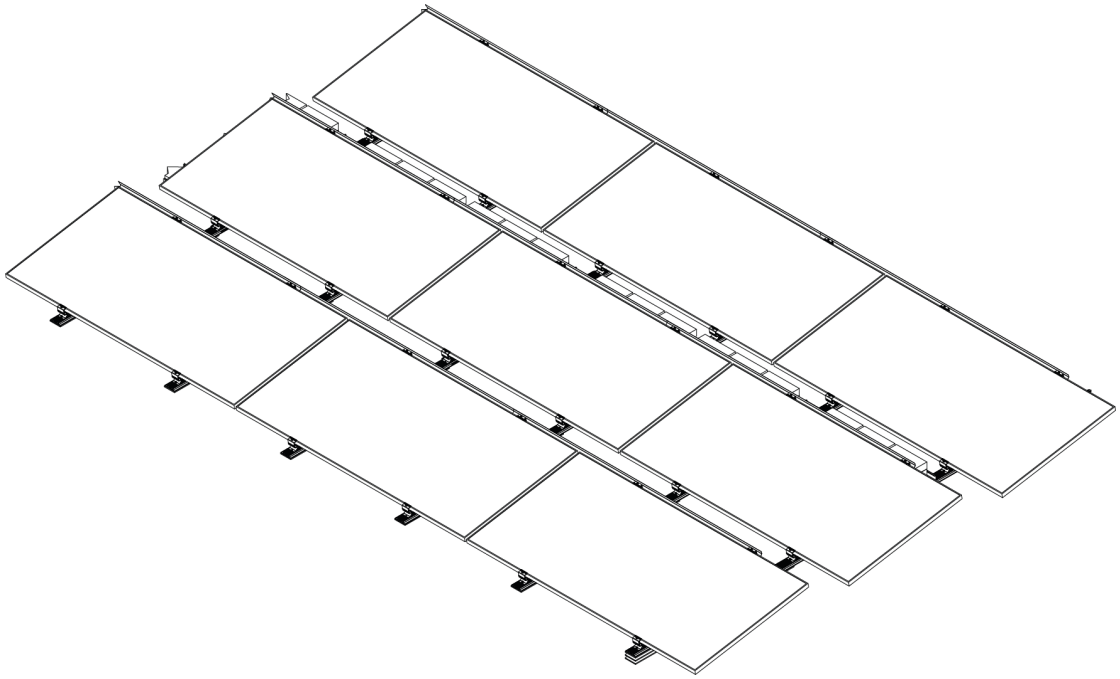
AEROCOMPACT®

ENGLISH



Assembly Instruction

COMPACT**FLAT** SN 2 long side clamping

Version : 3.4
Language : English
Important! Read carefully before installation!

Legal Notice

Subject to change due to technical modifications! These assembly instructions correspond to the technical status of the delivered product and not to the current development status at the manufacturer. If pages or parts of the assembly instructions are missing, please contact the manufacturer's address given below. The original language of these assembly instructions is German. Any assembly instructions in another language are a translation of the assembly instructions in German. Therefore, in case of doubt or contradiction, the authentic German version shall prevail. The installation instructions are protected by copyright. The installation instructions may not be copied, reproduced, microfilmed, translated or converted for storage and processing in computer systems, either in part or in full, without the written permission of AEROCOMPACT Europe GmbH

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Creation date

03/2025

TOC

GENERAL

These assembly instructions describe the assembly procedure and must be strictly adhered to. Read these installation instructions carefully before starting installation. The basic prerequisite for safe working is compliance with all the safety and handling instructions in these installation instructions. In addition, the local accident prevention regulations and general safety regulations for the area of application of the product apply. Illustrations in these instructions are for basic understanding and may differ from the actual design.

APPLICABLE DOCUMENTS

In addition to this manual, you have received an AEROTOOL project report, planning documents and drawings. Always comply with the instructions and notes contained therein.

LIMITATION OF LIABILITY

All information and instructions in these assembly instructions have been compiled taking into account the applicable standards and regulations, the state of the art and our many years of knowledge and experience. Liability provisions are stated in our **terms** and can be accessed at **www.aerocompact.com/downloads**.

EXPLANATION OF SYMBOLS

SYMBOLS FOR INSTRUCTIONS


Prerequisites for action instruction


Step by step action instruction


Results of action steps


This note provides useful information for smooth installation

SYMBOLS IN ILLUSTRATIONS - ACTIVITIES


Optional component,
optional mounting variation


Visual inspection


Activity by hand


Observe right angle


Check AEROTOOL project report or planning documents


Assembly tip

SYMBOLS IN ILLUSTRATIONS - TOOLS


Measuring tape, measure


Cordless screwdriver, screwdriver


Pencil, mark


Use a torque wrench,
Observe torque


Chalk line


Use Allen key


Scissors, tin snips, cut to size

SAFETY

The following list serves as an indication of the most common safety risks that can occur when installing these products. There is no liability for the completeness of the risks presented. A specific check of the necessary safety measures must be carried out by an authorized specialist company before installation.

APPROPRIATE USE

The CompactFLAT flat roof system is designed exclusively for mounting PV modules on flat roofs or similar flat surfaces. Proper use also includes correct installation in accordance with these installation instructions. Installation must be carried out by qualified personnel who are familiar with the installation of photovoltaic systems and strictly in accordance with the installation instructions, planning documents and project report. The building protection mat included in the scope of delivery is matched to the roof surface defined in the project. Due to the large number of different types of waterproofing used in the past and currently available on the market, the responsible planner must ensure compatibility and the static friction coefficient between the building protection mat and the roof structure of the building on which the system design is based. The friction coefficient is determined during the planning process using the Friction Measurement Kit.

PERSONNEL REQUIREMENTS

Installation may only be carried out by a specialist company and must be carried out strictly in accordance with the installation instructions, the project report and the planning documents. A specialist company is a company that is familiar with the installation and maintenance of photovoltaic systems as part of its normal business operations. National and local building regulations, standards and environmental protection must be complied with. Under no circumstances may the assembly personnel be under the influence of medication, alcohol, drugs or in any other condition that impairs consciousness (e.g. overtiredness). Trainee personnel may only carry out work under the instruction and supervision of specialist personnel who are authorized to train personnel.

WORKING SAFELY

The contractual partner shall ensure that all relevant safety and labor regulations are complied with during installation. Information from AEROCOMPACT Europe GmbH is supportive, but without guarantee or claim to completeness. The contractual partner is responsible for informing himself about all applicable regulations and implementing them. Areas below the roof must be protected from falling objects and blocked off if necessary. Work must not be carried out in unsuitable weather conditions, strong winds, wet conditions or temperatures below freezing. Only use intact, tested ladders and secure them. Mechanical climbing aids have their own rules and the PV mounting system must not be used as a climbing aid. Maintain a distance from overhead power lines and carry out equipotential bonding in accordance with country-specific regulations. When cutting materials to size, ensure that there are no burrs, especially on edges and corners. Rooflights, skylights and large ventilation flaps do not generally bear the load of people. Secure these areas such as roof edges. Corrugated fiber cement roofs are generally susceptible to breakthrough. Define routes and secure them with load distribution. Always use load distribution aids on non-load-bearing roof coverings (e.g. thin sheet metal, corrugated fiber cement).

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Personal protective equipment is used to protect people from health and safety hazards at work. Personnel must wear personal protective equipment during installation. Personal protective equipment is explained below:

Wear safety goggles when drilling and sawing

Wear cut-resistant work gloves during assembly

Wear safety shoes

Use fall protection

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

Wear hearing protection

STRUCTURE OF THE WARNINGS ACCORDING TO HAZARD LEVELS

The warnings used in these installation instructions indicate safety-relevant information. They consist of:

- Signal word and warning sign to indicate the hazard level
- Type and source of danger
- Consequences of ignoring the danger
- Escape (measures to avoid the danger)

WARNING SIGNS ACCORDING TO EN ISO 7010 - EXAMPLES

General

Hand injury

Risk of slipping

Risk of tripping

Electrical hazard

Cut injury

SIGNAL WORDS ACCORDING TO EN IEC/IEEE 82079

Personal injury
Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

Personal injury
Indicates a potential hazard which, if not avoided, will result in death or serious injury.

Personal injury
Indicates a potential hazard which, if not avoided, will result in death or serious injury.

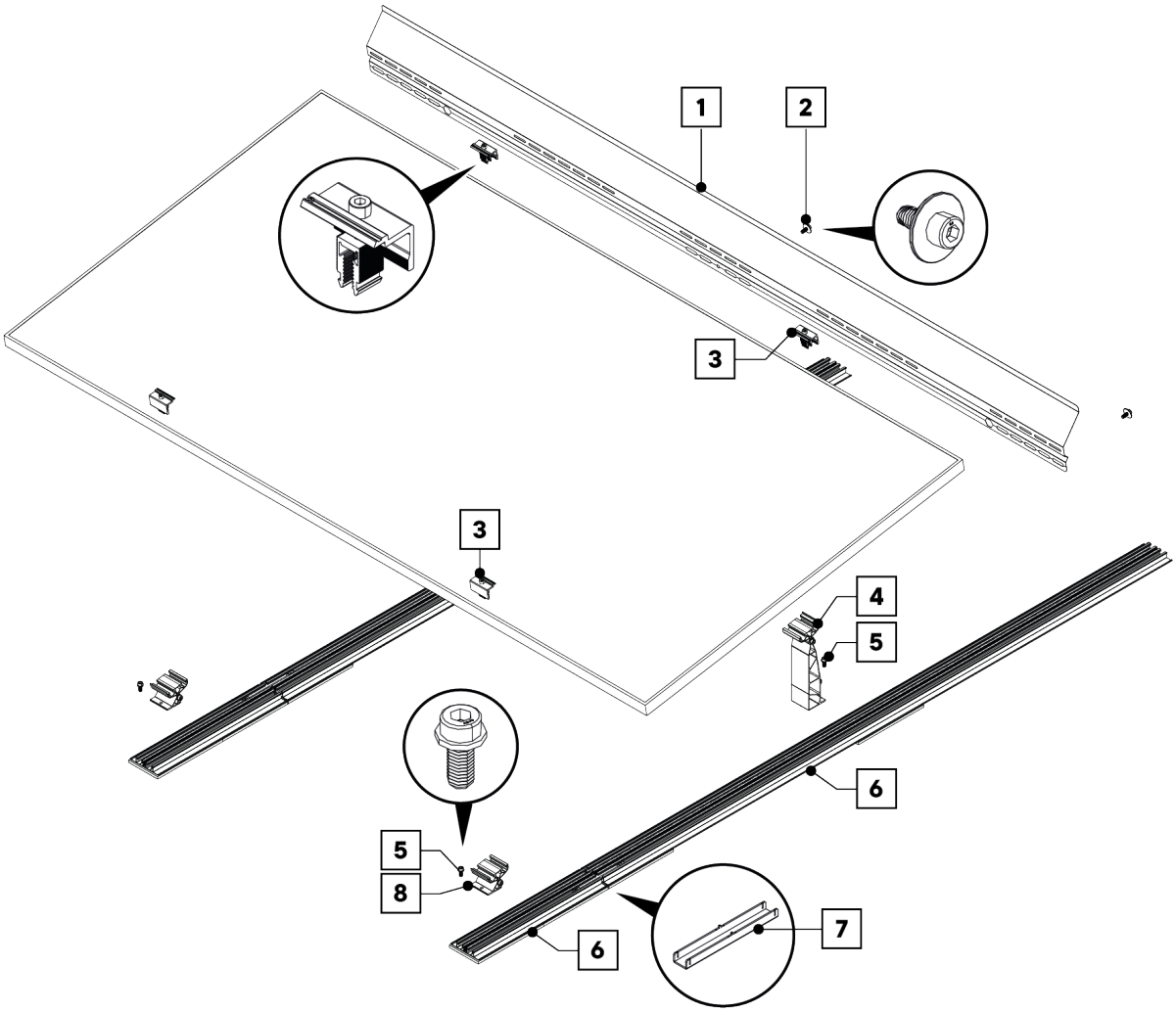
Material damage
Indicates a situation which, if not avoided, may cause damage to the product or other property.

ⓘ The information given here on warning signs covers the minimum requirements. However, there may be additional national, regional or project-specific requirements that must also be fully observed. Compliance with all relevant regulations is essential.

SYSTEM OVERVIEW

SN2 10°

CLAMPING TYPE: LONG SIDE CLAMPING
DESIGN: CONNECTED BASE RAILS



1 **Sx10WD-XXXX**
Wind deflector 10° | 1850, 2175, 2450 (mm)

2 **SCS8x20**
Tapping combi-screw M8x20

3 **CLE20**
End clamp Click 28 - 42 mm

4 **SNLS10RB**
SN rear bracket landscape 10°

5 **AB8x18S**
Allen head bolt M8x18 serration

6 **BR450 | BRW450**
Base rail 450 mm | Base rail wide 450 mm

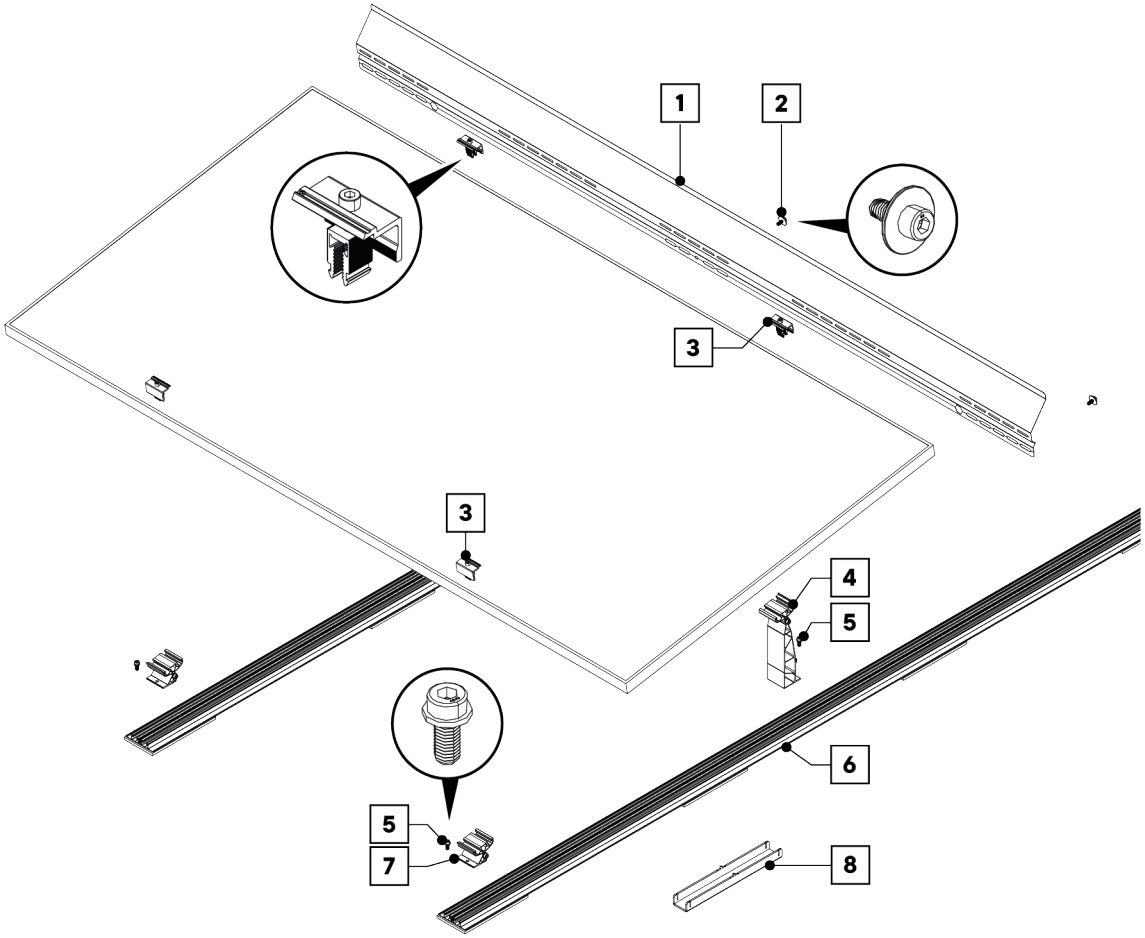
6 **BR900**
Base rail 900 mm

6 **BR1980 | BRW1980**
Base rail 1980 mm | Base rail wide 1980 mm

7 **BRCNSN**
Base rail connector SN

8 **SNLSFB**
SN Front bracket Landscape

CLAMPING TYPE: LONG SIDE CLAMPING
DESIGN: LONG BASE RAILS



1 **Sx10WD-XXXX**
Wind deflector 10° | 1850, 2175, 2450 (mm)

2 **SCS8x20**
Tapping combi-screw M8x20

3 **CLE20**
End clamp Click 28 - 42 mm

4 **SNLS10RB**
SN rear bracket landscape 10°

5 **AB8x18S**
Allen head bolt M8x18 serration

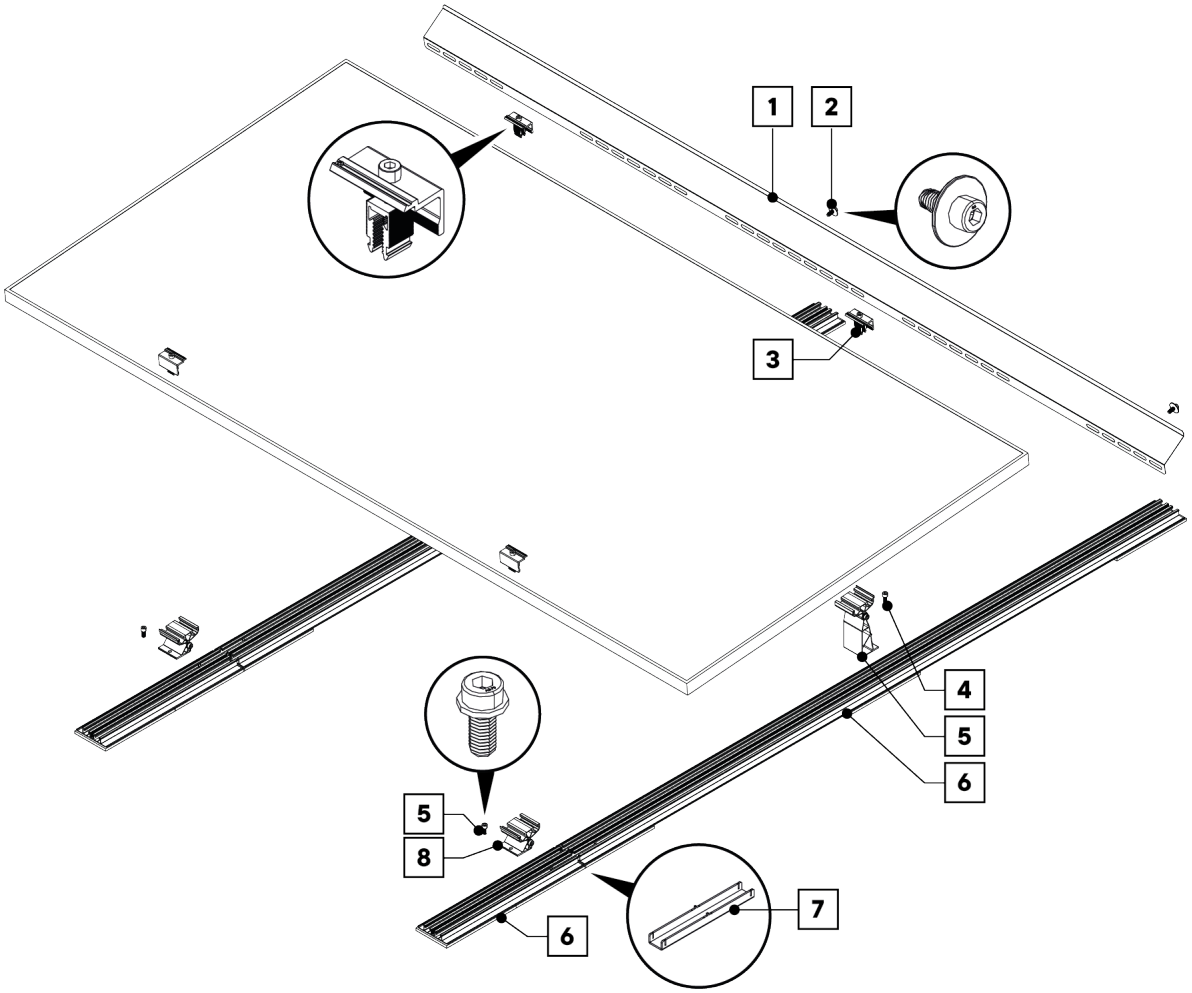
6 **BR5800**
Base rail 5800 mm

7 **SNLSFB**
SN Front bracket Landscape

8 **BRCNSN**
Base rail connector SN

SN2 5°

CLAMPING TYPE: LONG SIDE CLAMPING
DESIGN: CONNECTED BASE RAILS



1 **SN05WD-XXXX**
Wind deflector 5° | 1850, 2175, 2450 (mm)

2 **SCS8x20**
Tapping combi-screw M8x20

3 **CLE20**
End clamp Click 28 - 42 mm

4 **AB8x18S**
Allen head bolt M8x18 serration

5 **SNLS05RB**
SN rear bracket landscape 5°

6 **BR450 | BRW450**
Base rail 450 mm | Base rail wide 450 mm

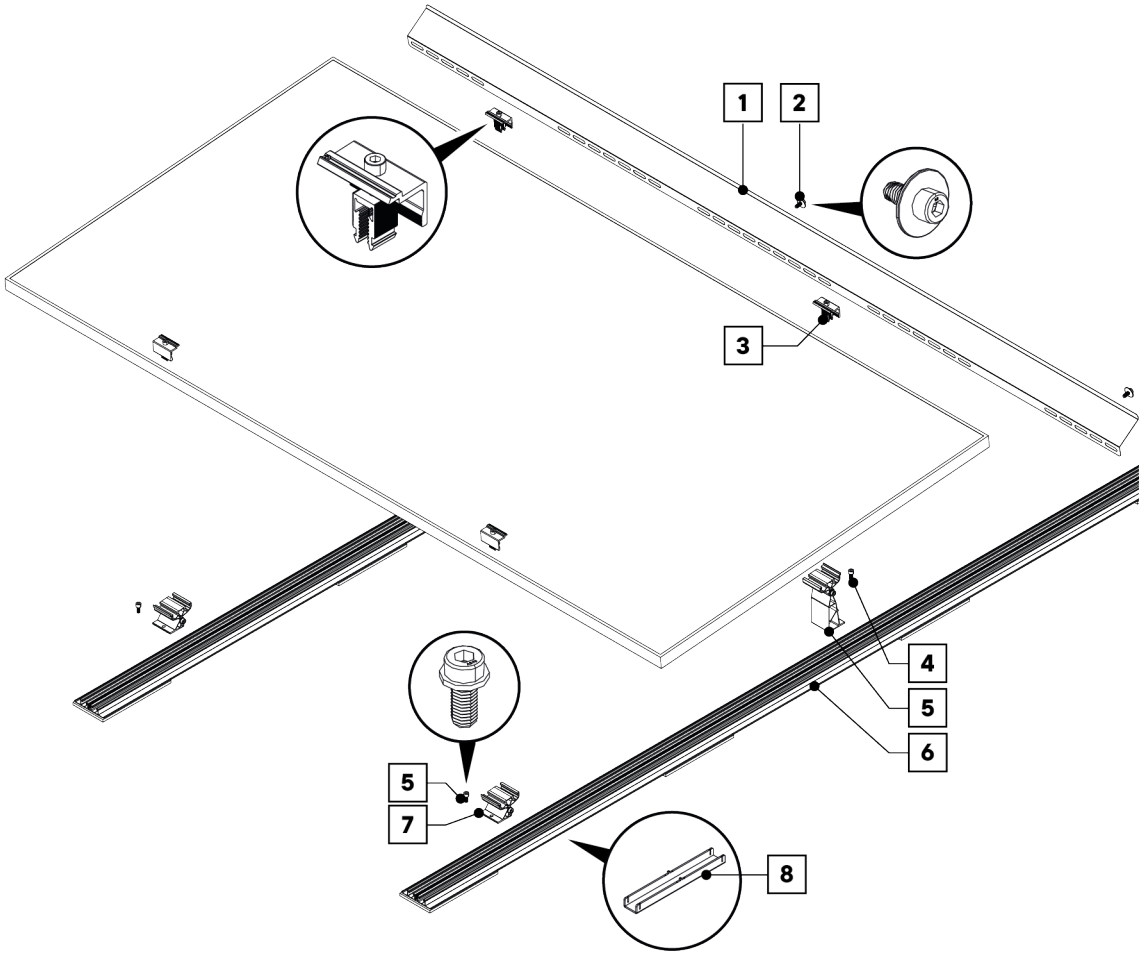
6 **BR900**
Base rail 900 mm

6 **BR1980 | BRW1980**
Base rail 1980 mm | Base rail wide 1980 mm

7 **BRCNSN**
Base rail connector SN

8 **SNLSFB**
SN Front bracket Landscape

CLAMPING TYPE: LONG SIDE CLAMPING
DESIGN: LONG BASE RAILS



1 **SN05WD-XXXX**
Wind deflector 5° | 1850, 2175, 2450 (mm)

2 **SCS8x20**
Tapping combi-screw M8x20

3 **CLE20**
End clamp Click 28 - 42 mm

4 **SNLS05RB**
SN rear bracket landscape 5°

5 **AB8x18S**
Allen head bolt M8x18 serration

6 **BR5800**
Base rail 5800 mm

7 **SNLSFB**
SN Front bracket Landscape

8 **BRCNSN**
Base rail connector SN

SYSTEM ACCESSORIES

S05WD-XXXX
5° Wind deflector | 1800, 2050, 2300, 2500 (mm)

SN-SP-1980
SN2 Mounting gauge for front brackets and rear brackets 1980 mm

BIT150E
Bit extension 150 mm

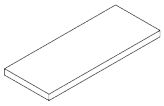
S10WD-XXXX
10° Wind deflector | 1800, 2050, 2300, 2500 (mm)

SN-SP-2500
SN2 Mounting gauge for base rails 2500 mm

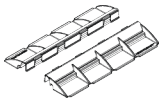
BIT6TXL
Double-blade bit 200 mm

BALLASTING ACCESSORIES

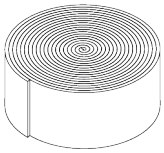
CSo-XXXX
Cross strut outer part 990 mm, 1150 mm, 1290 mm, 1380 mm



PP200/80
Building protection mat 200 x 80 x 10 mm, as a base for ballast stones and ballast trays



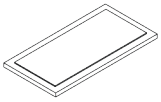
SNLDP
Load distribution plates for optimum load distribution



PP15-265
Building protection pad for SN2 ballast trays 21 m or 70 ft.

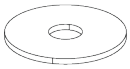
MSS6x25
Thin sheet metal screw 6x25

CSi-XXXX
Cross strut inner part 990 mm, 1150 mm, 1290 mm, 1380 mm

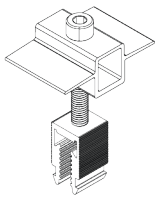


PP200/102
Building protection pad for additional underlay under the base rail

BT-1800 | BT-2050 | BT-2300 | BT-2500
Long ballast tray

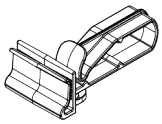


FW8.4/24
Washer 8,4x24

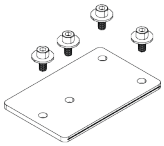


CLB10
Ballast clamp for ballast blocks (ballast stone height from 38 - 62 mm)

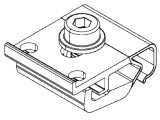
CABLE MANAGEMENT



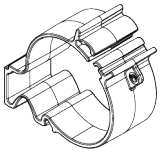
CLP-U
Cable clip universal



SNCP125
Connecting plate BR125x80



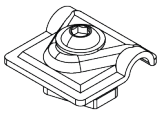
OC-GA
Optimizer clamp universal



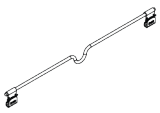
SNCLP-R
Cable clip SN2 rail

CLP-M
Cable tie clip for module frames with a thickness of 1 - 3 mm

EQUIPOTENTIAL BONDING ACCESSORIES

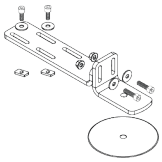


WCL8-10
Wire clamp 8 - 10 mm

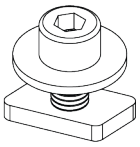


BJ8
Earthing jumper 200 mm (UL 467 and UL 2703 compliant)

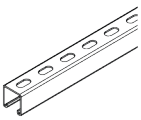
ROOF ANCHOR CONNECTION



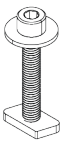
APA-BR
Connection bracket set for single roof anchor connection
(supplied in unassembled condition).



SCR-GA
Screw connection for general accessories



AR1352 | AR1652 | AR2552
Rail for anchor attachment in the lengths 1352 mm, 1652 mm, 2552 mm



SCR-DA
Bolting set for anchor channel AR1352 | AR1652 | AR2552

ASSEMBLY

ASSEMBLY PREPARATION

Required tools for assembly

ⓘ Before starting the assembly, make sure that the assembly personnel are familiar with the proper use of the listed tools.

Bit hexagon socket 6 mm

Bit TORX T40

Measuring tape

Chalk line

Torque wrench 10 - 30 Nm with hexagon socket bit 6mm

Cordless screwdriver

Socket bit 8 mm

INFORMATION ON MOUNTING ON GRAVEL ROOFS

ⓘ According to the planning documents, the installation of the system takes place either directly on the seal or the protective fleece (coefficient of friction 1.5) or freely on the gravel (coefficient of friction 0.3).

INSTALL THE SYSTEM ON WATERPROOFING OR PROTECTIVE FLEECE

✓ Height of gravel fill: 30 - 60 mm

ⓘ Due to possible damage to the roof waterproofing caused by excessive linear/surface loads, it is not recommended to install the system on a gravel layer of less than **60 mm**.

☐ Carefully remove the gravel in the area of the module field.
☐ Install the system directly on the waterproofing or on the protective fleece.

SET UP THE SYSTEM ON THE GRAVEL

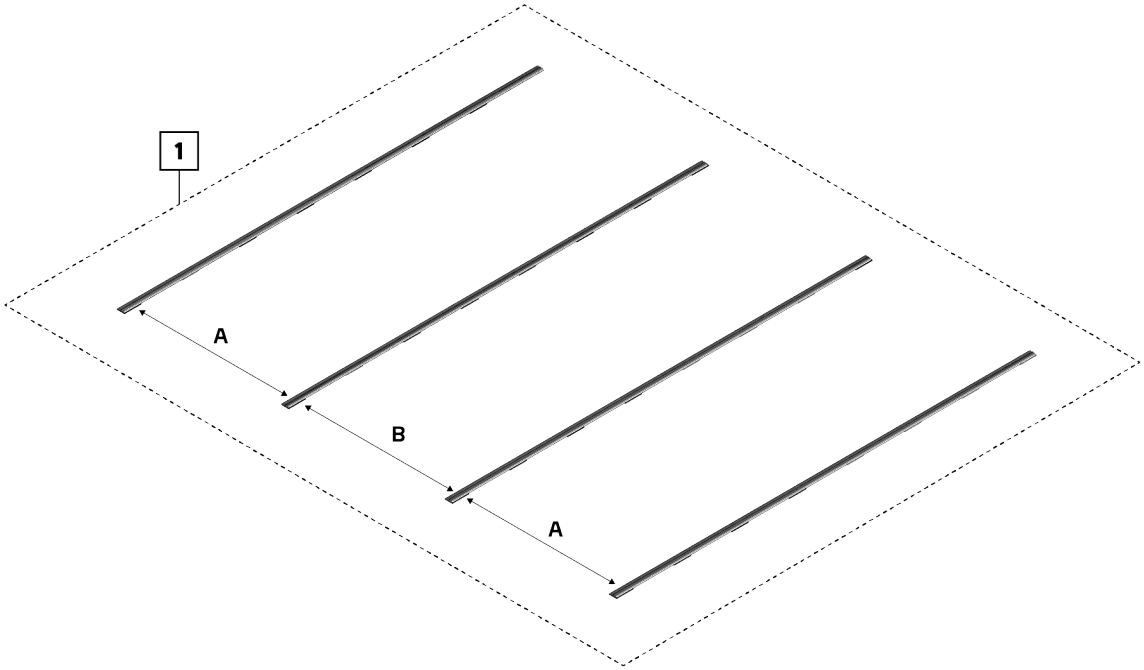
✓ The height of the gravel bed is 60 – 100 mm and protective fleece (min. 300 g/m²) is available or
✓ the gravel fill is 100 mm or more.

☐ Place the system on the gravel.

MEASURE THE MODULE FIELD

Important:
Before starting installation, compare the dimensions of the module array and the distances to the edge of the module array with the **planning documents** to ensure correct installation.

DISTANCE BASE RAILS



- Measure and mark the distance from the first base rail to the edge of the module field (1).
- Measure the distances between the base rails: **A = 1/2 of the module length | B = 1/2 of the module length + 2 cm** and mark.

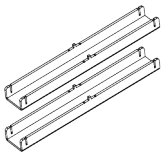
Attention:
- Observe the module manufacturer's clamping specifications
- Note the length of the cross struts

A mounting gauge is available as an optional accessory for positioning the base rails. The instructions for this can be found in the "SN2 assembly gauge" chapter.

BASE RAIL CONNECTOR

ⓘ Two base rails are connected using the base rail connectors. Due to thermal expansion, it is essential to install the base rail connectors in **a floating position**.

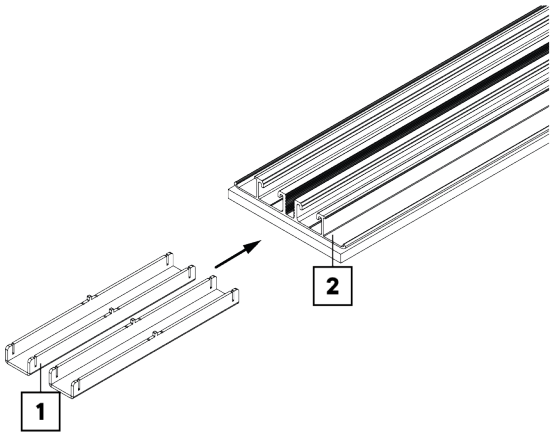
REQUIRED COMPONENTS



BRCNSN
Base rail connector SN

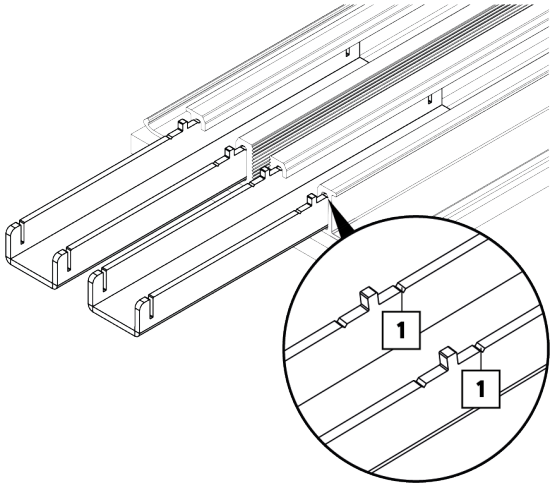
ASSEMBLY

☐ Insert the two base rail connectors (1) at the base rail (2).

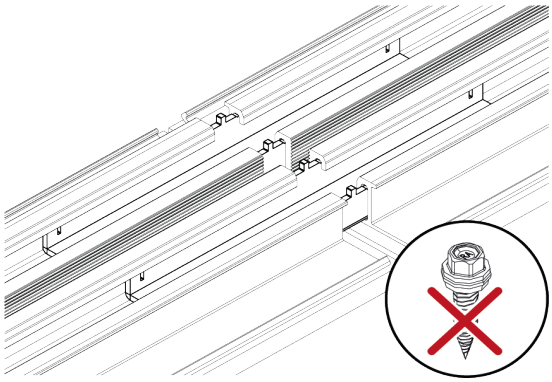


ⓘ The base rail connector has a notch (1) on both sides. This marks how far the connector must be pushed in.

☐ Insert the base rail connectors up to the notch (1).



ⓘ The base rail connectors must **not** be screwed together!



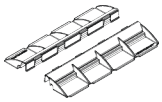
INCREASE BASE RAIL CONTACT SURFACE (OPTIONAL)

ⓘ To increase the support surface of the system, 2 base rails can be attached to the SN:

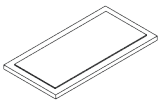
- additional **building protection pads** must be fitted,
- **Load distribution plates** can be mounted,
- or **wide base rails** can be used.

The different versions of the base rails can be found on the **planning documents**. The **work steps** and **variants** are described below.

REQUIRED COMPONENTS



SNLDP
Load distribution plates for optimum load distribution

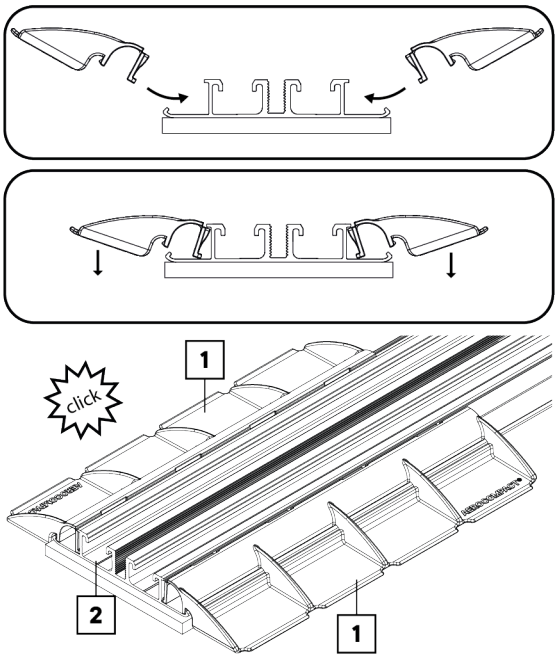


PP200/102
Building protection pad for additional underlay under the base rail

MOUNT LOAD DISTRIBUTION PLATES (SNLDP)

☐ Position the two load distribution plates (1) on the left and right of the base rail (2) as shown in the illustration.
☐ Then press the load distribution plates (1) down until they click into place.

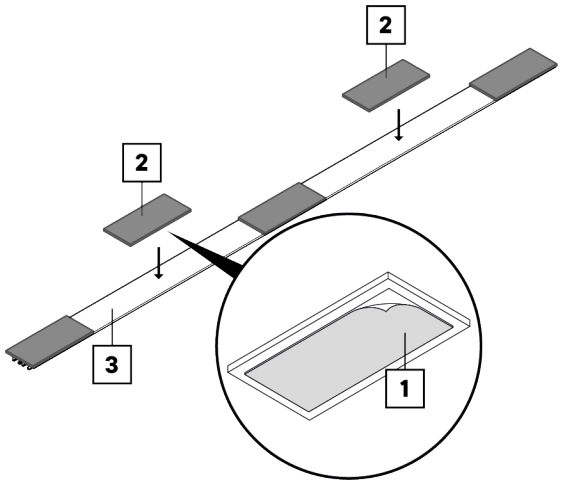
ⓘ **Important**!
The load distribution plates may **only** be fitted at the points on the base rail where there is also a building protection pad.



INSTALLING BUILDING PROTECTION PADS (PP200/12)

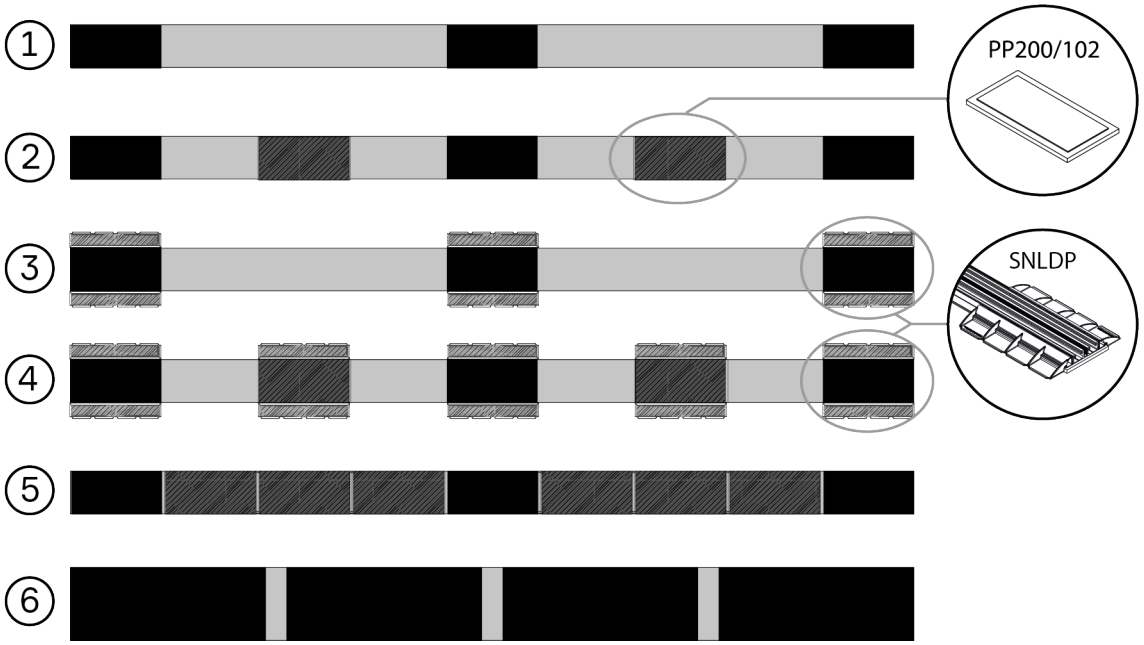
☐ Remove the protective film (1) of the butyl tape from the building protection pads (2).
☐ Then attach the building protection pads (2) to the underside of the base rail (3).

ⓘ The number of building protection mats can be found at the planning documents. The different variants are shown below.



Design example

ⓘ The following example shows the different versions of the base rail**(L = 1980 mm**).

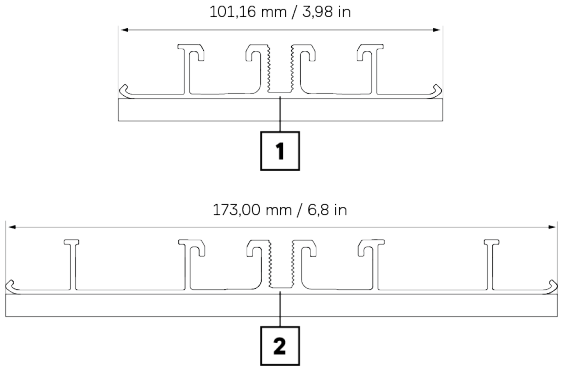


ADDITIONAL BUILDING PROTECTION PADS AND LOAD DISTRIBUTION PLATES

	Type	Base rail 450 mm		Base rail 900 mm		Base rail 1980 mm		Base rail 5800 mm	
		PP200/102	**SNLDP**	**PP200/102**	**SNLDP**	**PP200/102**	**SNLDP**	**PP200/102**	**SNLDP**
1	Standard	- -	- -	- -	- -	- -	- -	- -	- -
2	Extended	- -	- -	1 pc	- -	2 pcs	- -	7 pcs	- -
3	Standard + Load distribution plates	- -	4 pcs	- -	4 pcs	- -	6 pcs	- -	16 pcs
4	Extended + Load distribution plates	- -	4 pcs	1 pc	6 pcs	2 pcs	10 pcs	7 pcs	30 pcs
5	Full padding	- -	- -	2 pcs	- -	6 pcs	- -	14 pcs	- -
6	Wide base rail	- -	- -	- -	- -	- -	- -	- -	- -

DIMENSION WIDTH BASE RAIL

ⓘ The installation sequence in these instructions is identical for the standard base rail (1) and the wide base rail (2). The SN2 components are compatible with both base rails*.



Attach building protection pads to cut-to-size base rails

ⓘ The base rails can be cut to size for the following reasons:
- For thermal separation
- If the base rails protrude beyond the module field.

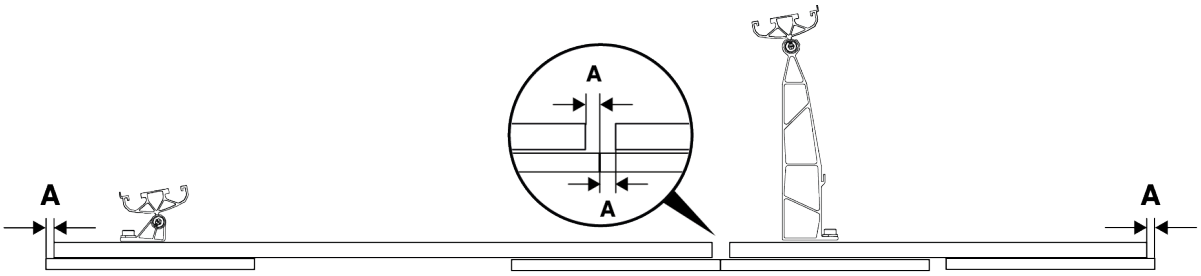
To secure the roof cladding, building protection mats **must** be fitted below the base rails at the separation points. If a building protection mat is already in place at a separation point, it must be **removed**.

DANGER

Danger from cuts

Skin contact with sharp edges can cause cuts.

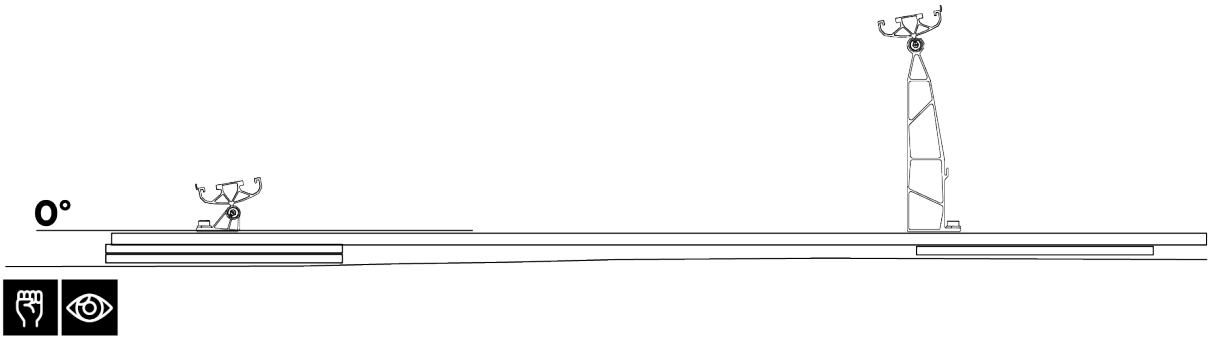
☒ **Wear safety gloves**
☒ **Handle with care**



☒ It is necessary to attach building protection pads to the ends of the base rails. The overhang of the building protection pads is **A = 6 mm** in each case.

BUILDING PROTECTION PADS FOR LEVEL COMPENSATION

ⓘ In the event of unevenness, additional **building protection pads** can be placed underneath to level the floor.



Place the required building protection pads under the base rail until an angle of inclination of **0°** is reached.

SN2 MOUNTING GAUGE

Positioning the base rails

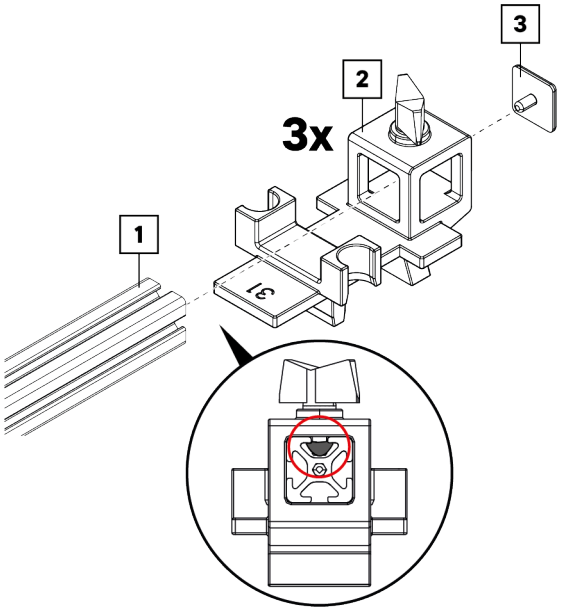
REQUIRED COMPONENTS

SN-SP-2500
SN2 Mounting gauge for base rails 2500 mm

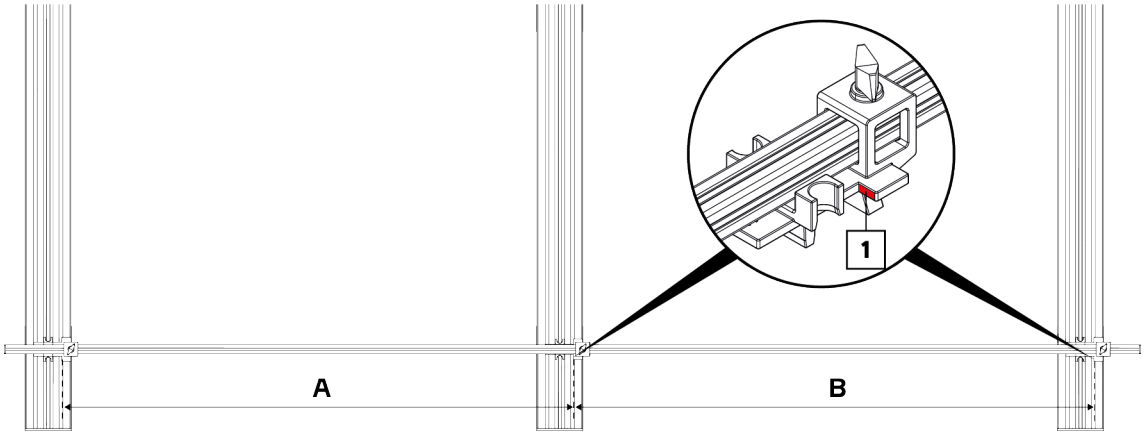
INSERT SPACER

- Insert **3 pcs.** spacers (2) into the guide rail (1).
- Then mount the end cap (3).

ⓘ When inserting the spacers, make sure that the sliding block is positioned correctly (see illustration).



POSITIONING THE SPACER



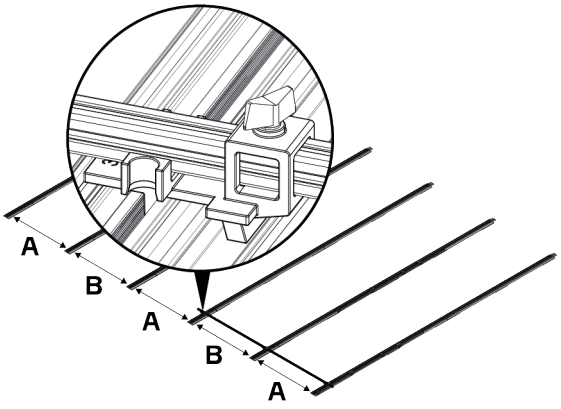
- When measuring, ensure that the **same point** (1) is measured for each spacer.
- Distribute and measure the spacers. **A = 1/2 of the module length | B = 1/2 of the module length + 2 cm**
- Then tighten the locking screw.

ⓘ **Attention**:
- Observe the module manufacturer's clamping specifications
- Note the length of the cross struts

USE MOUNTING GAUGE

☑ The mounting gauge is now prepared for the placement of the base rails and can be positioned as shown in the illustration.

ⓘ Place the mounting gauge horizontally along the base rails several times to ensure **parallelism**.



Position brackets.

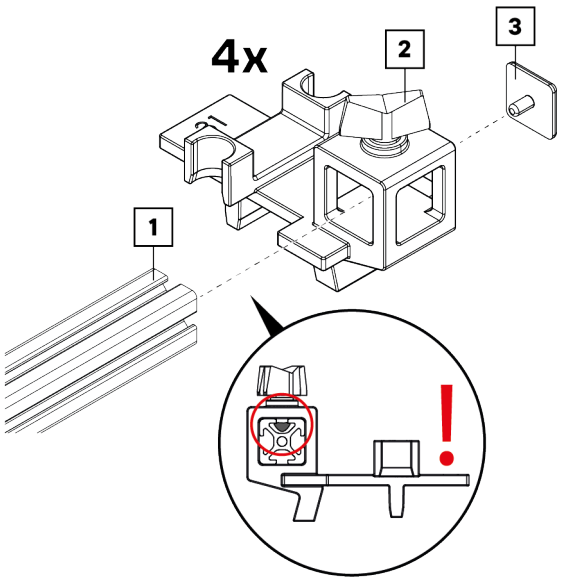
REQUIRED COMPONENTS

SN-SP-1980
SN2 Mounting gauge for front brackets and rear brackets 1980 mm

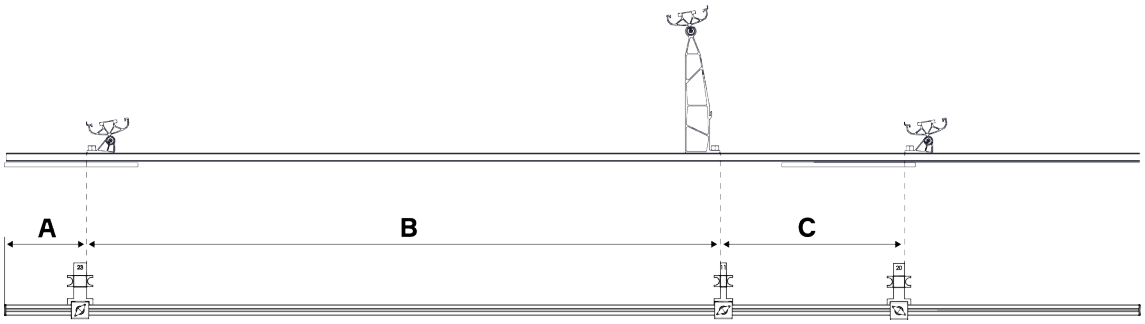
INSERT SPACER

☑ Insert **4 pcs.** spacers (2) into the guide rail (1).
☑ Then mount the end cap (3).

ⓘ When inserting the spacers, make sure that the sliding block is positioned correctly (see illustration).



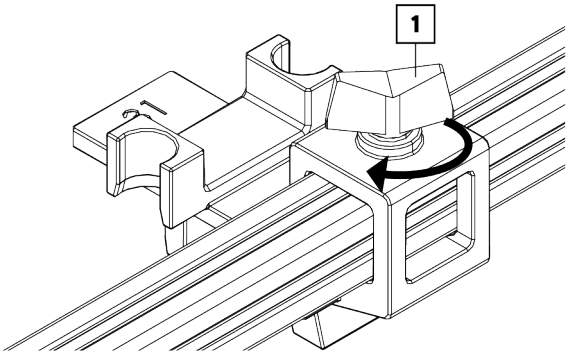
POSITIONING THE SPACER



☒ Take the dimensions **A**, **B** and **C** from the planning documents.
☒ Measure the spacers and position them as shown in the illustration.

FIXING SPACER

☒ After positioning, tighten the spacers with the locking screw (1).

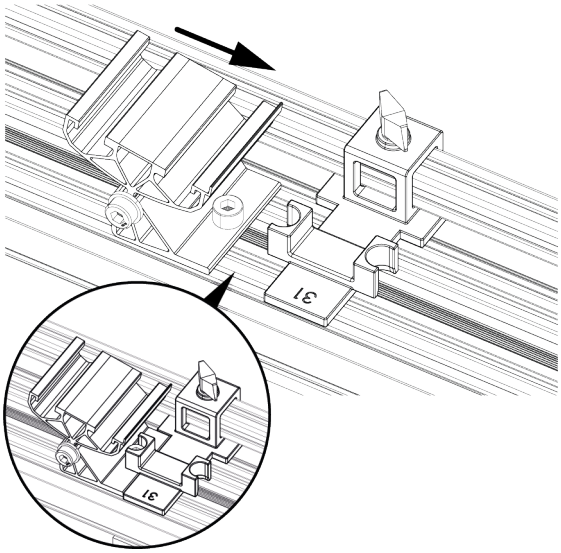


MOUNT BRACKET

EXAMPLE FRONT BRACKET (SNLSFB)

☒ Place the bracket to the mounting gauge and mount it.

ⓘ The steps for assembly the brackets can be found in the "**Fitting the feet**" section.

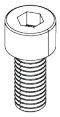


MOUNT BRACKETS

Mount front bracket

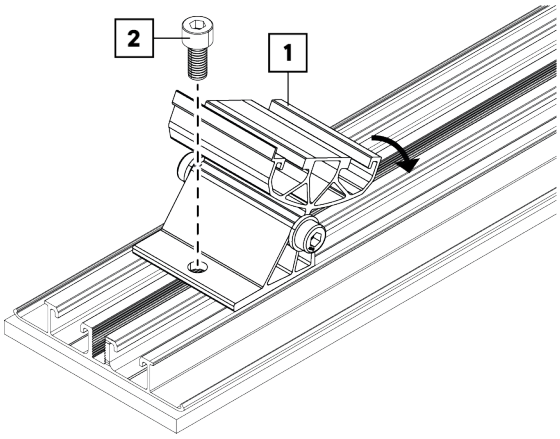
REQUIRED COMPONENTS

SNLSFB
SN Front bracket Landscape



AB8x18S
Allen head bolt M8x18 serration

- Mount the front braket (south side) on a BR450 base rail.
- Tilt the bracket rocker backwards as shown in the illustration.
- Then tighten the screw (2) with a torque of 15 Nm or 11 lb-ft.

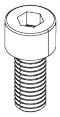


Important!
Never use an impact or impulse wrench when installing the components. The use of a bit extension is recommended for fastening the bracket.

Mount rear bracket 5°

REQUIRED COMPONENTS

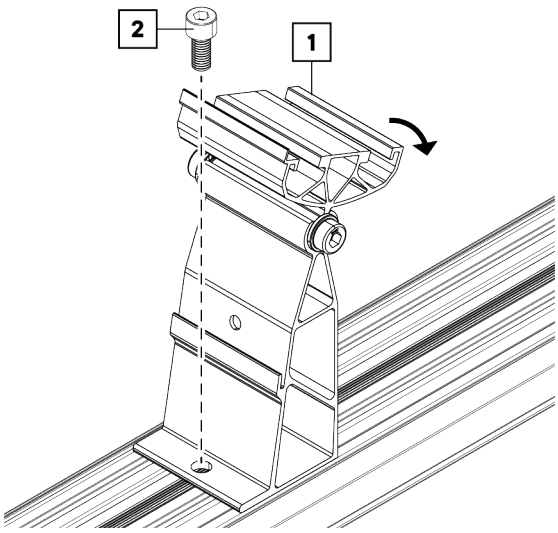
SNLS05RB
SN Rear Bracket Landscape 5°



AB8x18S
Allen head bolt M8x18 serration

BIT150E
Bit extension 150 mm

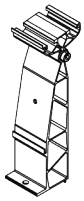
- Position the rear bracket (1) on the base rail.
- Tilt the bracket rocker backwards as shown in the illustration.
- Then tighten the screw (2) with a torque of 15 Nm or 11 lb-ft.



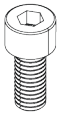
Important!
Never use an impact or impulse wrench when installing the components. The use of a bit extension is recommended for fastening the bracket.

Mount rear bracket 10°

REQUIRED COMPONENTS



SNLS10RB
SN Rear Bracket Landscape 10°

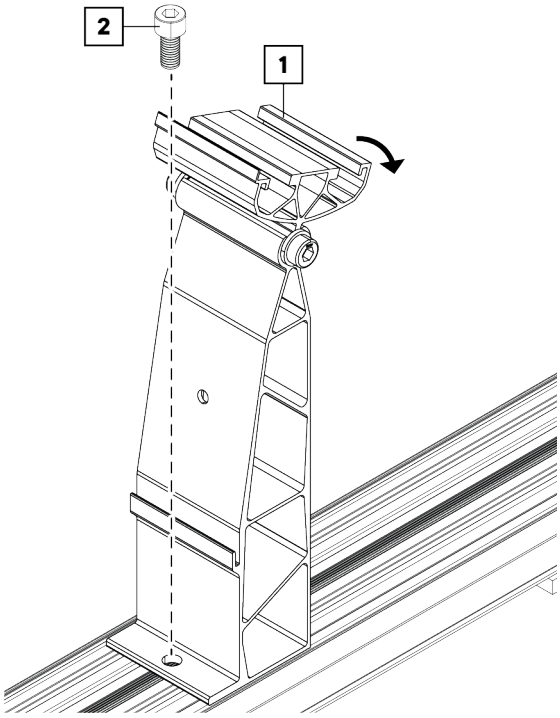


AB8x18S
Allen head bolt M8x18 serration

BIT150E
Bit extension 150 mm

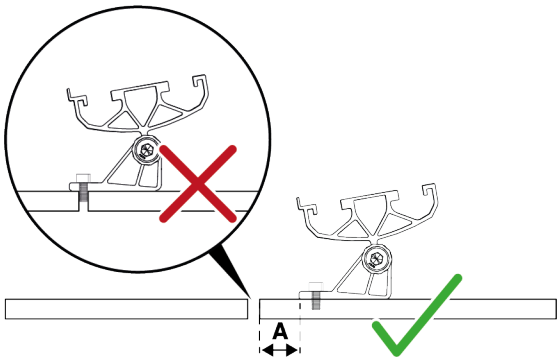
- Position the rear bracket (1) on the base rail.
- Tilt the bracket rocker backwards as shown in the illustration.
- Then tighten the screw (2) with a torque of 15 Nm or 11 lb-ft.

Important!
Never use an impact or impulse wrench when installing the components. The use of a bit extension is recommended for fastening the bracket.



INSTALLATION IN THE JOINT AREA OF THE BASE RAILS

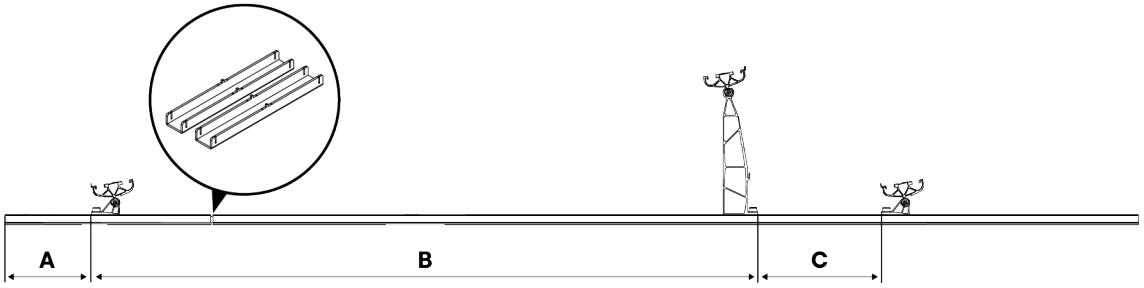
For connected base rails, make sure that the brackets are not screwed in the joint area between two base rails. **A** distance of at least **A = 20 mm** must be maintained from the joint area.



Variants

ⓘ The following variants apply to both the **5° system** and the **10° system**; the work steps are identical.

CONNECTED BASE RAIL



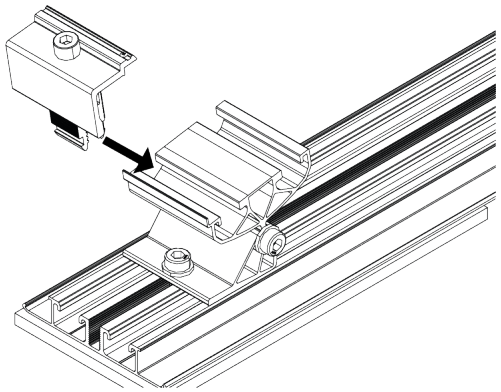
LONG BASE RAIL

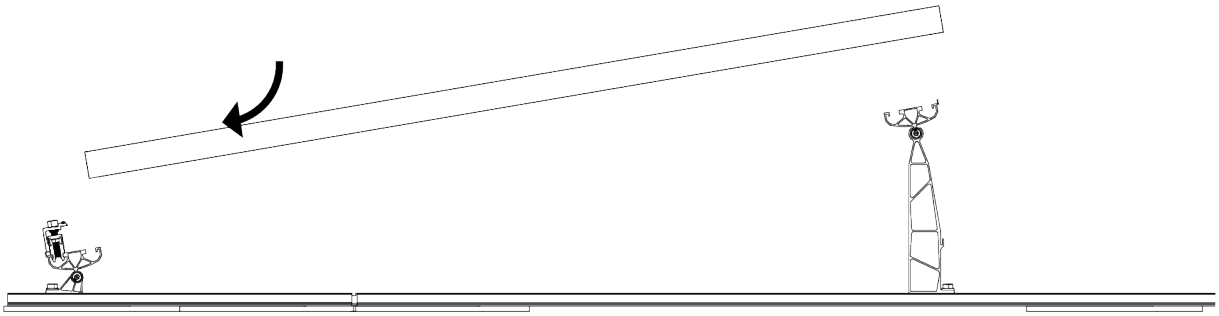
An assembly gauge is available as an optional accessory for positioning the front bracket and rear bracket. The instructions for this can be found in the chapter "SN2 Montagelehre" auf Seite 1.

INSTALLING THE MODULES

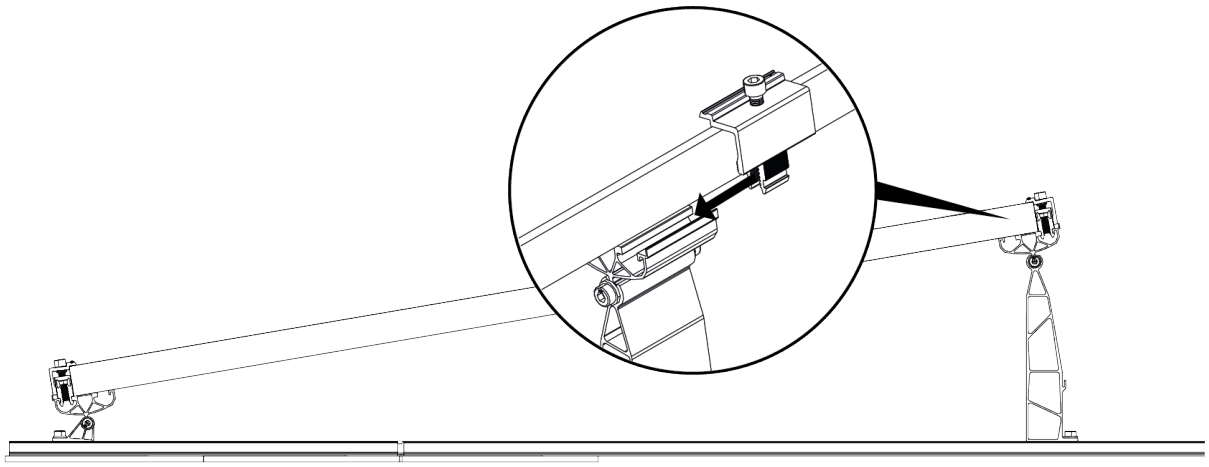
ⓘ The assembly of the modules begins in the southernmost row.

☐ At the front brackets in the outer clamping channel, push in the end clamps at the side.



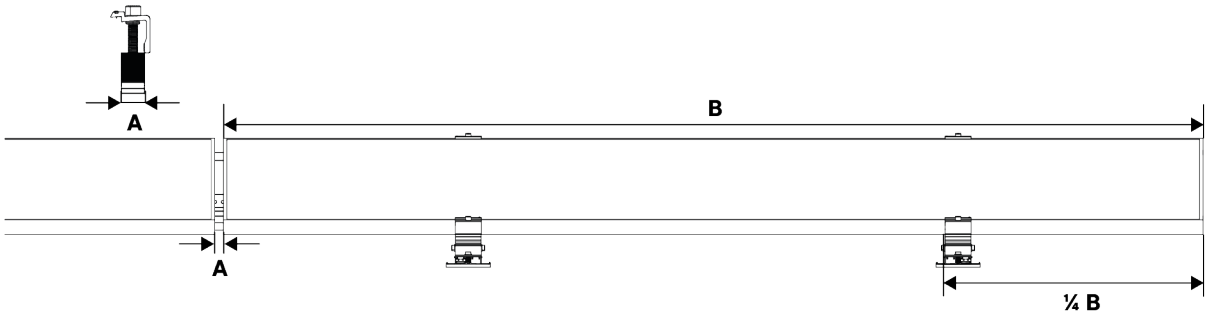


☐ Place the module flush with the end terminals.



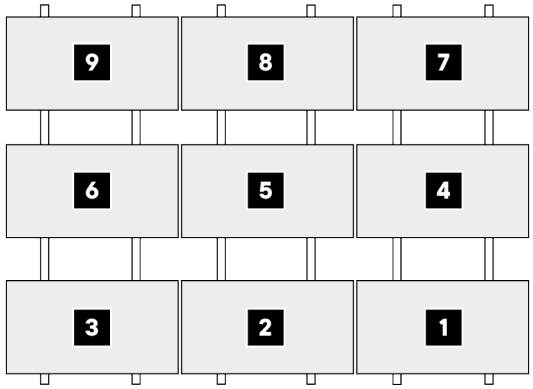
☐ Insert the end clamp as shown in the figure.

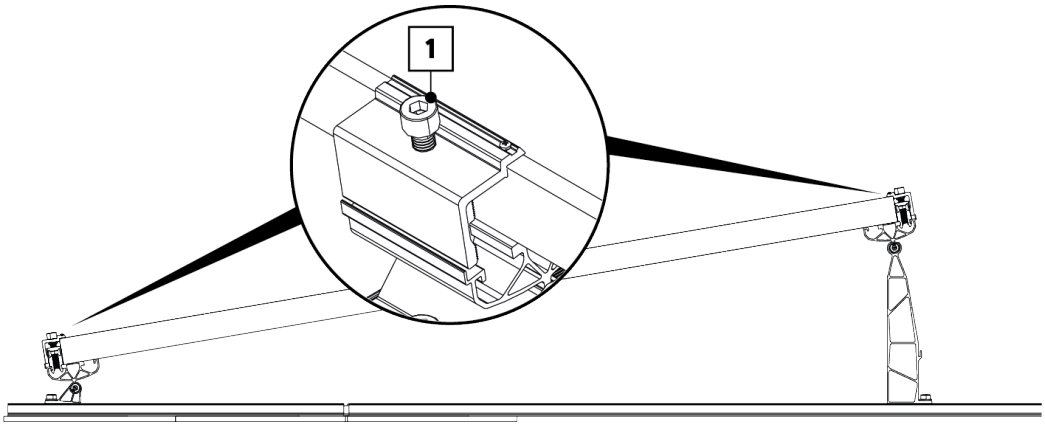
ⓘ It is important to ensure that the module is flush on the upper side; if necessary, the rear bracket must be moved.



The distance (A) between the modules is 2 cm. As an aid 2 clamps can be used as gauges.
Clamp position: according to the module manufacturer's clamp position recommendation, if permissible 1/4 of the module length B, measured from the respective module edge.

- Continue mounting the modules row by row.
- Align the rail lines as required.





- Tighten the screws at the end terminals with 15 Nm or 11 ft lb each.

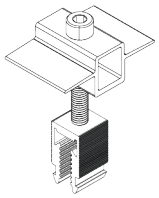
REPOSITION / REPLACE CLAMPS

- Dismantle the mounted clamp: Unscrew the screw on the clamp completely.
- Depending on the installation situation, press the clamp together at the side and pull it out or pull it out of the rail at the side.

BALLASTING

Ballast clamp

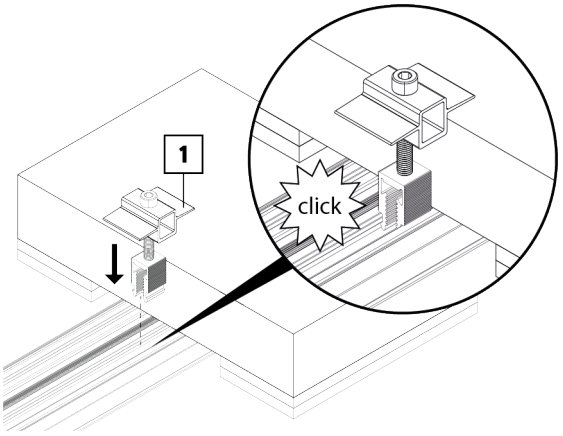
REQUIRED COMPONENTS



CLB10
Ballast clamp for ballast blocks
(ballast stone height from 38 - 62 mm)

MOUNT BALLAST CLAMP

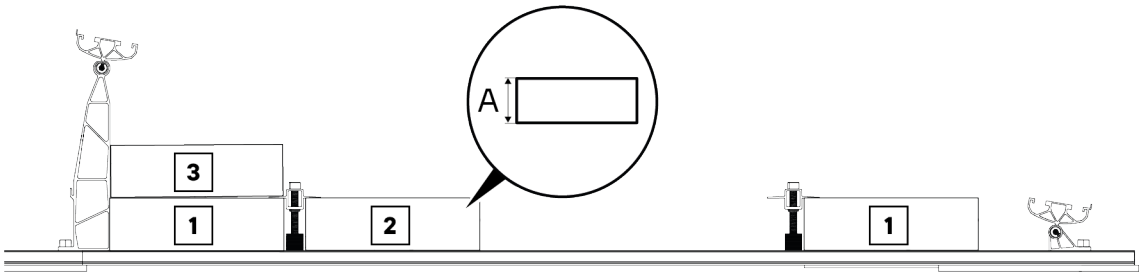
☐ Click the ballast clamp (1) onto the side of the ballast block.



ⓘ **Important!**
During installation, ensure that the ballast clamp (1) is in contact with the ballast block to prevent the ballast clamp from twisting.

PLACE BALLAST BLOCKS

ⓘ The ballast clamp can be used to attach up to **two** ballast blocks. It is possible to arrange several ballast blocks on top of each other. From the **third layer** onwards, secure fastening is the responsibility of the **specialist personnel**.

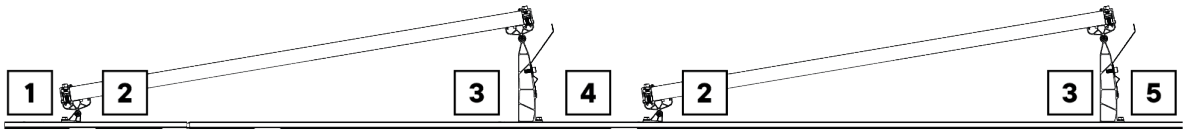


ⓘ The ballast clamp is designed for ballast blocks with a height of **A = 40 - 60 mm** suitable.

☐ Place the ballast blocks (1-2) in accordance with the planning documents.
☐ Tighten the ballast clamps to a torque of 15 Nm or 11 lb-ft.
Important: Make sure that the wings of the ballast clamp are flush with the ballast blocks.
☐ Place the other ballast blocks (3) on top.

Positioning the ballast

CONNECTED AND LONG BASE RAIL VARIANT



The ballast can be placed in the following positions:

1 in front of the module (south side)

2 below the module

3 below the module

4 between the module rows

5 behind the module (north side)

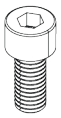
Mount cross struts

ⓘ The **number**, **position** and **lengths** of the cross struts can be found in the planning documents.

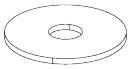
REQUIRED COMPONENTS

CSi-XXXX
Cross strut inner part 990 mm, 1150 mm, 1290 mm, 1380 mm

CSo-XXXX
Cross strut outer part 990 mm, 1150 mm, 1290 mm, 1380 mm



AB8x18S
Allen head bolt M8x18 serration

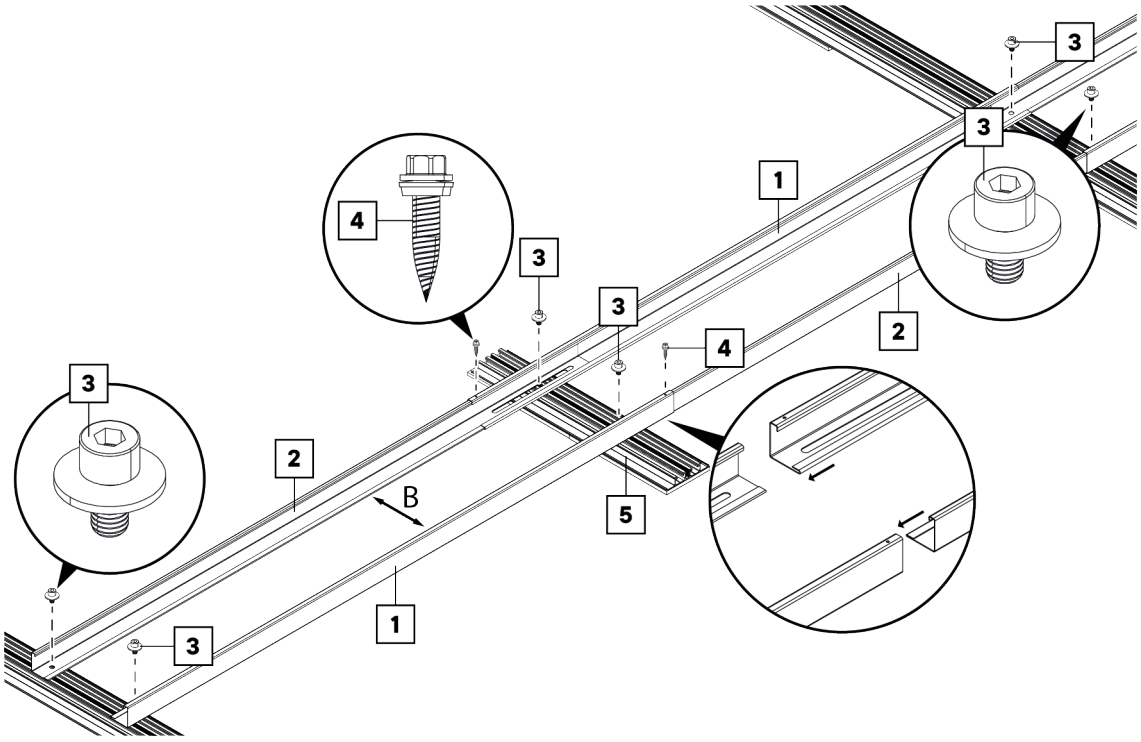


FW8.4/24
Washer 8,4x24

MSS6x25
Thin sheet metal screw 6x25

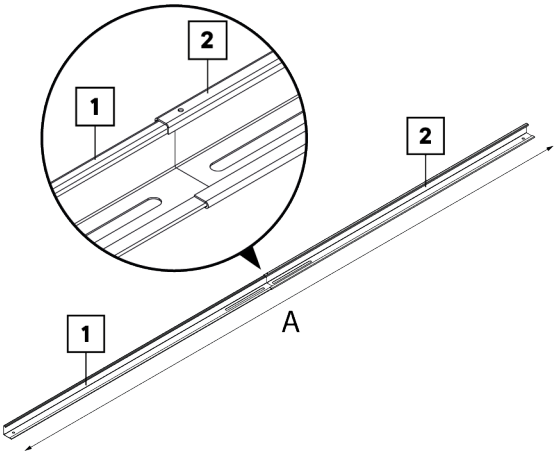
BR450
Base rail 450 mm

MOUNT CROSS STRUTS



- Use the outer part (1) and inner part (2) of the cross strut alternately and slide them into each other.
- Place the cross struts on the base rails according to the position indicated in the **planning documents** .
- **Important!** Note the width (B) of the ballast blocks.
- Tighten the Allen screws AB8x18S with a torque of 10 Nm or 7.3 lb-ft.
- Then screw in the MSS6x25 screws at the connection points of the cross struts.

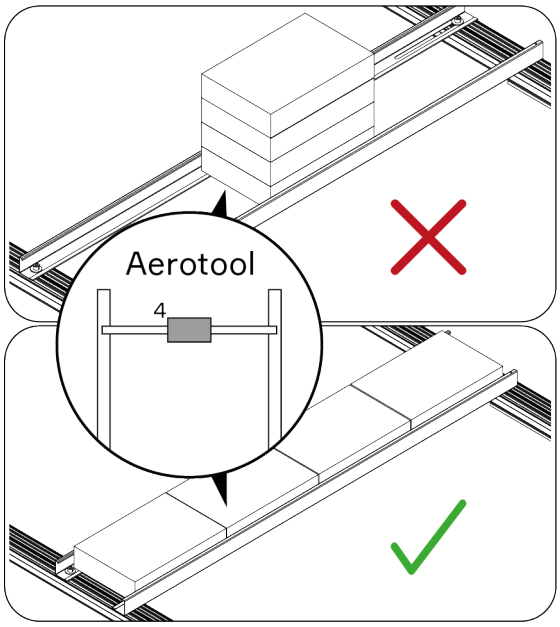
JOIN CROSS STRUTS (OPTIONAL)



Important! The necessity of joining cross struts can be found in the **planning documents**.

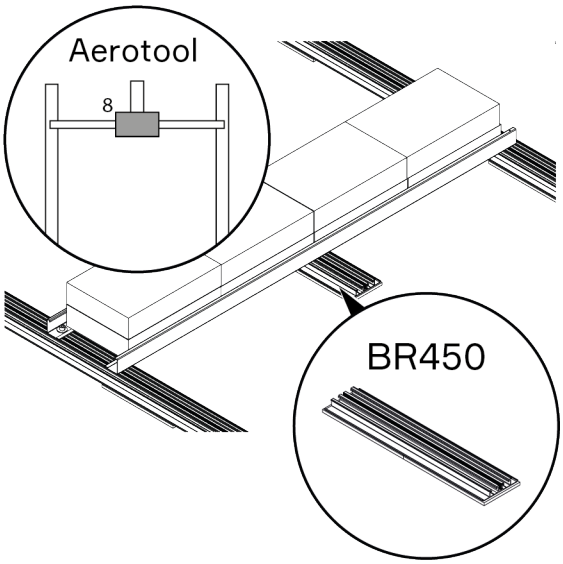
- Slide the inner part (1) into the outer part (2).
- Determine the distance **(A)** according to the base rail spacing and observe the **planning documents**.

CORRECT DISTRIBUTION OF THE BALLAST STONES ALONG THE CROSS STRUTS



Recommendation!
Make sure that the ballast blocks are always distributed along the cross struts, avoid **stacking** if possible. In the example shown, the number of ballast blocks in **AEROTOOL** is represented by a number.

UNDERLAY ADDITIONAL BASE RAIL BR450 (OPTIONAL)

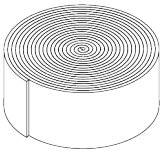


Important! Depending on the number of ballast blocks, additional **BR450** base rails are placed centrally under the cross struts. The exact **number** and **position** of the additional base rails can be found in the **planning documents** .

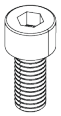
Installing gravel ballast trays

REQUIRED COMPONENTS

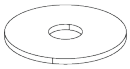
BT-1800 | BT-2050 | BT-2300 | BT-2500
Long ballast tray



PP15-265
Building protection pad for SN2 ballast trays 21 m or 70 ft.



AB8x18S
Allen head bolt M8x18 serration



FW8.4/24
Washer 8,4x24

MOUNT MOUNTING RAIL

WARNING

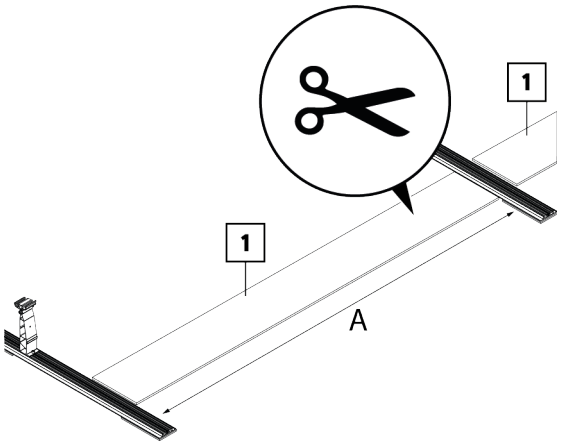
Risk of injury from sharp objects

Cuts from sharp objects can cause severe bleeding.

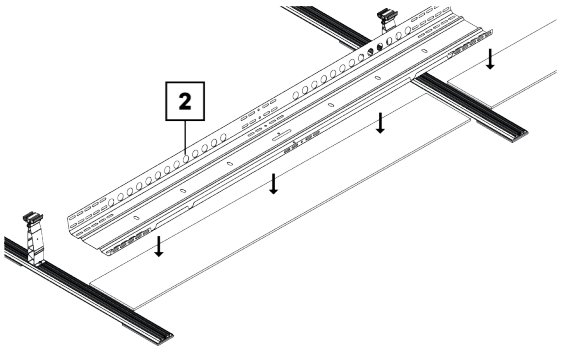
☐ **Wear safety gloves**

Important!
Before laying the building protection mat, ensure that the substrate is free of dirt, small stones or other objects.

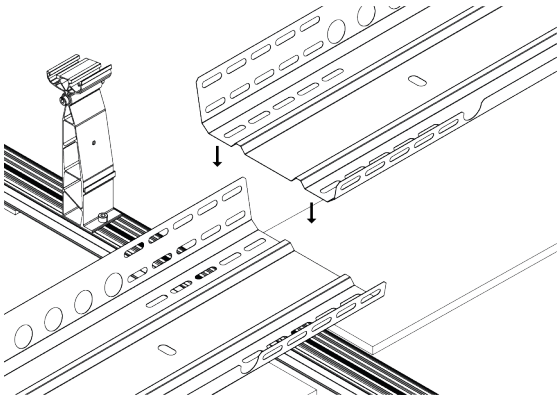
☐ Determine the length between the base rails **(A)**
☐ Cut and position the building protection mat PP15-265 (1) accordingly.



☐ Place the ballast tray (2) over the building protection mat

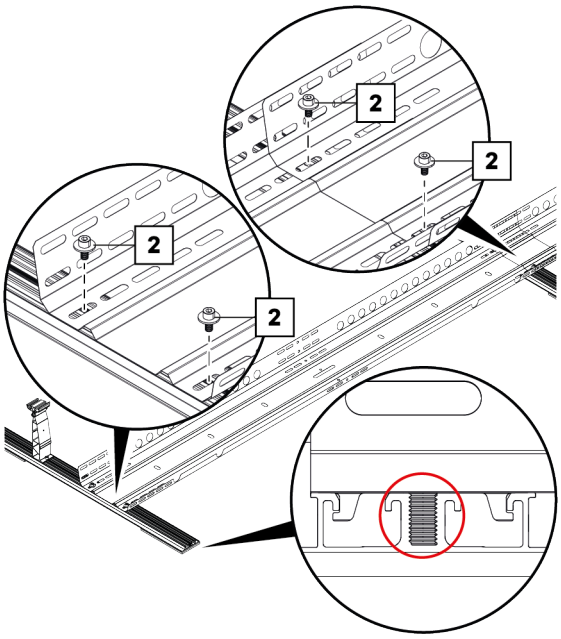


Important!
When overlapping the ballast trays, make sure that the overlap is at the base rails.

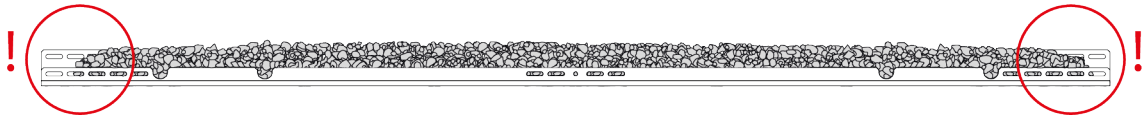


Then screw in the ballast tray at the support points on the base rail using two AB8x18S screws and FW8.4/24 washers and tighten to a torque of 10 Nm or 7.38 ft-lb.

Ensure that the screws are screwed into the channel provided on the base rail (see illustration).

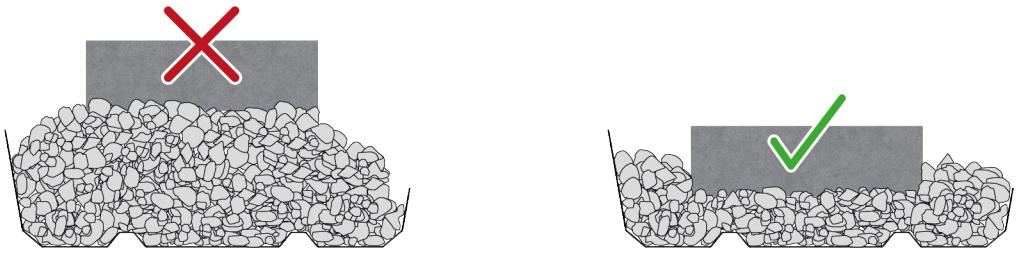


FILLING THE BALLAST TRAYS



Make sure that the gravel is evenly distributed and runs out flat at the ends - see illustration.

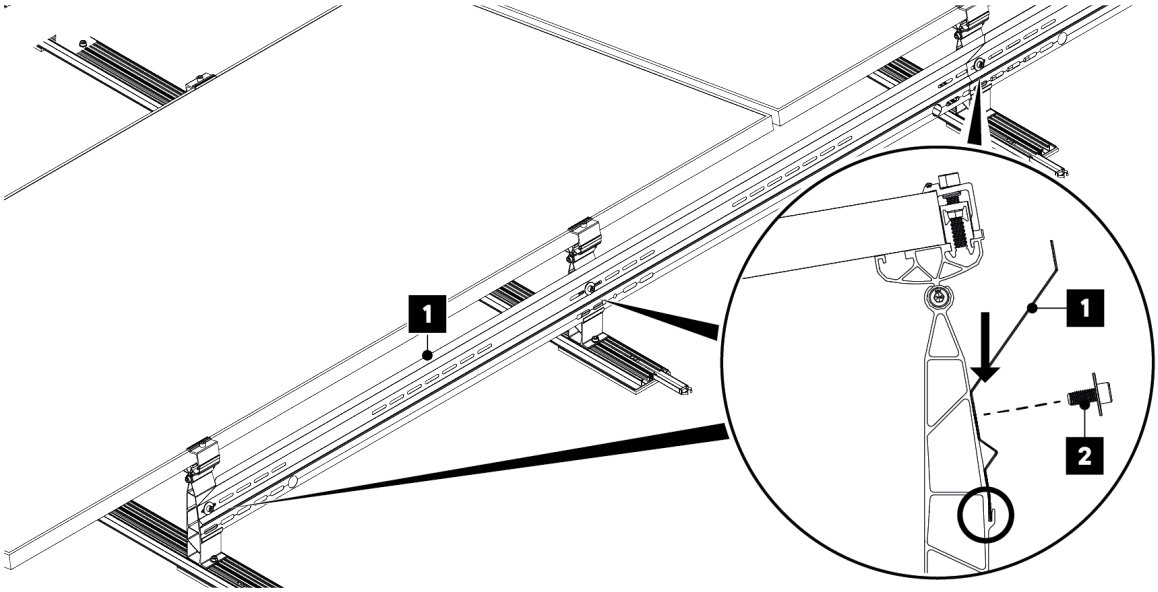
PLACING BALLAST STONES IN COMBINATION WITH GRAVEL



Important: Ballast blocks must not protrude beyond the ballast tray.

INSTALLING THE WIND DEFLECTORS

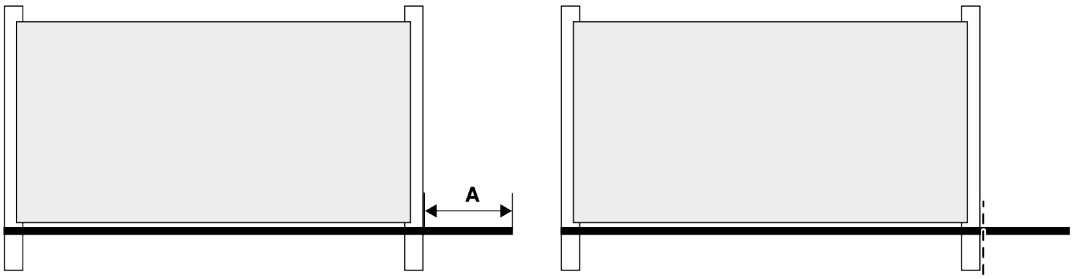
Attention:
Do not leave the construction site until the wind deflectors have been fully installed to prevent potential personal injury and damage to property. All the cabling work must be completed before the wind deflectors are fitted.



At the rear bracket there is a bore for screwing the wind deflectors. The wind deflectors are mounted laterally flush on the rear bracket.

- Attach wind deflectors to the holder at the back of the rear bracket (1) in an overlapping manner.
- Screw wind deflectors with tapping combi screws (SCS8x20) to the rear brackets (2).
- Tighten the screws to 10 Nm each.

WIND DEFLECTOR OVERHANG

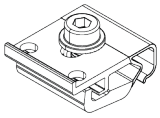


Lay wind deflectors as overlapping as possible. Overhang (A) must not exceed **200 mm.**

- If the overhang (A) is more than 200 mm, cut off the wind deflector with tin snips.

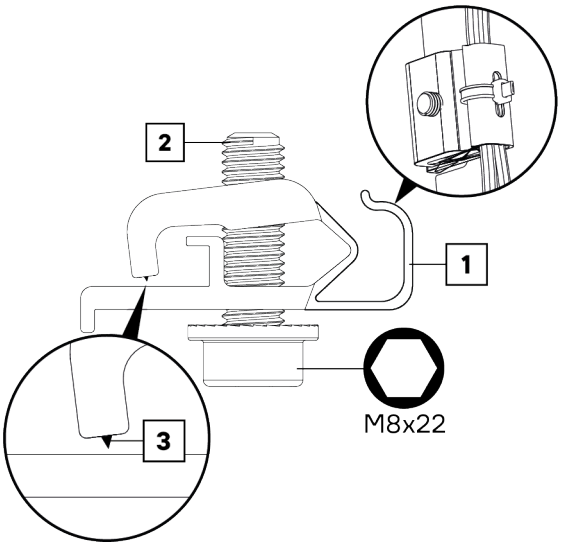
MOUNT OPTIMIZER CLAMP (OPTIONAL)

REQUIRED COMPONENTS



OC-GA
Optimizer clamp universal

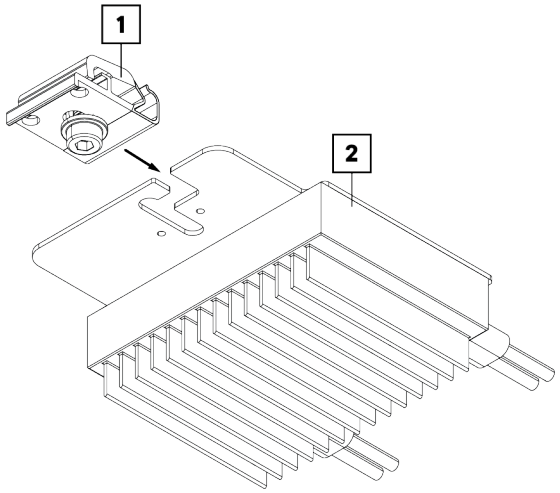
1 The integrated cable channel for up to two cables and **optional** cable tie fixation.
2 Hexagon socket screw with flange and toothing.
3 Stainless steel pins for potential equalization.



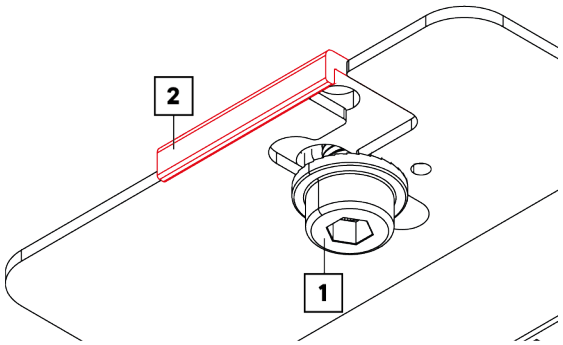
CONNECT OC-GA WITH OPTIMIZER

Important!
The **OC-GA** microverter terminal is intended for single use only.

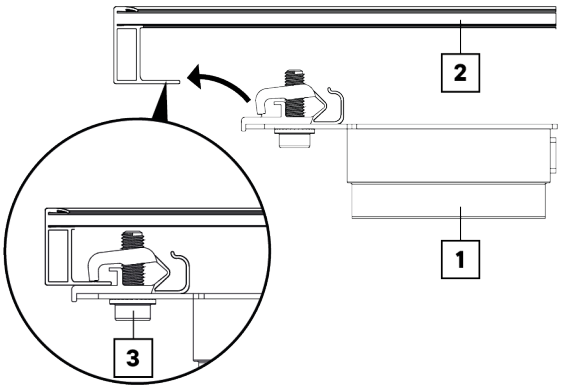
Insert the clamp (1) into the optimizer device (2) as shown in the illustration.



The screw (1) must be positioned so that the stop bracket (2) of the clamp is in contact with the bracket.

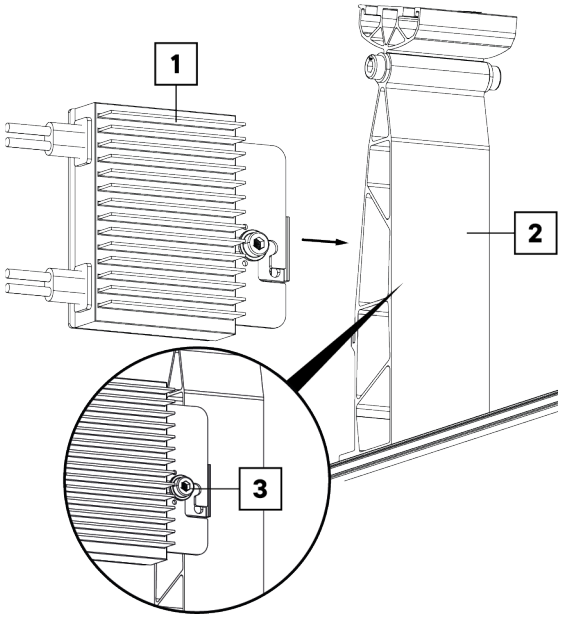


OC-GA MODULE ASSEMBLY



- Guide the optimizer (1) with the clamp to the underside of the module frame (2).
- Insert the clamp so that the module frame (2) is positioned between the upper and lower attachment of the clamp and rests on it.
- Then tighten the screw (3) with a torque of 10 Nm or 7.38 lb-ft.

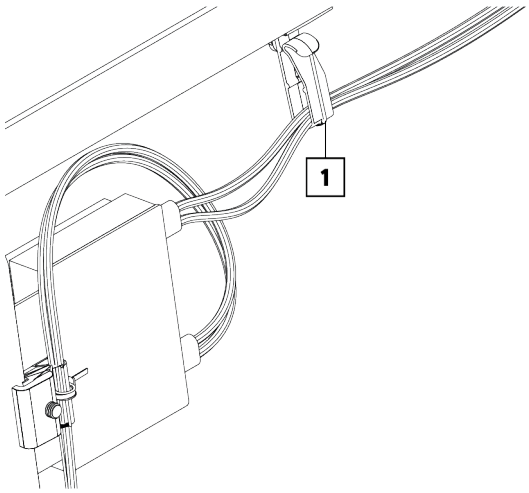
OC-GA BRACKET MOUNTING



- Guide the optimizer (1) with the clamp to the side of the bracket (2)
- Insert the clamp so that the bracket (2) is positioned between the upper and lower attachment of the clamp and rests on it.
- Tighten the screw (3) to a torque of 10 Nm or 7.38 lb-ft.

CABLE MANAGEMENT

Application tip!
The integrated cable management of the **OC-GA** can be ideally combined with the **CLP-U** (1).

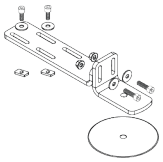


Further information on cable management can be found in chapter "Kabelmanagement" auf Seite 1 ersichtlich.

MOUNT SINGLE ROOF ANCHOR CONNECTION (OPTIONAL)

ⓘ The roof anchors are not included in the scope of delivery and must be provided by the customer. The roof anchor must be fitted with an **M10** or **M12 threaded rod** or a screw with the same diameter.

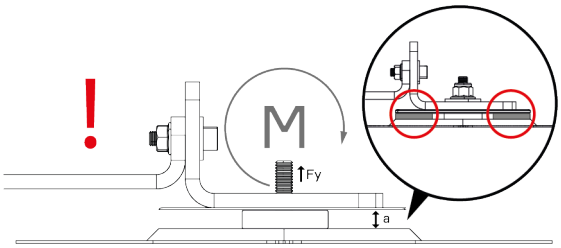
REQUIRED COMPONENTS



APA-BR
Connection bracket set for single roof anchor connection (supplied in unassembled condition).

IMPORTANT INFORMATION ON ROOF ANCHOR INSTALLATION

ⓘ **IMPORTANT:**
The permissible **bending moment (M)** and the vertical **force (Fy)** must be agreed with the roof anchor manufacturer. It must also be ensured that the **distance (a)** is appropriately shimmed. Improper installation can lead to impermissible loads on the connection.

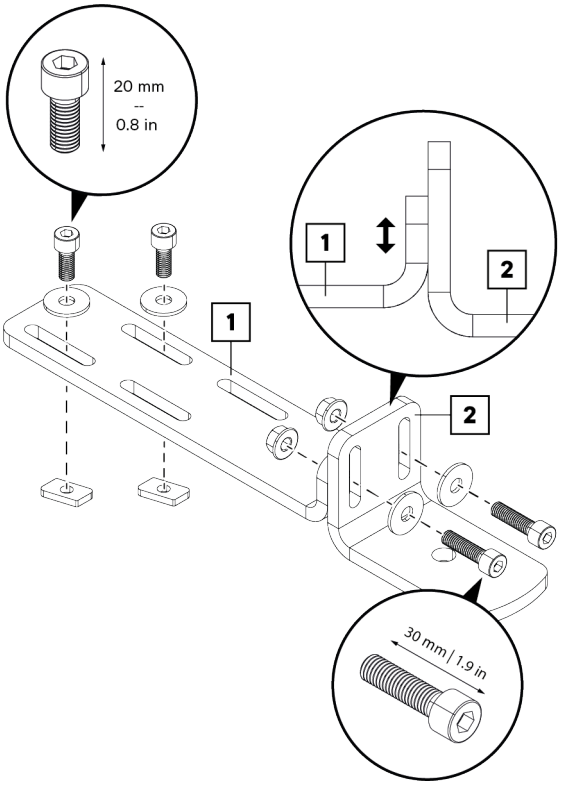


ⓘ For a roof anchor with a raised pot, the angle load plate must be **shimmed** to ensure a flat support (see illustration).

APA-BR ASSEMBLE

- Assemble the mounting bracket (2) and the mounting plate (1) as shown in the illustration. Screw in the screws and nuts - **do not tighten them**.
- The height of the mounting plate (1) can be adjusted.

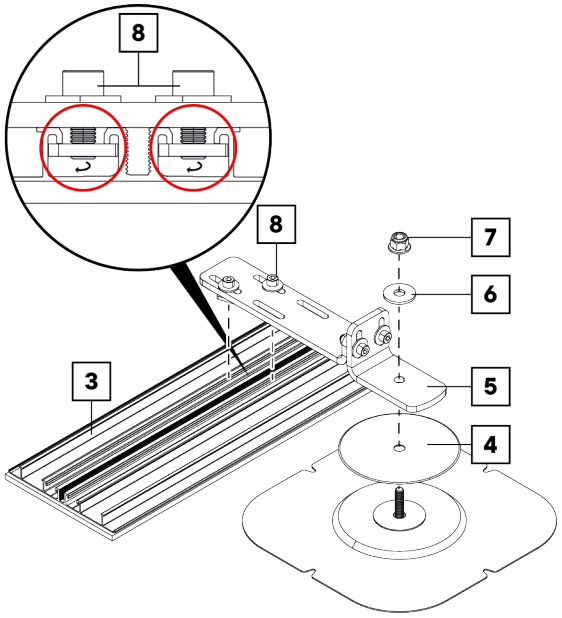
ⓘ **Important**:
Ensure that the correct screw lengths are used.



APA-BR CONNECT WITH SYSTEM

ℹ The **self-locking nut** (7) and **washer** (6) are **not included in the scope of delivery** and must be provided by the customer.

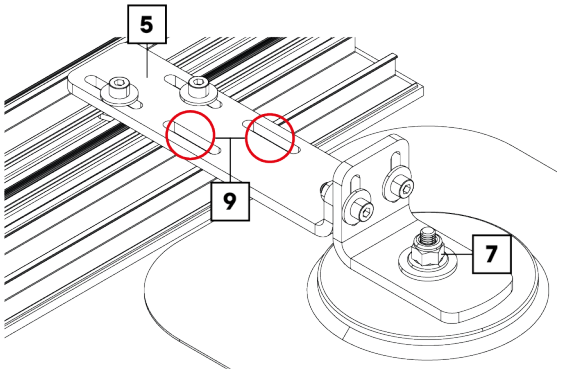
- Insert the angle plate (4) into the roof anchor.
- Position the APA-BR on the base rail (3) and the roof anchor as shown and insert from above.
- Fit washer (6) and nut (7) - **do not screw tight**.
- Fit the screws with threaded plate (8) to the base rail (3) - **do not screw tight**.



- Then tighten the screws of the APA-BR (5) to a torque of 15 Nm or 11 lb-ft.

ℹ The front slotted holes (9) must be used if the maximum bending moment is **limited** due to the anchor construction.

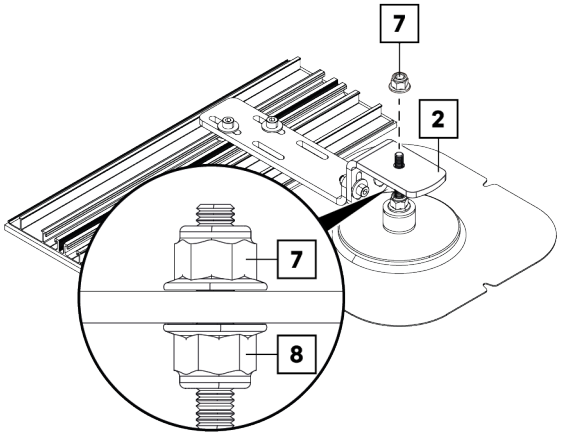
ℹ **Important**:
The tightening torque of the **self-locking nut** (7) can be found in the manufacturer's technical documentation.



MOUNTING BRACKET TURNED

- Turn the mounting bracket (2) 180° as shown in the illustration.
- With this variant, the mounting bracket must be locked with a **self-locking nut** (8).

ℹ **Important**:
The tightening torque of the on-site fastening (7) and (8) can be found in the manufacturer's technical documentation.

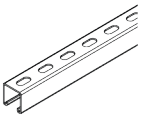


MOUNT THE DOUBLE ROOF ANCHOR CONNECTION (OPTIONAL)

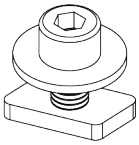
ⓘ The roof anchors are not included in the scope of delivery and must be provided by the customer. The roof anchor must be fitted with an **M10** or **M12 threaded rod** or a screw with the same diameter.

Flat variant

REQUIRED COMPONENTS

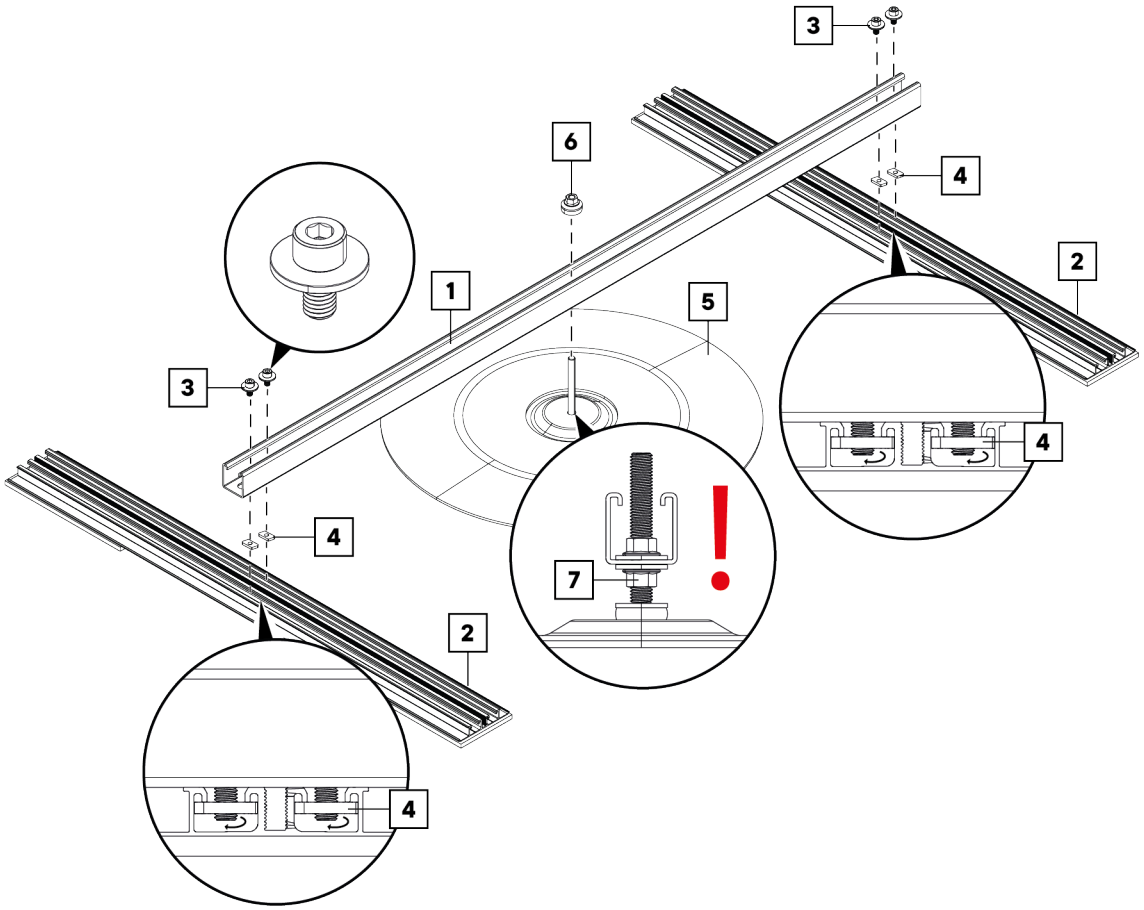


AR1352 | AR1652 | AR2552
Rail for anchor attachment in the lengths 1352 mm, 1652 mm, 2552 mm



SCR-GA
Screw connection for general accessories

ASSEMBLY

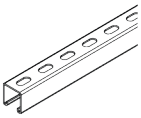


- Place the anchor rail (1) on the base rails (2) and insert it into a suitable slot in the roof anchor (5).
- Fasten the anchor rail (1) to both base rails using two screws (3) and threaded plates (4).
- Then tighten the screw (3) with a torque of 15 Nm or 11 lb-ft.
- Observe the torques specified by the manufacturer when fastening the roof anchor (5).
- The roof anchor (5) and the corresponding self-locking nut (6) and (7) are **not** included in the scope of delivery.

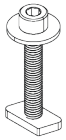
ⓘ **Caution!**
Ensure that the anchor rail rests on the roof anchor **or** is locked with a second self-locking nut. Floating the anchor rail is not permitted.

Upright variant

REQUIRED COMPONENTS

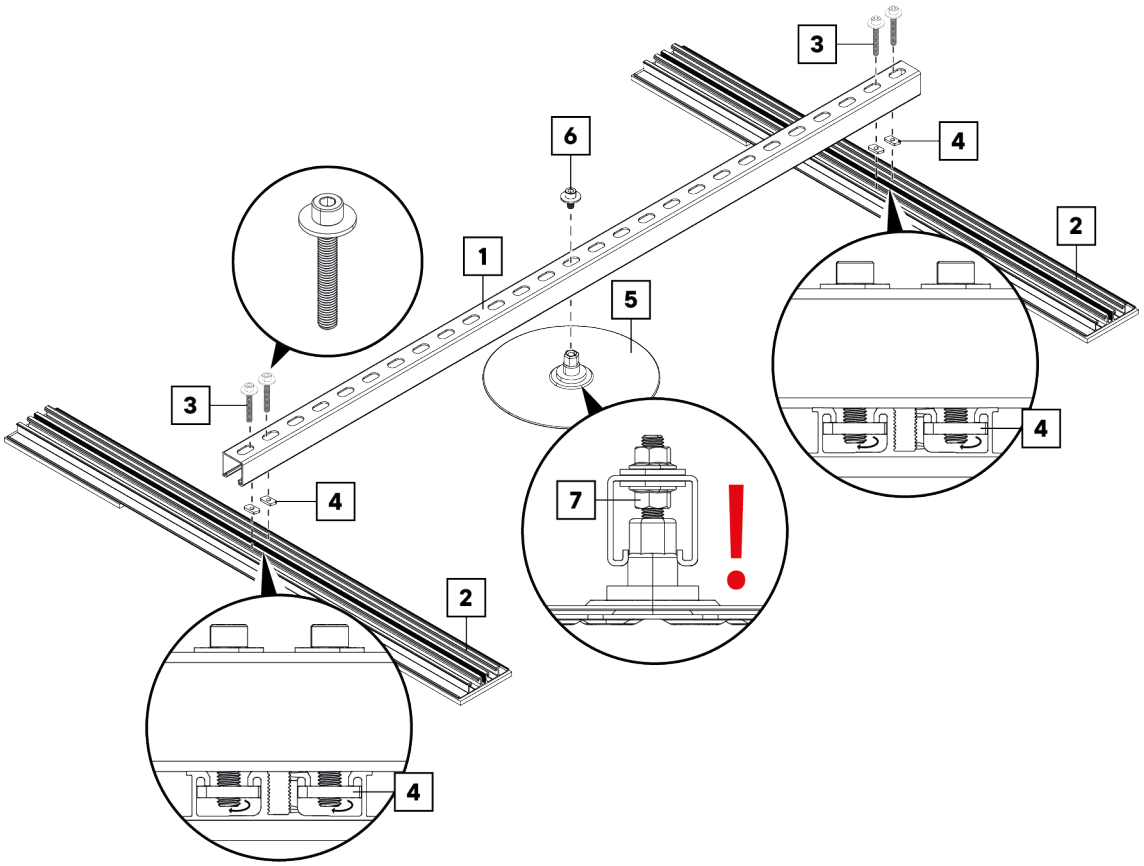


AR1352 | AR1652 | AR2552
Rail for anchor attachment in the lengths 1352 mm, 1652 mm, 2552 mm



SCR-DA
Bolting set for anchor channel AR1352 | AR1652 | AR2552

ASSEMBLY



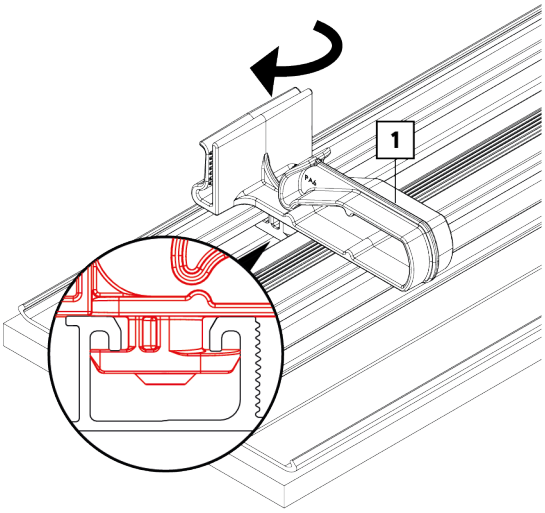
- Place the anchor rail (1) on the base rails (2) and insert it into a suitable slot in the roof anchor (5).
- Fasten the anchor rail (1) to both base rails using two screws (3) and threaded plates (4).
- Then tighten the screw (3) with a torque of 15 Nm or 11 lb-ft.
- Observe the torques specified by the manufacturer when fastening the roof anchor (5).
- The roof anchor (5) and the corresponding self-locking nut (6) and (7) are **not** included in the scope of delivery.

Caution!
Ensure that the anchor rail rests on the roof anchor **or** is locked with a second self-locking nut. Floating the anchor rail is not permitted.

SN2 CABLE MANAGEMENT

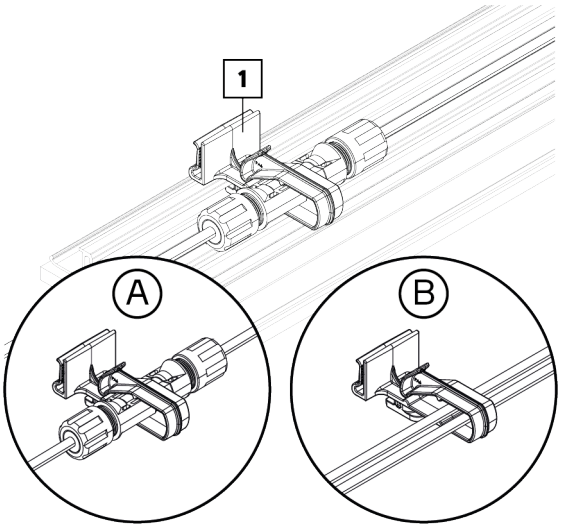
MOUNT THE CLP-U CABLE CLIP TO THE BASE RAIL

- Insert the cable clip (1) into the base rail from above.
- Rotate the cable clip by 90°.



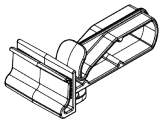
Attention:
Make sure that the cable clip is fully engaged in the rail channel.

- The CLP-U (1) is suitable for:
  A - Solar connectors (e.g. MC4)
  B - Solar wire



CABLE CLIP CLP-U FOR MODULES

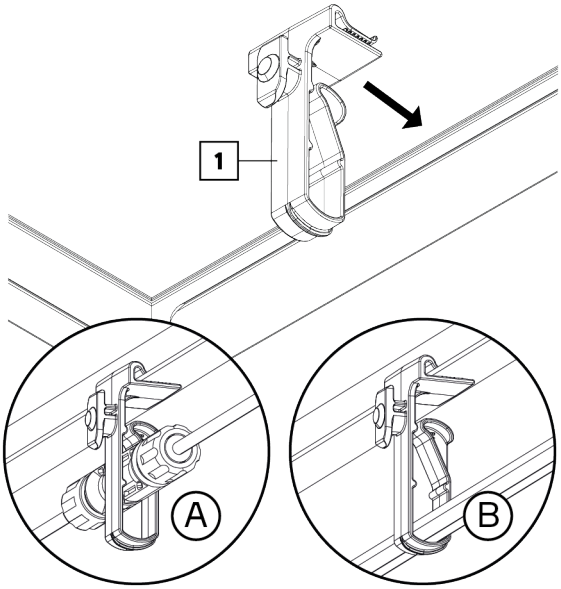
ⓘ The **CLP-U cable clip** is suitable for module frames with a sheet thickness of **1.5 - 3 mm.**



CLP-U
Cable clip universal

ASSEMBLY

- Insert the CLP-U (1) into the module frame.
- The CLP-U is suitable for:
  A - Solar connectors (e.g. MC4)
  B - Solar wire



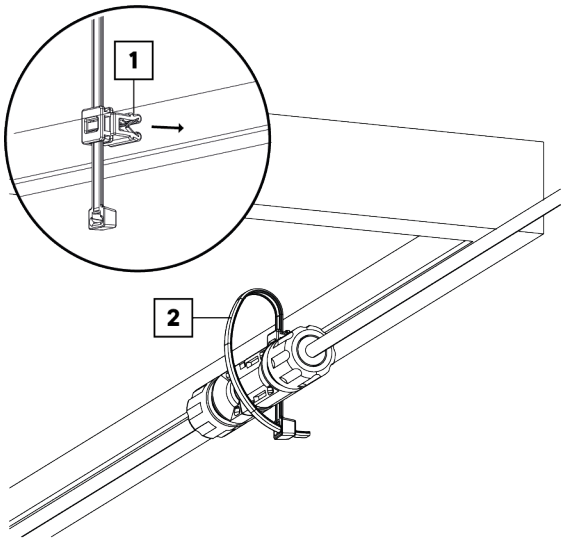
CABLE CLIP CLP-M FOR MODULES

ⓘ The **CLP-M cable clip** is suitable for module frames with a sheet thickness of **1 - 3 mm.**

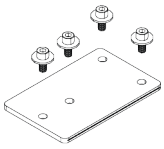
CLP-M
Cable tie clip for module frames with a thickness of 1 - 3 mm

ASSEMBLY

- Insert the CLP-M (1) into the module frame.
- The cable tie is suitable for:
  - Solar plug
  - Solar cable
- Then tighten the cable tie (2).

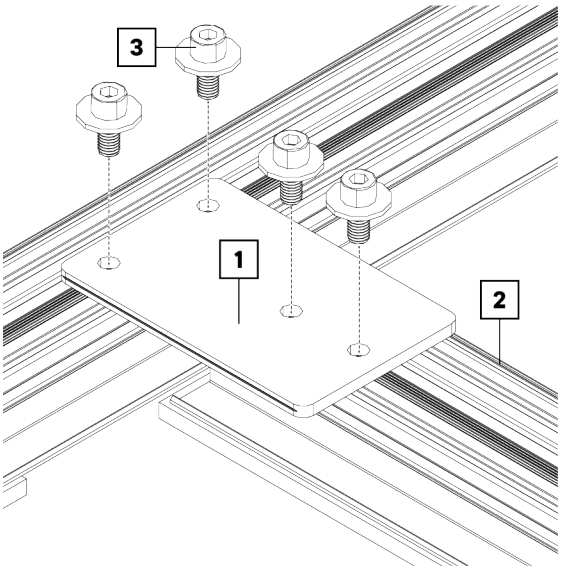


FITTING THE SNCP125 CONNECTING PLATE FOR BASE RAILS



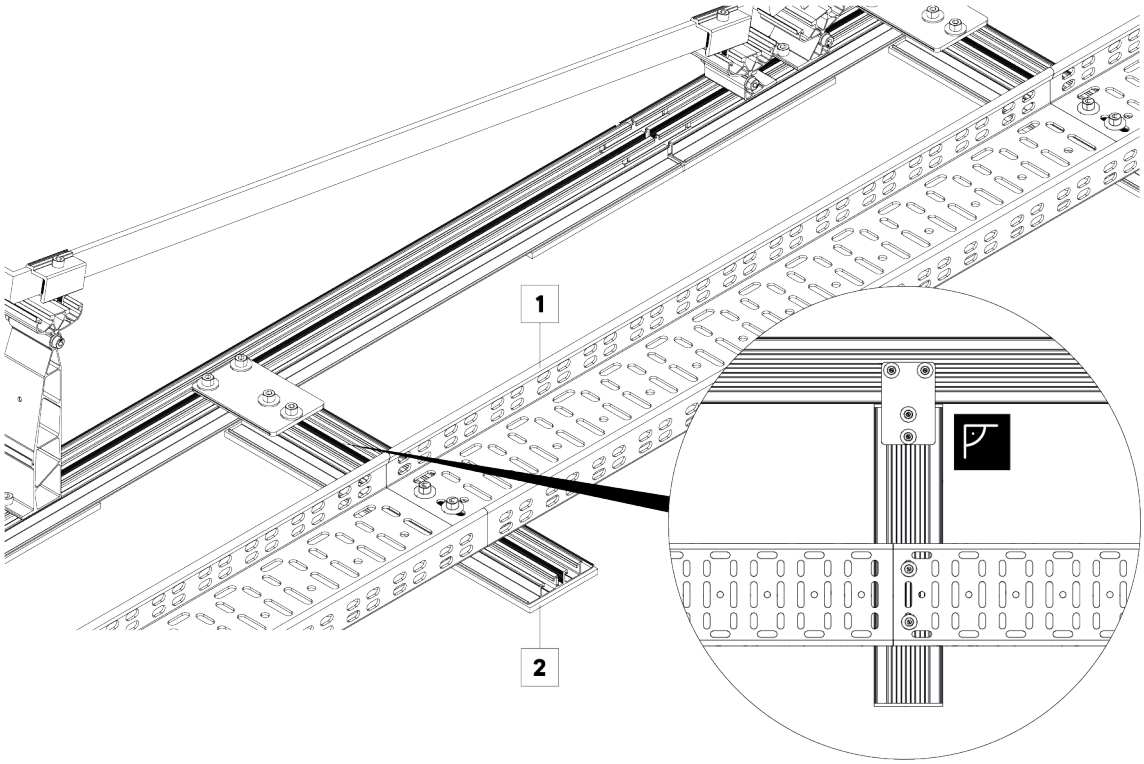
SNCP125
Connecting plate BR125x80

- Position the base rail (2) rotated by 90° (front side) as shown in the illustration.
- Place the connecting plate (1) in position and then screw tight with 4 pcs. M8x18 screws (3).
- The tightening torque of the screws (3) is 15 Nm or 11 lb-ft.



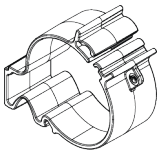
4 pcs. **M8x18 mm** screws (1) are used to fasten the connecting plate. **Important** - The screws for the cable tray must be organized by the customer.

INSTALLING THE CABLE TRAY



The cable tray (1) and the fastening material must be organized by the customer, which means that the ballasting must also be planned by the customer; **no** ballasting specifications are provided in the planning documents from AEROCOMPACT Europe GmbH. The base rail (2) is included in the scope of delivery and is available in lengths of **450 mm** or **900 mm**.

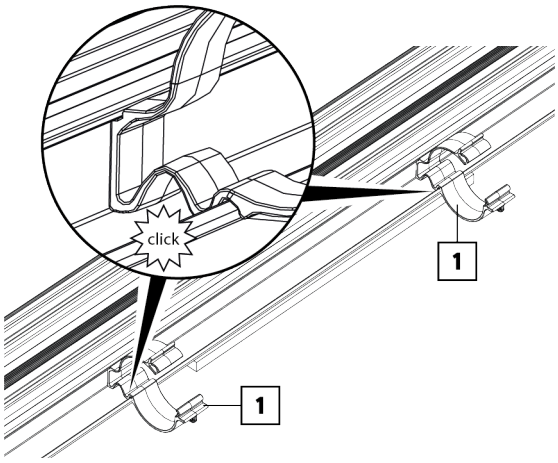
FITTING THE SNCLP-R CABLE CLIP



SNCLP-R
Cable clip SN2 rail

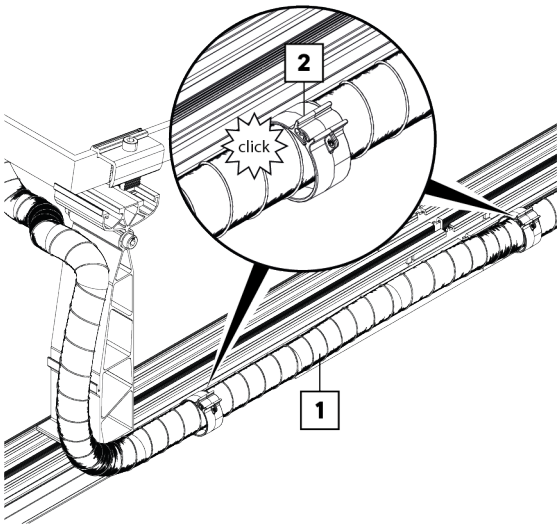
CLICK IN SNCLP-R

☐ Click in the SNCLP-R (1).



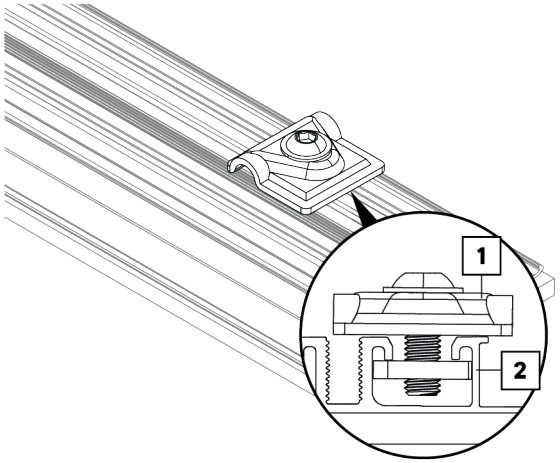
ATTACH CABLE PIPE

☐ Place the cable pipe (1) on the cable clips (2).
☐ Then engage the cable clip lock (2).



POTENTIAL EQUALIZATION

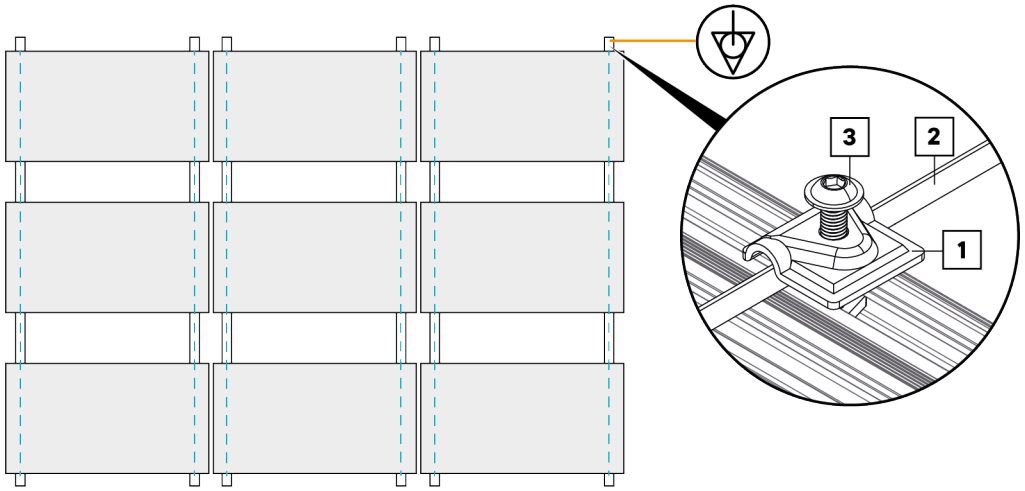
INSERT WIRE CLAMP



☐ Insert the wire clamp (1) into the base rail (2)

ⓘ Depending on the requirements, either the right or left channel of the base rail can be used to insert the wire clamp (1).

POTENTIAL EQUALIZATION

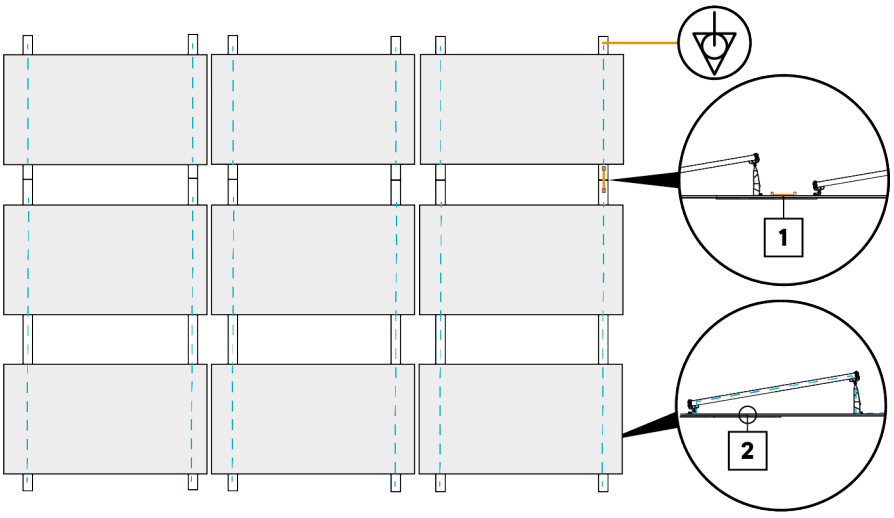


☐ Insert the ground wire (2).
☐ Tighten the screw (3) of the wire clamp (1) with a torque of 10 Nm or 7.3 lb-ft.

ⓘ The ground wire (1) must be organized **on site**.

POTENTIAL EQUALIZATION CONNECTED RAIL

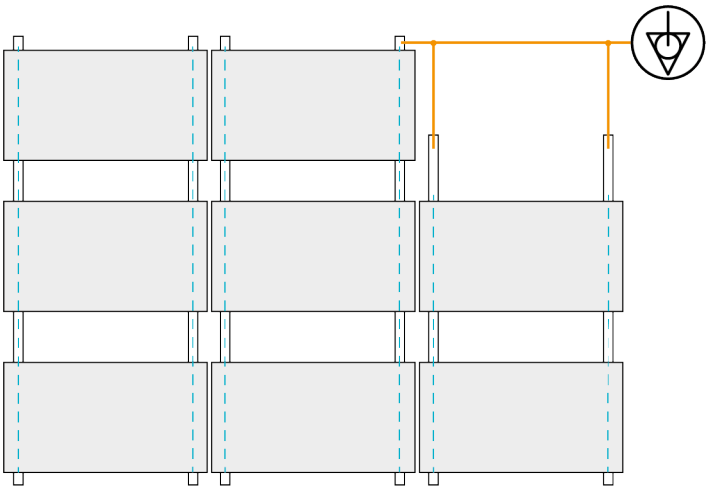
ⓘ To ensure the connection between the module rows, it is necessary to establish a connection to the rail joints located outside the modules (1). It is **not necessary** to make a connection for rail joints that are located under a module (2).



☑ Rail joints (1) that are not located under a module must be connected using two wire clamps and an grounding wire.
☑ If the rail joints (2) are located under a module, **no further action** is required.

EQUIPOTENTIAL BONDING DURING MAINTENANCE WORK

ⓘ **Caution!**
To ensure that the connection between the remaining modules and the potential equalization is guaranteed, additional earthing terminals and earthing wire must be attached when a module is removed.



MAINTENANCE, DISASSEMBLY AND DISPOSAL

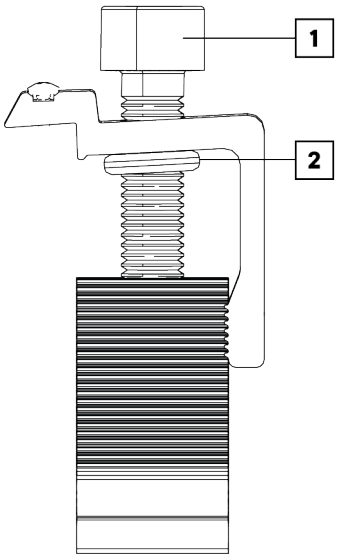
MAINTENANCE

To prevent personal injury and damage to property, the system must be checked regularly by qualified personnel and annual maintenance is required.

- Check all system components for damage. In the event of damage, replace the affected component immediately.
- Check all screw connections. Tighten loose screw connections, observing the tightening torque specified in the installation instructions.
- Checking all components for damage caused by the weather, animals, dirt, deposits, build-up, vegetation, roof penetrations, seals, stability and corrosion. In the event of damage, clean, repair or replace the affected component.

DISASSEMBLY

DISMANTLING THE CLAMPS (EXAMPLE)



ⓘ To disassemble the system, carry out the assembly steps in reverse order.

☑ Unscrew the screw (1) on the clamp.
☑ When reusing the clamp, ensure that the O-ring (2) is not lost.

ⓘ If the components are reused, it must be noted that these are wearing parts. Therefore, the AEROCOMPACT Europe GmbH cannot assume any responsibility for checking the degree of wear. For this reason, any liability or warranty of AEROCOMPACT Europe GmbH in case of reuse is excluded and reuse is at the installer's own responsibility.

DISPOSAL

Unless a take-back or disposal agreement has been made, disassembled components should be recycled:

- Give metals and plastic elements for recycling.
- Dispose of remaining components sorted according to material composition.

ⓘ Incorrect disposal may result in hazards to the environment. In case of doubt, obtain information on environmentally sound disposal from the local municipal authority or from specialized disposal companies.

APPENDIX

DECLARATION OF PERFORMANCE

CE

Manufacturer:	**AEROCOMPACT Europe GmbH**
Designation:	**CompactFLAT SN 2 system for flat roofs**
Identification code:	**SN 2**
Applied standard:	**EN 1090**
Certification body:	**2397-CPR-65/2511**

For the declaration of performance

REVISION HISTORY

Version	Chapter	Modification
v3.2	"SN2 Mounting gauge" on page 21	New chapter added
v3.3	"SN2 Cable management" on page 42	New chapter added
v3.4	"Installing gravel ballast trays" on page 33	New chapter added
	"Increase base rail contact surface (optional)" on page 17	New chapter added
	"Mount single roof anchor connection (optional)" on page 38	New roof anchor connection added
	"Mount the double roof anchor connection (optional)" on page 40	New roof anchor connection added

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