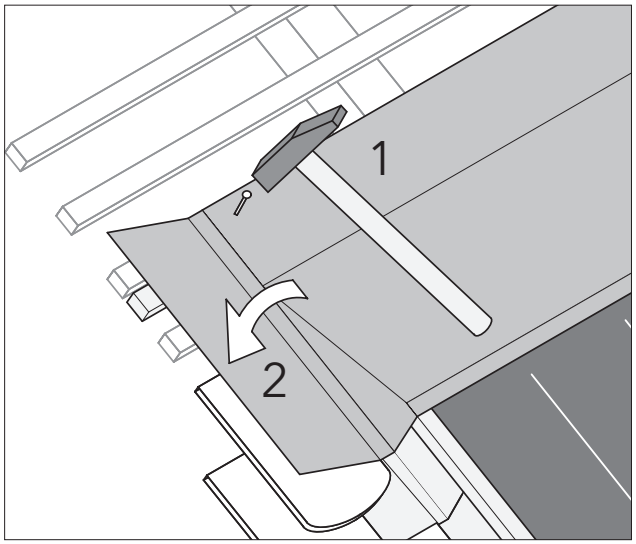

Figure 29 Nail upper flashing sheets onto battens and adjust standing up sheet at the corners as described before.

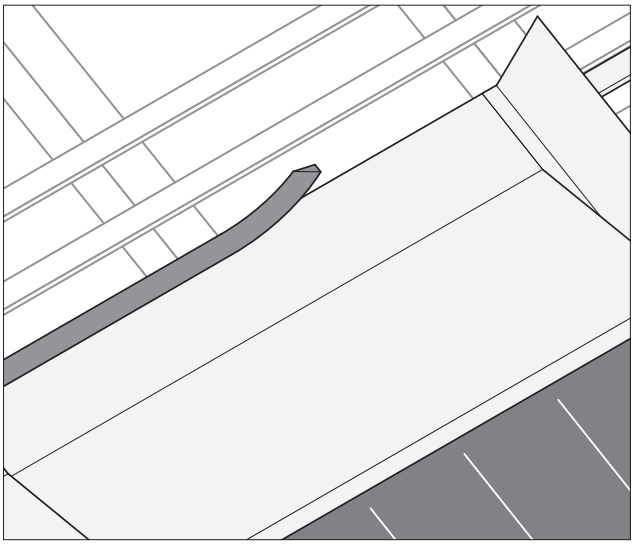

Figure 30 Affix black foam rubber strip along the upper edge.

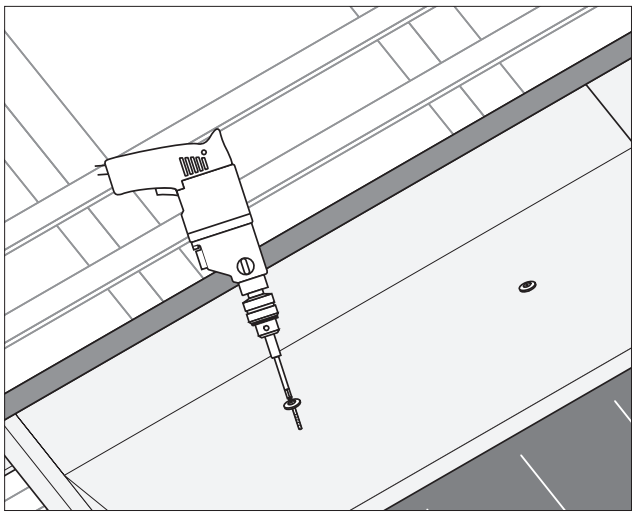

Figure 31 In storm prone regions, screw on each covering sheet with two central sheet metal screws.

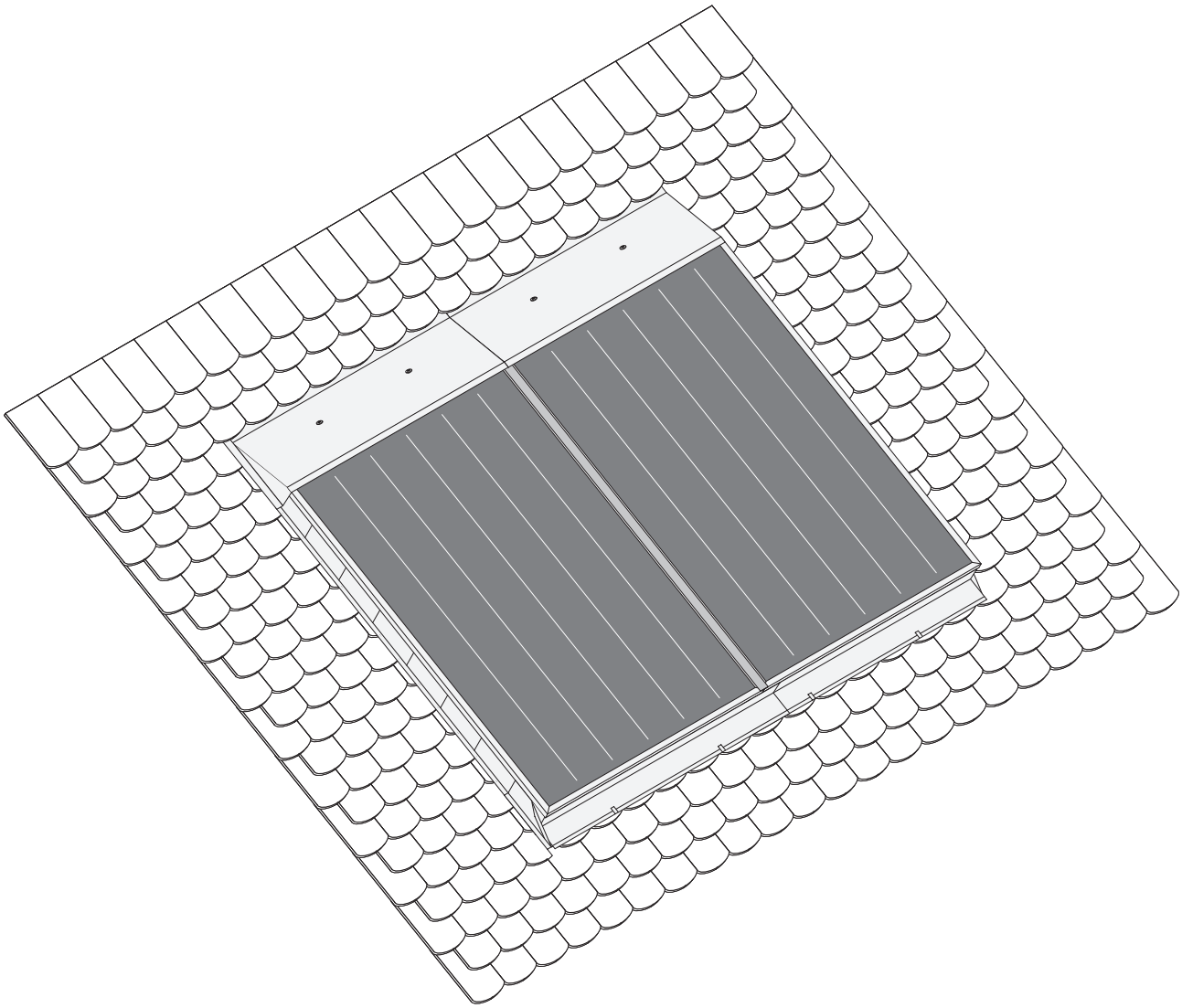

Figure 32 Completed installation on pan tile roof.