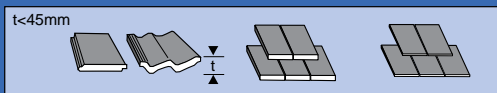
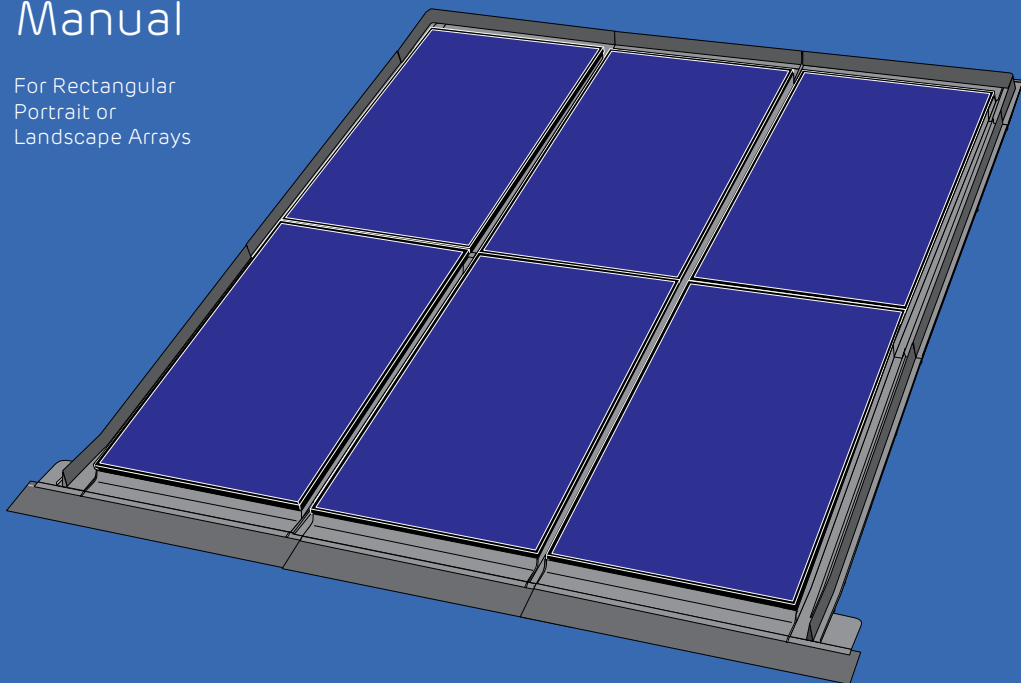


3 x 2 Installation Manual

For Rectangular
Portrait or
Landscape Arrays



Important notes pertaining to South African Installations!

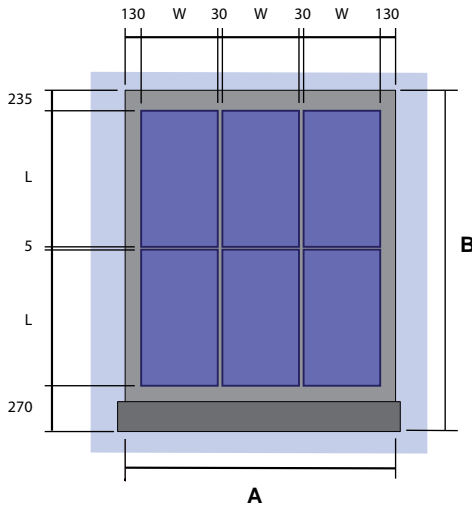
There are a few important notes pertaining to Marley Roofing South Africa to ensure correct stock ordering and installations practices!

Please pay special attention to the notes listed as per the pages mentioned below!

- Page 13 - Information pertaining to 38mm x 38mm batten brackets!
- Page 14 - Information pertaining to Landscape and Portrait Combination Kits!
- Page 50 - Information pertaining to tiles and slates neatly joining with flashing!



Portrait Array



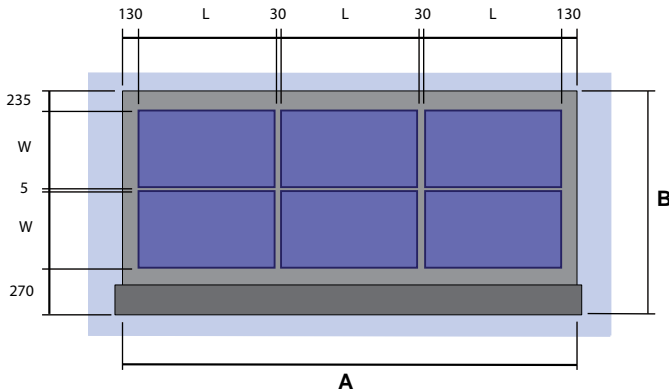
n x m

n			
2			
1	2	3	m

G1 (eg PV16-335-G1)	
A	(m x 1030) + 230
B	(n x 1691) + 500
W	1000
L	1686



Landscape Array



n x m

n		
3		
2		
1	2	m

G1 (eg PV16-335-G1)	
A	(m x 1716) + 230
B	(n x 1005) + 500
W	1000
L	1686

EN

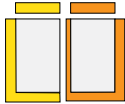
Mechanical Specification

Thickness	mm	69
Static roof loading (distributed)	kg/m ²	12.9
Characteristic Wind Resistance	kPa	5.32
Ultimate Wind Design Load ¹	kPa	5.32
Positive Design Load (IEC61215)	kPa	5.40
Fire Rating (EN 13501-5 / BS 476-3)	$B_{ROOF} (T_1, T_2, T_3, T_4) / AA$	
Power Warranty	% rated	90% 10 years, 80% 25 years
Standards	IEC61215, 61730, TUV, MCS012	



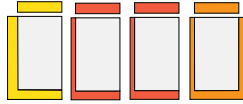
Top tip! Visit marleyroofing.co.za and use our website configurator to build your array. This will provide you with a full kit list, quote, as well as basic output power based on your array!

1 x 2



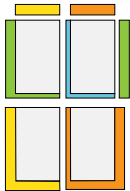
□ Clearline PV16 ____ 2
 ■ F16-TL ____ 1
 ■ F16-TR ____ 1

1 x 4



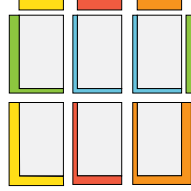
□ Clearline PV16 ____ 4
 ■ F16-TL ____ 1
 ■ F16-TC ____ 2
 ■ F16-TR ____ 1

2 x 2



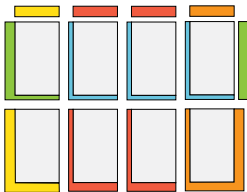
□ Clearline PV16 ____ 4
 ■ F16-TL ____ 1
 ■ F16-TC ____ 0
 ■ F16-TR ____ 1
 ■ F16-TY ____ 1
 ■ F16-J ____ 1

2 x 3



□ Clearline PV16 ____ 6
 ■ F16-TL ____ 1
 ■ F16-TC ____ 1
 ■ F16-TR ____ 1
 ■ F16-TY ____ 1
 ■ F16-J ____ 2

2 x 4



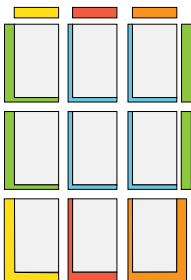
□ Clearline PV16 ____ 8
 ■ F16-TL ____ 1
 ■ F16-TC ____ 2
 ■ F16-TR ____ 1
 ■ F16-TY ____ 1
 ■ F16-J ____ 3

2 x 1



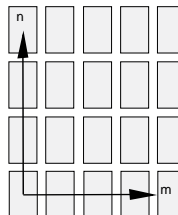
□ Clearline PV16 ____ 2
 ■ VAT16 ____ 1
 ■ F16-TY ____ 1

3 x 3



□ Clearline PV16 ____ 9
 ■ F16-TL ____ 1
 ■ F16-TC ____ 1
 ■ F16-TR ____ 1
 ■ F16-TY ____ 2
 ■ F16-J ____ 4

n x m

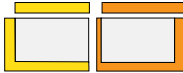


□ Clearline PV16 ____ (n x m)
 ■ F16-TL ____ 1
 ■ F16-TC ____ (m-2)
 ■ F16-TR ____ 1
 ■ F16-TY ____ (n-1)
 ■ F16-J ____ (n-1) x (m-1)



Top tip! Visit marleyroofing.co.za and use our website configurator to build your array. This will provide you with a full kit list, quote, as well as basic output power based on your array!

1 x 2



☐ Clearline PV16 ____ 2
☒ F16-LL ____ 1
☒ F16-LR ____ 1

1 x 4



☐ Clearline PV16 ____ 4
☒ F16-LL ____ 1
☒ F16-LC ____ 2
☒ F16-LR ____ 1

2 x 2



☐ Clearline PV16 ____ 4
☒ F16-LL ____ 1
☒ F16-LC ____ 0
☒ F16-LR ____ 1
☒ F16-LY ____ 1
☒ F16-LJ ____ 1

2 x 3



☐ Clearline PV16 ____ 6
☒ F16-LL ____ 1
☒ F16-LC ____ 1
☒ F16-LR ____ 1
☒ F16-LY ____ 1
☒ F16-LJ ____ 2

2 x 4



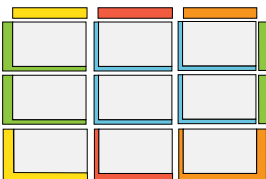
☐ Clearline PV16 ____ 8
☒ F16-LL ____ 1
☒ F16-LC ____ 2
☒ F16-LR ____ 1
☒ F16-LY ____ 1
☒ F16-LJ ____ 3

2 x 1



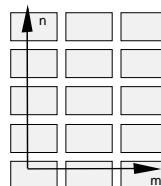
☐ Clearline PV16 ____ 2
☒ VAL16 ____ 1
☒ F16-LY ____ 1

3 x 3

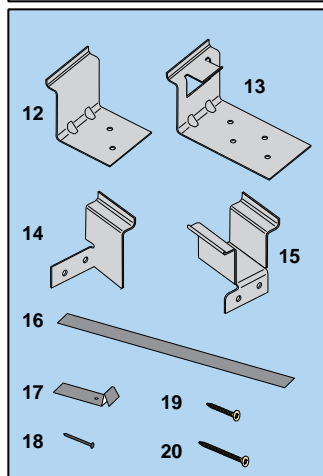
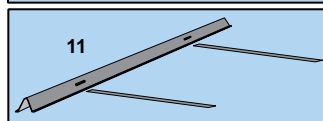
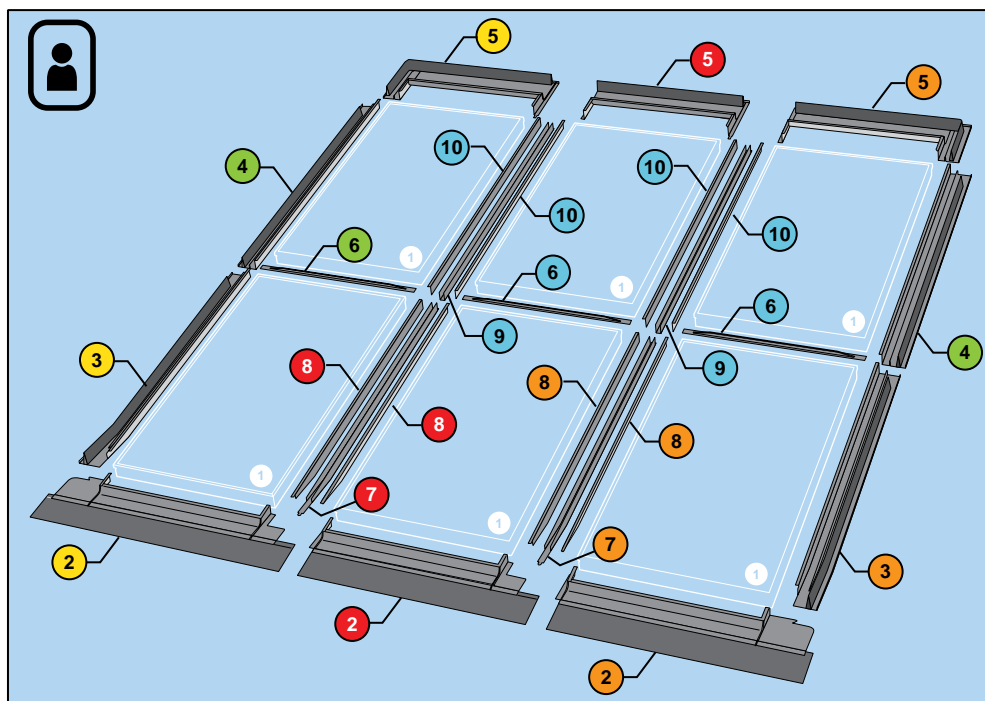


☐ Clearline PV16 ____ 9
☒ F16-LL ____ 1
☒ F16-LC ____ 1
☒ F16-LR ____ 1
☒ F16-LY ____ 2
☒ F16-LJ ____ 4

n x m



☐ Clearline PV16 ____ (n x m)
☒ F16-LL ____ 1
☒ F16-LC ____ (m-2)
☒ F16-LR ____ 1
☒ F16-LY ____ (n-1)
☒ F16-LJ ____ (n-1) x (m-1)



Please note!

South African
Portrait kits

F16-TL-G1 and F16-
TR-G1 kits have
been combined into
one combination kit
box

F16-T-LR-G1

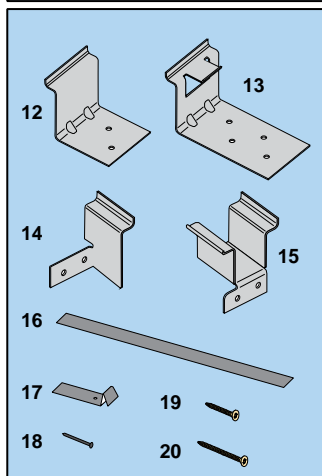
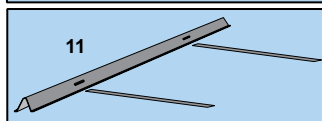
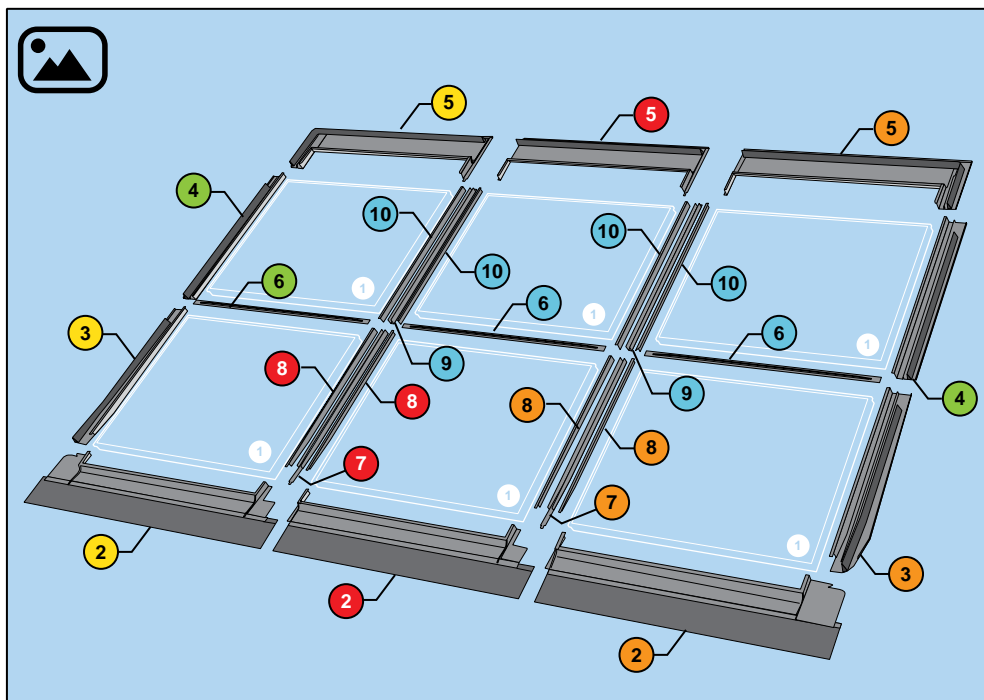
View pg 14 for more
information!

	TL	TC	TR	TY	J
1					
2	1	1	1		
3	1		1		
4				2	
5	1	1	1		
6				1	1
7		1	1		
8		2	2		
9					1
10					2
11	1	1	1		
12	4	4	4		
13				2	2
14	3		3	6	
15		3	3		3
16		1	1		1
17	6		6	12	
18	6	1	7	12	1
19	6	6	12	12	6
20	8	8	8	8	8

EN

Portrait

1 Clearline PV16	11 Tile support
2 Sill flashing	12 Rafter bracket
3 Lower side flashing	13 Combi rafter bracket
4 Upper side flashing	14 Batten bracket
5 Top flashing	15 Combi batten bracket
6 Joining strip	16 Gutter fixing strip
7 Lower gutter	17 Side fixing tab
8 Lower gutter cover	18 Nail
9 Upper gutter	19 4 x 25mm screw
10 Upper gutter cover	20 4 x 50mm screw



Please note!

South African
Landscape kits

F16-LL-G1 and F16-
LR-G1 kits have
been combined into
one combination kit
box

F16-L-LR-G1

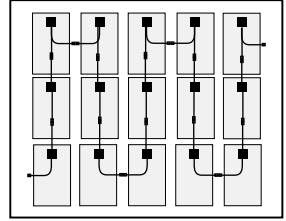
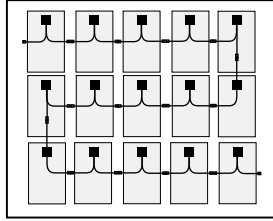
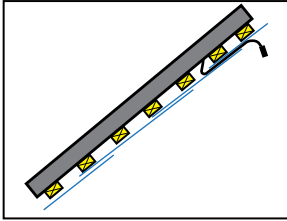
View pg 14 for more
information!

	LL	LC	LR	LY	LJ
1					
2	1	1	1		
3	1		1		
4				2	
5	1	1	1		
6				1	1
7		1	1		
8		2	2		
9					1
10					2
11	1	1	1		
12	6	6	6		
13				3	3
14	2		2	4	
15		2	2		2
16		1	1		1
17	4		4	8	
18	4	1	5	8	1
19	4	4	8	8	4
20	12	12	12	12	12

EN

Landscape

1 Clearline PV16	11 Tile support
2 Sill flashing	12 Rafter bracket
3 Lower side flashing	13 Combi rafter bracket
4 Upper side flashing	14 Batten bracket
5 Top flashing	15 Combi batten bracket
6 Joining strip	16 Gutter fixing strip
7 Lower gutter	17 Side fixing tab
8 Lower gutter cover	18 Nail
9 Upper gutter	19 4 x 25mm screw
10 Upper gutter cover	20 4 x 50mm screw



EN

Electrical

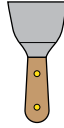
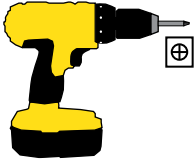
Electrically test each solar panel as it is installed.

Cables can be passed through roofing membrane laps for connection inside the building (recommended) or connected to adjacent panels in the batten space.

Choose to connect panels in rows or columns based on consideration of shading and potential difference. Panels can be installed with the junction box at the top or bottom.



Use only genuine Staubli MC4 when connecting to modules



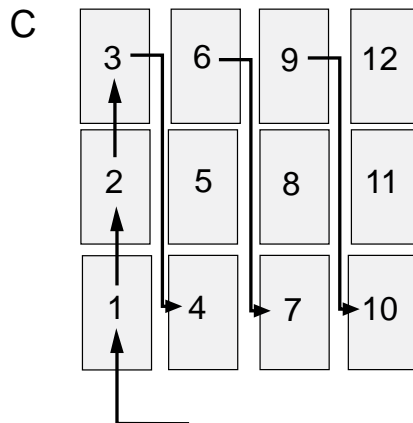
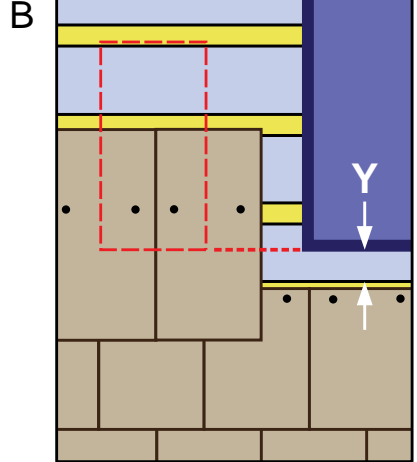
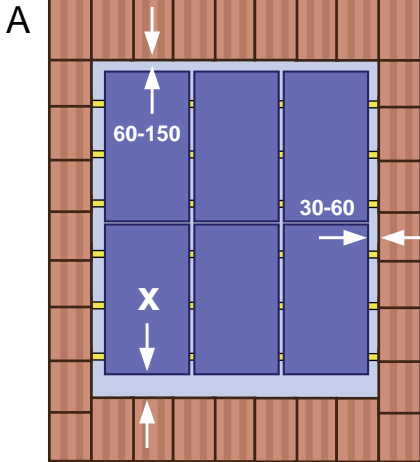
EN



- Flashings may have sharp edges, wear gloves.
- The installation must comply with local regulations on lightning protection.
- Viridian Solar recommends that the panel installation is carried out by an installer with roofing competence.

For best results

- Don't rush it.
- Ensure the flashing edges are straight.
- It may be helpful to lubricate gaskets before pushing in the flashing - use glass cleaner for this.

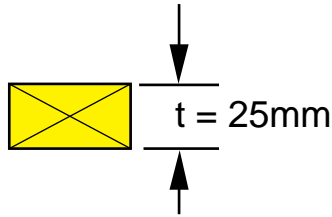
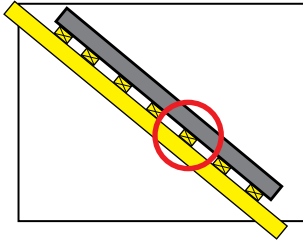


EN



Clearline fusion is intended for installation above a continuous, functional undertile membrane that terminates in a gutter.

- (A) Interlocking tiles set lower gap 'X' 130-150mm. Reduce for thinner tiles, if unsure - contact us
- (B) Slate. For best results align the bottom edge of panel with the slate line. This may require that slates below the panels are nailed in advance. If installing before slating, set 'Y' to 130mm.
- (C) Start at the bottom left of the array. Move to the right as each column is finished.



EN

TILE BATTENS

Roofing kits are provided with brackets suitable for tile battens of 25mm thickness.

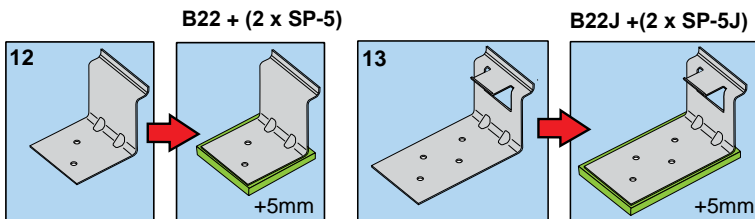
- (B) For tile battens of greater than 25mm thickness, use the required number of 5mm bracket spacers. Use SP-5 for Rafter Bracket (12) and SP-5J for Combi Rafter Bracket (13).

Important!

Adaptation for South African batten thickness 38mm x 38mm

Ad two 5mm SP-5 Rafter Bracket Spacers to each of the Rafter Brackets and two 5mm SP-5J Rafter Joining Bracket Spacers to each of the Combi Rafter Brackets..

B $t > 25\text{mm}$



Important!



Please note South African Landscape kits

F16-LL-G1 (yellow landscape kit) and F16-LR-G1 (orange landscape kit) have been combined into one kit box **F16-L-LR-G1**

Note that this landscape kit will be represented within the configurator as two separate kits **F16-LL-G1** and **F16-LR-G1**, though this will not affect your quote as provided by the configurator!



Please note South African Portrait kits

F16-TL-G1 (yellow portrait kit) and F16-TR-G1 (orange portrait kit) have been combined into kit box **F16-T-LR-G1**

Note that this portrait kit will be represented within the configurator as two separate kits **F16-TL-G1** and **F16-TR-G1**, though this will not affect your quote as provided by the configurator!

However! When ordering these items, please ensure that you request the correct single portrait or landscape combination kit, hence:

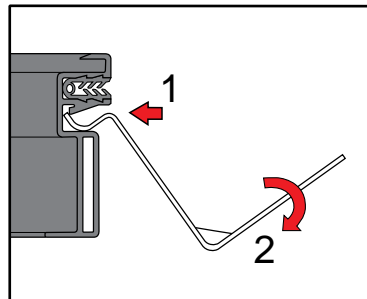
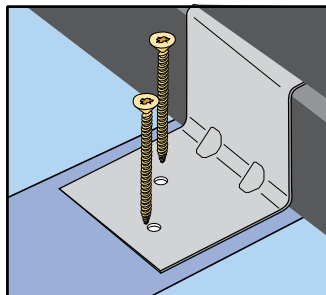
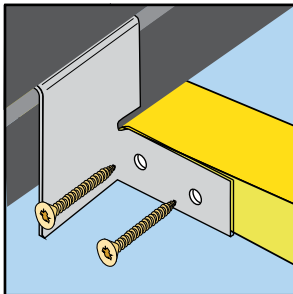
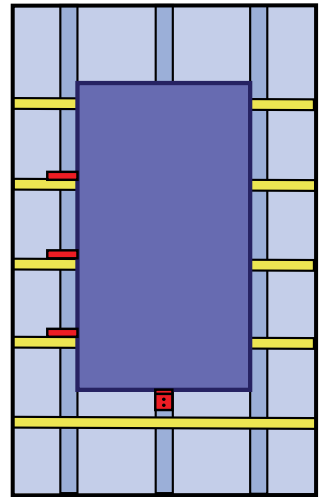
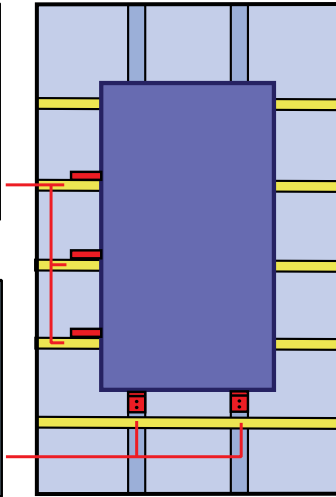
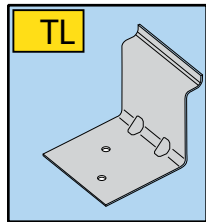
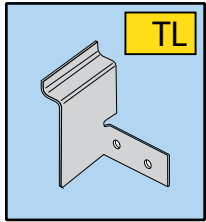


F16-T-LR-G1 contains (F16-TL-G1 & F16-TR-G1)



F16-L-LR-G1 contains (F16-LL-G1 & F16-LR-G1)

1



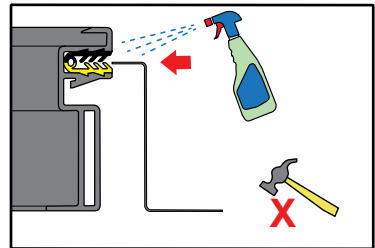
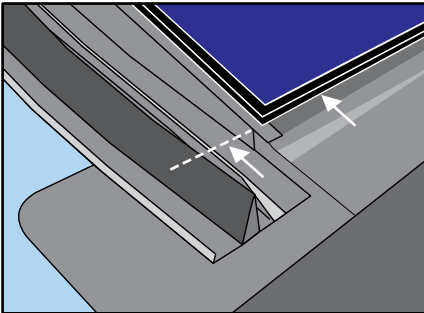
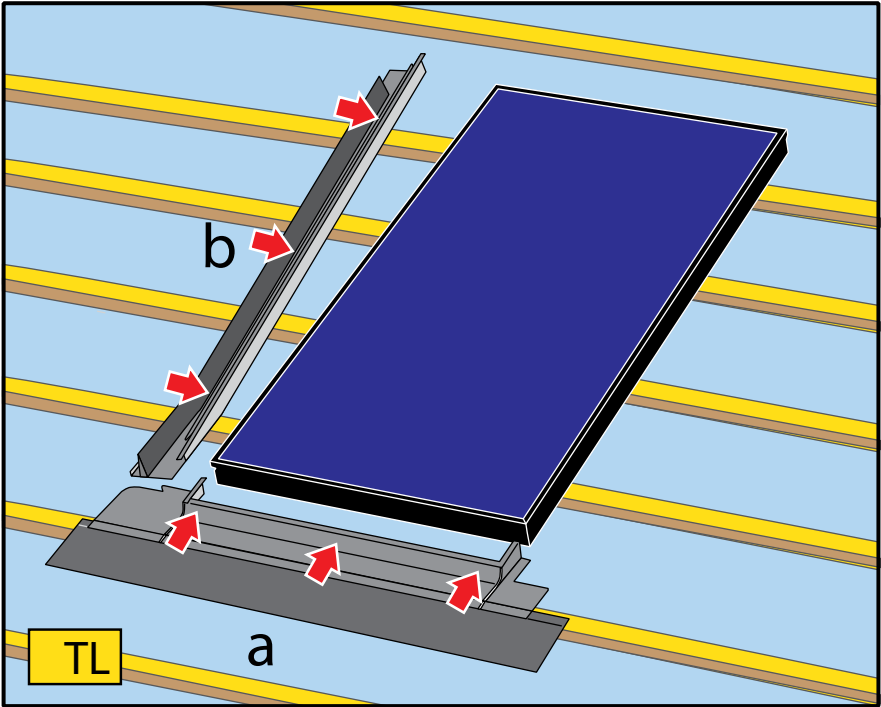
EN

*The following portrait 3 above 3 installation illustrates how the system works for any rectangular array. **Landscape installation follows the same principles***

OPEN THE YELLOW/ORANGE BOX

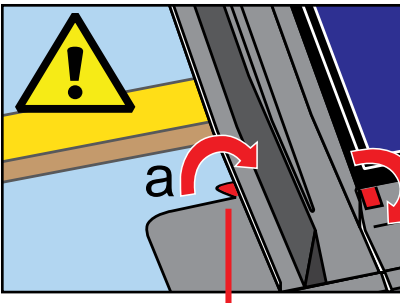
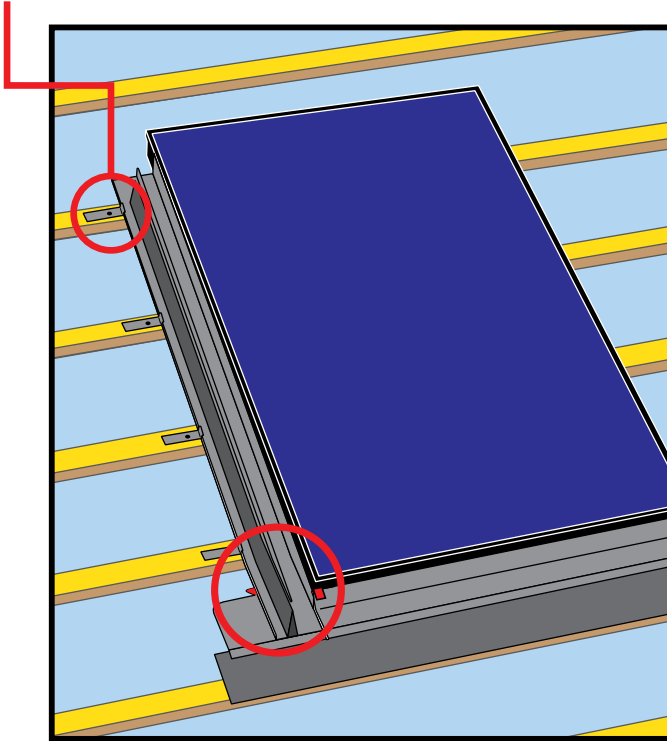
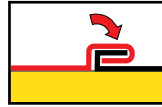
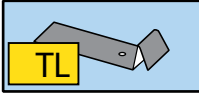
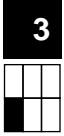
Start with the bottom left panel. Brackets rotate into the lower slot on the panel frame. Fix the batten brackets (14) to the left side with two 25mm screws (19) each. Fix rafter brackets (12) at the bottom to each rafter the panel crosses with two 50mm screws (20) each.

2



EN

Fit the sill flashing (2) then the lower side flashing (3) to the panel. Flashings push into the rubber gasket seal in the upper slot of the panel frame. Take care to align the leading edge just above the yellow line on the gasket. If lubrication is required, use glass cleaning fluid.



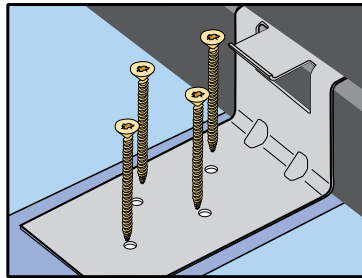
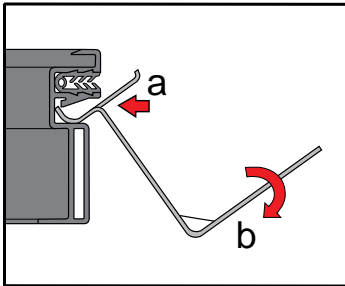
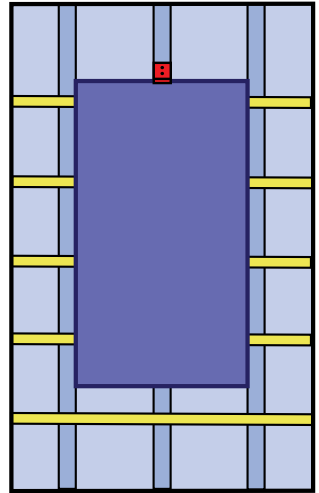
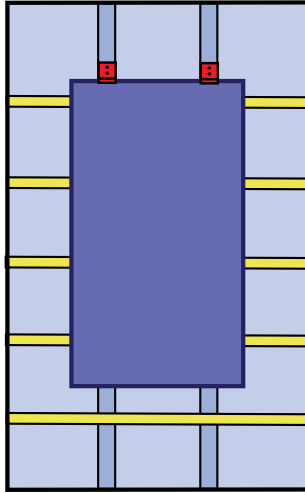
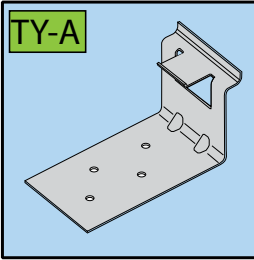
EN

Secure the edge of the side flashing using side fixing tabs (17) and nail (18). Fold over the tab on the sill flashing (a) to grip the side flashing. Fold down the tab on the side flashing (b).

4

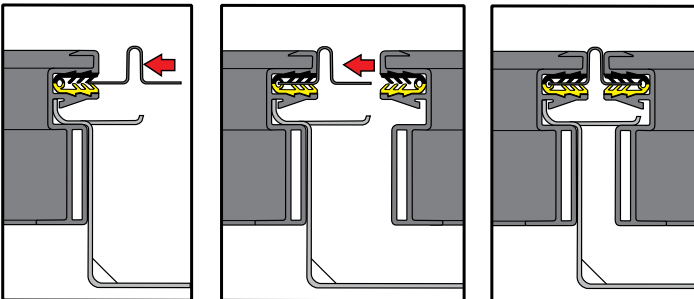
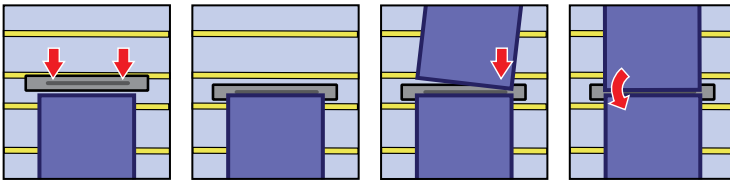
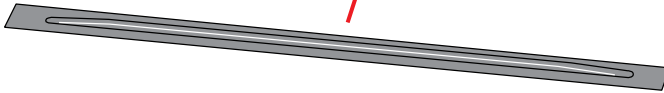
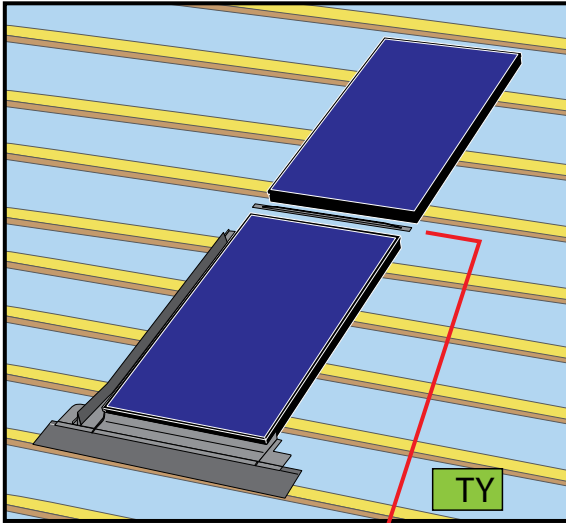
TY-A

TY-A



- EN** OPEN THE GREEN BOX
Fix combi rafter brackets (13) to each rafter the panel crosses with four 50mm screws (20) each.

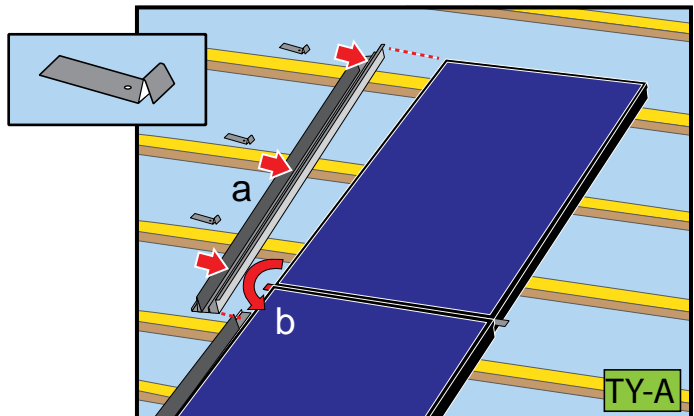
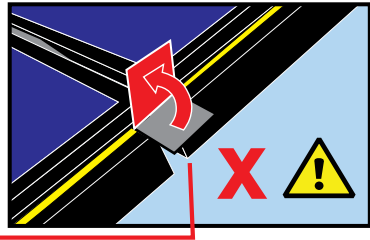
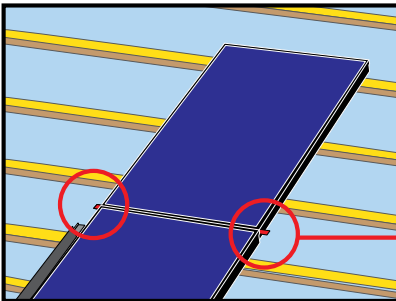
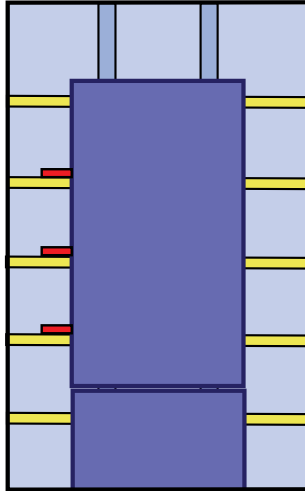
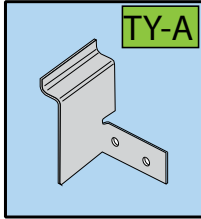
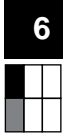
5



EN

Push the joining strip (6) into the gasket on the top face of the lower solar panel. Align to the centre of the panel.

Slide the upper solar panel down the roof to simultaneously engage with the combi-bracket and the joining strip. Aligning the panels on the right corner then rotating the left corner downwards ensures a smooth connection.



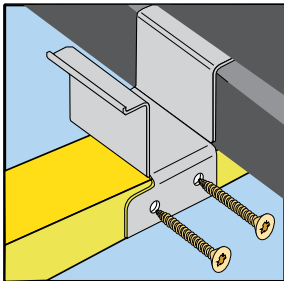
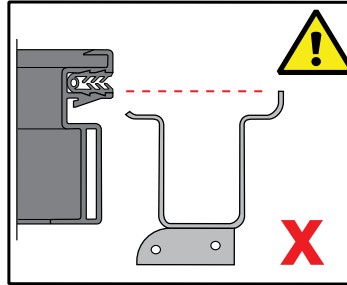
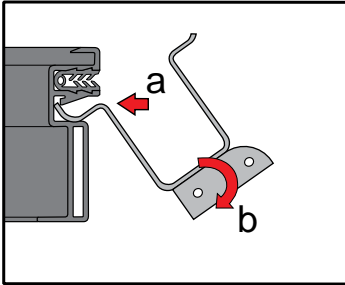
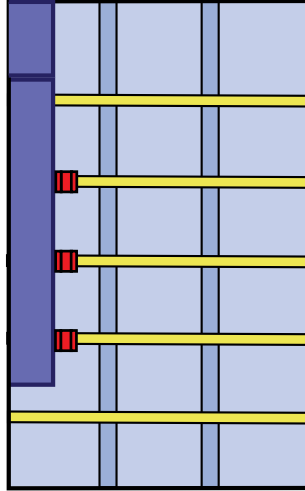
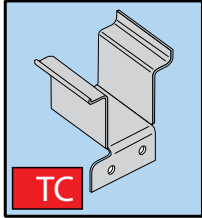
EN Fix the left side of the solar panel with batten brackets (14) and 25mm screws (19). Push in the upper side flashing (4) and fix the outside edge with side fixing tabs (17).

Fold the protruding end of the joining strip (6) down over the side flashing.



Do not fold the protruding end of the joining strip upwards

7

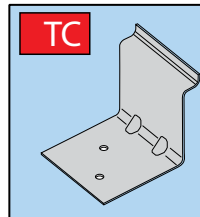
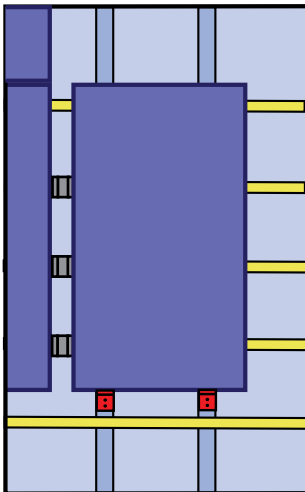
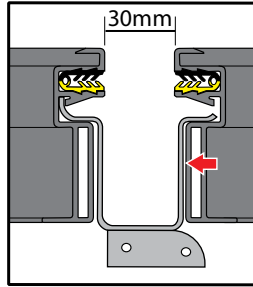
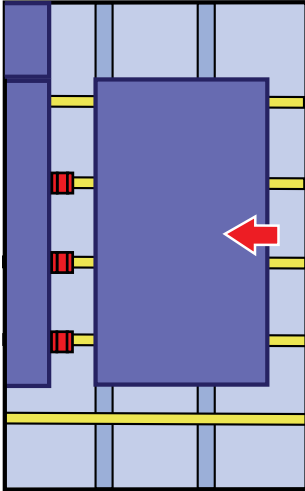


EN

RED BOX

Fix combi-batten brackets (15) to the right hand side of the bottom solar panel. The bracket must be turned so that the side with the taller edge goes into the panel. Fix each brackets with two 25mm screws (19).

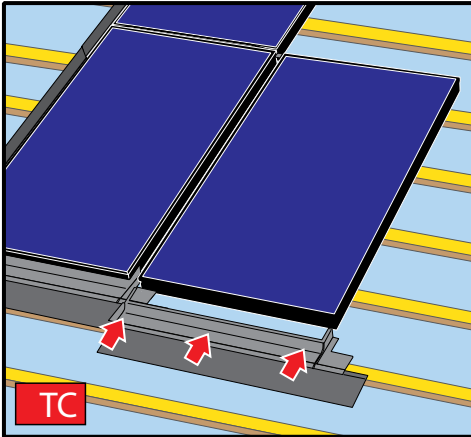
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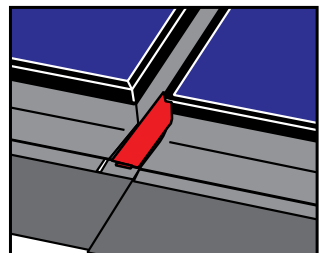
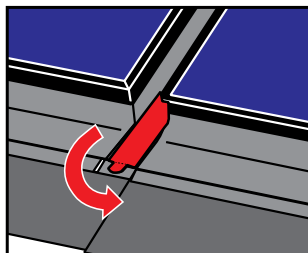
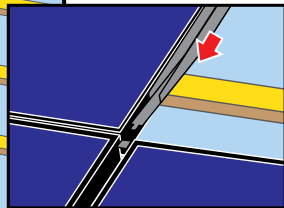
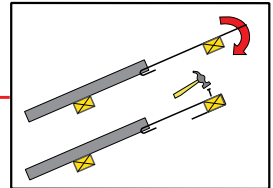
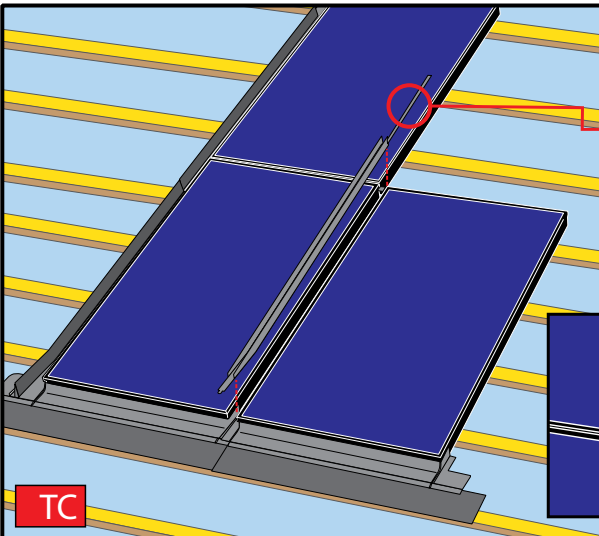
EN

Slide the first panel of the next column sideways to engage with the combi-batten brackets. The bracket sets the gap to 30 mm. Secure the new solar panel to each rafter it crosses with rafter brackets (12) and two 50mm screws (20) each.

9



10

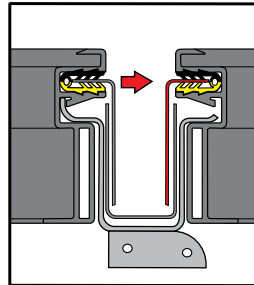
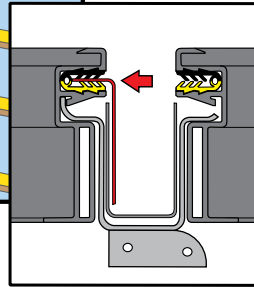
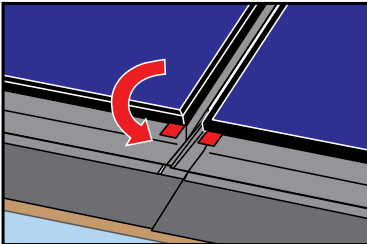
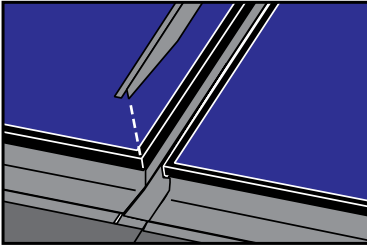
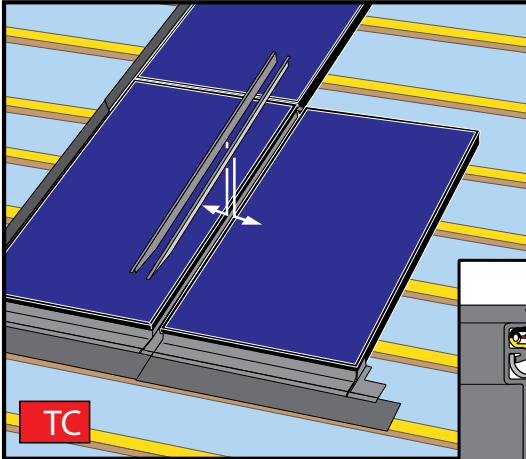


EN

Push the sill flashing (2) into the gasket on the solar panel.

Slide the lower gutter (7) between the two solar panels from the top. Fold the tab at the bottom behind the sill flashing. Loop the gutter fixing strip (16) into the slot on top of the gutter. Fix the strip to a batten with a nail.

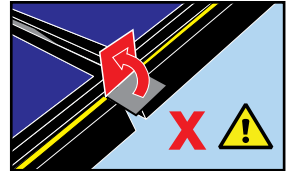
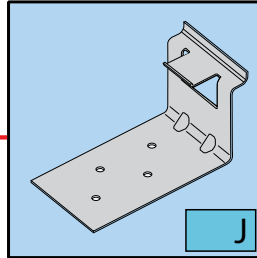
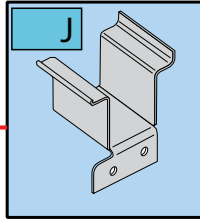
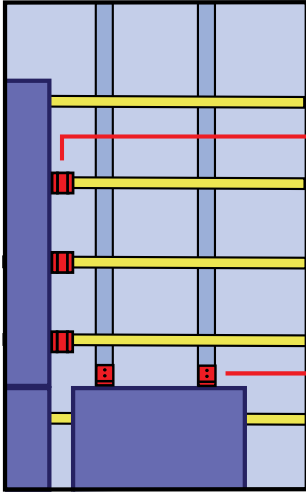
11



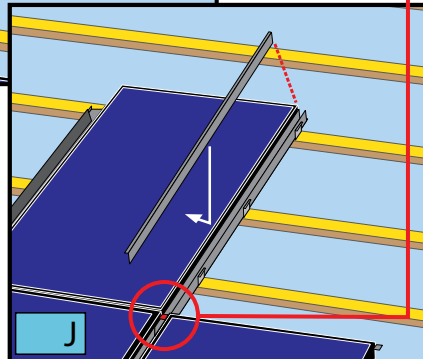
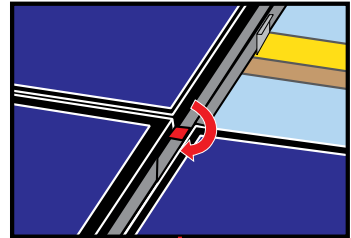
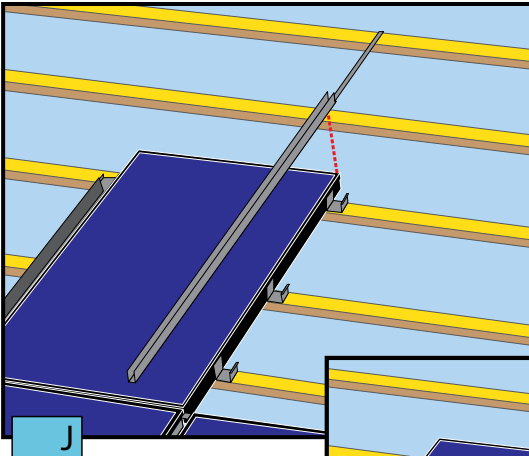
EN

Align the bottom corner of the lower gutter covers (8) with the bottom edge of the solar panel and push the gutter covers into the gasket. Fold down the retaining tabs.

12



13



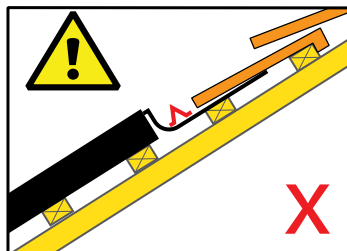
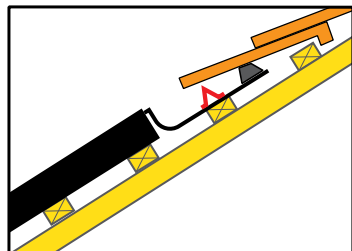
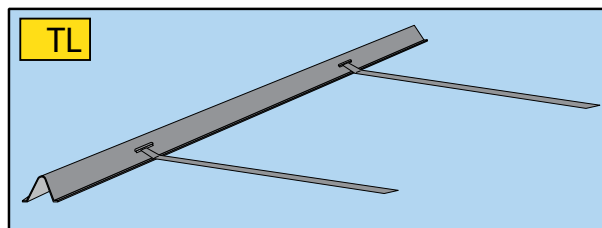
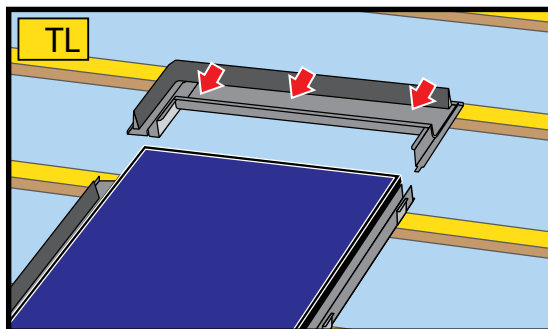
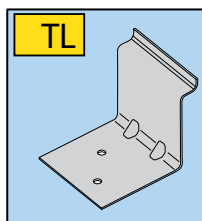
EN

BLUE BOX

Fix combi-rafter brackets (13) to the top of the panel below and combi-batten brackets (15) to the right hand side of the panel to the left.

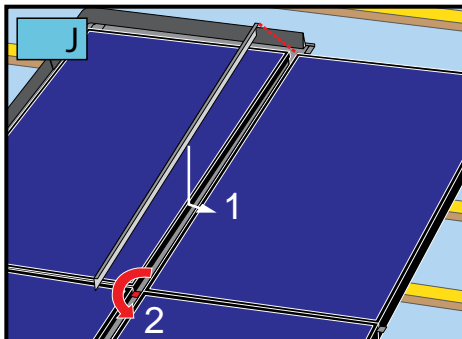
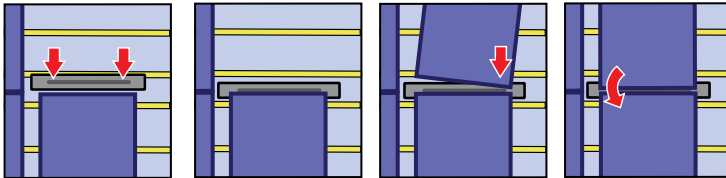
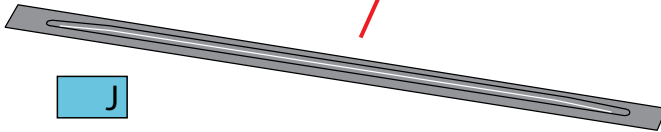
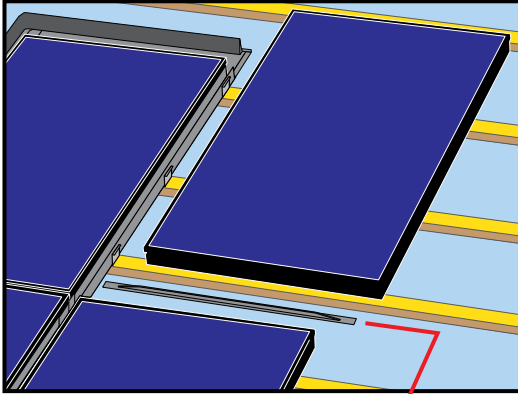
Fit the upper gutter (9) between the solar panels and nail the gutter fixing strip to a batten. Push the upper gutter cover (10) into the panel gasket. Fold the end of the joining strip down into the gutter.

14



EN

For each rafter it crosses, fix a rafter bracket (12) to the top of the top left panel and secure with two 50mm screws (20) each. You may need to add a batten above the panel to support the top flashing. Push the top flashing (5) into the panel gasket. The tile support (11) is needed for some tile types. Feed the two straps under the foam and secure the straps to a batten above.



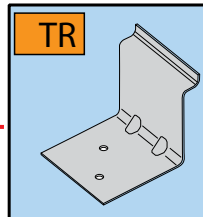
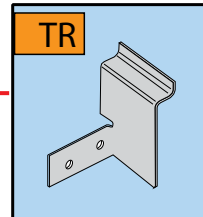
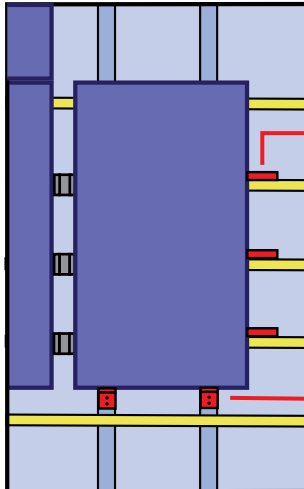
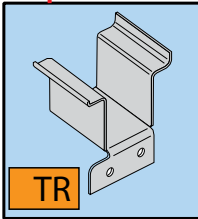
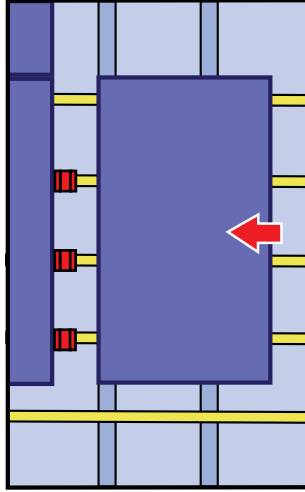
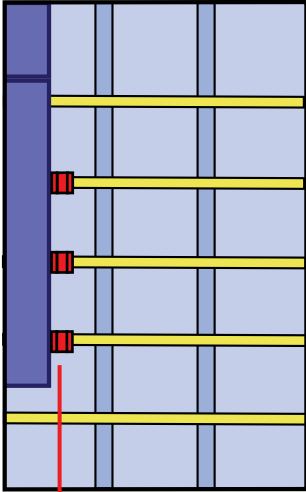
EN

Push the joining strip (6) into the gasket in the top edge of the panel below and slide the solar panel in to engage with the joining strip and combi-brackets on two sides.

Fit gutter cover (10) into the panel gasket. Fold the end of the joining strip down into the gutter.

16

TR

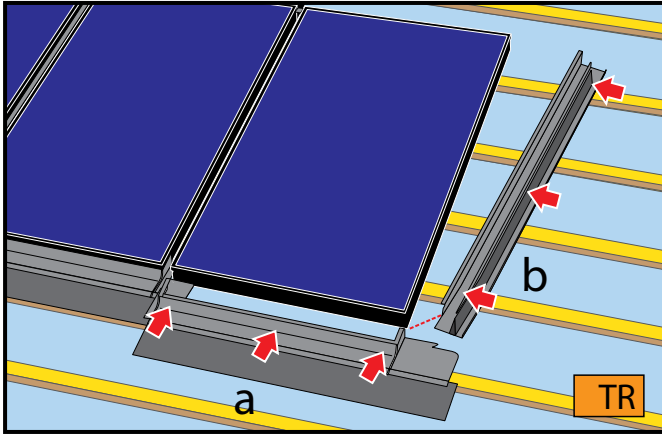


EN

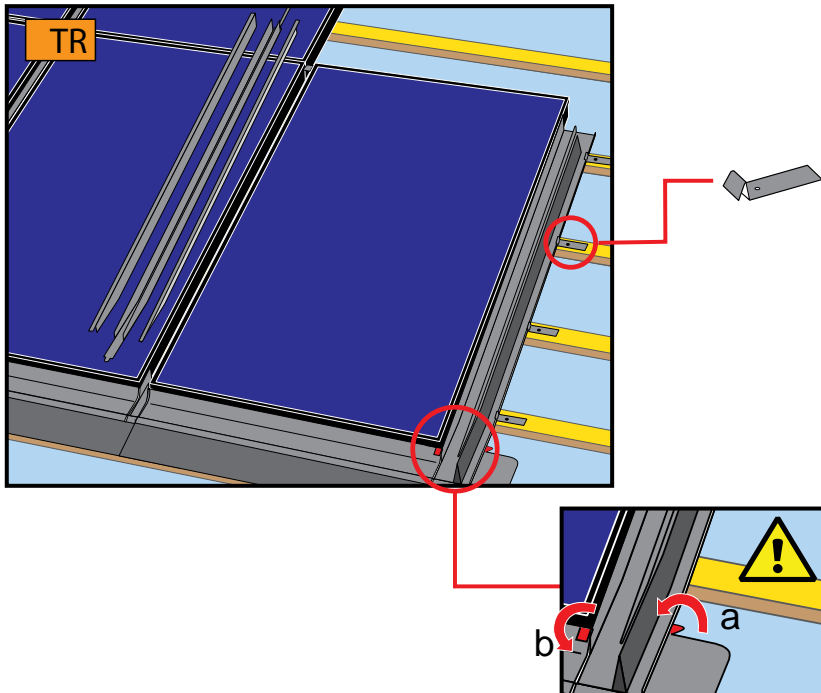
YELLOW/ORANGE BOX

Fix three combi-batten brackets (15) to the right hand side of the panel to the left. Slide the new panel into position. Fix with rafter brackets (12) on the bottom edge and batten brackets (14) to the right hand side.

17



18



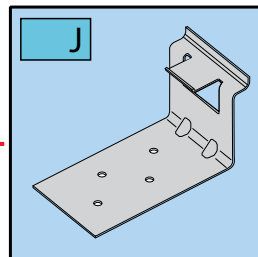
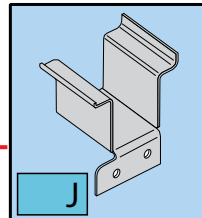
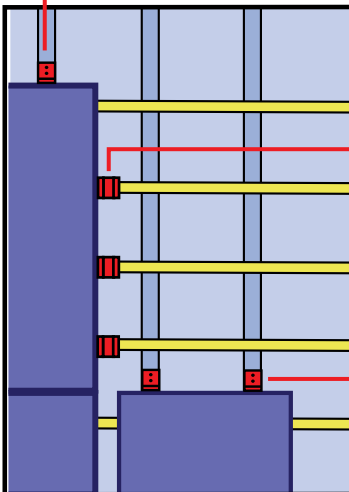
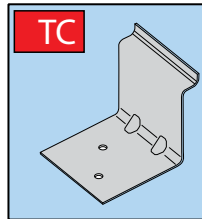
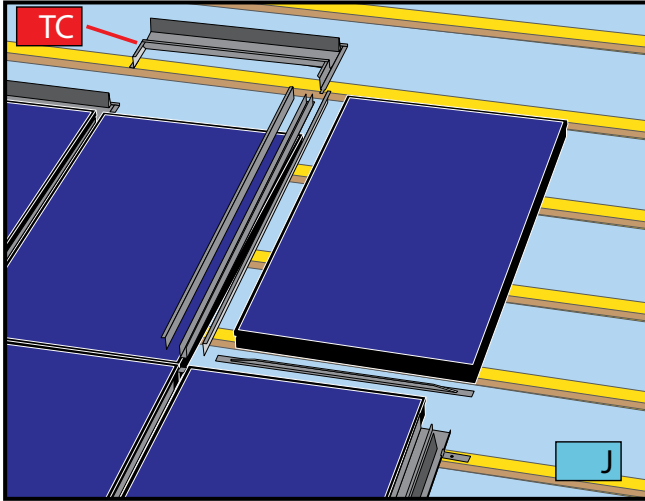
EN

Push the sill flashing (2) into the gasket at the bottom of the solar panel. Push the lower side flashing (3) into the gasket on the right hand side of the panel.

Fit the lower gutter (7), (16) and lower gutter covers (8). See steps 10 and 11.

Fit side fixing tabs (17) and fold over the tab on the sill flashing. See step 3.

19

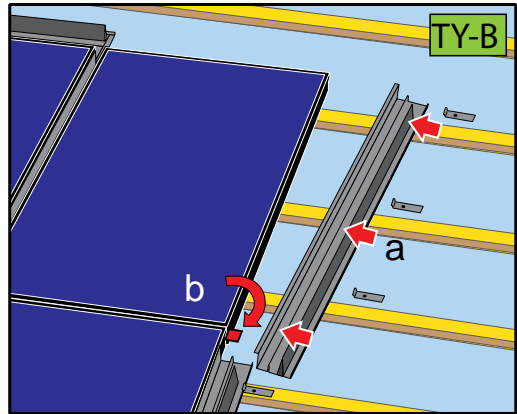
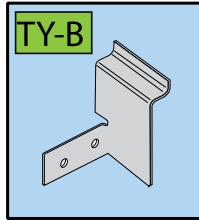
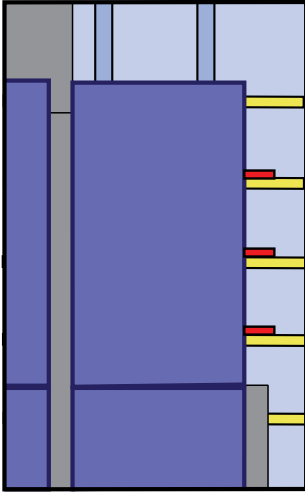


EN

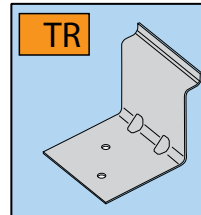
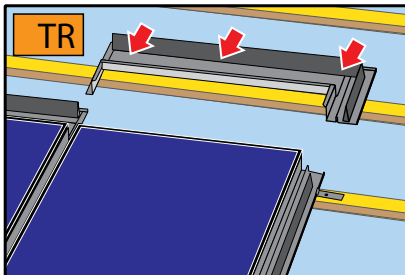
BLUE BOX

Repeat steps 12 to 15 with TC kit and J kit.

20



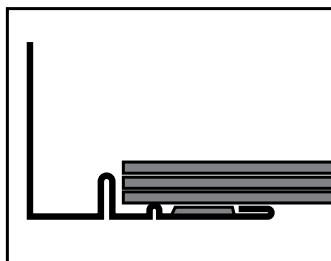
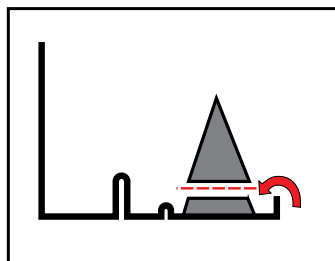
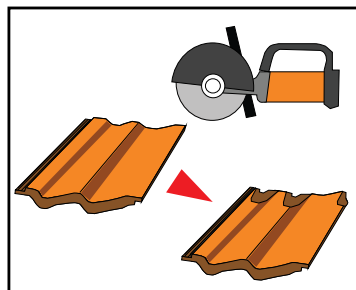
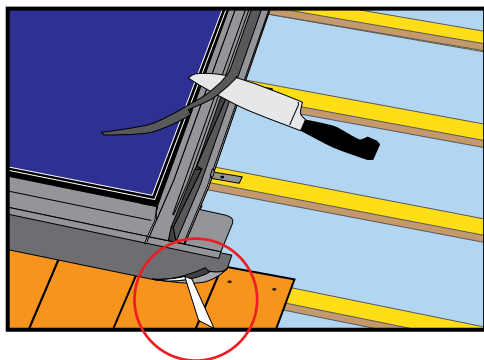
21



EN

Repeat step 6 to fit batten brackets and upper side flashing

Repeat step 14 with TR kit



EN

Remove the paper strip on the underside of the sill flashing and dress the lead down onto the tiles. Ensure that the bitumen strip is well-bonded to the tiles. In some circumstances, for example a dusty tile surface, the application of a low modulus external silicone sealant will be required to achieve good adhesion.

For some tile types it may be necessary to chamfer the high points under the sill flashing.

It may also be necessary to cut a channel through batten bearers, batten lugs or any part of the under tile that may obstruct tiles sitting flat over the side flashings.

Lighter tiles will sit more neatly if the foam surround is trimmed. For slates, trim the foam to within 10mm of its base and flatten over the outside edge of the flashing.

Need the help of a Marley Approved Solar Expert and Solar Fitter, as well as more helpful tools?

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