

---

Assembly Instruction

## COMPACTPITCH XM-F

Version : 3.3

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

Copyright by AEROCOMPACT Europe GmbH

## **Manufacturer**

AEROCOMPACT Europe GmbH  
Gewerbestrasse 14  
6822 Satteins, Austria

[office@aerocompact.com](mailto:office@aerocompact.com)  
[www.aerocompact.com](http://www.aerocompact.com)

## **Creation date**

10/2024

# TOC

---

<b>General</b> .....	<b>4</b>
Applicable documents .....	4
Limitation of liability .....	4
Explanation of symbols .....	4
<b>Safety</b> .....	<b>5</b>
Appropriate use .....	5
Personnel requirements .....	6
Working safely .....	6
Breakthrough protection .....	7
Personal protective equipment (PPE) .....	7
<b>System overview</b> .....	<b>8</b>
Basic components .....	8
System accessories .....	9
Mounting rails and accessories .....	9
Module accessories .....	9
Accessories for equipotential bonding .....	9
<b>Assembly</b> .....	<b>10</b>
Assembly preparation .....	10
Required tools for assembly .....	10
Measure the area .....	11
Align XM-F roof hook .....	12
Assembly preparation .....	12
Evaluate installation height .....	13
Mount XM-F roof hooks .....	16
Decentralized mounting of the base plate (optional) .....	18
Mounting the ground plate bridge (optional) .....	19
Mount support plate .....	20
Mount cover medium .....	21
Attach foam wedge (optional) .....	22
Mount roof angle .....	23
Mount rail .....	25
Rail connector .....	27
Installing the modules .....	28
Assemble mounting rail in cross connection .....	30
Cable management .....	31
MLPE module mounting (optional) .....	35
MLPE for mounting Mounting rail (optional) .....	36
Potential equalization .....	37
<b>Maintenance, disassembly and disposal</b> .....	<b>39</b>
Maintenance .....	39
Disassembly .....	39
Disposal .....	39
<b>Appendix</b> .....	<b>40</b>
Declaration of performance XM-F .....	40
Revision history .....	40

# 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](http://www.aerocompact.com/downloads).

## EXPLANATION OF SYMBOLS

### SYMBOLS FOR INSTRUCTIONS



Prerequisites for action instruction



Results of action steps



Step by step action instruction



This note provides useful information for smooth installation

### SYMBOLS IN ILLUSTRATIONS - ACTIVITIES



Optional component, optional mounting variation



Activity by hand



Check AEROTOOL project report or planning documents



Visual inspection



Observe right angle

### SYMBOLS IN ILLUSTRATIONS - TOOLS



Measuring tape, measure



Pencil, mark



Chalk line



Scissors, tin snips, cut to size



Cordless screwdriver, screwdriver



Use a torque wrench, Observe torque



Use Allen key

# 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 CompactPITCH pitched roof system is intended exclusively for the installation of PV modules on tiled roofs or similar roof coverings. Proper use also includes correct installation in accordance with these installation instructions. Approval from the module manufacturer is required for the use of PV modules with the CompactPITCH system. AEROCOMPACT accepts no liability for loss of performance or damage of any kind to the PV modules. Any other use of the CompactPITCH system is considered improper use. Do not enter the mounting rails during installation. It is strictly forbidden to place any objects, such as pallets, on the mounting rails.

### ENSURING TIGHTNESS DURING INSTALLATION

**i** The following instructions are essential to ensure that the roof is watertight during the installation of roof hooks and hanger bolts and to prevent subsequent damage due to leaks.

**Correct positioning:** Roof hooks and hanger bolts must be positioned exactly in accordance with the planning documents and local building regulations. Incorrect positioning can impair the roof waterproofing and lead to water ingress. It is particularly important to look out for sharp-edged or protruding noses on roof tiles, which may need to be removed to ensure tightness - this applies especially when using replacement roof tiles.

**Correct torque setting:** Great care must be taken when tightening the fastening screws of both the roof hooks and the hanger bolts. Excessive tightening can damage the roof waterproofing and cause leaks. It is essential to adhere exactly to the torques specified in these installation instructions in order to maintain the structural integrity of the roof and the seal.

**Final check and inspection:** After the roof hooks and hanger bolts have been installed, a comprehensive inspection of the installed components must be carried out. Pay attention to damage to sealing materials or potential leaks. Incorrect installation can cause serious consequential damage to the building fabric and interior fittings.

**Legal notice:** By adhering to these installation instructions, responsibility is assumed for the correct installation of roof hooks and hanger bolts in accordance with regulations. Damage, in particular due to improper installation and resulting leaks, may result in liability claims. Careful observance of these recommendations makes a decisive contribution to the longevity and tightness of the roof.

### NOTE ON THE PROCESSING OF THIN SHEET METAL SCREWS

**i** The attachment of thin sheet metal screws with impulse or impact screwdrivers is not permitted. The high speeds can cause damage to the screw bodies, the flashing and the sealing. Thin sheet metal screws may **only** be used **once**, as their performance is not guaranteed if they are reused.

- Apply pressure to the thin sheet metal screw and screw in at low speed (< 500 rpm).
- Then reduce the pressure and screw in the thin sheet screw at a higher speed.

## 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 must ensure that the necessary safety measures and the relevant labor law and occupational safety regulations are observed when installing products from AEROCOMPACT Europe GmbH. Information from AEROCOMPACT Europe GmbH on the need to comply with security measures is provided without guarantee and without any claim to completeness and serves only to support the contractual partner. The contractual partner is obliged to inform himself about all relevant regulations concerning working safety and to comply with them. AEROCOMPACT Europe GmbH expressly assumes no responsibility and consequently no liability. Areas below the roof on which work is being carried out must be protected from falling objects. Where this is not possible, the affected areas must be closed to the public and unauthorized personnel. If the weather is unsuitable, work on the roof must not be continued for longer than necessary or must not be started at all. Never carry out installation work in strong winds. Strong winds exert particular enormous forces on the large-area PV modules. There is a risk of a module being torn off the roof and people being injured. Never work in wet conditions or at temperatures below freezing. Depending on the roof pitch, there is a risk of slipping. Only use suitable, intact and tested ladders. Set up and secure ladders according to specifications. Separate rules apply to mechanical climbing aids (elevators, cherry pickers, etc.). Never use the PV mounting system as a climbing support. Keep sufficient distance from overhead power lines. Equipotential bonding between the individual system components must be carried out in accordance with the respective country-specific regulations. When cutting materials to size, make sure there are no burrs, especially on edges and corners where there is a risk of injury.

# BREAKTHROUGH PROTECTION

Roof windows, skylights, large ventilation flaps, etc. generally cannot withstand the weight or impact of a person. Such objects must be secured in a similar way to the roof edge. Corrugated fiber-cement roofs can be at risk of breakthrough over the entire surface. Define routes and secure them with load distribution measures. Always use load distribution aids on roof coverings or roof structures (e.g. thin sheet metal, corrugated fiber cement) with insufficient load-bearing capacity.

# 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**



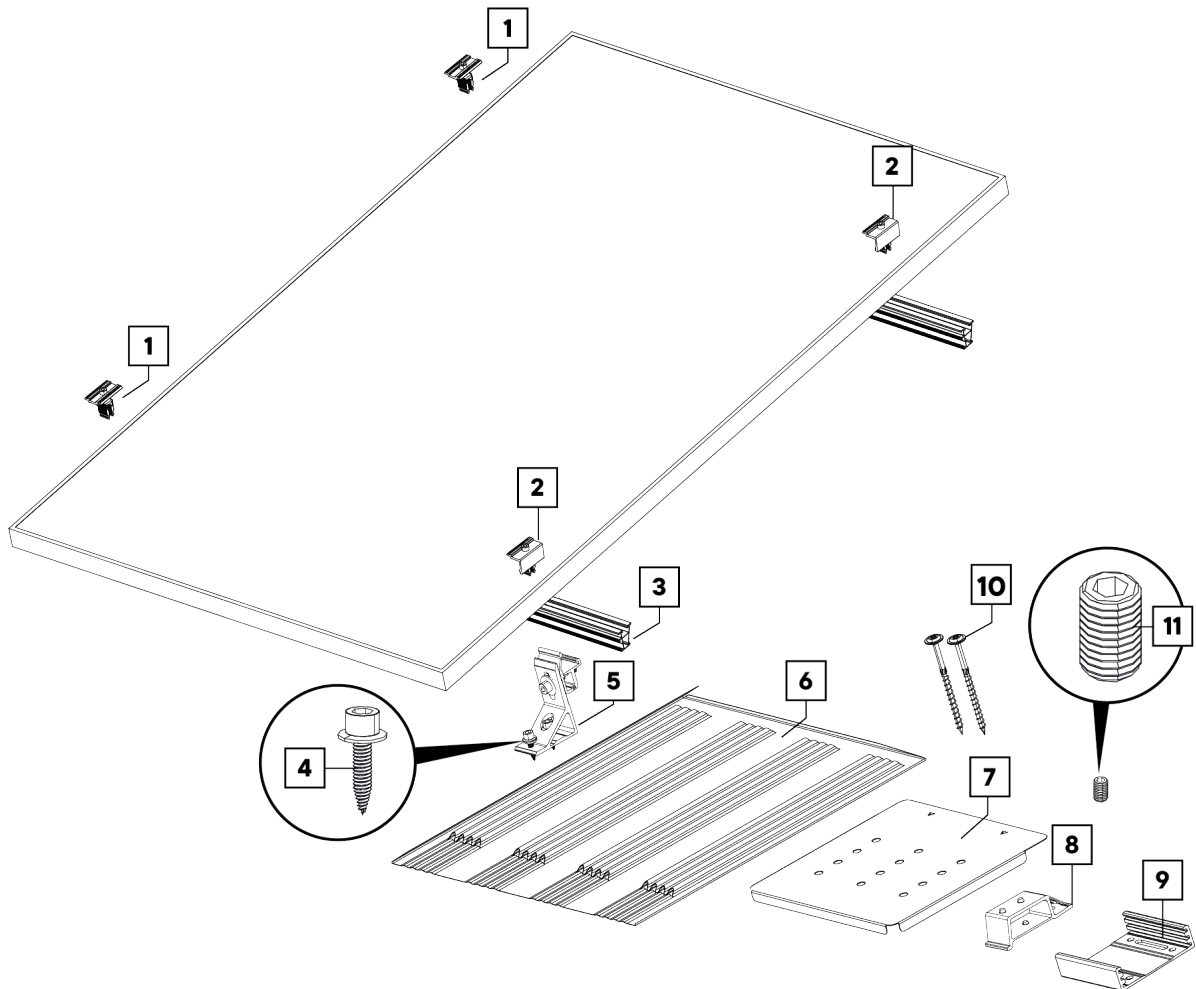
**Helmets must be worn by all persons working on the construction site**



**Wear hearing protection**

# SYSTEM OVERVIEW

## BASIC COMPONENTS



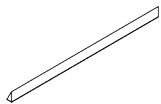
- 1 CLM10**  
Middle clamp Click 30 - 46 mm
- 3 X40 | X50 | X60**  
Mounting rail
- 5 XM-F**  
Angle bracket with connector
- 7 XM-FSP**  
Support plate
- 9 XM-F100**  
Base plate
- 11 GSC10x30**  
Grub screw M10x30

- 2 CLE10**  
End clamp Click 30-46
- 4 MSS-6x25-AH**  
Metal screw
- 6 XM-FCM**  
Cover sheet medium sized
- 8 XM-FS**  
Slider
- 10 SDS-W-6\*XXX | SDS-W-8\*XXX**  
Self-drilling screws\*

\*Screw length must be selected so that **sufficient** load-bearing thread length is screwed into the wood.



## SYSTEM ACCESSORIES



**XFw60**  
Foam wedge



**XDP**  
Distance plate



**XM-FR-1980**  
Ground plate long 1980 mm

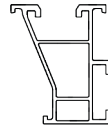


**MSS 7.2x19**  
Repair screw for XM-F angle bracket

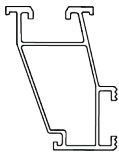
## MOUNTING RAILS AND ACCESSORIES



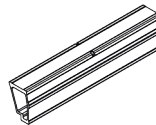
**X40-XXXX**  
Mounting rail X40 1980 mm 3300 mm 3550 mm 4400 mm 4750 mm 5500 mm 5850 mm



**X50-XXXX**  
Mounting rail X50 1980 mm 3300 mm 3550 mm 4400 mm 4750 mm 5500 mm 5850 mm



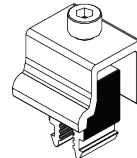
**X60-XXXX**  
Mounting rail X60 1980 mm 3550 mm 4750 mm 5850 mm



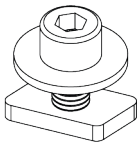
**XPCN60**  
Rail connector X60



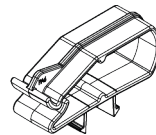
**XPCN-XX**  
Rail connector X40, X50



**XDL**  
Cross connector X40, X50, X60

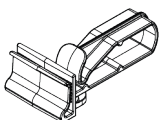


**SCR-MA**  
Bolting set module accessories

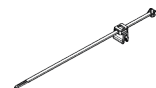


**CLP-R**  
Cable clip rail

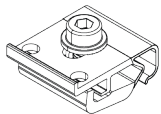
## MODULE ACCESSORIES



**CLP-U**  
Cable clip universal

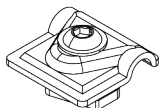


**CLP-M**  
Cable tie clip for module frames with a thickness of 1 - 3 mm



**OC-GA**  
Microinverter clamp universal

## ACCESSORIES FOR EQUIPOTENTIAL BONDING



**WCL8-10**  
Wire clamp 8 - 10 mm

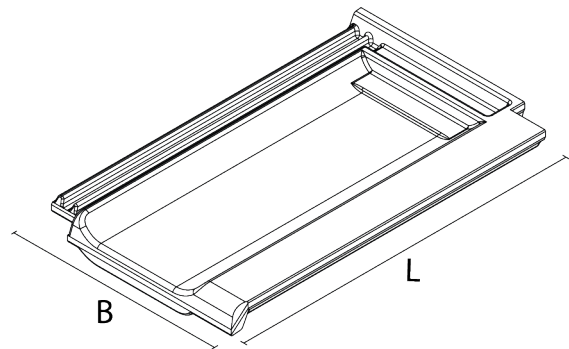
# ASSEMBLY

## ASSEMBLY PREPARATION

At the beginning, the existing roof covering must be checked for its suitability for the installation of the XM-F system:

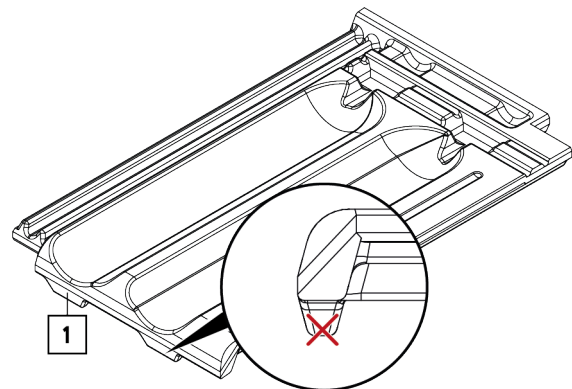


- ▣ The dimensions of the on-site roof tiles must not exceed **450 x 440 mm (LxW)**.



- ⓘ Roof tiles with strongly pronounced interlocking pyramids on the underside or a bead spacing of more than **40 mm** are not compatible with the mounting system.

- ▣ Remove sharp edges (1) on the on-site roof tile to avoid **damage to** the roof replacement tile.



## Required tools for assembly

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



Measuring tape



Chalk line



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



Bit TORX T40



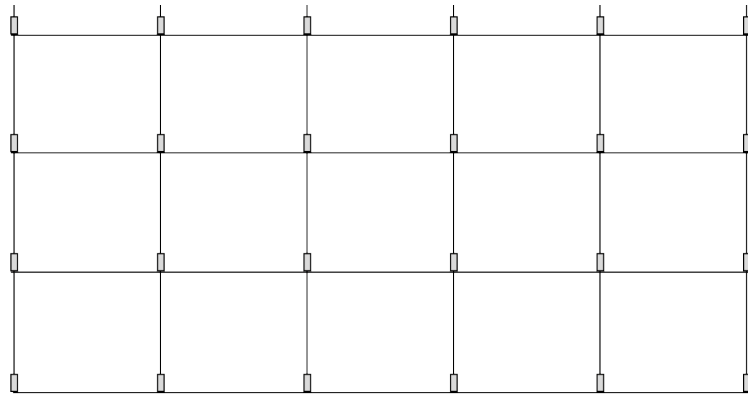
Bit hexagon socket 6 mm



Cordless screwdriver

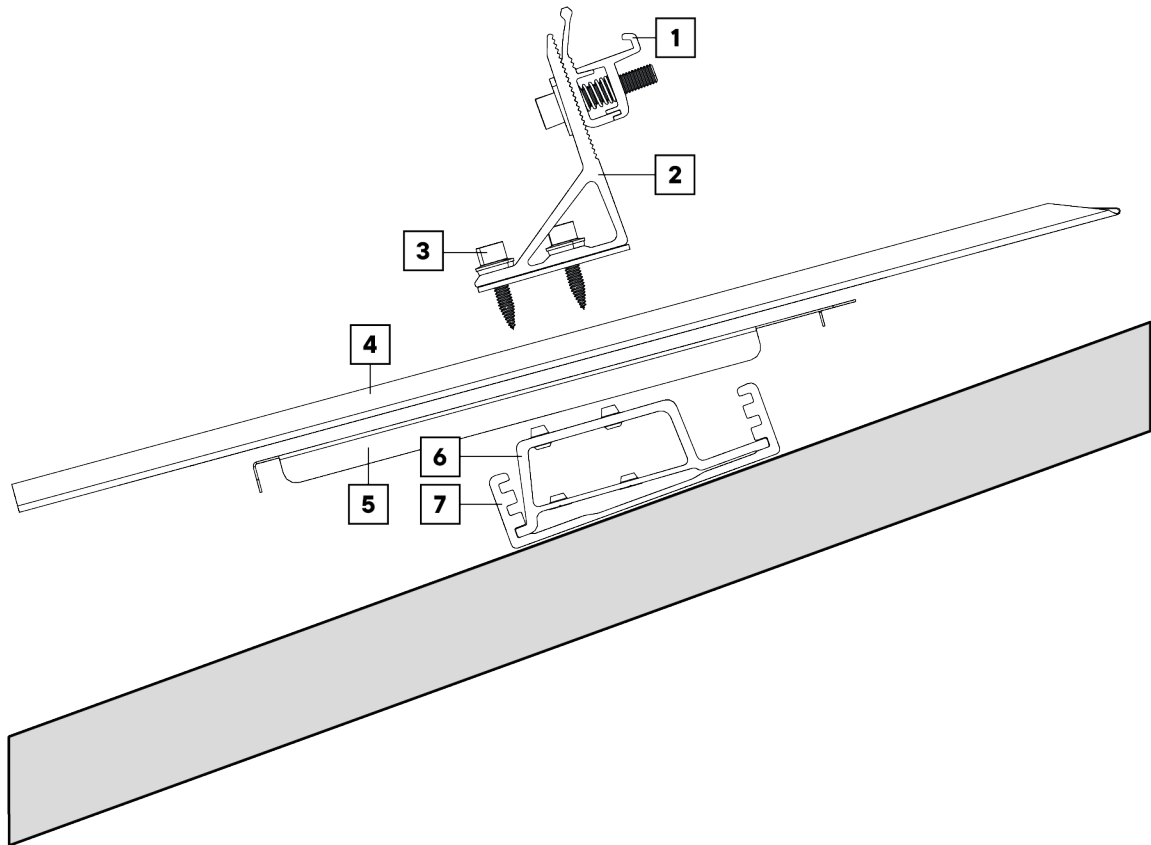
## MEASURE THE AREA

**i** The roof hooks are each screwed to the counter-battening.



- ▣ Take the dimensions of the array field from the planning documents.
- ▣ Determine module size.
- ▣ Check the position of the counter-battens.
- ▣ Determine and mark positions of roof hooks.

## ALIGN XM-F ROOF HOOK

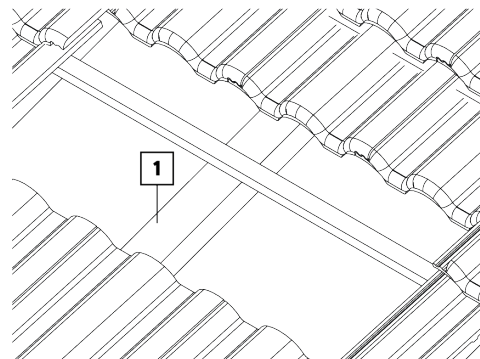


- 1 Quick connector
- 2 Roof angle
- 3 Metal screws
- 4 Cover plate
- 5 Support plate
- 6 Sledge
- 7 Base plate

## Assembly preparation



- ▣ Expose the roof battens (1).

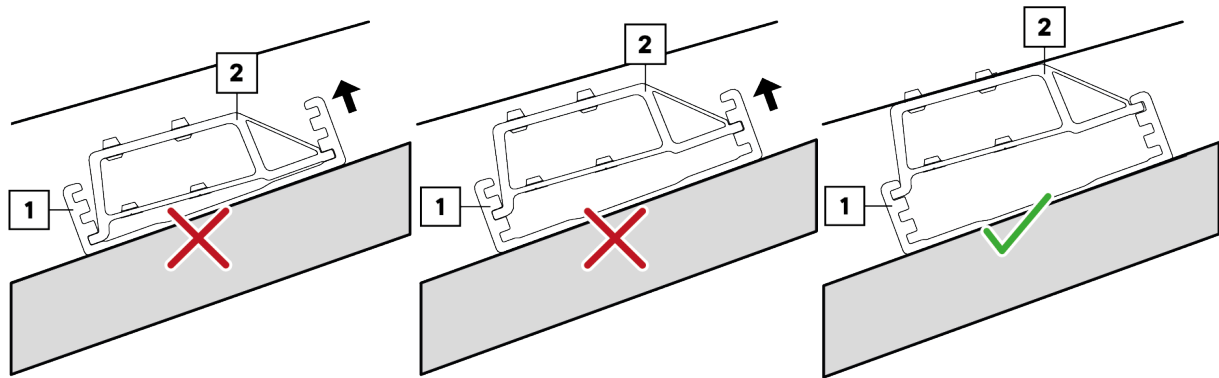


## Evaluate installation height

**i** The height of the roof hook must be selected so that the replacement tile reaches the same level as the on-site roof. The correct installation height can be achieved by using the **three height positions for the base plate** and by **moving the base plate vertically**.

**Attention:** In case of deviating roof batten thicknesses, the height must be adjusted.

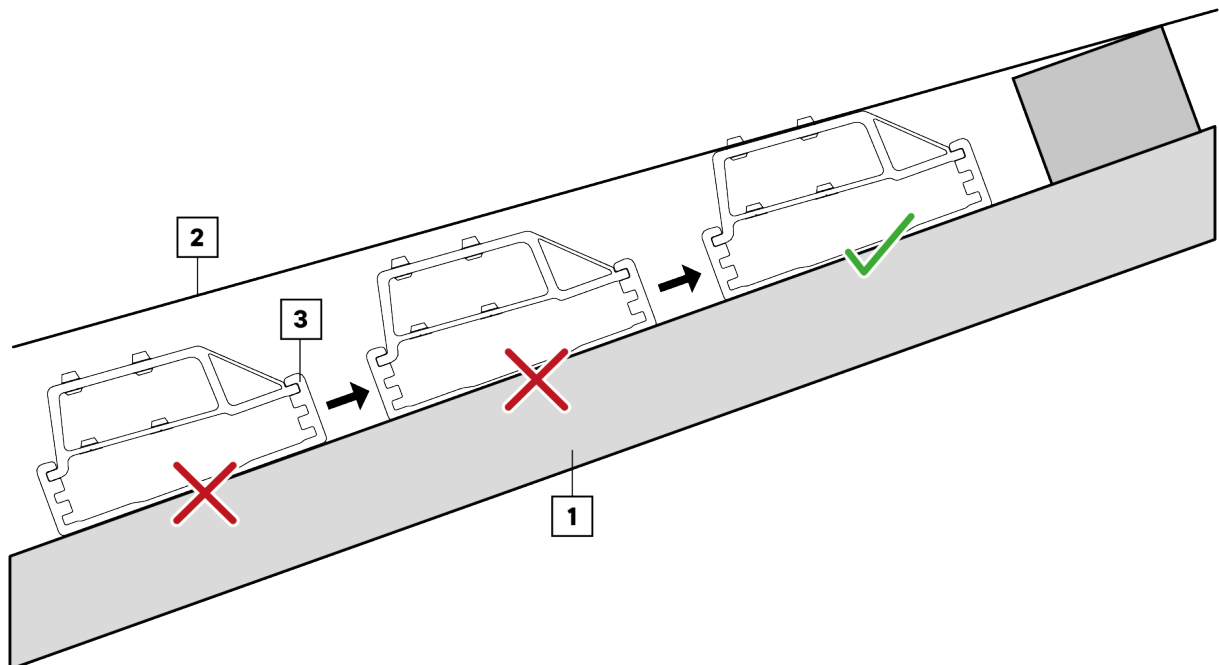
### SELECT HEIGHT POSITIONS FOR THE BASE PLATE



**▶** The sledge (2) is height-adjustable in three stages on the base plate (1).

**✓** The correct installation height is reached when the sledge (2) reaches the level of the roof covering provided by the customer.

### VERTICAL SHIFTING OF THE BASE PLATE

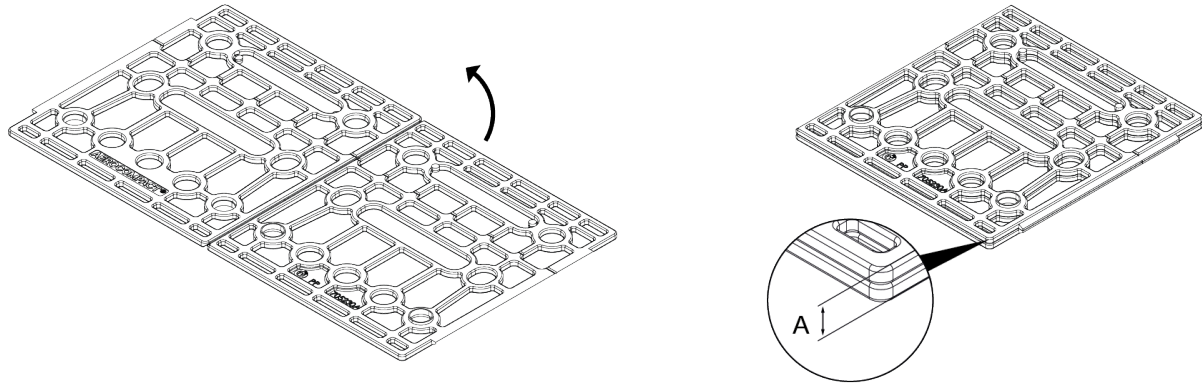


**▶** The level of the on-site roof covering (2) can also be achieved by moving the base plate (3) vertically along the counter-battening (1) in the direction of the ridge.

**i** If the installation height is not reached despite the **three height positions for the base plate** and by **vertical displacement of the base plate**, the base plate must be underbuilt.

#### INSERT DISTANCE PLATE (OPTIONAL)

**i** If the desired installation height is not achieved despite the measures mentioned above, the base plate can be underlaid with distance plates. The distance plates are always delivered in pairs. There is an option to either separate or collapse the distance plates as needed.



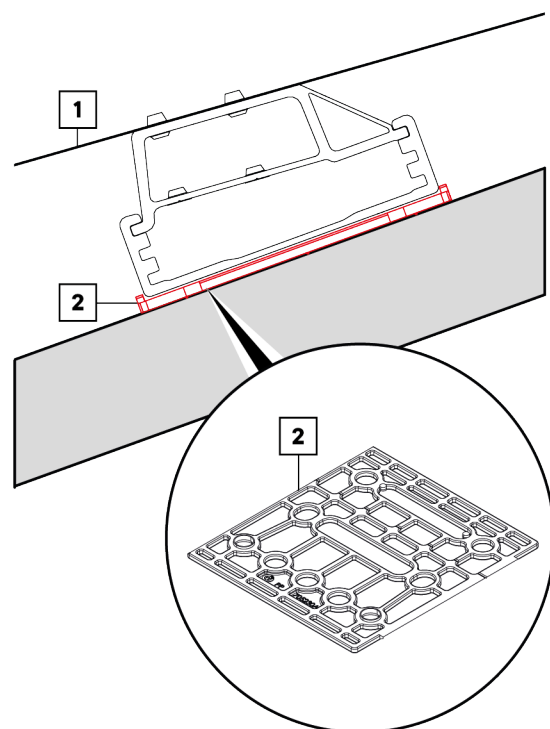
➤ When the distance plates are folded together, the dimension is **A= 5 mm**.

#### **i Important:**

Please note that a maximum increase of **10 mm** is permitted per roof hook by underlaying.



➤ To reach the level of the existing roof covering (1), the distance plate (2) must be placed under the base plate.

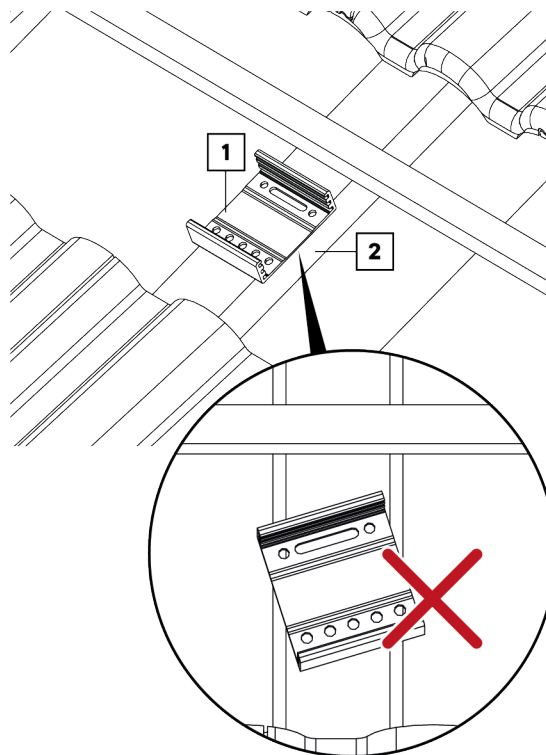


## HORIZONTAL ALIGNMENT OF THE BASE PLATE



- ▶ Before fastening the base plate (1) to the counter-batten (2), the horizontal alignment must be selected appropriately.

**i** If possible, orient to the **supporting lath**.



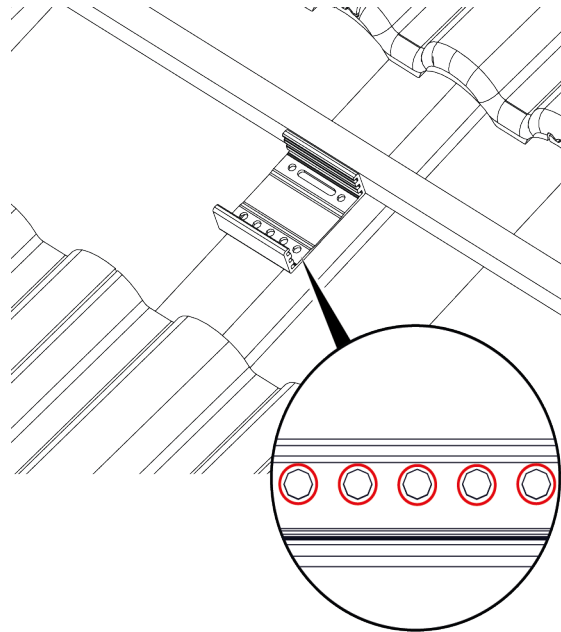
## MOUNT XM-F ROOF HOOKS



- Position the base plate.

### **i Attention:**

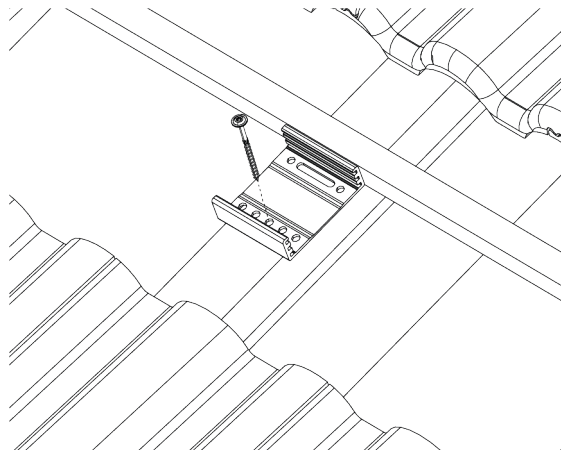
When selecting the screw length, it is important to ensure that sufficient load-bearing thread length is screwed into the wood.



- Screw in the first wafer head screw at a suitable hole.
- Then check the horizontal alignment.

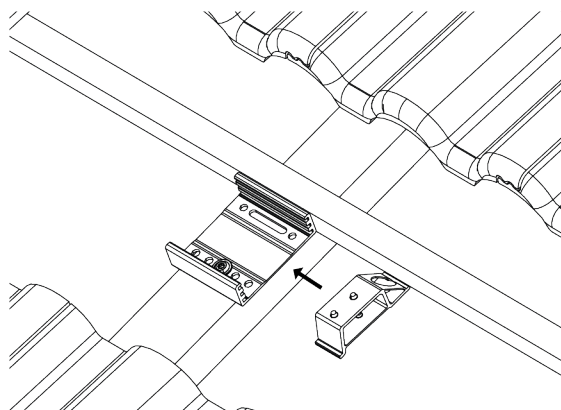
### **i Please select a suitable hole for fixing the base plate.**

Ensure that the minimum distance to the edges of the counter battens is maintained in accordance with the latest technical documentation (ETAs) from the manufacturer of the installed screws.



- Insert the slide laterally into the ground plate.

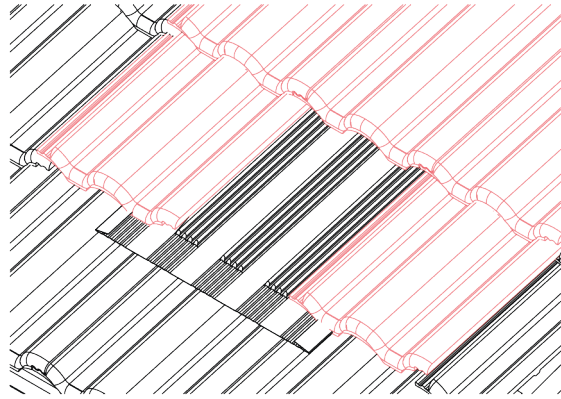
### **i Select correct height position - see [Select height position for base plate](#)**







- ▶ Before screwing the slide, first make sure that the existing roof covering overlaps by at least **4 cm** both above and to the side at the flexible cover.
- ▶ If there is sufficient overlap, the flexible cover can be set aside.

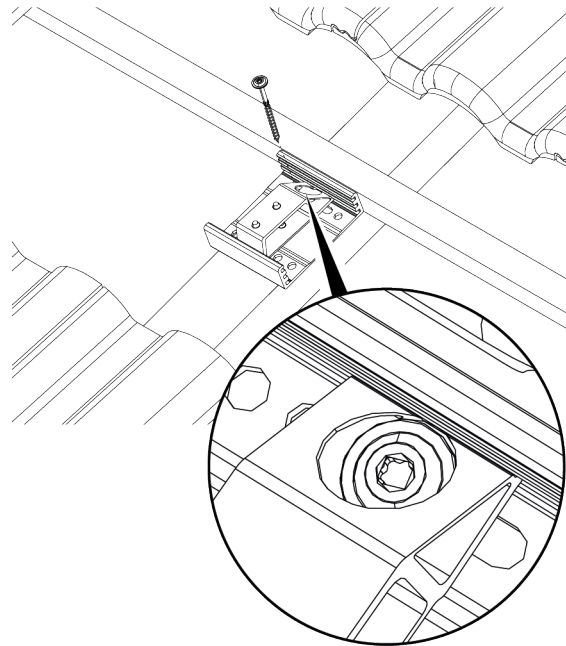


- ▶ Screw in the second wafer head screw at the slide.

**i** Number of wafer head screws per roof hook:

SDS-W-8\*XXX - 2 pcs

SDS-W-6\*XXX - 2 pcs

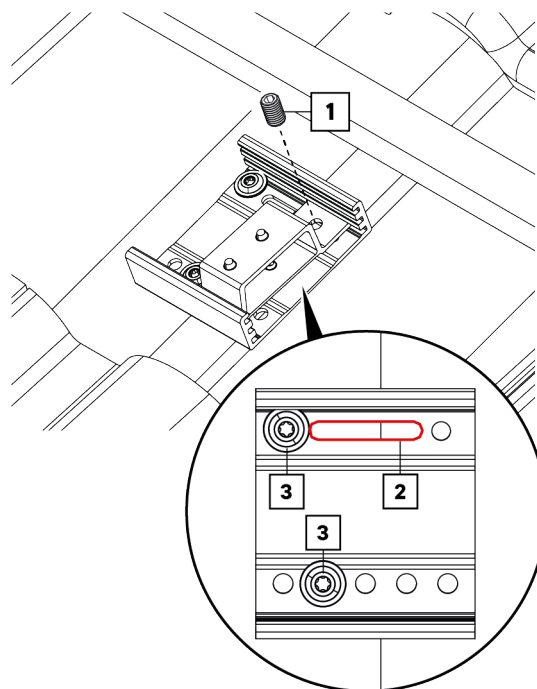


## Decentralized mounting of the base plate (optional)



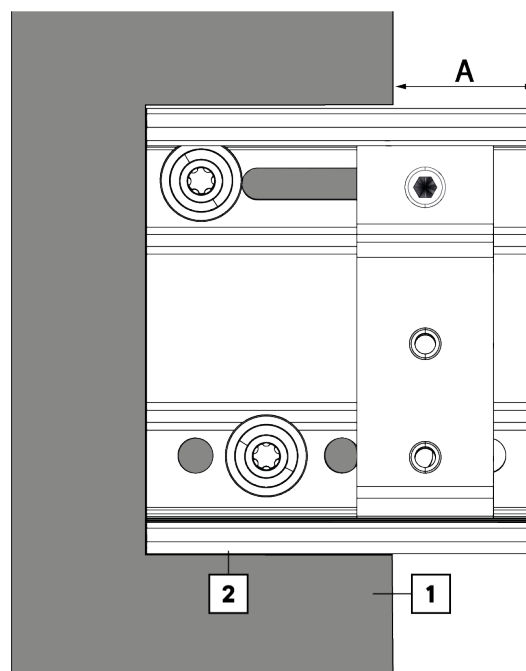
**I** Decentralized fastening of the base plate is used when the slide cannot be positioned above the counter-battening. In this mounting situation, the XM-F slide is attached to the base plate with a grub screw (1).

- Screw in the wafer head screws (3) at the base plate.
- Screw in the grub screw (1) in the slide and position it in the slotted hole (2) marked in red in the base plate.
- Then position the grub screw (1) and tighten it hand-tight.



### **I Important:**

In the case of decentralized fastening, the base plate (2) may project a maximum of **4 cm (A)** from the counter-battening (1).



## Mounting the ground plate bridge (optional)

**i** The use of the ground plate bridge is required when the roof hook is mounted next to the counter-battening. The ground plate bridge is supplied in a length of **1980 mm**, which must be cut to size on site. Likewise, the necessary holes for fastening must be drilled on site. The maximum length of the ground plate bridge must not exceed **990 mm**.

### **! CAUTION!**

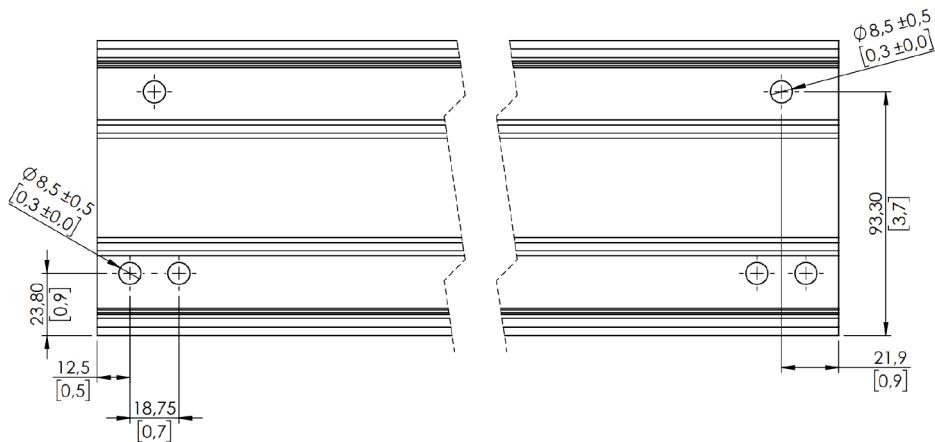


**Risk of injury from metal chips**

**Cutting injury due to contact**

- Wear safety gloves**
- Handle carefully.**

### HOLE PATTERN GROUND PLATE BRIDGE



**i** Dimensions are given in both millimeters and inches. Depending on the choice of screws, either two or three holes must be drilled per side. Care must be taken to ensure that **sufficient** load-bearing thread length is screwed into the wood.

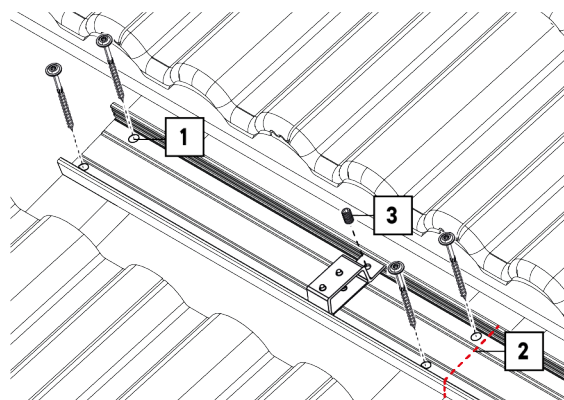
**Number of waver head screws per side:** SDS-W-8\*XXX - 2 pcs | SDS-W-6\*XXX - 2 pcs

### ASSEMBLY



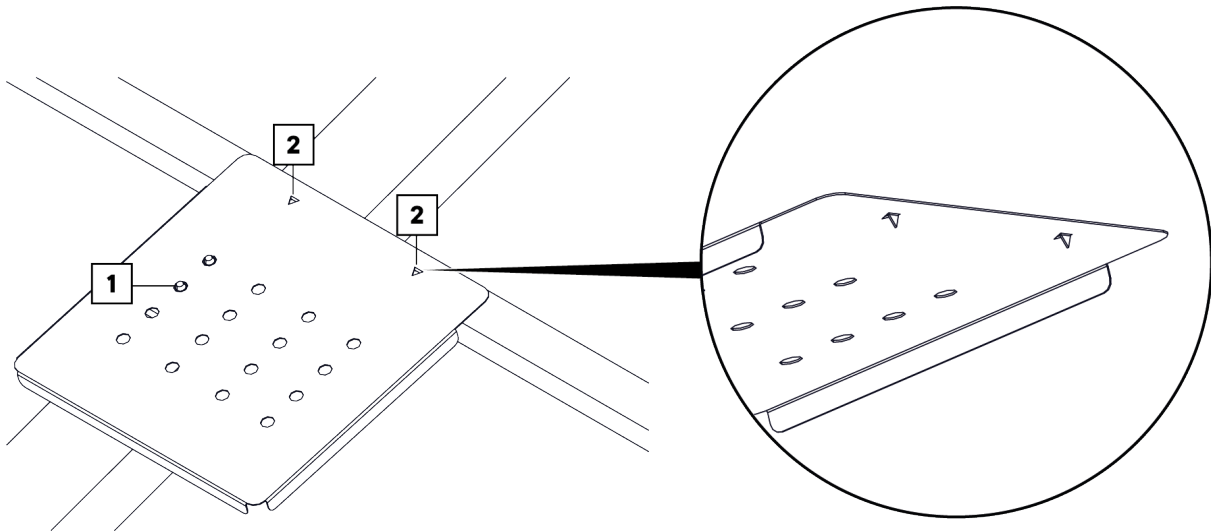
**i** It is important to ensure that the ground plate bridge is a maximum of **990 mm** long and is fully supported on both counter battens.

- Cut the ground plate bridge (2) to size.**
- Drill two holes (1) per side according to the hole pattern.**
- Screw down the ground plate bridge.**
- Insert the carriage laterally into the ground plate bridge.**
- Hand-tighten the grub screw (3) in the carriage so that the carriage is fixed.**



## Mount support plate

**i** The support plate is additionally used to prevent the formation of sags under high snow loads and is used for roof hooks, which are usually positioned at the **top row** and **outside the module field**. The exact location of the support plate can be found in the **planning documents**.



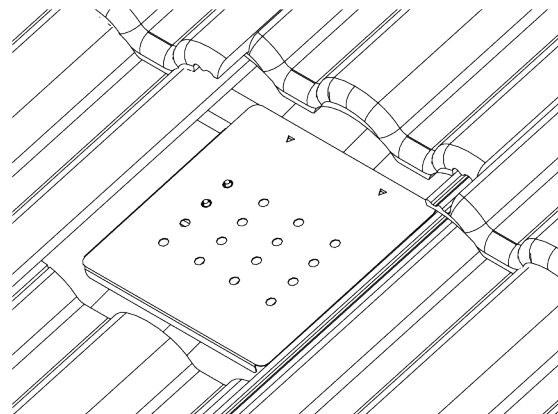
- Place the support plate by the slide and on the support rafter. **Note that the two outlet cones (1) protrude from the support plate.**
- Press in the prongs (2) on the batten according to the positioning.

**i** If the distance between the neighboring module fields is more than **100 mm** and the roof hook is covered by the module less than **250 mm**, it is necessary to use a support plate.



- Cover the exposed area as best as possible with the support plate.

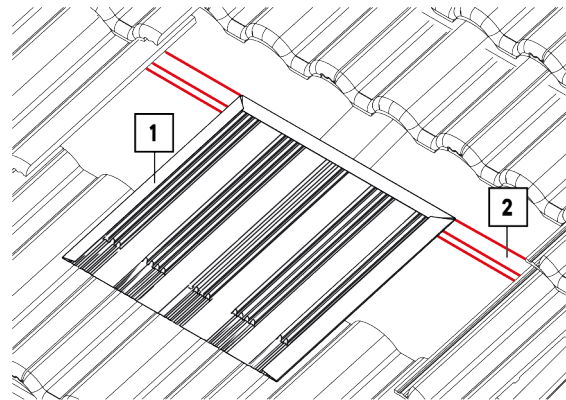
**i ATTENTION:** The support plate is not a step protection and is not allowed to be stepped on.



## Mount cover medium

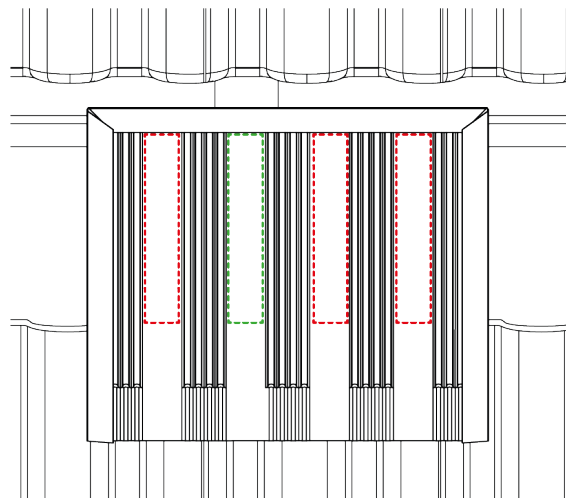


- i** The cover is positioned in such a way that it is exactly flush with the upper edge of the support lathing. This ensures that there is no damage to the cover when completing the roofing.



- >** The slide underneath must be in one of the marked areas. In this example, the area marked in green is the appropriate one.

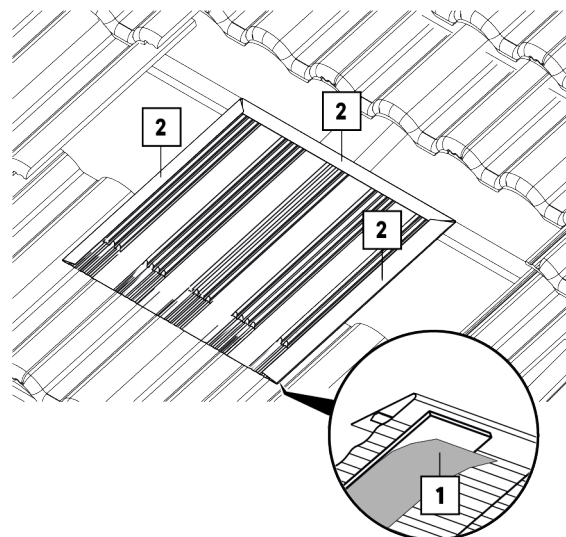
- i** When positioning the cover, make sure that everything is covered when the roofing is completed.



- >** Remove the protective film from the adhesive strip (1).
- i** It is important to ensure that the surface to be covered is dry and free of dirt.

- >** Press on the cover in the area of the adhesive strip (1).

- i** To properly complete the roofing, the sheet metal edging (2) must be folded up far enough so that it is pushed in when the roofing is completed.



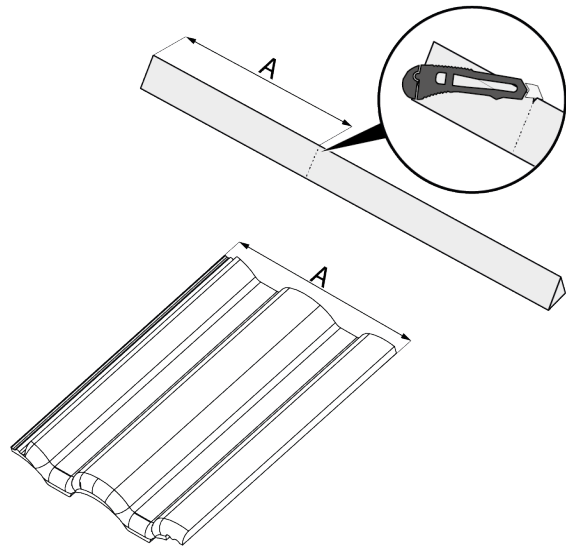
## Attach foam wedge (optional)

**i** To ensure that reliable weather resistance can be guaranteed, it is necessary to attach the foam wedge (1) supplied to the flexible cover.

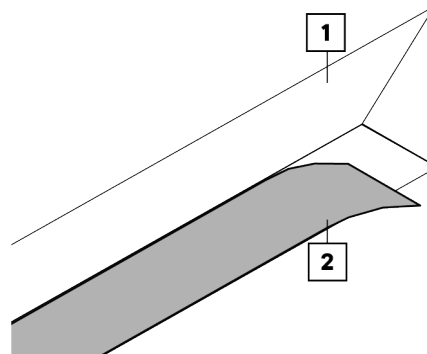


- ▶ The foam wedge is supplied in a length of **1000 mm** and must be cut to size on site according to the tile width provided by the customer.

<b>Warning</b>	
	<p><b>Risk of injury from sharp objects</b></p> <p>Cuts from sharp objects can cause severe bleeding.</p> <ul style="list-style-type: none"><li>▶ Wear safety gloves</li></ul>



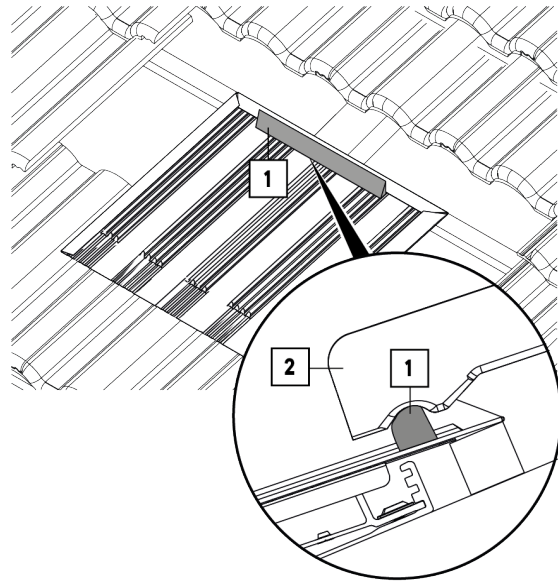
- ▶ Cut the foam wedge (1) to size.
  - ▶ Remove the protective film (2) of the adhesive strip from the foam wedge (1).
- i** The surface to be covered must be **dry** and **free of dirt**.





**i** When inserting the foam wedge, take into account that the foam wedge (1) is pressed in when completing the roofing (2).

➤ Place the foam wedge (1) and then press it in place.



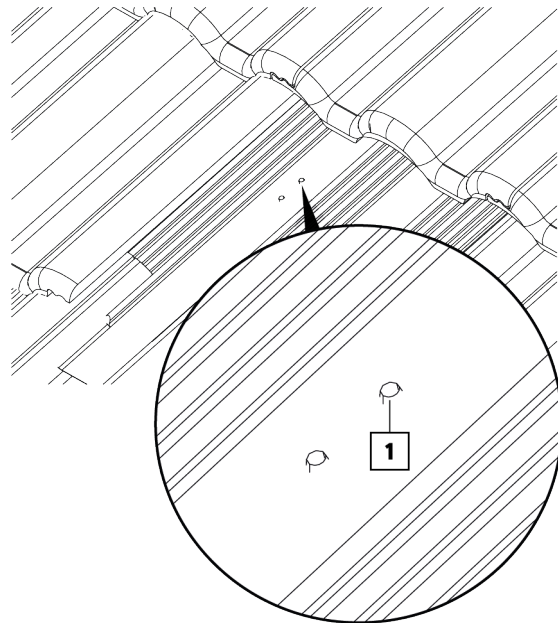
➤ Press on the flexible cover with a positive fit.

**i** When pressing on, make sure that no indentation occurs.

➤ Subsequently, complete the on-site roofing again.

➤ Press on the flexible cover in the area of the slide so that both exit cones (1) are visible.

➤ Press the sheet metal edging in the area of the overlap against the on-site roof tiles from below.



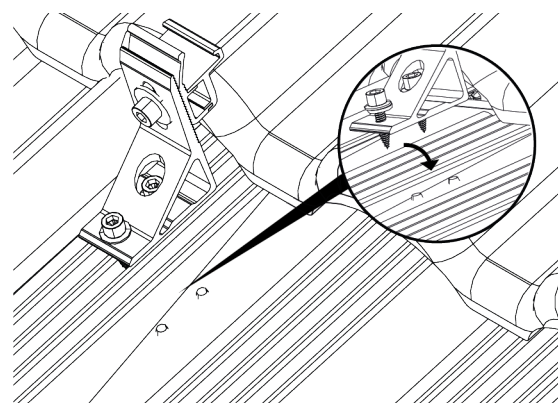
## Mount roof angle



➤ Guide and place the screws of the roof angle at the exit cones.

**i Attention:**

It should be noted that metal screws, XM-FS slides and the flexible cover may **only** be mounted **once** each. Full functionality cannot be guaranteed if these components are reused.

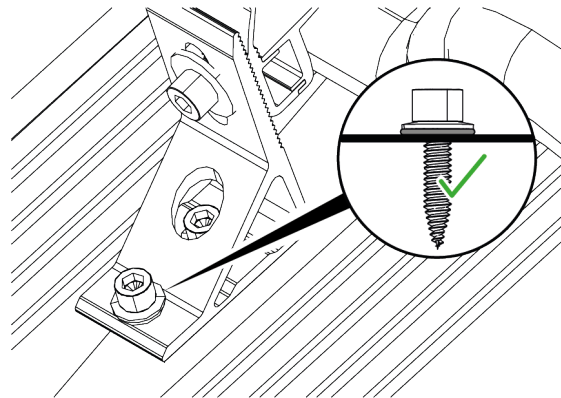




➤ Screw in the screws until the sealing washer visibly touches. The sealing washer must be compressed by approx. 30 %.

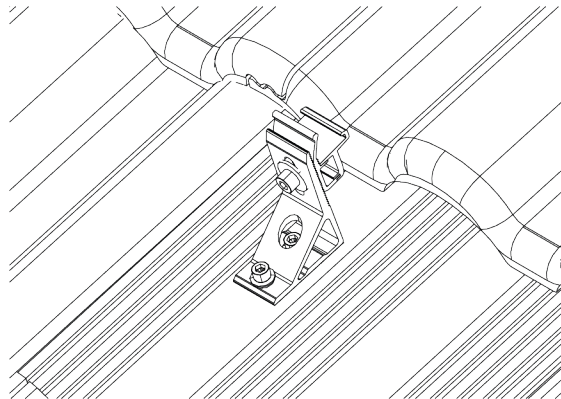
**i** Never use an impulse or impact screwdriver on the screws! High speeds can cause damage to the screw bodies, the flashing and the seal.

**i** In the event of improper installation, there is a possibility of clamping or incorrect tightening of the screw in exceptional situations. Aerocompact provides special repair screws to remedy such problems. The repair screw is described in chapter "System accessories " on page 9



☑ The roof hook is now mounted and prepared for rail mounting.

**i** If the distance between the XM-F roof hooks is so tight that only a few on-site tiles are placed, it is necessary to additionally fasten the on-site roof tiles with screws or storm clips.



## ⚠ CAUTION!



**Tripping by stepping on the roof replacement tile!**

**Risk of injury from falling**

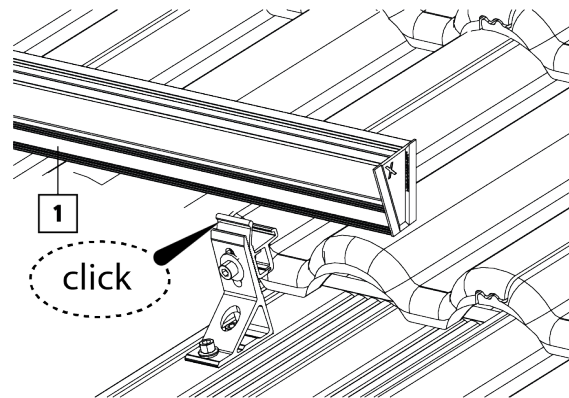
- Do not walk on roof replacement tiles
- Use sure-footed walkways



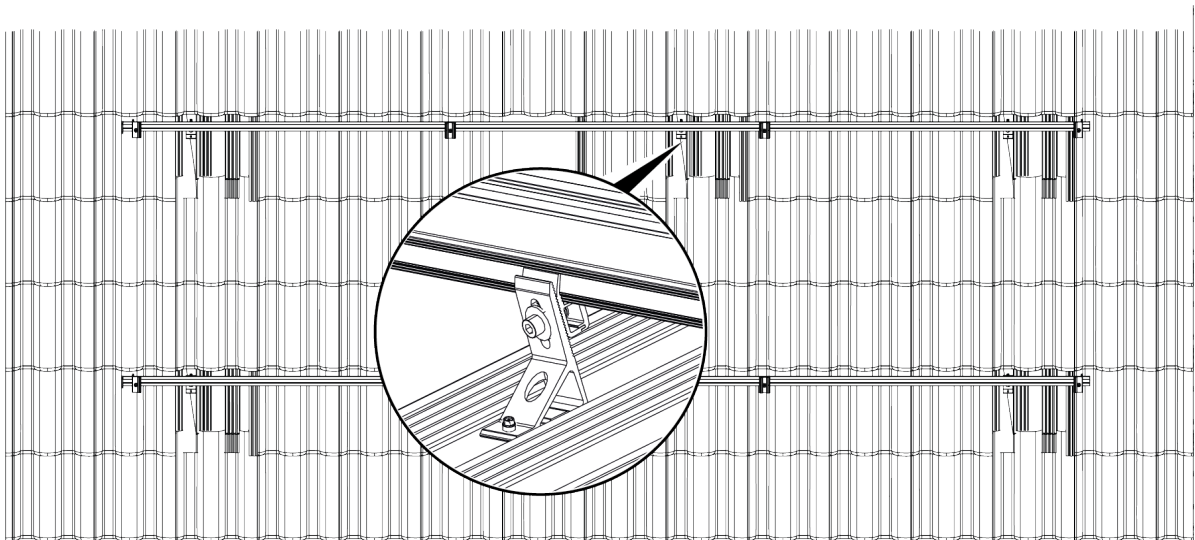
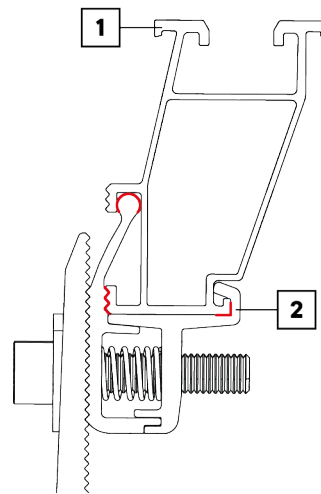
## MOUNT RAIL



- ▶ Click the rail (1) into place on the XM-F roof hook.



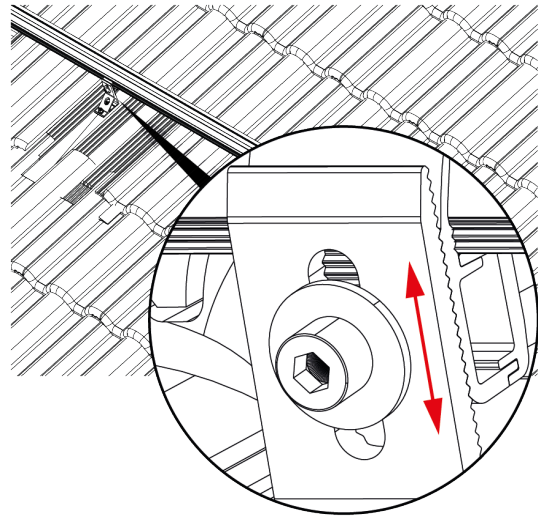
- ▶ Make sure that the mounting rail (1) is fully engaged with the XM-F quick release (2).



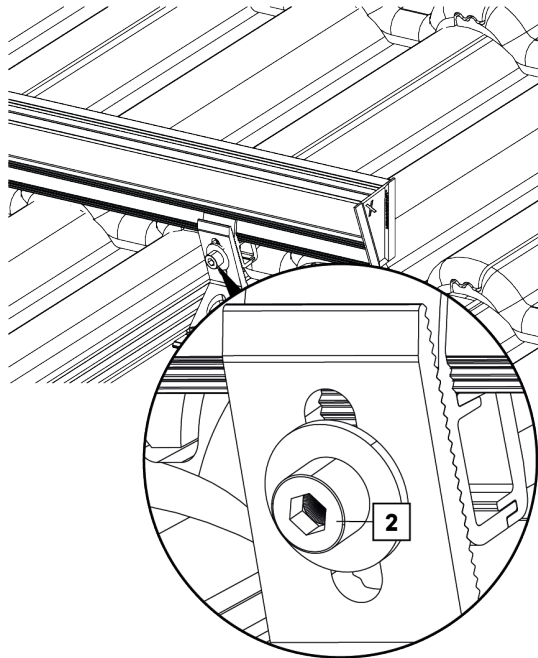
- ▶ Mount the other mounting rails and make sure that the mounting rail is fully engaged.




- ▶ Then check the horizontal alignment of the mounting rail.
- ▶ The quick release can be adjusted in height as required by using the slotted hole.



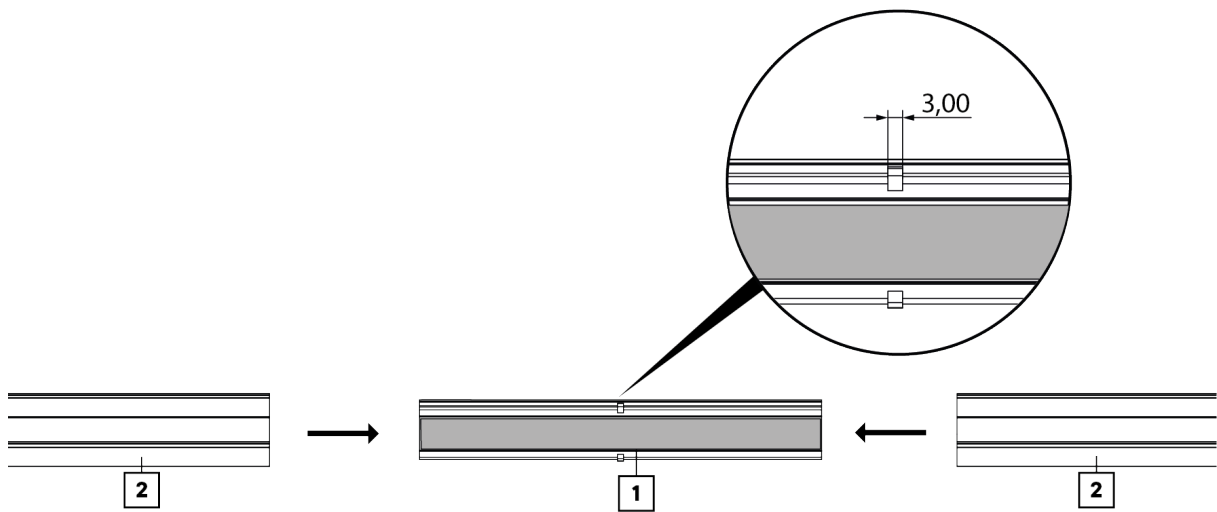
- ▶ Tighten the screw (2) on the quick-release to a torque of 10 Nm or 7.37 ft lb.



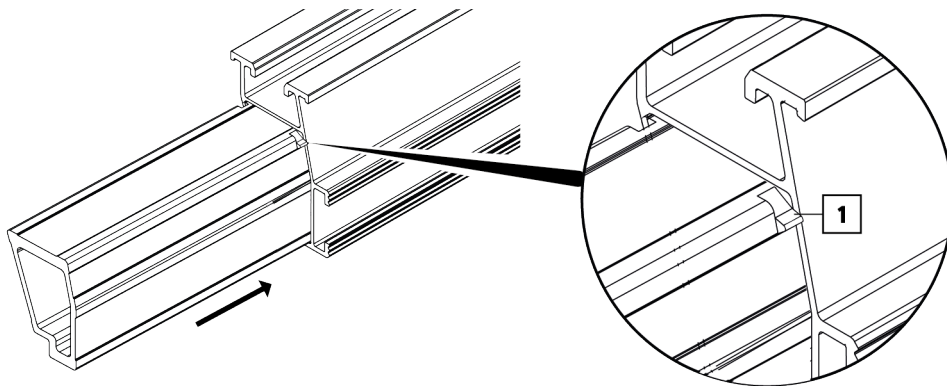
<b>⚠ CAUTION!</b>	
	<p><b>Falling due to stepping on or loading the mounting rails!</b></p> <p><b>Risk of injury from falls and falling objects.</b></p> <ul style="list-style-type: none"><li>▶ Do not step on the mounting rails</li><li>▶ Do not load mounting rails with pallets or similar objects</li></ul>

## RAIL CONNECTOR

**i** The figures below show the procedure for connecting **X60** mounting rails with the rail connector **XPCN60**. The same process applies to rail connectors **XPCN50** and **XPCN40**.



➤ Insert the mounting rails (2) on the left and right at the rail connector (1).



➤ Insert the mounting rail up to the stop (1).

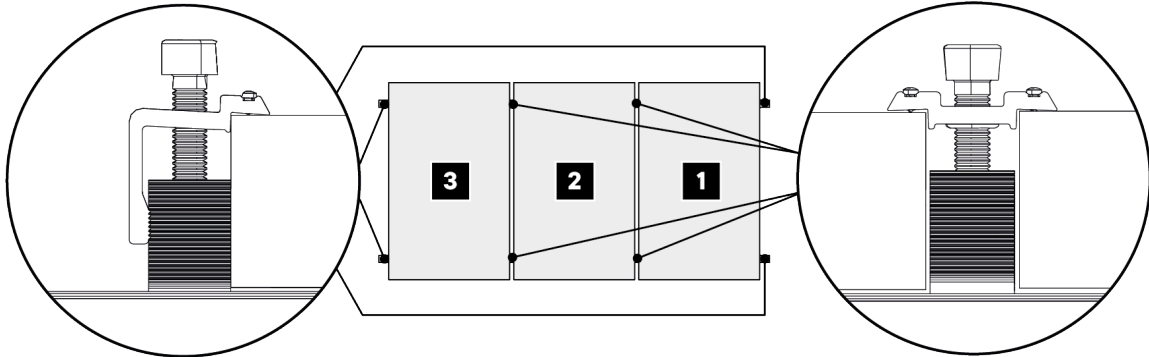
**i Important:**

The installation of components in the joint area of the mounting rail is prohibited.

# INSTALLING THE MODULES

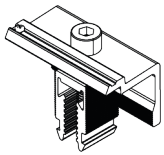
## ASSEMBLY SEQUENCE OF THE MODULES

**i** The illustration below is exemplary and may have a different number of modules depending on the project. The module assembly sequence remains constant.

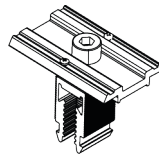


➤ The module rows must be mounted in ascending order.

## REQUIRED COMPONENTS



**CLE10**  
End clamp Click 30 - 46 mm

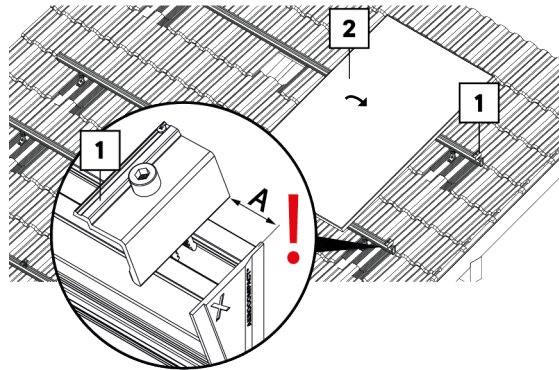


**CLM10**  
Middle clamp Click 30 - 46 mm

## ASSEMBLE FIRST MODULE ROW

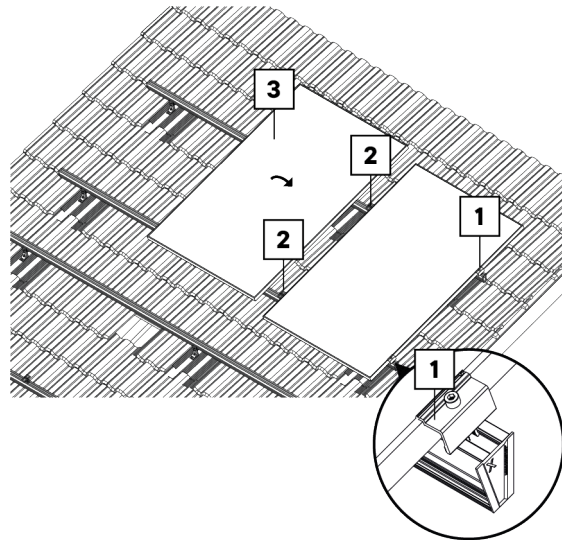


- Mount the end clamps (1) on the module field edge. The edge distance of the end clamp is **A = 40 mm**
- Place the first module (2).

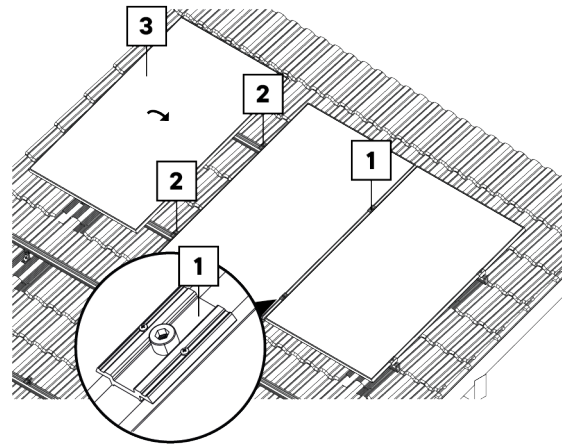




- Position the end clamps (1) flush with the module and then tighten to a torque of 15 Nm or 11 lb-ft.
- Mount the two middle clamps (2).
- Place the following module (3).

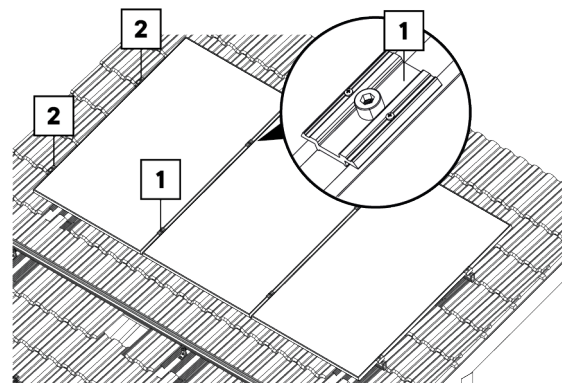


- Position the middle clamps (1) flush with the module and then tighten to a torque of 15 Nm or 11 lb-ft.
- Mount the two middle clamps (2).
- Place the following module (3).



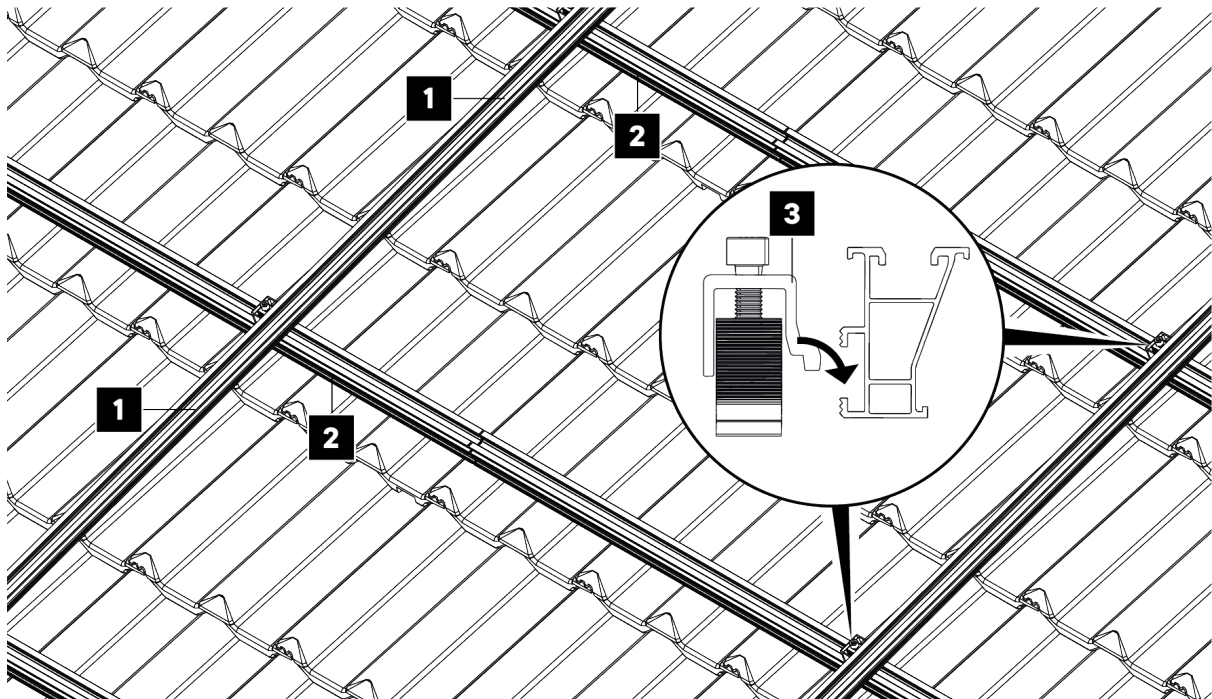
- Position the middle clamps (1) flush with the module and then tighten to a torque of 15 Nm or 11 lb-ft.
- Mount the two end clamps (2) and then tighten to a torque of 15 Nm or 11 lb-ft.

**i** Install the other module rows in the **same sequence**.



## ASSEMBLE MOUNTING RAIL IN CROSS CONNECTION

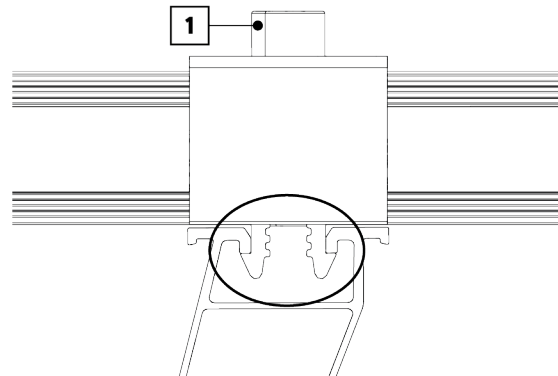
**i** At each point where the rails cross, the rails are joined together with a cross connector.



- ▷ Place the upper mounting rails (1) on the lower mounting rails (2).
- ▷ Then attach a cross connector (3) at each crossing point.



- ▷ Make sure that the cross connector is fully clicked into place.
- ▷ Tighten the Allen screw (1) with a torque of 15 Nm or 11 ft lb.



## CABLE MANAGEMENT

### CABLE CLIP CLP-M FOR MODULES

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



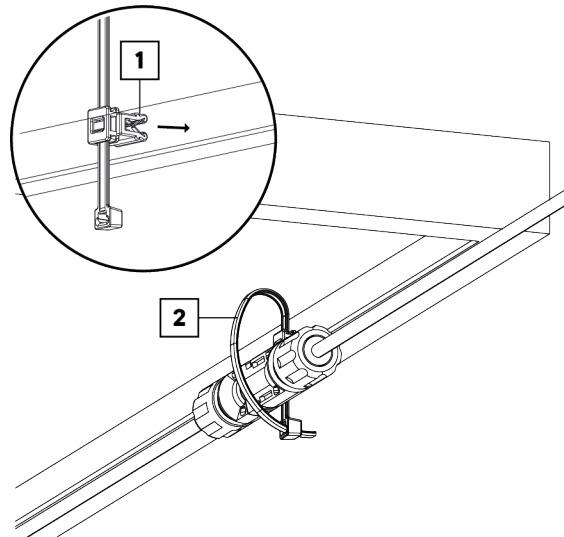
#### CLP-M

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

#### ASSEMBLY

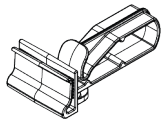


- ▶ Insert the CLP-M (1) into the module frame.
- ▶ The CLP-U is suitable for:
  - Solar plug (e.g. MC4)
  - Solar cable
- ▶ Then tighten the cable tie (2).



### CABLE CLIP CLP-U FOR MODULES

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



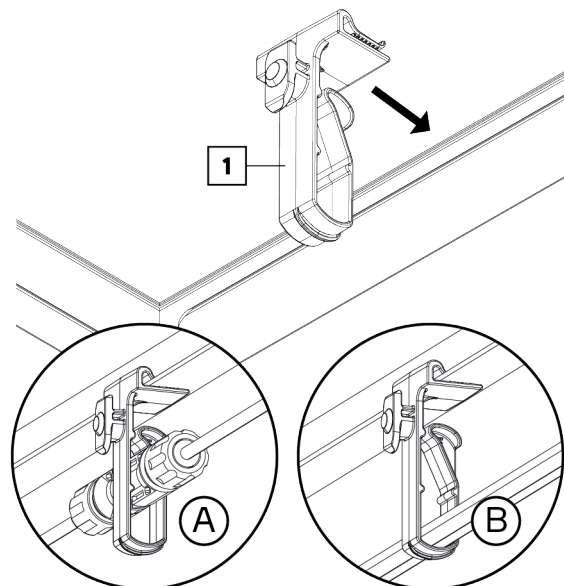
#### CLP-U

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





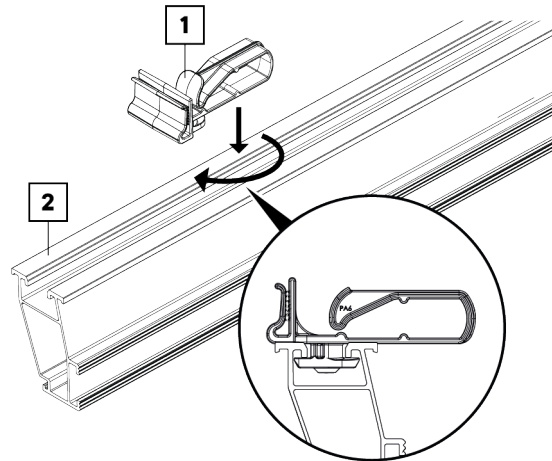
## MOUNT THE CLP-U CABLE CLIP TO THE MOUNTING RAIL



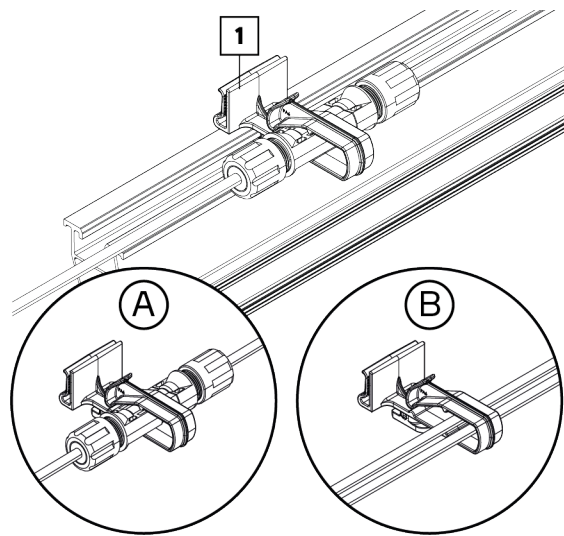
- Insert the cable clip (1) into the mounting rail (2) from above.
- Rotate the cable clip by 90°.

### **i 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





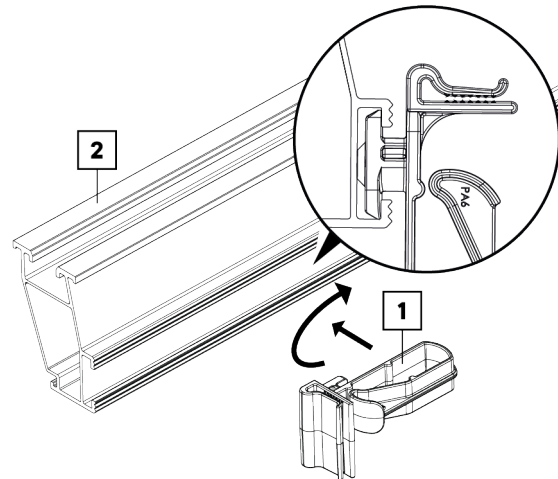
## MOUNT THE CLP-U CABLE CLIP ON THE SIDE OF THE MOUNTING RAIL



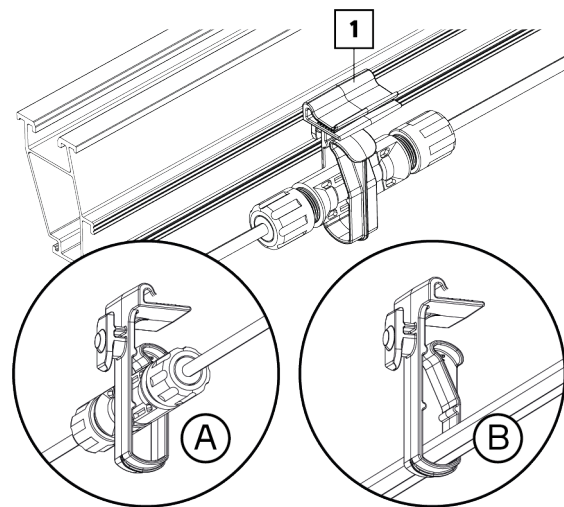
- Guide the cable clip (1) to the side of the mounting rail (2).
- Rotate the cable clip by 90°.

### **1 Attention:**

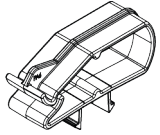
Make sure that the cable clip is fully engaged in the rail channel.



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



## MOUNT THE CLP-R CABLE CLIP TO THE MOUNTING RAIL



**CLP-R**  
Cable clip rail

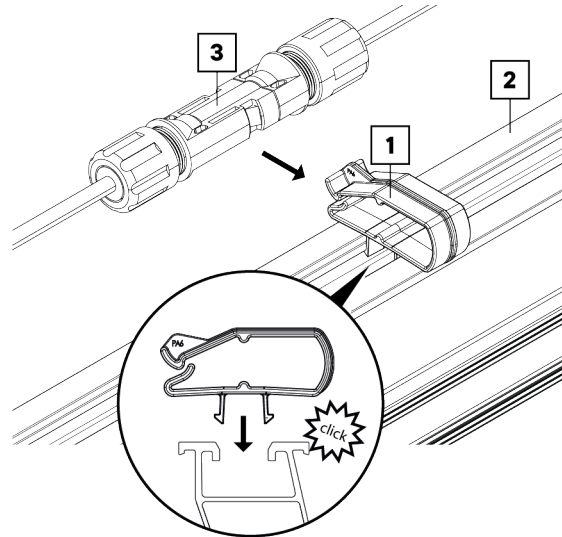
## MOUNT THE CLP-R



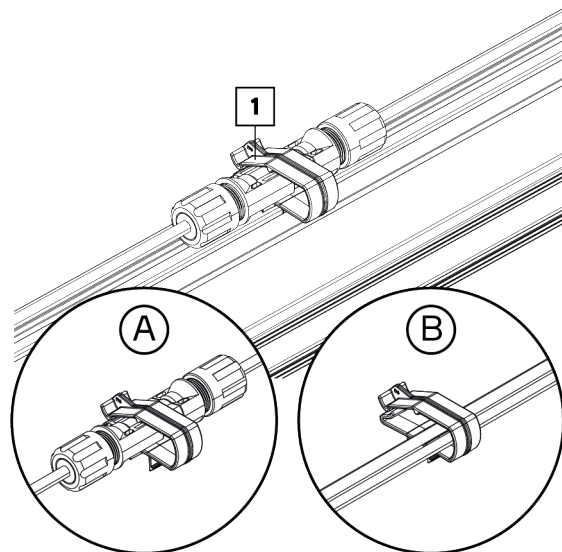
- ▶ Click the cable clip (1) into the mounting rail (2) from above.
- ▶ Insert the solar plug (3) from the side.

### **i Attention:**

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

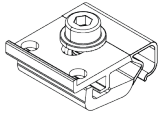


- ▶ The CLP-R (1) is suitable for:
  - A - Solar connectors (e.g. MC4)
  - B - Solar wire



## MLPE MODULE MOUNTING (OPTIONAL)

### REQUIRED COMPONENTS

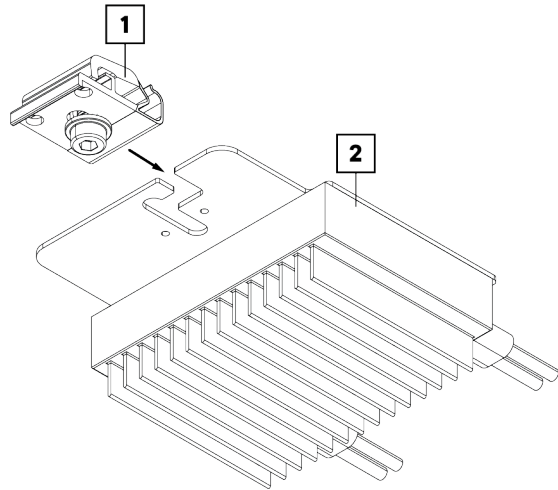


**OC-GA**  
Microinverter clamp universal

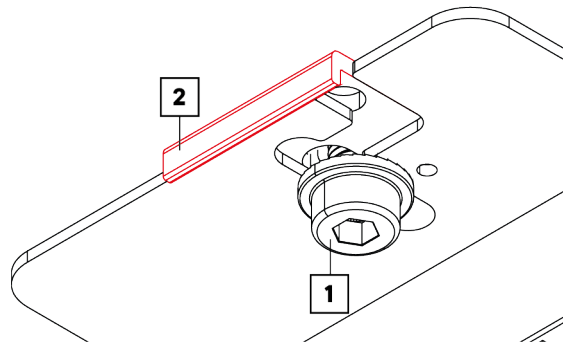
### ASSEMBLY



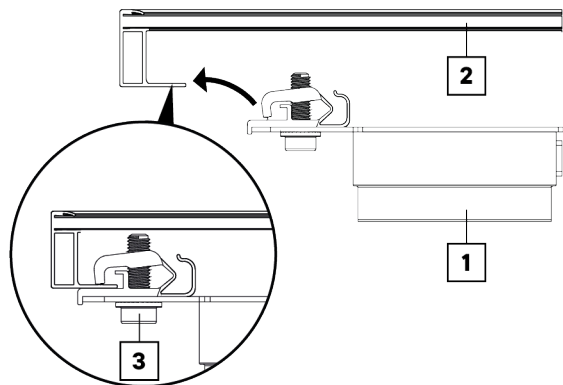
- ▶ Insert the clamp (1) into the MLPE device (2) as shown in the illustration.



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



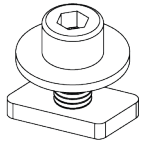
- ▶ Guide the MLPE (1) with the clamp to the underside of the module frame (2).
- ▶ Insert the clamp so that the module frame (2) is positioned between the upper and lower attachment of the clamp and rests on it.
- ▶ Then tighten the screw (3) with a torque of 10 Nm or 7.38 lb-ft.



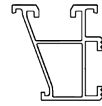
## MLPE FOR MOUNTING MOUNTING RAIL (OPTIONAL)

**i** The **SCR-MA** screw connection is intended for the mounting rails **X40**, **X50** and **X60**. In the following steps, the assembly is shown using an **X40** mounting rail. The procedure is identical for **X50** and **X60** mounting rails.

### NECESSARY COMPONENTS



**SCR-MA**  
Bolting set module accessories

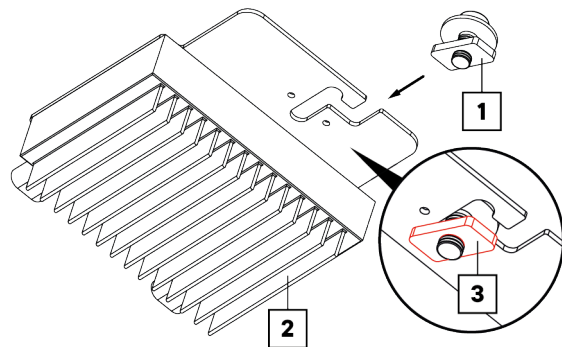


**X40-XXXX**  
Mounting rail X40 1980 mm 3300 mm 3550 mm 4400 mm 4750 mm 5500 mm 5850 mm

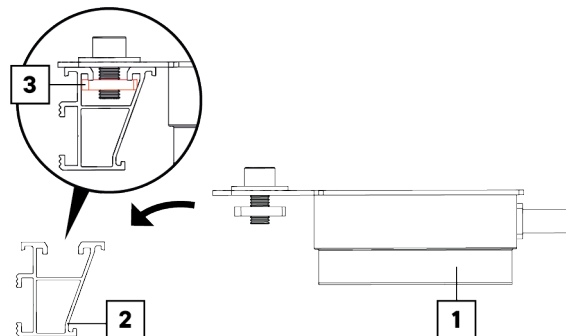
### ASSEMBLY (EXAMPLE MOUNTING RAIL X40)



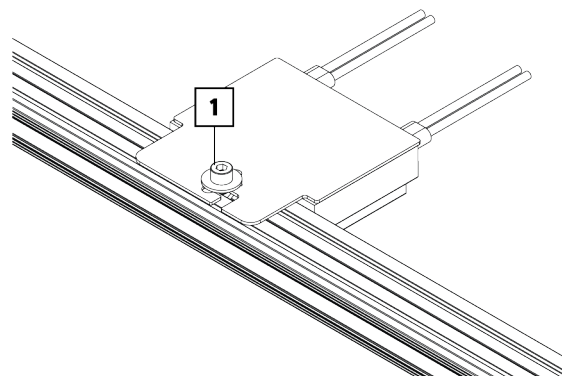
- Insert the screw connection (1) into the MLPE device (2) as shown in the illustration.
- Ensure that the plate (3) is pointing downwards.



- Guide the MLPE (1) with the screw connection to the top of the mounting rail (2).
- Insert the plate (3) as shown in the illustration.



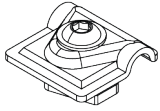
- Then tighten the Allen screw (1) with a torque of 15 Nm or 11 lb-ft.
- ☑ The MLPE is now mounted.



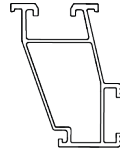
## POTENTIAL EQUALIZATION

**i** For potential equalization, **AEROCOMPACT Europe GmbH** provides the wire clamp as an accessory. These are each mounted on the mounting rail, depending on the mounting situation, the module rows are connected to each other by the module clamps.

### REQUIRED COMPONENTS



**WCL8-10**  
Wire clamp 8 - 10 mm



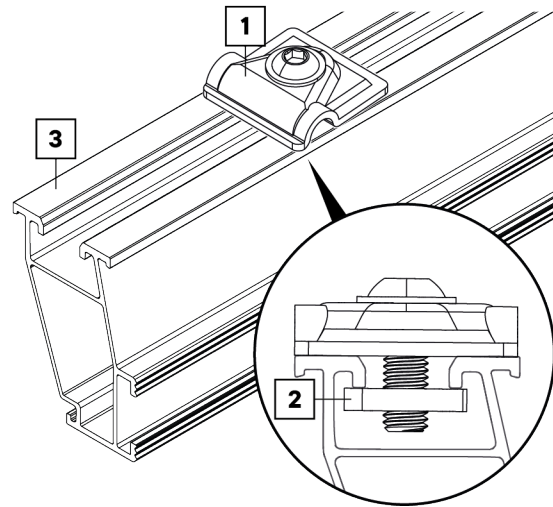
**X60-XXXX**  
Mounting rail X60 1980 mm 3550 mm 4750 mm 5850 mm

### MOUNTING WIRE CLAMP (EXAMPLE MOUNTING RAIL X60)



- Insert the wire clamp (1) into the mounting rail (3).
- Ensure that the threaded plate (2) is positioned as shown in the illustration.
- With the wire inserted, tighten the screw of the wire clamp (1) to a torque of 10 Nm or 7.38 lb-ft.

**i** In the following steps, the installation of the clamp is shown using an **X60** mounting rail. The procedure is identical for **X50** and **X40** mounting rails.



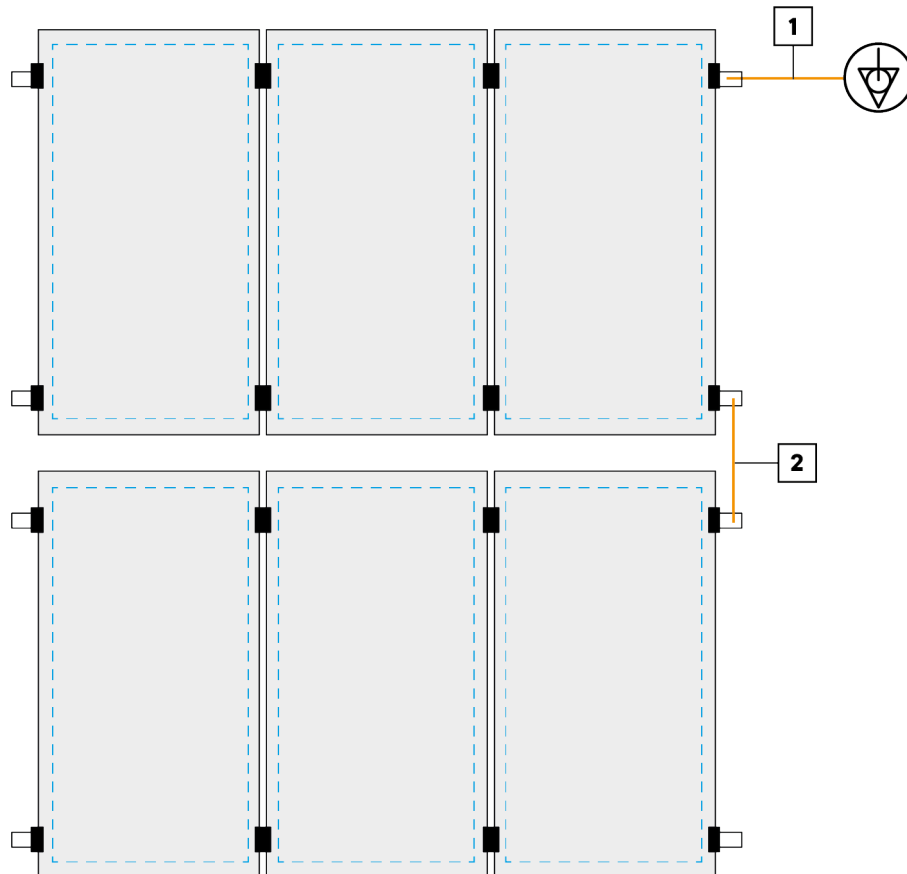
### MINIMUM CROSS-SECTIONS FOR EQUIPOTENTIAL BONDING

**i Caution!**

The specialist planner, contractor or installer is responsible for specifying the minimum cross-sections for equipotential bonding in accordance with the applicable legal requirements and standards. AEROCOMPACT Europe GmbH assumes no liability for this.



## WIRING DIAGRAM FOR EQUIPOTENTIAL BONDING



- Attach the on-site potential equalization (1) to a point on the system.
- Create a connection (2) for the module columns.

# 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.

---

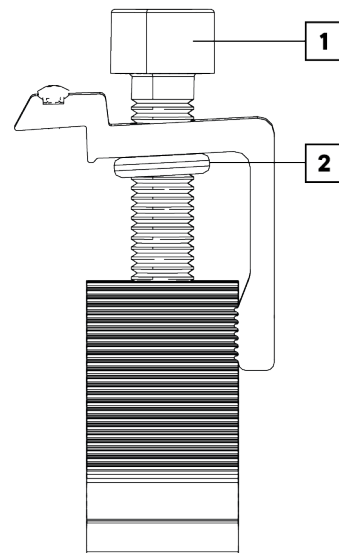
## DISASSEMBLY

### DISMANTLING THE CLAMPS (EXAMPLE)



**i** 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.
- i** 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.

**i** 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 XM-F



Manufacturer: **AEROCOMPACT Europe GmbH**  
Designation: **Pitched roof system for installation of PV modules on tiled roofs using flexible covers as tile substitutes.**  
Identification code: **XM-F**  
Applied standard: **EN 1090-1**  
Certification body: **2397-CPR-65/2511**



[To the declaration of performance](#)

## REVISION HISTORY

Version	Chapter	Modification
v3.1	"Mount XM-F roof hooks" on page 16	Base plate bridge added
v3.2	"Mount XM-F roof hooks" on page 16	Repair screw added
v3.3	"MLPE module mounting (optional)" on page 35	New chapter added
	"Cable management" on page 31	New chapter added



---

**Europe / APAC**

AEROCOMPACT® Europe GmbH  
Gewerbestraße 14  
6822 Satteins  
Austria  
phone: +43 5524 22 566  
e-mail: [office@aerocompact.com](mailto:office@aerocompact.com)

**USA / Canada**

AEROCOMPACT® Inc.  
901A Matthews Mint Hill Road  
Matthews, NC 28105  
USA  
phone: +1 800 578 0474  
e-mail: [office.us@aerocompact.com](mailto:office.us@aerocompact.com)

**India**

AEROCOMPACT® India Private Ltd.  
Hub and Oak  
C-360, Defence Colony  
New Delhi, 110024  
phone: +91 888 26 32 902  
e-mail: [office.in@aerocompact.com](mailto:office.in@aerocompact.com)

---

