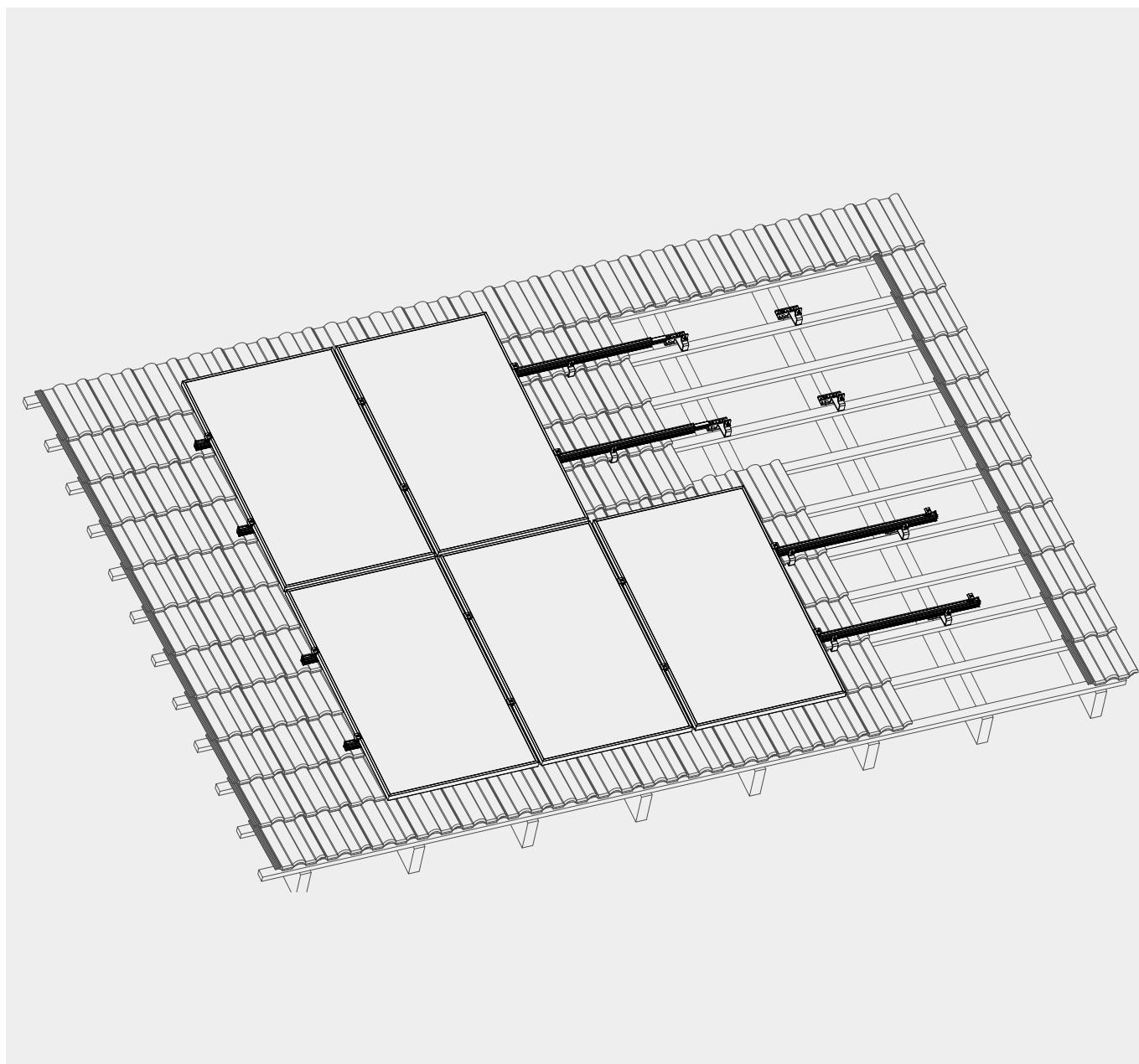


Installationsystem Vitovolt 300  
VS+





## Safety instructions

Mounting system for the installation of framed PV modules with a frame thickness between 30 and 50 mm on pitched roofs with the following characteristics:

- Roof pitch 5° - 60° (solar fasteners) or 20°-60° (roof hooks).
- For roof pitches below 20° the permissible roof pitch of the used tile type shall apply.
- Various tile roofs (pan tile, flat tile, interlocking tile, shingle tile, etc.) on wood substructure.
- PV assembly in Portrait and Landscape is possible.

A proof of stability of the roof considering the additional loads from the photovoltaic system must be on hand before the assembly.

### Installation guideline

To compensate the linear expansion of modules and mounting system, an interruption should be planned every 12 m.

Please observe the specifications issued by the manufacturers of the modules, the manufacturers of the roofing, as well as the local regulations for woodwork. Do not use the installed roof fixations as stepping aid.

For installation, follow the requirements referring to lightning and overvoltage protection for photovoltaic systems, as well as the requirements on fire protection.

If the installation takes place in a distance of 10 km to the coasts, we advise against the use of galvanised components.

### Installation instructions

Please, carefully read the last version of the installation instructions, before starting the installation. First, familiarise yourself with the system components. Check the condition of the roof construction before starting the installation. This includes quality and thickness of rafters, purlins and the roof sealing. The building structure must be able to safely and durably bear the additional loads of the photovoltaic system. During the installation, in particular while working on the roof, be sure to observe the relevant health and safety regulations and please follow the relevant professional rules.



Check the structural loadability of the PV system before starting the installation. The building must be able to bear the additional weight.

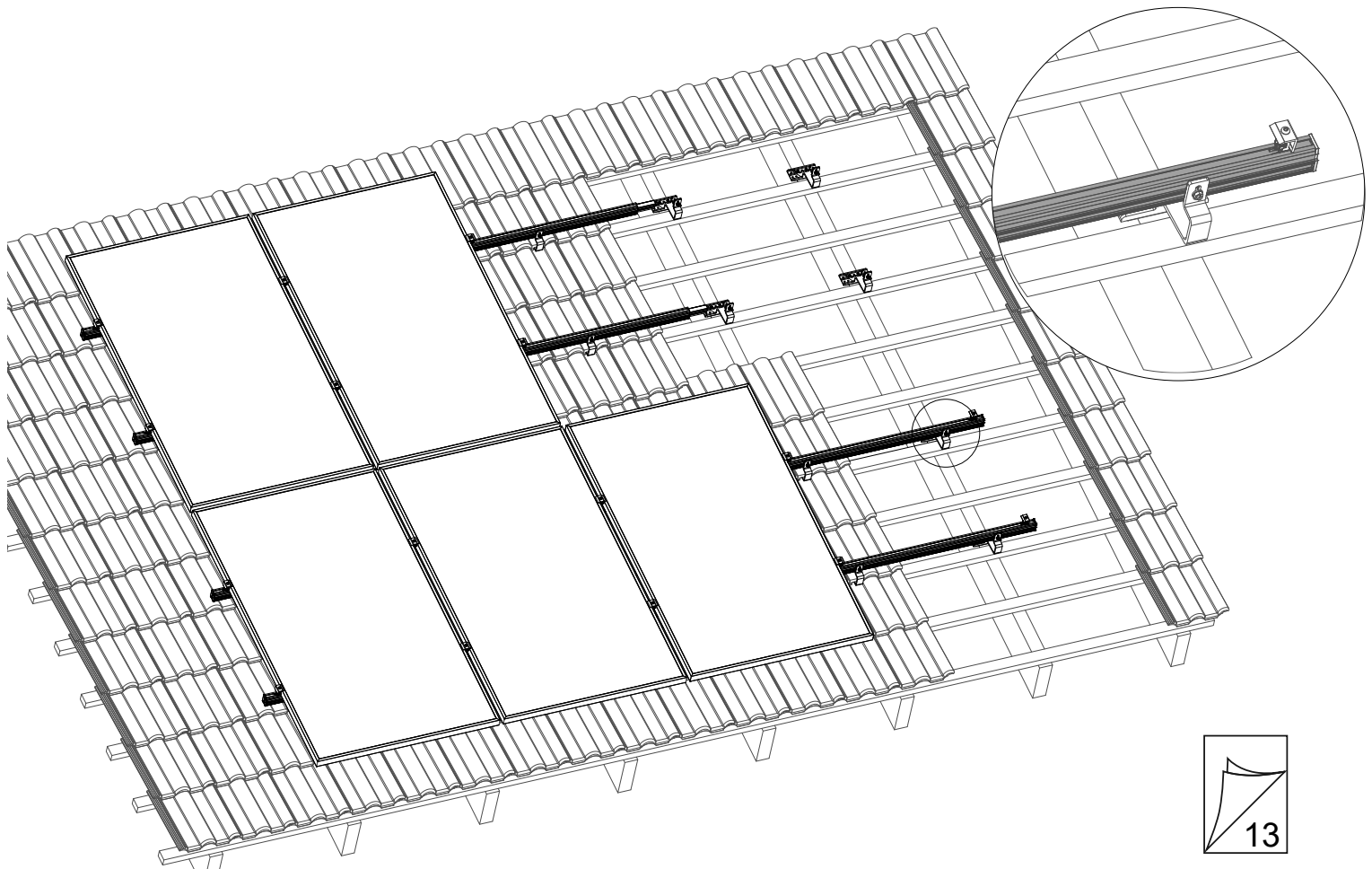
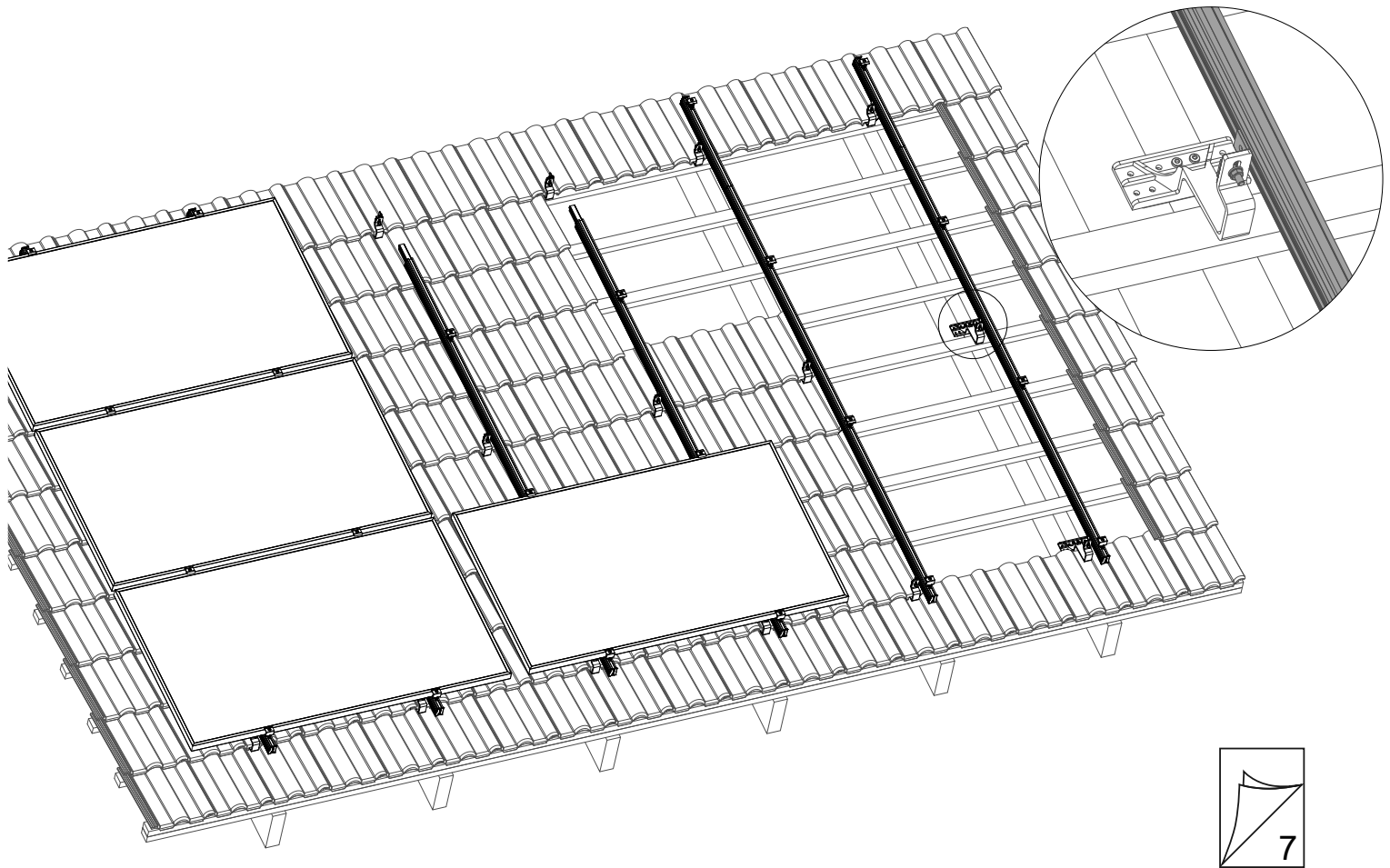
The figures and texts in the installation instructions correspond to current technology at the time of printing. Printing errors are possible and we reserve the right to make technical changes. The individual installation instructions are merely recommendations in accordance with the current state of the art and are based on the experience of how systems by Viessmann can be installed. If any special characteristics of the roof or object need to be considered, please consult specialists such as roofers or structural engineers, if necessary.

Observe further product documents.

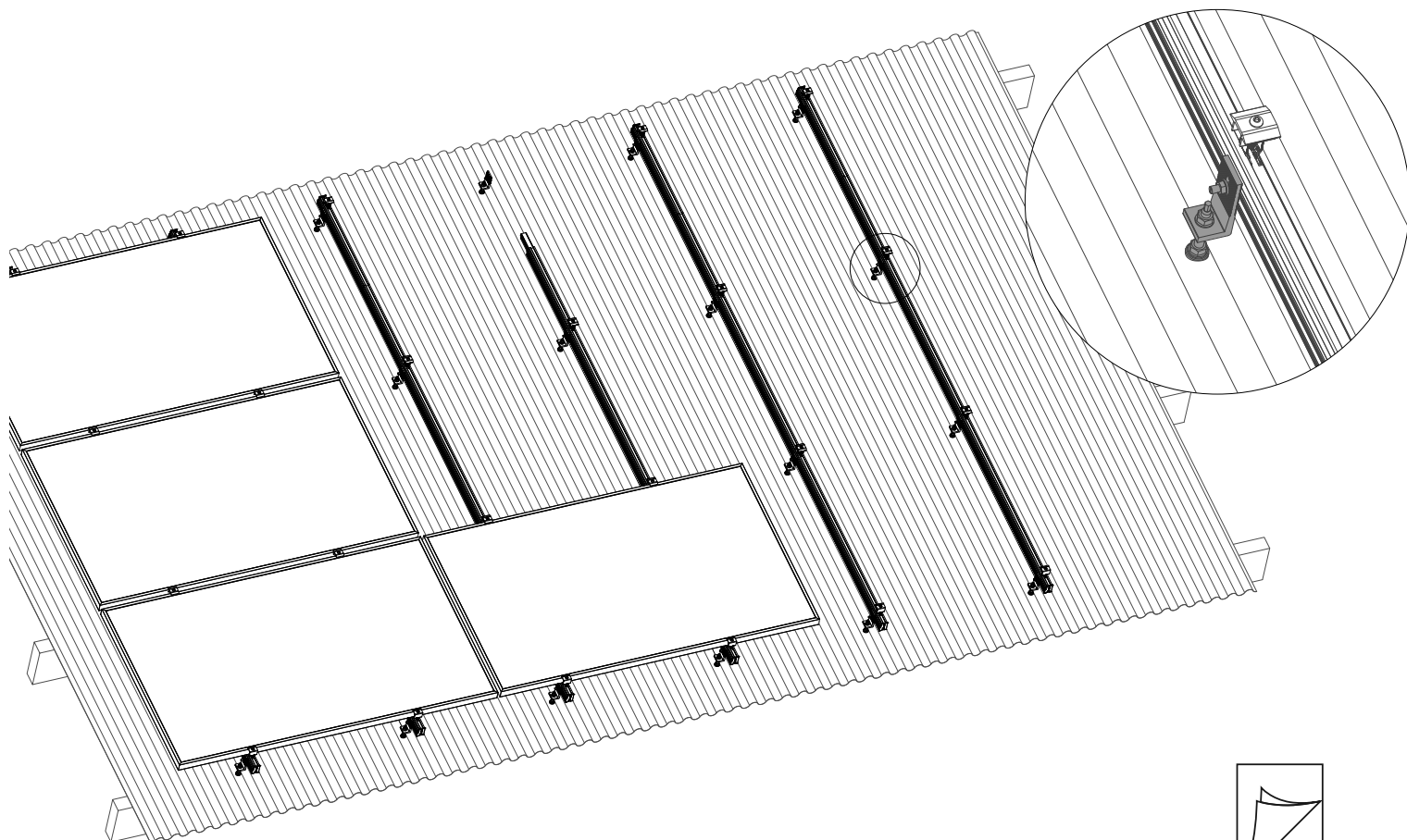
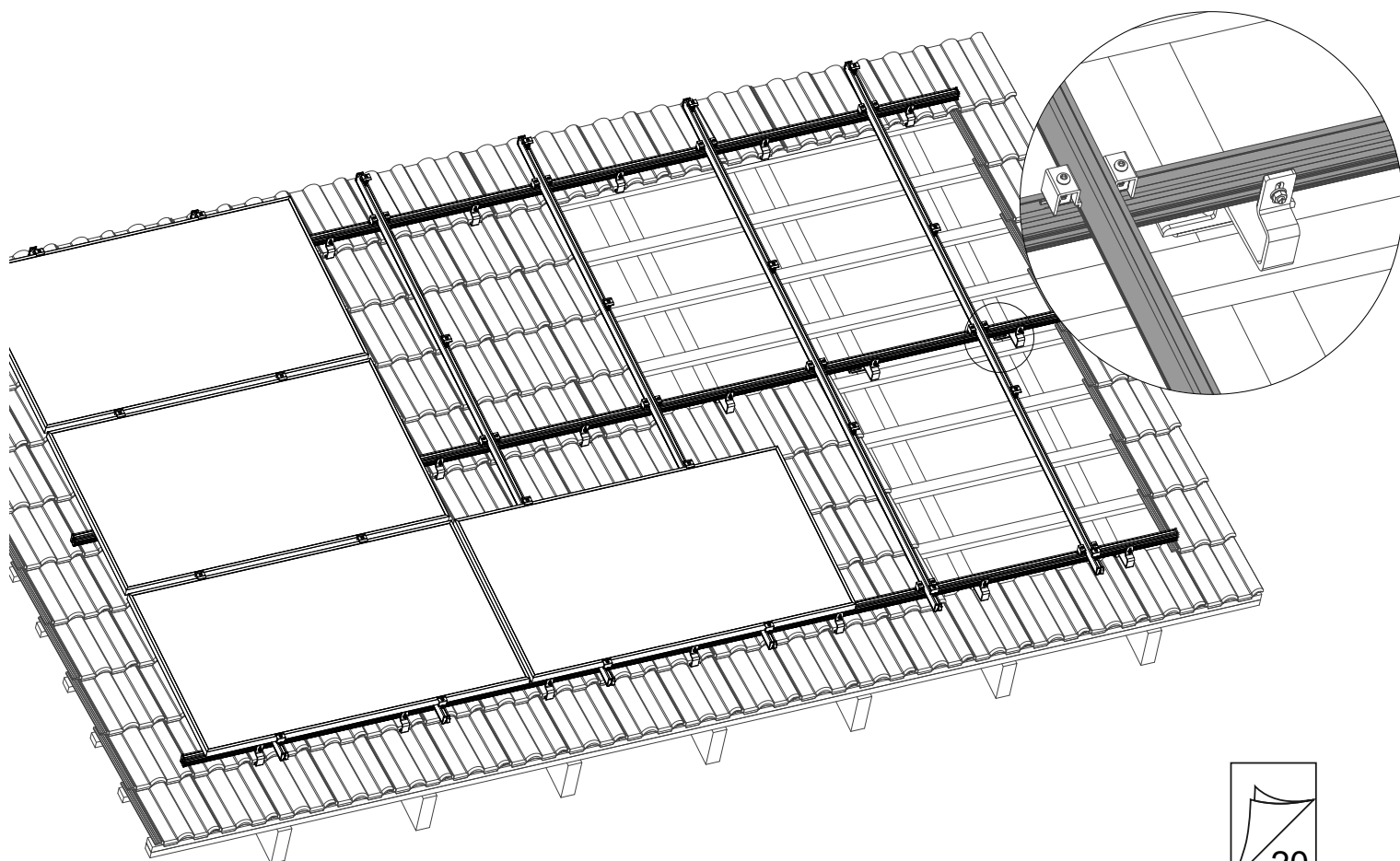
### Warranty

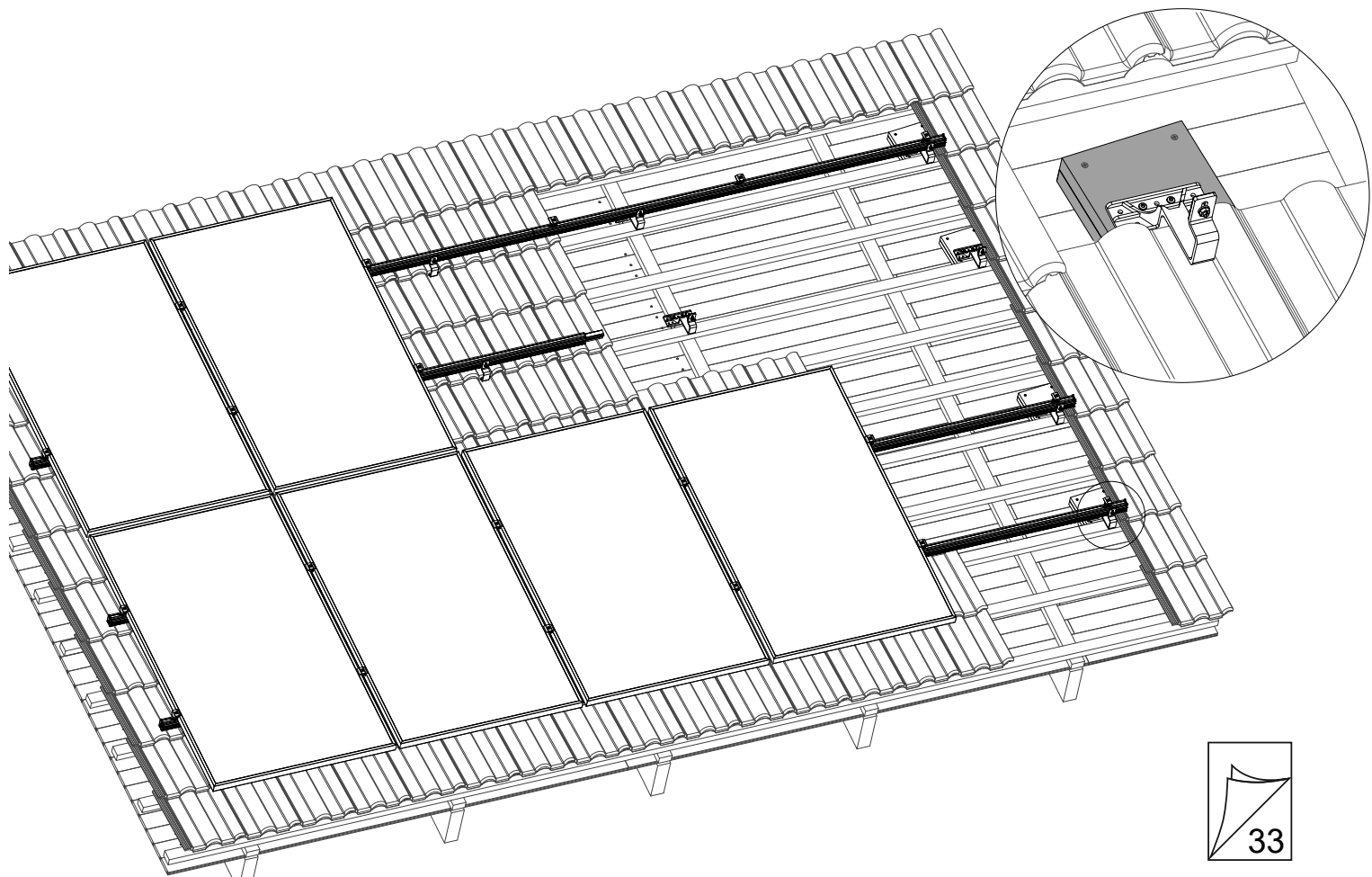
The warranty only applies if an original Viessmann system is being used.

One-layer rail system - horizontal module alignment - overview .....	7
One-layer rail system - vertical module alignment - overview .....	13
Two-layer rail system - horizontal module alignment - overview .....	20
Hanger bolts - solar fastener connection - horizontal module alignment.....	27
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Connection to alternative fasteners .....	40
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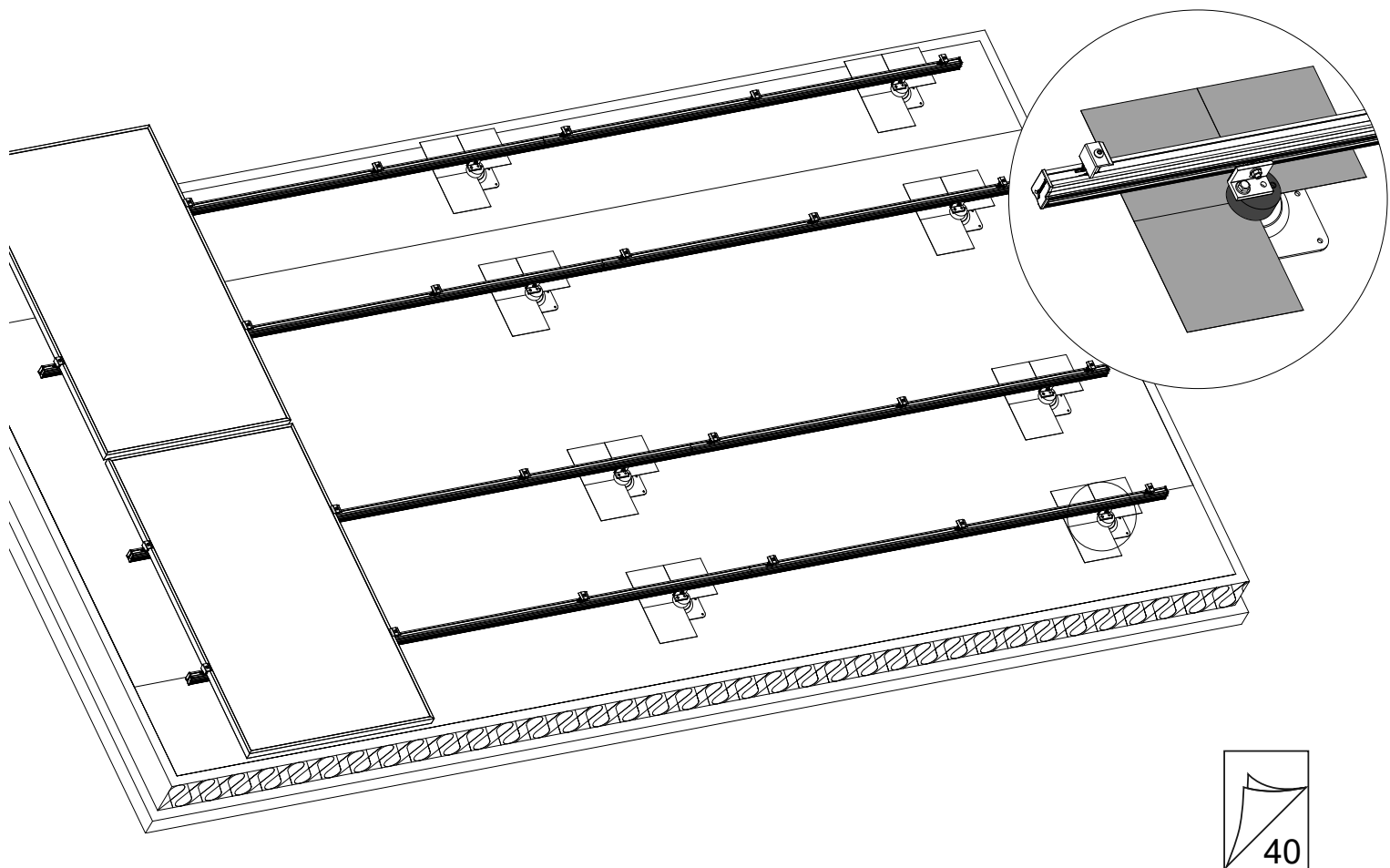


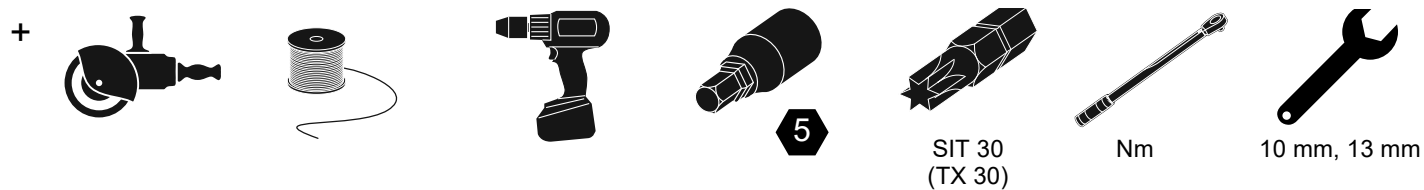
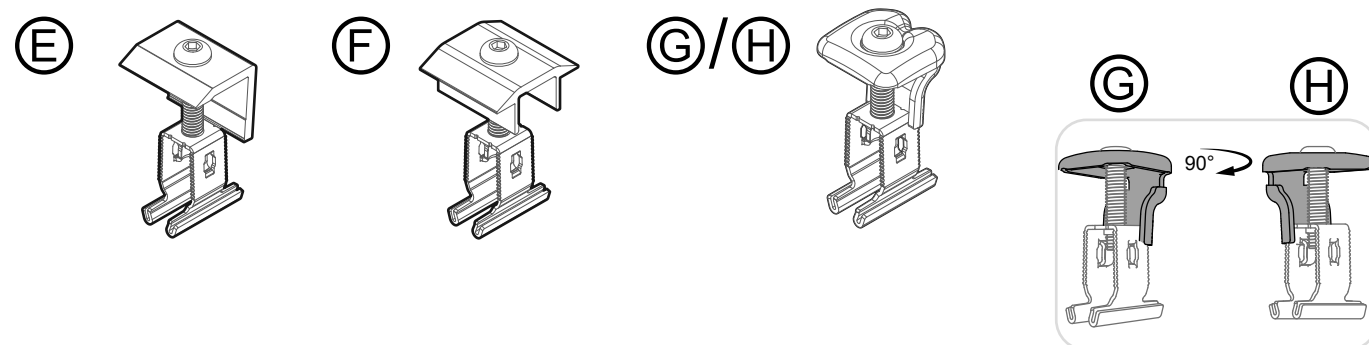
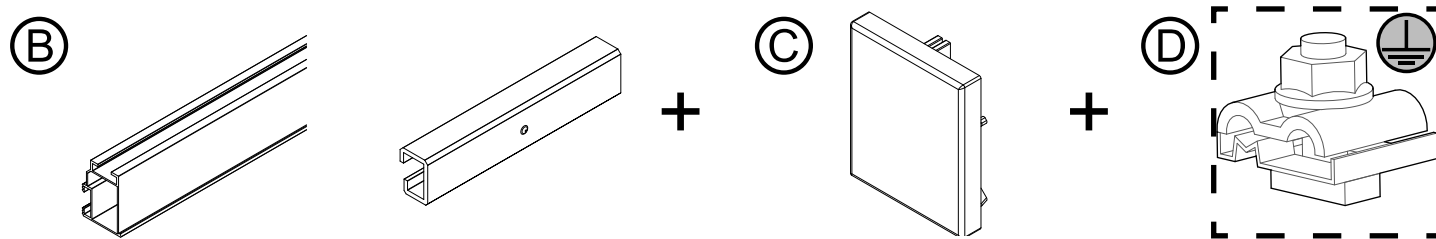
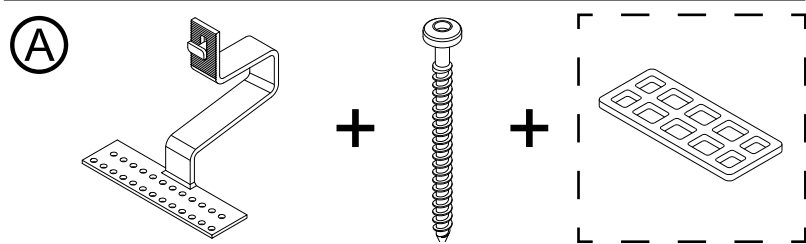
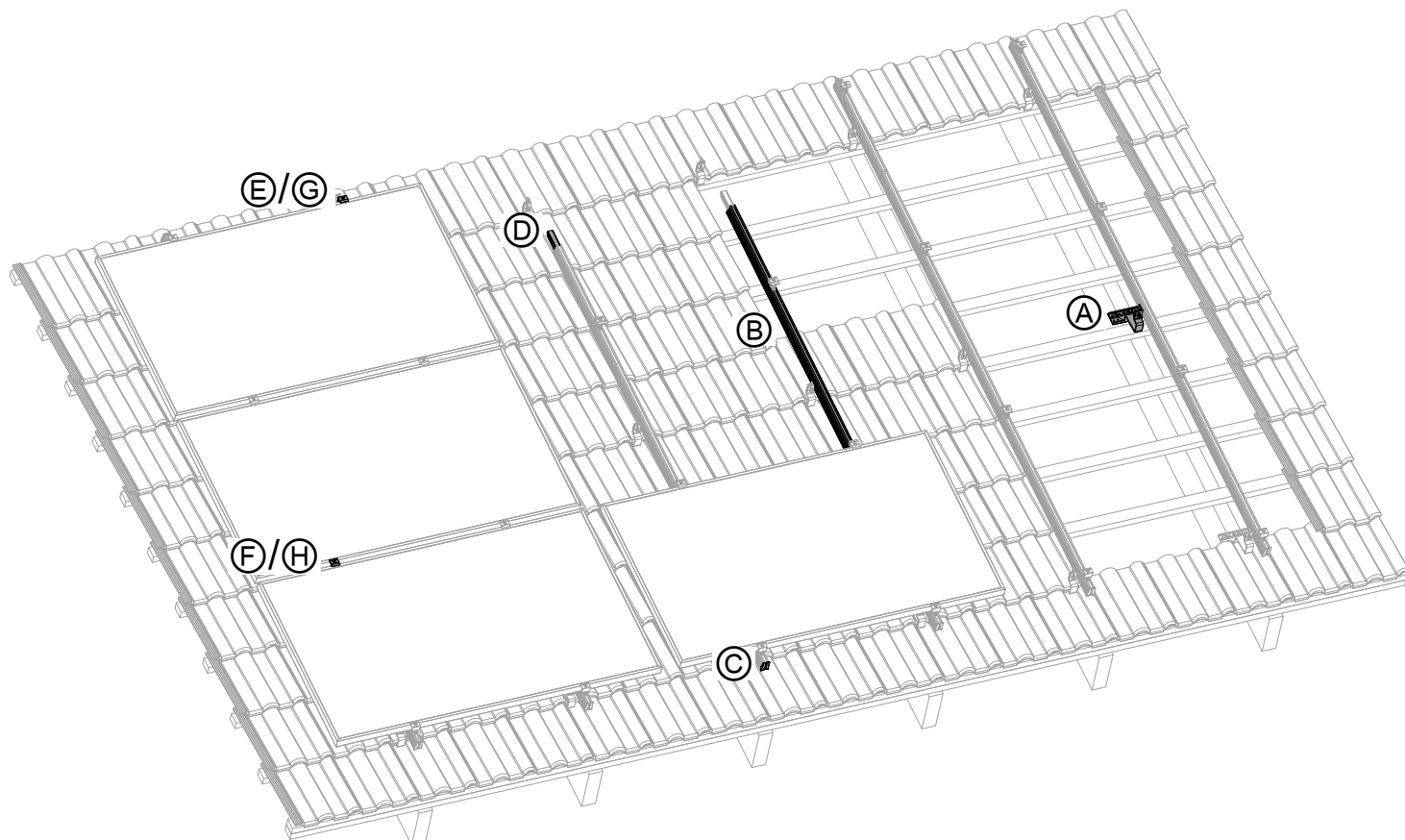


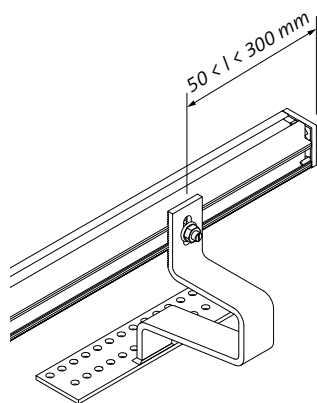
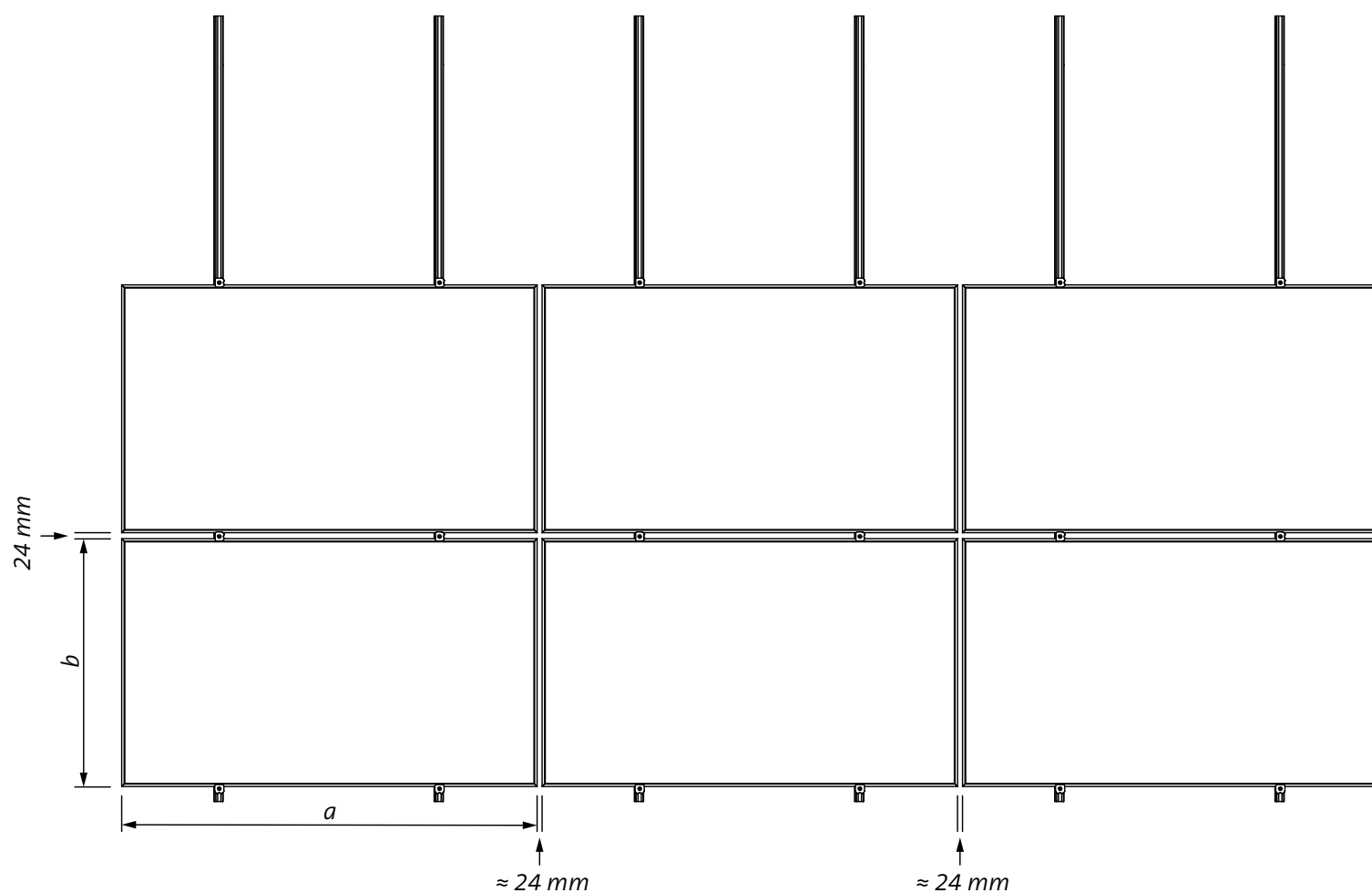




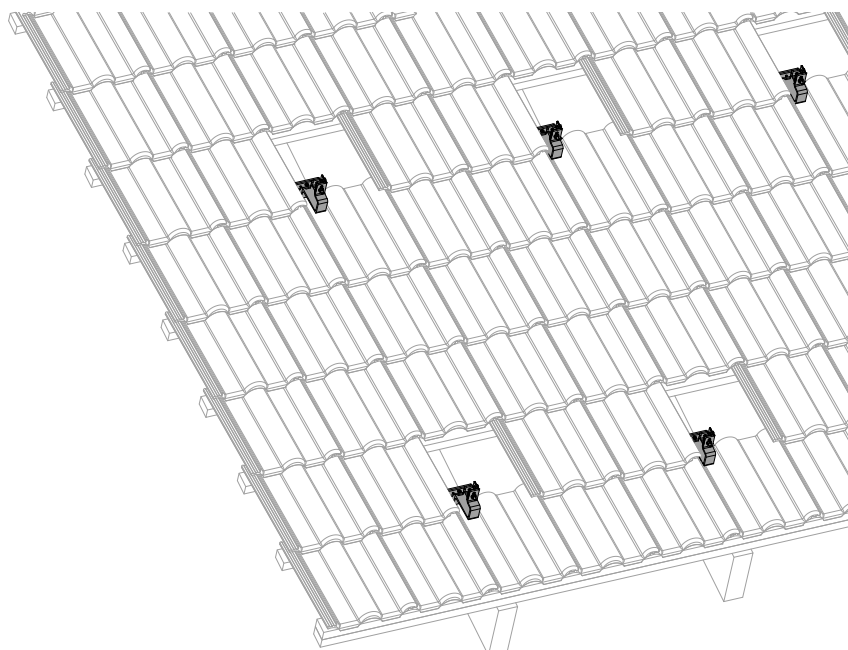
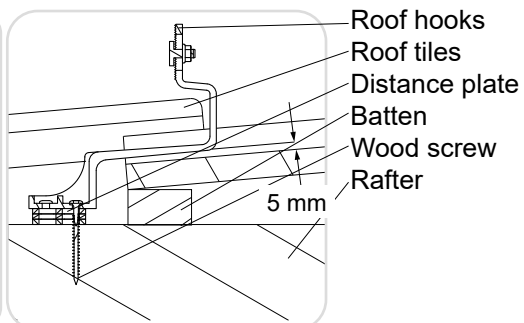
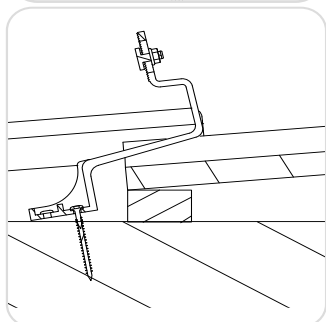
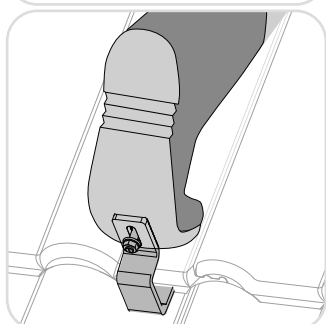
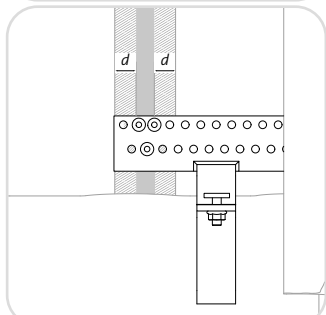
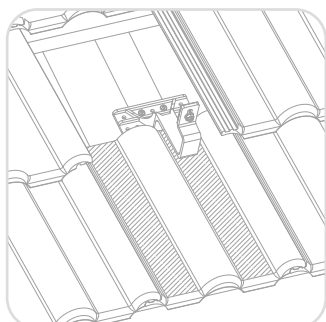
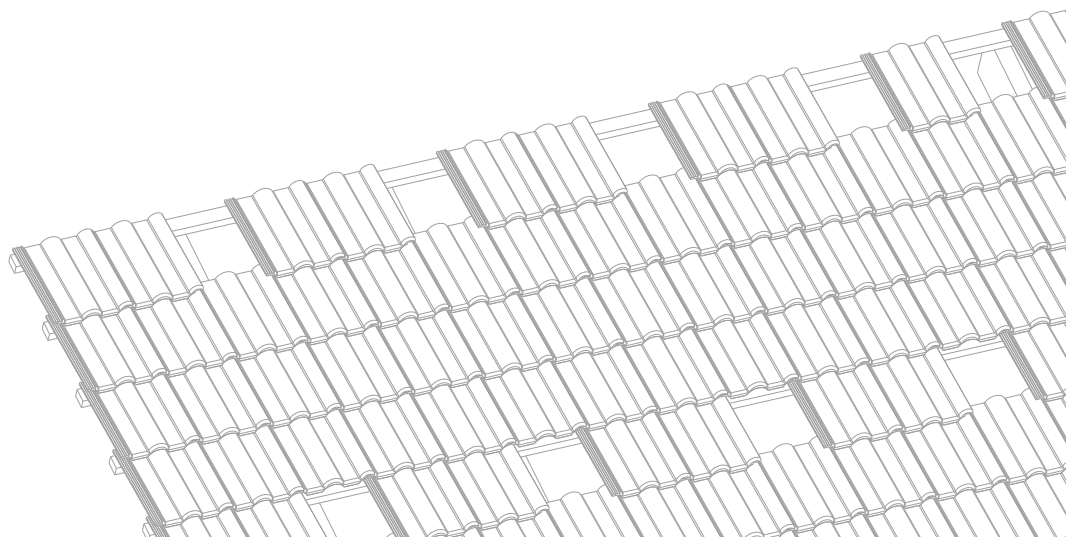
Connection to alternative fasteners







Without a structural analysis by means of the Viessmann PV-Planner the length of the cantilever should not be longer than 300 mm.



**Warning!**

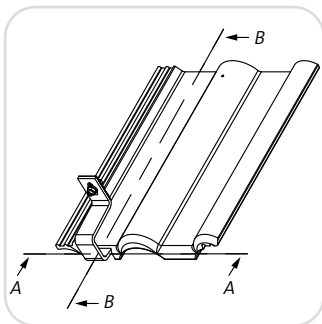
Use the hole pattern of the roof hook to place the roof hook in the trough area of the tile.

Screw the roof hook in the allowed area only.

Keep a distance of  $3 \times \varnothing$  of the wood screw to the outer edge of the rafter. Do not use the roof hook as step.

When mounted, the cantilever of the roof hook shall have a distance of approx. 5mm to the roof tile.

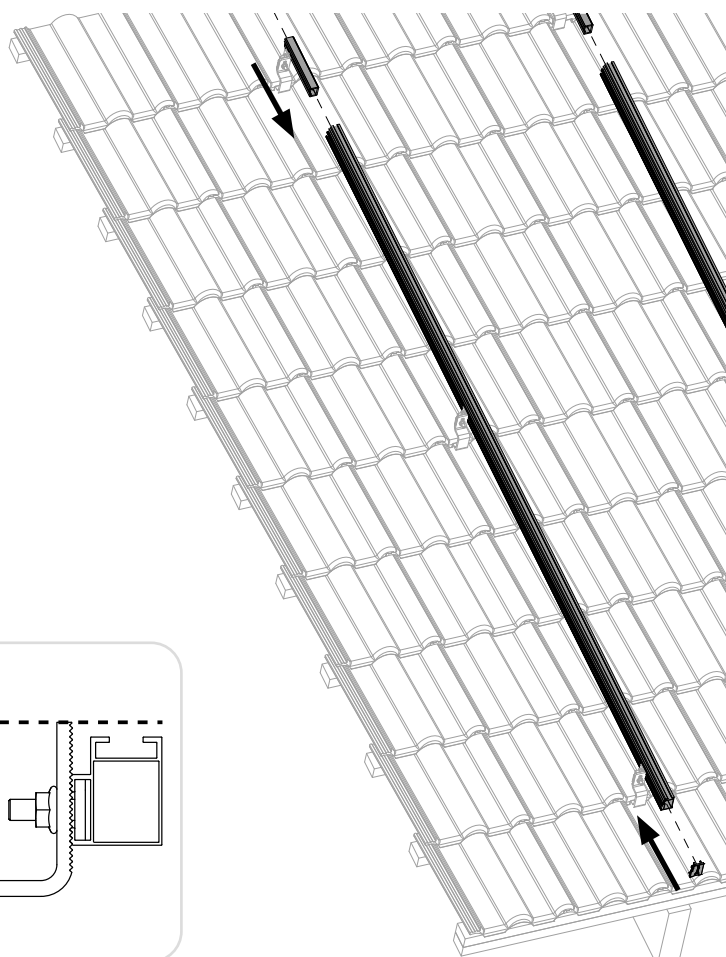
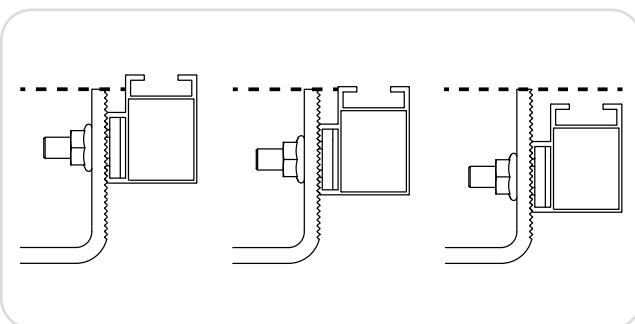
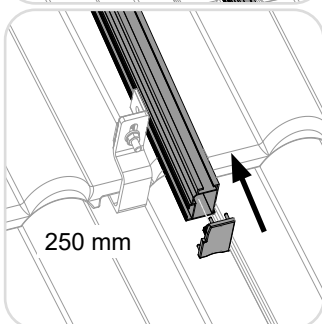
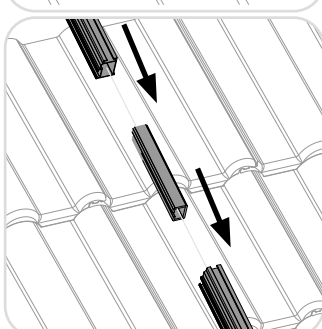
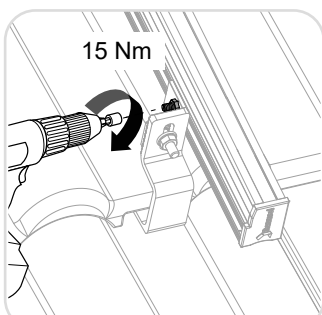
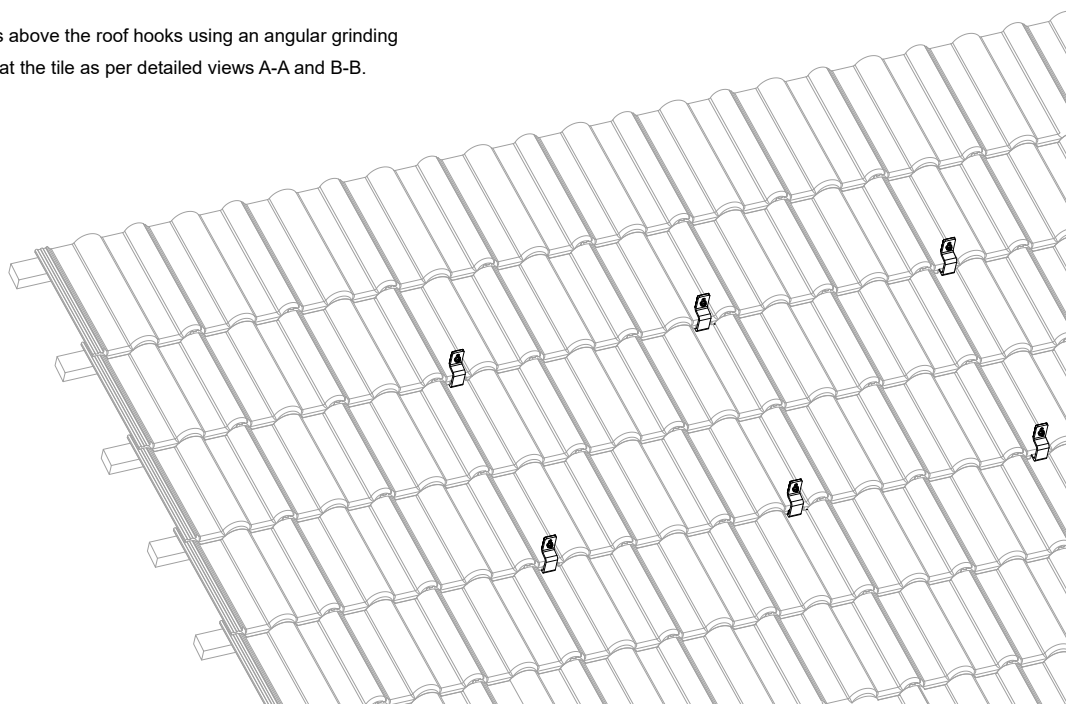
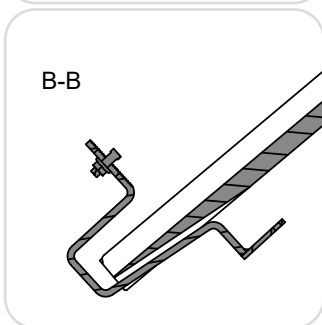
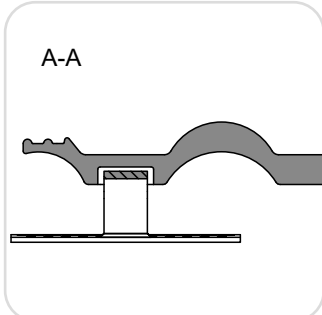
Please find the number of screws on page 50-52.

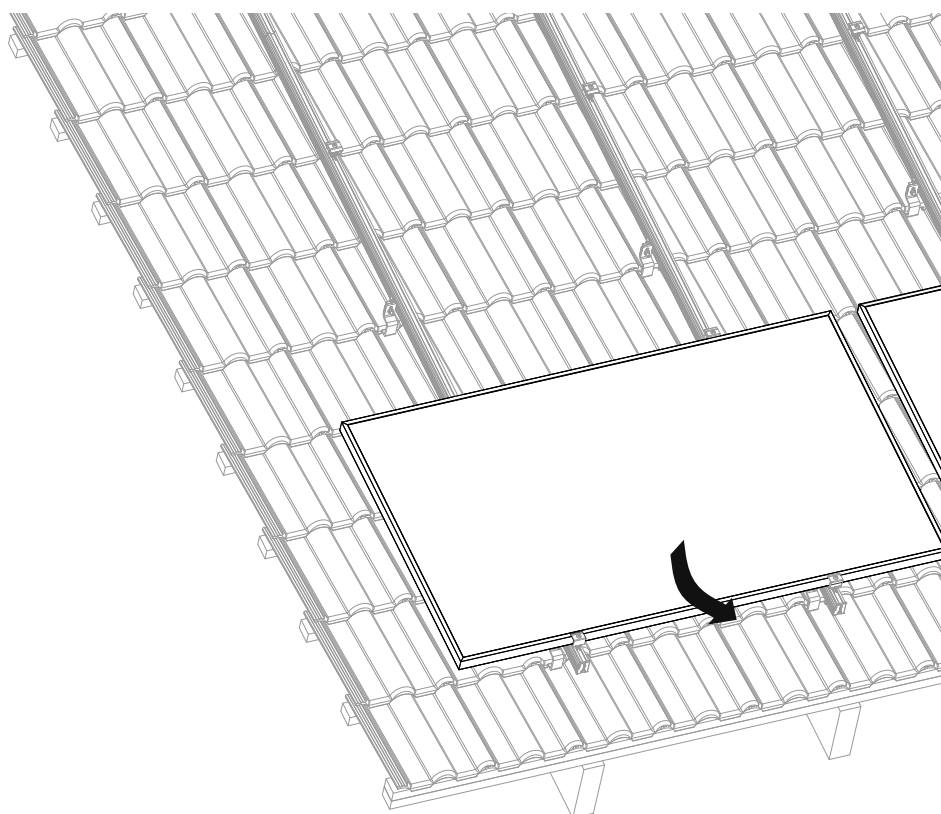
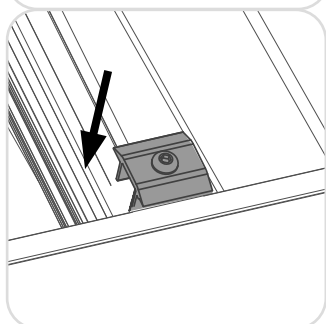
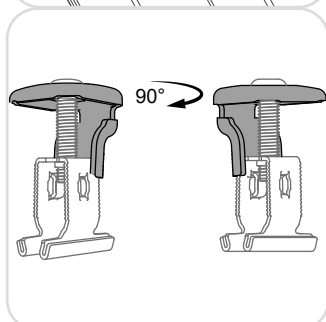
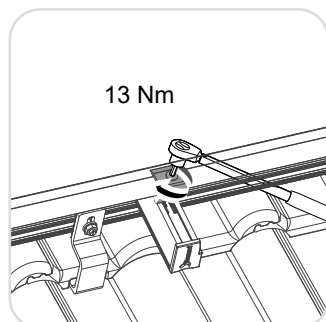
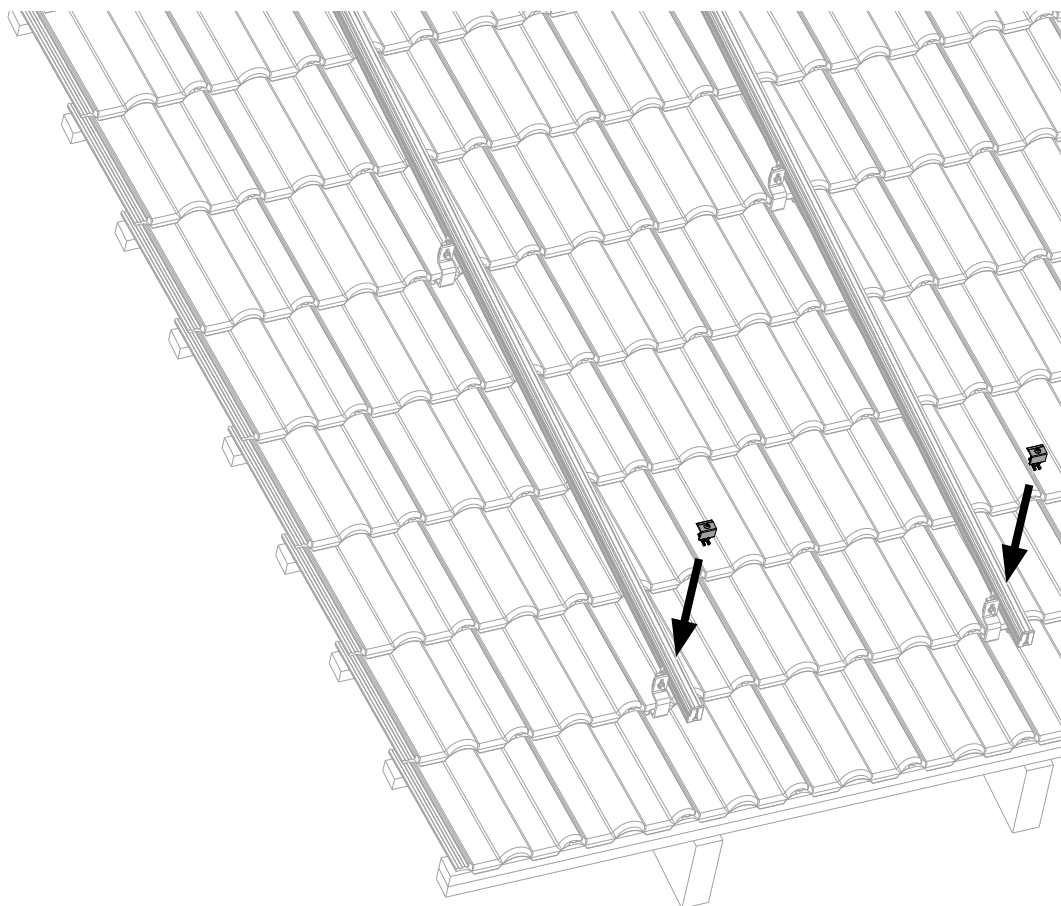
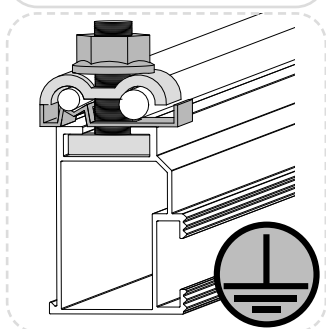
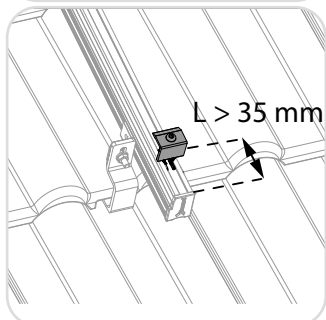
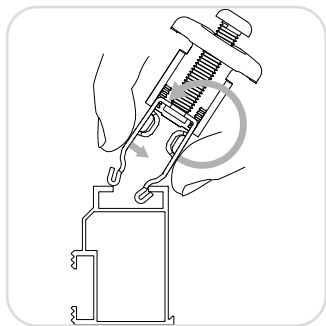


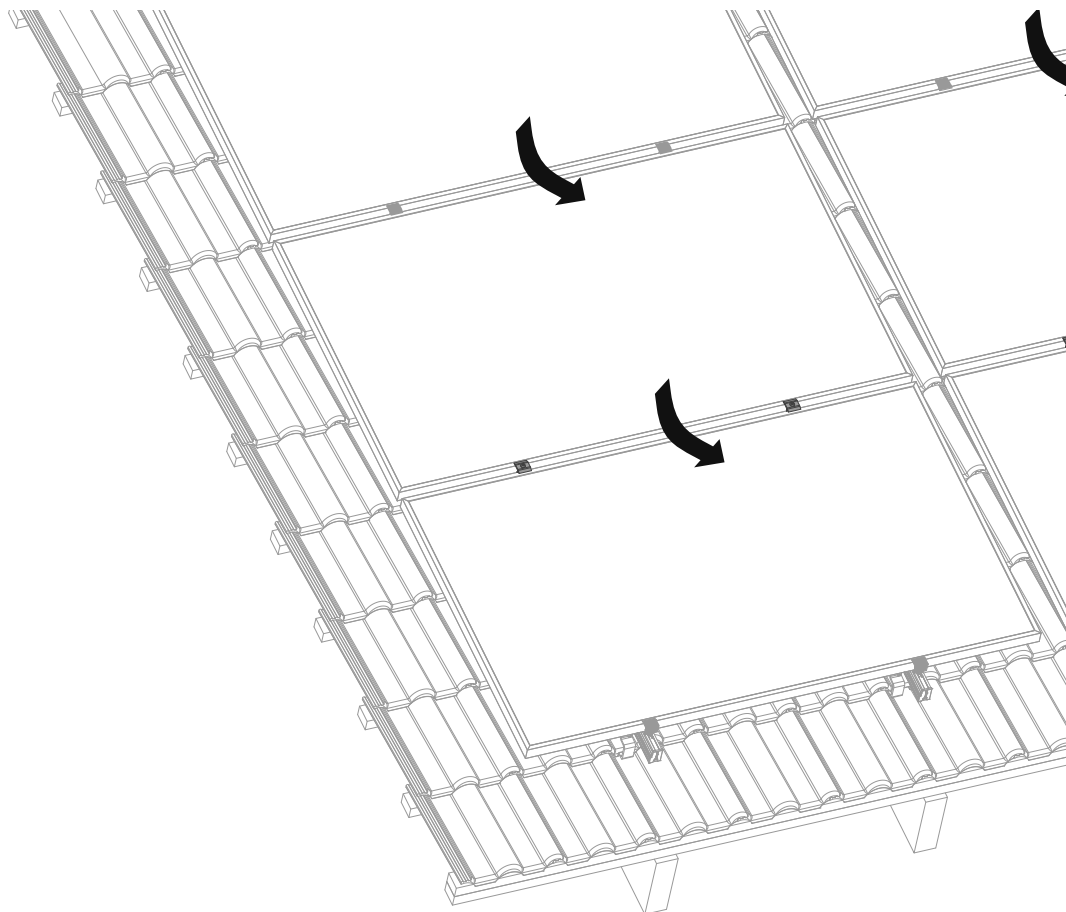
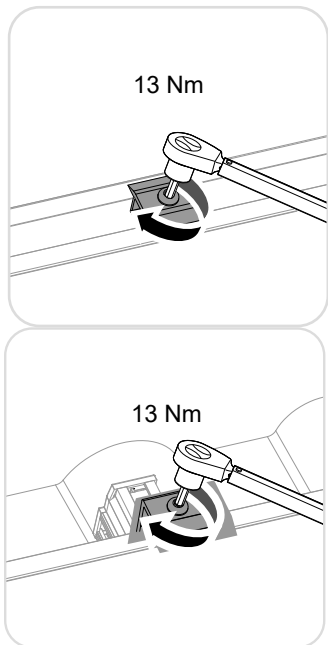
**Warning!**

The following treatment of tiles only applies to grooved tiles.  
For flat tiles, please look at page 45-47.

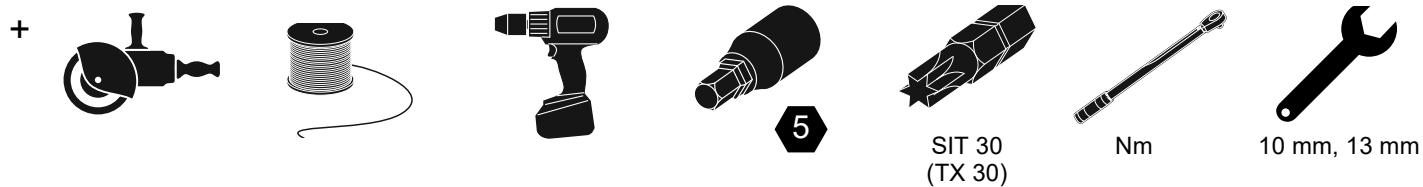
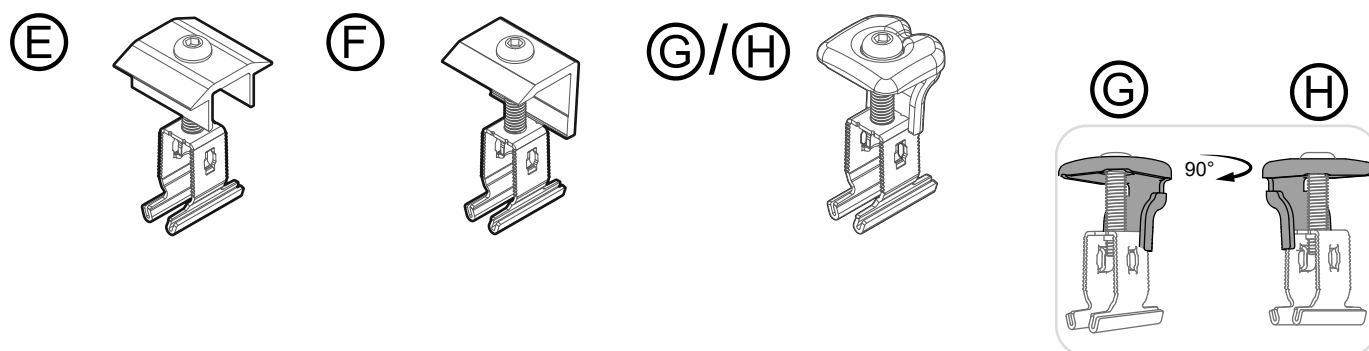
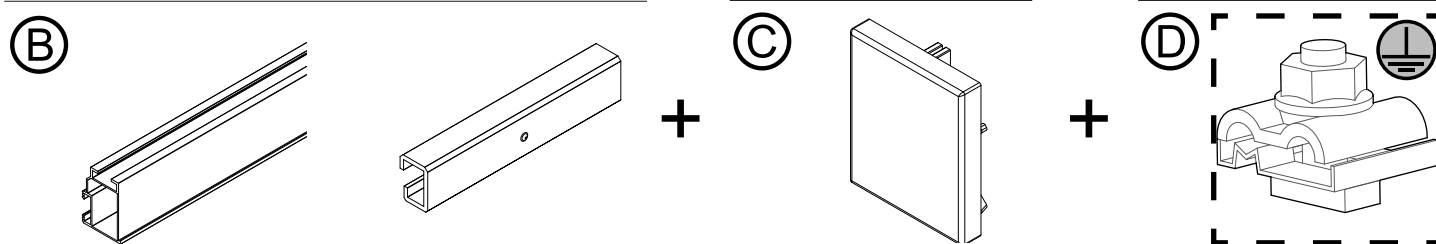
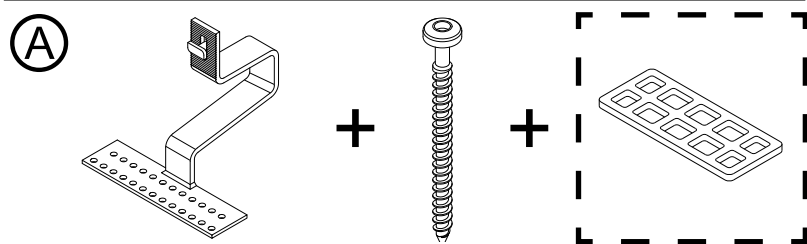
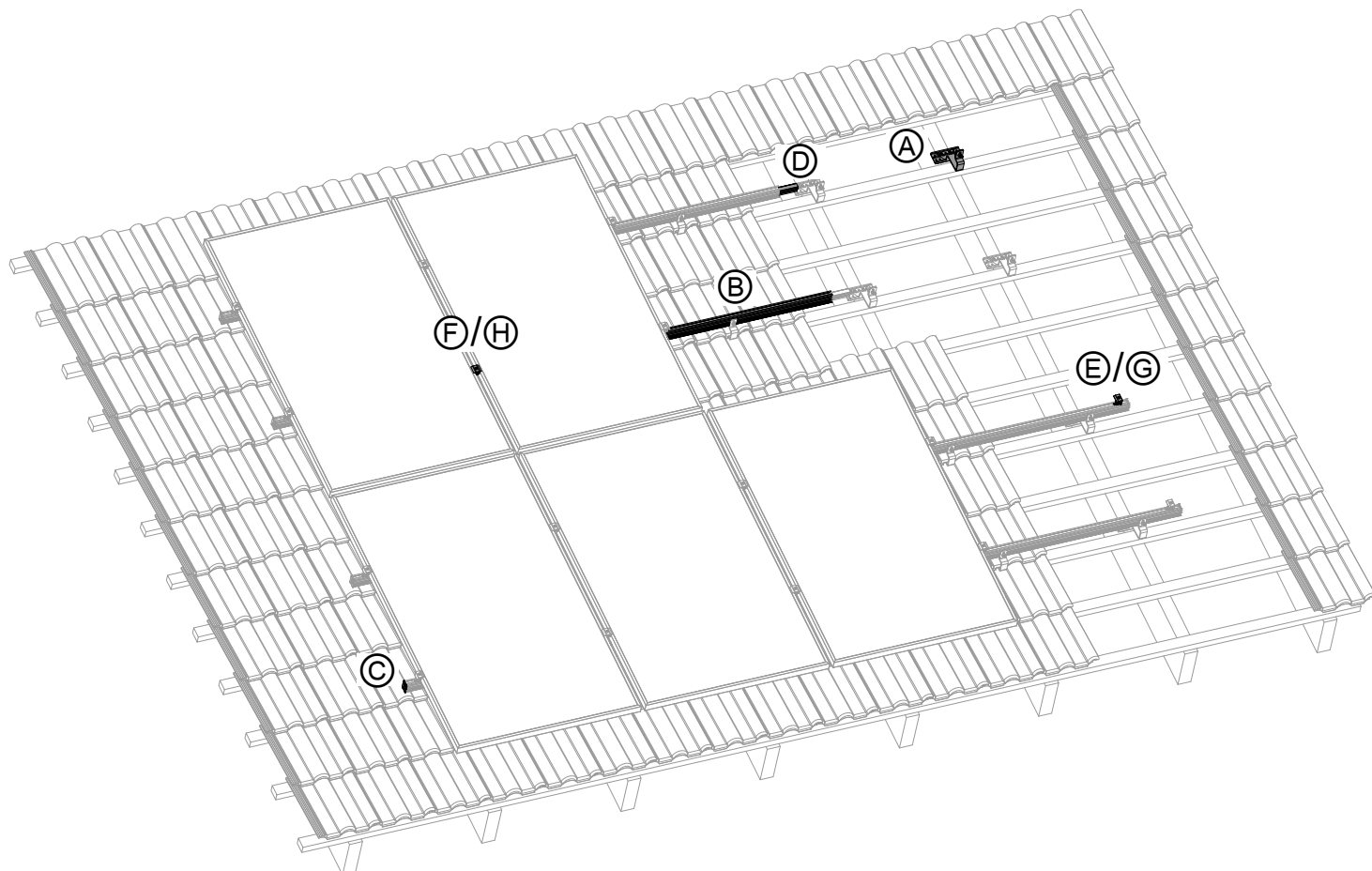
Treat the tiles above the roof hooks using an angular grinding machine. Treat the tile as per detailed views A-A and B-B.

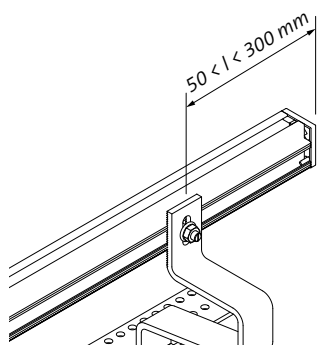
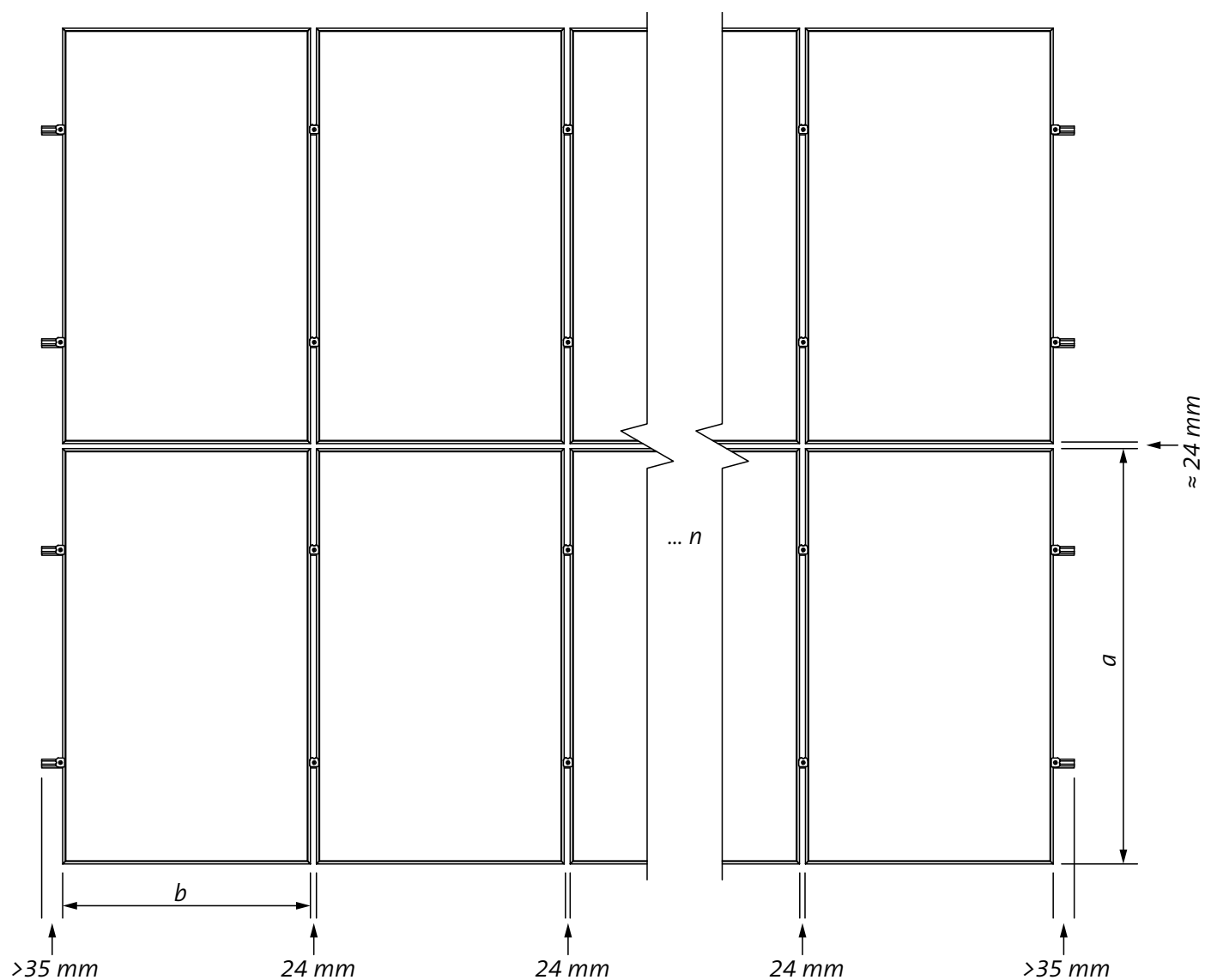




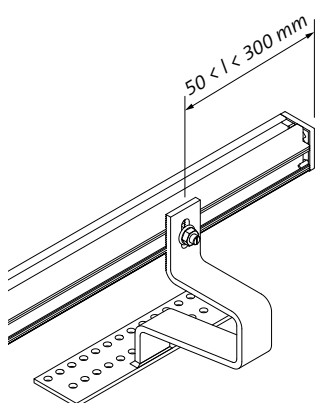
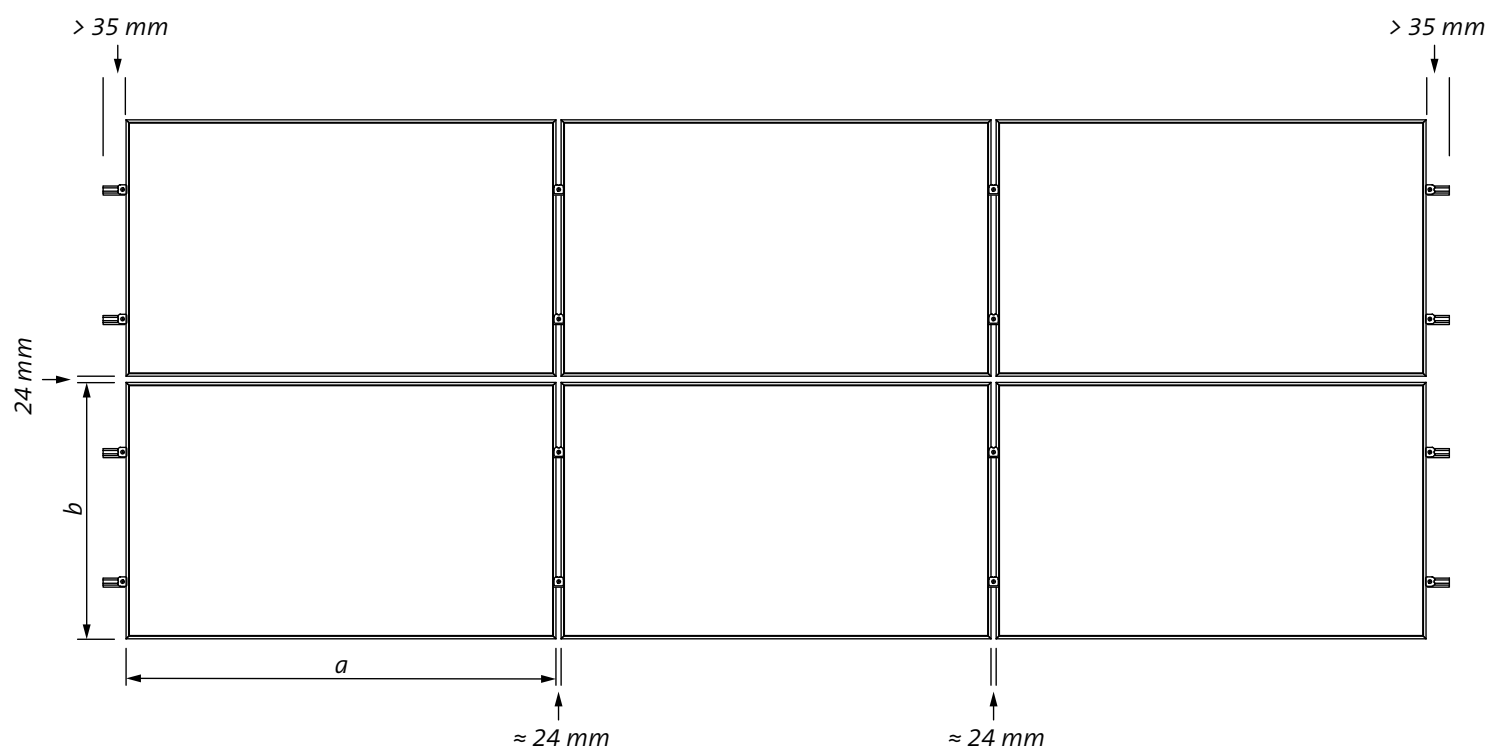




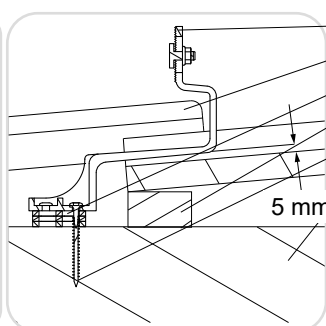
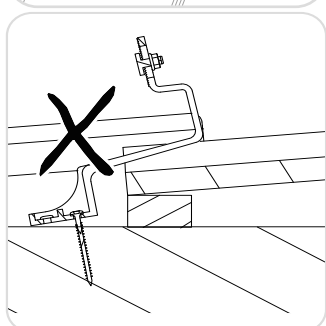
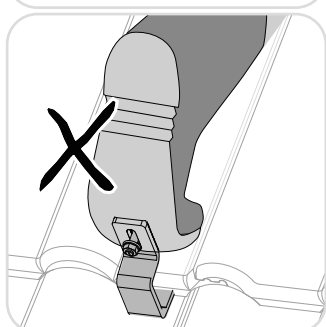
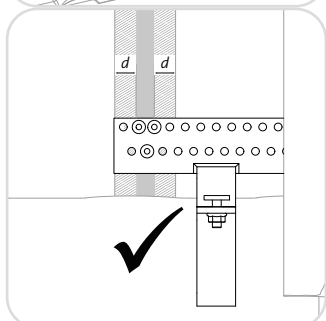
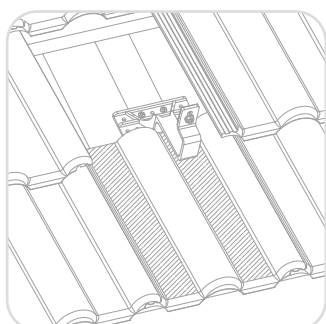
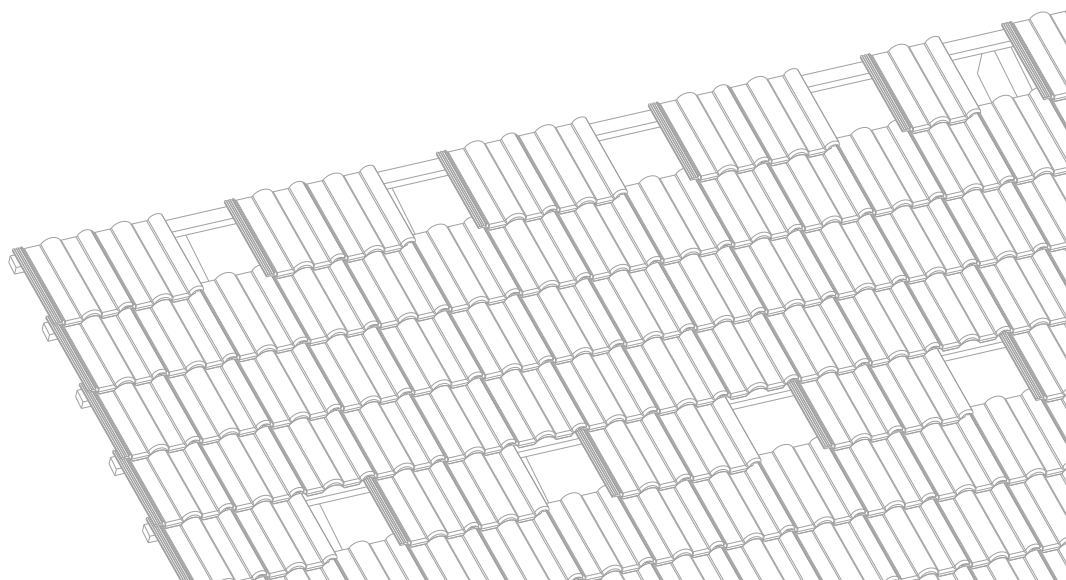




Without a structural analysis by means of the Viessmann PV-Planner the length of the cantilever should not be longer than 300 mm.

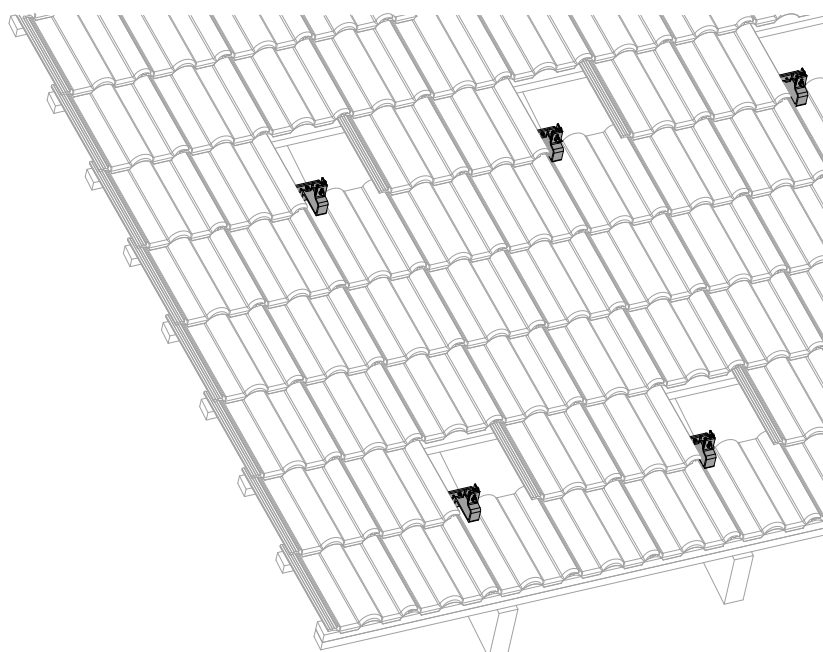


Without a structural analysis by means of the Viessmann PV-Planner the length of the cantilever should not be longer than 300 mm.



Roof hooks  
Roof tiles  
Distance plate  
Batten  
Wood screw  
Rafter

5 mm



#### Warning!

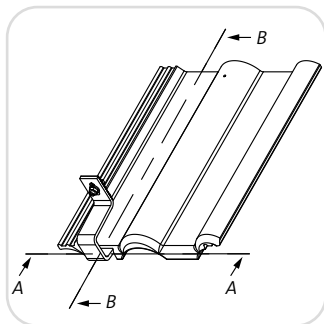
Use the hole pattern of the roof hook to place the roof hook in the trough area of the tile.

Screw the roof hook in the allowed area only.

Keep a distance of  $3 \times \varnothing$  of the wood screw to the outer edge of the rafter. Do not use the roof hook as step.

When mounted, the cantilever of the roof hook shall have a distance of approx. 5mm to the roof tile.

Please find the number of screws on page 50-52.

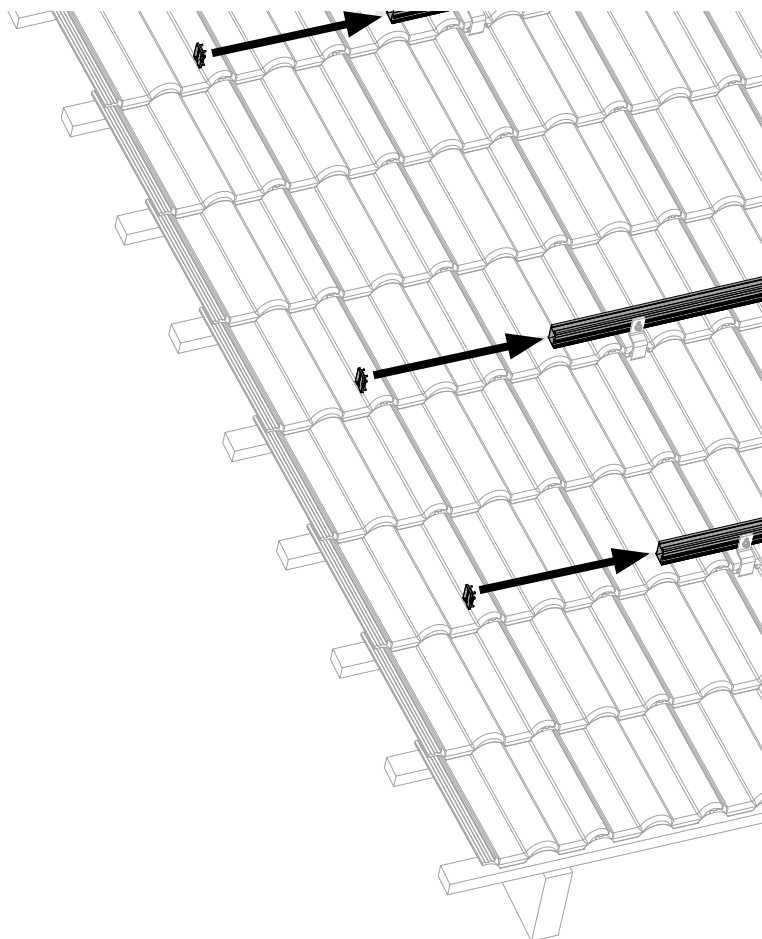
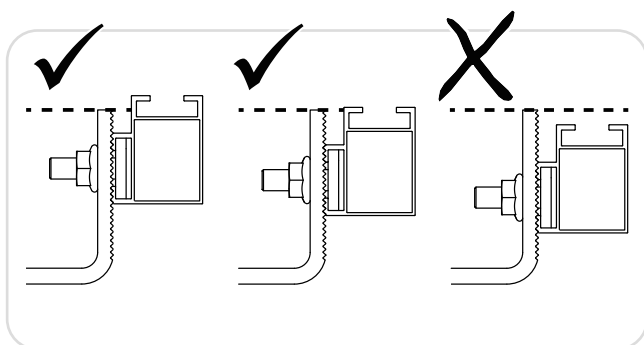
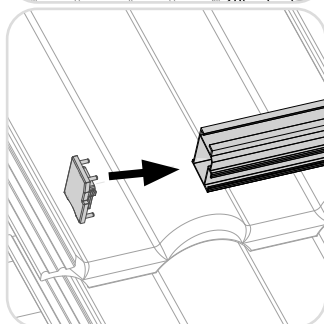
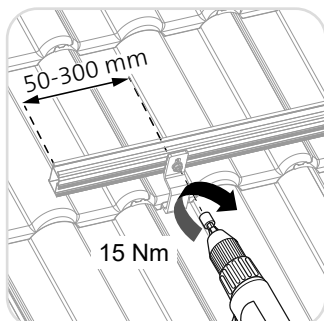
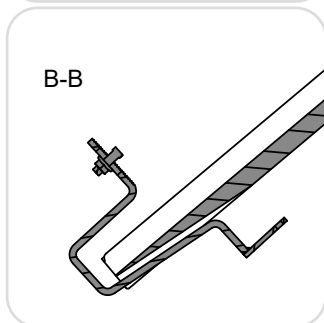
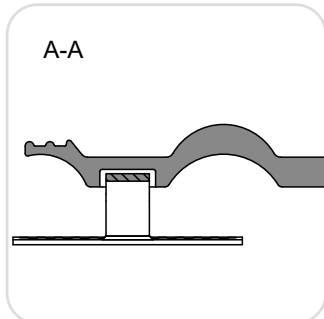


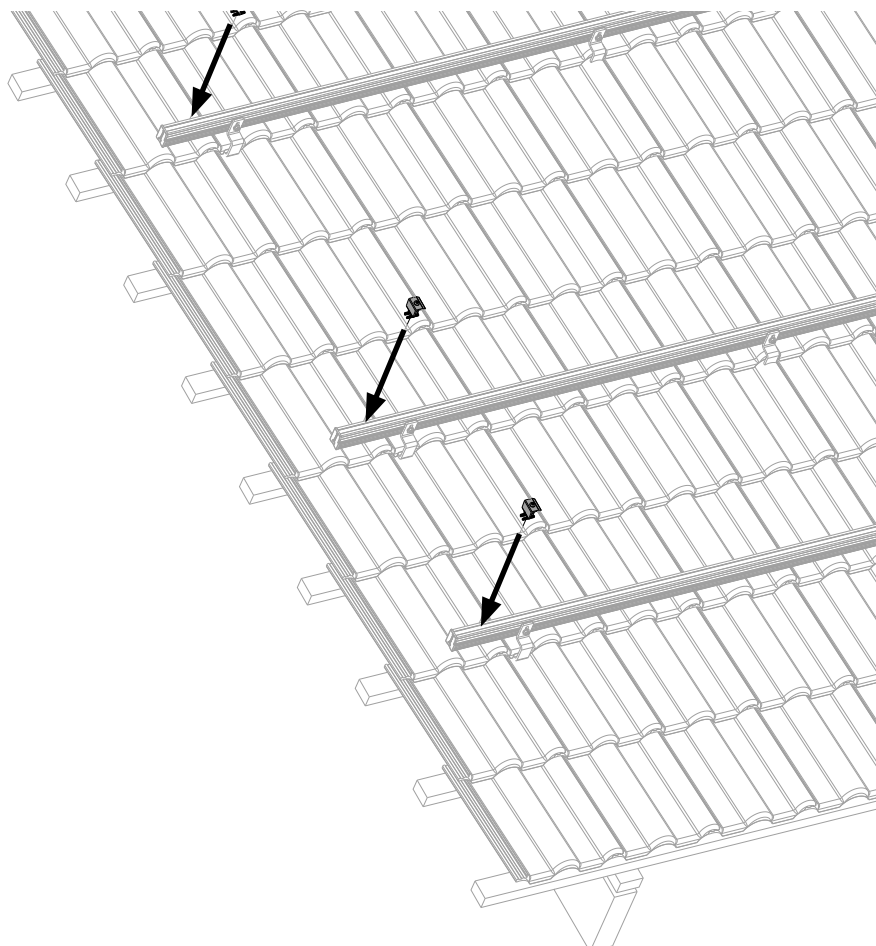
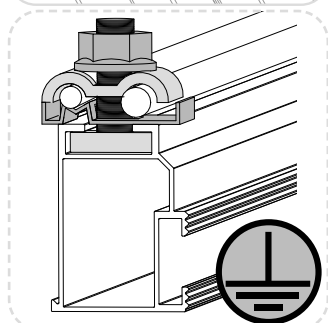
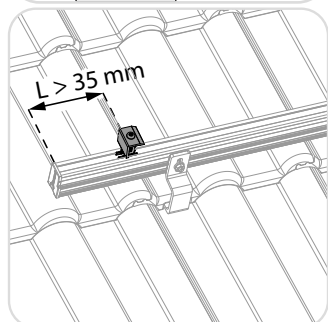
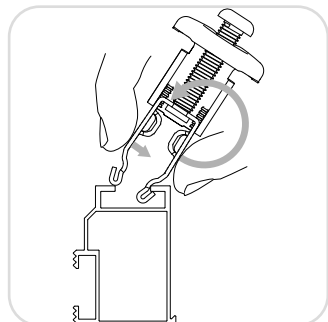
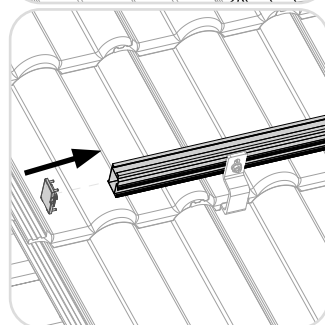
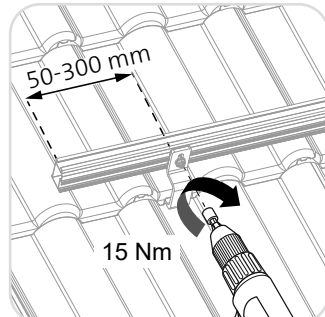
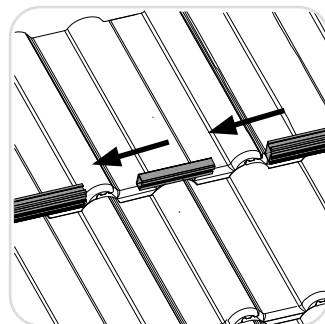
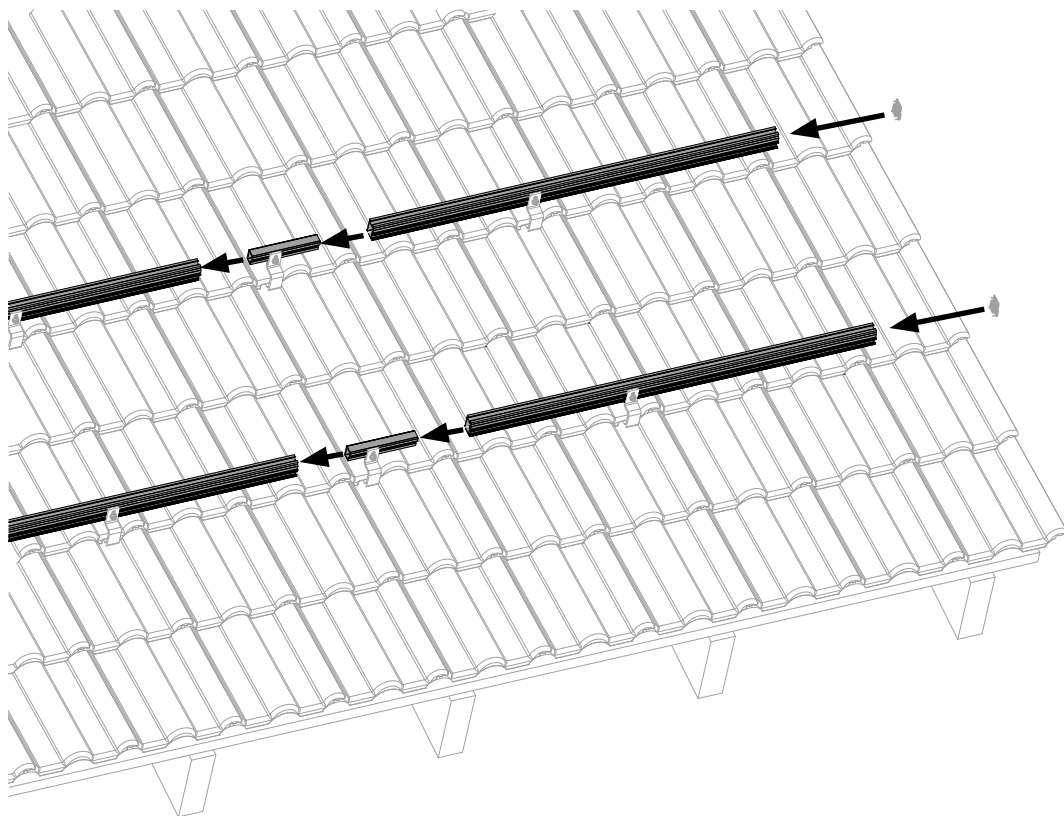
**Warning!**

The following treatment of tiles only applies to grooved tiles.

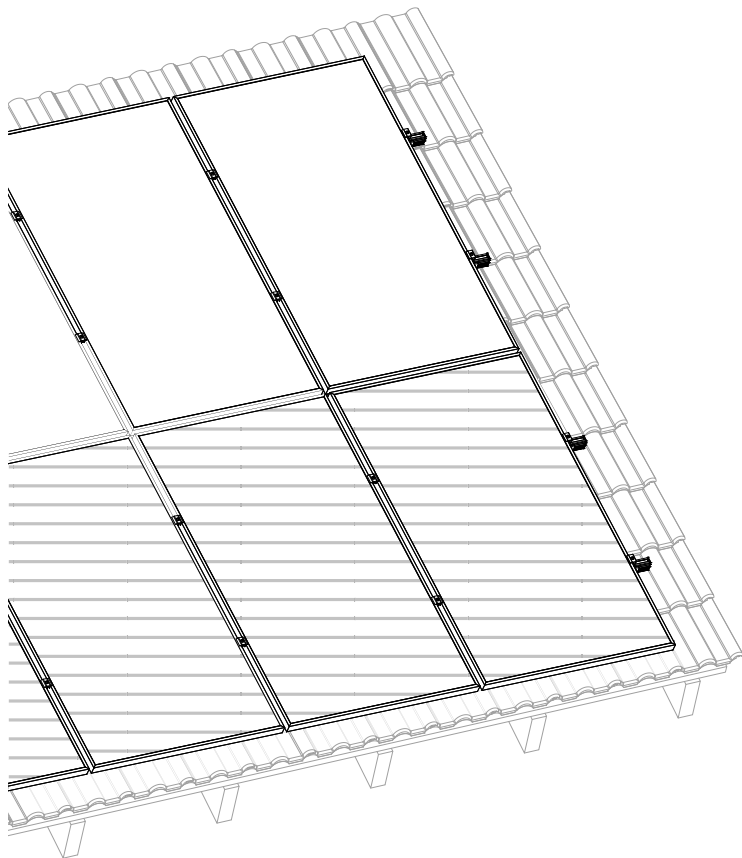
For flat tiles, please look at page 45-47.

Treat the tiles above the roof hooks using an angular grinding machine. Treat the tile as per detailed views A-A and B-B.





## One-layer rail system - vertical module alignment

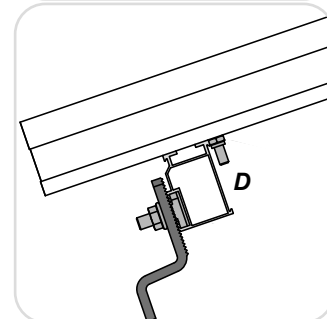
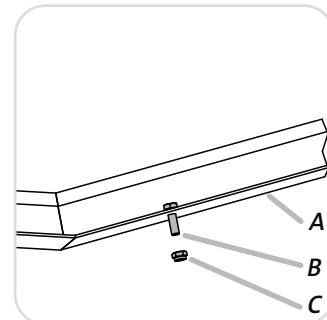


### Warning!

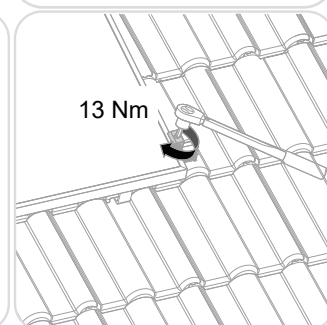
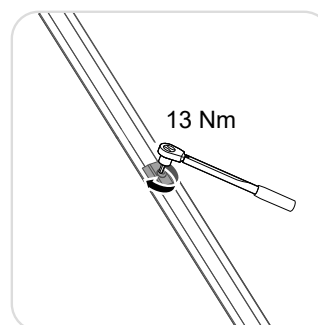
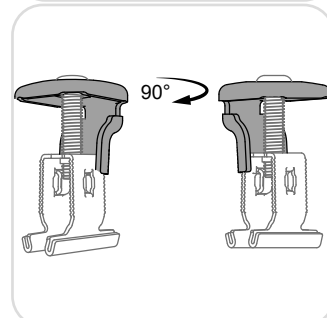
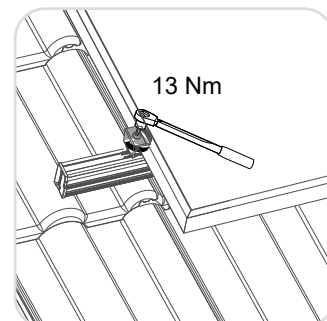
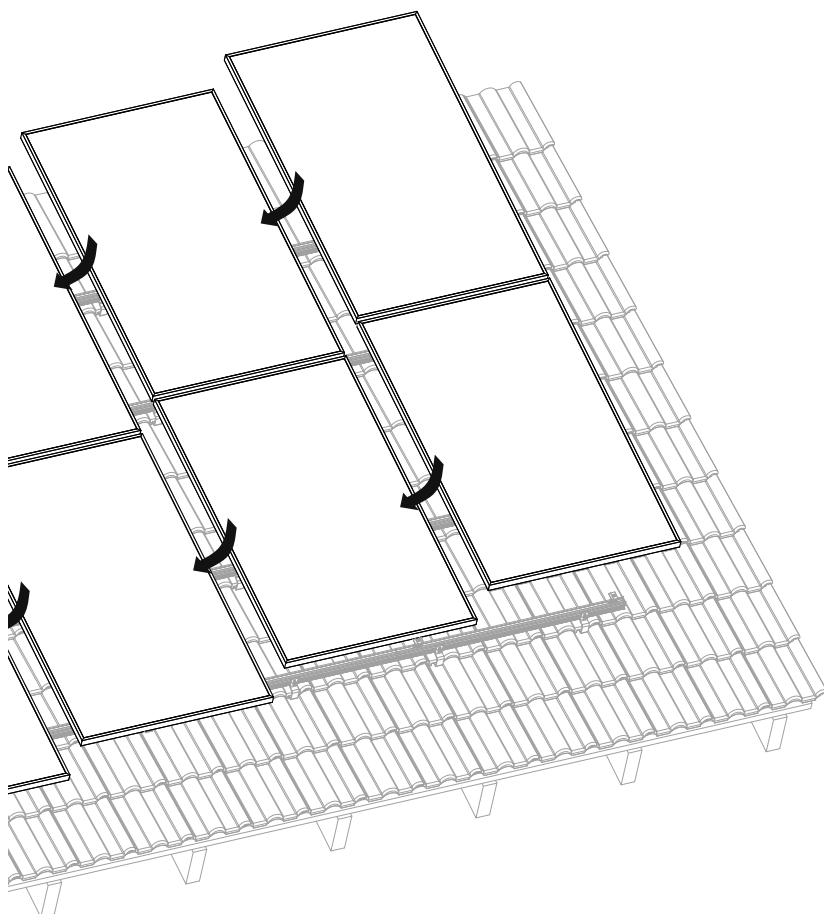
Before installing the modules, the modules of the lowest row should be provided with anti-slip protection.

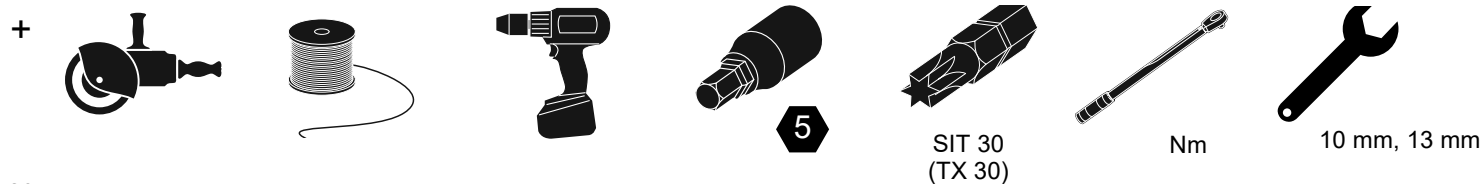
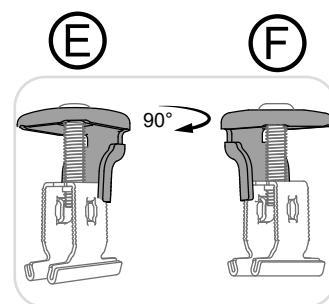
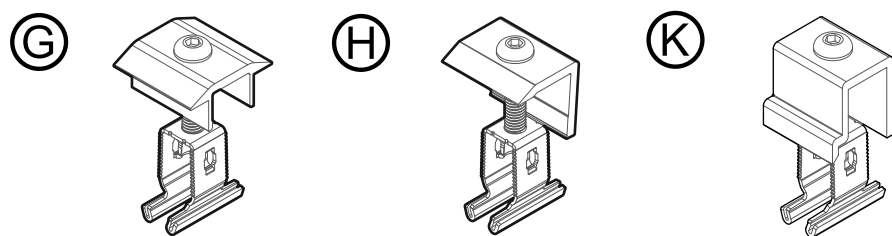
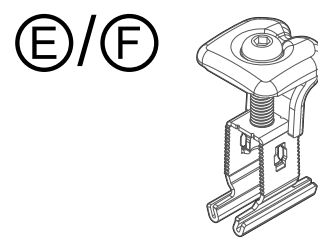
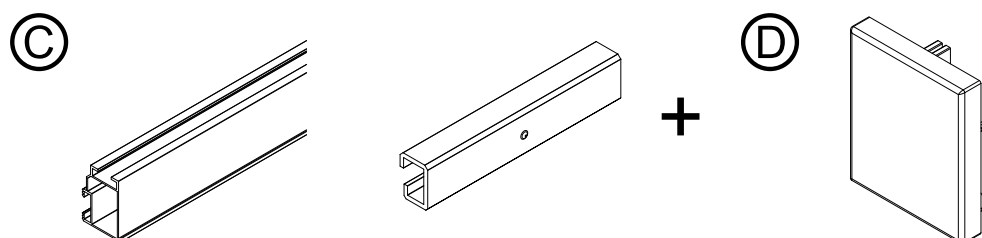
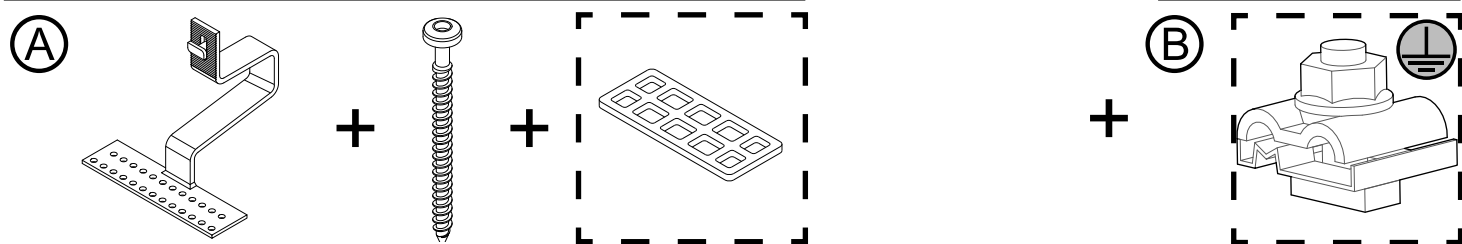
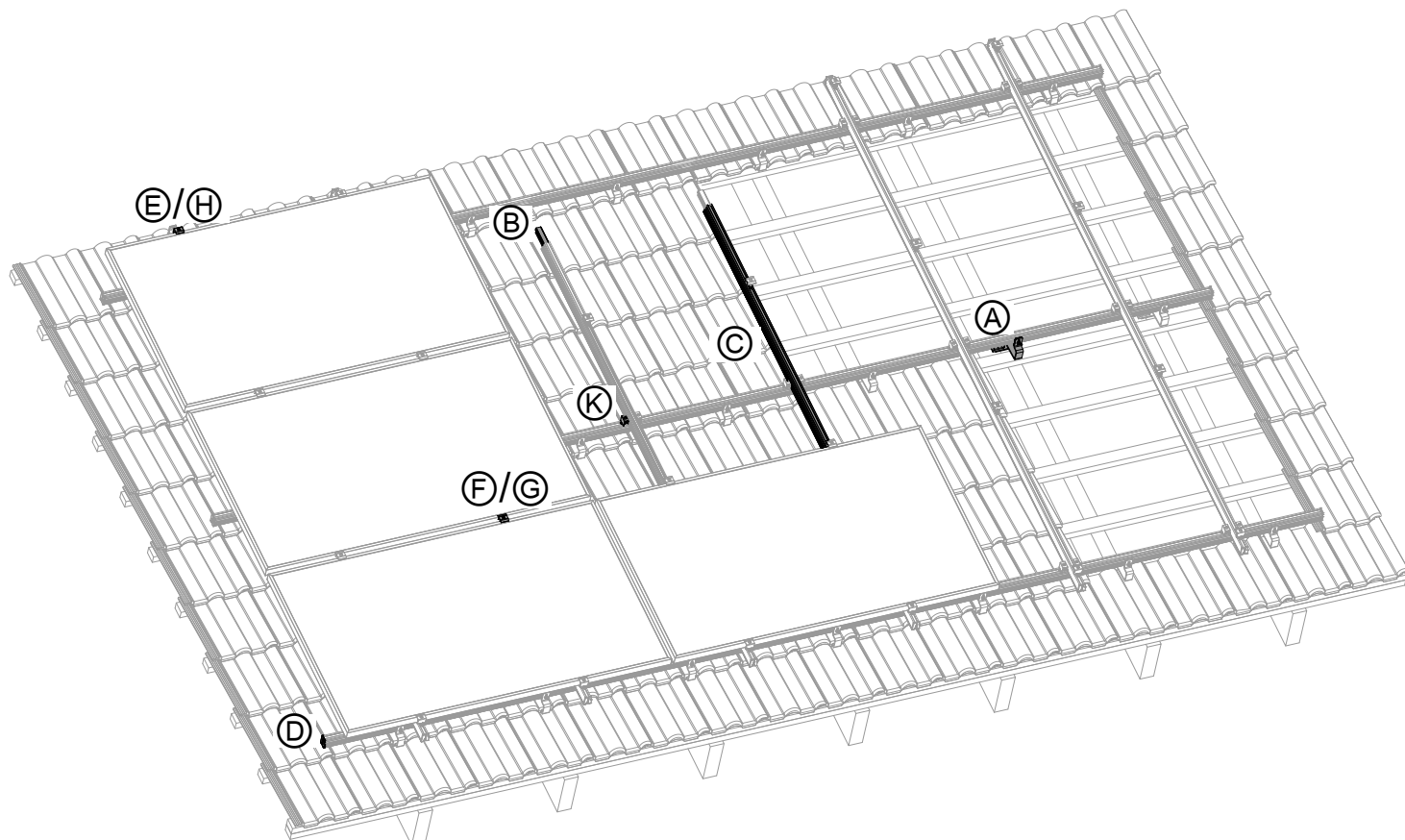
For this purpose fasten the M6x20 mm screws (with the shaft/thread pointing downwards) in the fastening points of the modules using M6 nuts. Place the modules in the lowest row in a way that the anti-slip protection abuts and the edge of the lowest mounting rail (Fig. B) touches.

Note: The anti-slip protection can only be used with modules with the appropriate fastening holes.

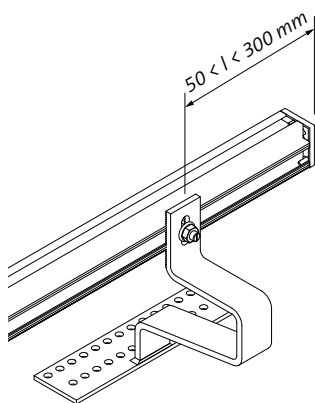
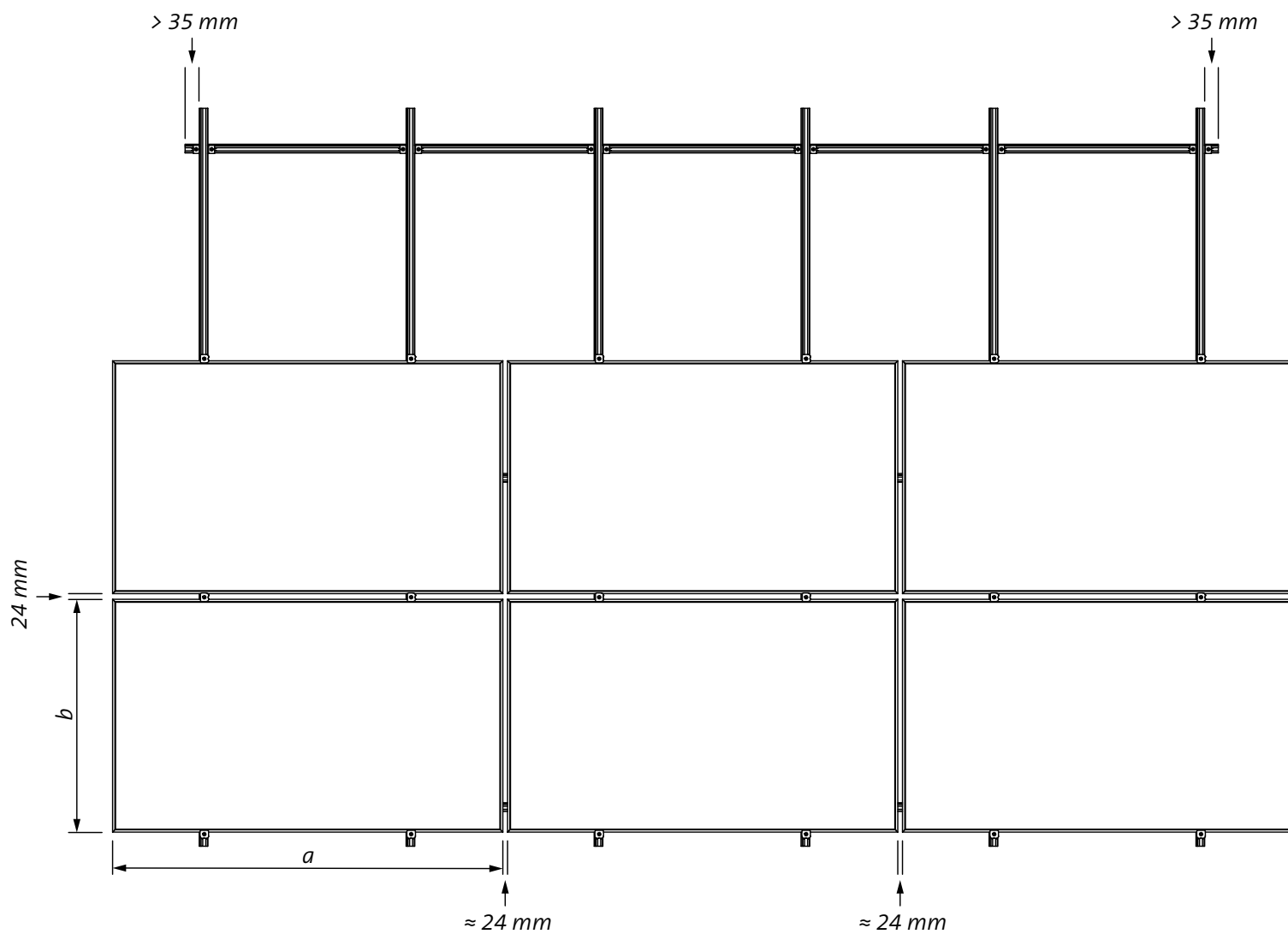


## One-layer rail system - vertical module alignment

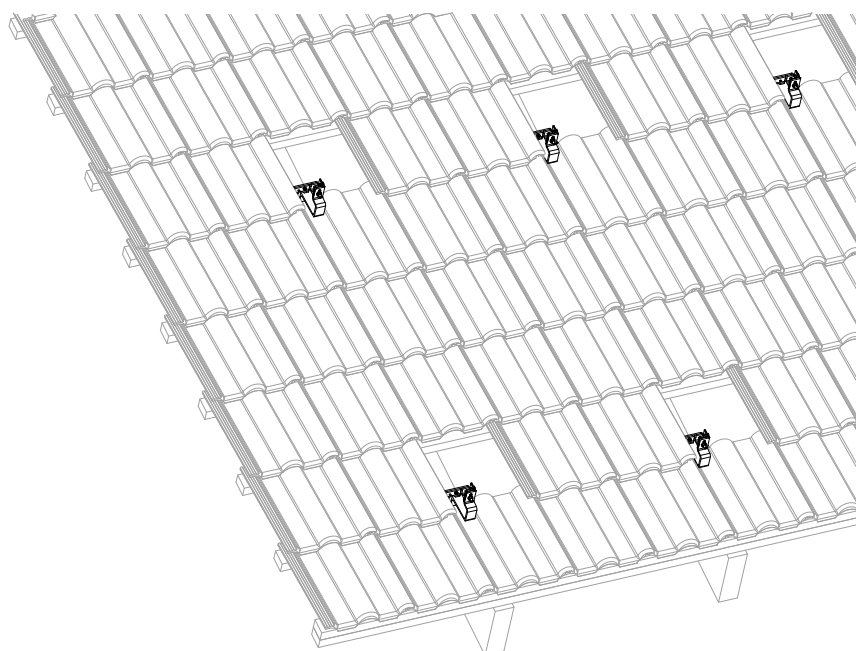
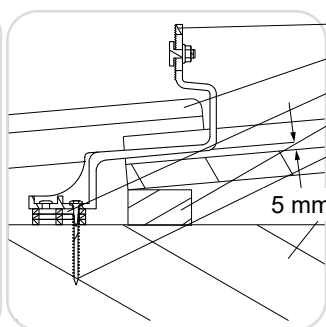
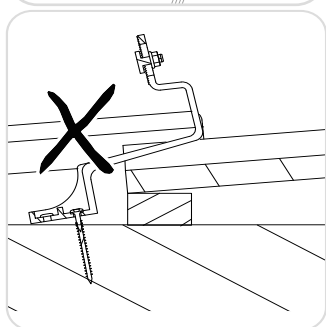
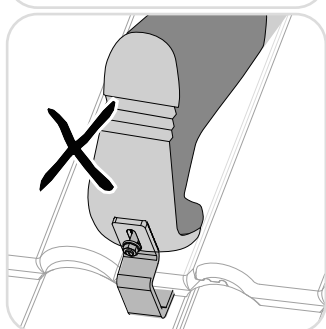
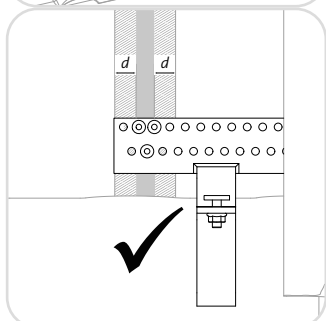
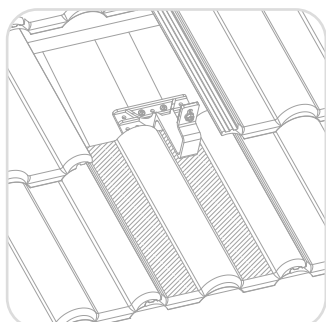
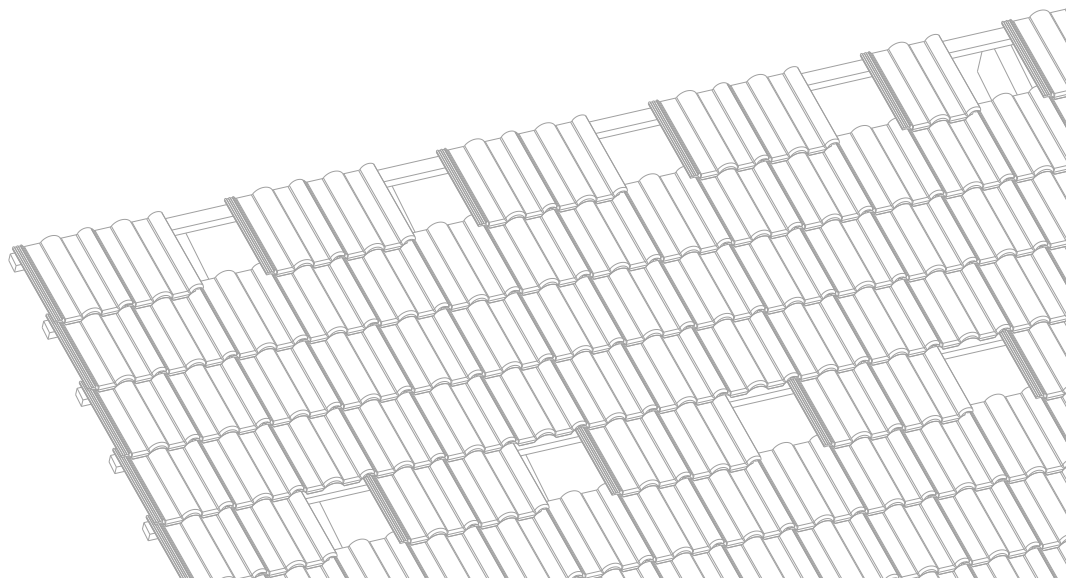








Without a structural analysis by means of the Viessmann PV-Planner the length of the cantilever should not be longer than 300 mm.

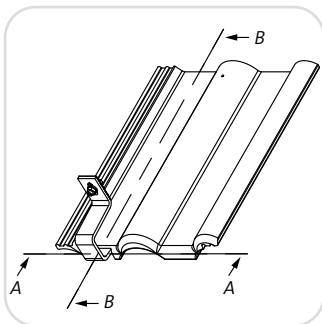


**Warning!**

Use the hole pattern of the roof hook to place the roof hook in the trough area of the tile. Screw the roof hook in the allowed area only. Keep a distance of  $3 \times \varnothing$  of the wood screw to the outer edge of the rafter. Do not use the roof hook as step.

When mounted, the cantilever of the roof hook shall have a distance of approx. 5mm to the roof tile.

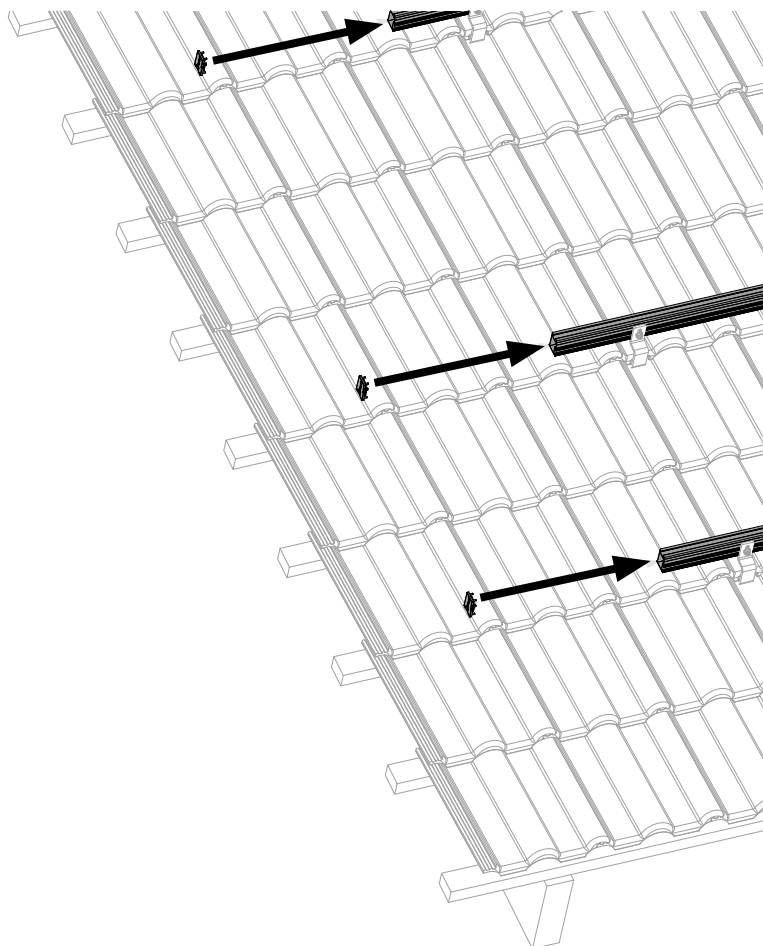
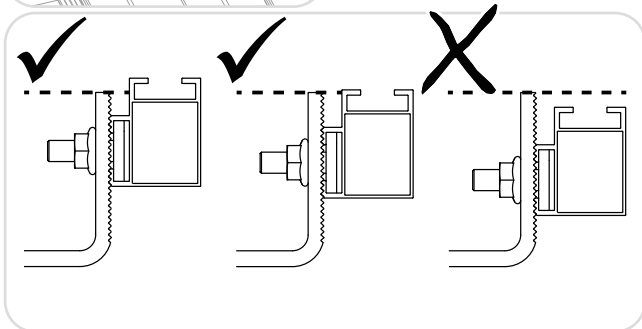
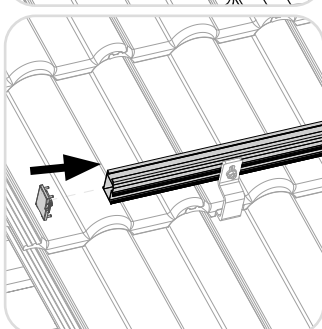
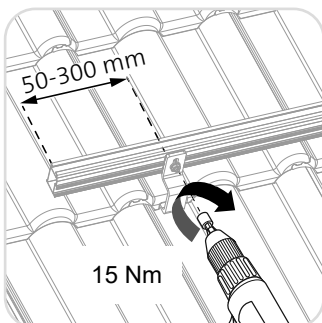
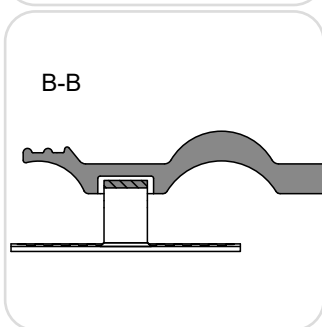
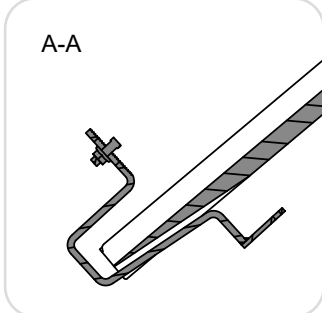
Please find the number of screws on page 50-52.

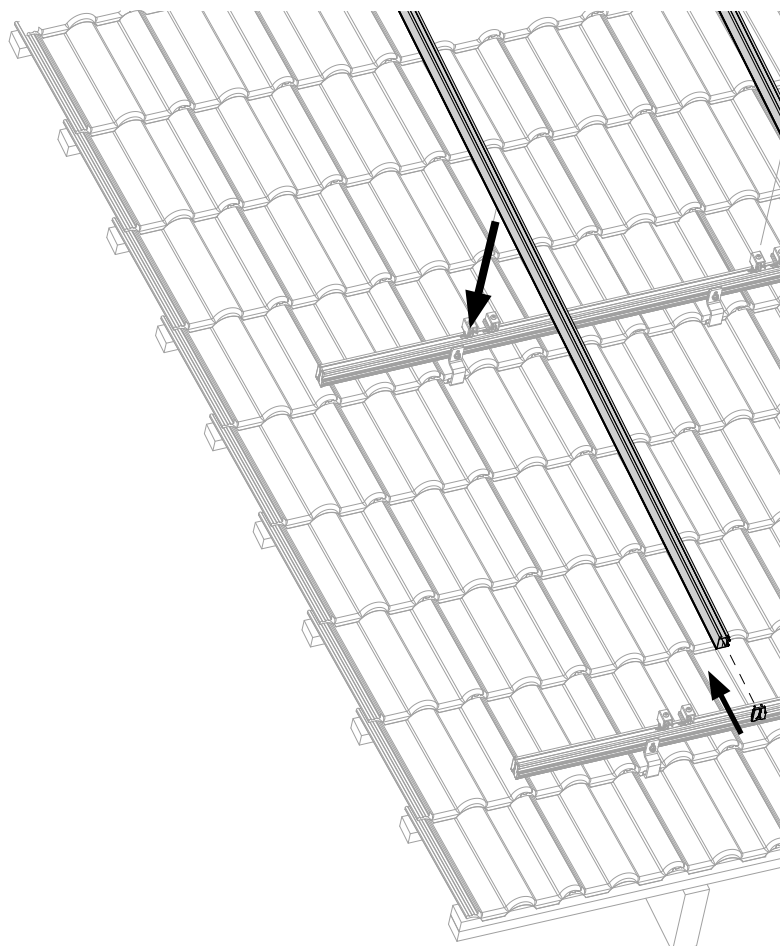
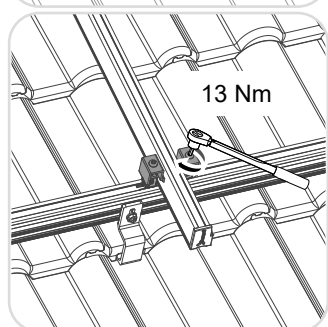
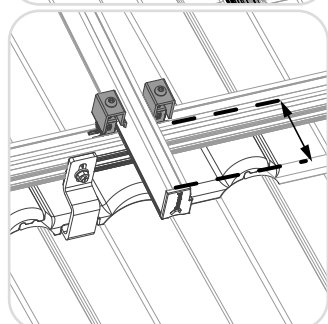
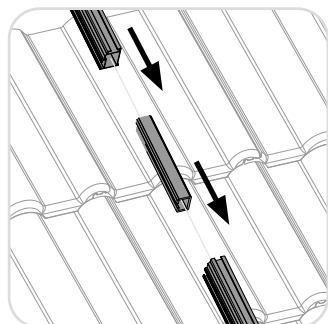
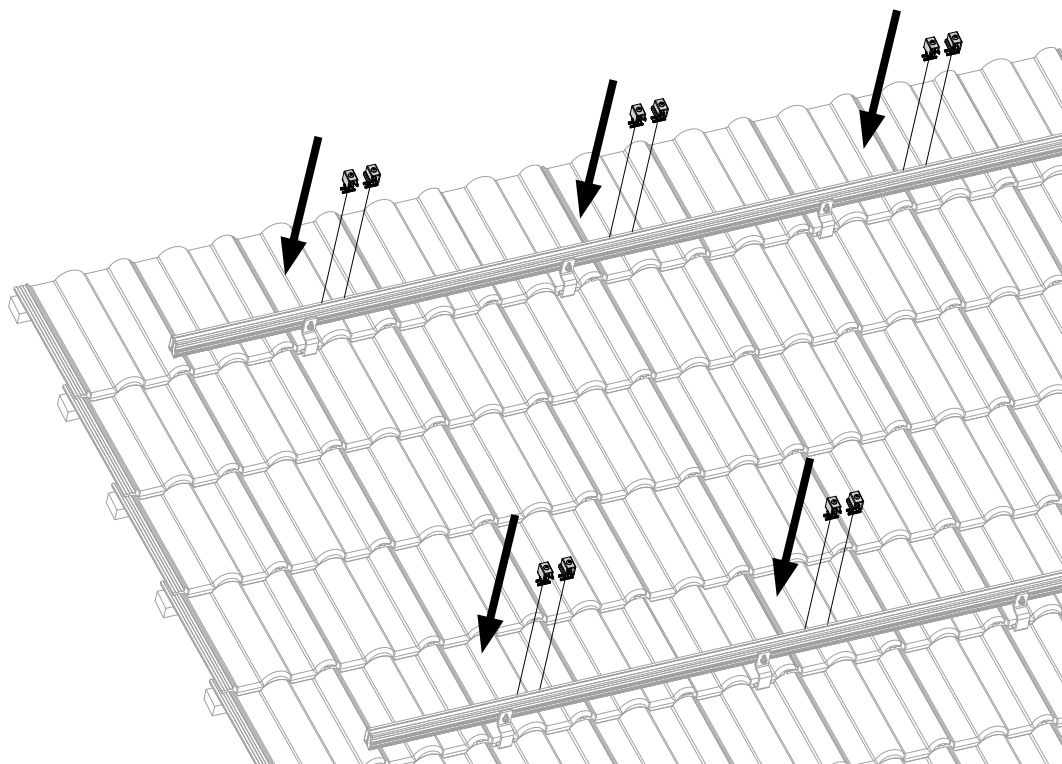
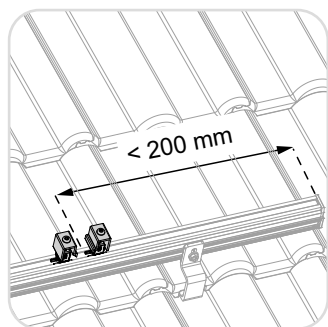


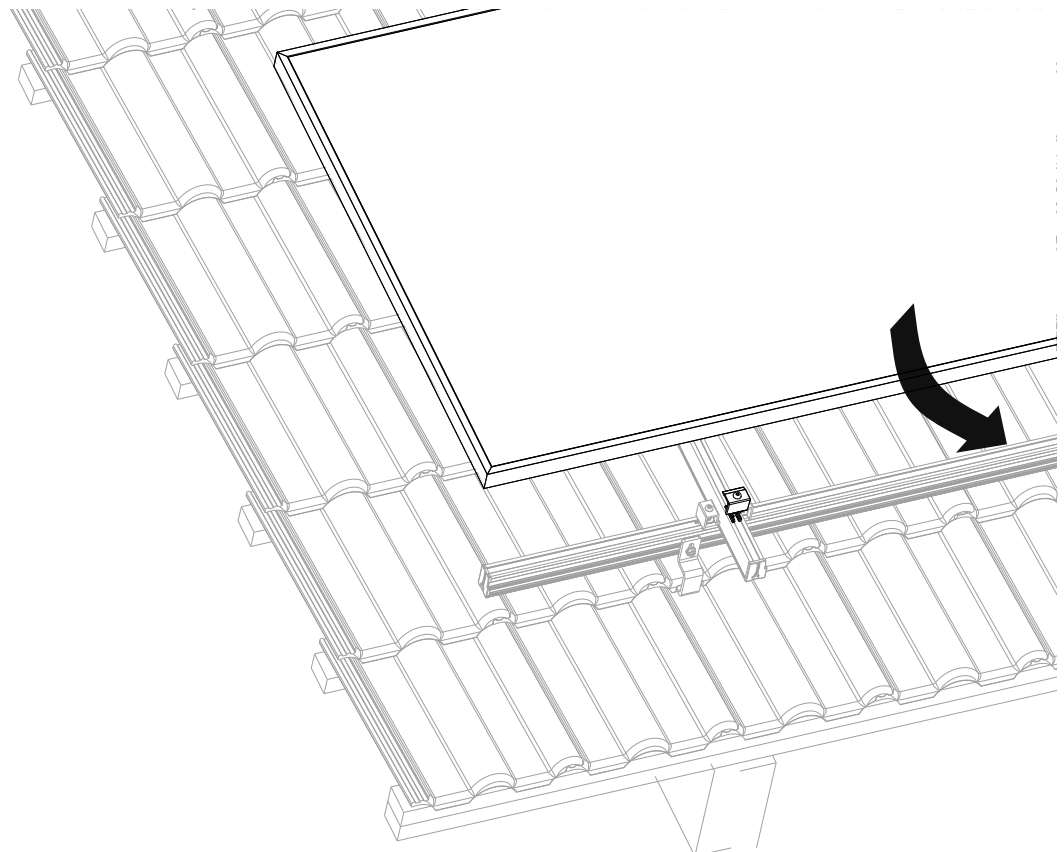
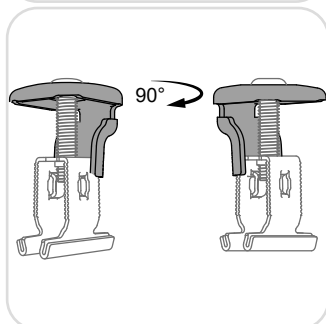
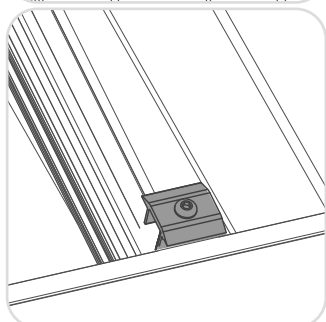
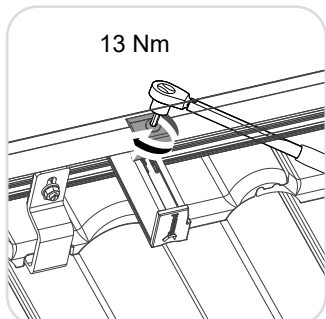
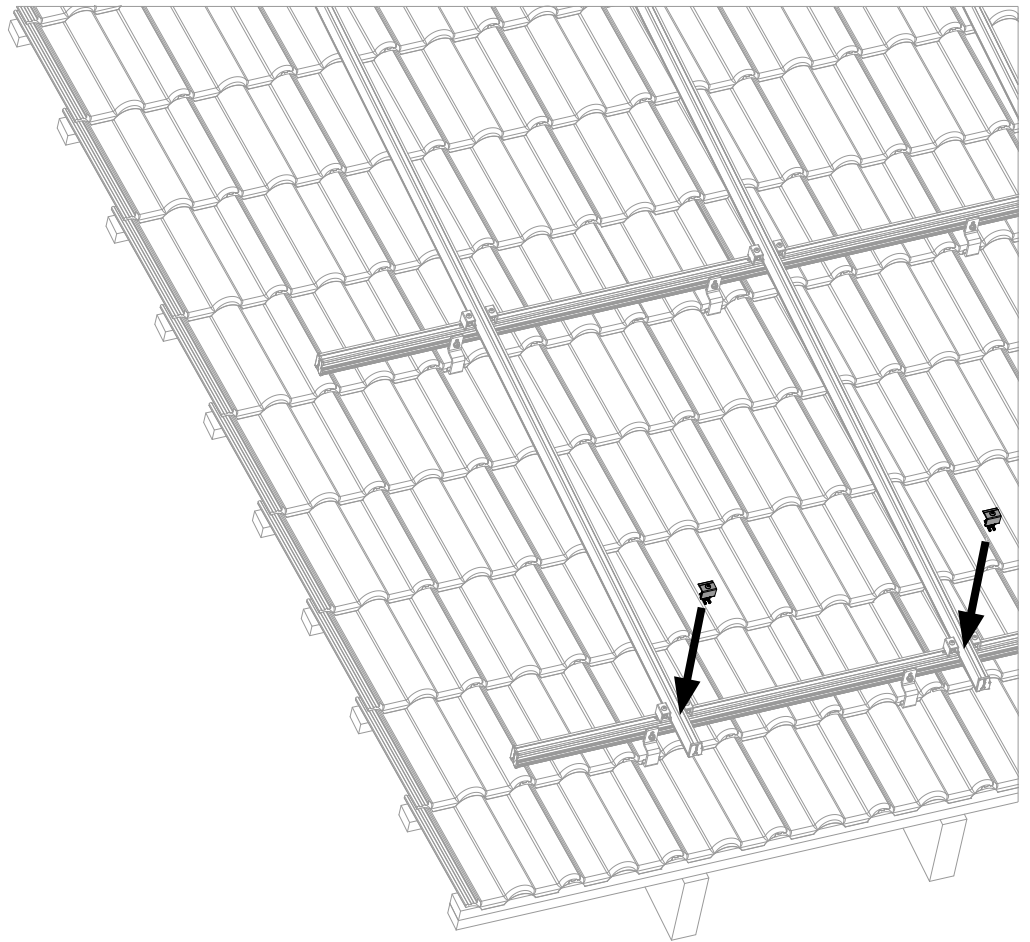
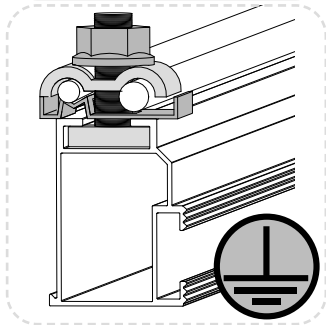
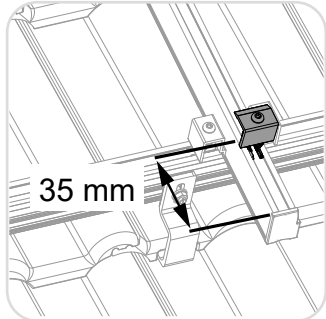
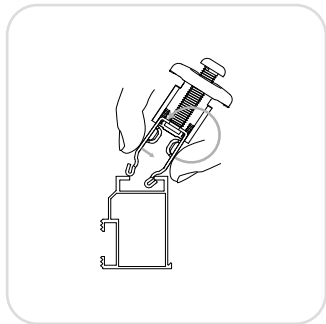
**Warning!**

The following treatment of tiles only applies to grooved tiles.  
For flat tiles, please look at page 45-47.

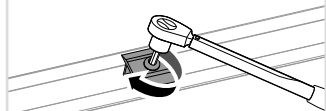
Treat the tiles above the roof hooks using an angular grinding machine. Treat the tile as per detailed views A-A and B-B.



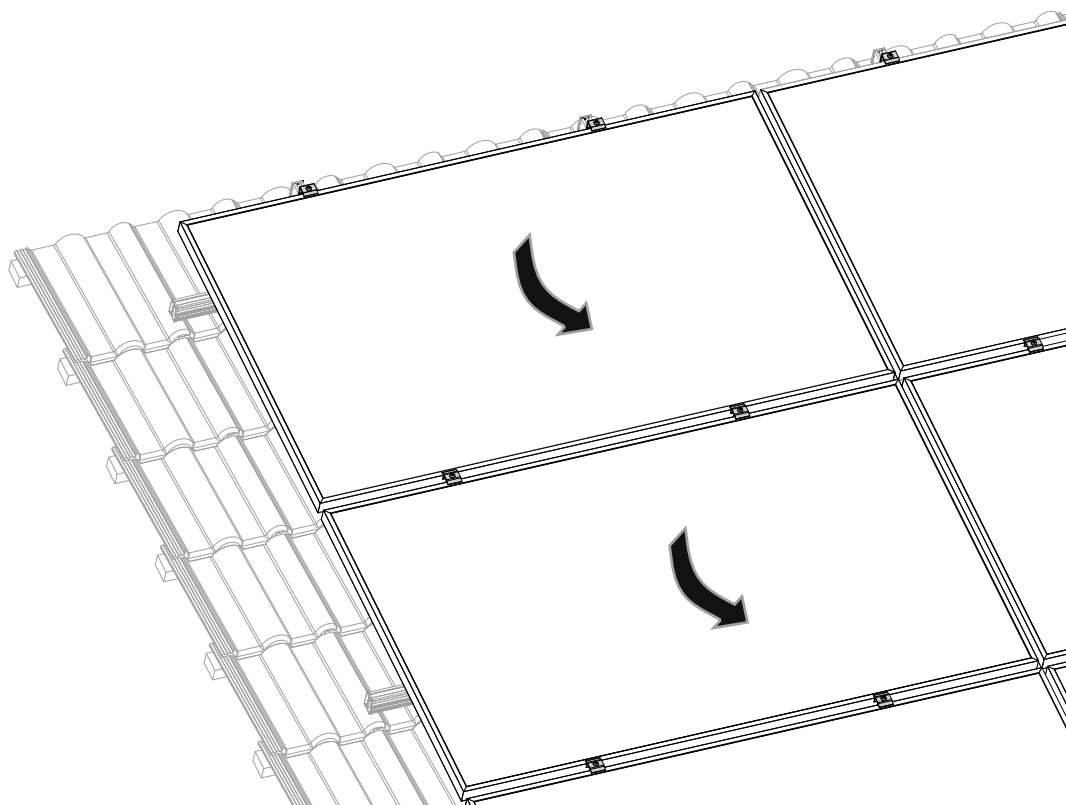


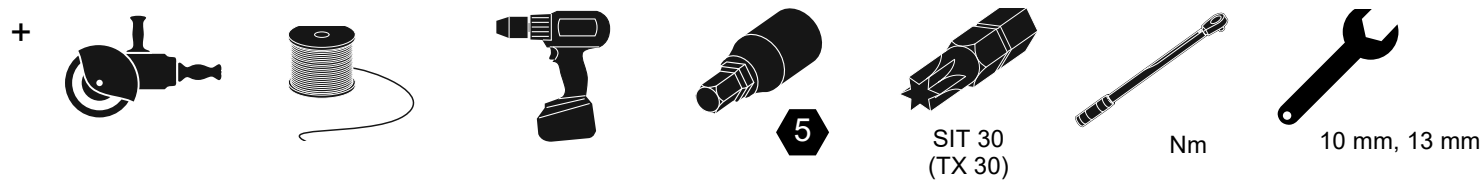
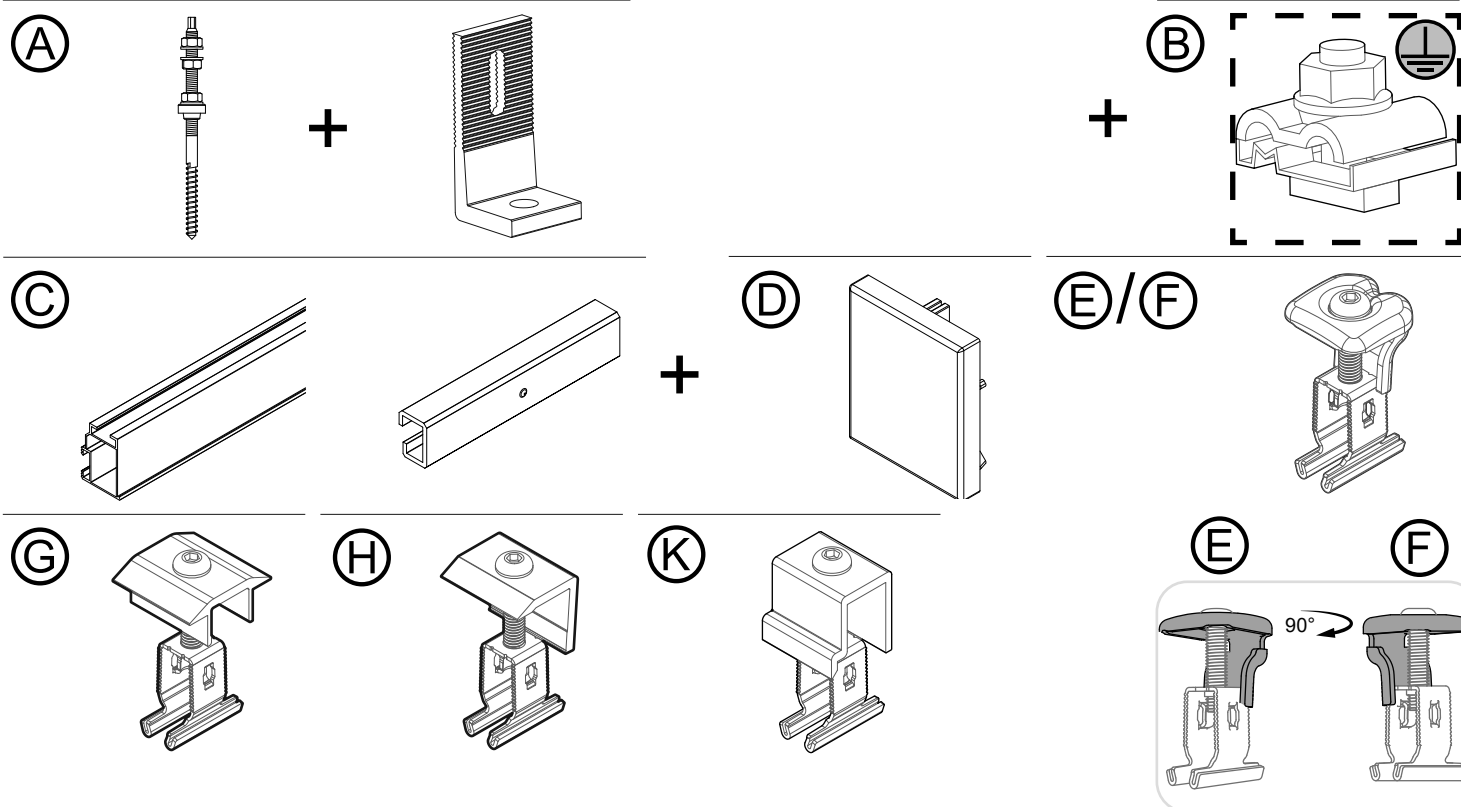
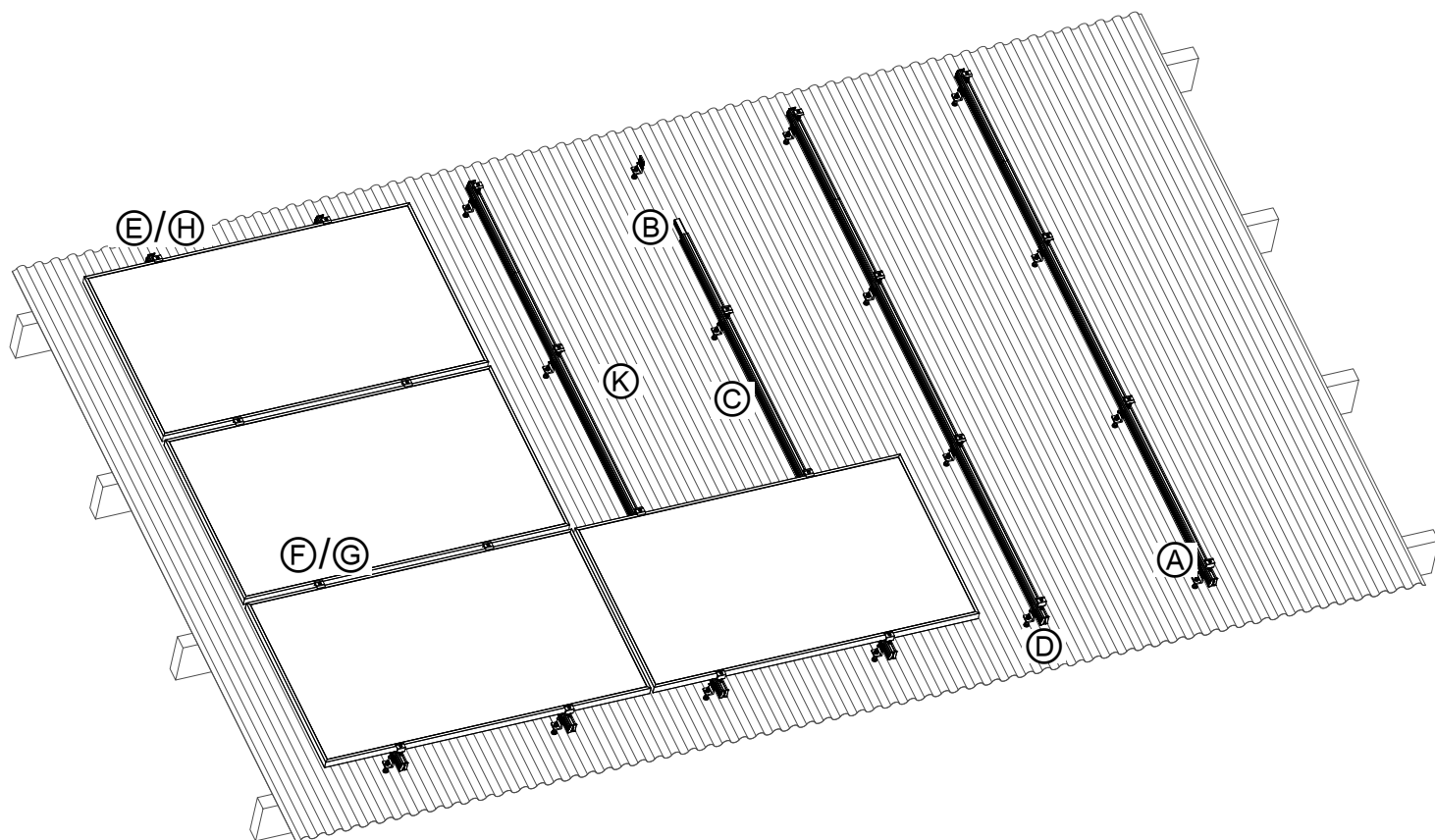


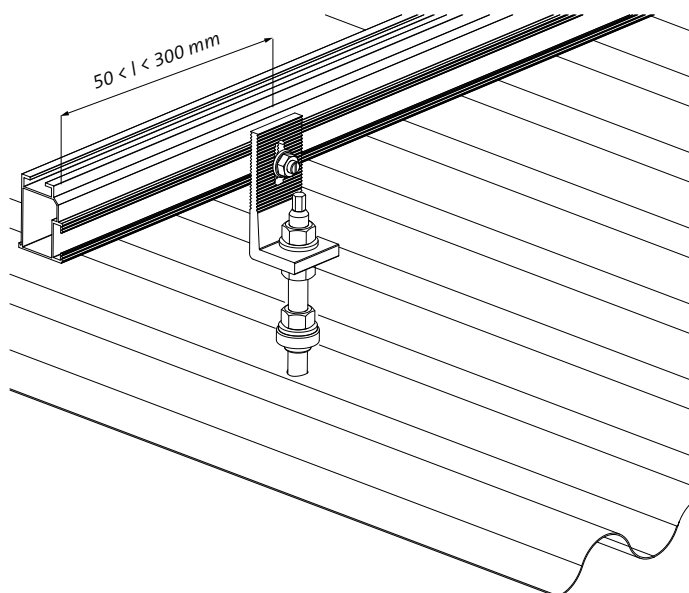
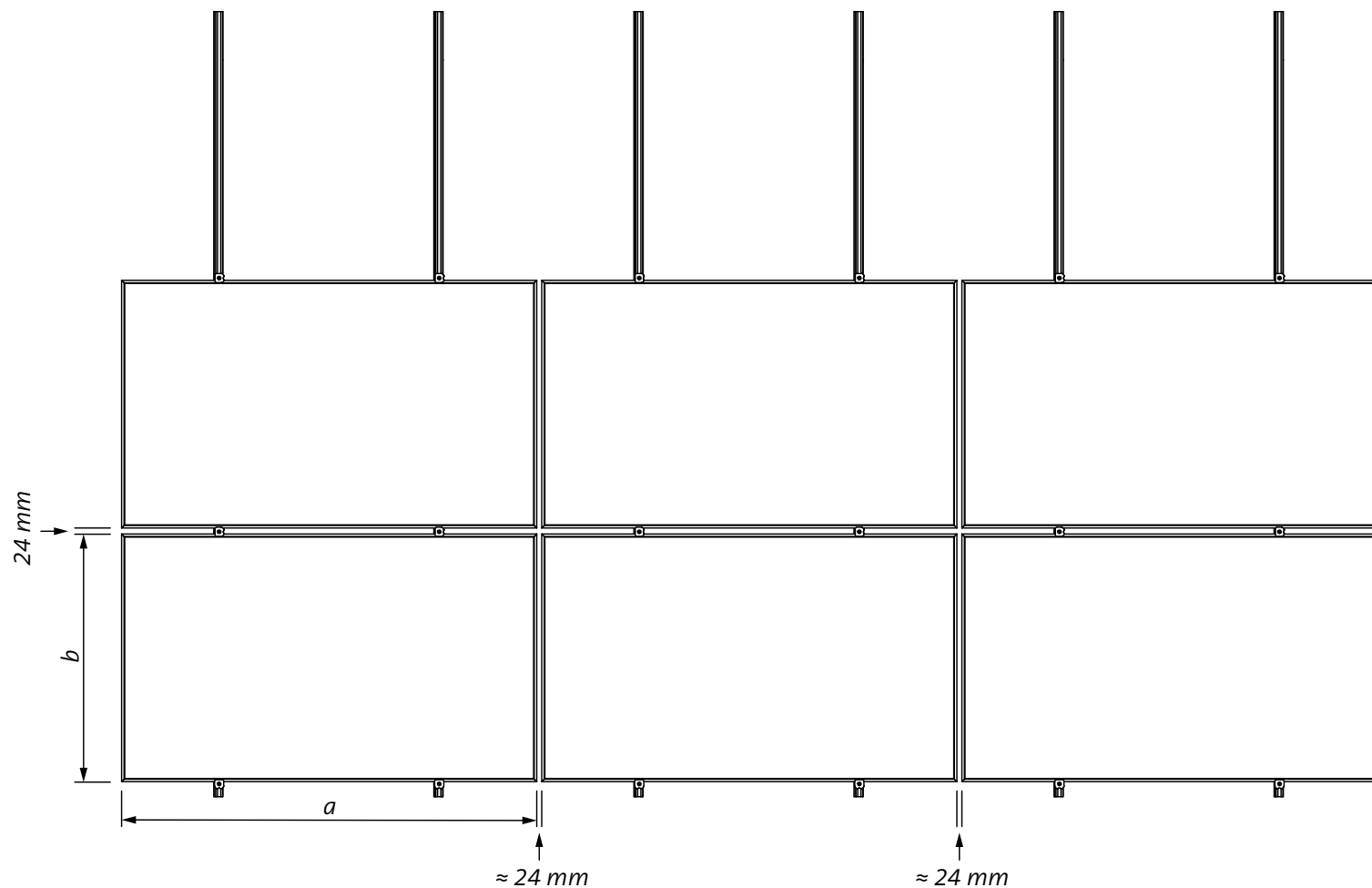
13 Nm



13 Nm

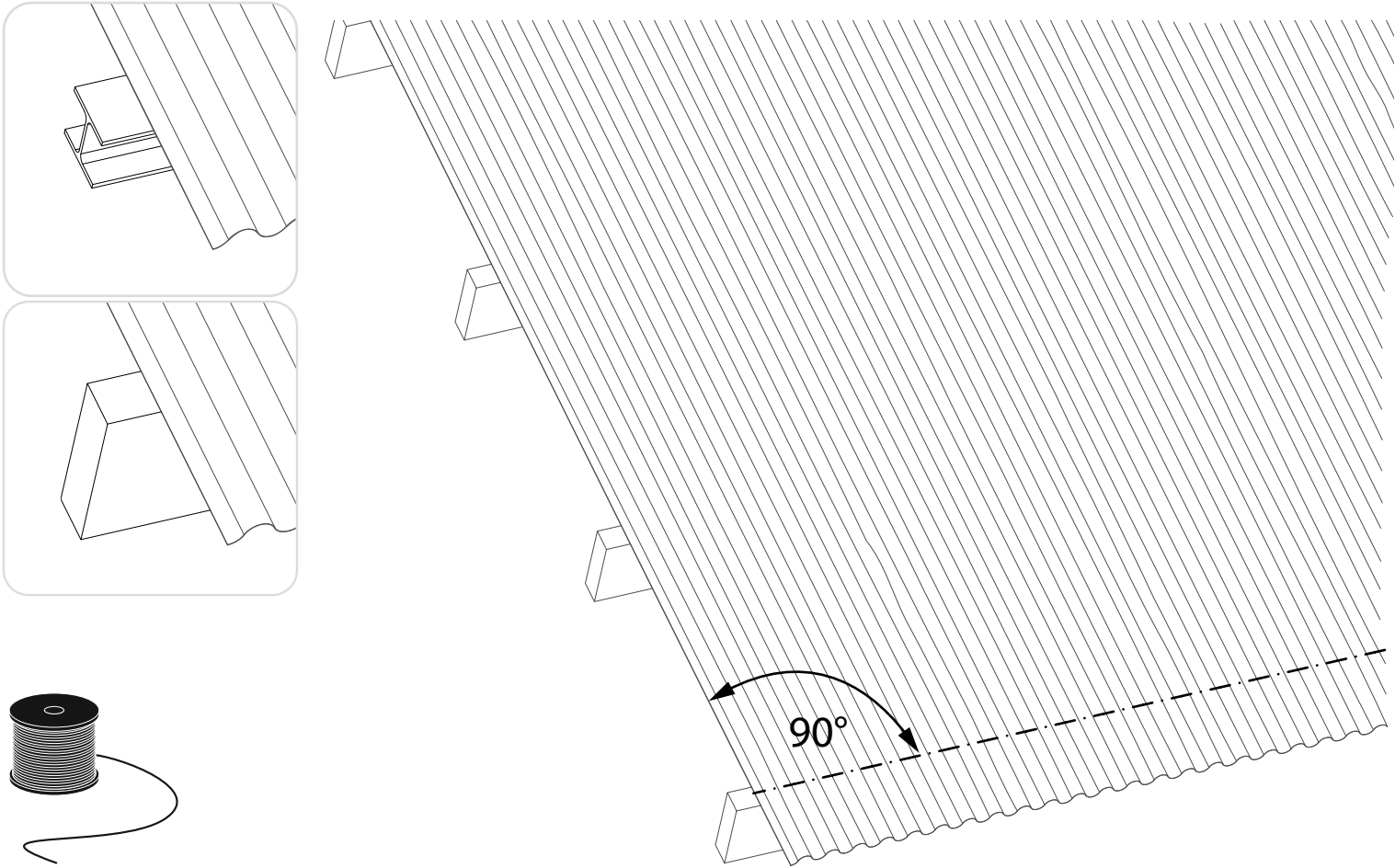


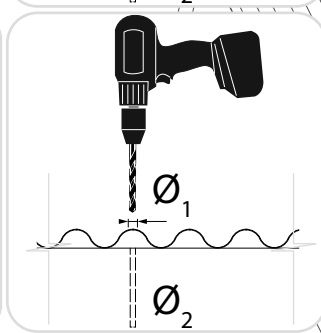
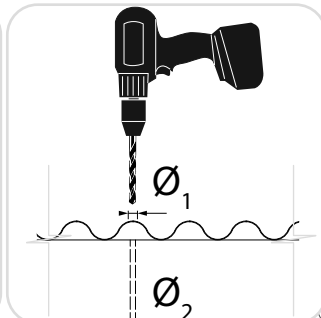
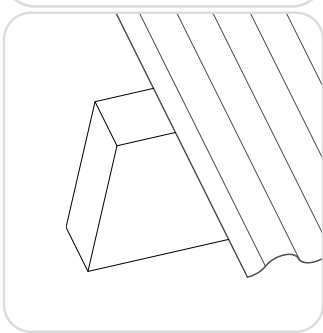
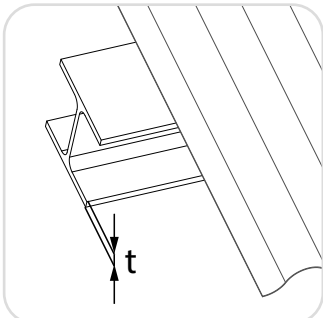










Without a structural analysis by means of the Viessmann PV-Planner the length of the cantilever should not be longer than 300 mm.

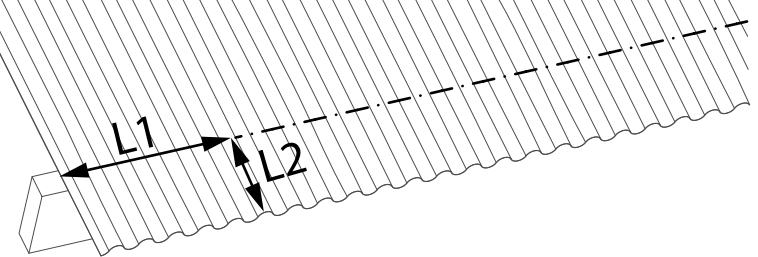


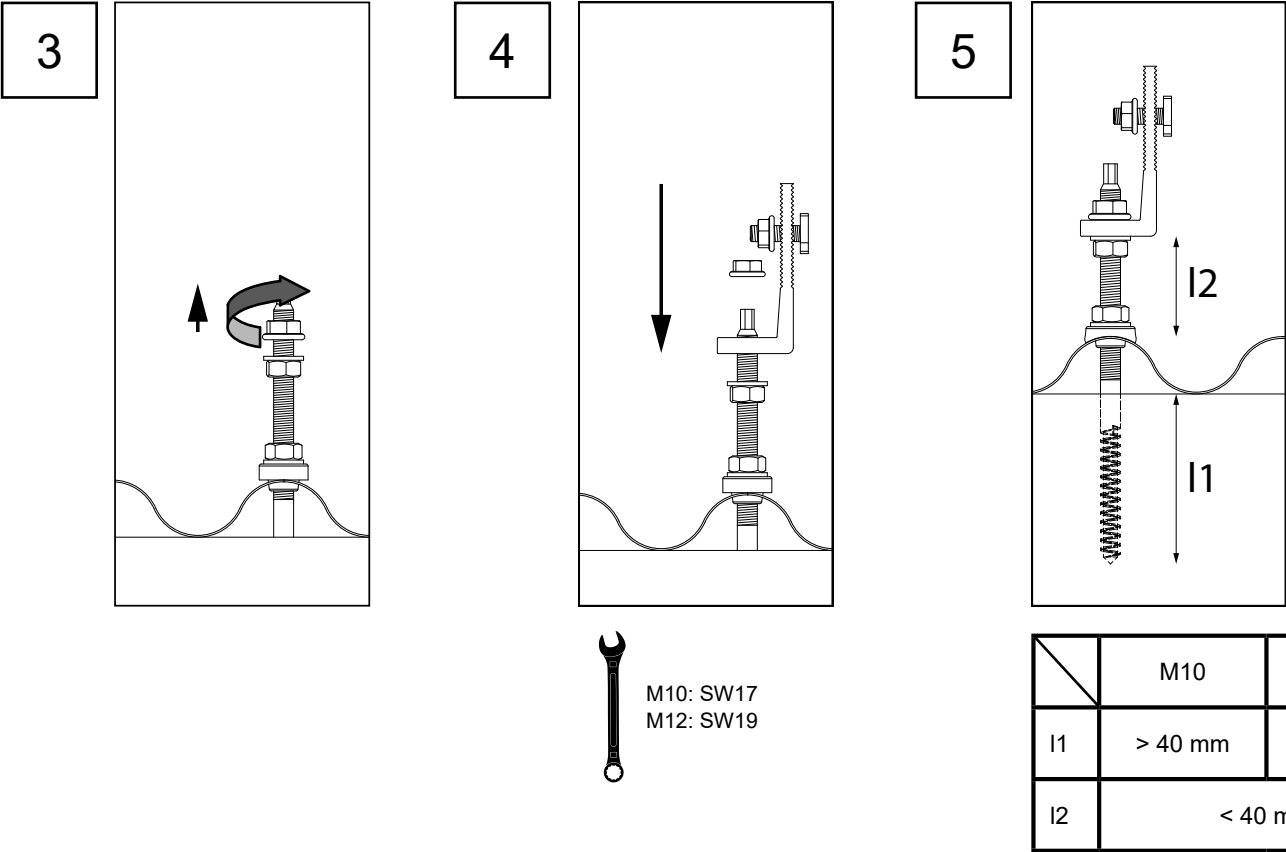
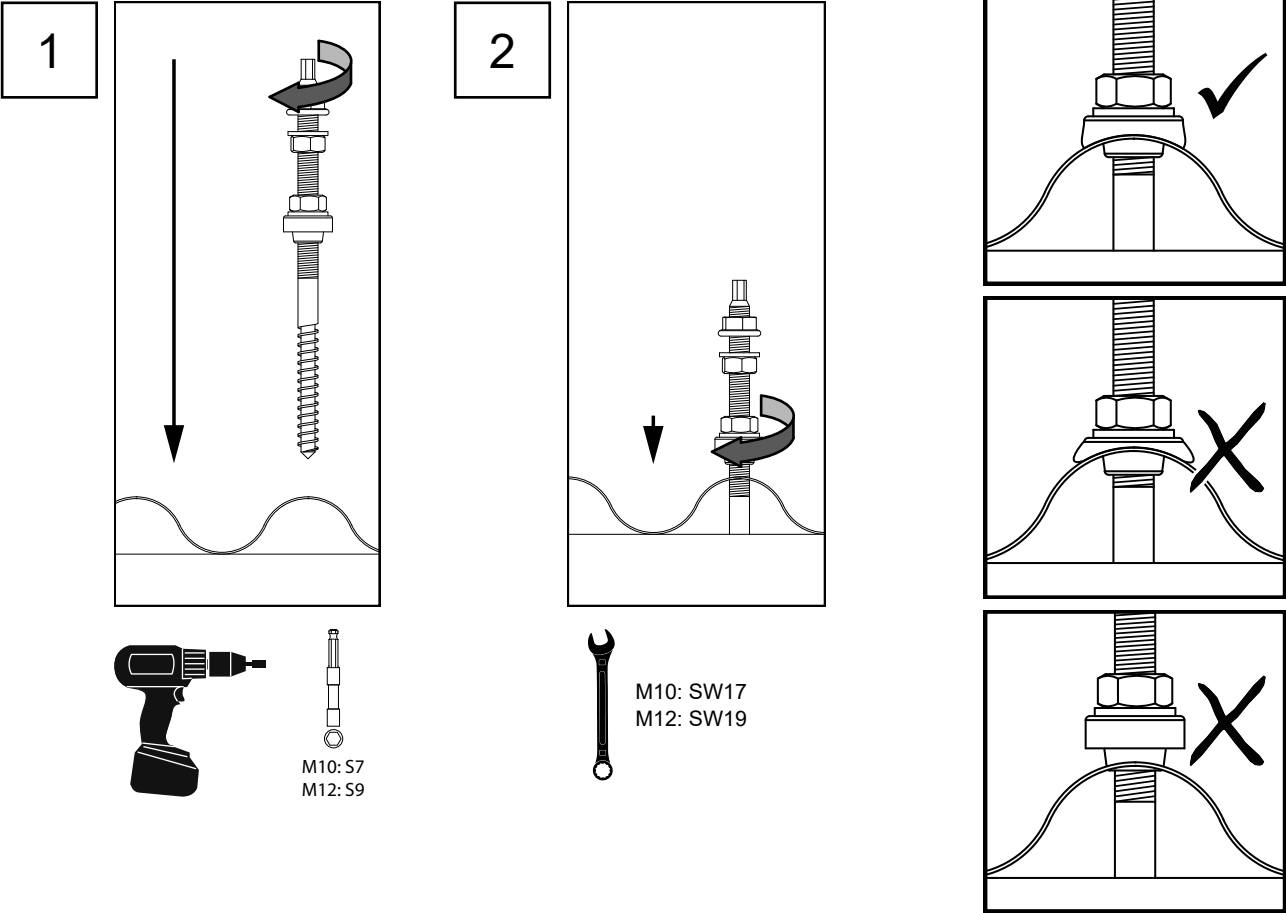


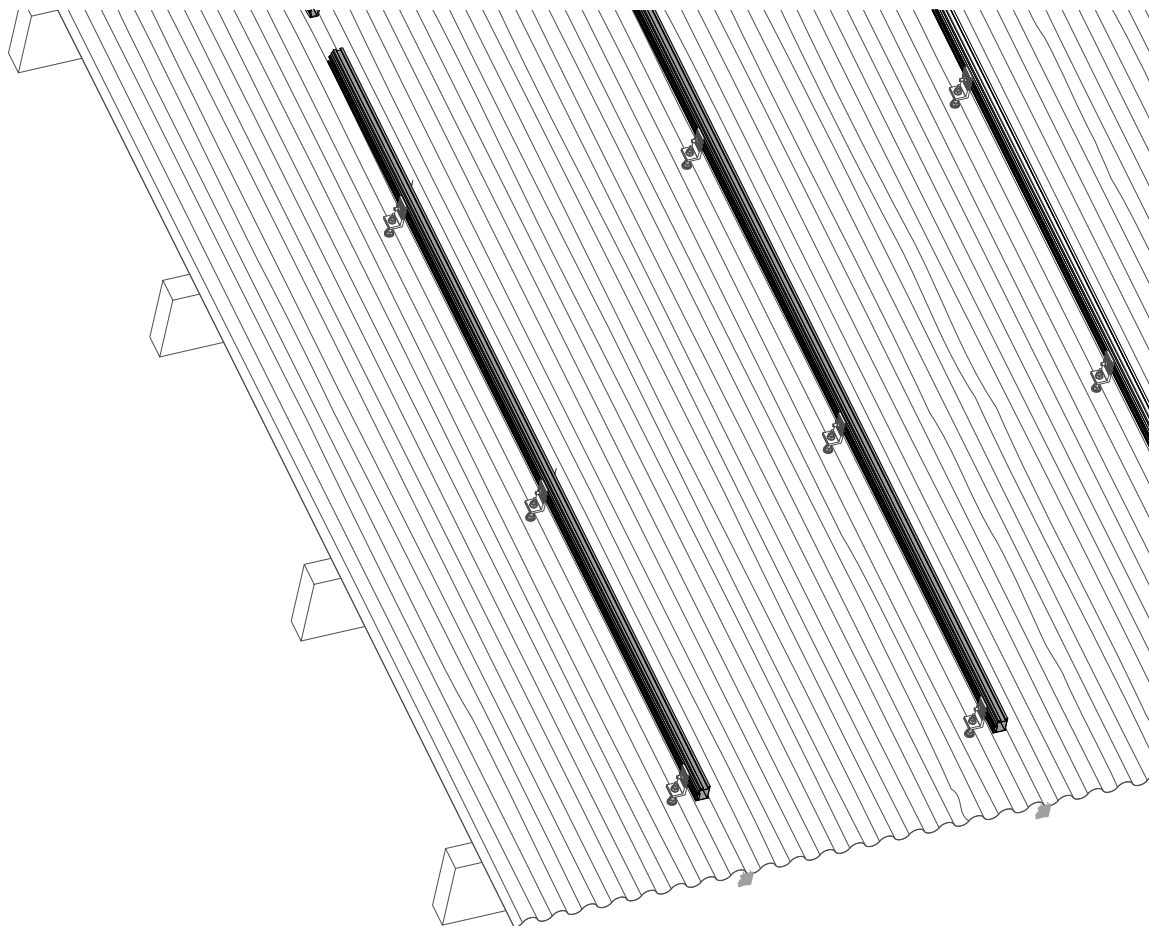
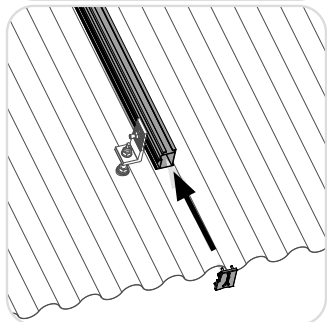
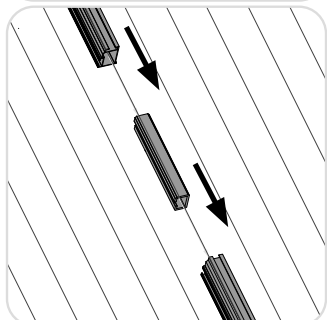
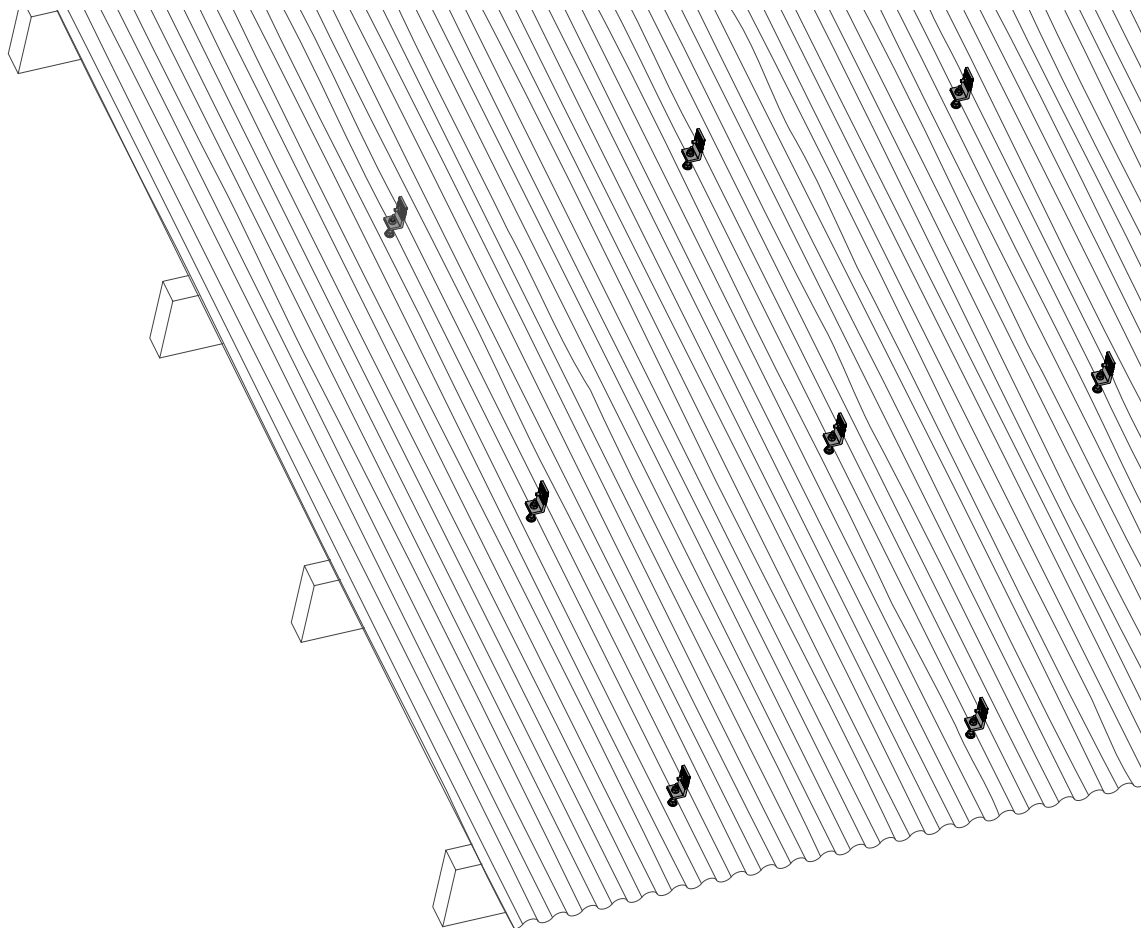
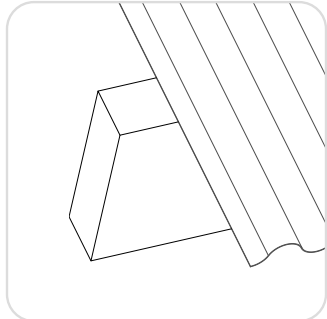
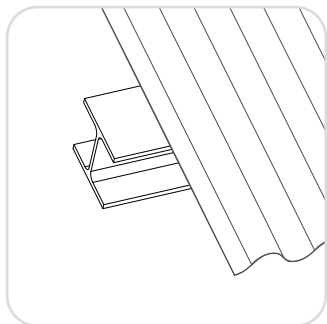


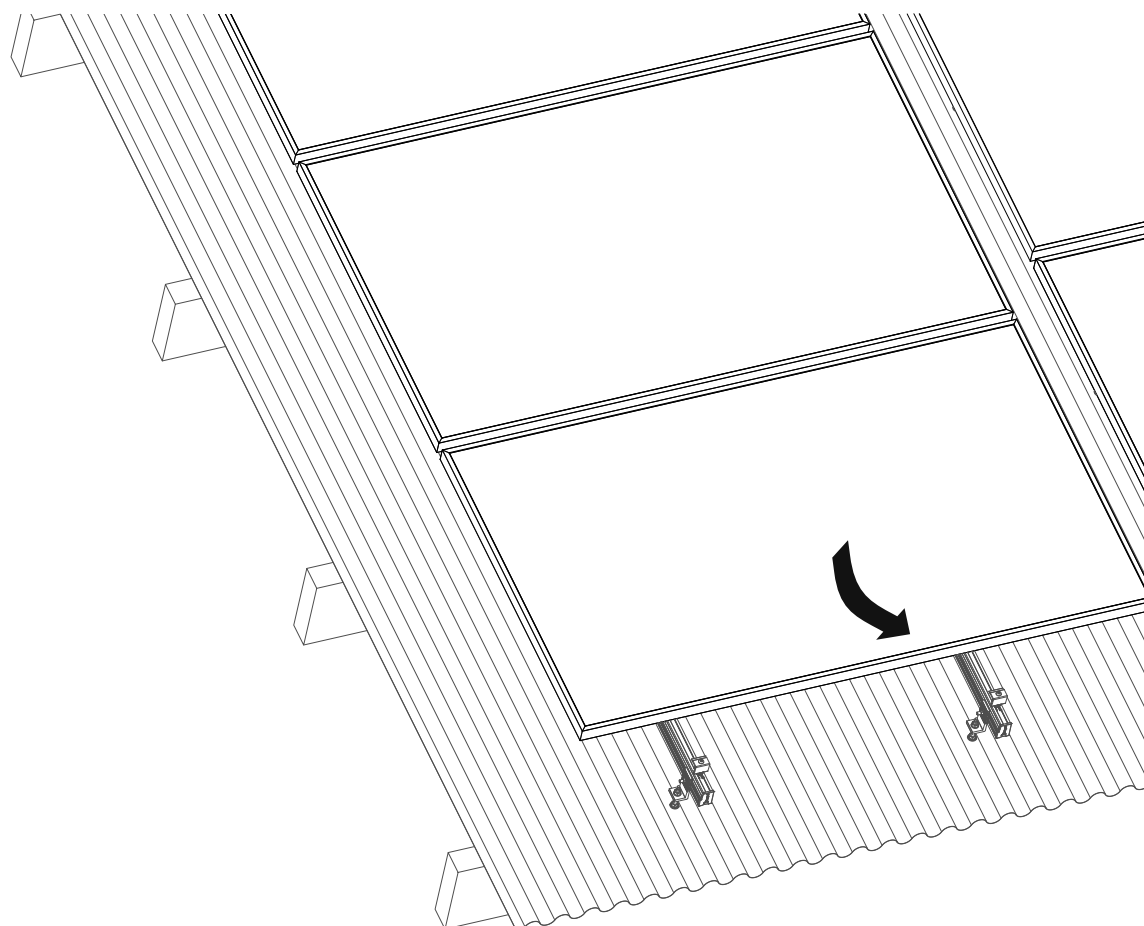
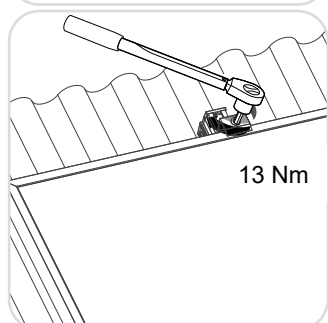
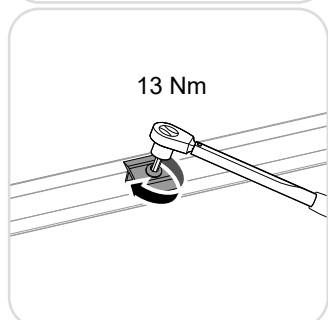
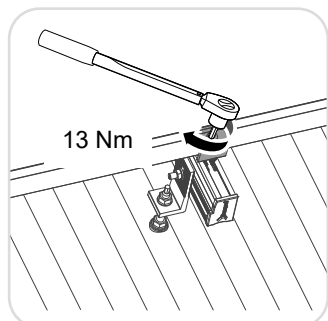
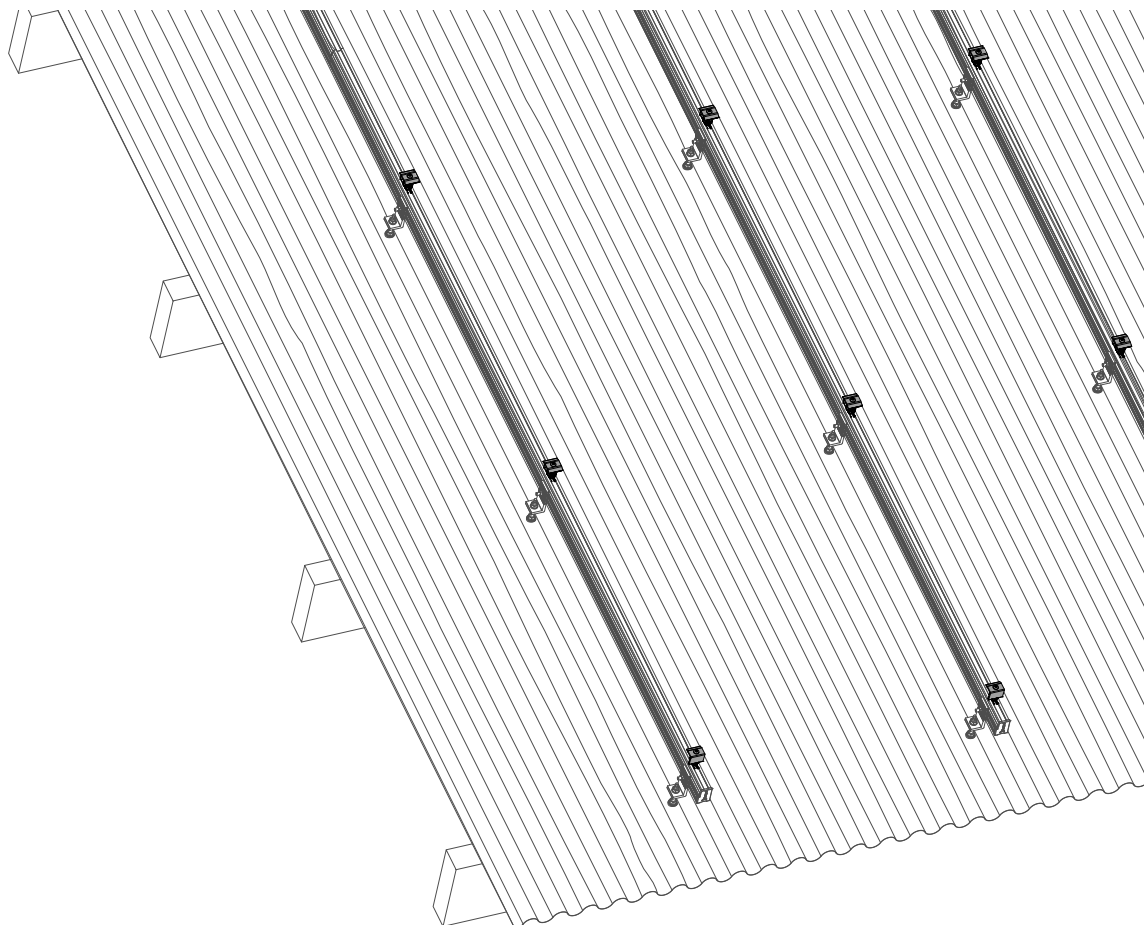
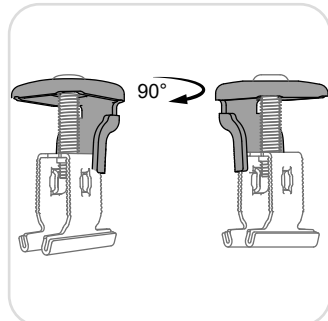
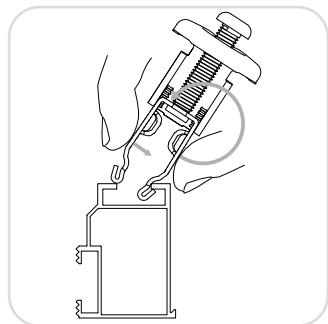
	t= (mm)	1,5 - 5,0	6,0	8,0	>10
	Ø <sub>1</sub> (mm)	14 mm			
	Ø <sub>2</sub> (mm)	6,8	7,0	7,2	7,4

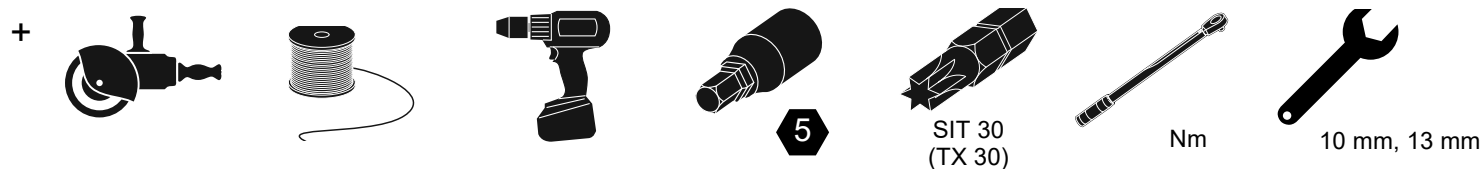
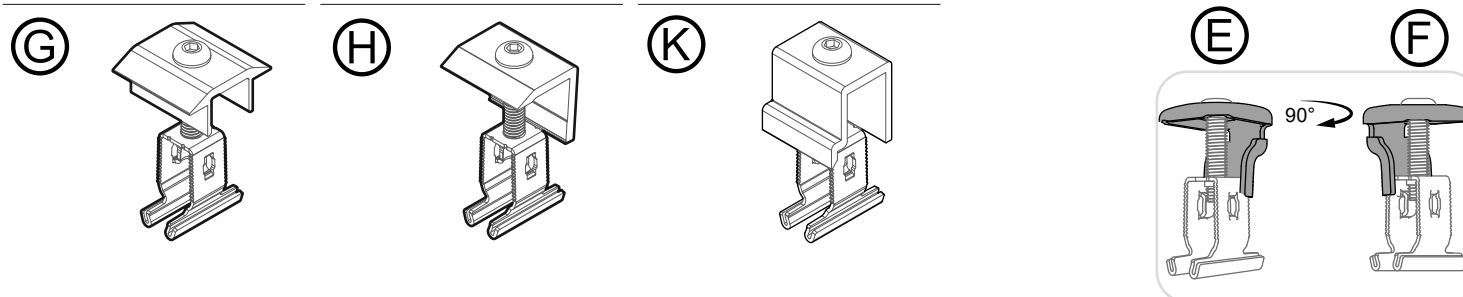
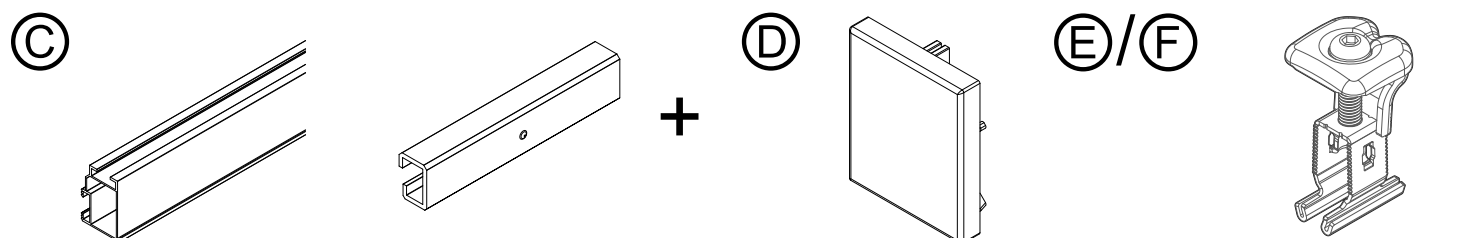
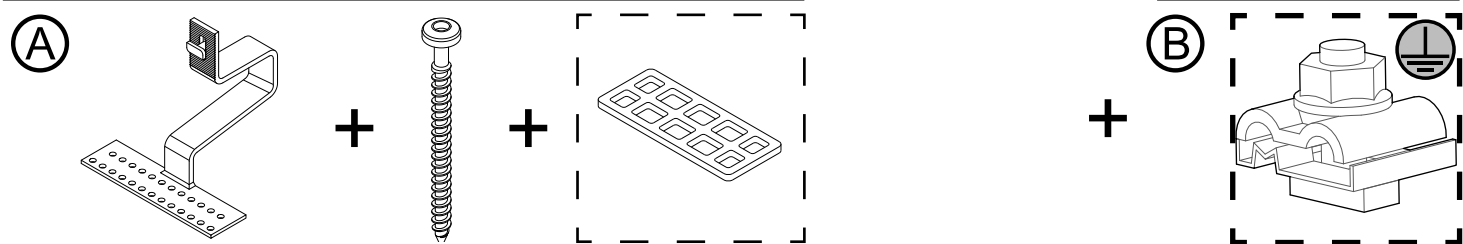
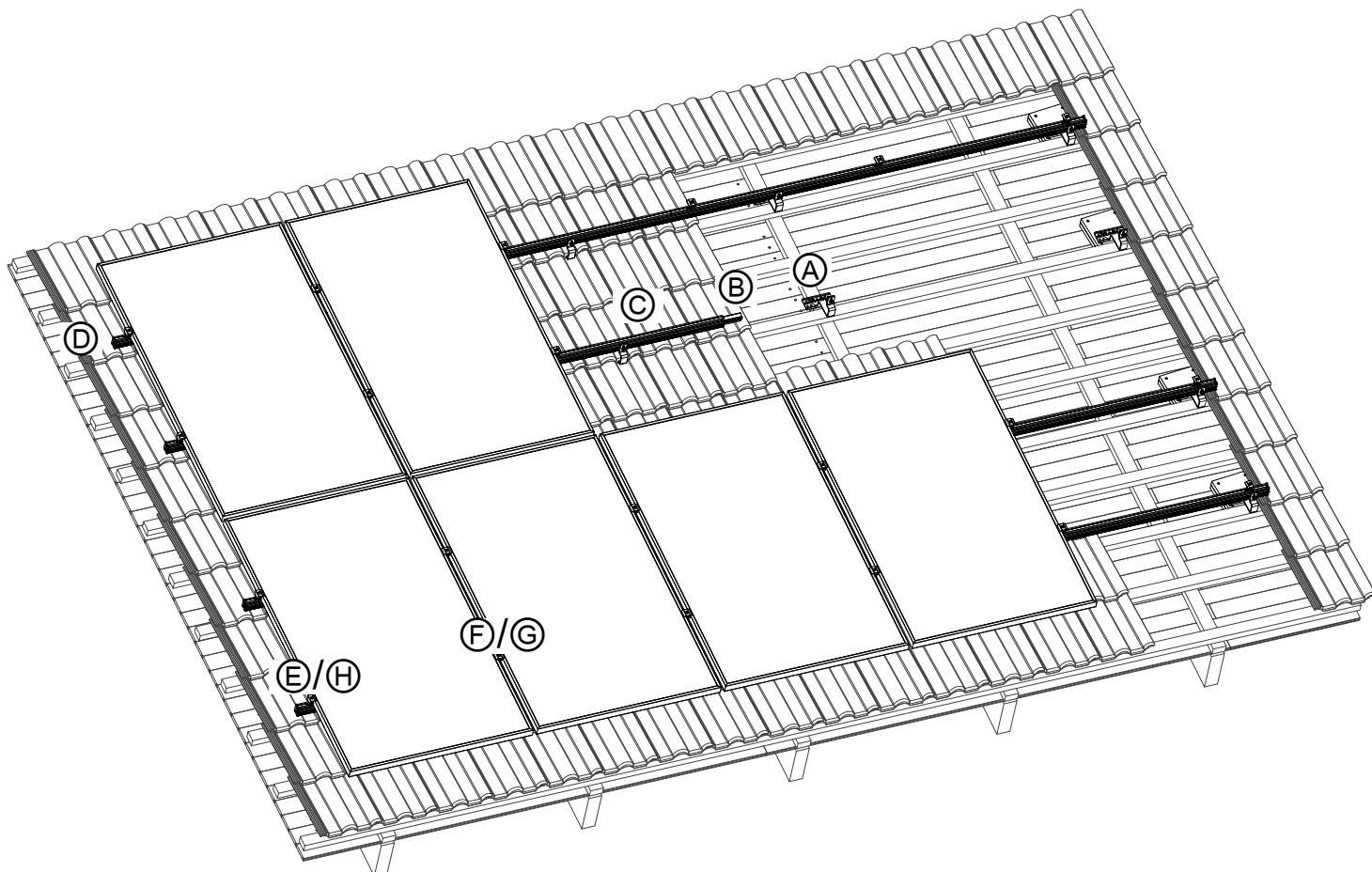
	Ø	M10	M12
	Ø <sub>1</sub>	14 mm	
	Ø <sub>2</sub>	7,0 mm	8,4 mm

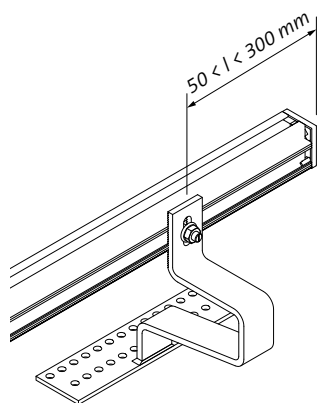
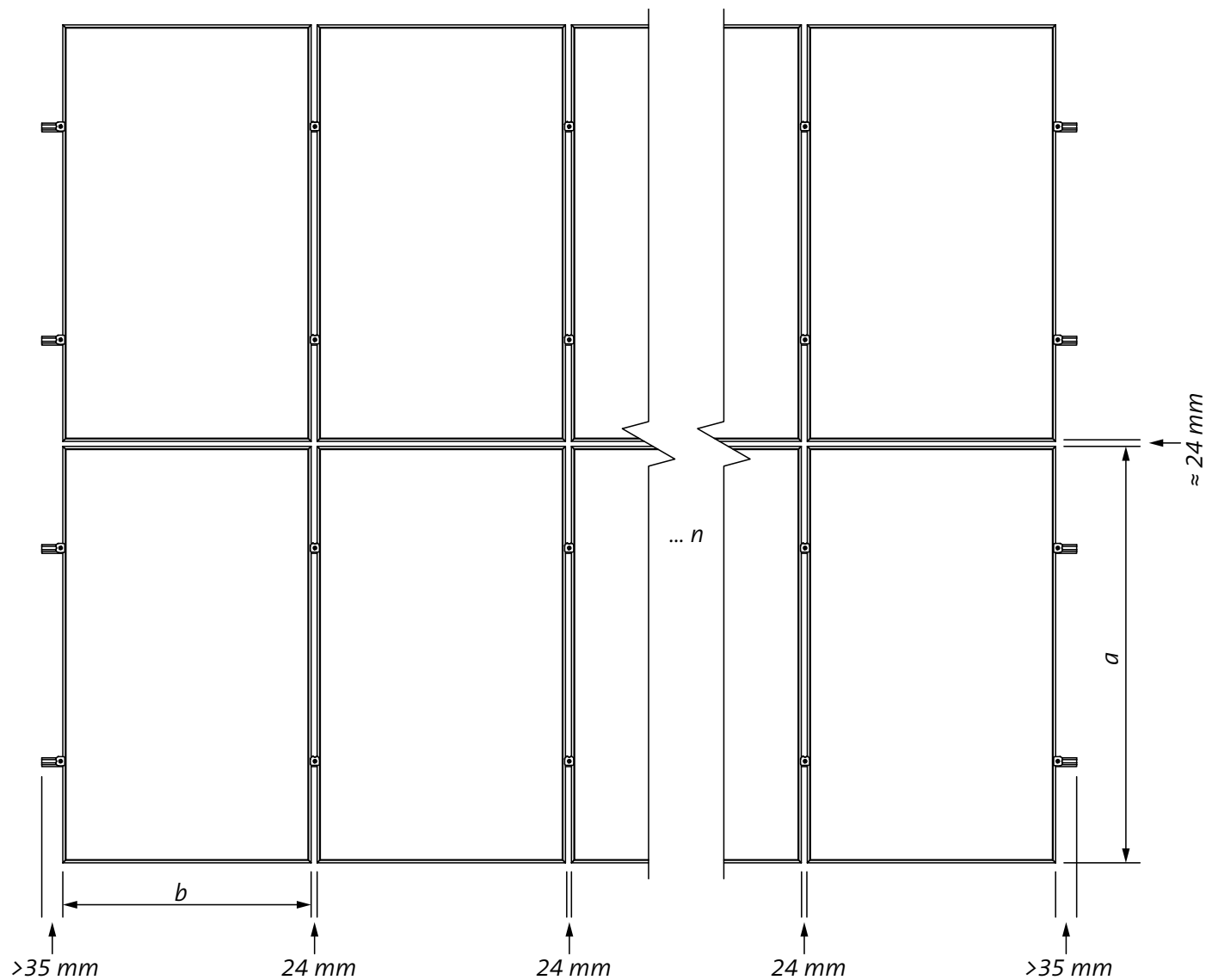










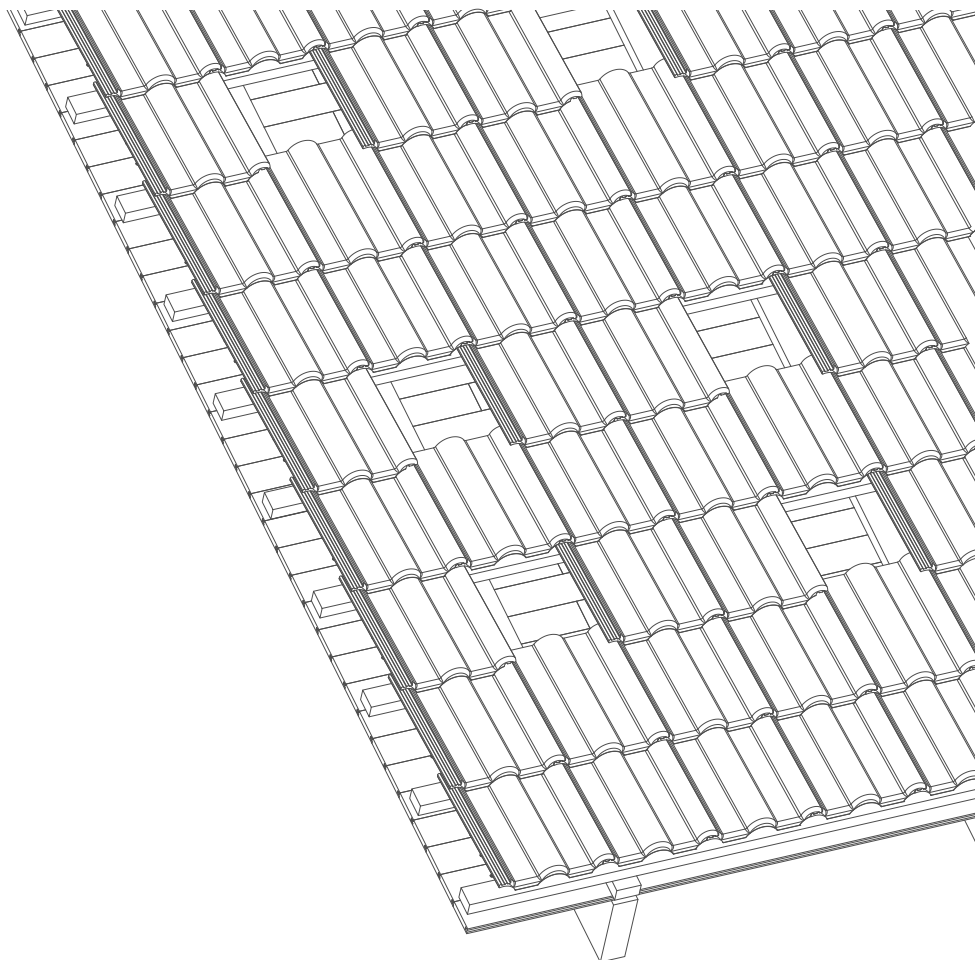


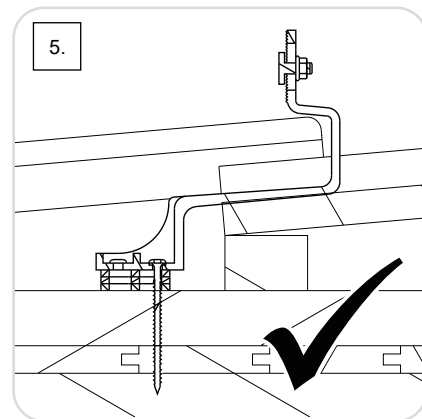
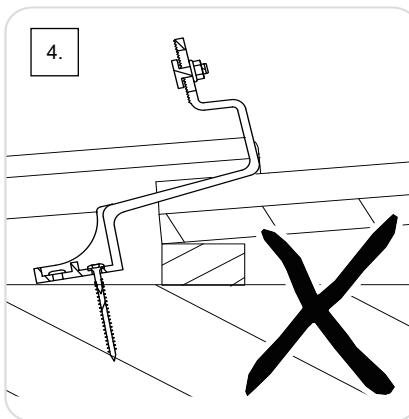
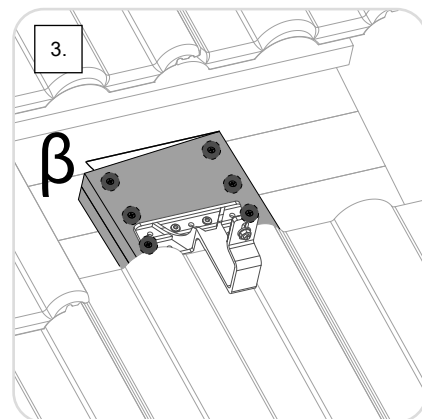
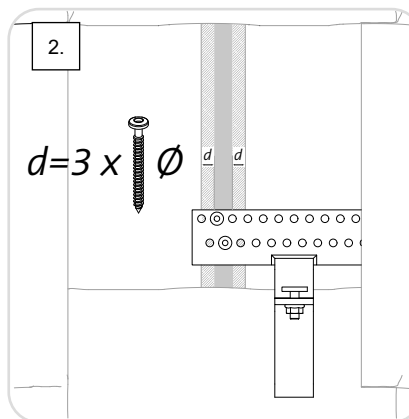
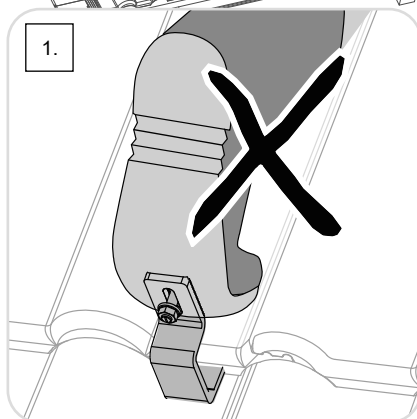
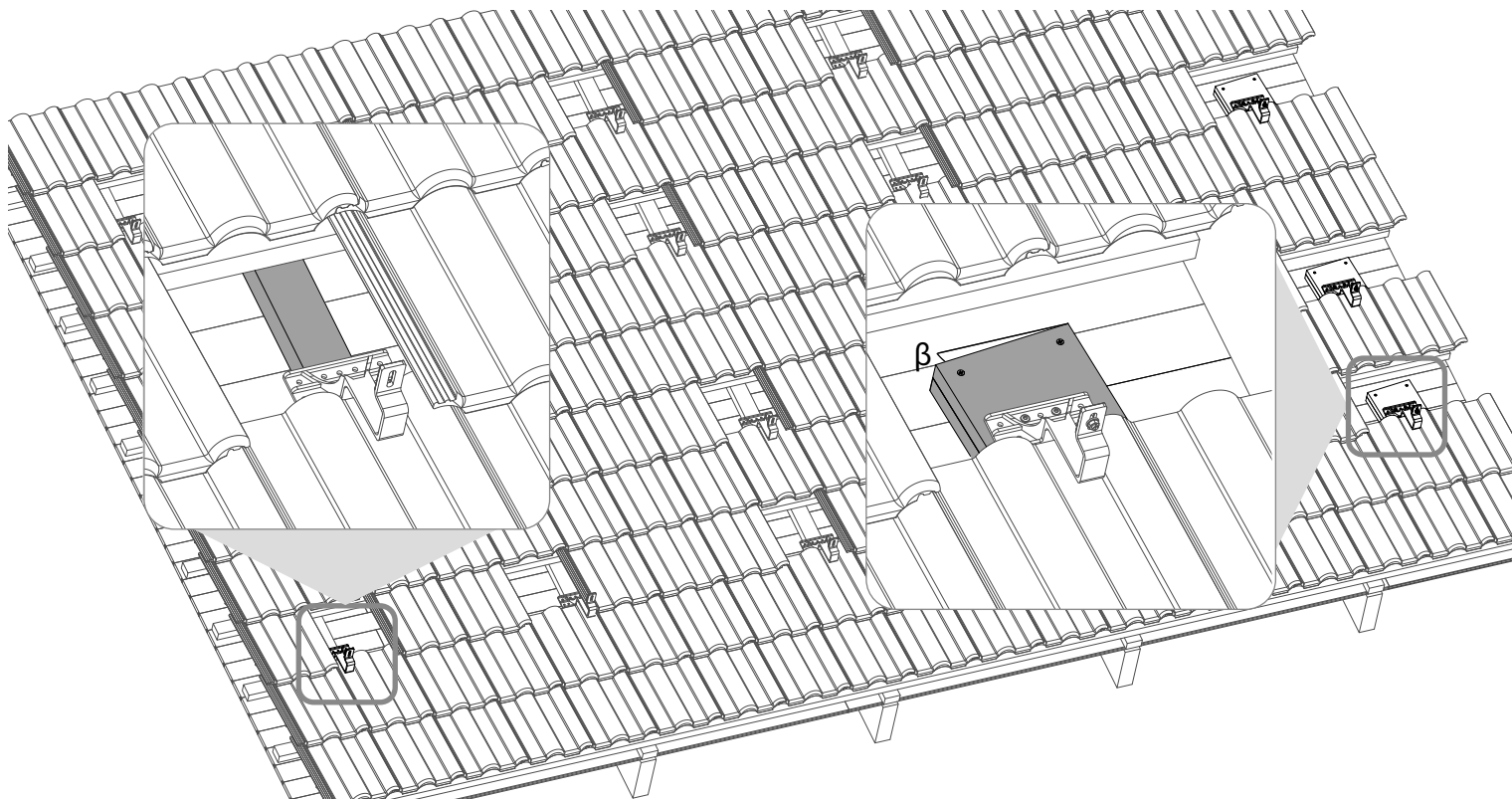
Without a structural analysis by means of the Viessmann PV-Planner the length of the cantilever should not be longer than 300 mm.

Remove the additional gutter tiles on the top side as per layout to have more work space.

### Warning!

Check the condition of the roof construction before starting the installation. This includes quality and thickness of rafters, purlins and the roof sealing. The building structure must be able to safely and durably bear the additional loads of the photovoltaic system.





## Warning!

A surveyor must assess the quality of the rafters, laths as well as the grooved board and the strictly required screwed fixations of the grooved board with the rafters and ascertain whether the roof is suitable for the installation of VarioSole taking into account the local wind and snow conditions. Replace bad or old roof laths as well as the grooved boards by new ones, which at least comply with the currently applicable regulations.

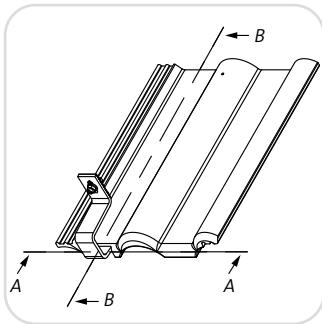
If mounted on grooved boards, the load capacity of the roof hook is clearly lower compared with the screwed connection on rafters.

Viessmann will not accept liability for the direct screwed connection on the grooved board. The following steps shall only serve for illustration. To ensure warranty, please follow the instructions "One-layer rail system - vertical module alignment". Only use the levelling element on a timber lining of at least 20 mm thickness with an NH strength class of min. C24.

## Warning!

1. Do not use the roof hook as step
2. Screw the roof hooks fastened on the rafter within the allowed range only. Keep a distance of  $3 \times \varnothing$  of the wood screw to the outer edge. Please find the number of screws on page 50-52.
3. Screw on the levelling elements in an angle of approx.  $\beta \approx 5^\circ$ , to avoid stagnant water. Screw on 6 wood screws.
4. If screwed on grooved board and on roof rafters, make sure that the tile does not rest on.
5. Screw on the roof hooks through all levelling elements (incl. grooved board)

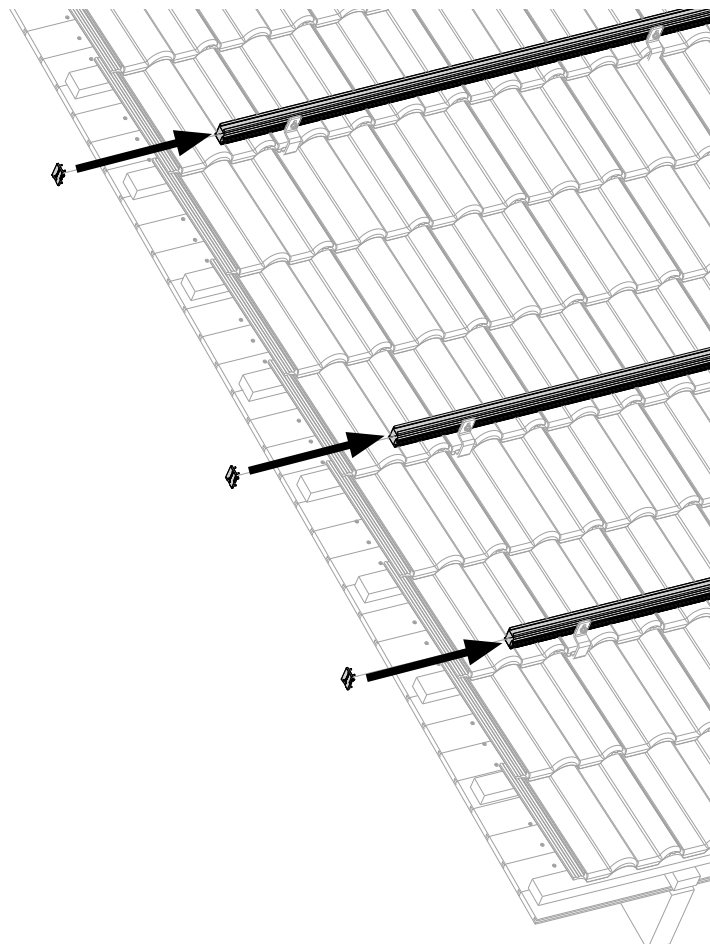
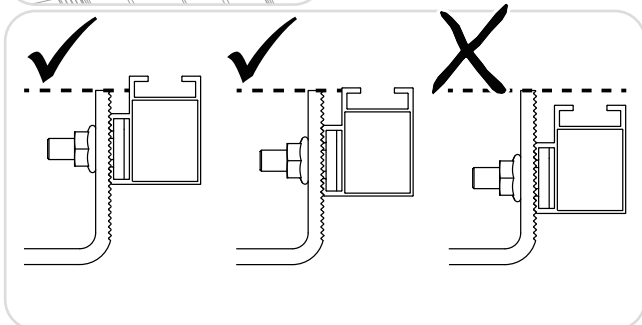
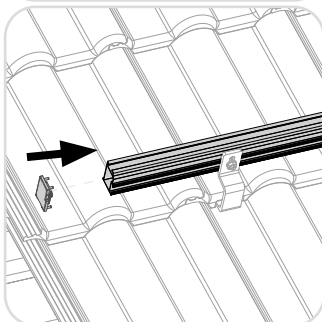
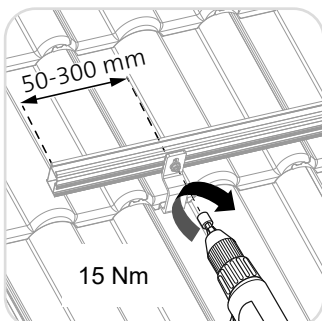
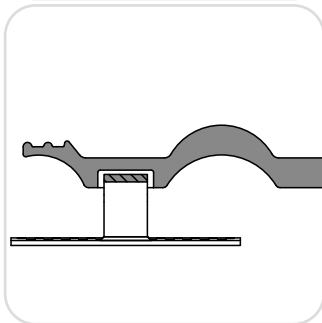
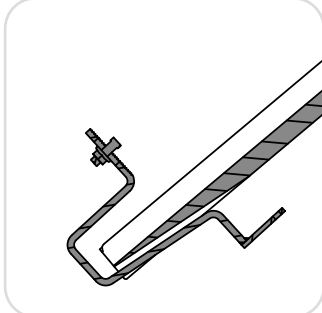


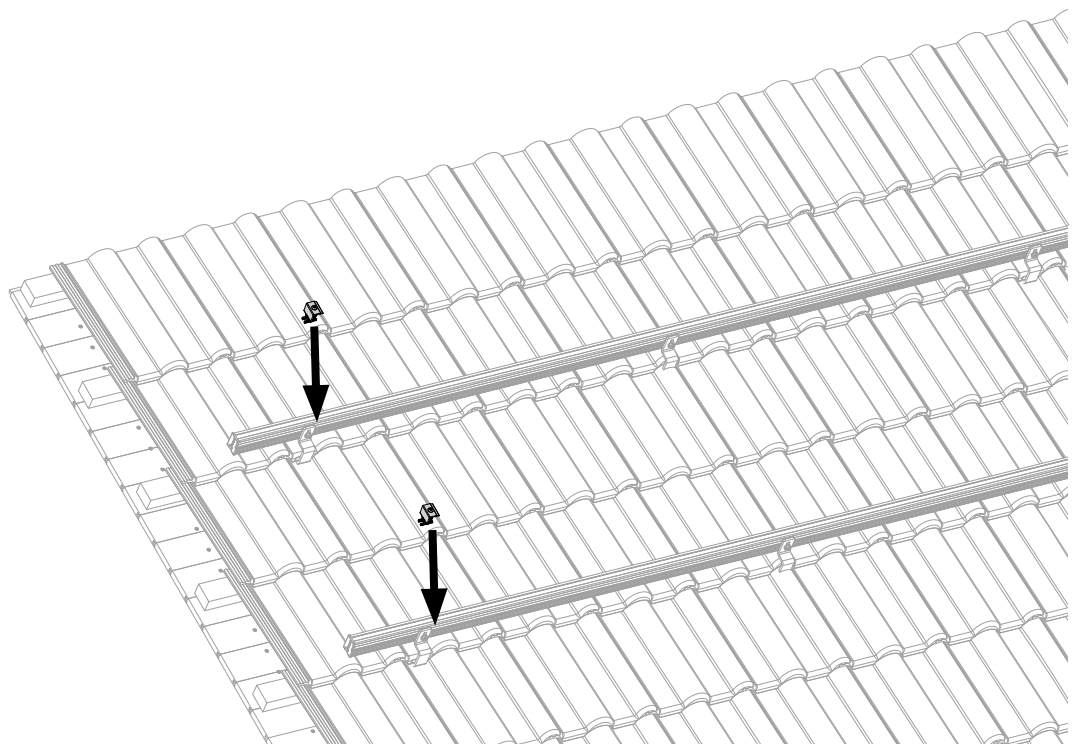
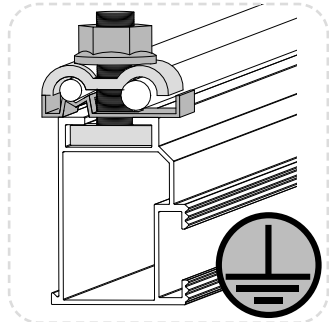
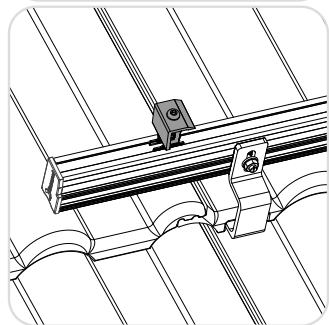
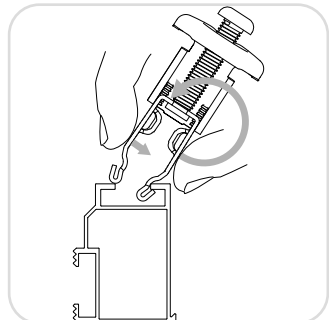
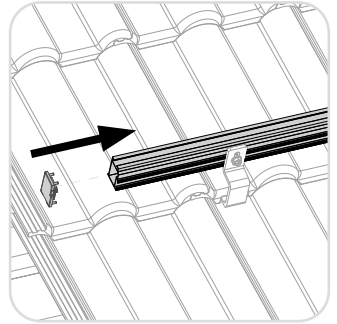
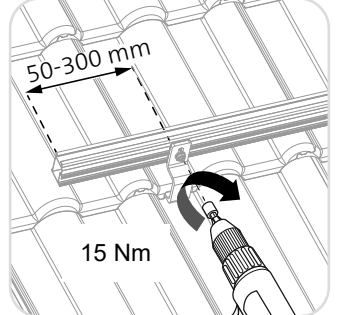
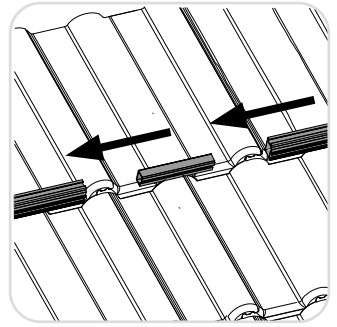
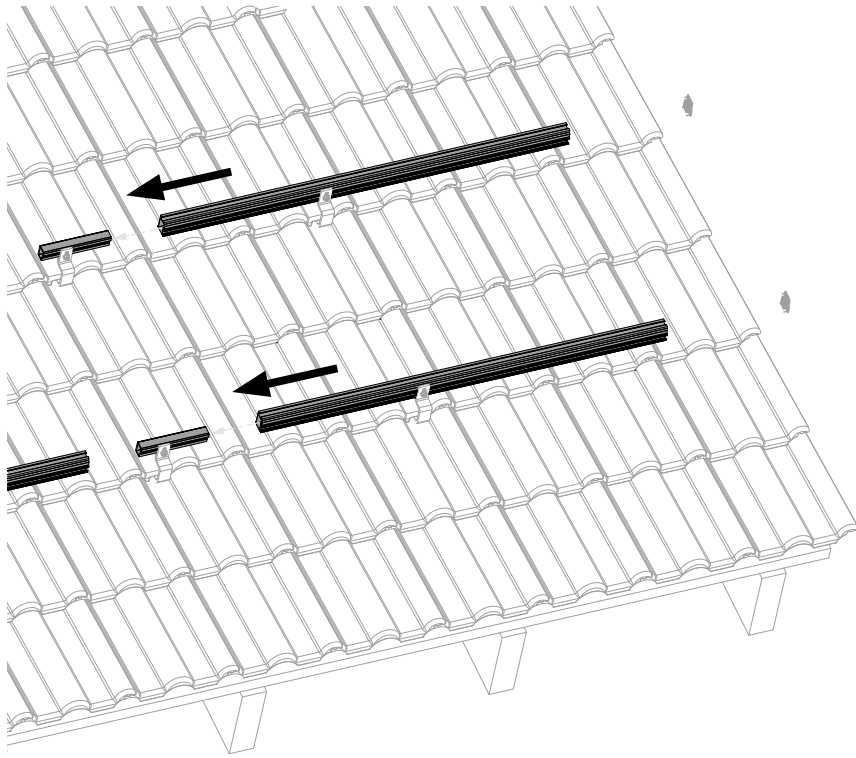


**Warning!**

The following treatment of tiles only applies to grooved tiles.  
For flat tiles, please look at page 45-47.

Treat the tiles above the roof hooks using an angular grinding machine. Treat the tile as per detailed views A-A and B-B.



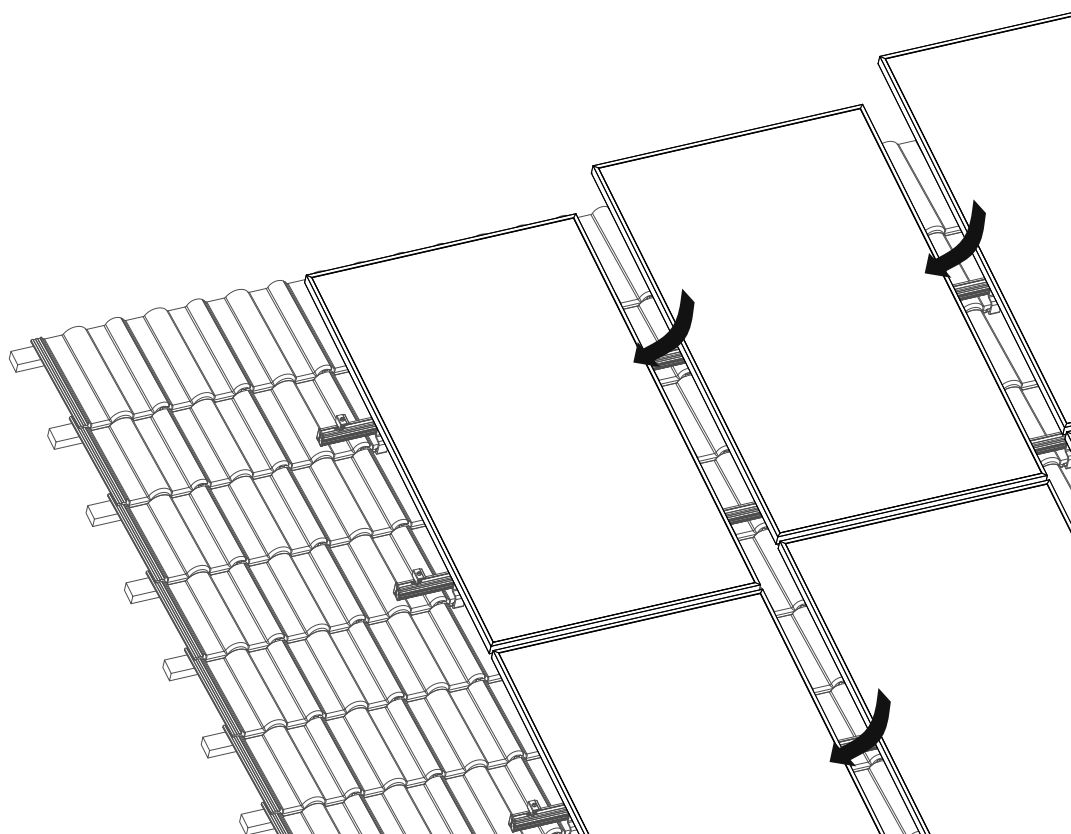
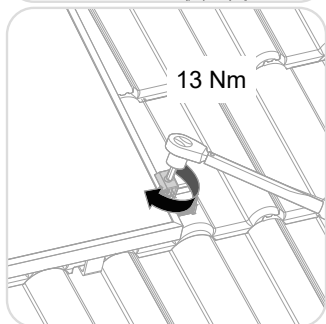
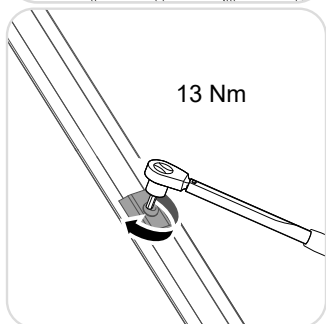
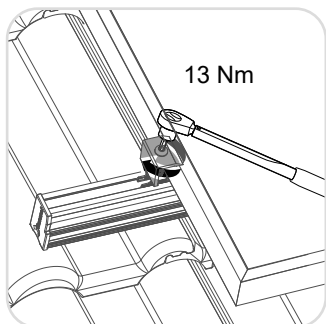
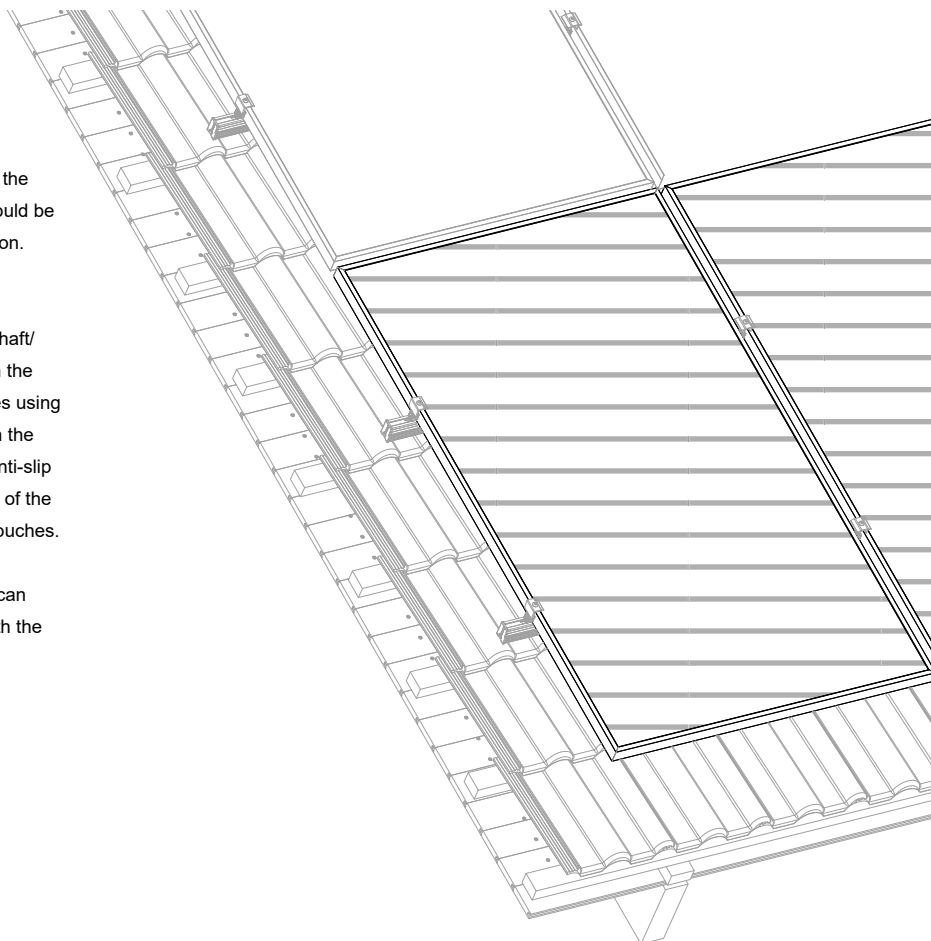
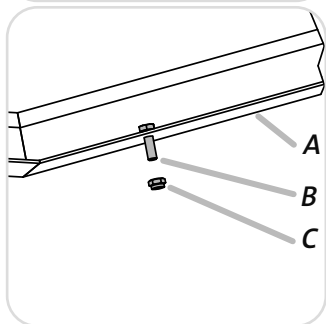
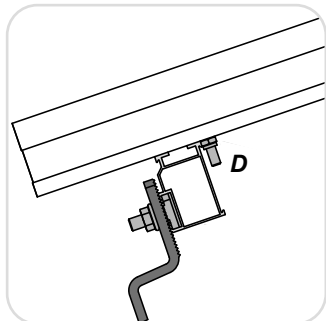


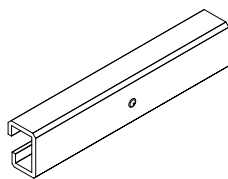
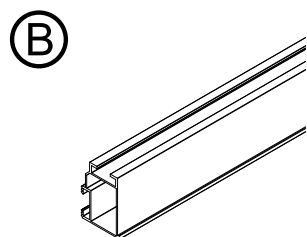
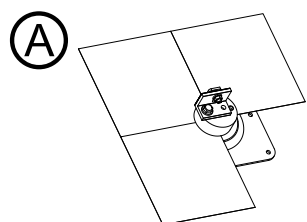
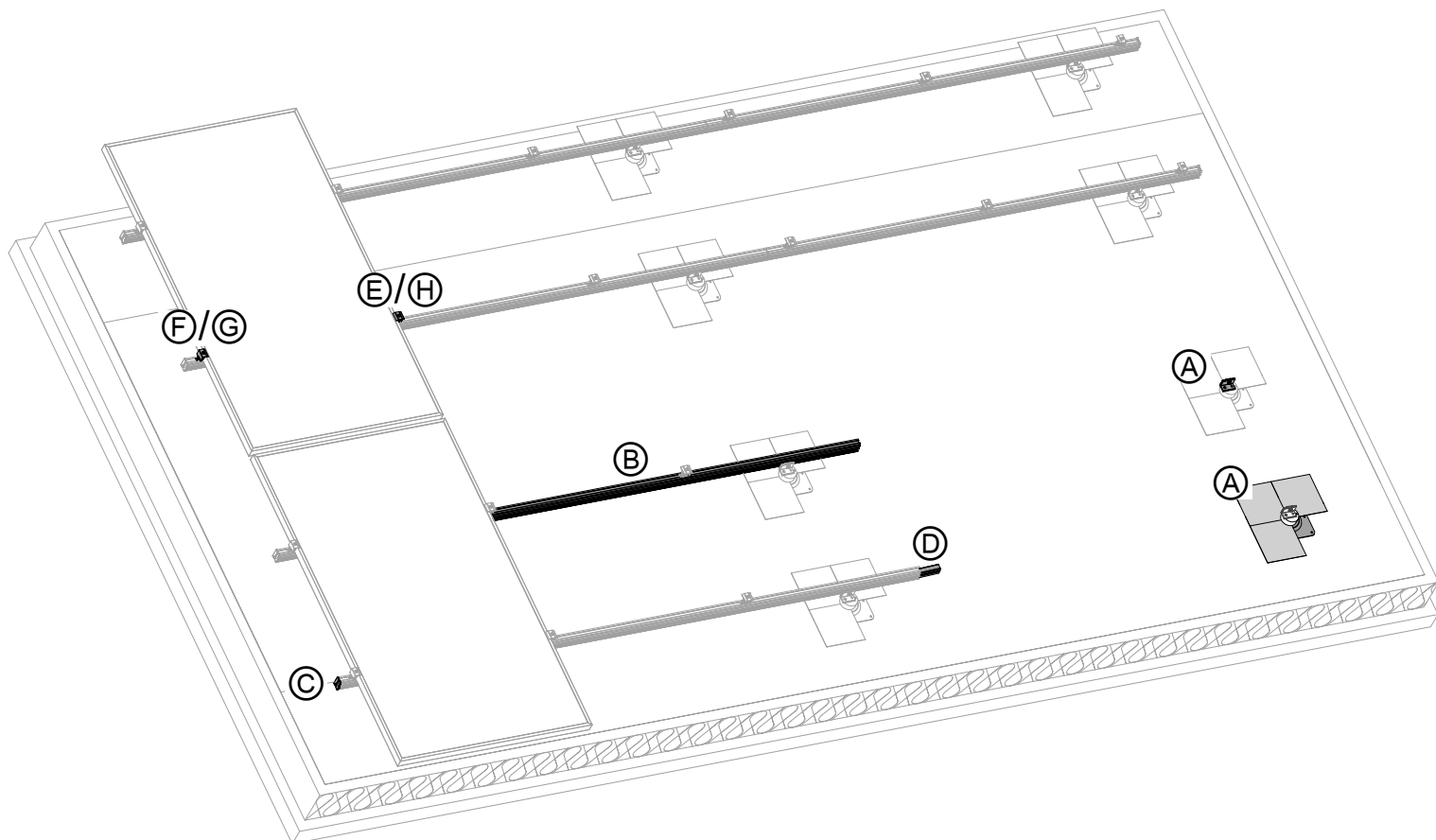
**Warning!**

Before installing the modules, the modules of the lowest row should be provided with anti-slip protection.

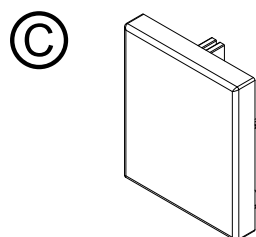
For this purpose fasten the M6x20 mm screws (with the shaft/thread pointing downwards) in the fastening points of the modules using M6 nuts. Place the modules in the lowest row in a way that the anti-slip protection abuts and the edge of the lowest mounting rail (Fig. B) touches.

Note: The anti-slip protection can only be used with modules with the appropriate fastening holes.

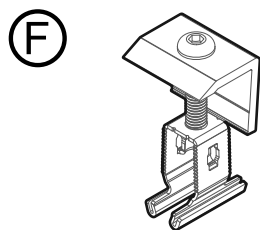
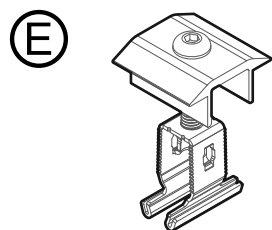
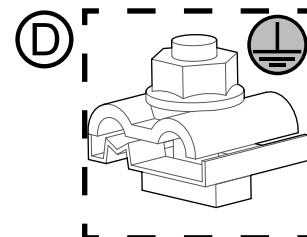




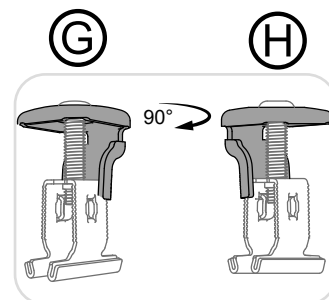
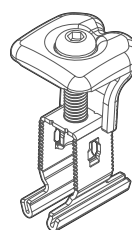
+



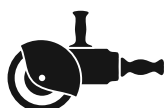
+



+



+



5



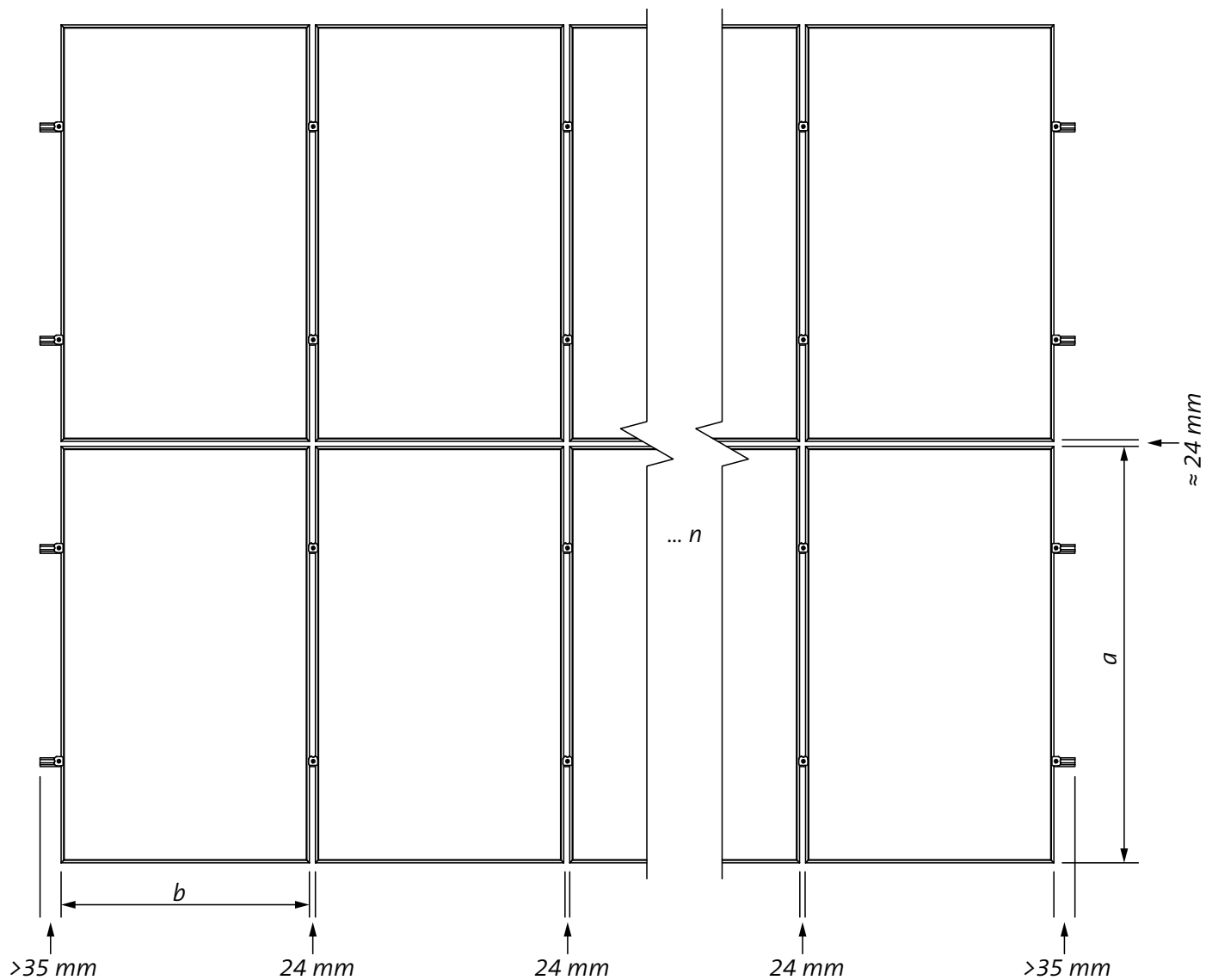
SIT 30  
(TX 30)



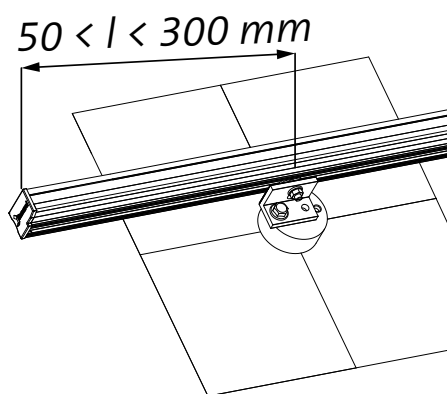
Nm

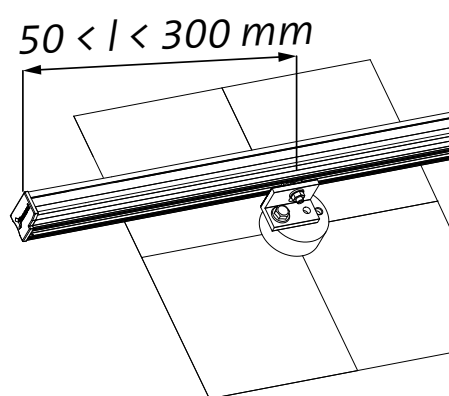
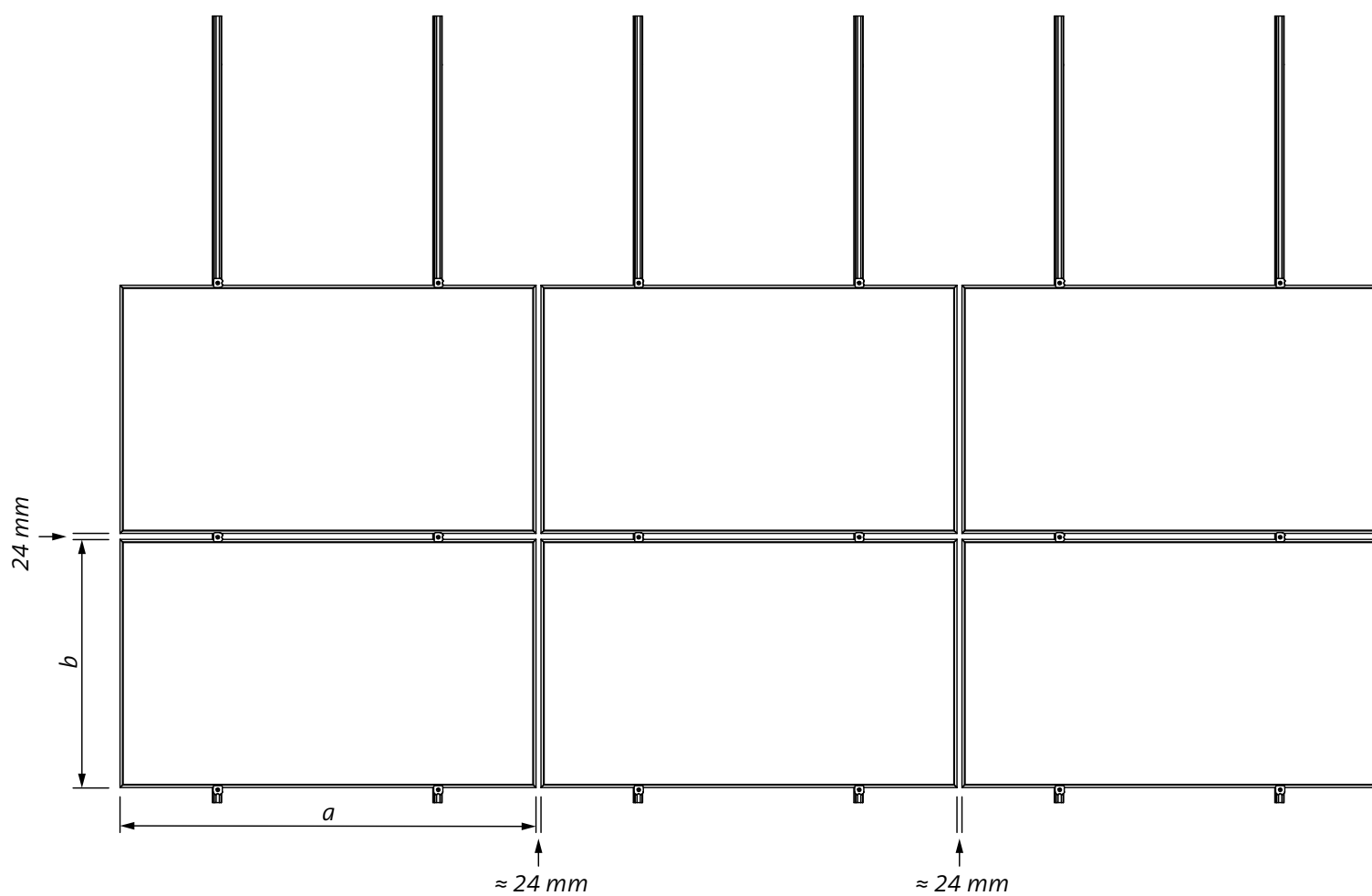


10 mm, 13 mm

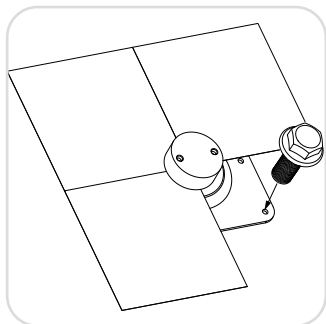


Without a structural analysis by means of the Viessmann PV-Planner the length of the cantilever should not be longer than 300 mm.

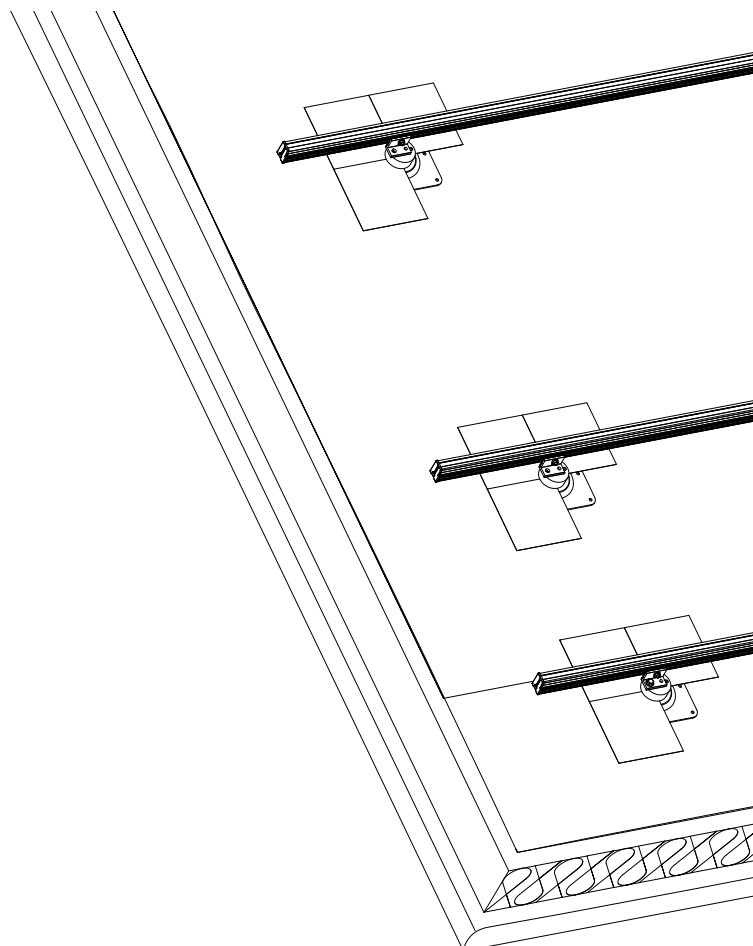
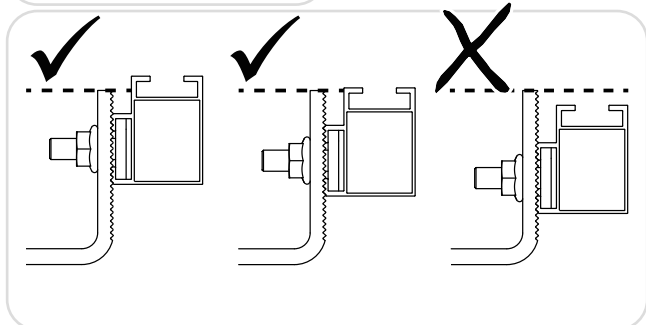
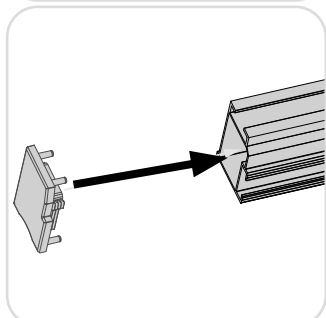
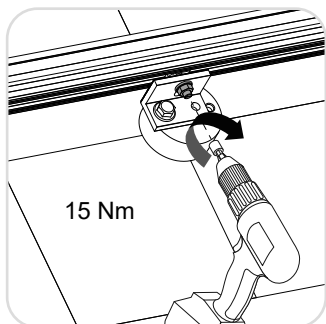
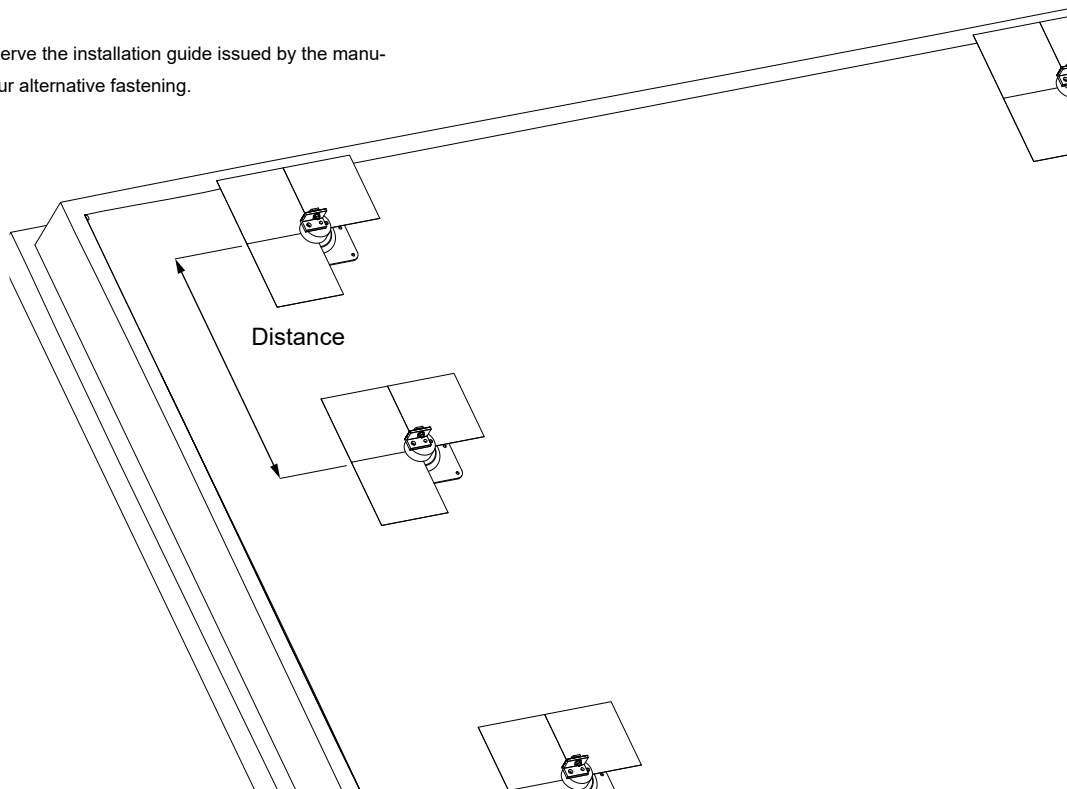
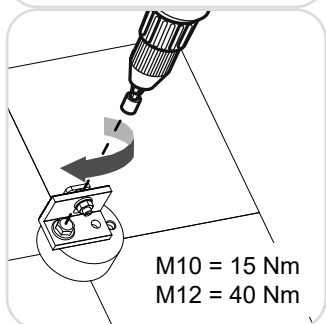
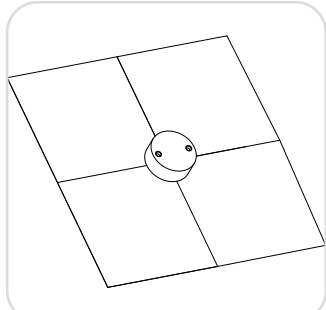


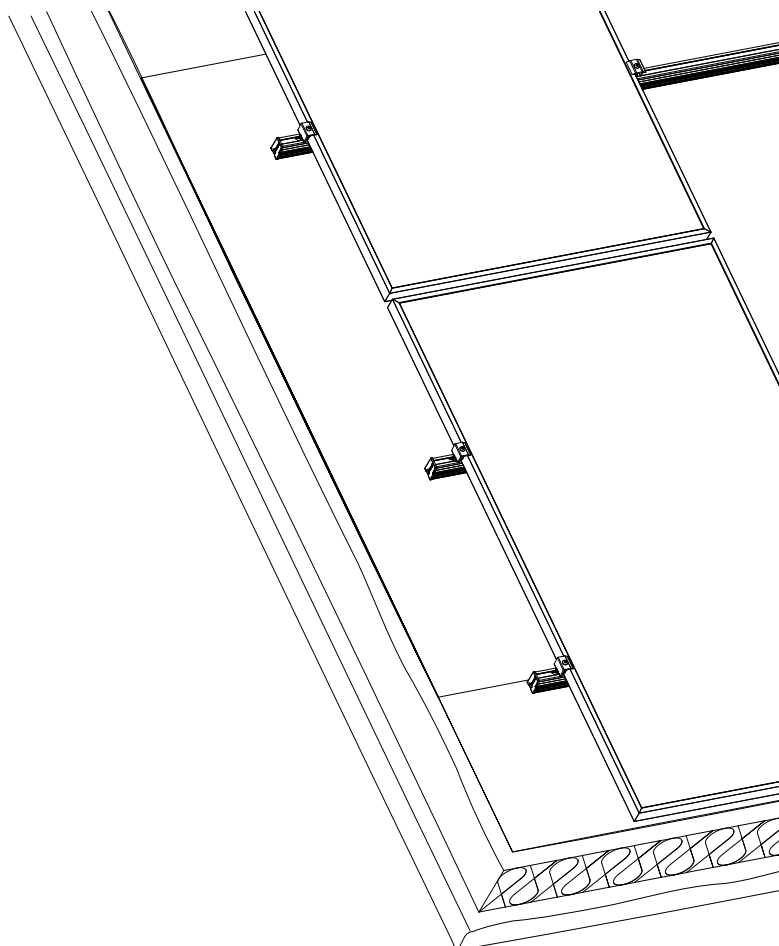
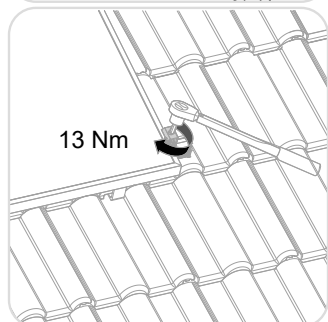
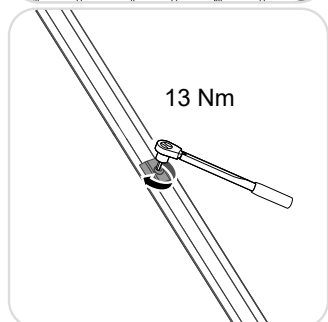
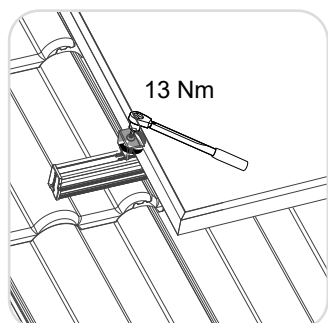
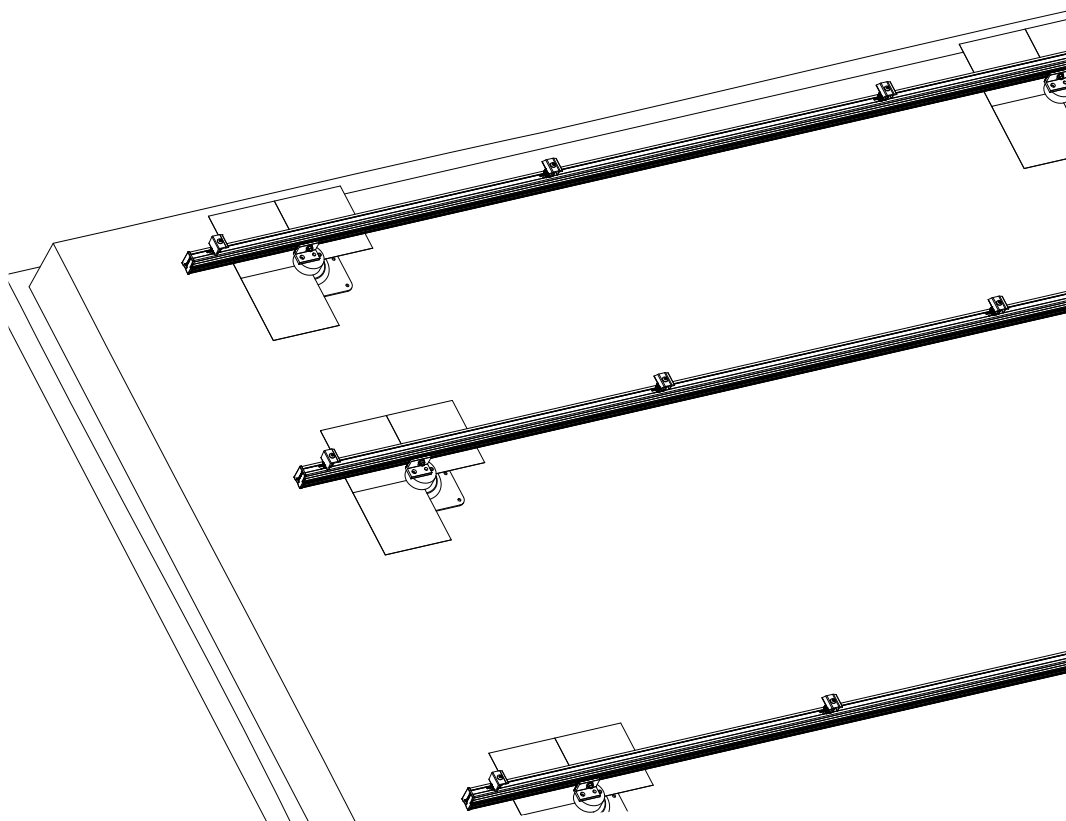
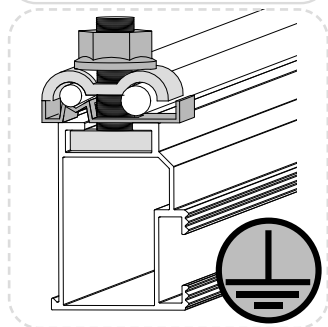
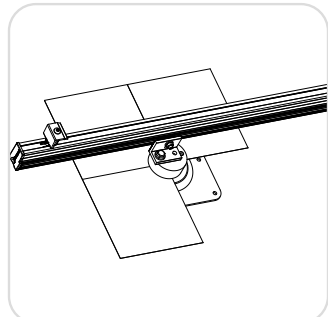
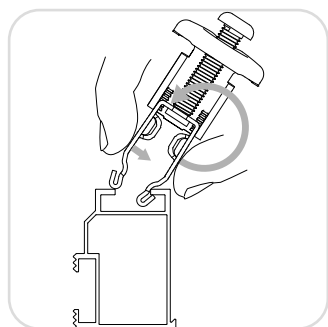


Without a structural analysis by means of the Viessmann PV-Planner the length of the cantilever should not be longer than 300 mm.



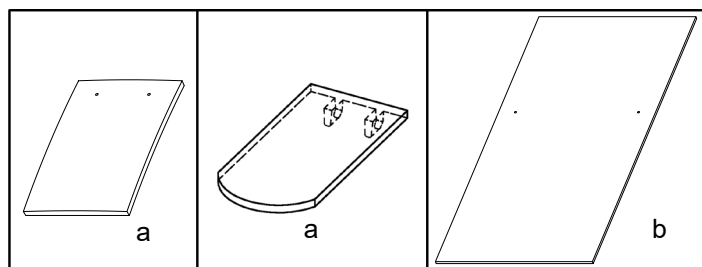
With this, observe the installation guide issued by the manufacturer of your alternative fastening.







A

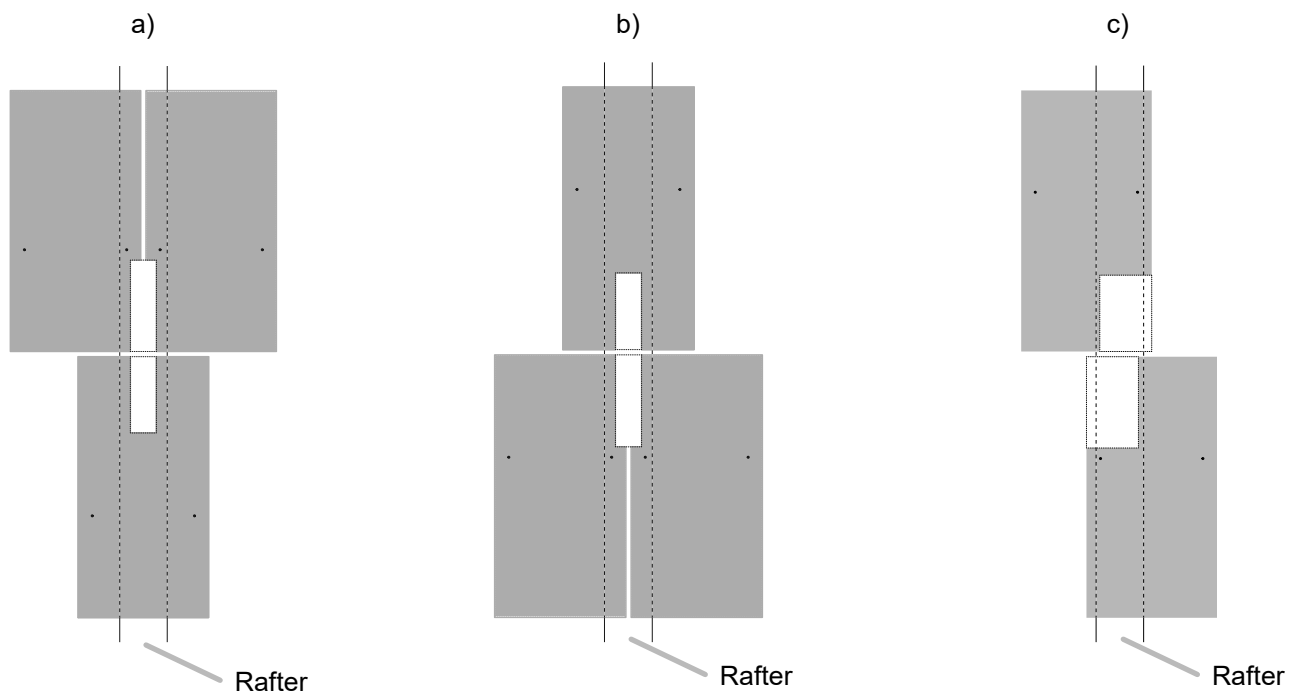
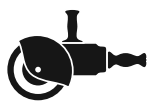


a Plain Tile

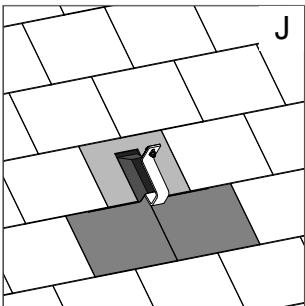
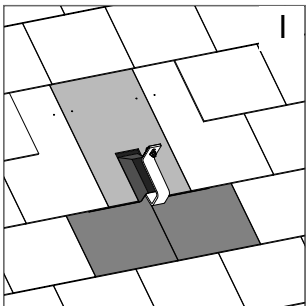
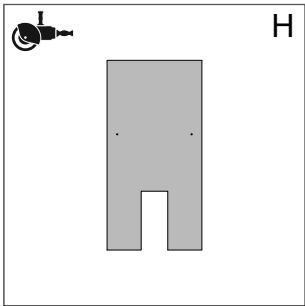
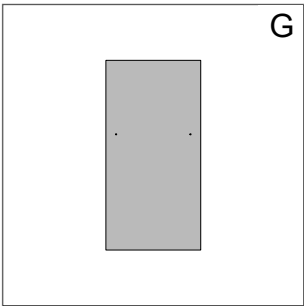
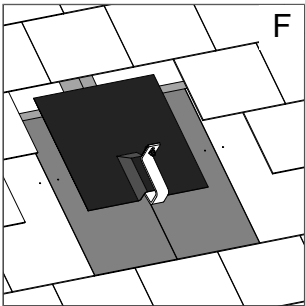
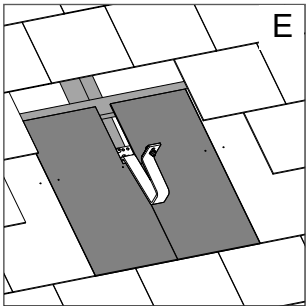
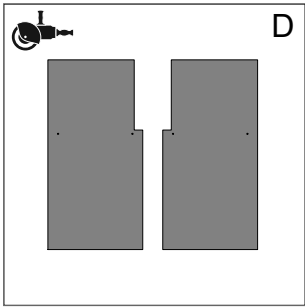
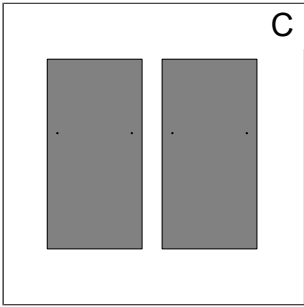
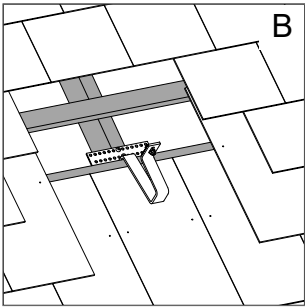
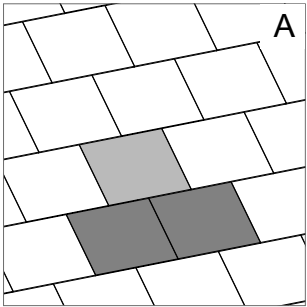
b Slate Tile

### Processing of the bricks

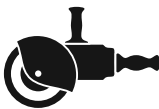
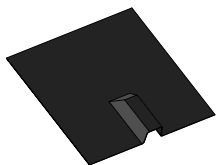
Use an angle grinder or slate cutter to cut a recess in the tile at the point of insertion of the roof hook, which covers the roof hook so that the tile lies flat. If the roof tiles are grooved, a recess must also be cut in the top of the lower roof tile. Handling from three different positions:



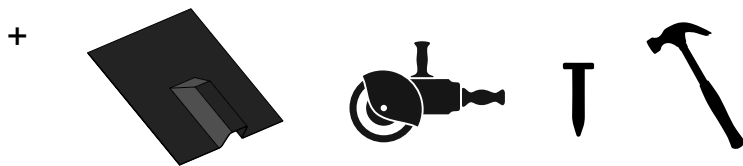
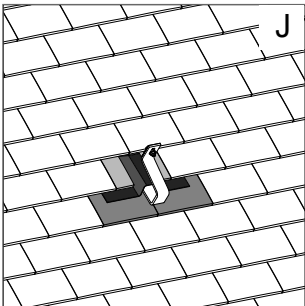
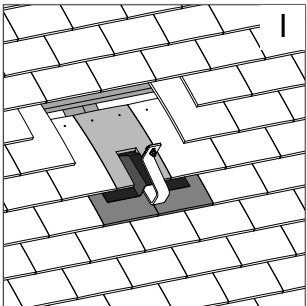
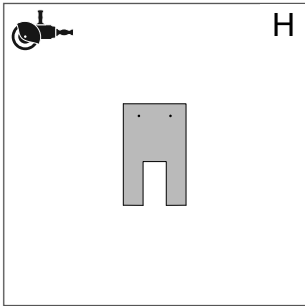
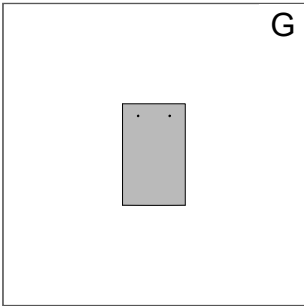
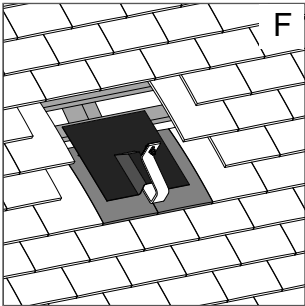
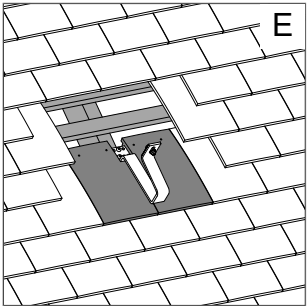
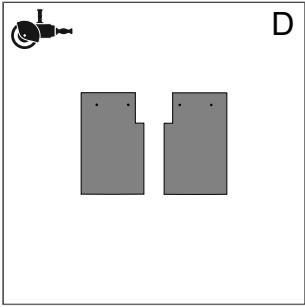
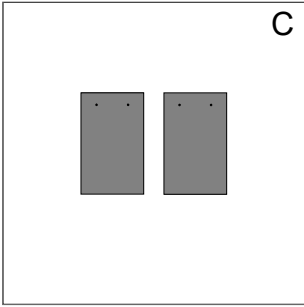
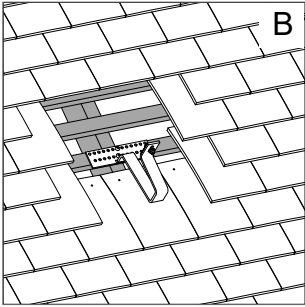
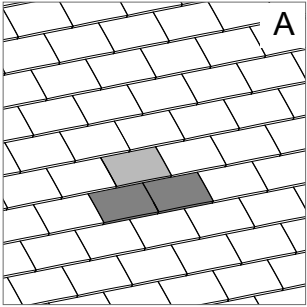
A



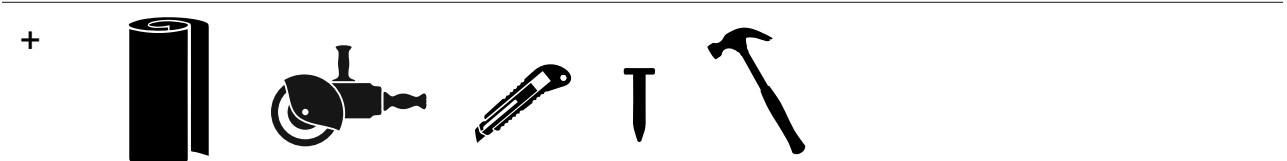
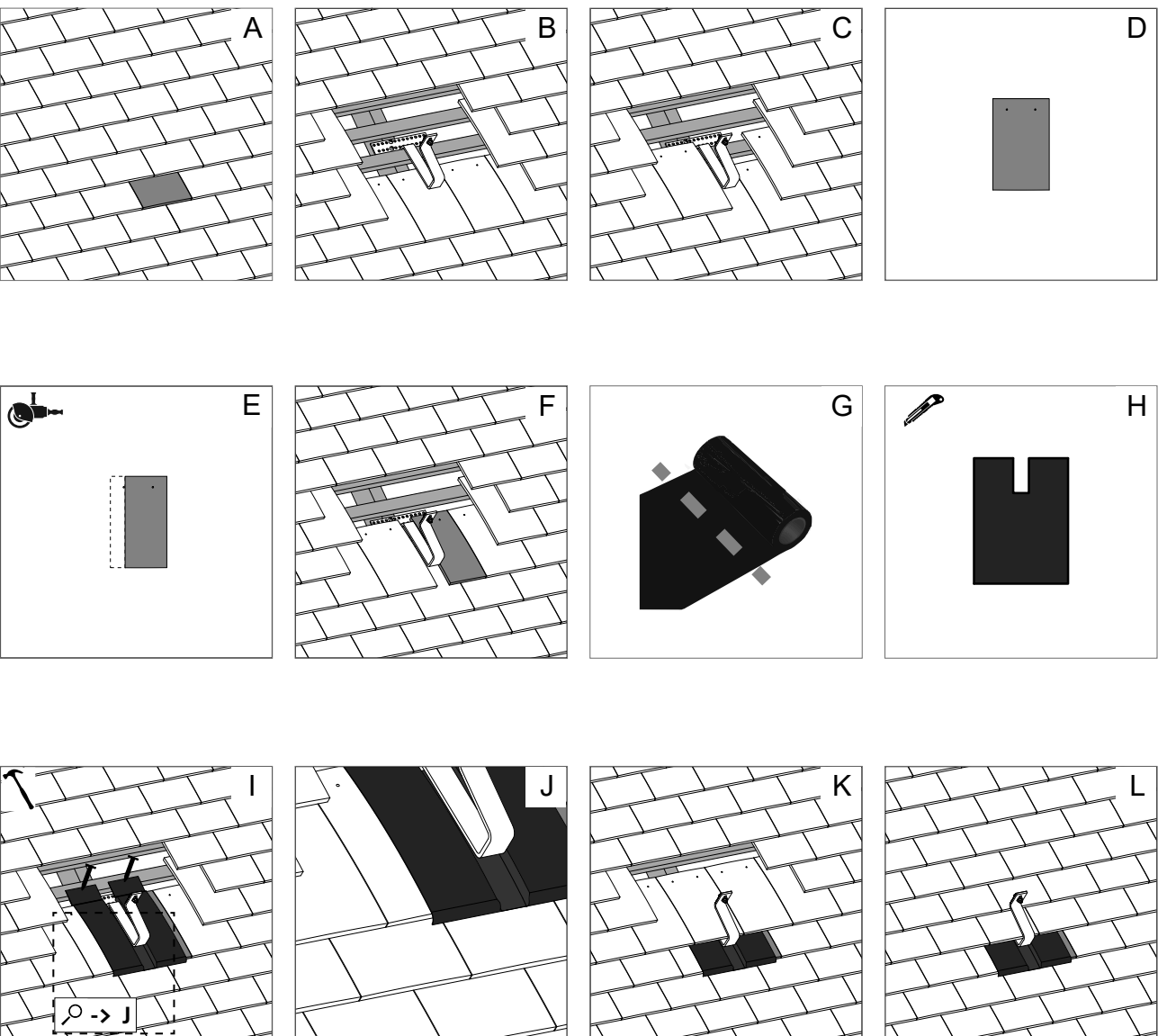
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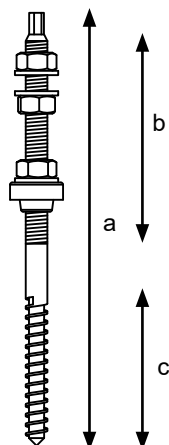
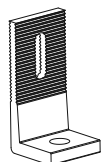
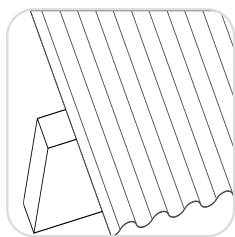
A



A

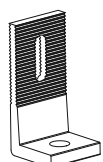
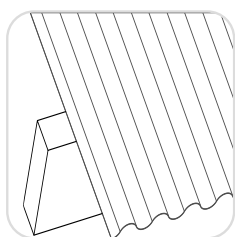


B

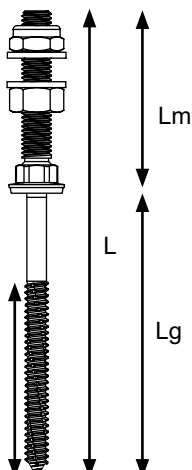


	Item No.	a:	b:	c:	
M10	7959300	160 mm	71 mm	65 mm	(Connection offset/ connection)
M10		180 mm	81 mm	65 mm	
M10	7959301	200 mm	81 mm	65 mm	(Connection offset/ connection)
M10	7959295	200 mm	81 mm	65 mm	
M10	7968411	250 mm	81 mm	65 mm	(Connection offset/ connection)
M10	7968410	250 mm	81 mm	65 mm	

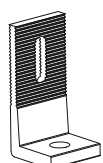
M12	7959302	250 mm	91 mm	100 mm	(Offset connection)
M12	7959296	250 mm	91 mm	100 mm	
M12	7959297	300 mm	141 mm	100 mm	
M12	7959298	350 mm	191 mm	100 mm	
M12	7959299	400 mm	211 mm	100 mm	



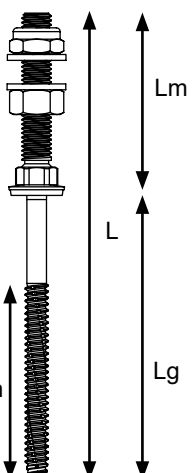
70 mm



	Item No.	Lg/Lm:	L	Clamp area
M10	7959309	80/50	136 mm	0 - 40 mm
M10	7959310	100/50	156 mm	20 - 60 mm
M10	7959311	130/50	186 mm	55 - 90 mm
M10	7959312	150/50	206 mm	75 - 110 mm
M10	7959313	180/50	236 mm	105-140 mm
M10	7959314	200/50	256 mm	125 - 160 mm



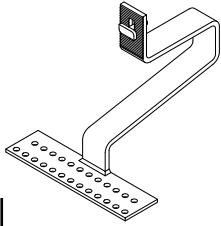
65 mm



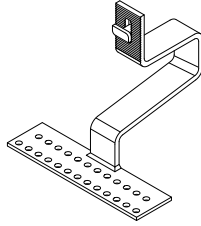
	Item No.	Lg/Lm:	L	Clamp area
M10	7959303	80/50	136 mm	15 - 60 mm
M10	7959304	100/50	156 mm	35 - 80 mm
M10	7959305	125/50	181 mm	60 - 105 mm
M10	7959306	150/50	206 mm	85 - 130 mm
M10	7959307	160/50	216 mm	95 - 140 mm
M10	7959308	200/50	256 mm	135 - 180 mm

B

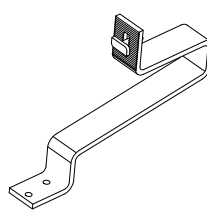
7959280  
UK Roof hook,  
Flexible



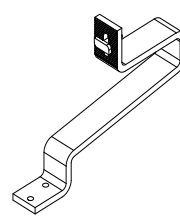
7959277  
UK Roof hook,  
Pantile



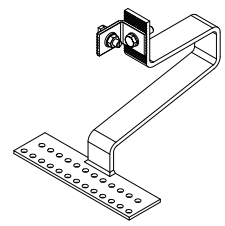
7959278  
UK Roof hook,  
Plain



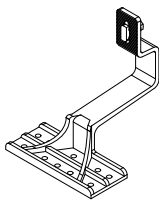
7959279  
UK Roof hook,  
Plain, Heavy Load



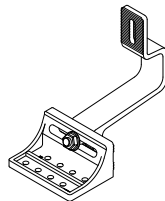
7959281  
UK Roof hook 90°,  
Flexible



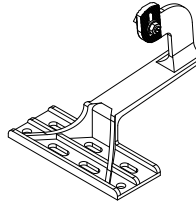
7959269  
Roof hook,  
aluminium, adjustable



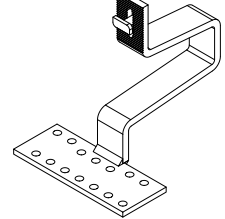
7959270  
Roof hook,  
aluminium, adjustable



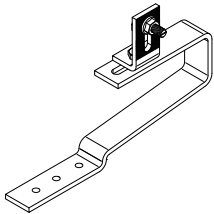
7959271  
Roof hook,  
aluminium, 90°



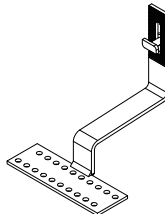
7959284  
Roof hook,  
Heavy Load



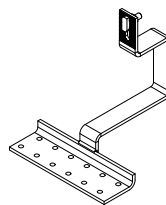
7959272  
Roof hooks,  
On-roof insulation



7959282  
Roof hook,  
Eco Basic

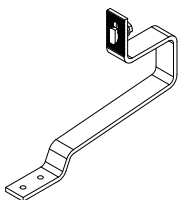


7959285  
Roof hook,  
Stainless steel TP

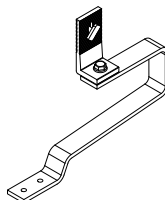


Galvanised steel as  
per EN ISO 1461.  
Suitable for corrosion  
class C3.

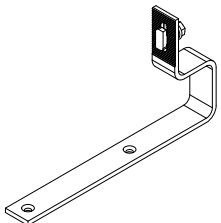
7959273  
Plain tile roof hook



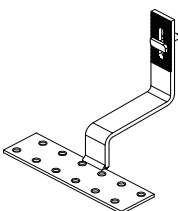
7959274  
Plain tile roof hook,  
90°



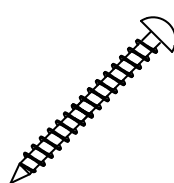
7959275  
Slate roof hook



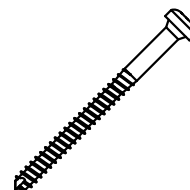
7959272  
Dachhaken,  
Edelstahl



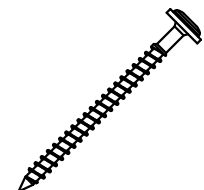
7959294 5x30



7959288 6 x 80



7959291 6 x 120  
7959291 6 x 160  
7959290 8 x 100

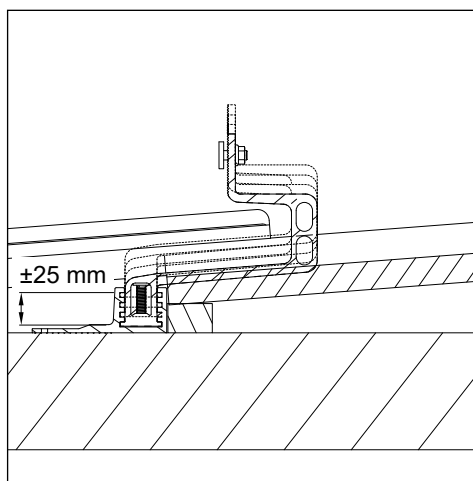
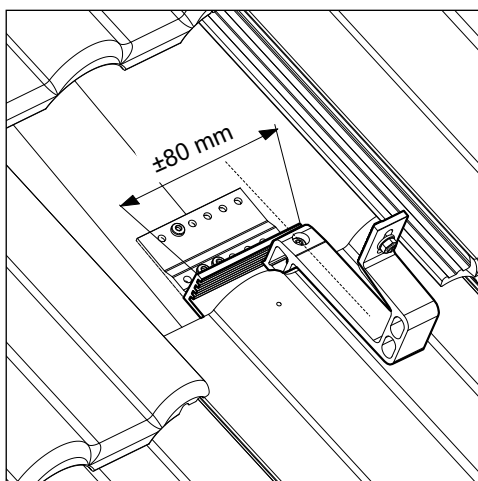
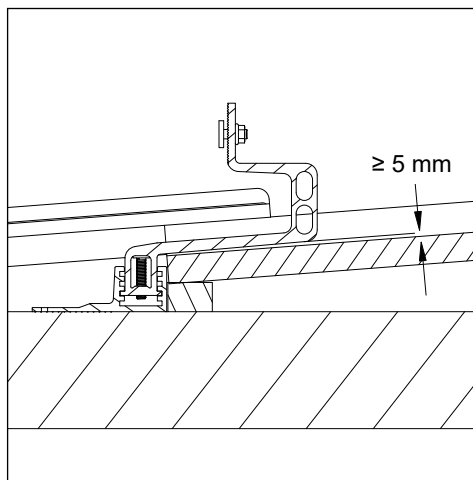
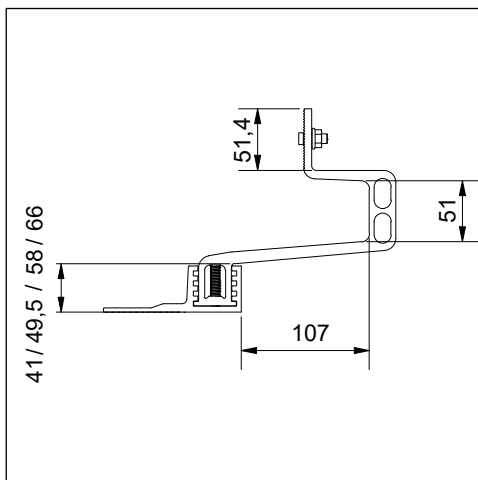
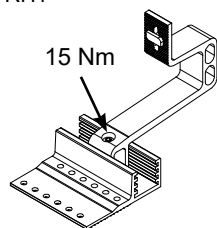


7959289 6 x 80



B

7968408  
Roof hook,  
RH1



B

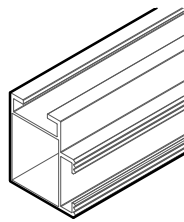
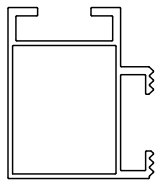
A		B	
1 x	<b>D</b> Dachhaken	+ n	<b>D</b> Holzschraube
	<b>UK</b> Roof hooks		<b>UK</b> Wood screw
	<b>F</b> Crochet de toit		<b>F</b> Vis a bois
	<b>I</b> Staffa		<b>I</b> Vite da legno
	<b>E</b> Gancho de tejado		<b>E</b> Tornillo de madera

A	B					
	7959288	7959289	7959290	7959291	7959292	7959294
7968408	3x	—	—	2x	2x	—
7959269	3x	—	—	2x	2x	—
7959270	3x	—	—	2x	2x	—
7959271	—	—	2x	—	—	—
7959272	3x	—	—	2x	2x	—
7959273	2x	—	—	2x	2x	—
7959274	2x	—	—	2x	2x	—
7959275	—	2x	—	—	—	—
7959285	3x	—	—	2x	2x	—
7959276	—	—	—	—	—	3x
7959282	3x	—	—	—	—	—
7959277	2x	—	—	—	—	—
7959278	2x	—	—	—	—	—
7959280	2x	—	—	—	—	—
7959281	2x	—	—	—	—	—

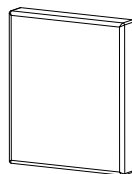


B

VS+ mounting rail 41 x 35

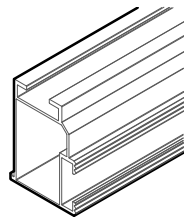
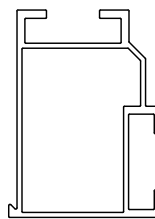


Cover cap for  
mounting rail 41 x 35

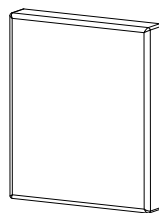


Item number	Colour
7959376	Black
7959375	Blank

VS+ mounting rail 50 x 37

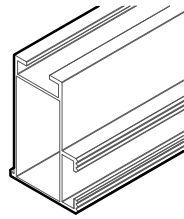
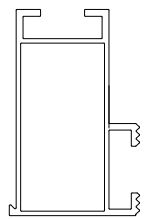


Cover cap for  
mounting rail 50 x 37



Item number	Colour
7959374	Black
7959373	Blank

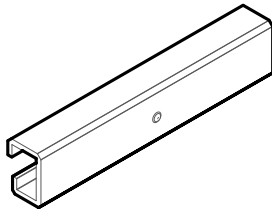
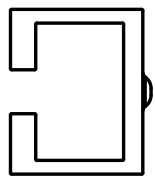
VS+ mounting rail 60 x 38



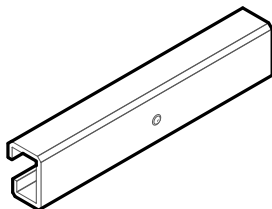
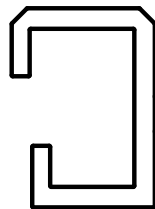
Mounting rail

Item number	Length	Colour
7959351	41x35x2250 mm	Blank
7959353	41x35x3300 mm	Blank
7959355	41x35x4400 mm	Blank
7959357	41x35x6200 mm	Blank
7959358	Pre-cut part	Blank
7959358		Black

VS+ rail connector 41 x 35  
7959370

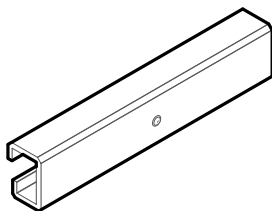
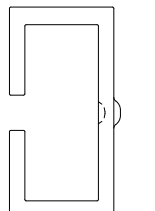


VS+ rail connector 50 x 37  
7959371



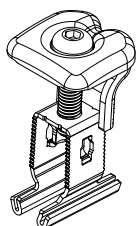
Item number	Length	Colour
7959360	50x37x2250 mm	Blank
7959362	50x37x3300 mm	Blank
7959364	50x37x4400 mm	Blank
7959366	50x37x6200 mm	Blank
7959358	Pre-cut part	Blank
7959368		Black

VS+ rail connector 60 x 38  
7959372

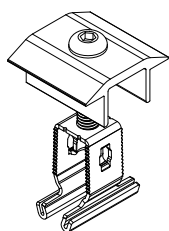


Item number	Length	Colour
7959369	60x38x3300 mm	Blank

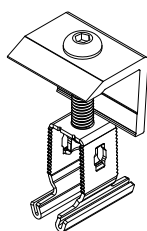
7959379, 7959380  
RS1 middle/ end clamp



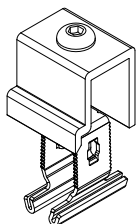
7959381, 7959382  
End clamp +



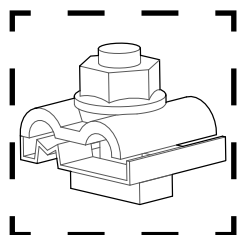
7959383, 7959384  
Middle clamp +



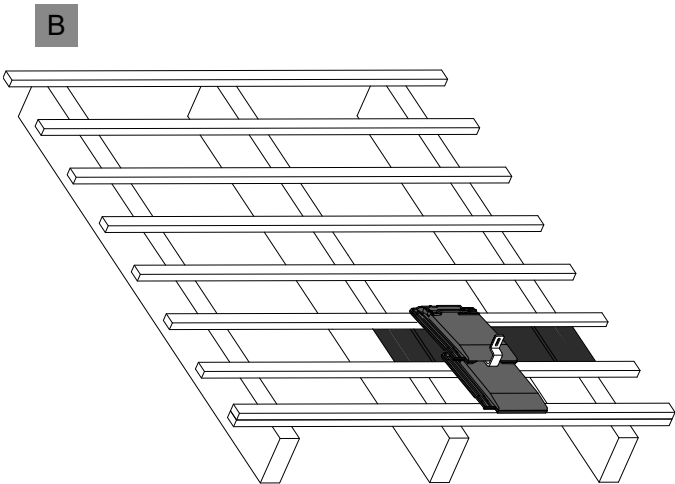
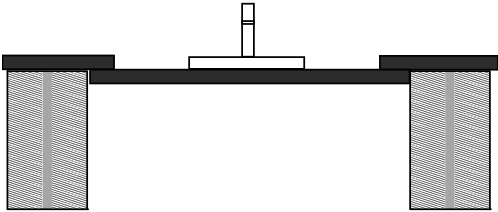
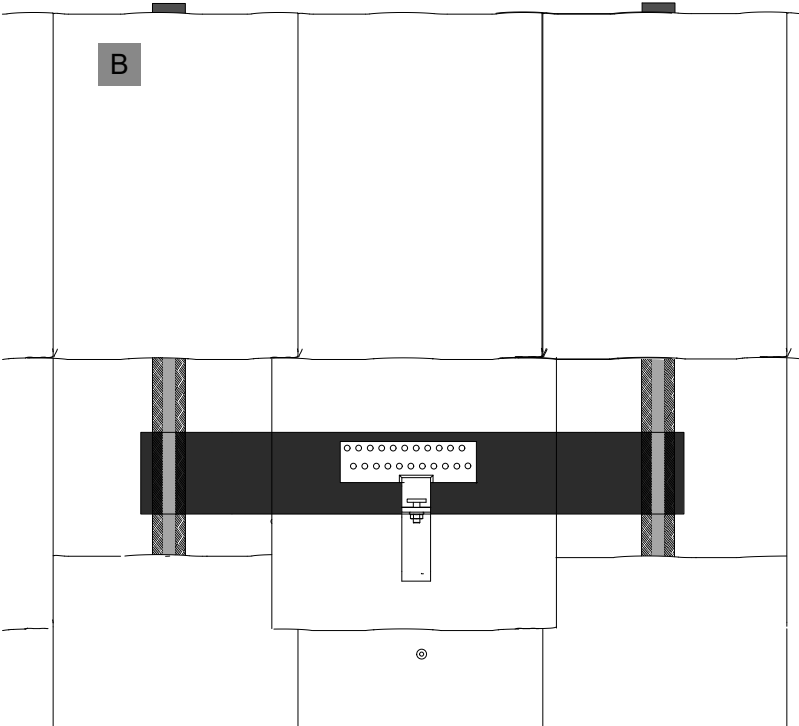
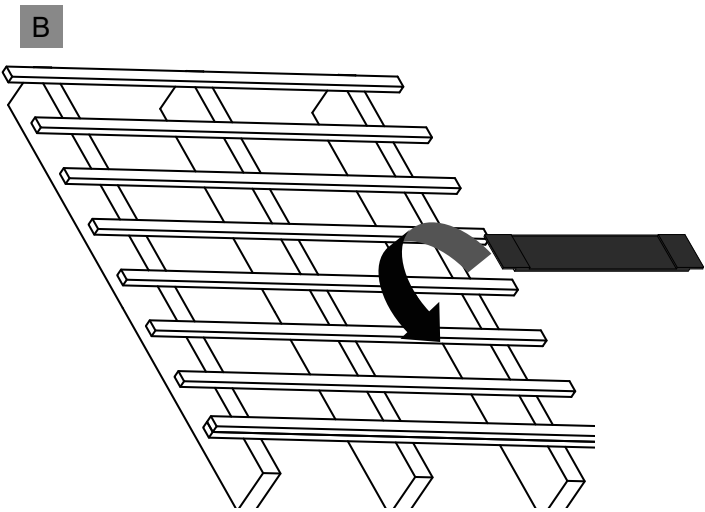
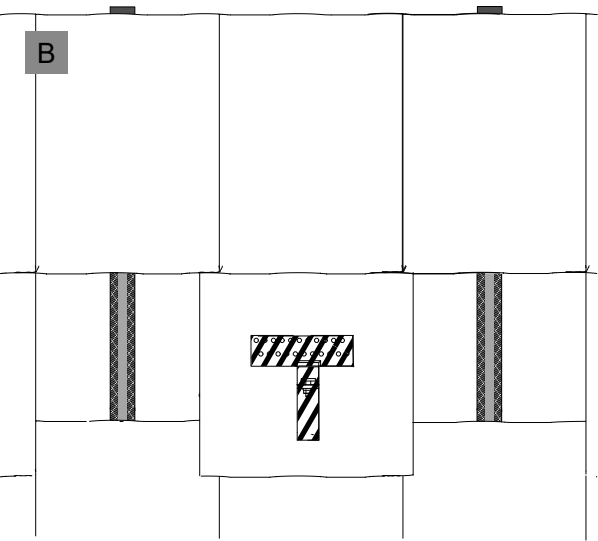
7959377, 7959378  
Cross rail connector+



7959416  
UNI earth clamp



C



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