

CompactFLAT

S05 | S10 | S15

Assembly Instructions

Version: 04

Language: English | Original language: German

Original installation instructions

Important! Read carefully before installation!

Notice

Subject to changes due to technical improvements. These assembly instructions correspond to the technical status of the delivered product and not to the current development status of 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.

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Update

This manual is subject to change without notice. This does not represent any obligation on the part of the manufacturer.

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ABOUT THIS DOCUMENT

These installation instructions describe the procedure for installing the product. Read these assembly instructions carefully before starting the assembly. Follow the instructions carefully to ensure correct installation of the product.

Applicable Documents

The following documents are a part of these installation instructions and are absolutely necessary for the correct assembly of the system:

- Project report from AEROTOOL
- Planning documents and drawings

Explanation of Symbols

In order to make these assembly instructions easy to understand, uniform safety instructions, symbols, terms and abbreviations are used. The following symbols indicate notes which are not relevant to safety, but which make working with the assembly instructions easier.

- ✓ Requirements for an action are depicted with this symbol. Make sure that all requirements are met before you carry out the following actions.
- Action steps are depicted with this symbol. Carry out the steps in the specified order.
- ☑ The result of the action is depicted with this symbol.

i This note provides useful information for a smooth assembly of the product.

Symbols in Illustrations

Activities

Certain activities are required to carry out the assembly. These activities are shown in the illustrations with the following symbols.



Check AEROTOOL planning documents



Visual inspection



Activity by hand



Observe right angle



Optional component,
optional installation method

Tools

Certain tools are required to carry out the assembly. These tools are shown in the illustrations with the following symbols.



Measuring tape, measure



Pencil, mark



Chalk line



Cordless screwdriver, screwdriver



Torque wrench,
Observe torque



Drilling machine, drill

Target group

These installation instructions are intended for trained personnel who are familiar with the installation of photovoltaic systems. The personnel should also be familiar with working on roofs and know the local regulations regarding work safety. The personnel must also observe the instructions in the Safety chapter.

Appropriate use

The CompactFLAT flat roof system is designed exclusively for installing PV modules on flat roofs or similar flat surfaces. The system must be properly installed in accordance with these installation instructions.

PV modules used with the CompactFLAT system should be approved by the module manufacturer. AEROCOMPACT accepts no liability for loss of performance or damage of any kind to the PV modules.

Any other use of the CompactFLAT system is considered improper.

Liability, Warranty, Guarantee

These assembly instructions and the project report supplied with the product are integral parts of the product. The information, data and instructions given in the assembly instructions were up to date at the time of printing. No claims can be made for products already delivered that deviate from the information, illustrations and descriptions.

The project report supplied with the system contains the static/ structural calculation related to the location. Follow the position of the modules on the roof, the number and position of the building protection pads and the ballast distribution exactly according to the project report. If the module layout on the roof changes due to local conditions, e.g. unforeseen interference areas, the structural analysis must be recalculated. The Aerocompact system is designed and planned using the AEROTOOL software.

Aerocompact accepts no liability for damage and malfunctions caused by:

- Improper use
- use of non-certified components.
- unauthorized modifications to the product.
- improper handling of the product.
- Installation errors
- Failure to comply with the installation instructions or planning documents.

Guarantee

The warranty period for the system is 25 years. The warranty period for galvanized steel parts is 10 years. The guarantee is only valid if the installation is carried out professionally and all system components are purchased from Aerocompact. If the assembly instructions or the planning documents are disregarded, the warranty will be invalidated.

Photovoltaic racking systems are not maintenance-free. Carry out maintenance annually and immediately after unusual weather events, e.g., after heavy storms or heavy snowfall, etc. If the maintenance is not carried out at the specified interval, the warranty will become void.

General information on liability

We would like to point out that the flat roof system is being sold as part of a sales contract. Assembly/-processing by the purchaser or third parties is not carried out on behalf of or for Aerocompact and must be carried out by qualified personnel strictly in accordance with the assembly instructions. The Aerocompact system must be designed and planned with the AEROTOOL software. Aerocompact is not responsible for the project-related structural integrity of the roof structure, for obtaining and documenting the roof manufacturer's approval for the installation of the corresponding fasteners on the respective roof (in terms of warranties), nor for the professional execution.

Errors and damage as well as limited or insufficient functionality of the system due to incorrect installation and/or installation that deviates from the installation instructions and/or the project report (AEROTOOL) exclude any material defect for which Aerocompact is responsible. In the event of improper handling, the rights of the buyer due to a material defect shall expire. The system warranty is only valid if all system components are purchased from Aerocompact.

Systems with clamping on the short side of the module

For a system with a clamp on the short side of the module, it is assumed that the module may also be used with this installation method (clamp on the short sides of the module). This approval can either be generally available as part of the module certification or, under certain circumstances, can also be given by the module manufacturer on a project-specific basis.

Systems with roof protection pads

The roof protection pad included in the scope of delivery is matched to the roof surface defined in the project. Due to the many available roof surfaces on the market, the responsible designer should ensure the compatibility of and the coefficient of static friction between the protection pad and the roof surface of the building used in the design. The friction value is determined during the planning process with a coefficient of friction test.

SAFETY

Requirements of personnel

The person must be physically and mentally fit. Under no circumstances must the installation personnel be under the influence of medication, alcohol or drugs.

Persons who are not healthy and fit must not work on roofs.

Personnel who are in training must only carry out work under the supervision of qualified personnel who are authorized to train personnel.

Working safely

The company carrying out the installation is responsible for ensuring that the local regulations for work safety and accident prevention are observed.

Breakthrough protection

Roof windows, skylights, large ventilation flaps etc. often cannot withstand the weight or impact of a person. Such objects must be secured in a similar way as the edge of the roof.

Corrugated fibre cement roofs can be prone to breakthrough over the entire surface. Define walking routes and secure them with load distribution measures.

On roofing or roof structures that do not have sufficient load-bearing capacity (e.g. thin sheets, corrugated fibre cement), always work with load distribution aids.

Climbing aids

Only use suitable, intact and tested ladders. Set up and secure ladders according to instructions.

Separate rules apply to mechanical climbing aids (lifts, lifting platforms, ...).

Never use the PV mounting system as a climbing aid.

Weather conditions

In case of unsuitable weather conditions, work on the roof must not be continued any longer than necessary - or not started at all.

Never carry out assembly work in strong winds. Strong wind exerts enormous forces on the large-area PV modules. There is a risk that a module could be torn off the roof and people could be injured.

Never work in wet conditions or at temperatures below the freezing point. Depending on the roof pitch there is a risk of slipping.

Dangers from the environment

Keep sufficient distance from overhead electrical lines. The following distances must be observed:

1 m to 1,000 V
3 m: 1,000 to 11,000 V
4 m: 11,000 to 22,000 V
5 m: 22,000 to 38,000 V
> 5 m: if the voltage is unknown

Protection against falling objects

Areas below the roof on which work is being carried out must be protected from any falling objects. Where this does not succeed, affected areas must be closed to the public.

Persons involved in the construction project must wear safety helmets.

Personal protective equipment (PPE)

Personal protective equipment is required to prevent injuries during assembly work.



Wear protective goggles when drilling.



Wear safety boots.



Wear cut-resistant work gloves during assembly.



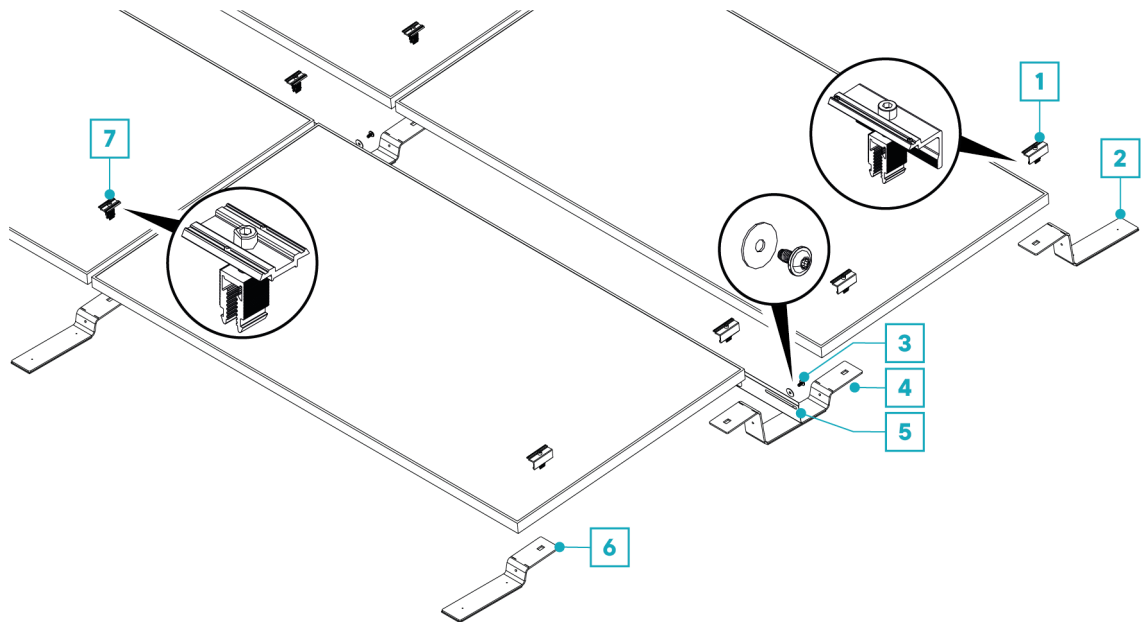
Helmets are required for all persons involved on the construction site.



Use fall protection.

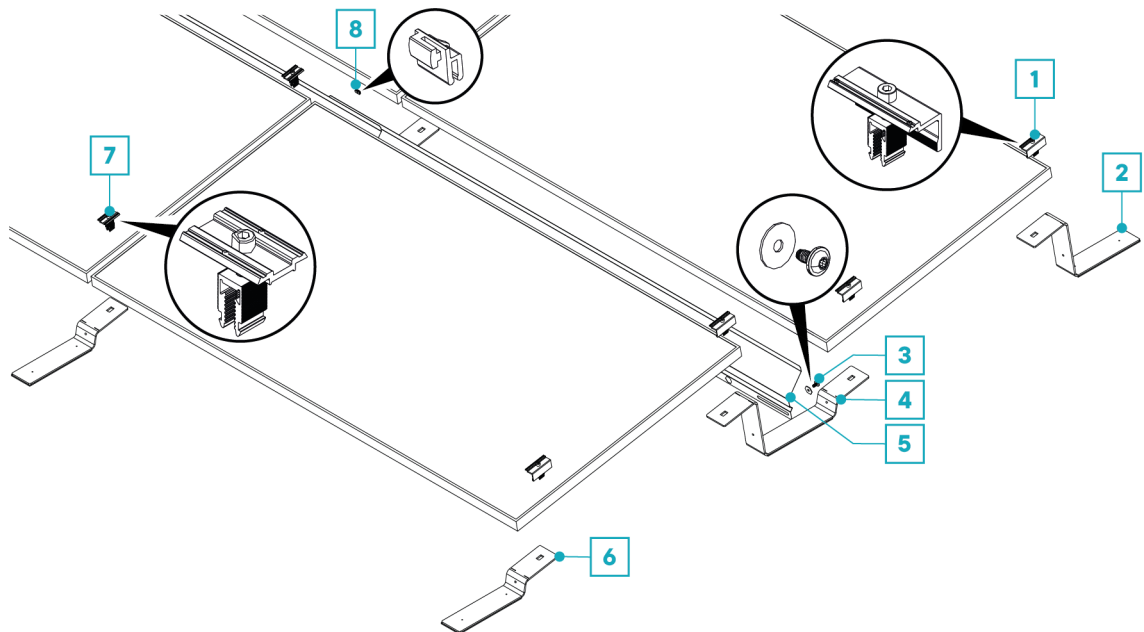
SYSTEM OVERVIEW

Basic Components S05



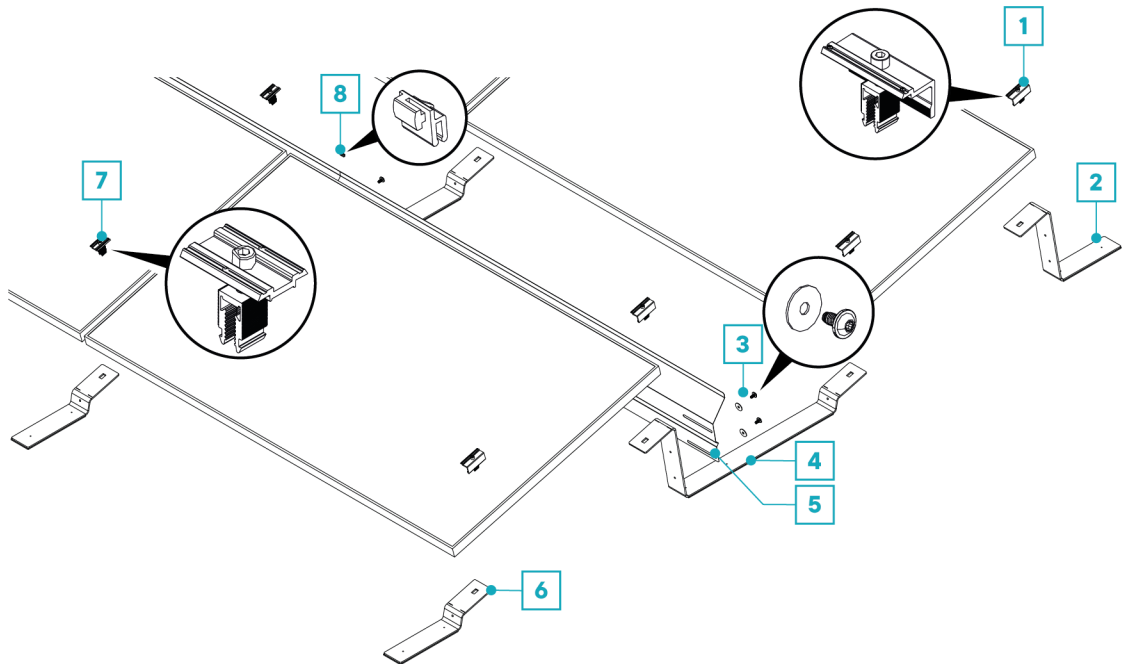
- 1** End-Clamp | CLE10+
- 2** End Bracket S5, with/without roof protection pad | S05EB-PP, S05EB
End Bracket S05 with additional bottom attachment for ballast tray | S05EB-TF-PP, S05EB-TF
- 3** Torx screw and washer | STS8x16, FW8.4/30
- 4** Connector S05, with/without roof protection pad | S05CN-PP, S05CN
Connector S05 with additional bottom attachment for ballast tray | S05CN-TF-PP, S05CN-TF
- 5** Wind deflector S5 1800 mm, 2050 mm, 2300 mm | S05WD-1800, S05WD-2050, S05WD-2300
- 6** Front Bracket S05 with/without roof protection pad | S05FB-PP, S05FB
Front Bracket S05 with additional bottom attachment for ballast tray | S05FB-TF-PP, S05FB-TF
- 7** Mid-Clamp | CLM10

Basic Components S10



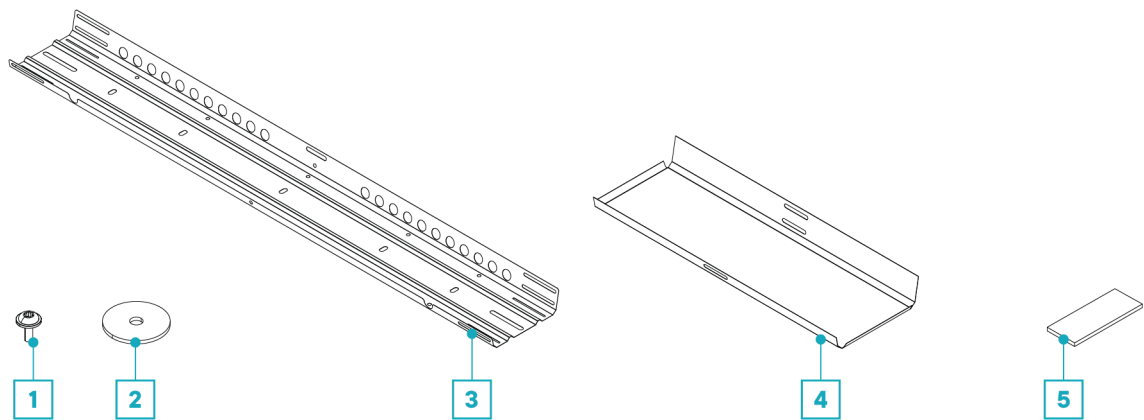
- 1** End-Clamp | CLE10+
- 2** End Bracket S10, with/without roof protection pad | S10EB-PP, S10EB
End Bracket S10 with additional bottom attachment for ballast tray | S10EB-TF-PP, S10EB-TF
- 3** Torx screw and washer | STS8x16, FW8.4/30
- 4** Connector S10/18 with/without roof protection pad | S10CNL-PP, S10CNL
Connector S10/25 with/without roof protection pad | S10CNS-PP, S10CNS
Connector S10/18 with additional bottom attachment for ballast tray | S10CNL-TF-PP, S10CNL-TF
Connector S10/25 with additional bottom attachment for ballast tray | S10CNS-TF-PP, S10CNS-TF
- 5** Wind deflector S10 1800 mm, 2050 mm, 2300 mm | S10WD-1800, S10WD-2050, S10WD-2300
- 6** Front Bracket S10 with additional bottom attachment for ballast tray | S10FB-TF-PP, S10FB-TF
Front Bracket S10 with additional bottom attachment for ballast tray | S10FB-TF-PP, S10FB-TF
- 7** Mid-Clamp | CLM10
- 8** Clip for wind deflectors | CLP-WD

Basic Components S15



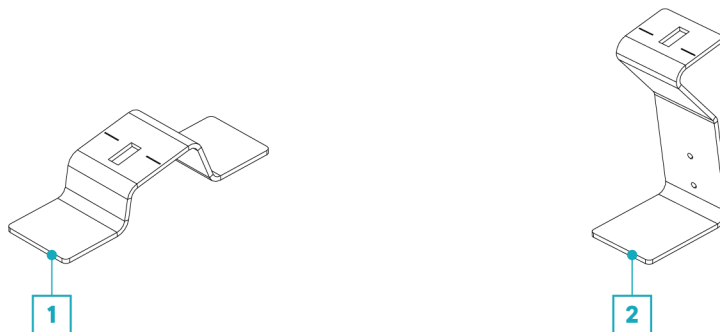
- 1** End-Clamp | CLE10+
- 2** End Bracket S15, with/without roof protection pad | S15EB-PP, S15EB
End Bracket S15 with additional bottom attachment for ballast tray | S15EB-TF-PP, S15EB-TF
- 3** Torx screw and washer | STS8x16, FW8.4/30
- 4** Connector S15/18 with/without roof protection pad | S15CNL-PP, S15CNL
Connector S15/25 with/without roof protection pad | S15CNS-PP, S15CNS
Connector S15/18 with additional bottom attachment for ballast tray | S15CNL-TF-PP, S15CNL-TF
Connector S15/25 with additional bottom attachment for ballast tray | S15CNS-TF-PP, S15CNS-TF
- 5** Wind deflector S15 1800 mm, 2050 mm, 2300 mm | S15WD-1800, S15WD-2050, S15WD-2300
- 6** Front Bracket S15 with/without roof protection pad | S15FB-PP, S15FB
Front Bracket S15 with additional bottom attachment for ballast tray | S15FB-TF-PP, S15FB-TF
- 7** Mid-Clamp | CLM10
- 8** Clip for wind deflectors | CLP-WD

Ballasting



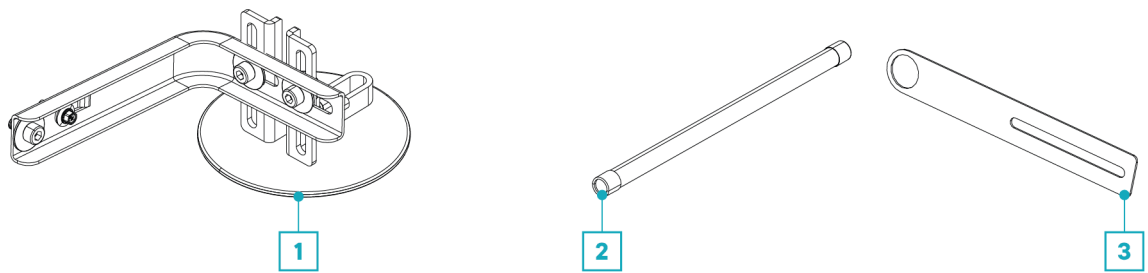
- 1** Furrow screw ALtracs+ 4x8 | STS4x8 (optional for fastening the long ballast tray)
- 2** Washer 4.3/25 FW4.3/35 (optional for fastening the long ballast tray)
- 3** Long ballast tray | BT-1800, BT-2050, BT-2300
- 4** Short ballast tray | BT-880
- 5** Roof protection pad for ballast blocks and ballast trays | PP200/80

Alpine supports



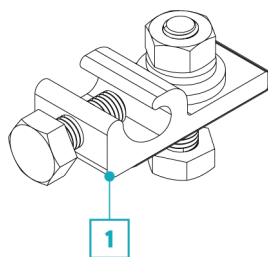
- 1** Front alpine support | S05FS, S10FS, S15FS
- 2** Back alpine support | S05BS, S10BS, S15BS

Accessories



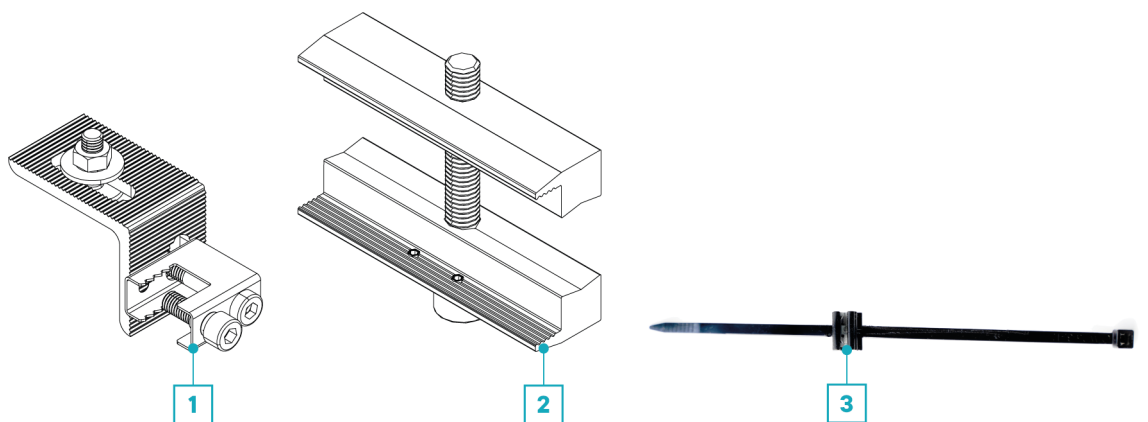
- 1 Anchor point attachment | APA
- 2 Cable conduit | CP-430, CP-620, CP-840
- 3 Bracket for cable conduit | BR-CP

Accessories for grounding / potential equalization (USA)



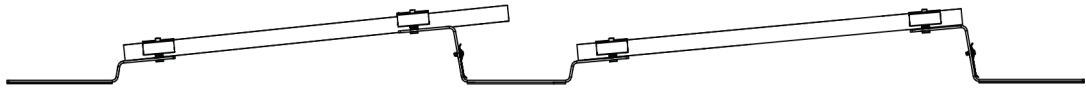
- 1 Grounding lug with nut (follows UL 476 or UL 2703 requirements) | GL18N

Module Accessories



- 1 Holder for module accessories, Mounting bracket for microinverter (EU) | MA-BR
- 2 Holder for module accessories, Microinverter clamp US | MA-MO
- 3 Cable tie clip to module | CLP-M

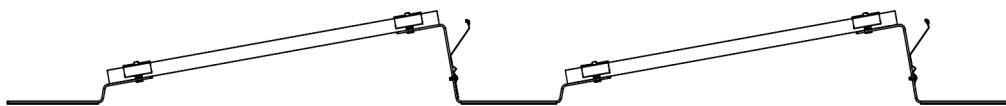
Variations of the CompactFLAT S system



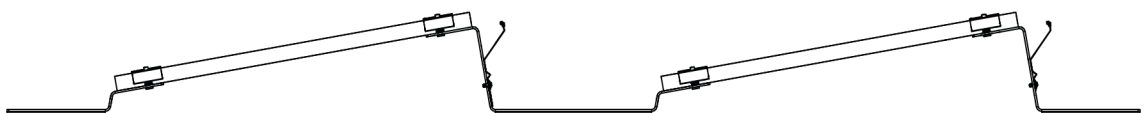
System S05 | HD 7 in. row spacing | 30° shading angle



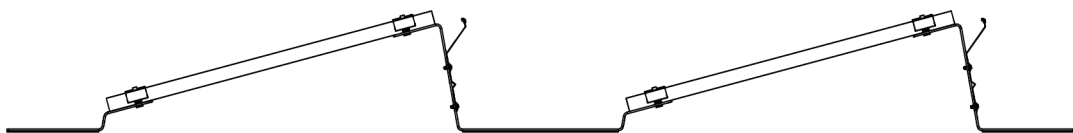
System S05 | 13.2 in. row spacing | 15° shading angle



System S10 | 15 in. row spacing | US 25° shading angle



System S10 | 20.8 in. row spacing | EU18° shading angle



System S15 | 22.5 in. row spacing | US 25° shading angle



System S15 | 31.1 in. row spacing | EU18° shading angle

ASSEMBLY

Installation Instructions for Gravel Roofs

Gravel Depth up to 2.5 in

i Since damage to the roof surface can occur due to excessive point loading, Aerocompact recommends not placing the system on the gravel if the gravel layer is less than 2.5 in.

- ☑ Carefully move aside the gravel in the array field.
- ☑ Install the system components on the roof surface or on the protective fleece.

i If possible and if properly calculated with the help of design professionals, use the gravel as ballast in the ballast trays or distribute it evenly on the roof again.

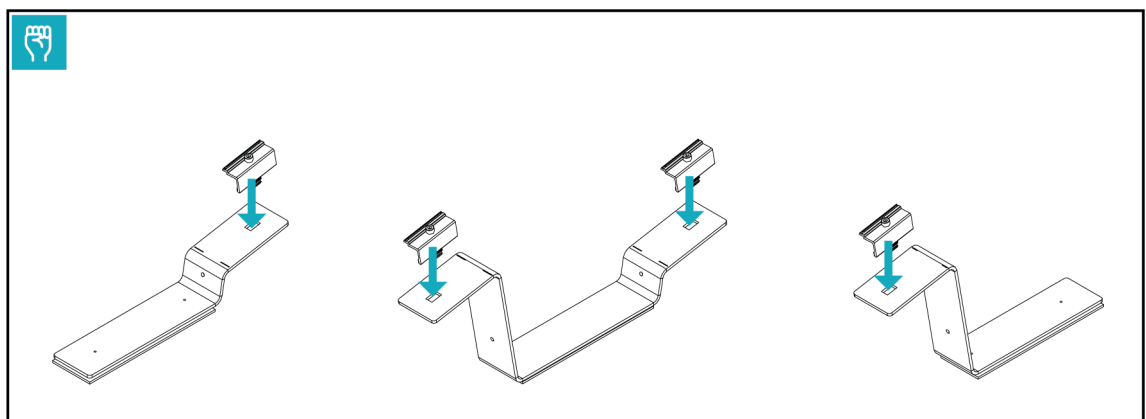
Gravel Depth 2.5 in. to 4 in.

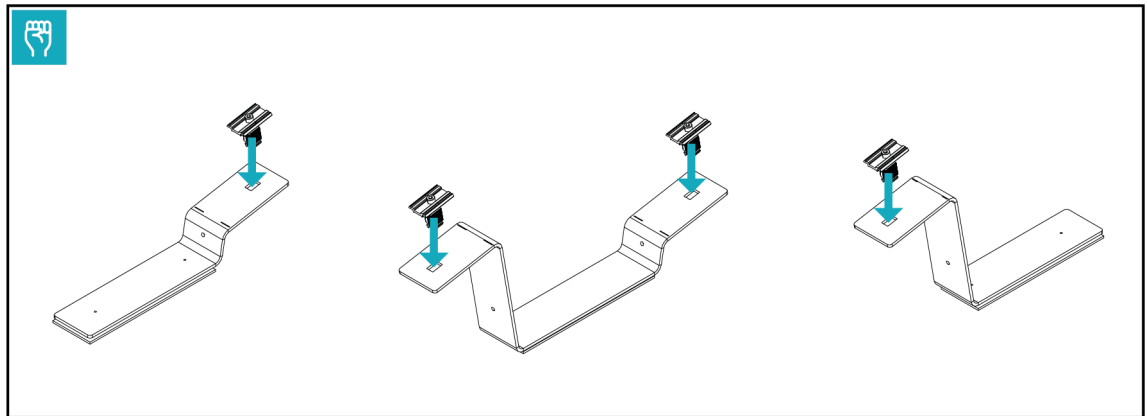
- ☑ Only place the system on the gravel if a suitable protective fleece (min. 300 g/m²) is present. (I do not agree. Honestly, this whole section needs to be rewritten)

Gravel Depth greater than 4 inches

- ☑ The system can be placed safely on the gravel, but requires an on-site coefficient of friction test. *Ballast requirements will greatly increase with this installation method*

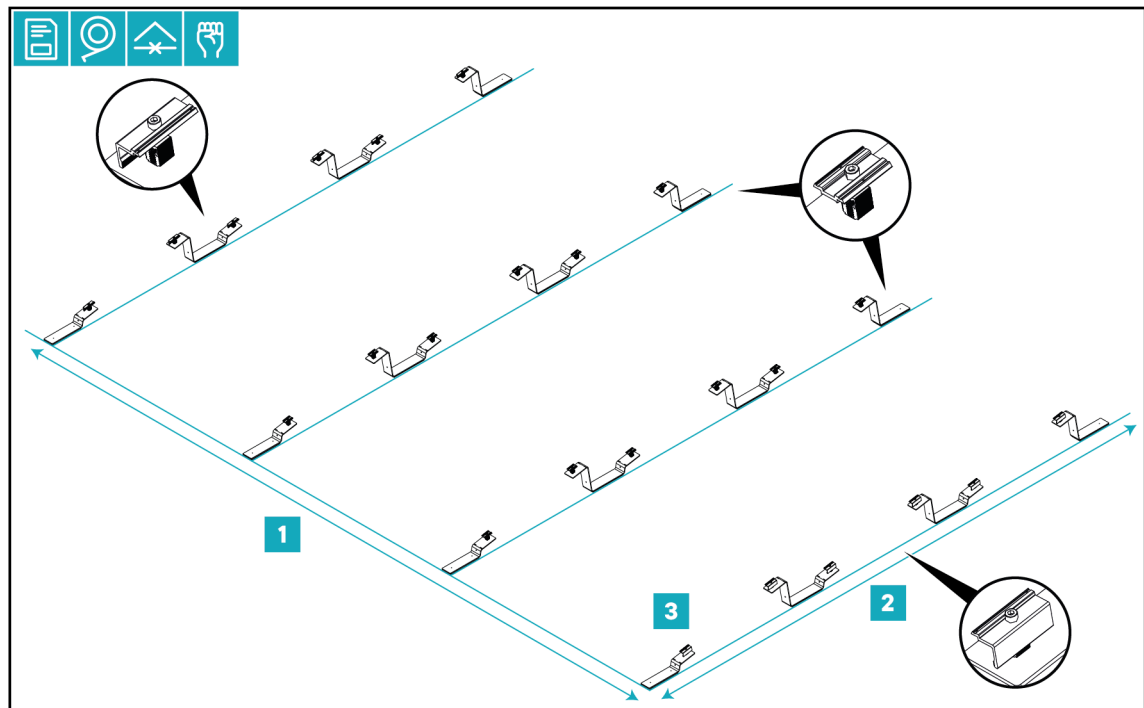
Pre-install the Clamps





- ▶ Attach end-clamps or mid-clamps to the front brackets, back brackets, and connector brackets as needed.

Measure area, place brackets and connector brackets



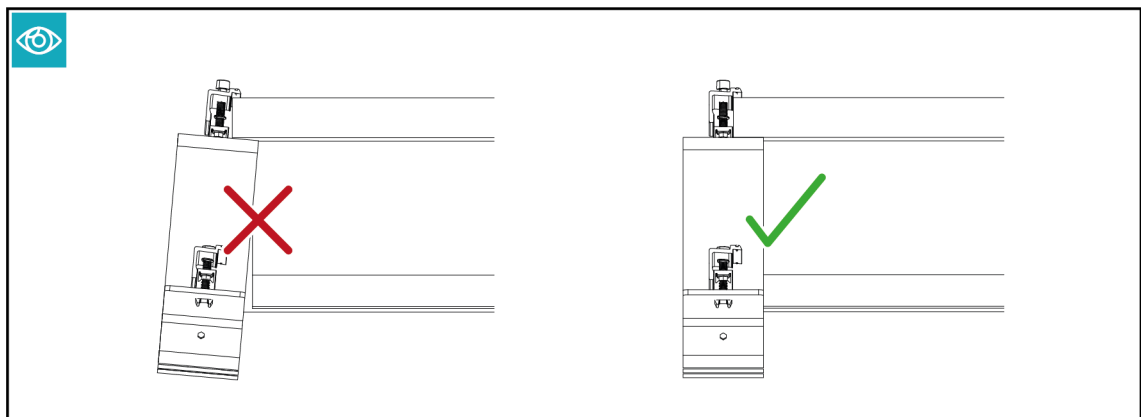
- Take the dimensions of the module field from the planning documents.
- Measure the length of the module field **1** and mark the line.
- Measure the width of the module field **2** and mark the line.
- Place brackets and connectors **3** in the module field:
 - Lateral field edge: Place starting brackets, end brackets and connector brackets with end-clamps.
 - Field interior: Place front brackets, end brackets and connector brackets with mid-clamps.

Installing modules

i Tip: When installing, wire the modules at the same time.

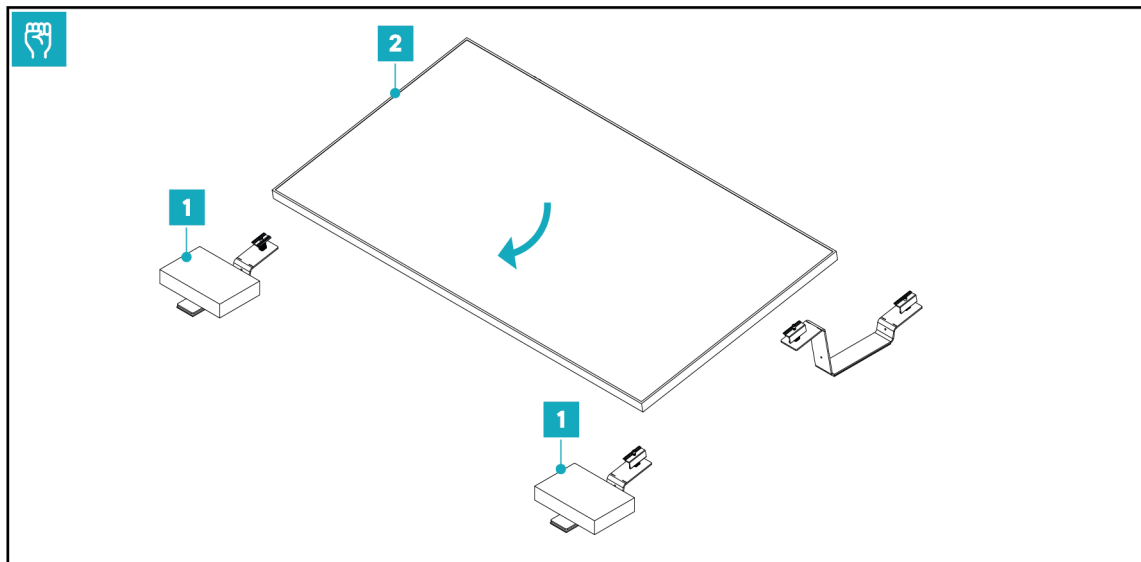
i The cables can be attached to the module with the cable tie clip (CLP-M).

i The distance between the clamps is determined by the brackets and connector brackets or by the module size.



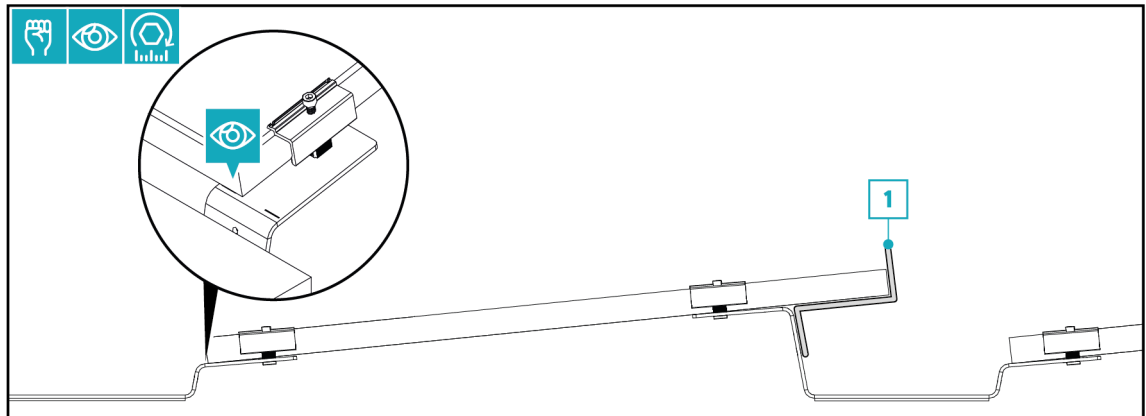
i When mounting the modules, make sure that the brackets/ connector brackets are straight at the edge of the module field.

- Place the brackets/ connector brackets, so that the clamps are flush against the module.
- Tighten the clamps carefully. Make sure that the brackets/ connector brackets are straight.



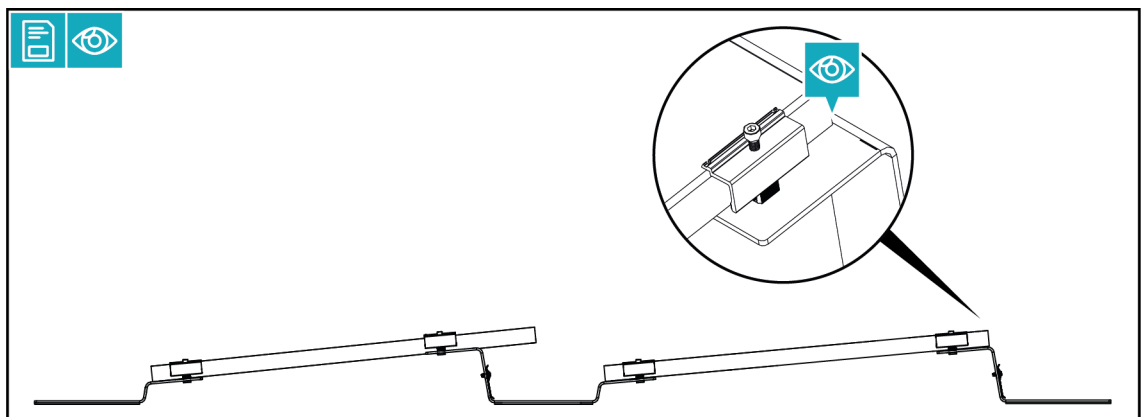
- Weigh down the front brackets with ballast blocks **1**.
- Place the module on the brackets or connector brackets **2**.

Version S5 - High Density



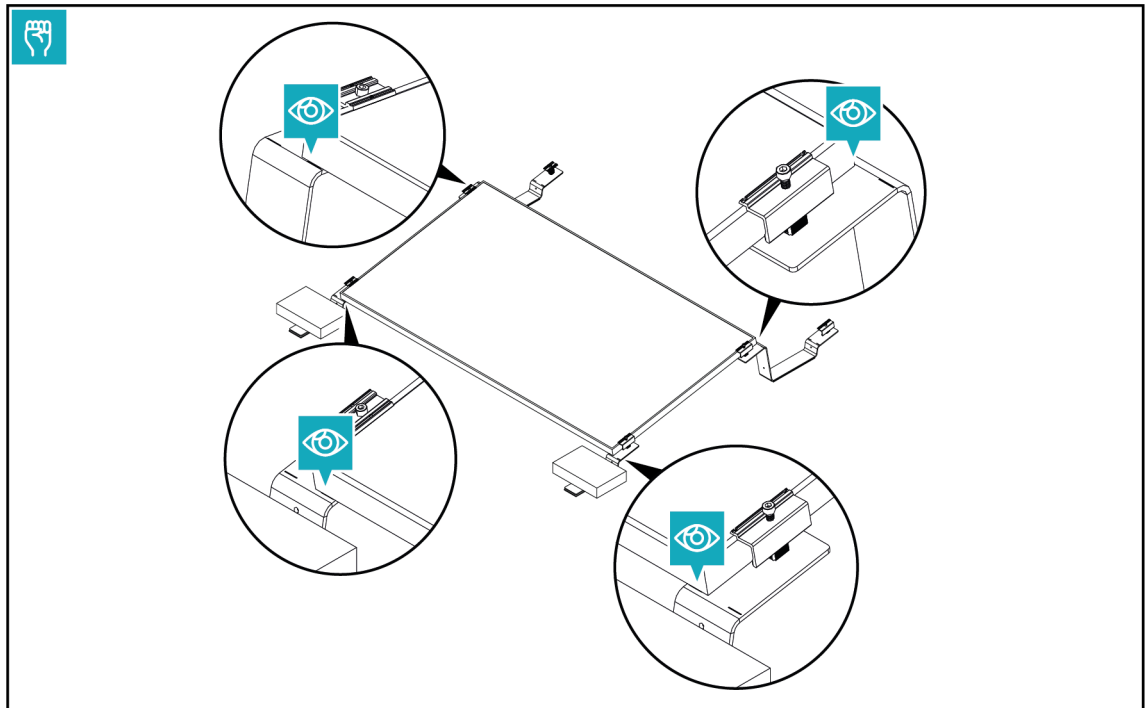
- Position the module at the notches on the front and end brackets.
- Position the back of the module on the connector brackets using the spacer bracket **1**.
- Make sure that the brackets/ connector brackets are straight.
- Tighten the screws of the end-clamps with 15 Nm or 11 ft lbs.

Mount the last row

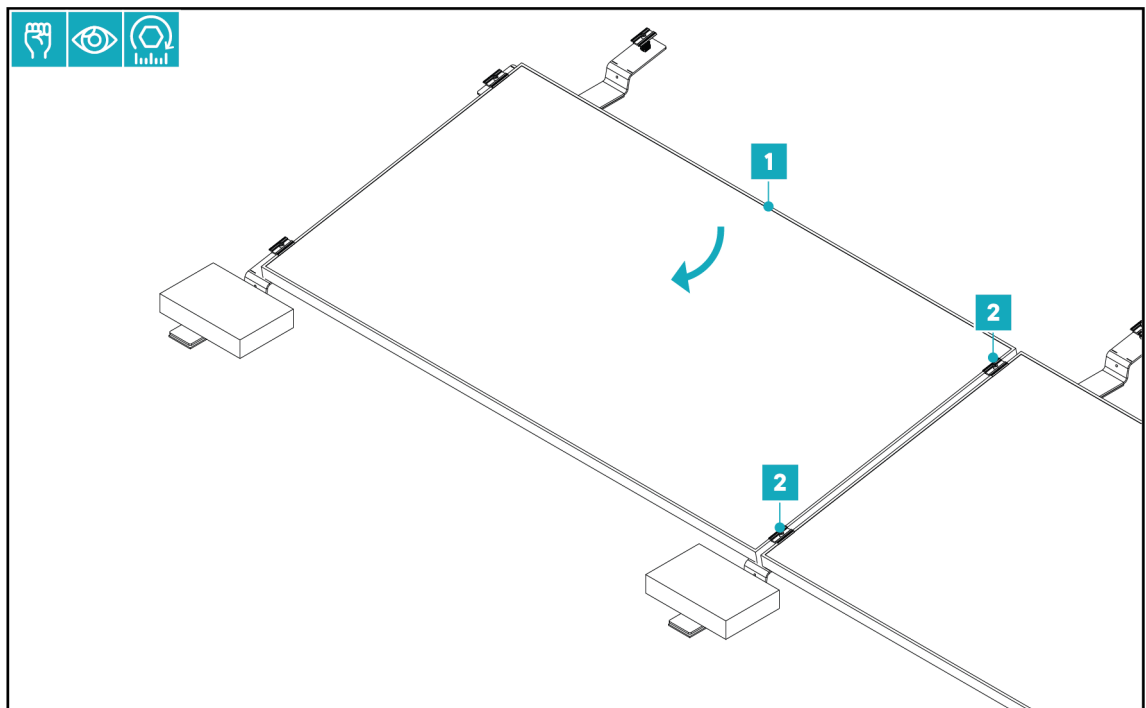


- In the last row of modules, mount each module at the notches of the end brackets.

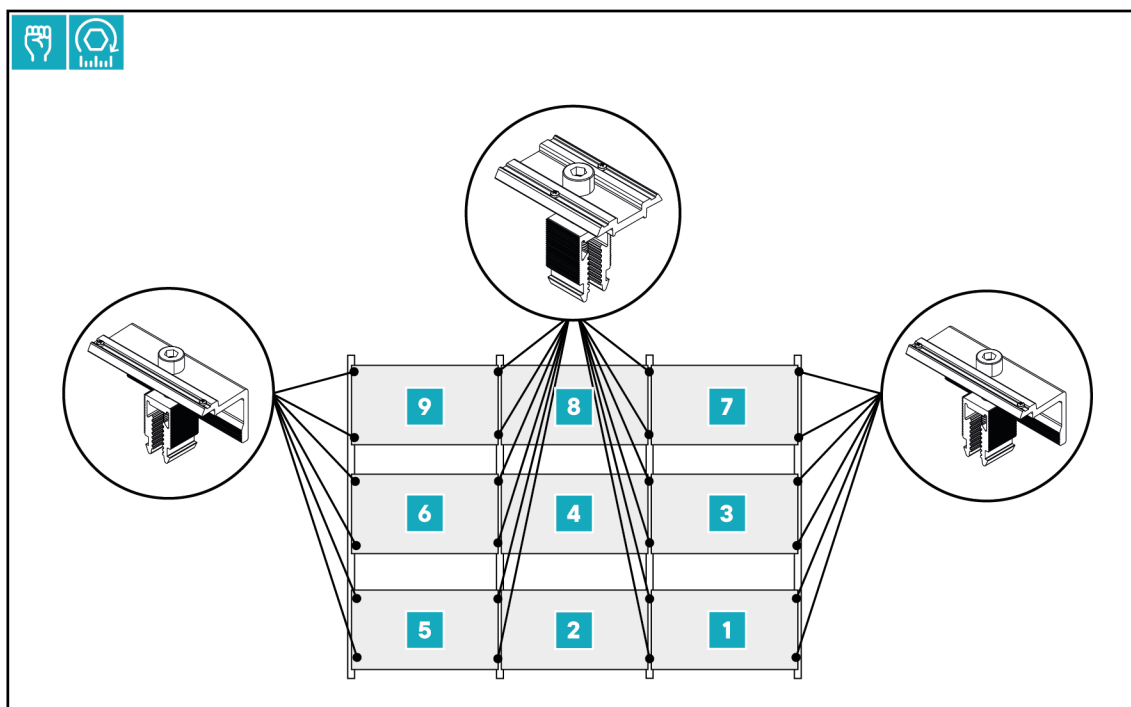
Version S05 - Standard, S10, S15



- ☑ Align the module with the notches on the brackets/ connector brackets.
- ☑ Tighten the screws of the end-clamps with 15 Nm or 11 ft lbs.



- ☑ Place the next module **1**.
- ☑ Tighten the screws on the mid-clamps **2** of the previous module with 15 Nm or 11 ft lbs.



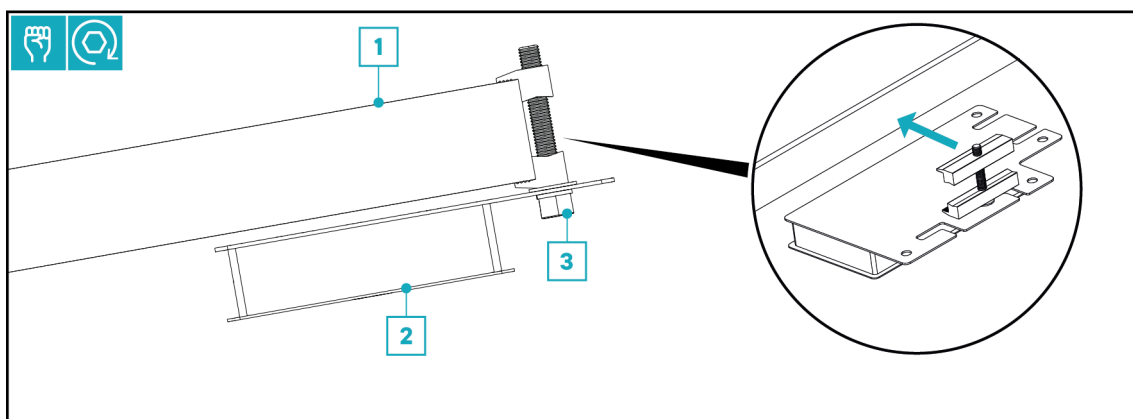
- Install further modules according to the recommended sequence.
- Tighten the screws at the end-clamps with 15 Nm or 11 ft lb each.

Reposition / replace clamps

- Demount clamp: Unscrew the screw at the clamp completely.
- Depending on the mounting situation, squeeze the clamp laterally and pull it out or pull it laterally out of the rail.

Installing Microinverters (optional)

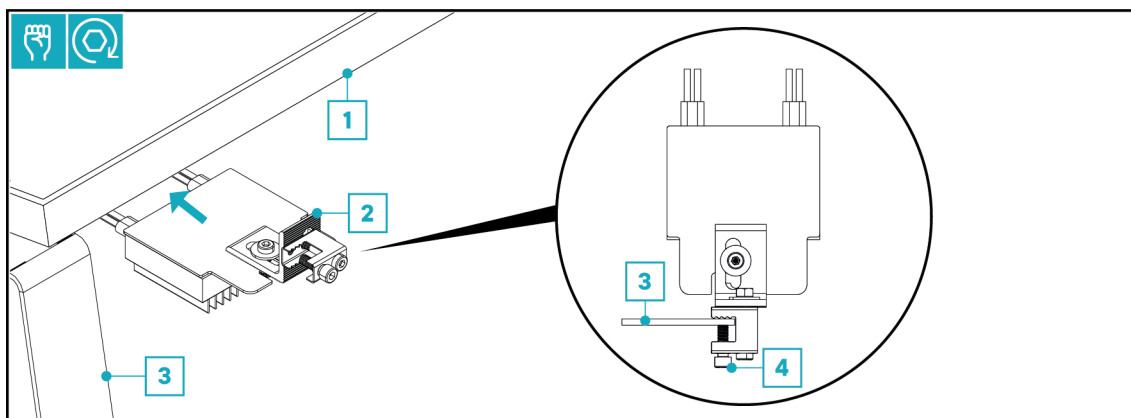
i The microinverter can be mounted directly onto the module frame.



- Observe the manufacturer's installation instructions (PV module, microinverter).
- Attach the microinverter with the microinverter clamp **2** to the module frame **1**.
- Carefully tighten the bolt **3** until the clamp is firmly attached to the module frame.

Installing Microinverters - EU (optional)

i The microinverter can be mounted below the module on a bracket, connector bracket or support.

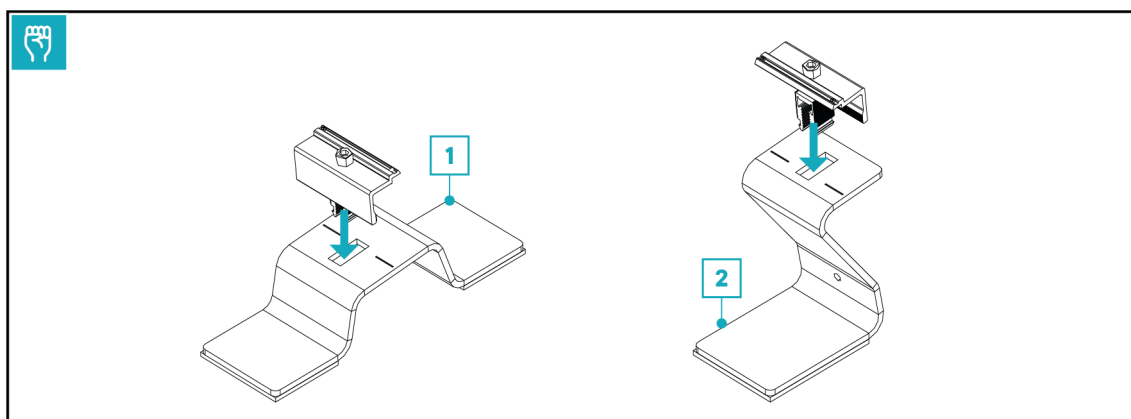


- Install the microinverter on the microinverter-bracket according to the manufacturer's specifications.
- Place installed microinverter **2** on the bracket, connector bracket or support **3** below the module **1**.
- Attach the microinverter-bracket to the bracket, connector bracket or support **3** and hand-tighten the Allen screw **4**.

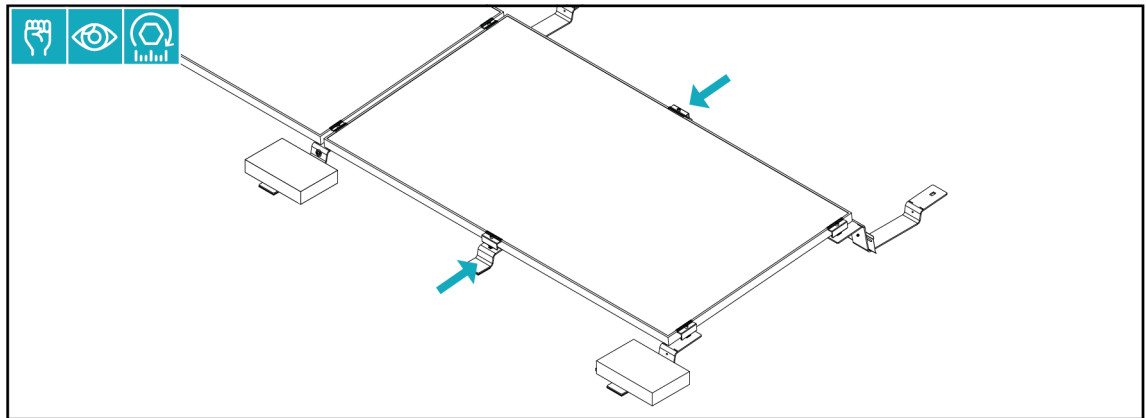
Installing Alpine Supports (optional)

i Above a certain snow load, additional support brackets (alpine brackets) are required at the middle of the module frame. The planning documents will state whether alpine supports are required.

i Before installing the alpine supports, make sure that the modules are suitable for the increased snow load and that clamping at the additional locations is approved.



- Attach one end-clamp each to the front alpine support **1** and to the back alpine support **2**.



- ☑ Position the alpine supports in the center of the module frame.
- ☑ Make sure that the end-clamps are flush with the module frame.
- ☑ Tighten the screws with a torque of 15 Nm or 11 ft. lbs.

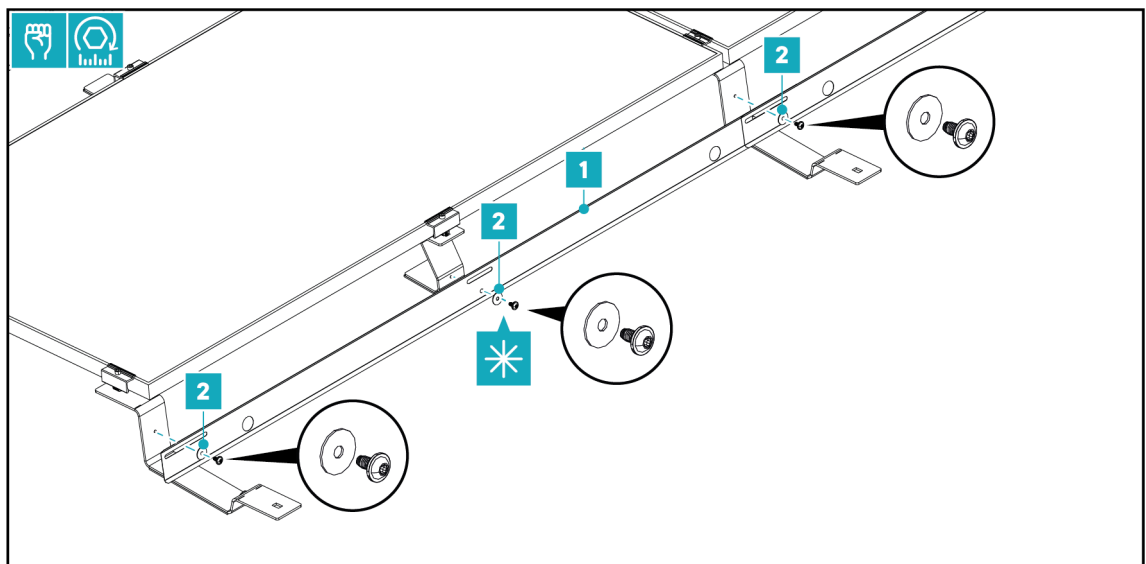
Installing Wind Deflectors

i Never leave the construction site until the wind deflectors have been installed. There is a danger of personal injury and damage to property!

i Complete all wiring work before installing the wind deflectors.

System S05

i In the S05 system, the long ballast trays can replace the wind deflectors. Wherever long ballast trays are required, do not install wind deflectors.

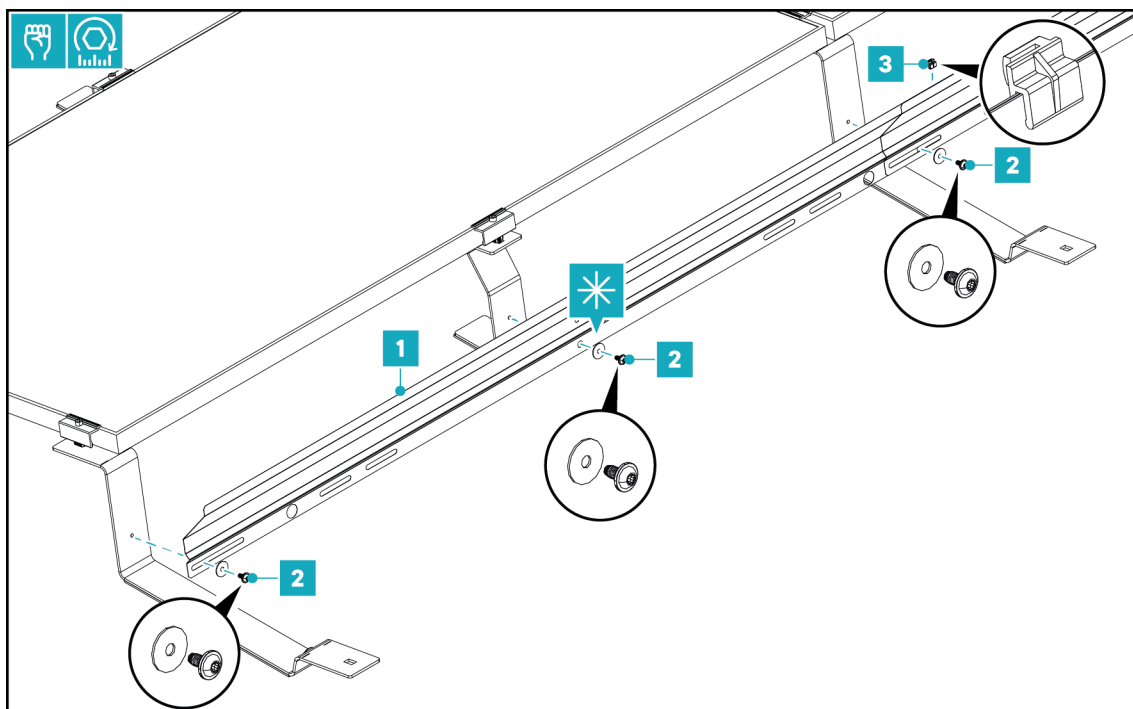


- ☑ Lay wind deflectors overlapping at the back of the connector brackets or end brackets **1**.
- ☑ If alpine supports will be mounted:
Screw the wind deflectors at the lower hole to the alpine supports.
- ☑ Screw the wind deflectors at the slotted holes to the connector brackets or end brackets **2**.

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

System S10

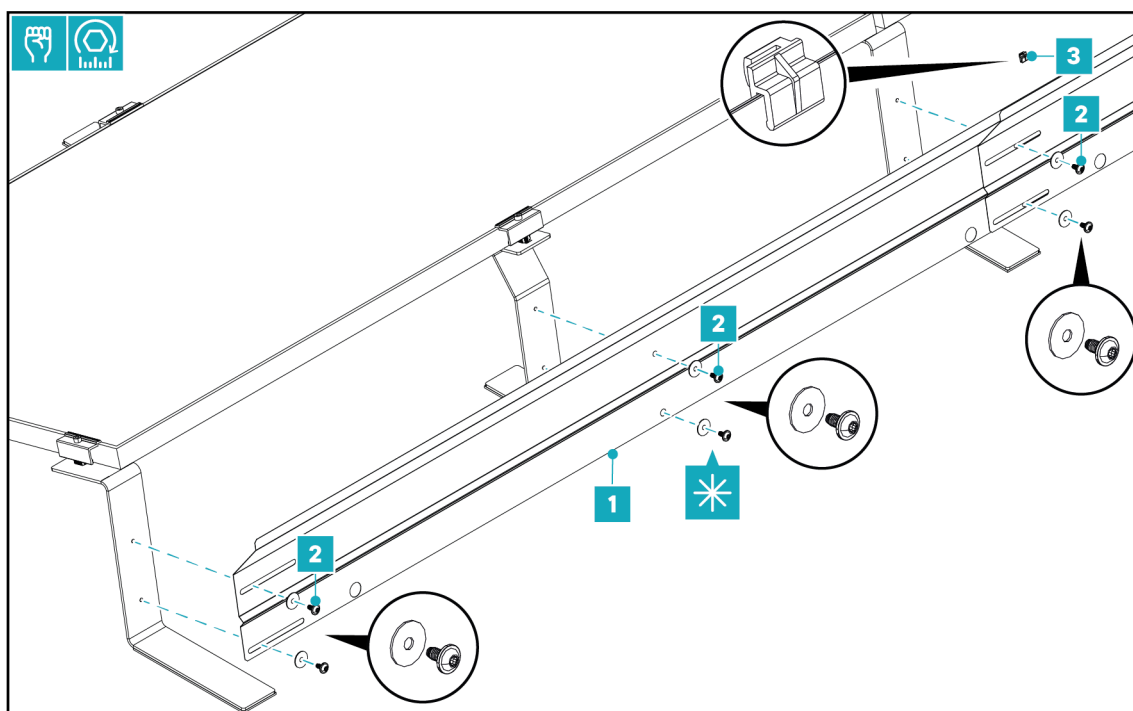
- i** To keep the installation work to a minimum, the wind deflectors should be installed together with the ballast trays.



- Lay wind deflectors overlapping at the back of the connector brackets or end brackets **1**.
- Screw the wind deflectors at the slotted holes to the connector brackets or end brackets **2**.
- If alpine supports will be mounted:
Screw the wind deflectors to the alpine supports.
- Tighten the screws with 15 Nm or 11 ft lb each.
- Attach the clips at the overlap points **3**.

System S15

- i** To keep the installation work to a minimum, the wind deflectors should be installed together with the ballast trays.



- Lay wind deflectors overlapping at the back of the connector brackets or end brackets **1**.
- Fasten the wind deflectors to the slotted holes with the connector brackets or end brackets using 2 screws each **2**.
- If alpine supports will be mounted:
Screw the wind deflectors to the alpine supports with 2 screws each.
- Tighten the screws with 15 Nm or 11 ft lb each.
- Attach the clips at the overlap points **3**.

Place ballast

i Depending on the project circumstances, ballast requirements will vary.

Ballasting for gravel roofs

Depth of the gravel - up to 2.5 in (6 cm)

- ✓ Use long ballast trays.
- ✓ Use existing gravel for ballasting in the ballast pans, if possible.
- ✓ Spread remaining gravel evenly over the roof.

Depth of the gravel - 2.5 in to 4 in (6 cm - 10 cm)

- ✓ Use only long ballast trays to distribute ballast as best as possible and to prevent the feet from sinking in.

Depth of the gravel - more than 4 in (10 cm)

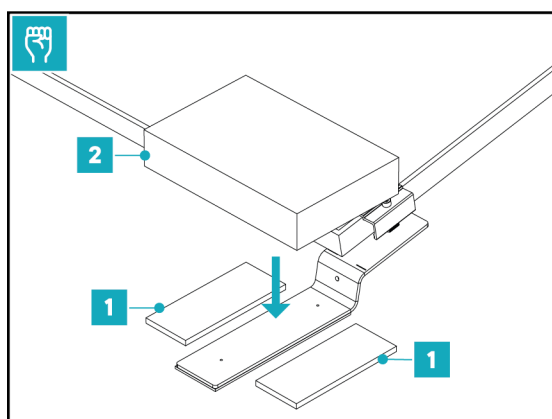
- ✓ Use ballast trays.

i When the depth of the gravel exceeds 4 in, the surface pressure should be reduced to such an extent that individual pebbles are not pressed into the roofing membranes. However, the coefficient of friction greatly changes. Damage to the roof membrane should be minimal, but the PV system will be prone to higher sliding values.

Version 1: Ballasting directly on the brackets or connector brackets

With this ballasting option, the ballast blocks are placed directly on the brackets or connector brackets with protection pads placed underneath for balance.

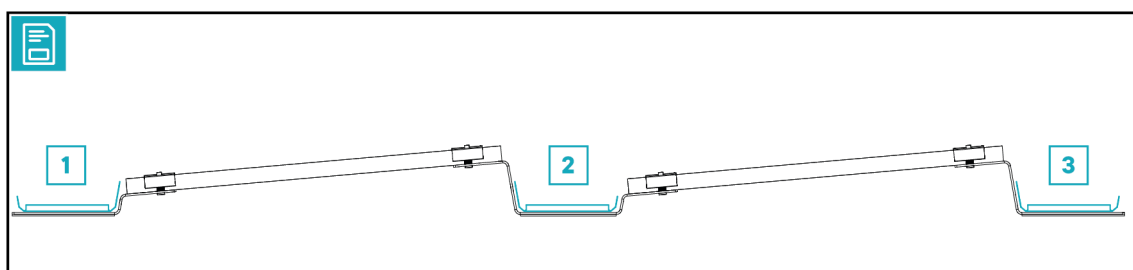
i Installers must follow the AEROTOOL planning documents for the exact number and placement of the ballast blocks.



i Recommendation: Gluing the protection pads to the ballast blocks will prevent movement of the pads. Use weather-resistant construction adhesive.

- Position the protection pads **1** to the right and left of the bracket or connector bracket.
- Place ballast block(s) **2**.

Version 2: Short ballast trays

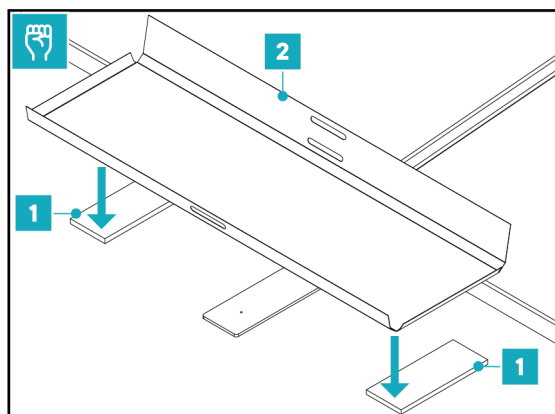


The short ballast tray can be installed in the following positions:

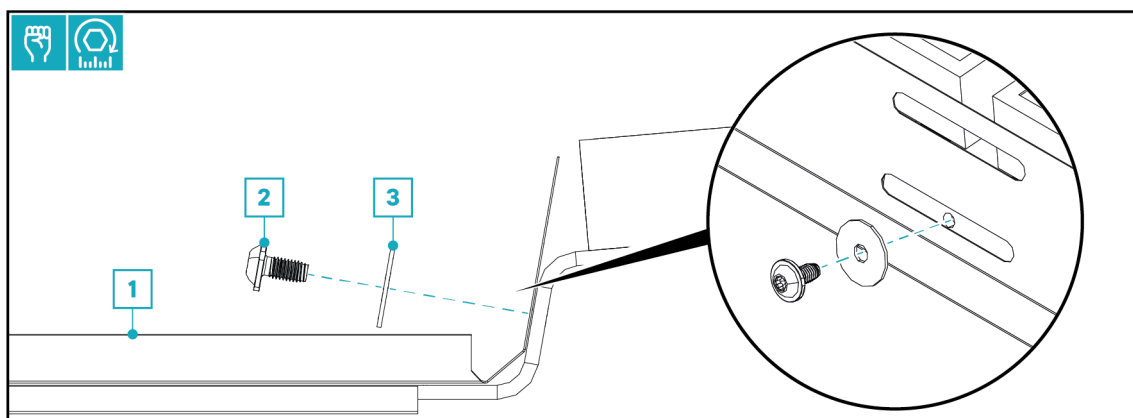
- 1** at the front bracket.
- 2** on the connector bracket.
- 3** at the end bracket.

i Refer to the Aerotool planning documents for the exact number and position of the short ballast trays.

Installing the short ballast tray

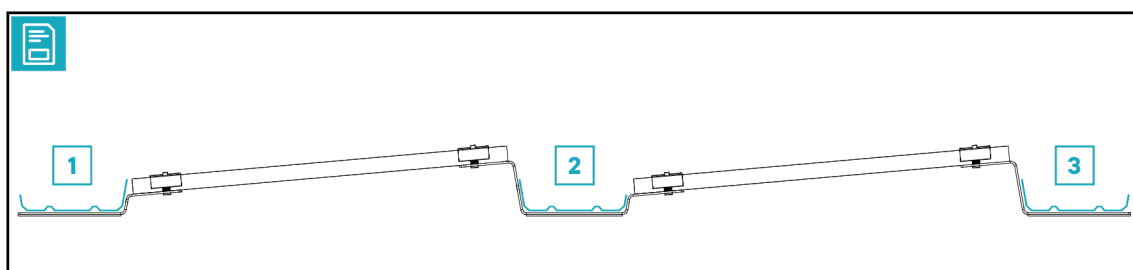


- Position protection pads **1** to the right and left of the edge of the short ballast tray.
- Place the ballast tray **2** centrally on the bracket or connector bracket.



- Screw the ballast tray **1** to the bracket or connector bracket with washer **3** and ALtracs screw **2**.
- Tighten the screws with 15 Nm or 11 ft lb.

Version 3: Long ballast tray



The long ballast tray can be installed in the following positions:

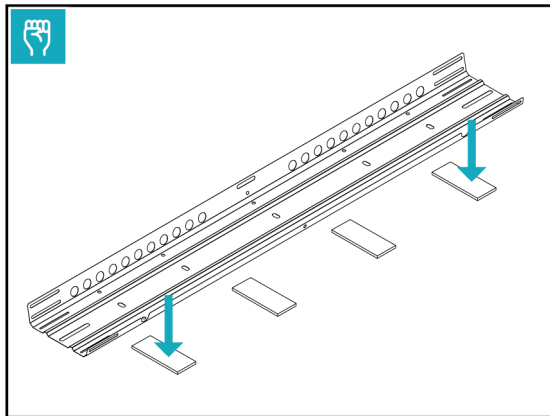
- 1** across the front brackets.
- 2** across the connector brackets.
- 3** across the end brackets.

Placing the roof protection pads

Depending on the length of the ballast tray, a different number of roof protection pads are required per ballast tray:

Length 1800 mm: 3 roof protection pads per ballast tray

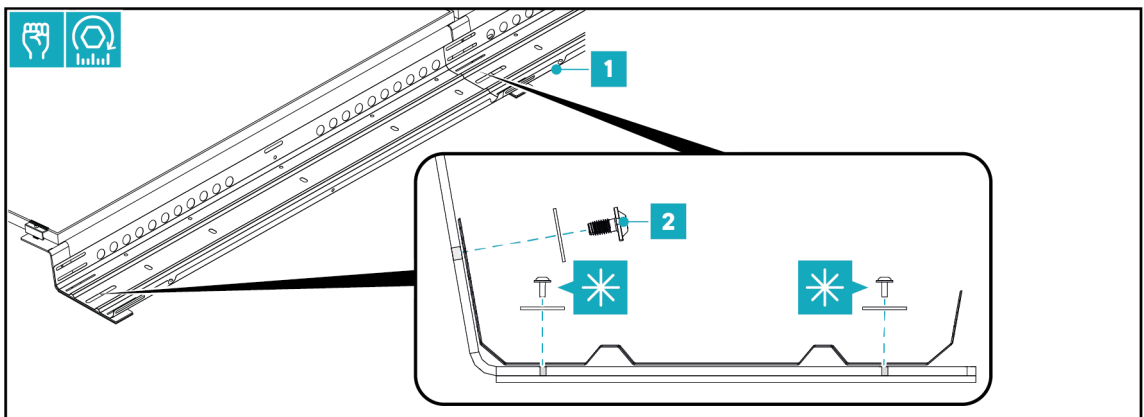
Length 2050 mm: 4 roof protection pads per ballast tray
Length 2300 mm: 5 roof protection pads per ballast tray



- i** When positioning the protection pads, make sure that the drain holes at the bottom of the ballast tray are not covered.
- Distribute roof protection pads evenly under the ballast trays.

Installing the long ballast tray for S5

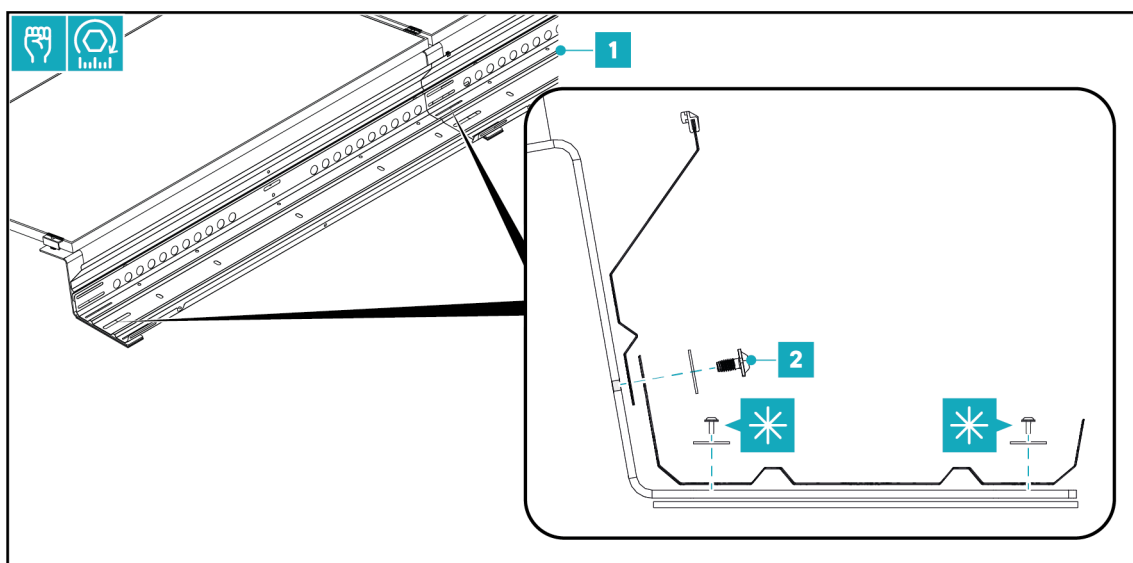
i In the S05 system, the long ballast trays can replace the wind deflectors. Wherever long ballast trays are required, wind deflectors are not needed.



- When several ballast trays are placed side by side:
Lay out the ballast trays so that they overlap at the connector brackets or end brackets **1**.
- Attach the ballast tray to the brackets with a washer and the ALtracs screw **2**.
- Tighten the screws with 15 Nm or 11 ft lb.
- If specified in the planning documents (optional):
Screw the bottom of the ballast trays to the connector brackets or end brackets (self-tapping screw STS4x8 and washer 4.3/(25)).
- Hand tighten the screws.

Install long ballast tray for S10 and S15

i In the S10 and S15 systems, the ballast tray is installed together with the wind deflectors.

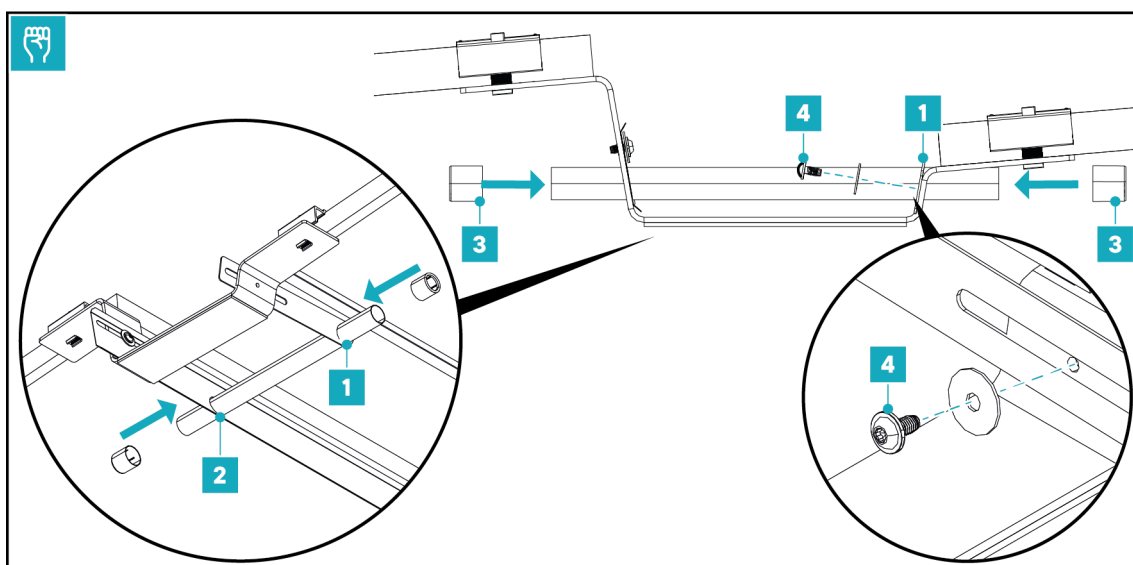


- ▶ If several ballast trays follow each other:
Lay out the ballast trays so that they overlap at the connector brackets or end brackets **1**.
- ▶ Attach the ballast trays to the brackets with a washer and ALtracs screw **2**.
- ▶ Tighten the screws with 15 Nm or 11 ft lb.
- ▶ If specified in the planning documents (optional):
Screw the bottom of the ballast trays to the connector brackets or end brackets (self-tapping screw STS4x8 and washer 4.3(/25)).
- ▶ Tighten the screws hand-tight.

Installing cable pipe assembly (optional)

i The cable pipes can be installed at the edges or interior of the module field.

i Depending on the situation, the cable pipe assembly can be installed on a connector bracket together with the wind deflector and/or the ballast tray.



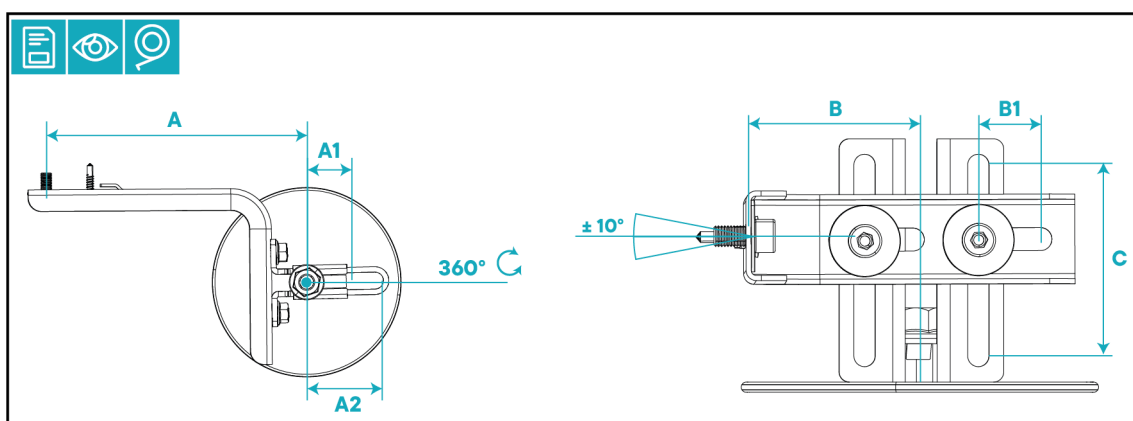
- Slide the cable pipe through the pipe bracket **1**.
- Slide the pipe through the appropriate hole in the long ballast tray **2**.
- Attach the plastic caps **3** to the end of the cable pipe.
- Hand-tighten the bracket to the connector bracket using the washer and furrow screw **4**.
- Align cable conduit and/or bracket.
- Tighten the screws with 15 Nm or 11 ft lb.

Mount anchor point attachment

i The mechanical attachments must be provided by the customer and are not included in the scope of delivery of AEROCOMPACT. Please follow the manufacturer's installation instructions.

i Refer to the AEROTOOL planning documents for the number and position of the mechanical attachments.

Position the Mechanical Attachments

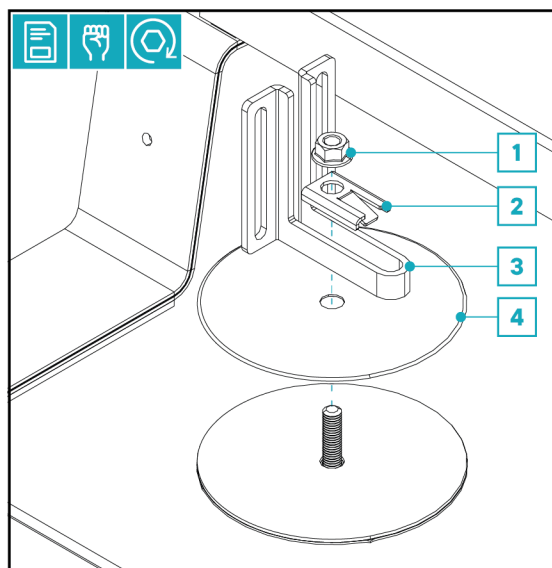


i AEROTOOL marks only the components on which the mechanical attachments are mounted.

- Determine the exact position of the mechanical attachment according to the following dimensions/tolerances:
 - A: 218 mm / 8.58 inch
 - A1: 0 - 30 mm / 0 - 1.18 inch
 - A2: 64 mm / 2.52 inch
 - B: 66 - 89 mm / 2.60 - 3.50 inch
 - B1: 28 mm / 1.10 inch
 - C: 74 mm / 2.91 inch

Connect system with mechanical attachments

i The connection to the mechanical attachments can be mounted together with the wind deflectors and/or ballast trays.

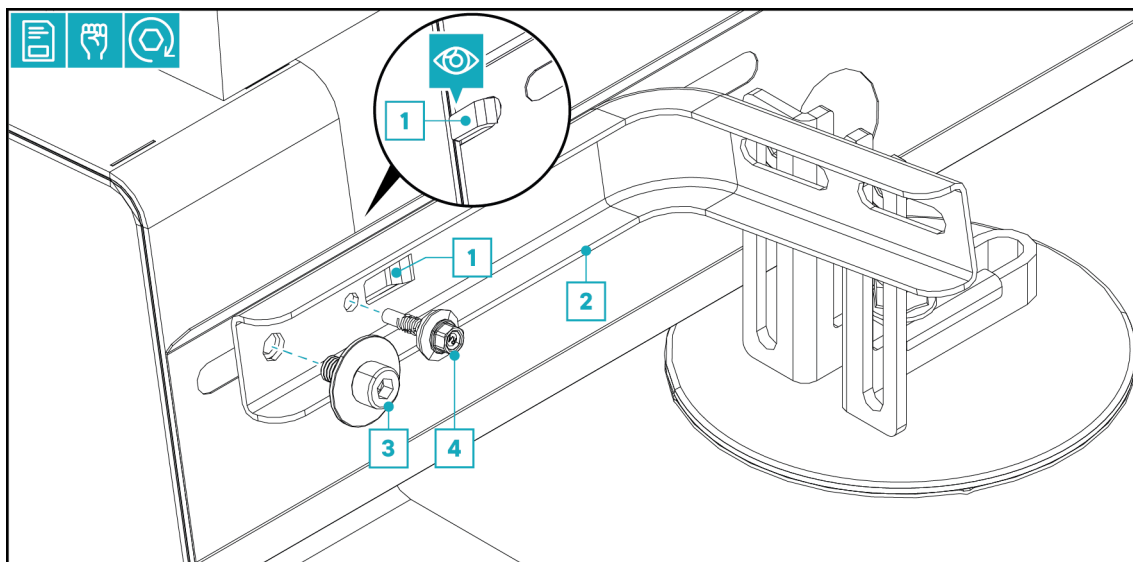


i The nut **1** is not included in the scope of delivery and must be provided by the customer.

➤ Place washer **4**, bracket **3** and spacer **2** onto mechanical attachment hardware.

i Make sure that the tab of the spacer **2** is facing outwards.

➤ Hand-tighten the components with the nut **1**.



i For tension-free mounting of the anchor point attachment, use the bracket / connector bracket (S...-TF...) with additional holes and a thin sheet metal screw.

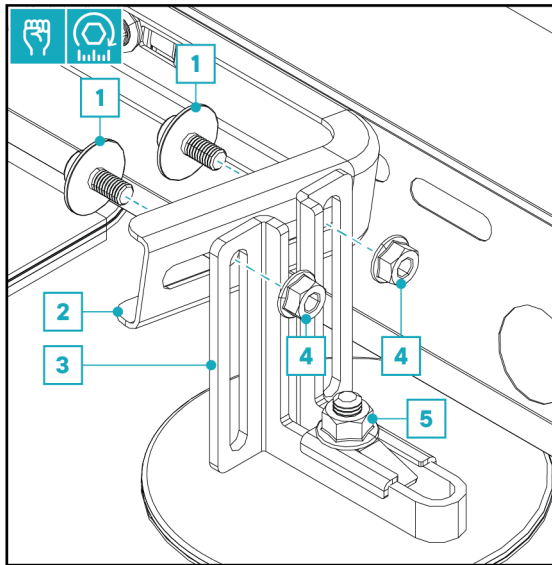
➤ Attach the angle connection **2** to the bracket / connector bracket.

➤ Make sure that the tab **1** is positioned on the side of the bracket / connector bracket.

➤ If necessary, move the wind deflector so that the tab **1** protrudes through the slotted hole of the wind deflector. The wind deflector and the angle connection **2** must be placed flush on the bracket/ connector bracket.

➤ Fasten the angle connection **2** to the bracket/ connector bracket using the furrow screw **3** and the drill screw **4**.

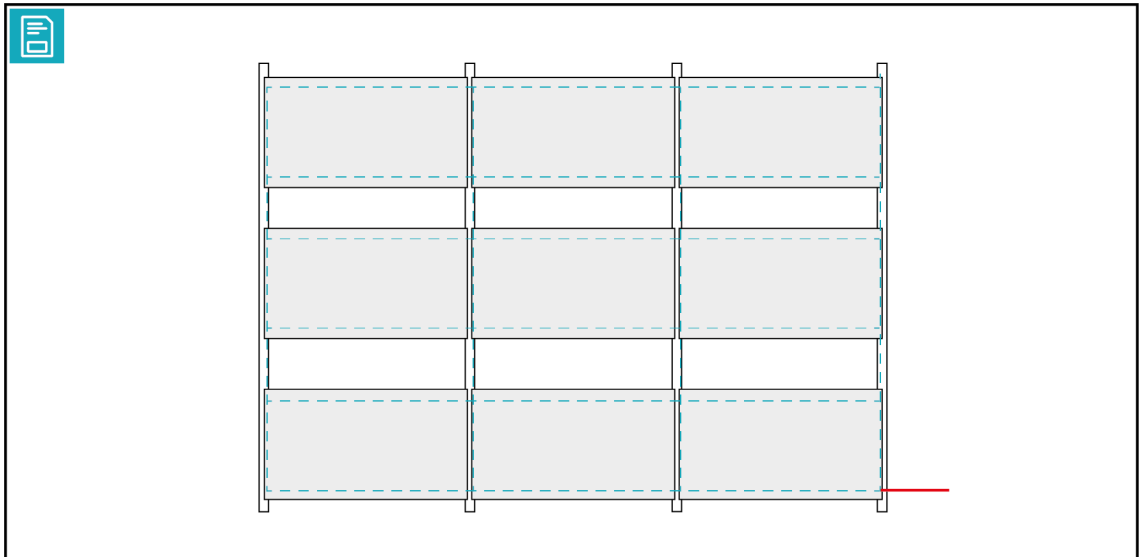
➤ Remove any possible metal shavings from the roof membrane.



- Position the angle connection **2** and the bracket **3** flush against each other.
- Connect the angle connection **2** and the bracket **3** to each other at the slotted holes using the furrow screws **1** and nuts **4**.
- Tighten the nuts **4** and bolts **5** to 11 ft-lb (15 Nm) each.

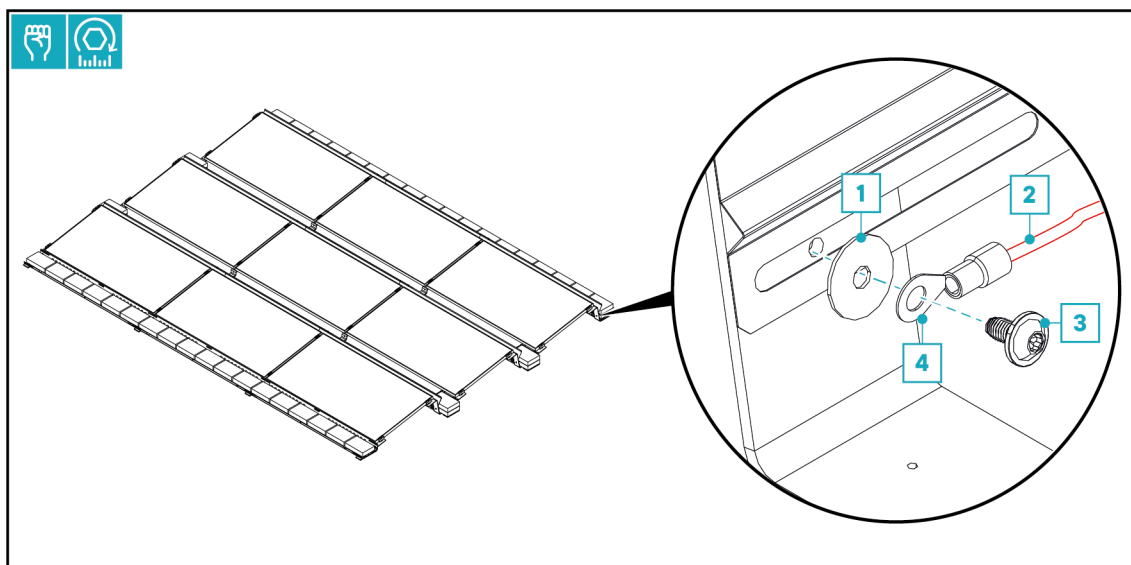
Bonding and Grounding (NOT VALID IN USA)

i The modules of an array field are bonded to each other by the module clamps and brackets/ connector brackets.



Install grounding / bonding equipment (not USA-compliant)

For grounding, use a commercially available cable lug in accordance with national regulations/ certifications.

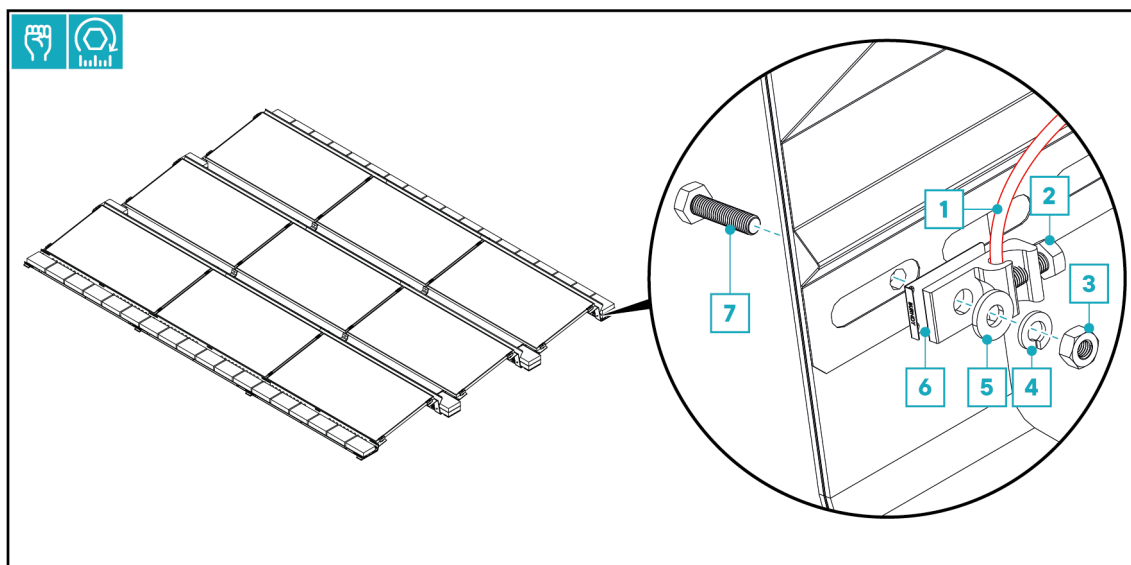


i The grounding / potential equalization is mounted at the edge of a module field on a bracket.

i The grounding/ bonding equipment can be mounted together with the wind deflectors/ ballast trays.

- Loosen and remove screw **3**.
- Connect ground wire **2** firmly to cable lug **4**.
- Attach washer **1** and cable lug **4** in the order shown with the screw **3**.
- Tighten the screw **3**.

Install grounding / bonding equipment (USA-compliant)



i The grounding / potential equalization is mounted at the edge of a module field on a bracket.

i The grounding/ bonding equipment can be mounted together with the wind deflectors / ballast trays.

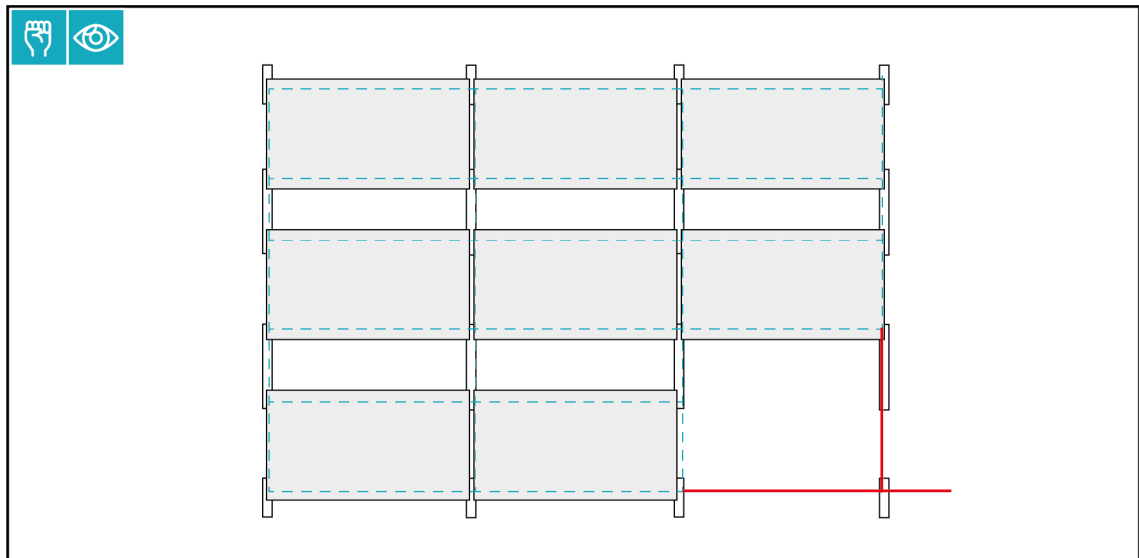
- Mount the grounding lug **6** at the bracket using the screw **7**, washer **5**, split ring **4** and nut **3**.

- Attach an appropriately sized copper grounding wire (provided by customer) **1** to the grounding lug with the screw **2**.

Potential equalization during maintenance

i Attention!

In case of a module removal, a temporary grounding lug and wire will be required to attach the remaining modules with each other and maintain an appropriate bonding path.



MAINTENANCE

To prevent personal injury and property damage, the system must be inspected regularly by qualified personnel. The operator of the equipment must perform the following maintenance items once a year.

A test of the system is necessary after severe weather events (e.g. wind storm, snow, hail, etc.) as well as after extreme events such as a hurricane or earthquake.

Complete System

- Check all components of the system for damage.
- Replace damaged components as soon as possible.

Fittings

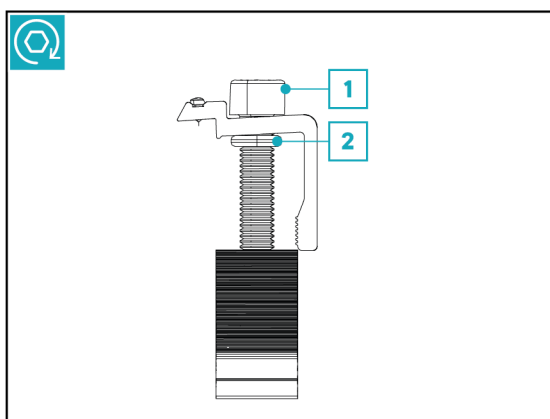
- Check all screw connections.
- Tighten loose screw connections. Confirm the tightening torque according to the assembly instructions.

DISMANTLING

Disassemble components

➤ Dismantling the system: Carry out the assembly steps in reverse order.

Dismantle clamps




➤ Completely unscrew the screw **1** on the clamp.

➤ If clamps are re-installed:
Make sure that the O-ring **2** is not lost.

APPENDIX

Declaration of Conformity S05, S10, S15

	Manufacturer:	AEROCOMPACT®
	Designation:	CompactFLAT S South system for flat roofs
	Identification code:	S5, S10, S15
	Applied standard:	EN 1090
	Certification body:	2397



[To the declaration of performance](#)

UL Certification Notes

The CompactMETAL system is certified by SolarPTL, LLC for grounding/bonding, fire classification, and mechanical loading. SolarPTL, LLC is a Nationally Recognized Testing Laboratory (NRTL).

The CompactMETAL grounding method conforms to ANSI/UL 2703, and is approved for use with photovoltaic modules listed under ANSI/UL 1703 and/or ANSI/UL 61730, whichever applies, and complies with the National Electrical Code, ANSI/NFPA 70. The individual parts within the solar array need to be electrically bonded to existing DC ground paths via the use of a UL 467 approved grounding lug and via UL 467 approved bonding jumpers. The conductor size, type and temperature rating should be selected in accordance with NEC 690.45 and NEC 250.122.1. The primary evaluation for grounding and/or mounting was performed with the PV module type(s) listed below.

- VSUN330-72P

Specific evaluations of other modules can be provided upon request and at cost (a minimum of two modules are required). In addition, more than four attachment points per module can be set to account for wind, snow, and other types of loading.

For the fire rating / testing requirements for metal roofs, there is an exception in ANSI/UL 2703 section 11.1 that exempts fire testing and provides a Class A rating when the following conditions are met:

- Type 1, Type 2, or Type 3 modules as defined by UL 1703 or UL 61730-2;
- 98% by weight of the racking is non-combustible per ASTM E136;
- Installed over a Class A roof assembly of non-combustible roof covering, such as clay tile, concrete tile, metal panels made from steel, minimum 28 Ga ferrous panels or shingles.

CompactMETAL meeting the above conditions shall be identified as having a Class A fire rating.

Load Rating

The CompactMETAL system design load ratings for a 72 cell PV module are:

- a) Upward: 50 psf / 2.4 kPa
- b) Downward: 71 psf / 3.4 kPa
- c) Down-slope 10 psf / 0.48 kPa

Tested loads: a) Upward: 75 psf / 3.6 kPa

b) Downward: 106.5 psf / 5.1 kPa

c) Down-slope: 15 psf / 0.72 kPa