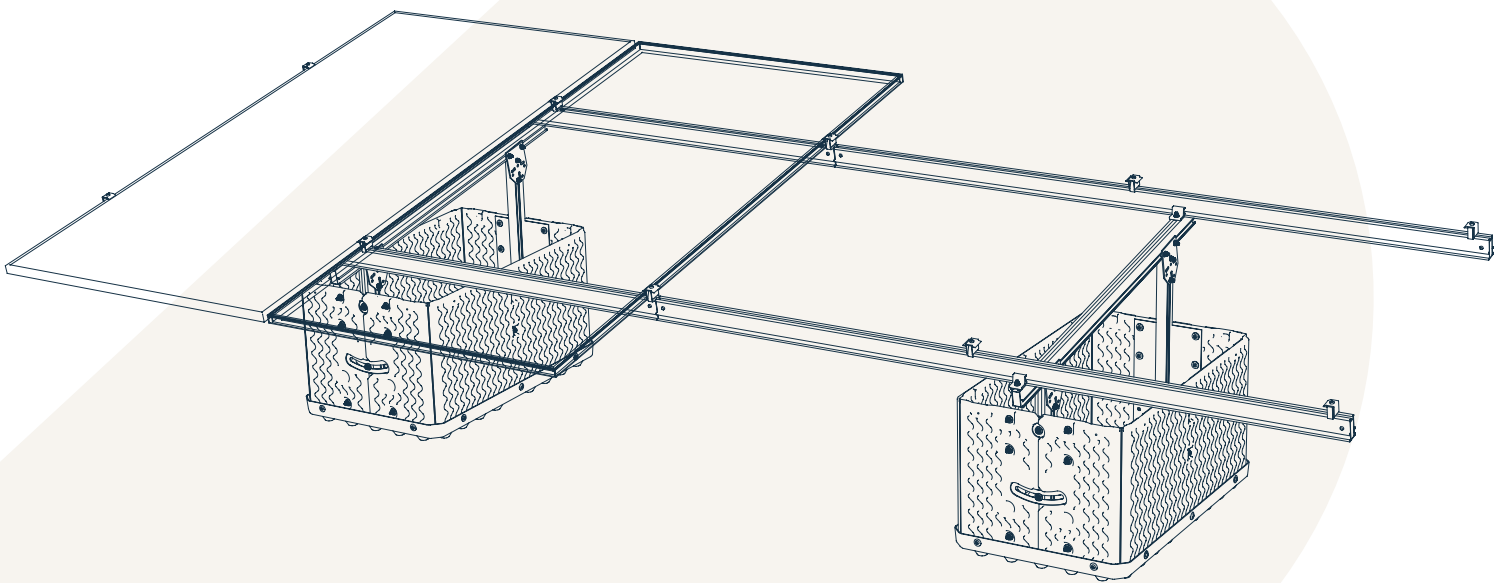


sflex groundmount box



Leaves nothing but possibilities.

The sflex groundmount box opens up areas that were previously inaccessible for PV. Foundation-free, soil-friendly, and mobile, it makes even sensitive locations usable—permanently or temporarily.

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Bestimmungsgemäße Verwendung



Failure to comply presents a high risk of injury and danger to life.



Failure to comply can lead to property damage.

Please note that our general safety instructions must be observed.

Intended Use

The sflex groundmount box system is designed for use in open spaces with plastic trays. Due to the bottom construction of the plastic trays with knobs and ribs, the sflex groundmount box system is suitable for slight slopes (3° terrain inclination).

The lightweight, material-saving design and the few modular components of the sflex groundmount box make the system modular and flexible. It is suitable for the assembly of all common module sizes and can be adapted to different boundary conditions by taking the planning documents into account.

Any use that deviates from this is to be regarded as non-intended. In particular, compliance with the information in these installation instructions is part of the intended use. sflex GmbH is not liable for damage resulting from non-compliance with the installation instructions or from improper and non-intended use of the product.

About this Document

These installation instructions describe the installation of the sflex groundmount box system on open spaces with plastic trays. It must be ensured that only the current and complete installation instructions are used for the installation.

General Information - Standards and Guidelines

Each photovoltaic system must be installed in compliance with the specifications of the present installation instructions and the project report.

These installation instructions are based on the state of the art and many years of experience in how our systems can be installed on-site. It must be ensured that only current and complete installation instructions are used for the assembly and that a printout of the installation instructions is kept in the immediate vicinity of the system. Technical changes reserved.

The project report is part of the installation instructions and is created on a project-specific basis. All information from the project report must be strictly observed. The project report contains the static calculations carried out on a site-specific basis. The design and planning of the sflex mounting systems must be carried out using sflex software.

When installing the PV systems, the installation instructions of the module manufacturer must always be observed. In particular, it must be checked whether the module manufacturer's specifications regarding module clamping (clamping surface and clamping range on the module) are met. If this is not the case, the module manufacturer's declaration of consent must be obtained on-site or the frame must be adapted to the module manufacturer's specifications.

The requirements for lightning and surge protection of mounting systems for PV systems must be established in accordance with DIN and VDE regulations. The specifications of the responsible energy supply company must be observed.

Prior to installation, the creator of the photovoltaic system must ensure that the installation is carried out strictly in accordance with national and site-specific building regulations, occupational safety and accident prevention regulations, standards, and environmental protection regulations.

Every person who installs sflex PV fastening systems is obliged to independently inform themselves about all rules and regulations for professionally correct planning and installation and to comply with them during installation. This also includes obtaining the current status of the rules and regulations.

The installation of the PV system may only be carried out by appropriately trained specialists.

Warnings

sflex assumes no liability for damages resulting from non-compliance with the general safety instructions.



1. All system components must be checked for damage before installation. Damaged components must not be used!

2. The installation of the sflex substructure and the PV system may only be carried out by appropriately trained specialists. System components are not to be used as stepladders; the modules are not to be stepped on. There is a risk of falling and falling through during roof work.

There is a risk of injury or danger to life in the event of falls. Suitable climbing aids and fall protection (e.g., scaffolding) as well as protection against falling parts must be provided.



1. Before installation, check the building statics and the structure/condition of the roof substructure. The specifications from the installation manual and the project report must be strictly observed during installation.

Failure to comply with the specifications from the installation manual and the project report can lead to damage to the PV system and the building.

System Description

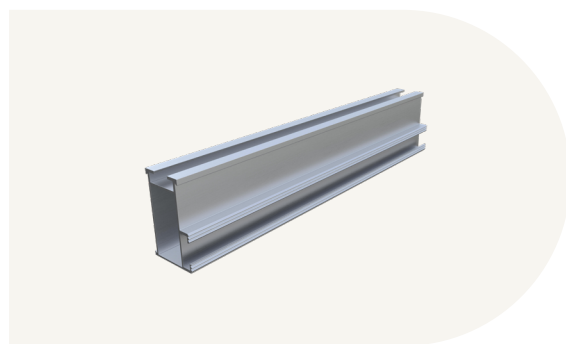
Application:	Open field
Connection:	No connection, ballasted
Module Type:	Framed modules
Module Size * (LxW):	Length up to 2400 mm; Width = 1134 mm
Module Orientation:	Portrait; South or East-West
Wind Load*:	Wind load zone 2
Snow Load*:	Snow load zone 2
Module Field Size:	Minimum: 4 modules (1 row of 4 modules portrait) Maximum: 12 modules (1 row of 12 modules portrait)
Terrain Inclination:	3°
Height Adjustment:	10 cm in uneven terrain; supports can be tilted by 20° relative to the plastic tray
Materials:	Aluminum, Stainless steel, Galvanized steel, HDPE; 100% recyclable

*Other module sizes and/or boundary conditions available upon request.

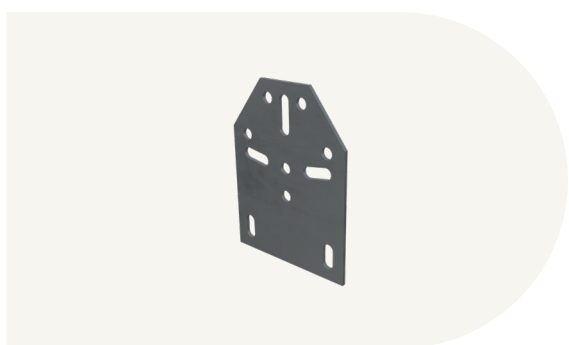
System Components



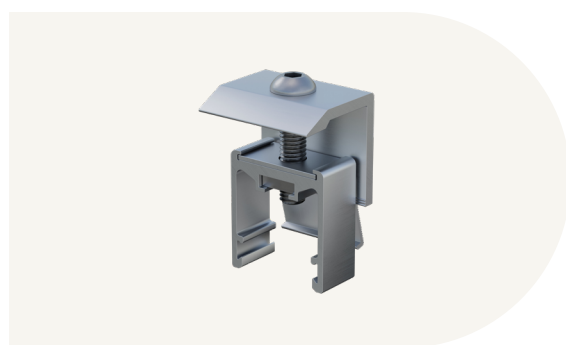
Plastic tray



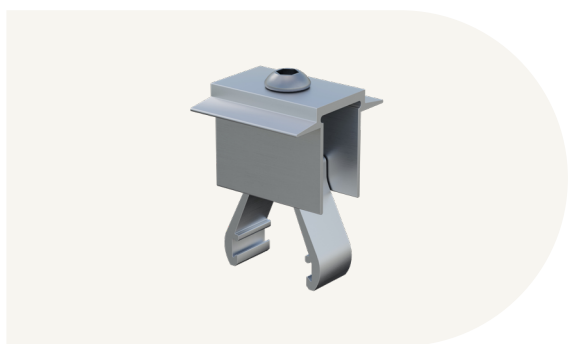
Rails: ST-AK 7 47 / ST-AK 13 60 / ST-AK 26 70



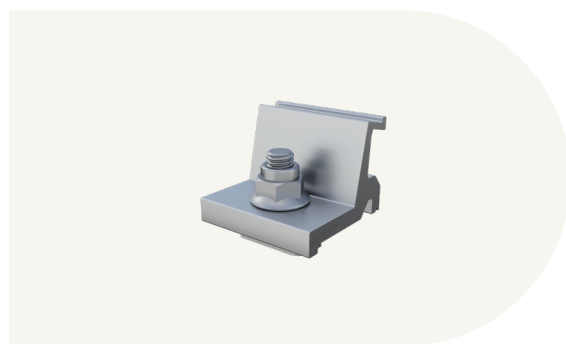
Gusset plate



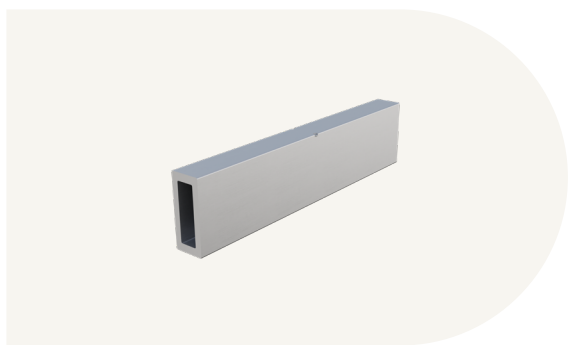
End Clamp AK II Click



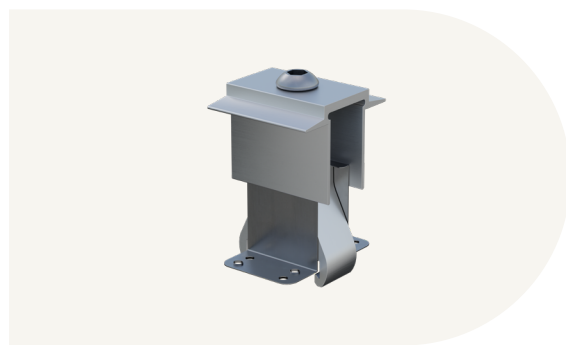
Module Clamp AK II Click



Cross adapter



Splice 26



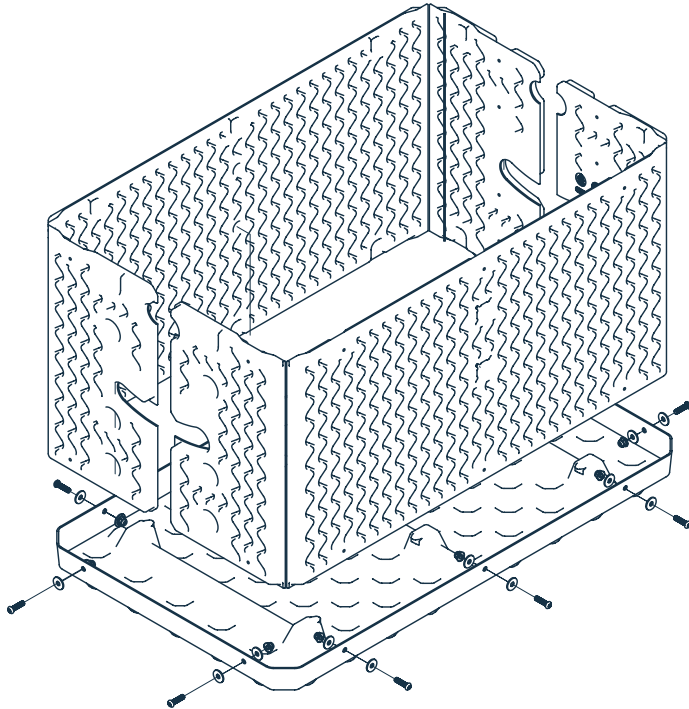
MH AK II Click with Grounding Kit

Assembly of Support Structures

1

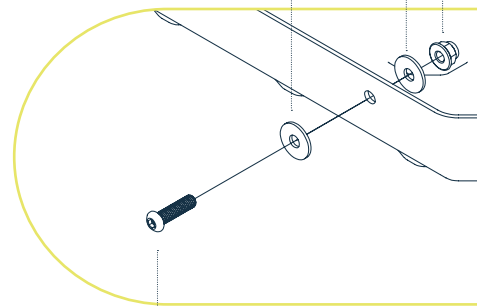
Unfold the side walls of the GmB plastic tray and place them on the ground.

Tighten the screws (Torque 15 Nm).



Serrated nut M8 A2 DIN 6926

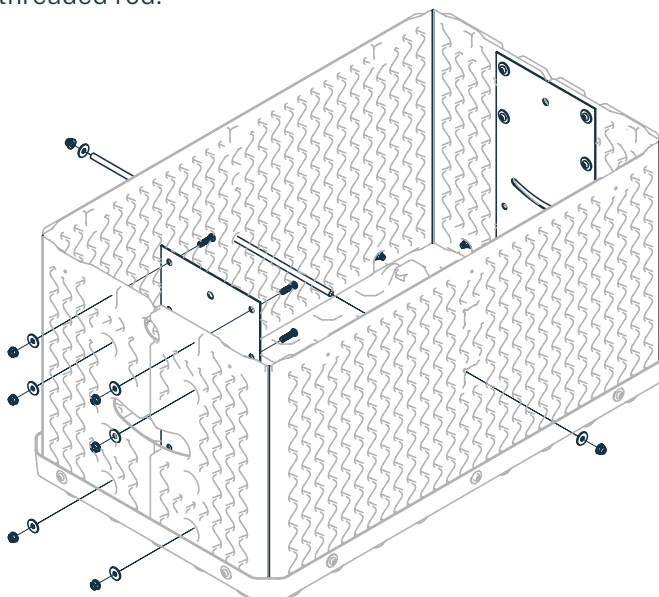
Washer DIN 9021 - 8,4



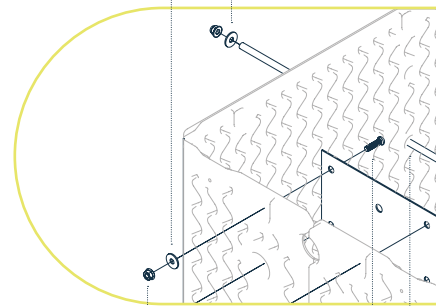
LmR Screw
ISO 7380 A2 IS5 M8x30

2

Screw the GmB side plate to the GmB plastic tray (Torque 15 Nm) and screw in the threaded rod.



Washer DIN 9021 - 8,4



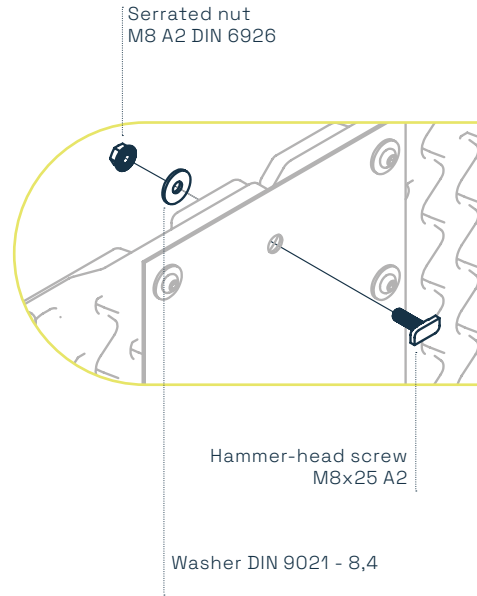
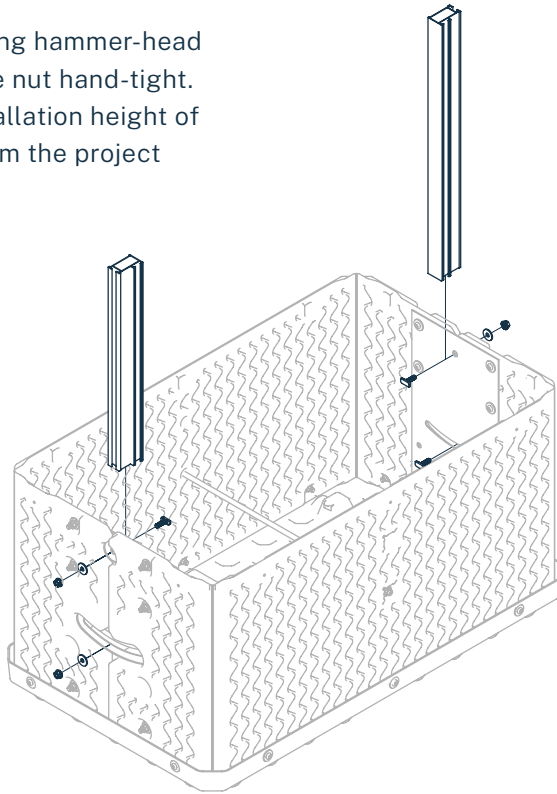
Serrated nut
M8 A2 DIN 6926

LmR Screw
ISO 7380 A2 IS5 M8x30

Threaded rod M8 x 600

3

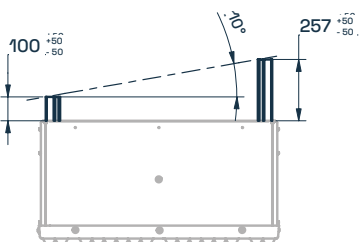
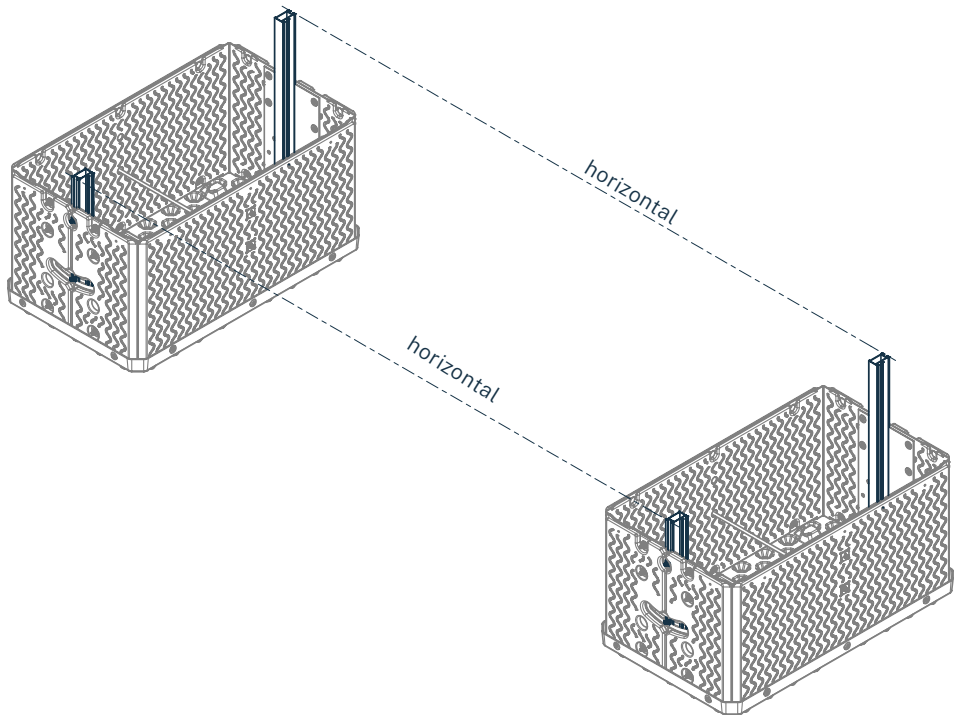
Mount the support using hammer-head screws and tighten the nut hand-tight. Take the required installation height of the support profile from the project report.



Aligning the Support Units

4

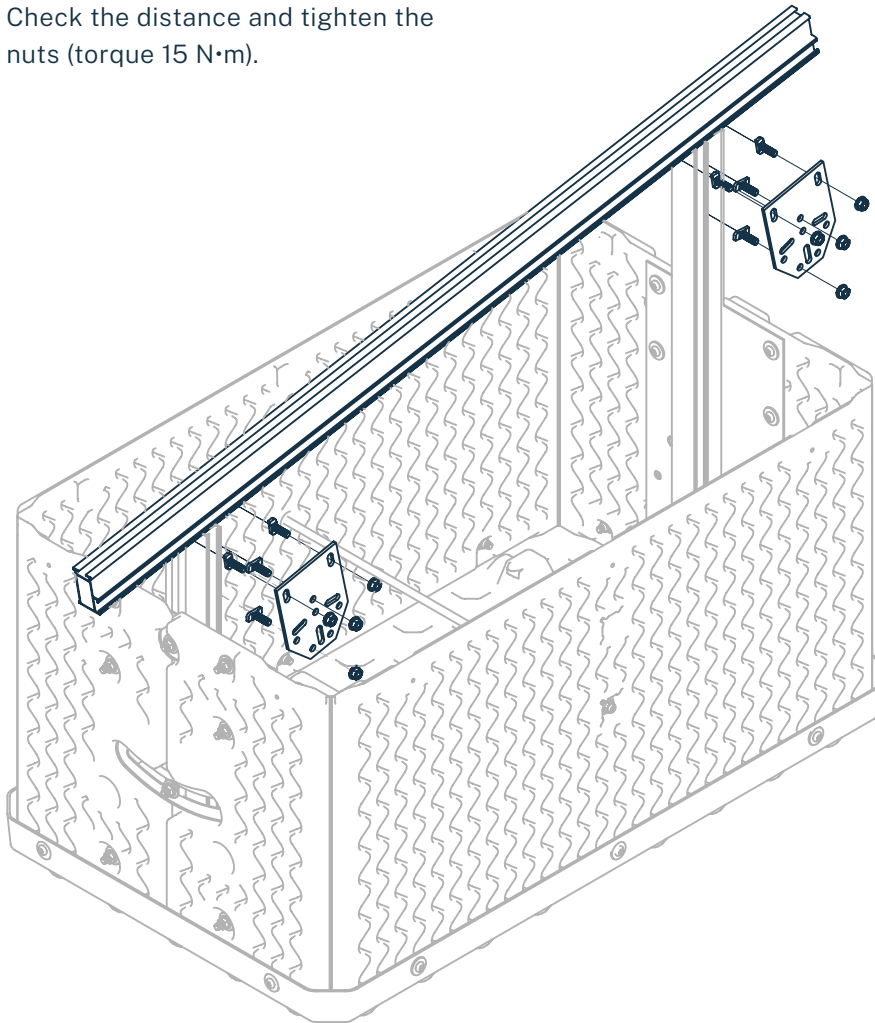
Align the support height of the adjacent plastic trays with each other. Observe the slope between the front and rear supports specified in the project report.



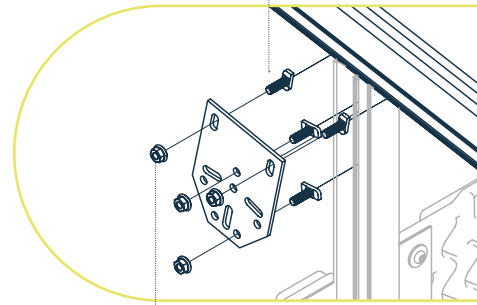
5

Mount the rafter using the node plate.
Take the required installation height of the rafter profile from the project report.

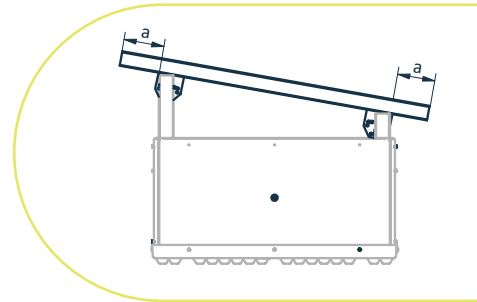
The rafter must be mounted symmetrically onto the supports.
Check the distance and tighten the nuts (torque 15 N·m).



Hammer-head screw
M8x25 A2



Serrated nut M8 A2
DIN 6926



Assembly of the Carrier Cons-

6

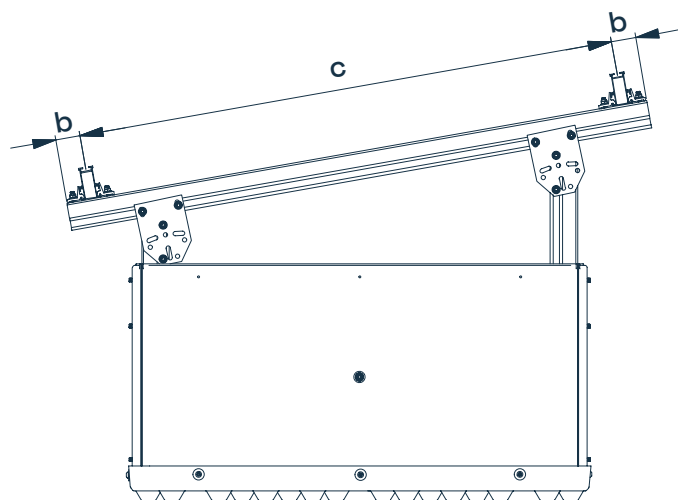
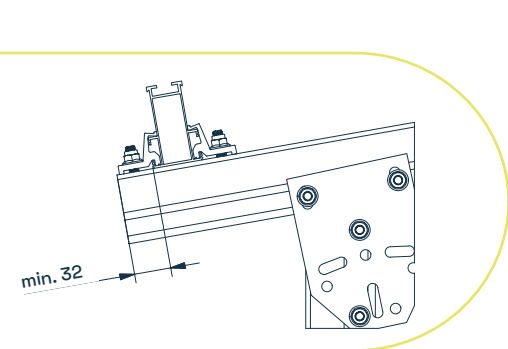
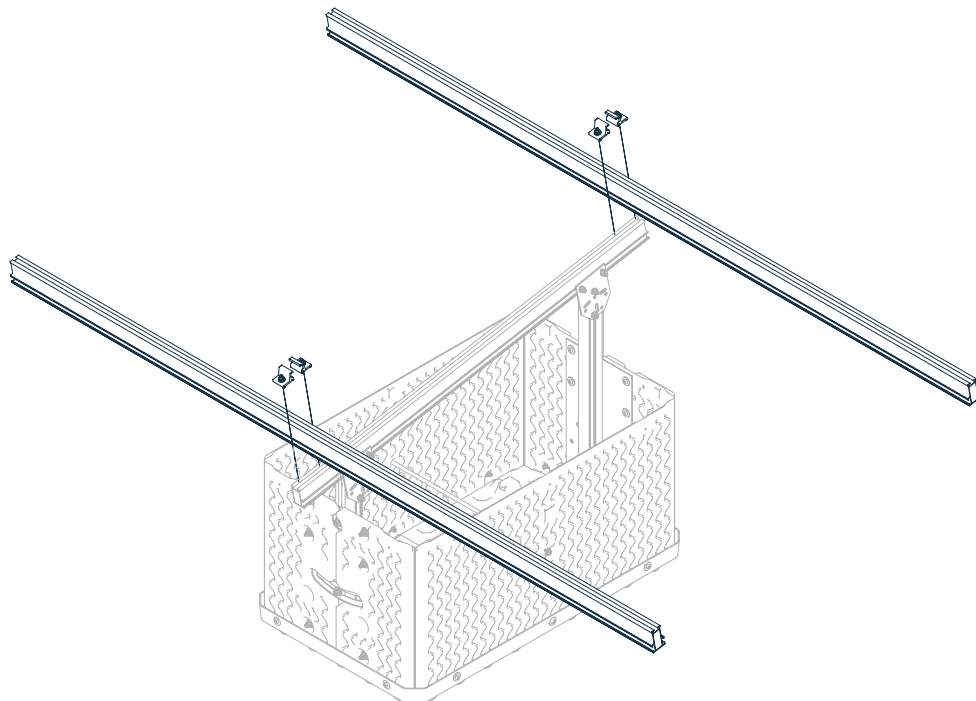
Mount the module support rails ST AK 26/70 onto the rafters using the cross-rail connectors KSV HK.

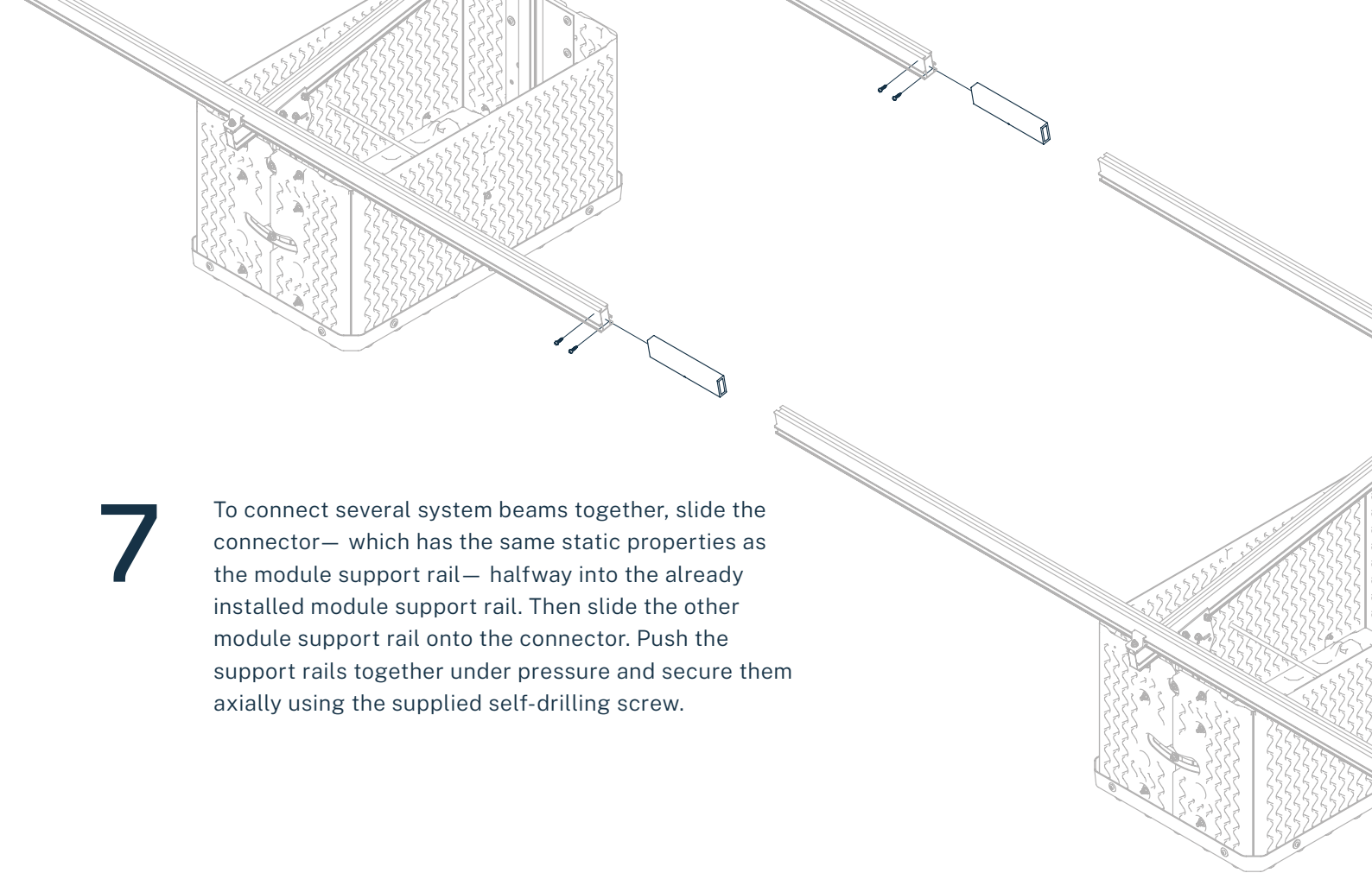
The number of KSV HK connectors required per module support rail (1 or 2) must be taken from the project report. If only one KSV HK is required per module support rail, it may be mounted on either side; however, the KSV HK connectors of adjacent module support rails must be arranged symmetrically to each other (e.g.,

both positioned on the inside or both on the outside).

The KSV HK must rest entirely on the rafter. Arrange both module support rails symmetrically to the rafter, meaning: the distance from each end of the rafter to the respective rail must be the same.

Choose the distance between the module support rails within the clamping range specified by the module manufacturer.





7

To connect several system beams together, slide the connector— which has the same static properties as the module support rail— halfway into the already installed module support rail. Then slide the other module support rail onto the connector. Push the support rails together under pressure and secure them axially using the supplied self-drilling screw.

Depending on the table size and the position of the respective support units within the table, observe the following support distances and cantilever lengths:

Table size up to 4 modules portrait format:
A: 1048 mm / B: 2597 mm

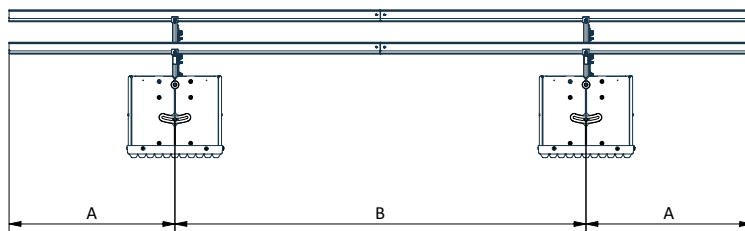
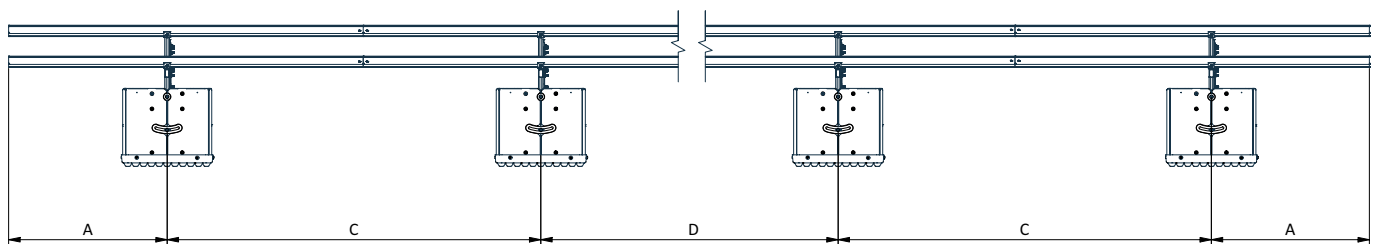


Table size from 1×6 to 1×12 portrait format:
A: 1048 mm / C: 2472 mm / D: 2345 mm



Ballasting the Support units

Fill the GmB plastic trays with ballast. The required dry ballast quantity per tray must be taken from the project report. The trays must be filled at least up to the upper edge.

The trays have a full volume of 256 L; in addition, up to 10% more ballast volume can be heaped on top. Depending on the type of fill material, the resulting ballast weight will vary for a tray filled up to the top edge.

To determine the weight of 256 L of bulk material, the following factors must be considered:

Type of material, Bulk density (influenced by grain size and the voids between grains), Moisture content of the bulk material. Use the following table as a reference; the actual required fill quantity and the resulting weight must be checked on site.

Bulk Material	Weight per m ³	Weight per Box in kg
Quartz sand	1.400	358
Sand	1.500	384
Topsoil (earth)	1.500	384
Crushed stone (split)	1.500	384
Gravel	1.600	410
Coarse aggregate	1.600	410
Lean concrete	1.700	435
Concrete rubble	1.600	435

Module Installation

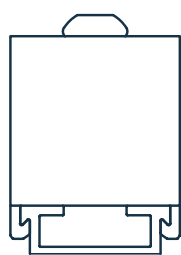
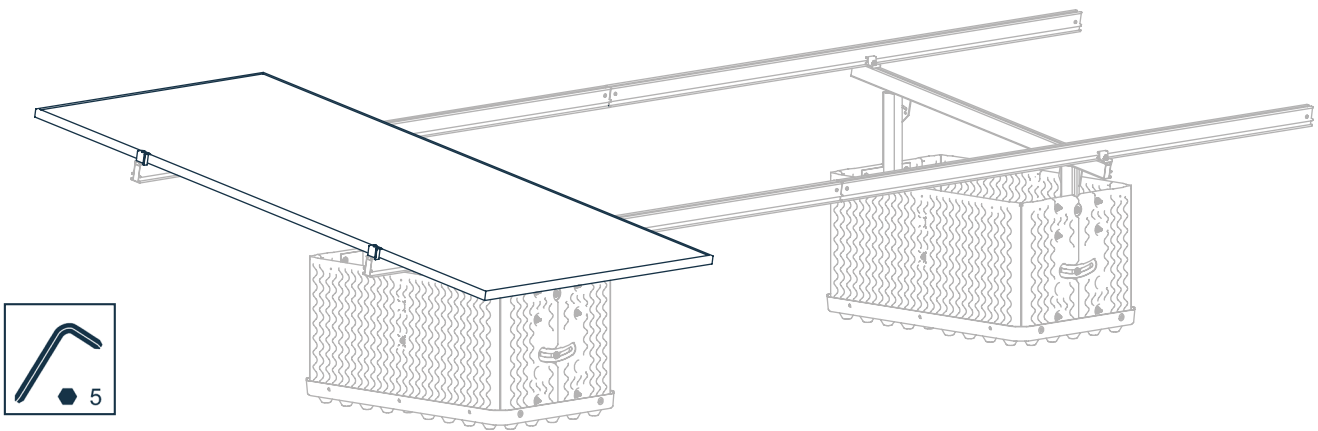
8

Place the module symmetrically onto the system rails. Install the end clamps. Ensure that the end clamp is inserted correctly on both sides of the system rail and sits flush with the module.

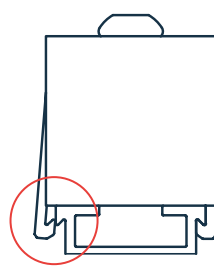
Now adjust the end clamp to the module height and tighten the screw (tightening torque 8–10 Nm).

The distance between the module frame and the rail must be at least 30 mm.

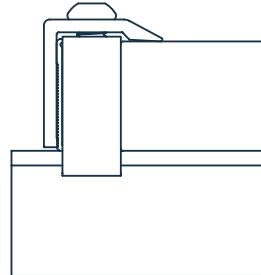
When selecting the end clamps and mid clamps, follow the specifications of the module manufacturer.



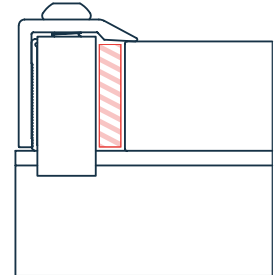
CORRECT



INCORRECT



CORRECT



INCORRECT

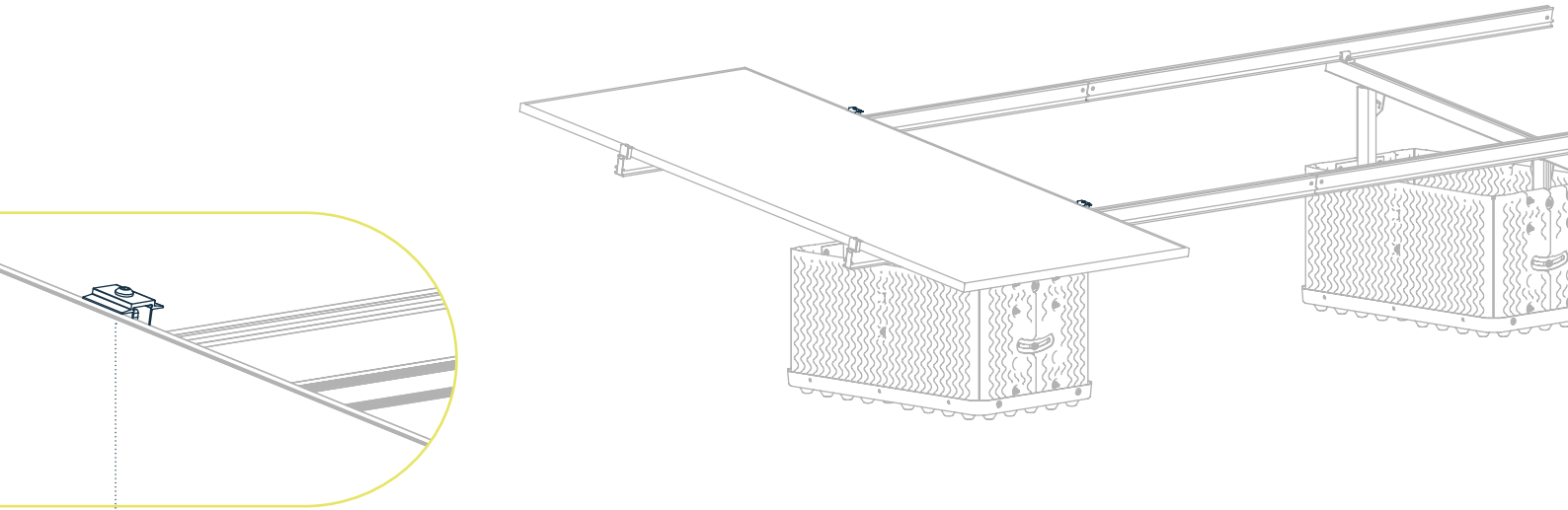


- Install end clamps
- End clamps are approved for one-time installation only. Check proper insertion of the end clamp
- Observe the module manufacturer's specifications

9

Now install the mid clamps. If required, the grounding plate must be installed before mounting the mid clamp. To do this, the grounding plate is inserted sideways between the “clamp” and the “top part” of the mid clamp. Click the mid clamp onto the system rail and slide it so that it sits flush against the module. Ensure that the mid clamp is properly inserted on both sides of the system rail.

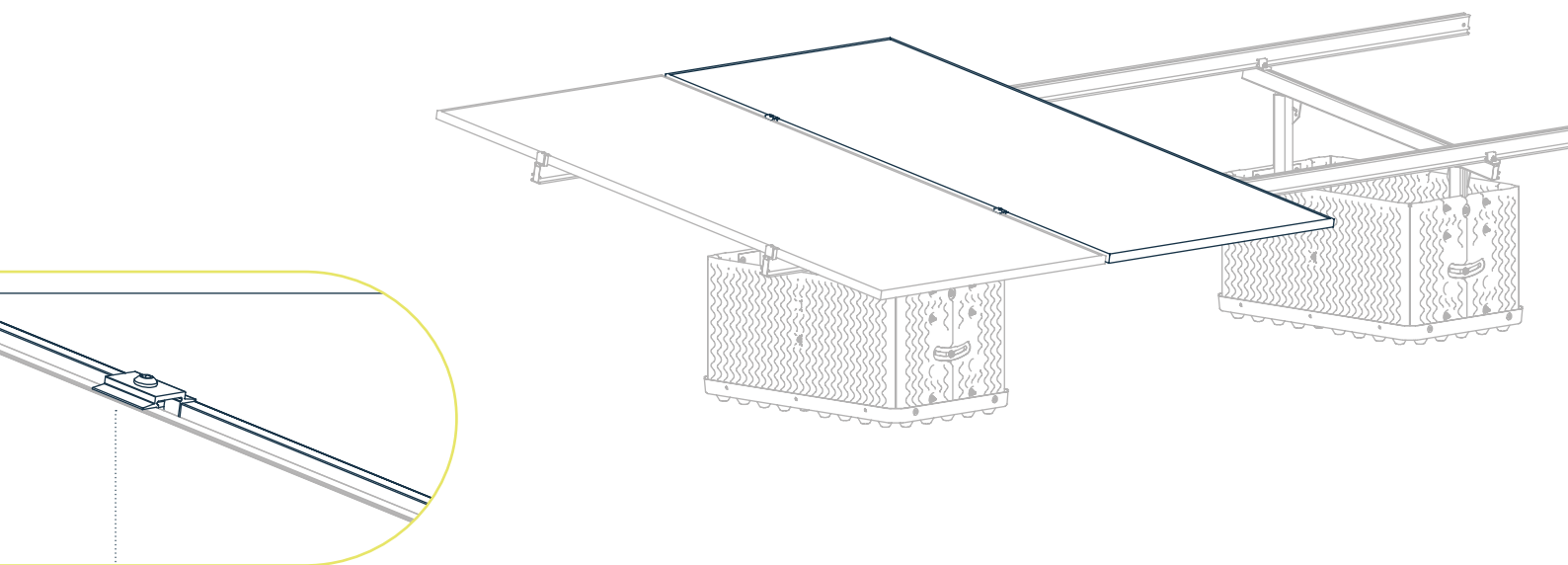
When using the grounding plate, the module must be positioned between the plate and the “top part” of the mid clamp. The grounding plate is then pressed against the underside of the module frame as the mid clamp is tightened.



Flip mid clamp open and slide in flush

10

Now slide the next module underneath the mid clamp, align the mid clamp to the module frame height, and tighten the screw (tightening torque 8–10 Nm).

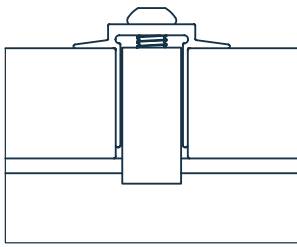


Insert module and tighten mid clamp

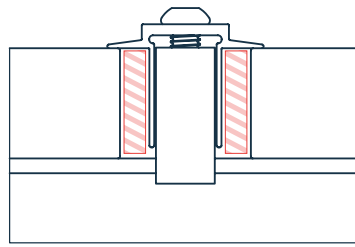


Install module clamps

Notes on Installing the Mid Clamp



CORRECT

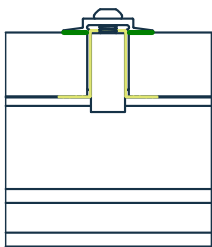


INCORRECT

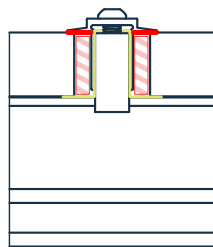


Follow the module manufacturer's specifications.

Notes on Mid Clamp Installation with Grounding Plate

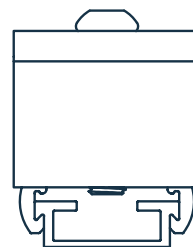


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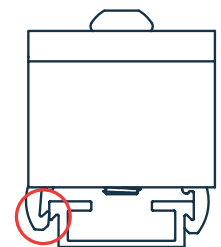


INCORRECT

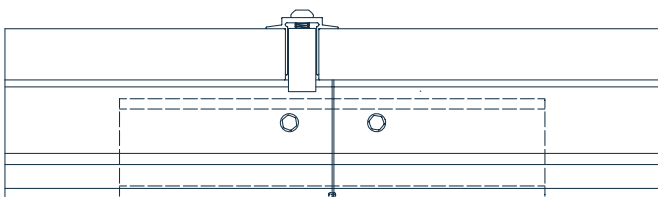
Notes on Click Position



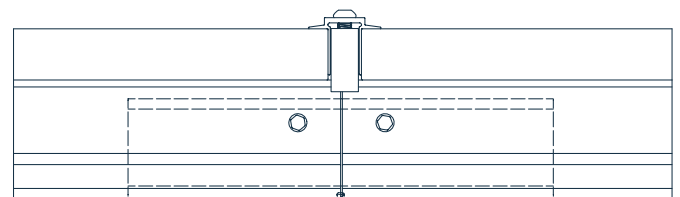
CORRECT



INCORRECT



CORRECT



INCORRECT

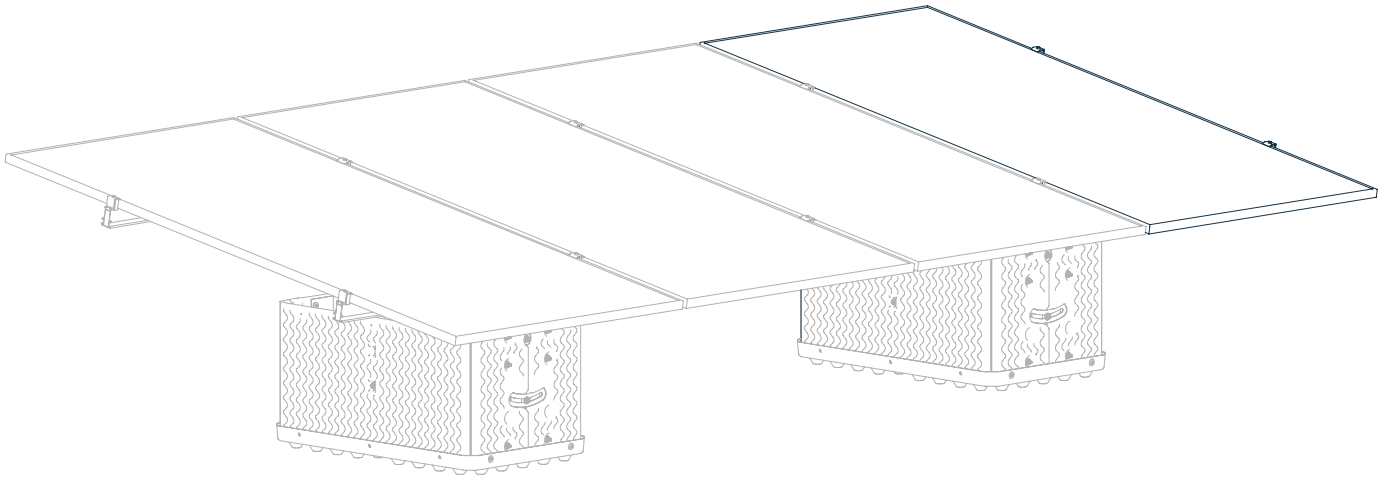
Clamp placed over the purlin connection area



- Install end clamps
- End clamps are approved for one-time installation only. Check correct engagement of the end clamp
- Observe the module manufacturer's specifications

11

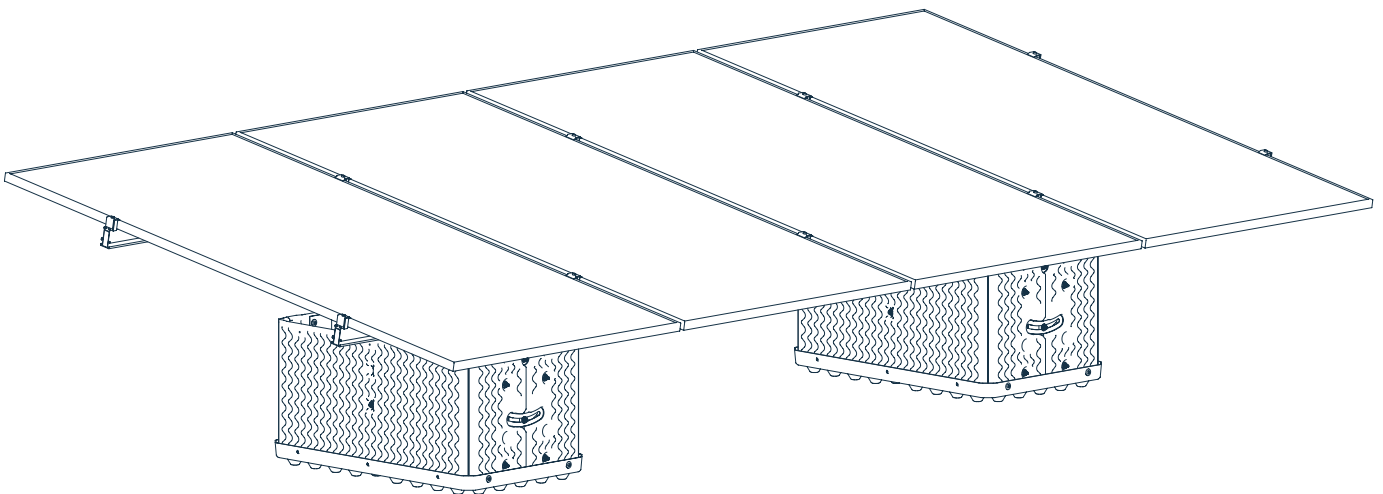
At the last module in the row, install the end clamps again as previously described.



Install end clamps at the last module

12

Proceed with the remaining tables as described.



Install module clamps

Disassembly

Disassembly

Disassembly of the sflex mounting system may only be carried out by trained specialist personal. Observe the same safety instructions, standards and guidelines as provided for the installation.

In general, disassembly is carried out in reverse order to the described installation

Disposal

The sflex mounting system is made from aluminium, stainless steel and steel components. These materials can be recycled after disassembly,

The frame system must only be disposed of by a specialist waste management company. Observe the applicable national standards and guidelines.



Before disassembly, disconnect the PV modules from the main network. Disconnect all of the PV modules' electrical cables (string lines and plug connectors) and remove them from the frame system



Then remove the modules and store them safely. Improper disassembly can lead to damage to the modules.



Disassemble frame system and safely store all of the parts.
Any holes in the roof must be sealed by a specialist.

Terms of Use and Warranty

Terms of Use

We expressly point out that the assembly system is sold as part of a purchase agreement.

Its installation/processing or acquisition by a third party is not carried out in the name of, or on behalf of, S:FLEX GmbH. Installation/processing of the system must be carried out by appropriately qualified personnel and strictly in accordance with the installation instructions.

The design and planning of the system must be undertaken using the sflex Planning Software. S:FLEX GmbH is neither responsible for the project-specific structural analysis of the roof structure, nor for obtaining and documenting the approval of the roof manufacturer for use of the respective fastening system on the roof in question (in the terms of the warranty), nor for correct installation of the fastening system.

S:FLEX GmbH accepts no liability for faults and damage and/or a restricted or limited operational capability of the system which has resulted from incorrect installation and/or installation which was not undertaken in accordance with the installation instructions and/or the project report. In the case of incorrect installation, the buyer's right to assert claims for material defects shall expire.

The system warranty is only valid if all system components were acquired from sflex. The system requires approval for the modules to also be mounted in the indicated manner (i.e. fitted to the modules' shorter sides). This approval can either be given generally as part of the module certification or, as the case may be, issued by the module manufacturer on a project-specific basis.

Warranty

The information regarding dimensioning provided in these instructions is merely suggested values based on prior experience. Binding structural analyses for installation frames can be created using the sflex planning software.

As an installation company, you are responsible for the correct execution of the installation. S:FLEX GmbH is not liable for the dimensional information contained in commercial system quotations.

As an installation company, you are responsible for the mechanical durability of the interface connections mounted on the building's structure. In particular, this includes ensuring that these are leak-tight. The components supplied by the company S:FLEX GmbH are designed for the expected loads and in accordance with the currently available technology. In this context, you must provide the company S:FLEX GmbH with information about all general technical conditions in writing via the project data collection sheet (information about the supporting structure, snow load zone, building heights, wind loads, etc.).

S:FLEX GmbH is not liable if the installed components are not properly handled. Any use close to the sea needs to be clarified with S:FLEX GmbH directly on a case-by-case basis due to the increased risk of corrosion. Provided that the system is handled properly and dimensioned according to the structural conditions and normal environmental and ambient conditions, the company S:FLEX GmbH provides a warranty from transfer of risk to the warranty holder, which guarantees that the metallic components of the racks will remain free from defects with regard to material and workmanship for a period of 10 years. This warranty does not apply to wear parts. For additional information, please refer to the separate warranty provisions.

This applies within the context of the generally prevalent weather and environmental conditions.

sflex groundmount box

Leaves nothing but possibilities

Are you interested or do you have more questions about the product?

Build on our support!

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