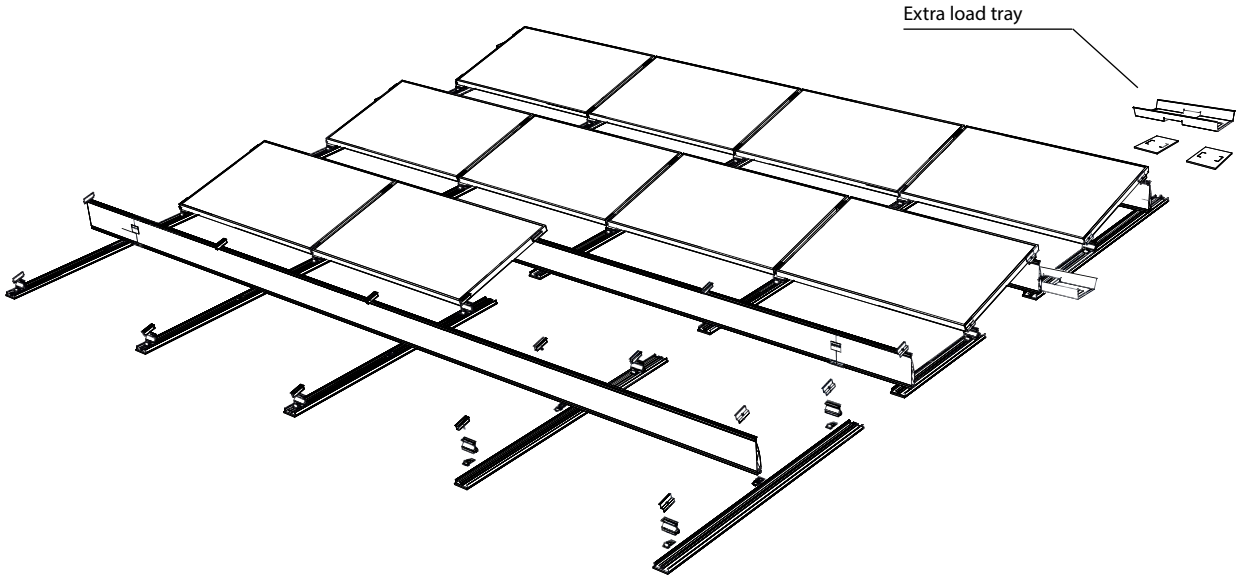
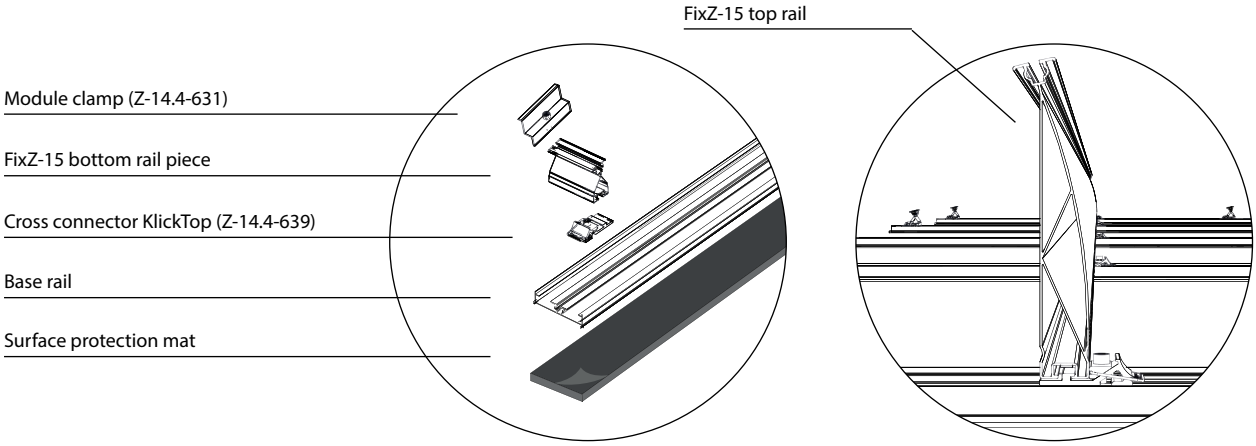
FixGrid

Mounting instructions





Required tools

Power screwdriver with bit holder,
Hex bit, size 6
Socket wrench, size 8
Measuring tape

Further required documents

General mounting instructions - mounting and project planning

Cross connector KlickTop mounting instructions
Module clamp mounting instructions

Tightening torques

M8 bolted connections: 15 Nm

Exception:
Self-drilling screws:
must be tightened firmly, but must not be overtightened

Safety Precautions

The system must be built exclusively with the load specified in the structural analysis for superimposed loads. You will receive this analysis from Schletter along with the plant planning. Alternatively, the data can be obtained directly in the "Download" area on our website: www.schletter.eu.

Risk of breakage! PV modules can be damaged if stepped upon.

The planning, assembly and putting into operation of a solar energy plant must be undertaken, exclusively, by qualified personnel. Improper execution can result in damage to the plant and place people in danger.

Risk of electric shock! The mounting and maintenance of the PV modules must be carried out by professionals only. Please observe the safety regulations issued by the solar module manufacturer!

Risk of falling! There is a risk of falling when working on the roof as well as when ascending and descending the building. Accident prevention regulations must be observed and appropriate safety equipment must be used. PV mounting systems are not suitable as climbing aids or fall protection.

Risk of injury! Objects falling off the roof can cause injury to people. Before starting the assembly work, the danger area around the installation site must be sealed off and persons in the vicinity must be warned.

Mounting information

Make sure that the bearing rubber is compatible with the flat roof sealing.

If the roof or the roof sealing is very uneven, compensatory measures may have to be taken in order to safeguard an evenly distributed load transfer.

The required distances to the roof edges must be maintained.

The maximum array size depends on the roof type.
On membrane roofs the maximum size is 10 m. On concrete roofs, bigger sizes are possible in individual cases.

On roofs with a substrate or gravel covering, it has to be made sure that the connection between the solar plant and the ground is sufficiently skid-proof so that the solar plant cannot move on the roof.

The system is not recommended for roofs with a pitch of more than 3 degrees.

The distributed load must not exceed the excess load-bearing capacity of the building!

The partial pressure on the surfaces under the continuous beams on the roof cladding and the insulation must not exceed the maximum admissible distributed surface load / surface pressure.

Current local laws and regulations must be observed.

Roof cleaning! In order to safeguard that the modules rest solidly on the ground, remove all soiling like moss, leaves, dirt, stones, etc.

If there is a lightning protection system, it must be checked if a technical integration by a certified lightning protection company is required. It also has to be checked if the mounting of the system changes the requirements of lightning protection

Before the mounting, it must be checked if there is damage of any kind, especially water troughs, and the roof cladding must be checked. Document any damage with accordant pictures in order to be on the safe side if there should be any claim for damages.

The system has been designed for modules with a width of 950-1050 mm (current standard module dimensions). Other module dimensions on request and with separate verification.

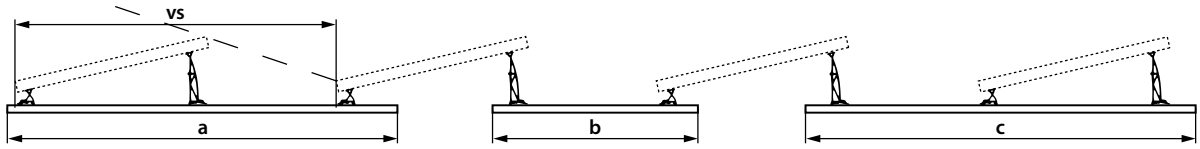
Only install original Schletter components!

Use the current mounting instructions! They are available in the download area of our website www.schletter.eu

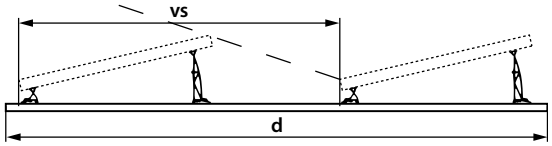
Defining the lengths of the base rails

The lengths of the base rails depends on the shading distance (vs) chosen. This distance can be defined with our shade calculator, for example (available at www.schletter.de in the solar download area).
Starting from 3 base rails, a further base rail of the length b is inserted in the middle of each additional module row.

Multi-rowed



Two-rowed



Shading distance vs *		Rail length a	Rail length b	Rail length c	Rail length d
Design with 6°	Design with 13°				
1150 - 1180 mm	1150 - 1180 mm	1295 mm	995 mm	1650 mm	2500 mm
1190 - 1500 mm	1190 - 1490 mm	1650 mm	995 mm	1650 mm	2500 mm
1510 - 1530 mm	1500 - 1530 mm	1650 mm	995 mm	1650 mm	2995 mm
1540 - 1760 mm	1540 - 1760 mm	2150 mm	995 mm	2150 mm	2995 mm
1770 - 1990 mm	1770 - 1990 mm	2150 mm	1295 mm	2150 mm	2995 mm
2000 - 2030 mm	2000 - 2030 mm	2150 mm	1295 mm	2150 mm	3550 mm

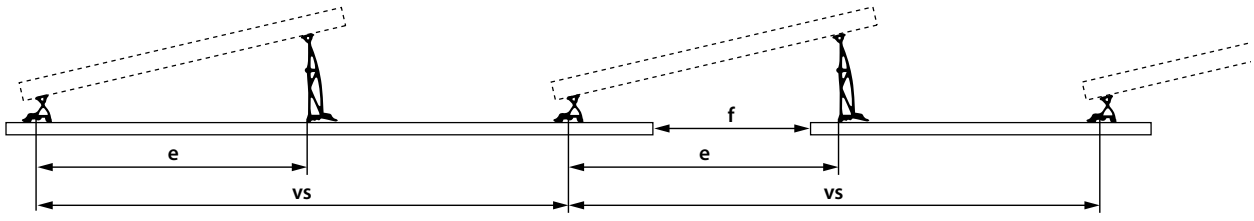
* Shading distance according to Erfurth and Bahner; please check!

For structural reasons, a one-rowed mounting is not possible!

Mounting distances

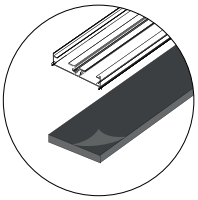
FixGrid design with 6°
Distance vs = Shading distance
Distance e = 834 mm
The distance **f** is to be chosen in such a way that the FixZ rails can be arranged on the base base rail b with the same distances to the rail ends.

FixGrid design with 13°
Distance vs = Shading distance
Distance e = 829 mm
The distance **f** is to be chosen in such a way that the FixZ rails can be arranged on the base base rail b with the same distances to the rail ends.



As the continuous beams are pre-assembled on mounting trestles, mounting times can be reduced considerably.

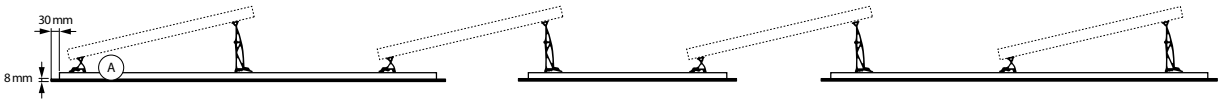
The mounting distances of the surface protection mats beneath the base rail depend on the mounting variant chosen.



Variant A

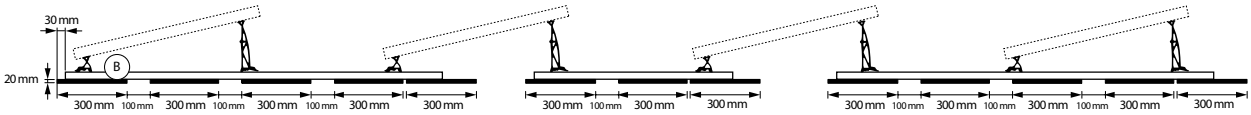
- 8 mm thick, continuous
- Very good load distribution

⚠ Not approved for crosswise water drain!



Variant B

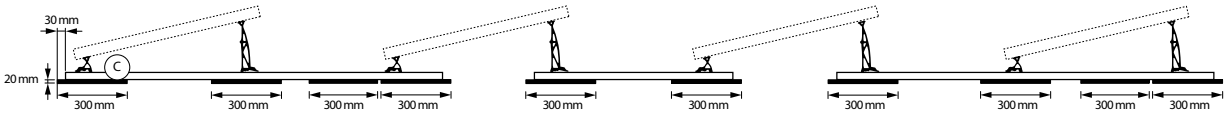
- 20 mm thick 300 mm strips
  at distances of 100 mm
- Good load distribution
- For crosswise roof water drain and a low admissible surface pressure onto the insulation



Variant C

- 20 mm thick 300 mm strips
  centrally under each bearing
- Punctual load distribution
- For crosswise roof water drain and a high admissible surface pressure onto the insulation

⚠ It must be checked if the structural analysis of the roof allows that variant!

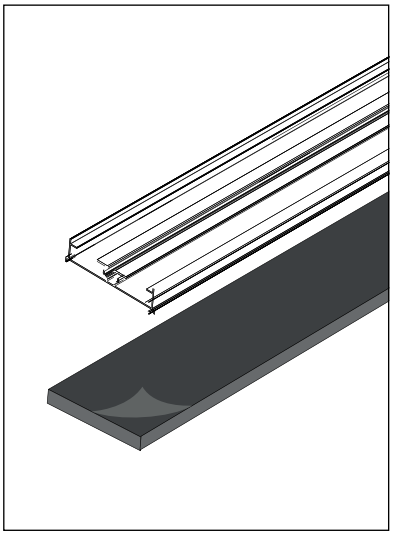


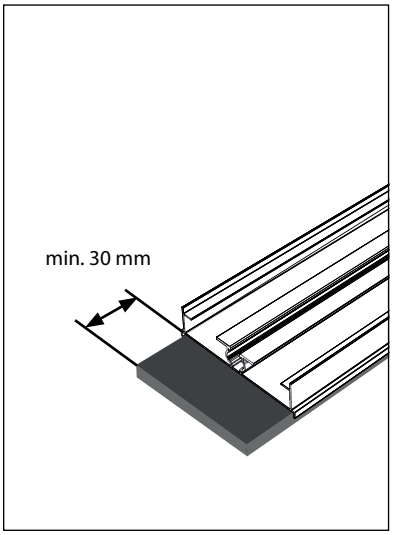
❶ Mounting of the surface protection mat

- Pull the protective foil off the strips of the surface protection mat and glue them to the base rail.
- Make sure that the surface protection mat strip protrudes at least 30 mm from each rail end.

⚠ Do not stretch surface protection mat strips; they should be a little compressed when they are installed.

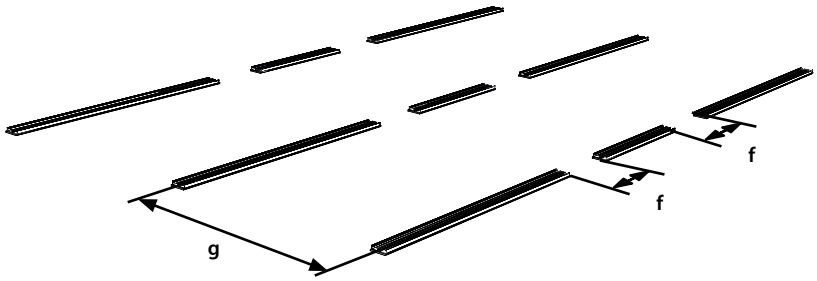
⚠ If the rain water runs at right angle to the continuous beam, short surface protection mat strips must be laid at certain distances under the beam to make sure that the water can drain off. The specific distance between these protection mat strips is determined by the customer on the basis of the local amount of precipitation.





❷ Alignment of the base rails

- Arrange the base rails parallel to each other and at right angle to the planned module rows on the roof.
- Distance f:
  see page 3
- Distance g:
  Module length plus 23 mm

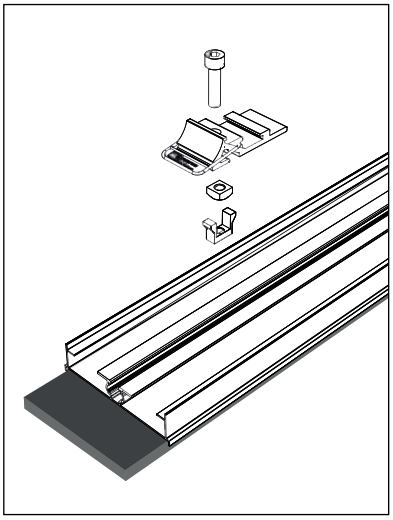


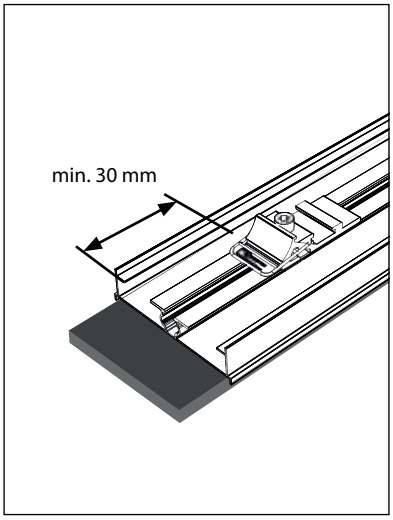
❸ Pre-assembly of the rail fastener, which is the KlickTop cross connector

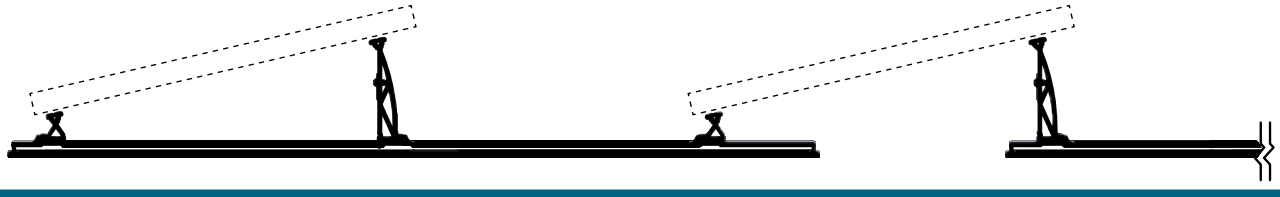
- Press in the green KlickIn click component.
- Feed the square nut edgewise into the KlickIn click component and rotate it through 90° so that the round side faces downwards.
- Insert the KlickTop cross connector
- Loosely tighten the bolt.

⚠ Please also see the mounting instructions for Cross connector KlickTop

⚠ Observe suitable module and row distances for profile (rail) and module mounting. (see page 3)

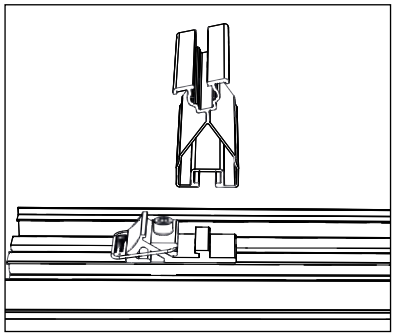


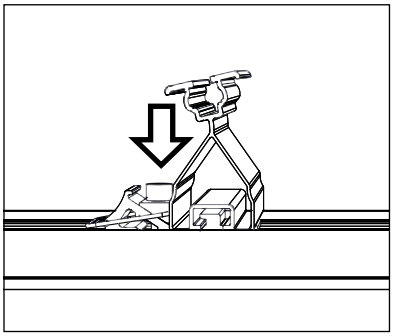


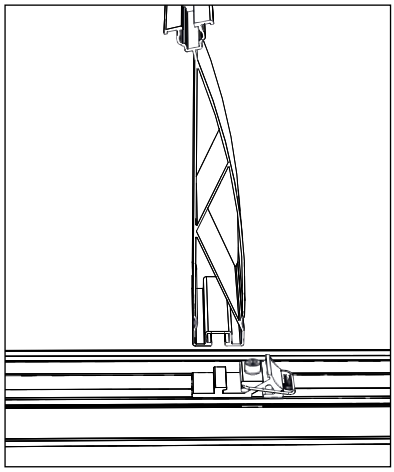


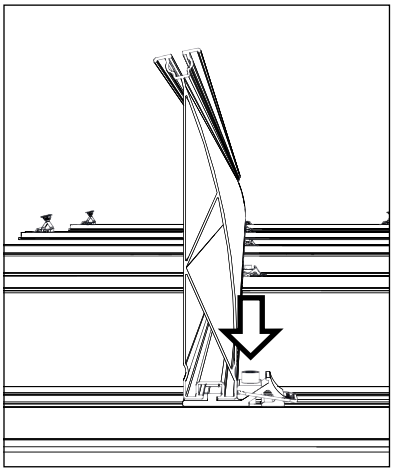
❹ **Mounting of the FixZ profiles (rails)**

- Put the lower side of the FixZ rails (M10 duct) onto the KlickTop cross connector.
- Fasten the bolt of the KlickTop cross connector with a size 6 Allen key.







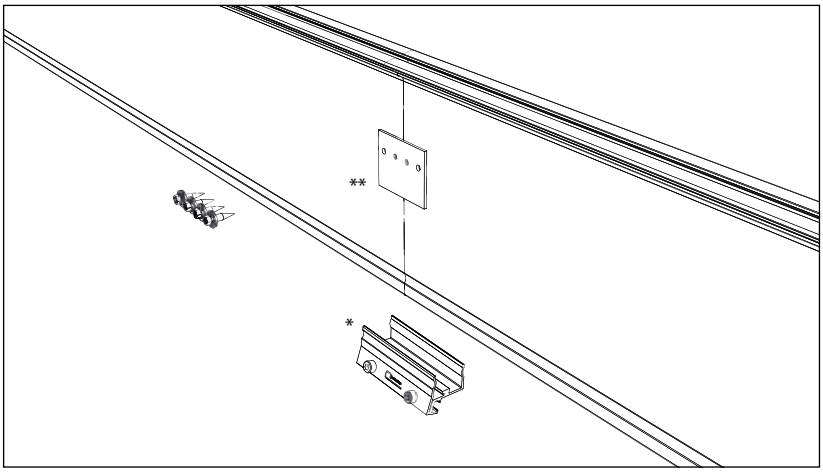


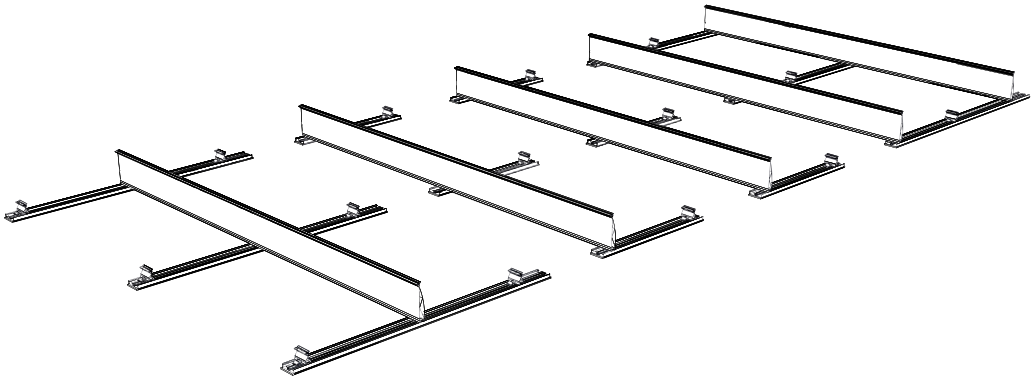
❺ **Extending the FixZ top rail**

- Position the next rail.
- Mount the E* connector from below.
- Tighten the pre-assembled hexagon socket head screws.

- Position the additional connector plate** against the inner side of the rail.
- Fasten it with 2 self-drilling screws (wrench size 8) per rail end.

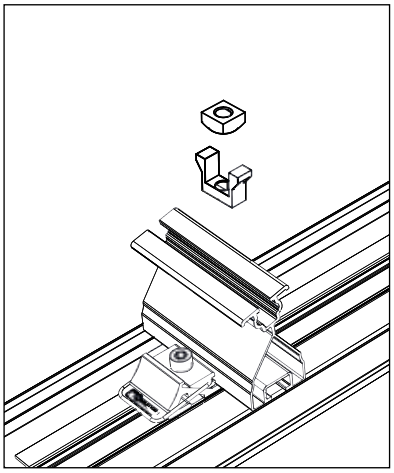
⚠ Please make sure that sufficient space is left for the connector at rail joints.





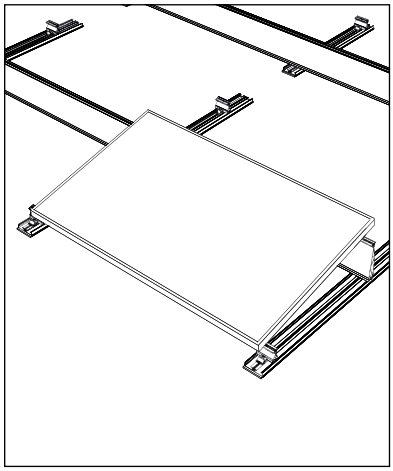
❻ Insert square nuts

- The green KlickIn click component is pressed into all FixZ profiles.
- Feed M8 square nuts edgewise into the click components and rotate them through 90° so that the round sides of the nuts face downwards.



❼ Arrange the first module

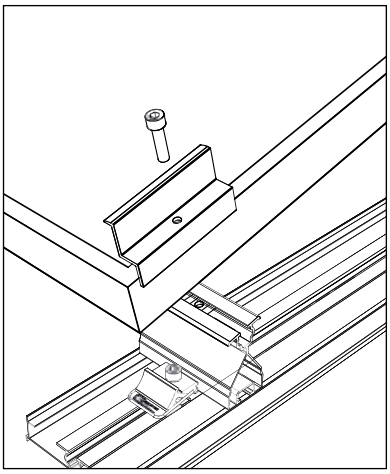
- Arrange the module on the FixZ rail.

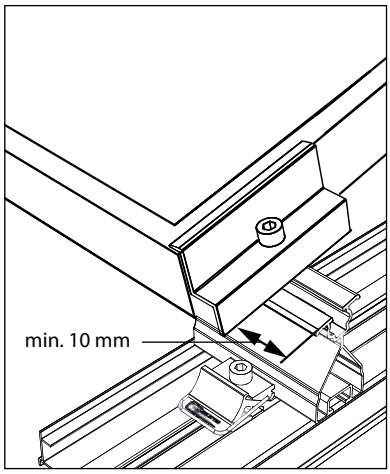


❽ Fasten the first module

- Place the end clamps against the module (bottom and top) and fasten them with M8 bolts (wrench size 6).
- Connect the module cables as required.

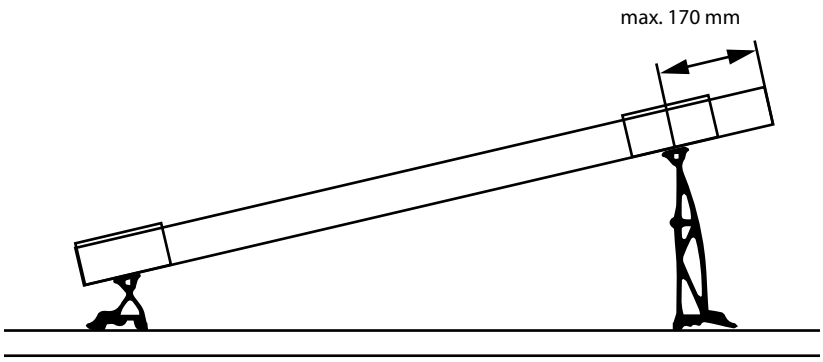
⚠ There must be a distance of at least 10 mm between the end clamp and the end of the rail (see picture on the right).





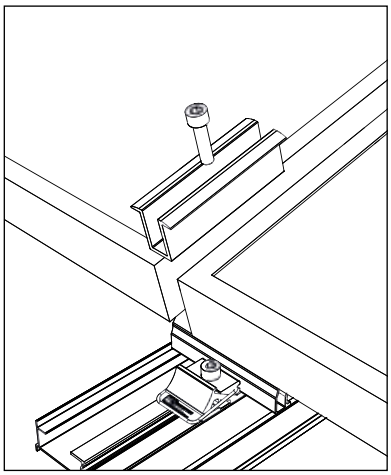
⚠ Generally, it must be made sure that the module is flush with the module clamps at the bottom.

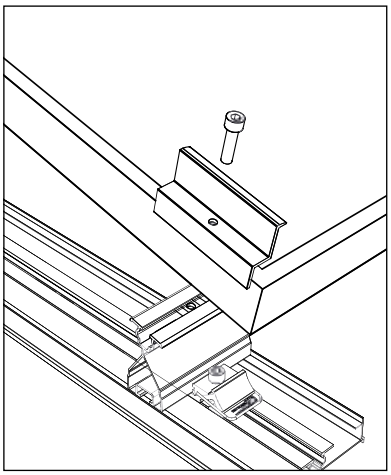
The module projection at the top varies depending on the module width (950 - 1050 mm).



❾ Fastening of further modules

- Pre-assemble the middle clamps (at the top and at the bottom) with M8 bolts.
- Place the next module.
- Connect the module cables as required.
- Fasten the middle clamps.
- Repeat these steps until the last module of the row is fastened.





❿ Fasten the last module

- Lay the end clamps (bottom and top) alongside the module and fasten them with M8 bolts.

⓫ Superimposed load/ballast

- Load the base rails as specified in the structural analysis for superimposed loads.
- We will send you the structural analysis for superimposed loads together with the plant plans or it can be obtained directly from the download area on our website: www.schletter.eu

If the base rail is not sufficient for loading, a tray can be filled with further stones as extra superimposed loads. Surface protection mat pieces are fastened to the tray with fastening lugs.

(Loading material is not included in the scope of delivery)