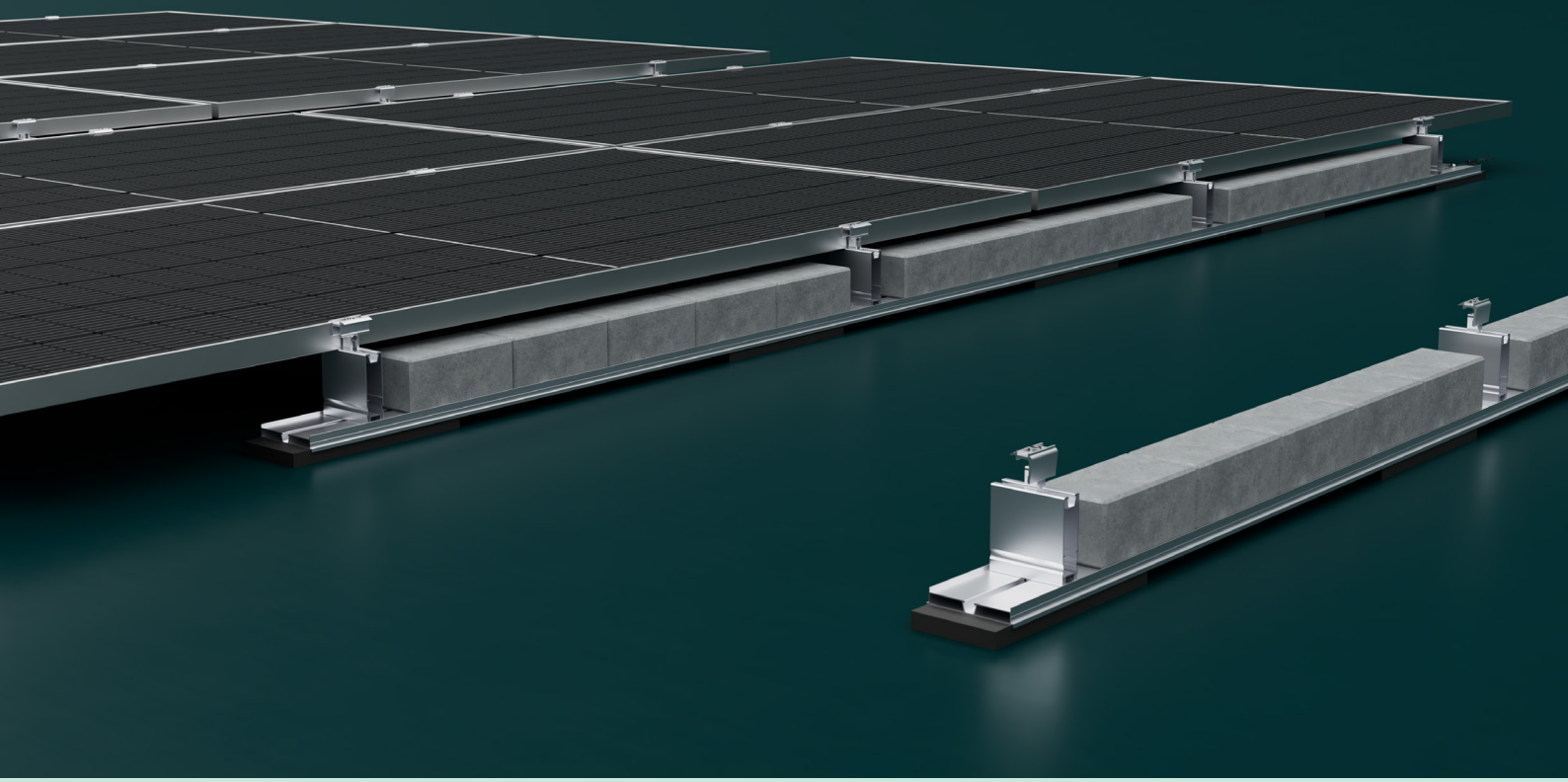
SCHLETTER
AN ENSTALL COMPANY



FLATGRID PRO

MOUNTING INSTRUCTIONS

EN

THANK YOU FOR CHOOSING A SCHLETTER MOUNTING SYSTEM.

Please read the instructions carefully before starting the installation. For competent and comprehensive advice when planning your solar power system and information regarding logistics and order processing, feel free to contact us anytime. We're here and happy to help.

CONTACT

+49 8072 9191 0
www.schletter-group.com

PLANNING AID

For the professional planning and calculation of your solar power system, we provide you with our Schletter Configurator free of charge. This is what the planning software offers you:

+ The most comprehensive global database for load determination
+ Simple roof design directly in Google Maps
+ Individual settings for saving and editing

+ Verifiable statics and professional documentation
+ Design of several different roofs in one plan
+ Manual editing and expansion of order lists

Download now from:
https://www.schletter-group.com/configurator/

TESTED QUALITY

When we develop, design, and manufacture our solar mounting systems, we don't just think about sunshine—we also take storms, heavy rain, snow, and earthquakes into account. These are the extreme loads your solar power system has to withstand for at least 25 years.

+ Optimal material utilization
+ Tested supplier quality
+ Reliable calculation
+ Detailed construction

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GENERAL INFORMATION

INTENDED USE

The Schletter mounting units are designed exclusively for rooftop PV modules. The intended use includes, among other things, professional installation in accordance with these instructions. Any other use, improper mounting (e.g. use of third-party components), and, in particular, the disregard of tolerance specifications are considered improper use and exclude any liability on the part of the manufacturer.

OBLIGATION OF THE INSTALLATION COMPANY

The installation company ensures all parts of the mounting instructions are always kept within easy reach of the fitters on site. The installation company must commit to only allowing persons to work on and in the area of the system who:

- are trained for the respective activity and have read and understood the relevant parts of the mounting instructions
- are familiar with the basic regulations on occupational safety, accident prevention, and environmental protection
- have been instructed in the safe handling of the system
- perform their work reliably and whose responsiveness is not influenced by narcotics, alcohol, or medication
- only allow trained and instructed personnel to carry out the activities described in these instructions
- only allow personnel to be trained to work on the installation under the supervision of an experienced person.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

The following personal protective equipment must always be worn during mounting and dismantling:


Safety goggles when drilling and sawing


Cut-resistant work gloves during mounting


Safety shoes


Fall protection


Helmets (must be worn by all persons working on the construction site)

ADDITIONAL DOCUMENTS RELEVANT TO THE MOUNTING

In addition to these mounting instructions, the following documents are required for mounting:

Planning documents from the Schletter Configurator, They include information on the layout plan, support widths and the positioning of screw-in rails and bracket connectors.

WARRANTY AND LIABILITY

Responsibility for correct mounting lies with the installation company. If there is any doubt about the correctness of the procedures described, the installation company is obliged to contact the manufacturer.

EXCLUSIONS

Guarantee, warranty, and liability claims for personal injury and property damage against the manufacturer (Schletter) are excluded if they are attributable to one or more causes for which the manufacturer is not responsible. This includes but is not necessarily limited to:

- failure to follow the mounting instructions
- Improper use of the mounting unit.
- improper repair/maintenance
- operation with defective spare parts or equipment that has not been agreed with the manufacturer
- unauthorized structural changes or manipulation of the mounting system or its equipment/components
- use of third-party components
- neglect or non-compliance with maintenance and/or testing and inspection intervals (the owner of the solar power system is responsible for maintenance and inspection)
- force majeure and other circumstances for which the manufacturer is not responsible
- damage and consequential damage caused by one or more of the above-mentioned causes
- components of the solar power system itself, such as modules, cable and plug connectors, inverters or electrical switch boxes not included in these mounting instructions. The manufacturer accepts no warranty or liability for this.
- material damage to objects that are not part of the scope of delivery

You can find more information about our systems at schletter-group.com

MOUNTING INSTRUCTIONS

- Before mounting, check whether the product meets the static requirements on site. For roof systems, the on-site load-bearing capacity of the roof must always be checked. Observe current country-specific building codes, standards, and regulations.
- Check the existing pitch of the roof and whether the mounting unit needs to be secured against slipping.
- The partial surface pressure acting on the roof cladding and insulation under the base rails must not exceed the maximum permissible surface pressure under any circumstances.
- In the case of very uneven roofs or roof waterproofing, carry out compensatory measures if necessary to ensure an even load distribution.
- Maintain the necessary distances from roof edges.
- Ensure surface load does not exceed the residual load-bearing capacity of the building.
- The base rails/base supports must be separated at reasonable intervals due to thermal expansion. A recommended guide value for the maximum rail length on membrane roofs is 10 m.
- The FlatGrid Pro flat roof system is approved for roofs with a maximum pitch of 10°. For roof pitches of 3° and above, additional connections may be required on the roof (see „Zugverbinder montieren“, Page 15).
- Before installation, check the roof for any kind of damage. The installation should be avoided, if damage is suspected. Always consult the responsible specialist personnel.
- The installation company is responsible for the mechanical durability of the mounted interface connections on the building envelope particularly their tightness.
- Please adhere to any project-related information in the planning documents provided by the Schletter Configurator.
- Please note that, on higher buildings, the mounting system will be exposed to greater wind loads. These must therefore be factored into the planning.
- Note the different terrain categories with regard to wind and snow loads. If necessary, use country-specific online services for determining wind and snow loads, such as the Geo-Zone tool from Dlubal Software or the HORA online service for Austria.

REQUIRED TOOLS

Cordless screwdriver with Torx 40 bit

Cordless screwdriver with 8 mm socket wrench insert

Measuring tape

FOR BOLT BH LS TX40 DIN 34805-2 M8 X 16, A2-70 DL AND HAMMER HEAD NUT PRO SCREWS:

- Torx 40 bit

OPTIONAL: FOR DRILL SCREW 6.0 X 22 SELF-TAPPING SEAL A2 WOA

- Socket wrench insert 8

FOR MODULE CLAMPS

- Torx 40 bit

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SAFETY INSTRUCTIONS

WARNING

IMPROPER INSTALLATION

Improper planning or installation may cause damage to the solar power system and endanger persons.

- Planning of the solar power system, as well as mounting, commissioning, and dismantling, may be conducted only by qualified personnel.
- Due to their professional training, experience, and knowledge of the relevant regulations, the specialist personnel are able to carry out the work assigned to them and to independently recognize and avoid possible dangers.
- Occupational safety and accident prevention regulations, corresponding standards, and regulations of the responsible employers' liability insurance association and the accident insurance provider must always be complied with.

RISK OF ELECTRIC SHOCK

Improper mounting, dismantling, or maintenance may result in personal injury due to electric shock.

- Planning of the solar power system, as well as mounting, commissioning, and dismantling, may be conducted only by qualified personnel.
- Mounting, dismantling, and maintenance of the PV modules may be carried out only by qualified personnel.
- Observe the safety instructions of the PV module manufacturer or other electrical components before commissioning or shutting down the system.

RISK OF FALLING

A fall when working on the roof or climbing up or down can result in death or serious injury.

- Mounting, dismantling, and maintenance of the PV modules may be carried out only by qualified personnel.
- Observe all accident prevention regulations.
- Use suitable fall protection equipment in accordance with the safety measures of the relevant employers' liability insurance association and the accident insurance provider.

FALLING OBJECTS

Falling objects can lead to an accident resulting in death or serious injury.

- Cordon off the danger zone before starting installation work.
- Warn people who are in the vicinity.

NOTE

RISK OF BREAKAGE

Improper use can cause the PV modules to break.

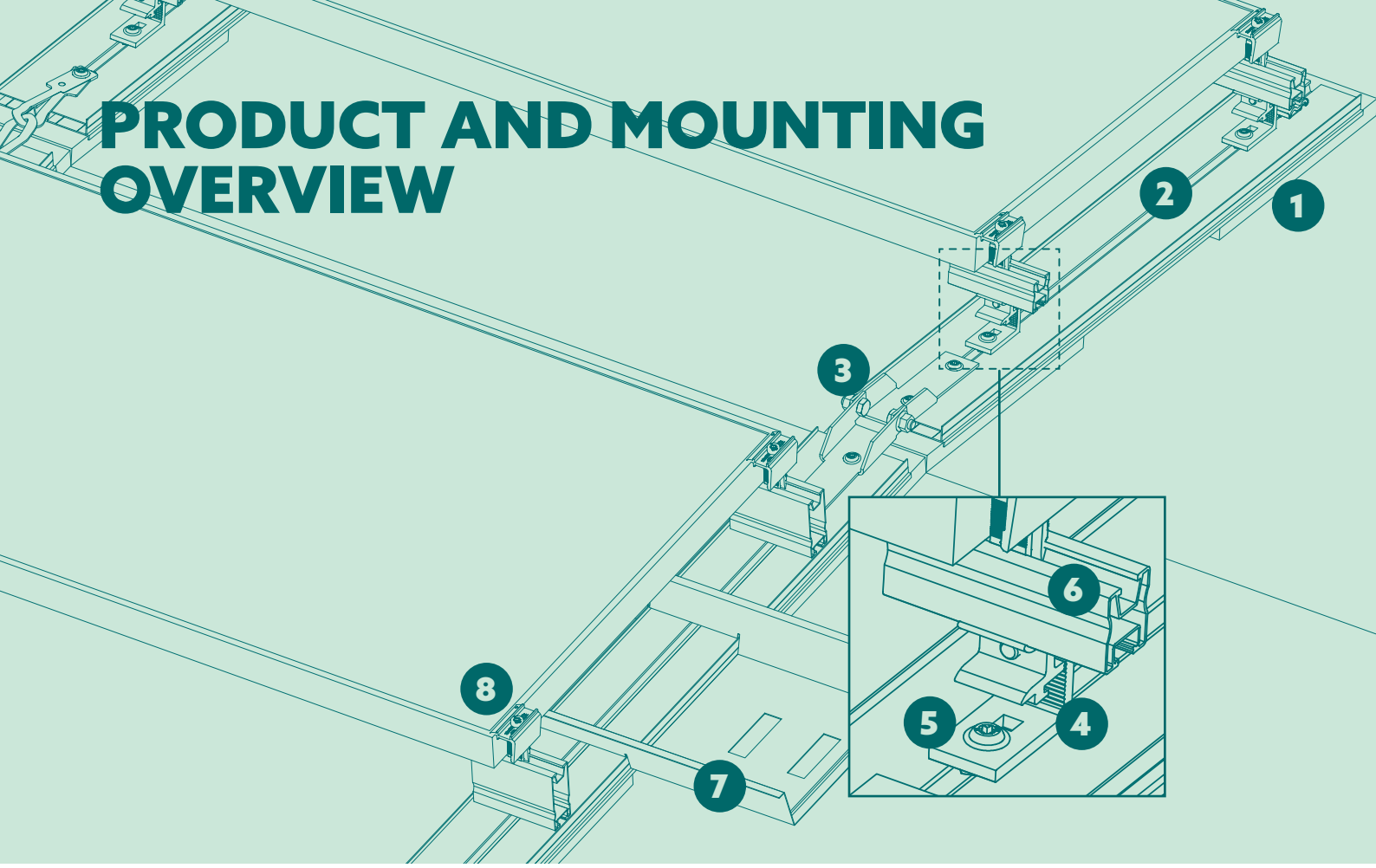
- Do not step on PV modules.

LIGHTNING PROTECTION

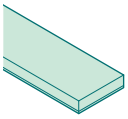
If a lightning protection system is present, take the following precautions:

- Check whether integration by a certified lightning protection company is required.
- Check whether the installation changes the lightning protection requirements.

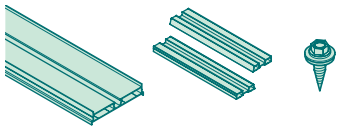
PRODUCT AND MOUNTING OVERVIEW



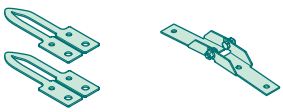
1 SUBSTRATE
Surface protection mat 300 x 110 x 20 mm AK SK (169004-003)



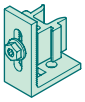
2 BASE RAIL (BASE SUPPORTS)
Base rail Pro (*)
Base rail Pro connector (129200-001)
Optional: Drill screw 6.0 x 22 self-tapping seal A2 woA (943001-232)



3 ANTI-SLIP PROTECTION
Tension connectors
(2 per connection) (129062-021)
Ridge connector set (129061-001)

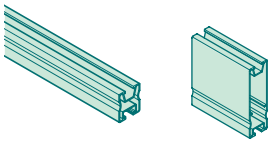


4 CONNECTION
Rapid Pro L (119026-122)

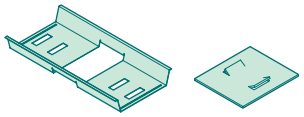


5 FASTENING
Bolt BH LS TX40 DIN 34805-2 M8X16, A2-70 DL (943001-238)
Hammer head nut Pro (942000-902)

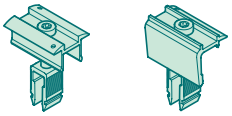
6 MOUNTING RAILS
Pro35 (*) module support rail
Screw-in rail (*)



7 BALLASTING
FlatGrid loading tray or base rail (169017-000)
Surface protection mat 230 x 110 x 8 mm (169004-013)



8 MODULE CLAMPS
Middle and end clamps



* System-specific article number

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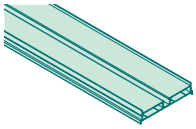
MOUNTING STEPS

ON MEMBRANE ROOFS

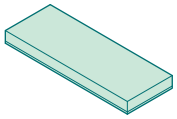
1 PREPARE FOR MOUNTING

Extend base rails



PAGE 10

Mount surface protection mat



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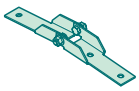
2 MOUNT ANTI-SLIP PROTECTION

Tension connector

PAGE 14

Ridge connector



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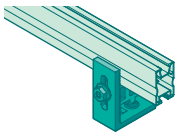
3 MOUNT RAILS

by means of RapidPro L



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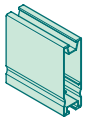
by means of screw-in rail



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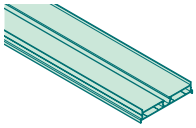
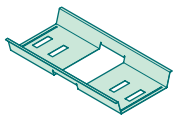
4 USE BALLASTING

in base rail



PAGE 23

in FlatGrid loading tray for base rail



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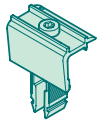
5 MOUNT MODULE AND ACCESSORIES

Module end clamp



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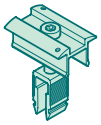
Module center clamp



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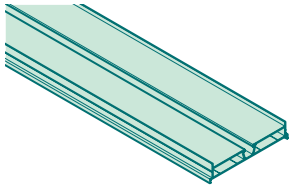
1

PREPARE FOR MOUNTING

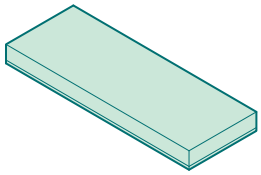
EXTEND BASE RAILS AND INSTALL SURFACE PROTECTION MATS

Extend Base rails



PAGE 10

Mount surface protection mat



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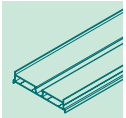
1 PREPARE FOR MOUNTING

EXTEND BASE RAILS

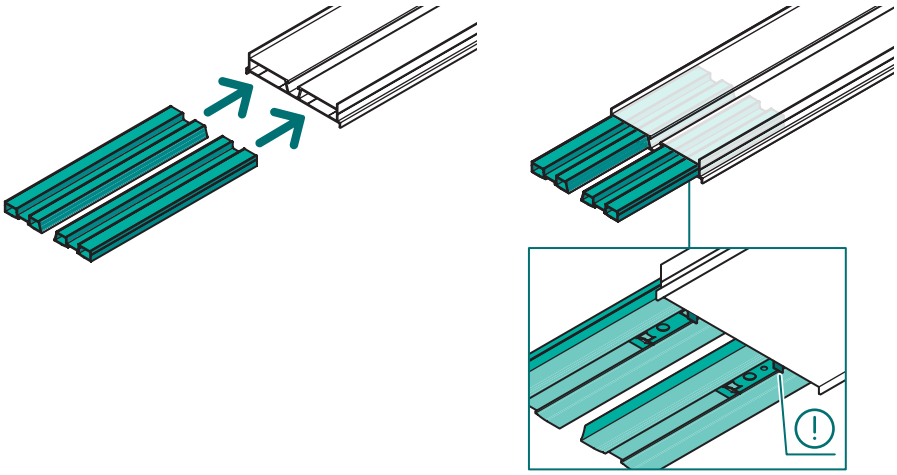


1.1

Extend base rails

Extend base rails as required.

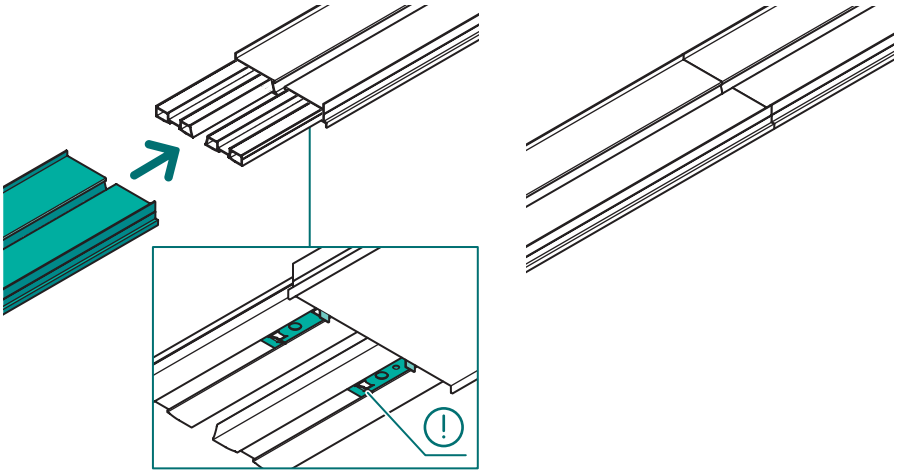
► Insert the connector into the base rail on both sides up to the ⓘ stop.



► Connect second base rail.

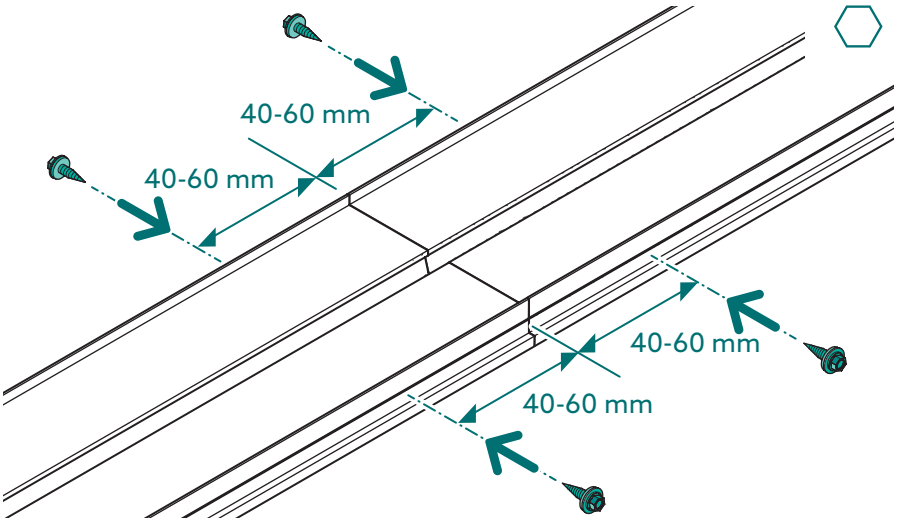
► Move up to the joint.

ⓘ The two base rails are connected by the hooks on the underside of the connector.



Optional mounting:

► On both sides of the rail, drill two 6.0 x 22 self-tapping screws oriented at their stops at the height of the horizontal bead and screw them tight. Place the drill holes approximately 60 mm from the end of the base rail.



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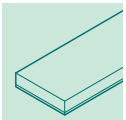
1 PREPARE FOR MOUNTING

MOUNT SURFACE PROTECTION MAT

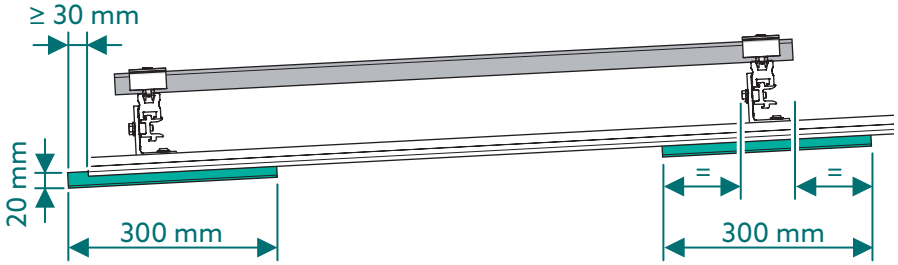


Information on the spacing of the surface protection mats on the base rails

Mounting option A

Load distribution across a small area (for low loads and/or solid substrate).

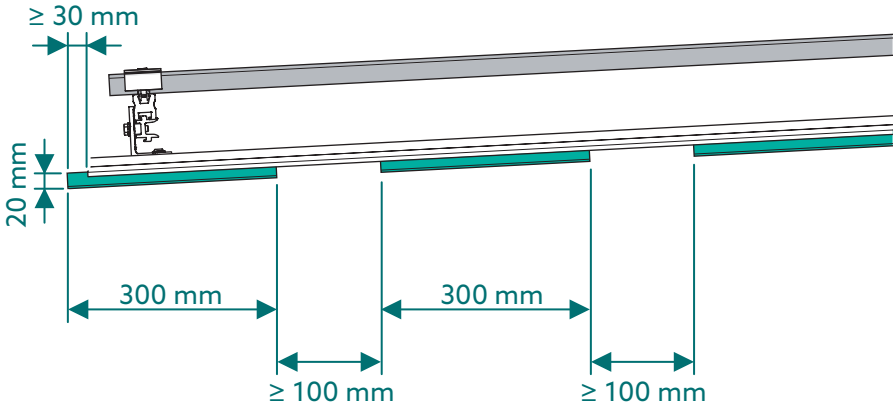
- Surface protection mats must be attached centrally under each bracket connector or screw-in rail.
- Additional surface protection mats must be positioned under the joints of the base rails.
- When roof water flows off transversely, it allows for almost unhindered drainage.

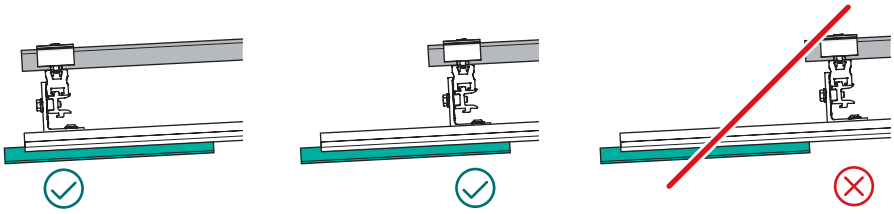


Mounting option B

Load distribution across a large area (for high loads and/or soft substrate with low permissible surface pressure).

- A minimum distance of ≥ 100 mm must be maintained between the installed surface protection mats. This ensures the drainage of transversely flowing roof water.
- Surface protection mats must be attached centrally under each bracket connector or screw-in rail.
- The permissible surface pressure of the roof must be checked (see „Mounting Instructions“, Page 5).





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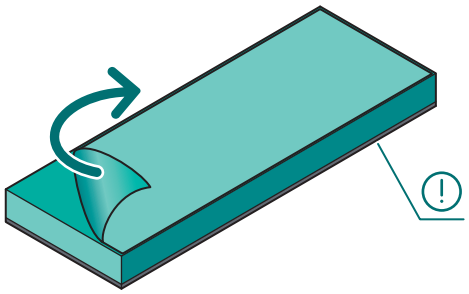
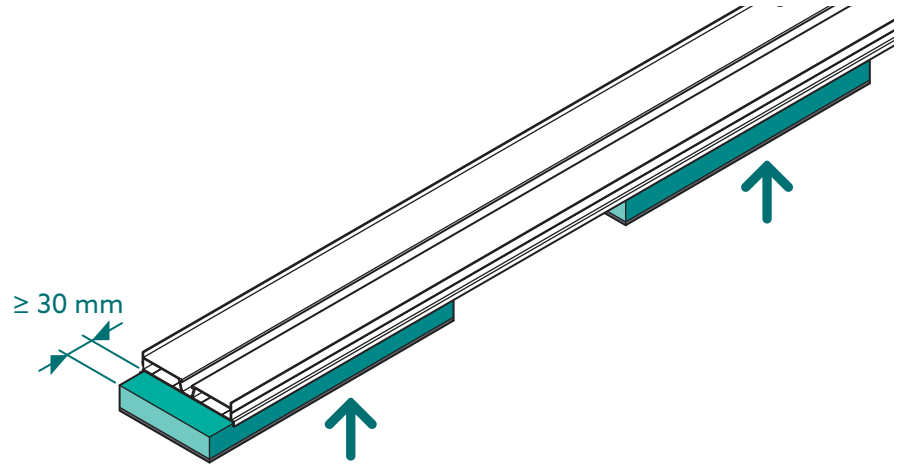
1.2

Mount surface protection mat

- ▶ Remove the adhesive film from the top of the surface protection mat.
- ⓘ The surface protection mat has an aluminum lamination to protect against plasticizer exchange with the cladding. The side with the aluminum lamination should be placed downwards.



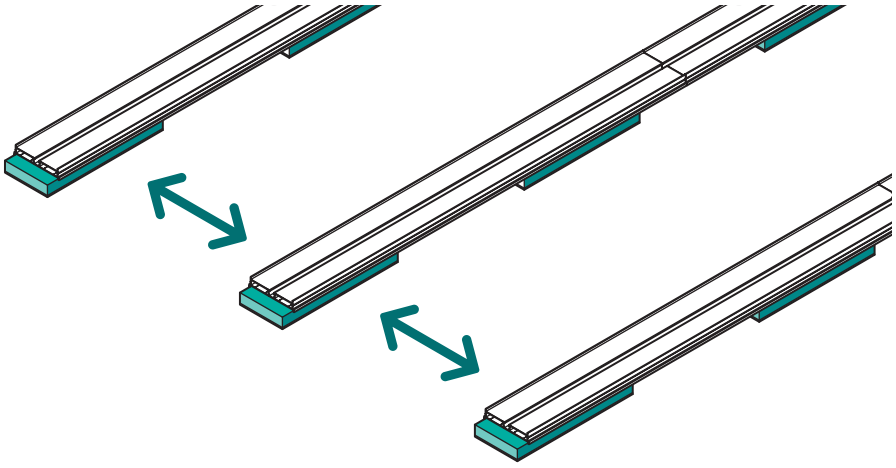
- ▶ Press the surface protection mat into the desired position on the underside of the base rail.
- ⓘ Place the surface protection mats at both ends of a base rail so that an protrusion of 30 mm remains.



1.3

Align surface protection mats

- ▶ Place the base rails parallel to each other in the direction of the ridge and eaves on the roof.
- ▶ Maintain the support width between the rails according to the planning documents. The support widths depend on the module sizes and the module orientation.



2

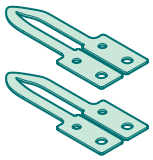
MOUNT ANTI-SLIP PROTECTION

TENSION CONNECTOR AND RIDGE CONNECTOR

AT A GLANCE

Module arrays must be secured against slipping on pitched roofs with a pitch of 3° or more. This can be achieved by connecting opposing base rails using tension connectors or ridge connectors if the system is installed on both sides of the roof. The ridge connector set allows for another mounting option. This can also be used in a valley on the roof.

Tension connector



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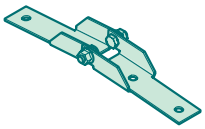
Ridge connector



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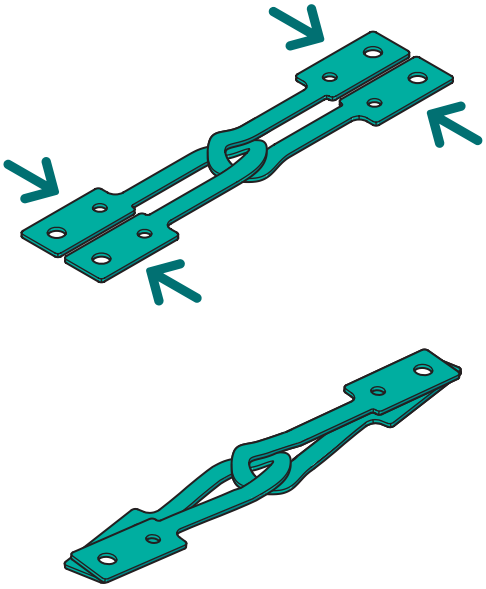
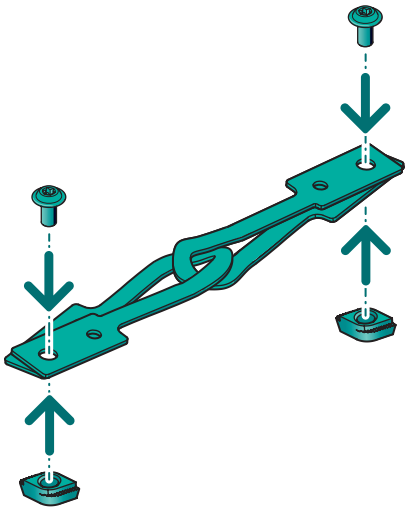
2 MOUNT ANTI-SLIP PROTECTION
TENSION CONNECTOR

2.1
Prepare tension connector

► Thread the tension connectors together and press them together at the ends.



► Pre-assemble tension connectors with button head screws and hammer head nuts.



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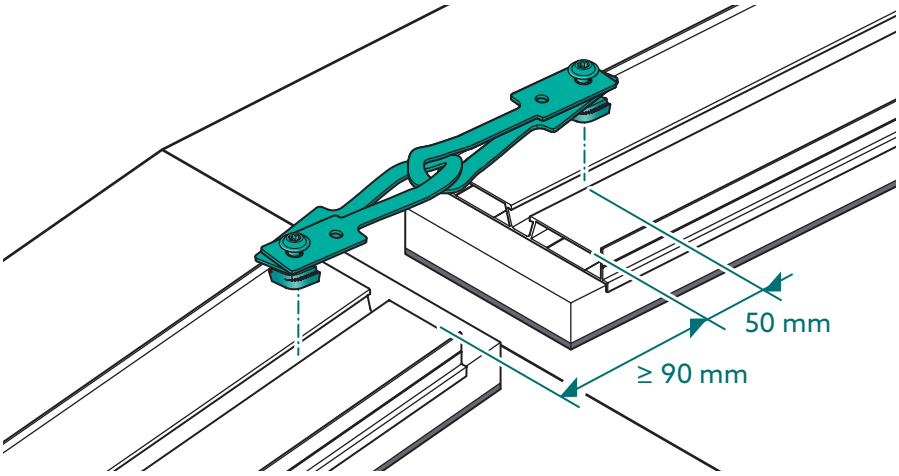
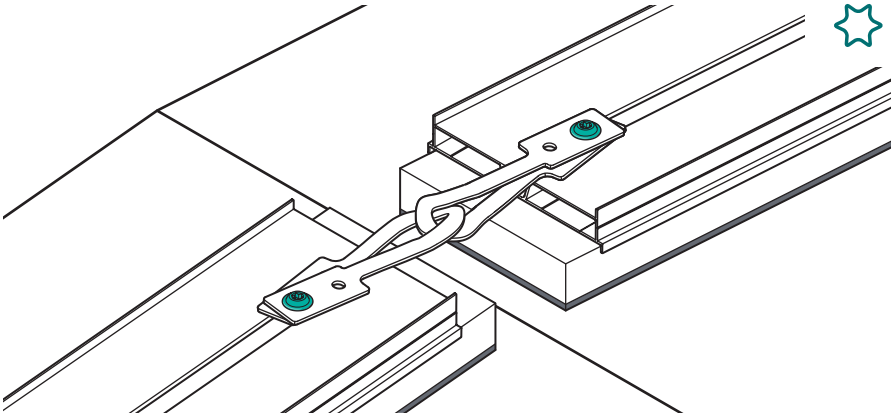
2.2
Mount tension connector

- ► Place the tension connectors.
  Distance between the screw connection and the edge of the base rail: 50 mm
  Distance between the edges of the base rails: ≥ 90 mm



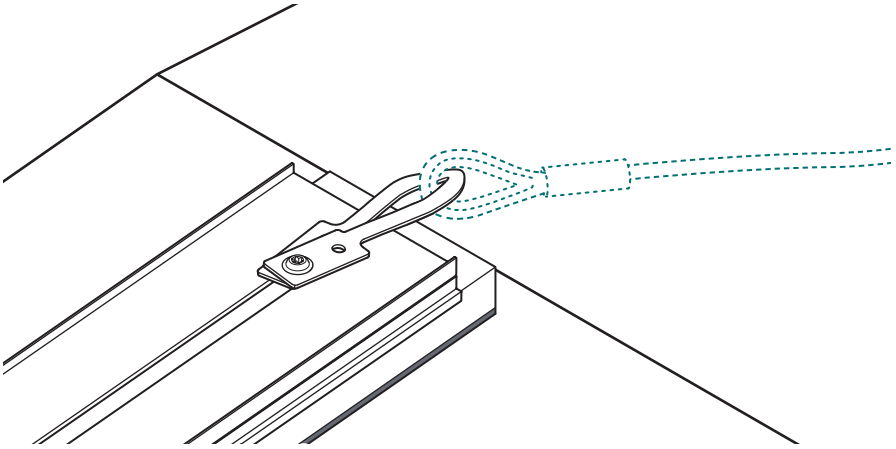
ⓘ The tension connectors should not be under tension during assembly.

- ► Screw the tension connectors tight.
  Tightening torques for M8:
  15 Nm (stainless steel),
  25 Nm (zinc coating)



ⓘ For roof pitches of 3° and above, it may be necessary to additionally secure the system with a wire rope at suitable points on the roof to prevent it from slipping. A rope with a diameter of at least 4 mm is recommended for fixing. Wire rope and fastening are not included in the scope of delivery and must be provided by the customer.

ⓘ Possible connections would be skylight constructions, trusses or purlins. The static load capacity of the connection must be checked in each case.



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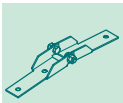
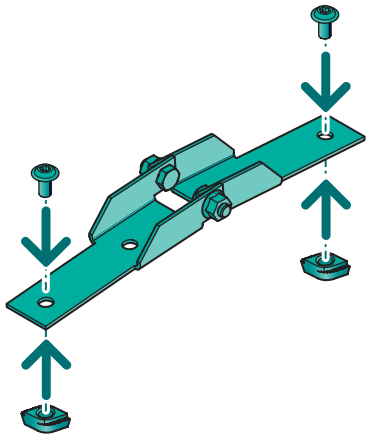
2 MOUNT ANTI-SLIP PROTECTION
RIDGE CONNECTOR



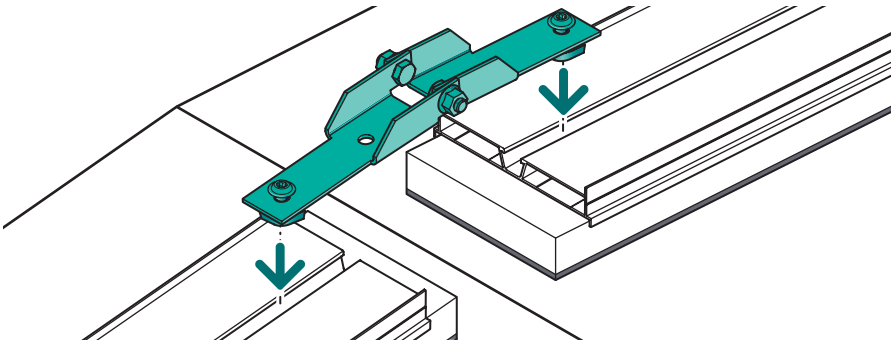
2.1
Prepare ridge connector

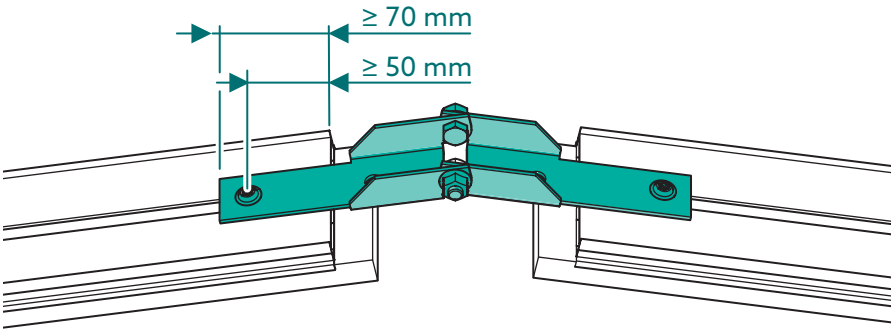
► Pre-assemble ridge connector with button head screws and hammer head nuts.



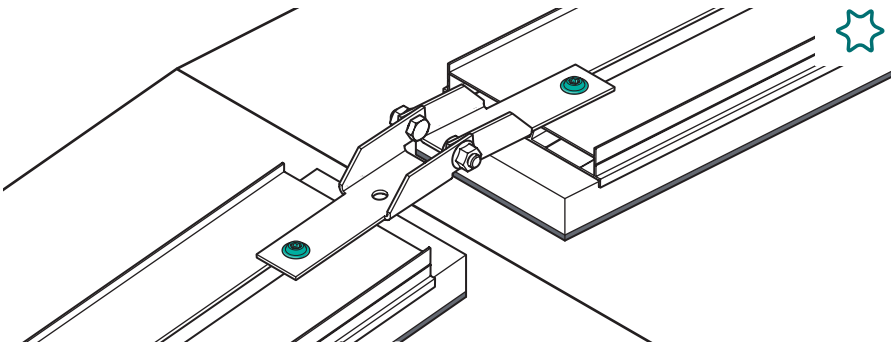
2.2
Mount ridge connector

► Place ridge connector.
Distance from the edge of the base rail to the edge of the ridge connector: ≥ 70 mm
Distance from the edge of the base rail to the center of the screw connection: ≥ 50 mm





► Screw the ridge connector tight.
Tightening torques for M8:
15 Nm (stainless steel),
25 Nm (zinc coating)



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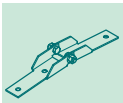
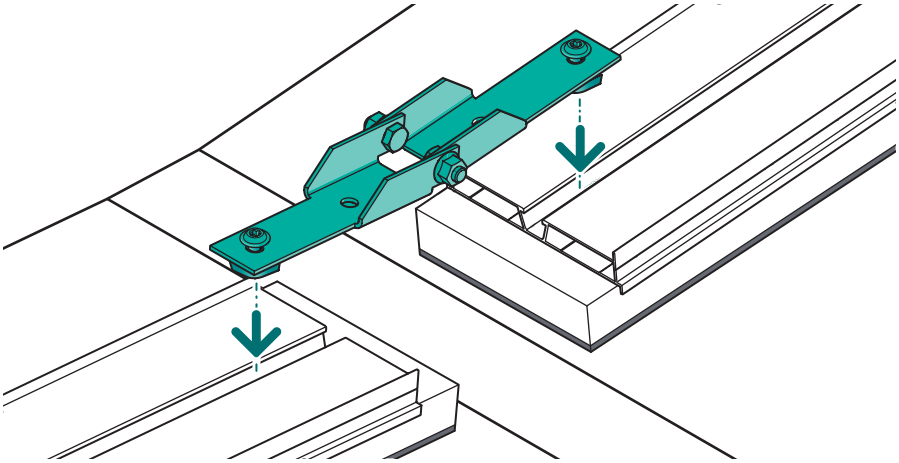
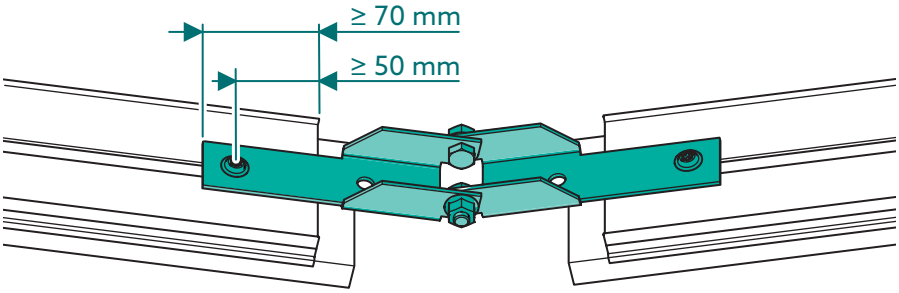


2.3

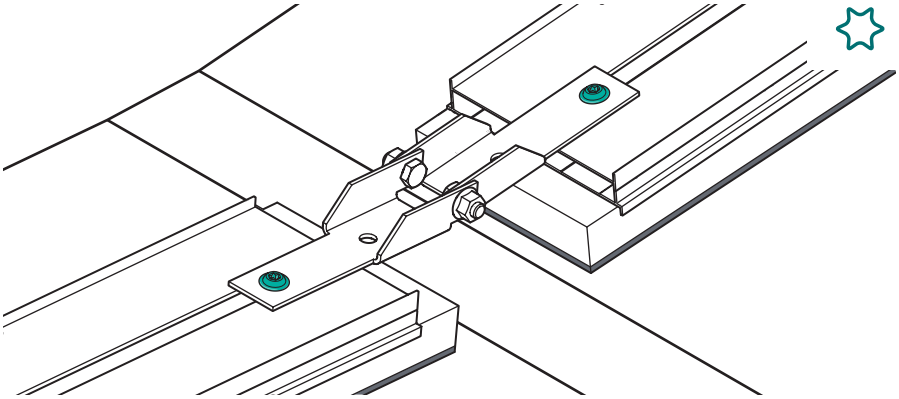
Optional: Mount ridge connector in the valley of the roof

- ► Place ridge connector.
  Distance from the edge of the base rail to the edge of the ridge connector: ≥ 70 mm
  Distance from the edge of the base rail to the center of the screw connection: ≥ 50 mm





- ► Tighten the ridge connector.
  Tightening torques for M8:
  15 Nm (stainless steel),
  25 Nm (zinc coating)



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3

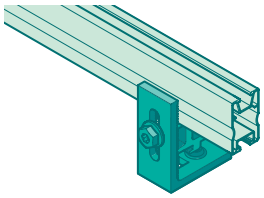
MOUNT RAILS

BY MEANS OF RAPIDPRO L OR SCREW-IN RAIL

AT A GLANCE

The spacing of the mounting rails or screw-in rails depends on the module size and is shown accordingly in the project-related statics report from the Schletter Configurator.

by means of RapidPro L



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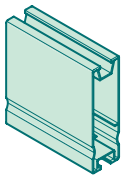
by means of screw-in rail



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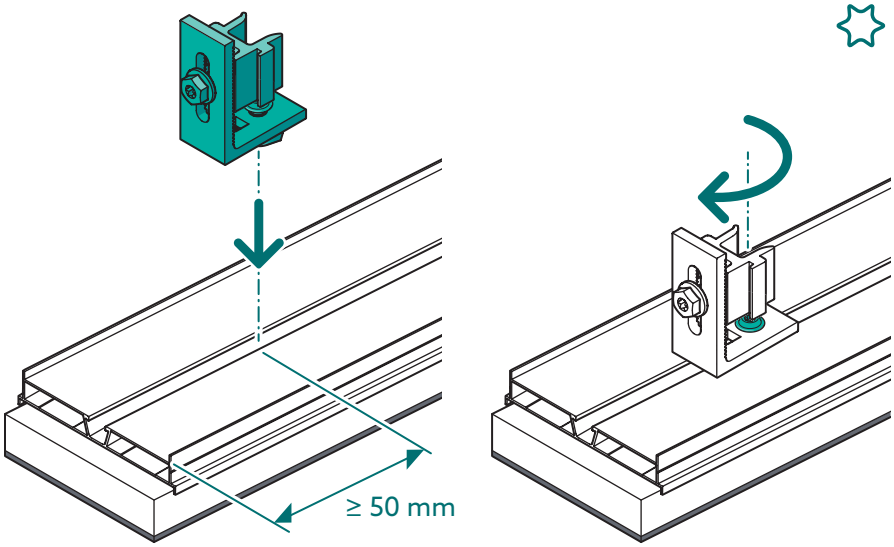
3 MOUNT RAILS
BY MEANS OF RAPIDPRO L

3.1
Prepare RapidPro L

- Pre-assemble RapidPro L with a button head screw and hammer head nut.

3.2
Mount RapidPro L

- Determine position according to planning documents (position depends on module size and orientation).
  Distance from the edge of the base rail to the center of the screw connection: ≥ 50 mm
- Place the RapidPro L on the base rail and tighten the button head screw. Tightening torques for M8:
  15 Nm (stainless steel),
  25 Nm (zinc-coated)



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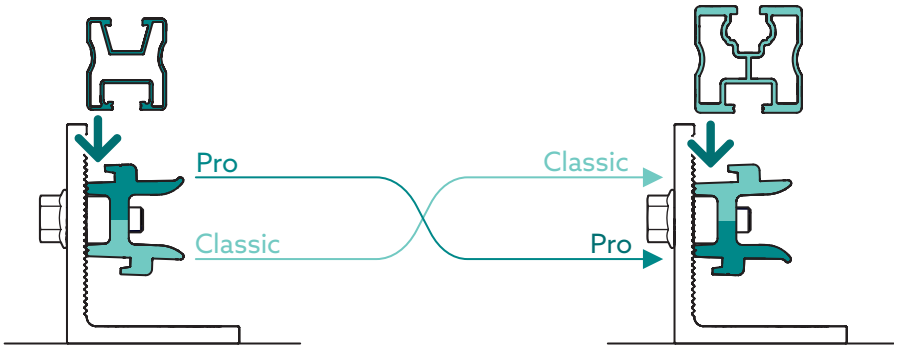
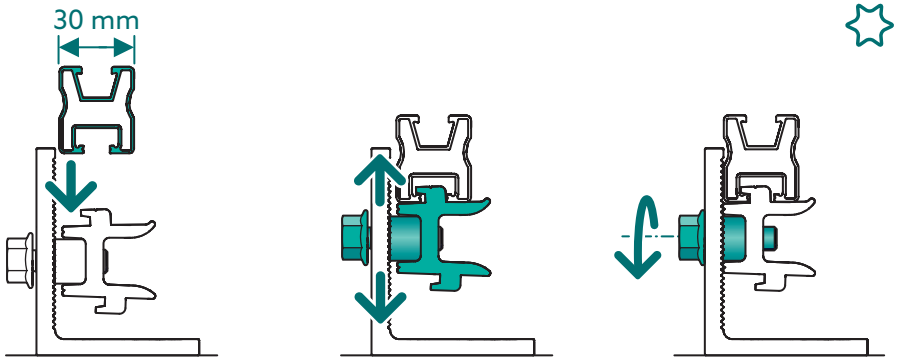
3.3
Mount module support rail

ⓘ The Rapid Pro L has a multi-adapter. By rotating the Rapid attachment, both the ProLine mounting rails (width 30 mm) and those of the Classic series (width 40 mm) can be mounted.

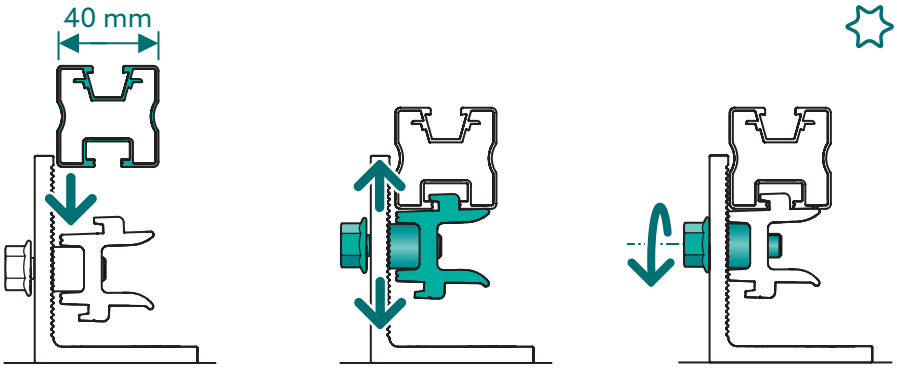


- ▶ Hang the lower channel of the module support rail on the rotating clamping part of the angle connector.
- ▶ Set the desired height.
- ▶ Tighten the screw oriented to its stop.

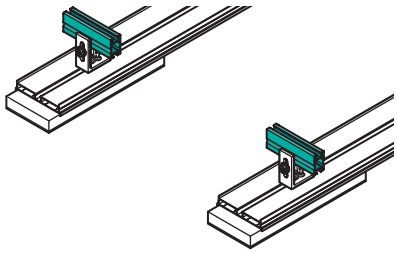


Mounting with Pro35 module support rail

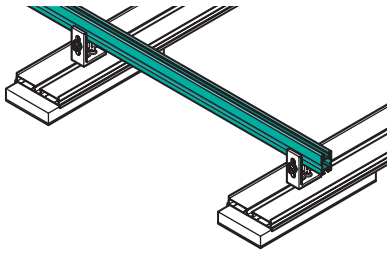
ⓘ The SoloPro mounting rail has the dimensions of the Classic series, but can connect ProLine items thanks to the upper channel.



Mounting with SoloPro module support rail



Pro35 100 mm module support rail



Continuous module support rail

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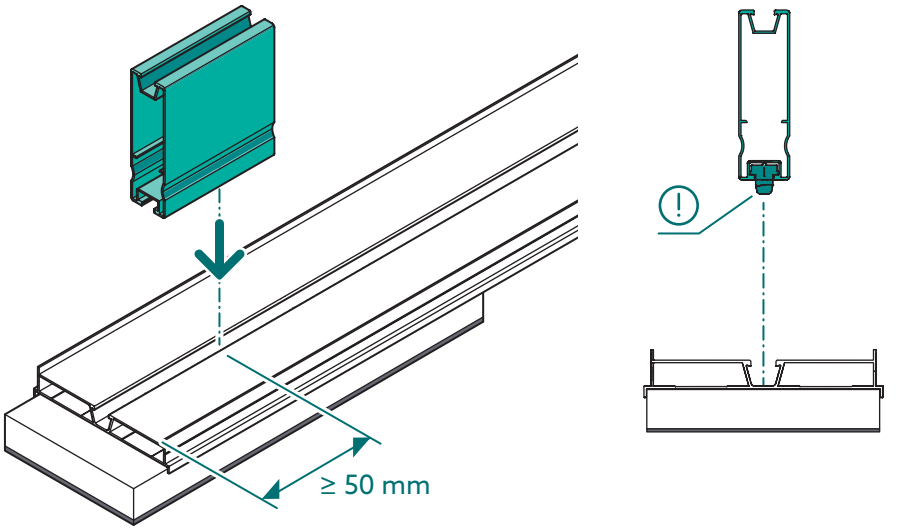
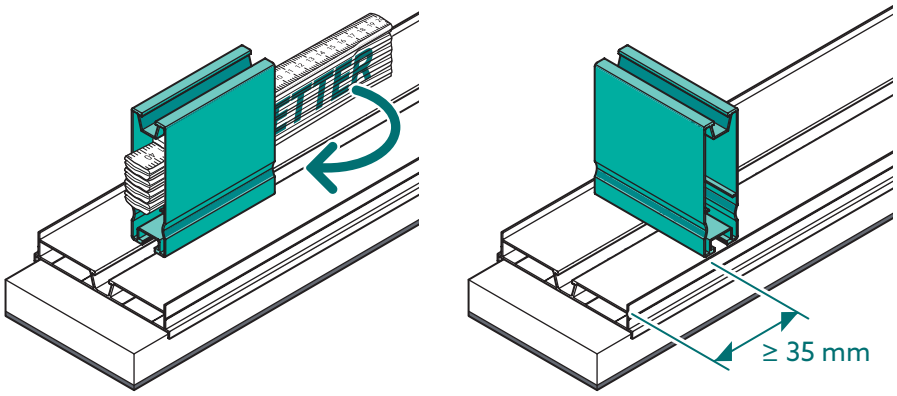
3 MOUNT RAILS
BY MEANS OF SCREW-IN RAIL

3.1
Mount screw-in rail

- ▶ Determine position according to planning documents. (Position depends on module size and orientation).
  Distance from the edge of the base rail to the center of the screw connection: ≥ 50 mm
- ▶ Insert the screw-in rail with ⓘ the screw-in connector into the click channel of the base rail.



- ▶ Turn the screw-in rail 90° clockwise using a lever (e.g., a ruler).



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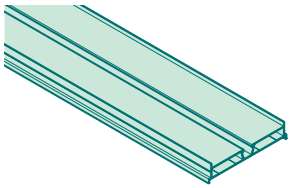
4

USE BALLASTING

IN BASE RAIL OR FLATGRID LOADING TRAY FOR BASE RAIL

in base rail



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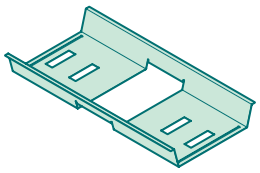
in FlatGrid loading tray for base rail



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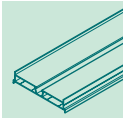
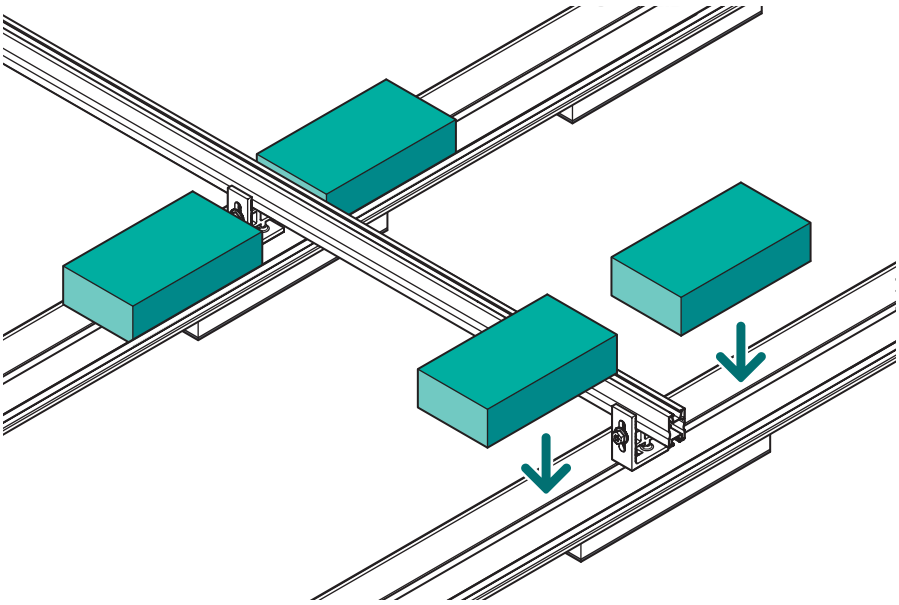
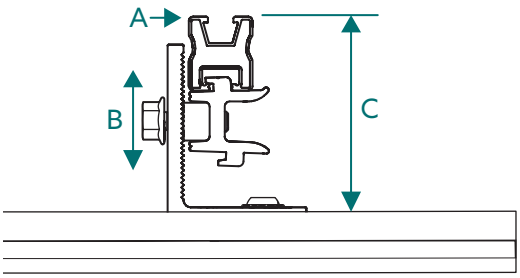
4 USE BALLASTING
IN BASE RAIL

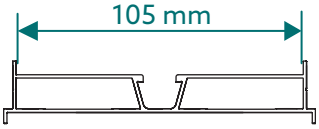


4.1
Insert ballasting into base rail

- ► Place ballast stones evenly along the base rail according to the planning documents. Recommended ballast dimensions: 200 x 100 x 80 mm
- ⓘ Place the ballast stones close to the module support rail if the load distribution is uneven.







A = Mounting rails	B = Adjustment height Clamping part	C = max. ballast stone height in millimeters
Pro 35	0 - 30	70 - 100
Pro 50	0 - 30	85 - 115
Pro 70	0 - 30	105 - 135
SoloPro	0 - 30	75 - 105
Screw-in rail 100	—	100

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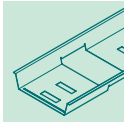
4 USE BALLASTING
IN FLATGRID LOADING TRAY FOR BASE RAIL

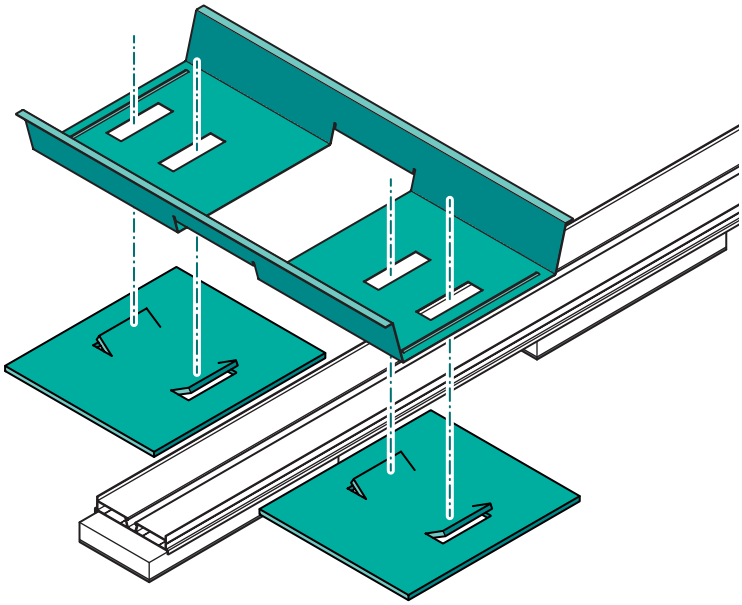


4.1
Optional: Insert ballasting into FlatGrid loading tray

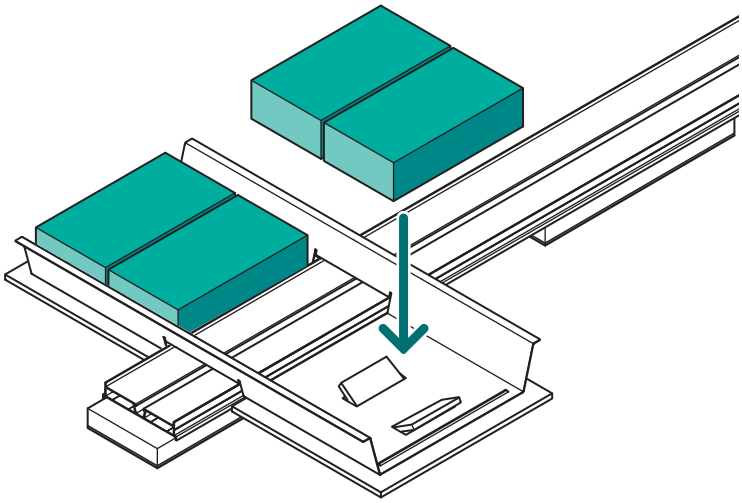
ⓘ Due to high wind loads, more ballast may be required, particularly in the edge and corner areas, than can be applied in the base rails.

► Surface protection mats 230 x 110 x 8 mm (169004-013) "Product and mounting overview", Page 7

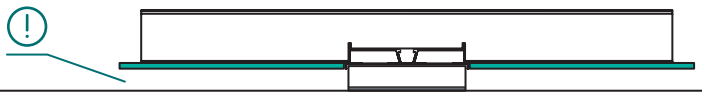
► Place the FlatGrid loading tray for base rail in the center of the recess on the base rail.



► Distribute ballast stones evenly in the FlatGrid loading tray for base rail.



ⓘ After ballasting, there is a gap between the surface protection mat and the roof cladding.



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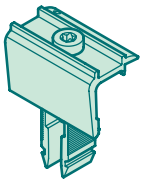
5

MOUNT MODULE

MODULE CLAMPS

Module end clamp



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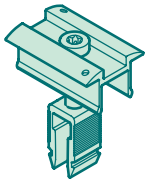
Module center clamp



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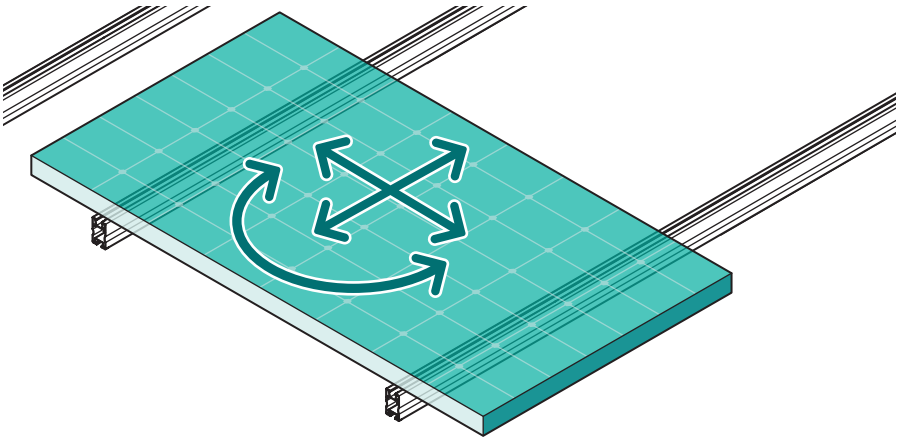
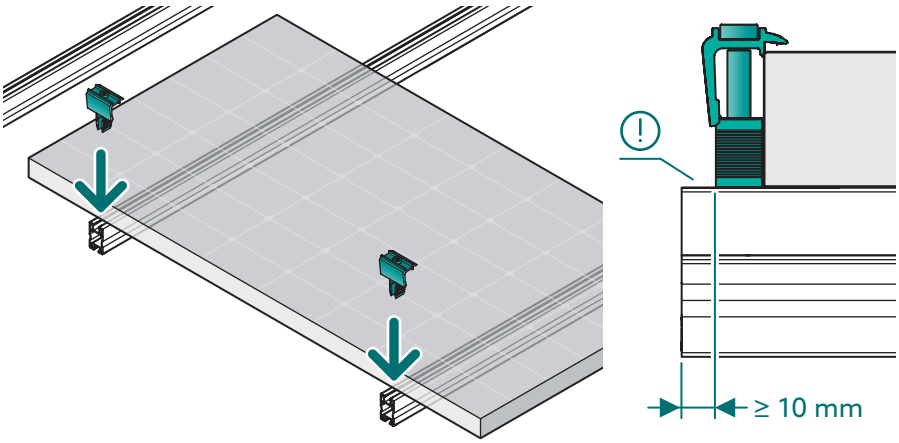
5.1
Install module with end clamp

► Place and align the module on the rail ends.

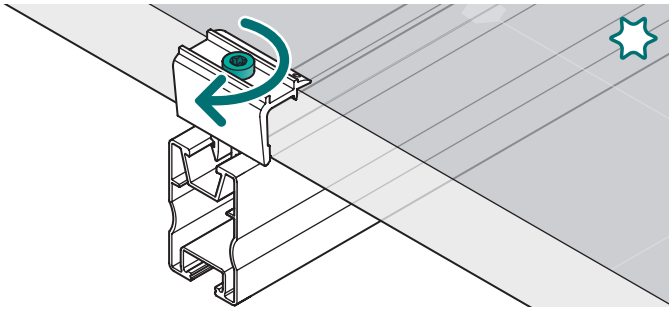


► Click in the end clamps.

ⓘ Insert the end clamps at least 10 mm before the end of the rail.



► Tighten the Torx 40 screws. Tightening torque M8: 15 Nm



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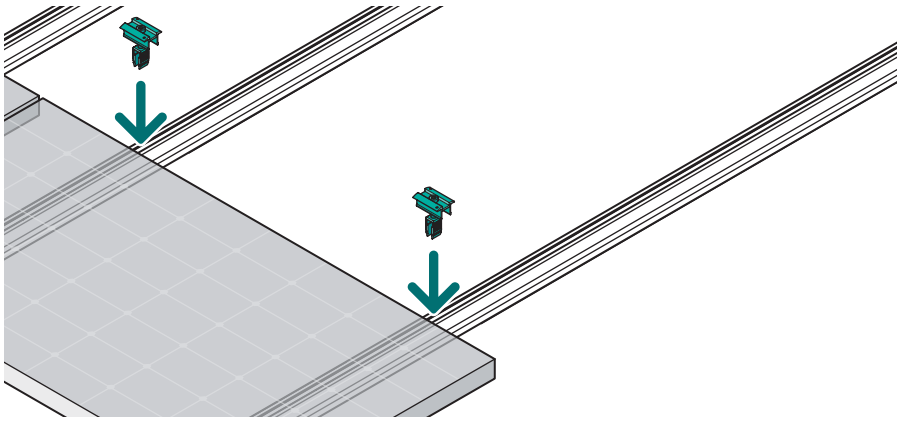
5.2
Mounting additional modules with center clamp

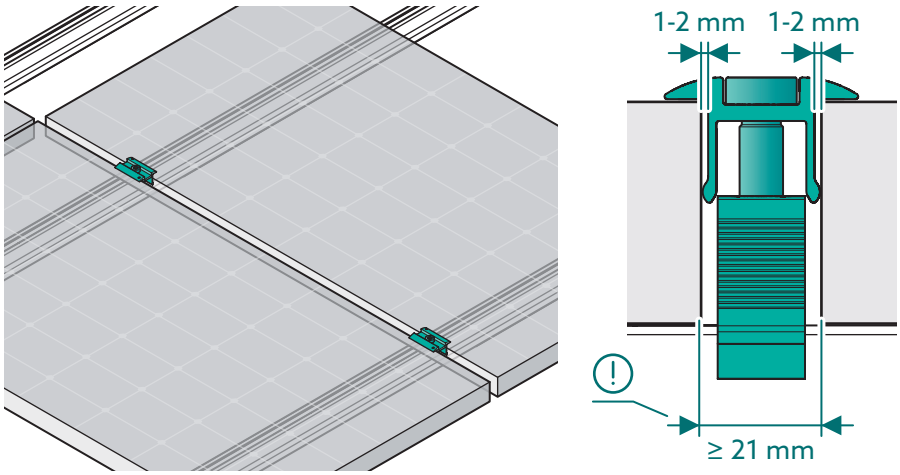
► Click in two center clamps.



► Align another module.

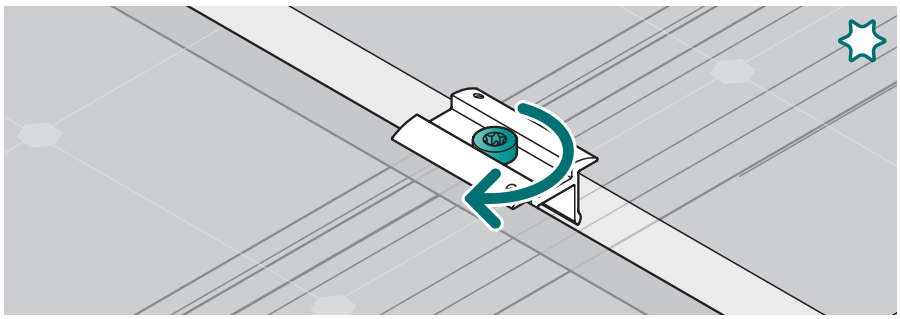
Ⓘ Observe module spacing. Ensure a minimum spacing of 21 mm between each module row, in accordance with the module manufacturer's installation guidelines.

► Connect the module cable accordingly.



► Tighten the Torx 40 screws. Tightening torque M8: 15 Nm

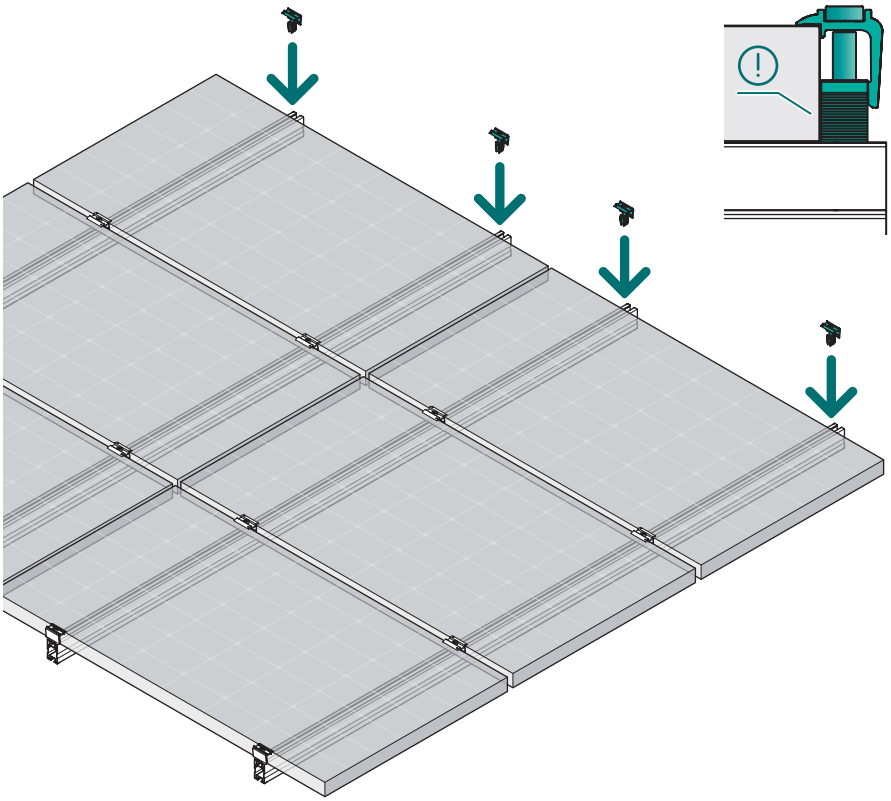
► Repeat the mounting steps until you reach the last module in this order.



5.3

Install last module with end clamp

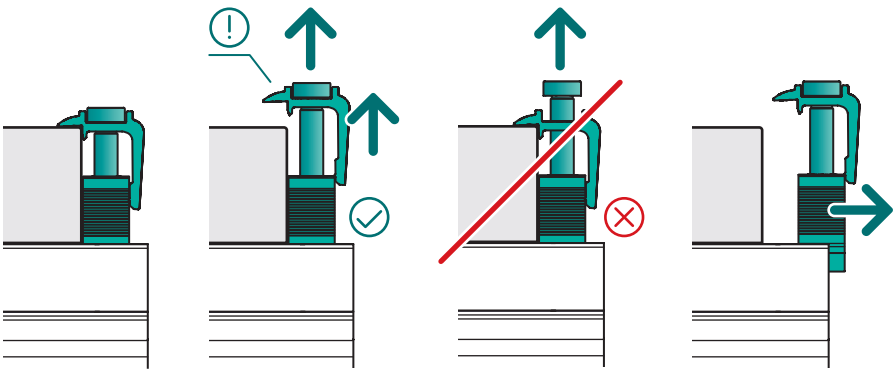
- ► Click in and tighten the Torx 40 screws.
  Tightening torque M8: 15 Nm
- ⓘ Ensure the clamp is in contact with the module frame.



Note on removal

To remove the module clamps from the module frame:

- ► Loosen the screw and lift the upper part of the clamp at the same time
- ⓘ This prevents the screw from only unscrewing from the upper part of the clamp.
- ► Pull the clamp out of the mounting rail to remove it completely from the module frame.



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WE HOPE YOU'VE FOUND THESE MOUNTING INSTRUCTIONS HELPFUL.

If you have any questions or suggestions, please feel free to contact us at any time.

IMPRINT

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