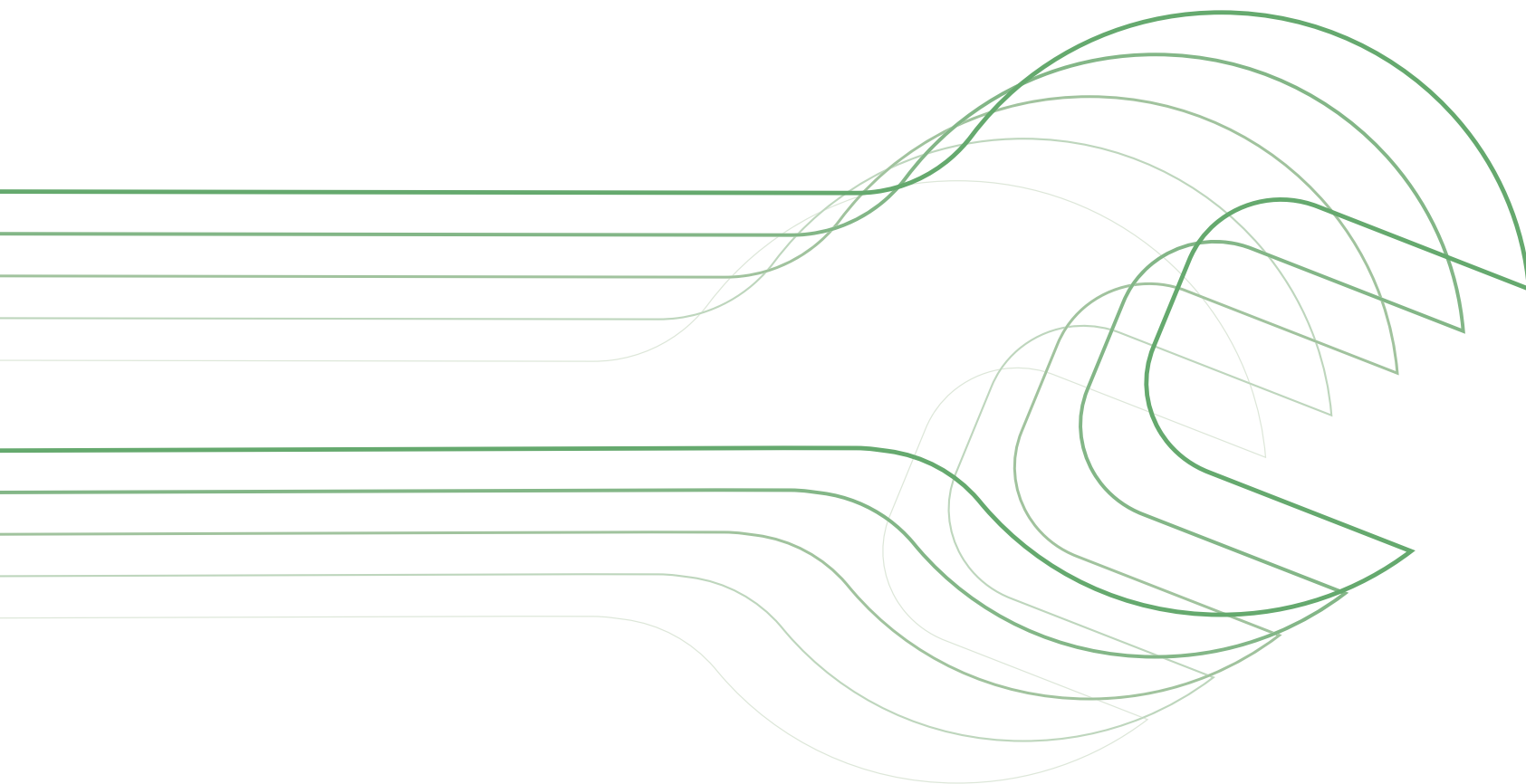


ALUMERO

EN



**SUSTAINABLE
SOLAR
SOLUTIONS**

easyBRIDGE
ASSEMBLY MANUAL

Please read the safety instructions at the end of this manual before starting the installation. Make sure you are using the latest version of the assembly manual.

The layout and planning of the mounting system should be done using the **ALUMERO.PRO.TOOL** software. Refer to the required materials, positions, and arrangement of individual components as detailed in the project report provided by ALUMERO.PRO.TOOL or your ALUMERO sales representative. This data has been statically calculated and are essential for the safe and proper functioning of the system.

The installer of the photovoltaic system must ensure before installation begins that the roof substructure provided is designed for the additional loads.

This manual describes the assembly processes for the according ALUMERO system, attachment in open terrain, and the installation of modules.

This ALUMERO mounting system is designed exclusively for mounting PV modules. Any other use is considered inappropriate.

Installation must only be performed by qualified personnel.
Roofing work in particular should be carried out by a roofing professional.

For further questions, use ALUMERO's professional and comprehensive consulting service.

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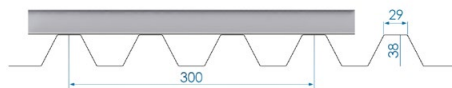
GENERAL INFORMATION

Min. sheet thickness:	Sheet steel min. 0,4 mm Aluminium min. 0,5 mm	
Roof pitch:	5°– 45°	
Trapezoidal sheet high bead:	Minimum width of the high bead 22 mm (25 mm recommended). The height of the high bead is irrelevant.	
High bead spacing:	Trapezoidal sheet metal bridge: 400: 100-170 / 190-333mm 250: 65-207mm	
Connection:	Thin sheet metal screws	
Max. module field size:	12 m length	
Screw mounting:	M8 (A2-70)	M10 (A2-70)
Torque:	15 Nm	30 Nm

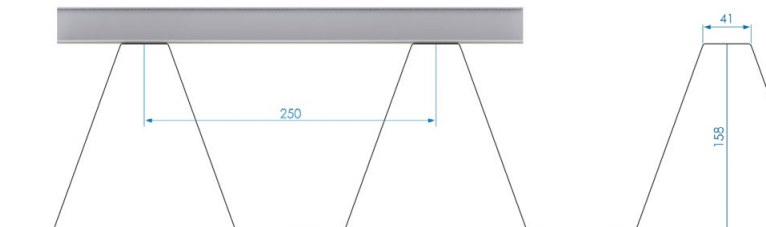
39/333,3



38/300



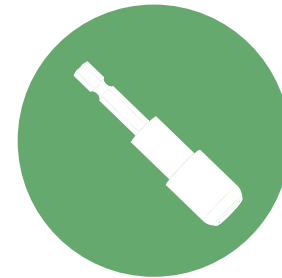
158/250



TOOLS REQUIRED



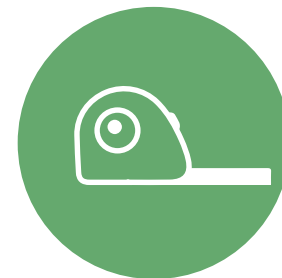
Cordless screwdriver
with bit inserts:
Hexagon SW 5, SW 6
Hexagon SW 13



Bit attachment SW8



Torque spanner



Measuring tape



Whipping cord



Spirit level

COMPONENTS

STANDARD



Trapezoidal sheet bridge 2.1

L = 400 mm, incl. screws and sealing
Distance between beads: 100 - 333 mm
Product No.: **802440**



Trapezoidal sheet bridge 2.1

L = 250 mm, incl. screws and sealing
Distance between beads: 100 - 207 mm
Product No.: **802441**



End clamp Click

Product No.:
Sheer: **802304C P1 30-42**
Black: **802304C P1 30-42**



Middle clamp Click 2.1

Product No.:
Sheer: **802301C P1 30-45**
Black: **802391C P1 30-45**

PLEASE NOTE THE FOLLOWING ADDITIONAL DOCUMENTS!

The following documents are required in addition to the installation instructions and for correct installation of the system:

- + Project report from ALUMERO.PRO.TOOL
- + Planning documents and drawings
- + The generally applicable document "Installation instructions" at <https://www.alumerogroup.eu/service> under "General" -> "Other"

Please also inform yourself about the safety regulations of the other system components.

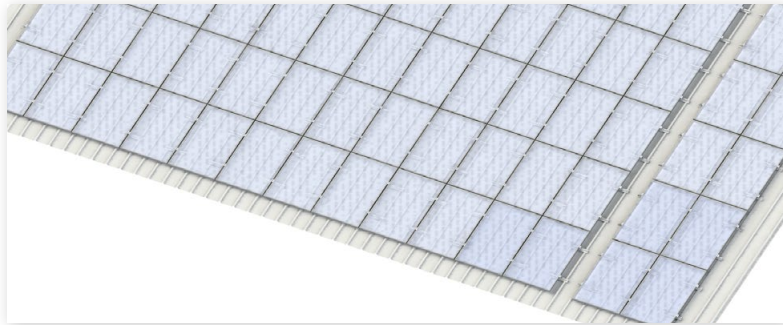
**CONGRATULATIONS,
WELL DONE!**



**SUSTAINABLE
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THERMAL SEPARATORS AND MAINTENANCE ROUTES

Observe the maximum module field length of 12 m. After this length, the modules must be thermally separated. A raised bead should be left free for this purpose.



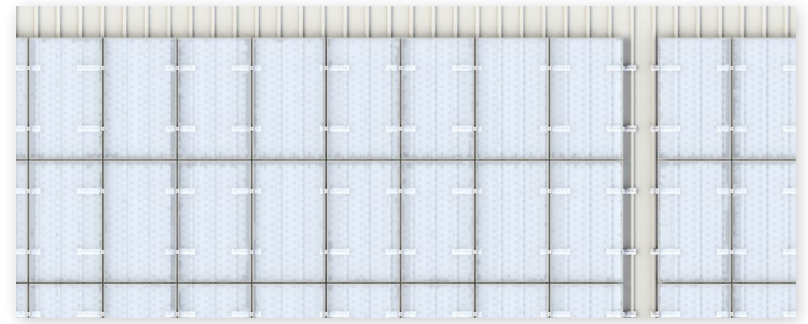
Detail: Thermal break after 12 m in horizontal direction.



Option: If the clamping area of the module and the distance of the high bead allow it, the trapezoidal sheet metal bridge can be mounted offset on the high bead for thermal separation. Nevertheless, ensure that there are sufficient maintenance aisles for larger systems.



For larger systems, you should always plan maintenance cycles in a horizontal and vertical direction.

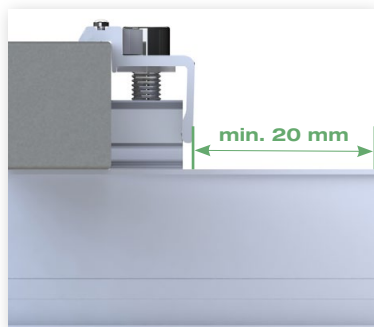
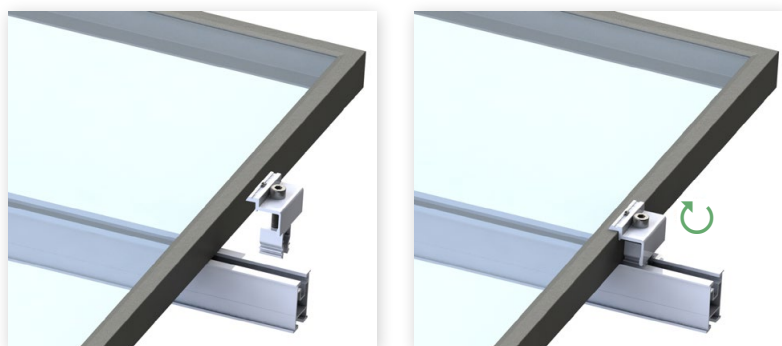


MODULE INSTALLATION

1 Installing end clamps

Start with the bottom row of modules. Place the first module on the trapezoidal sheet metal bridges and align.

Click in the Click end clamp at a slight angle and slide it towards the module frame. Tighten the Allen screw with a torque of **15 Nm**.



Please note:

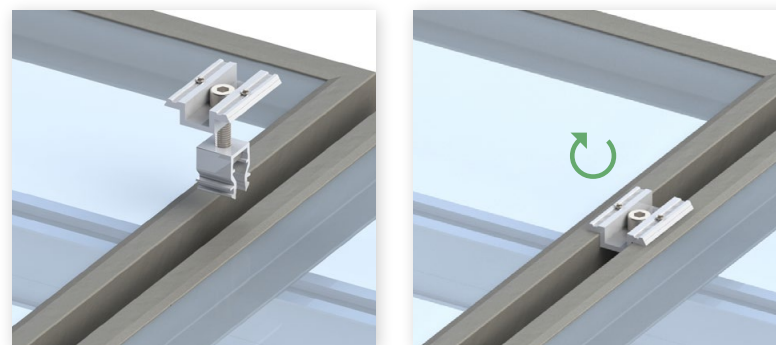
The end clamps must be fitted at least 20 mm from the end of the respective mounting profile.



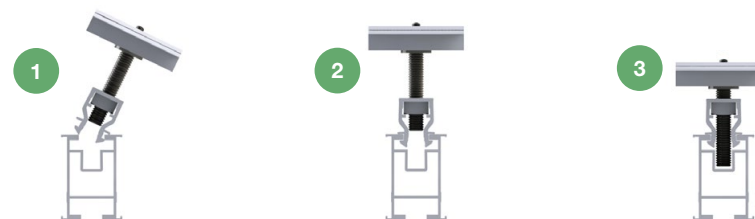
Attention: When using end clamps with threaded plates, attention must be paid to the alignment. The threaded plate must be at right angles to the profile channel.

2 Installing middle clamps

Place the Click centre clamp on the frame of the previous module and click in at a slight angle. Push the module in so that both modules are firmly in place. Tighten the Allen screw with a **torque of 15 Nm**.



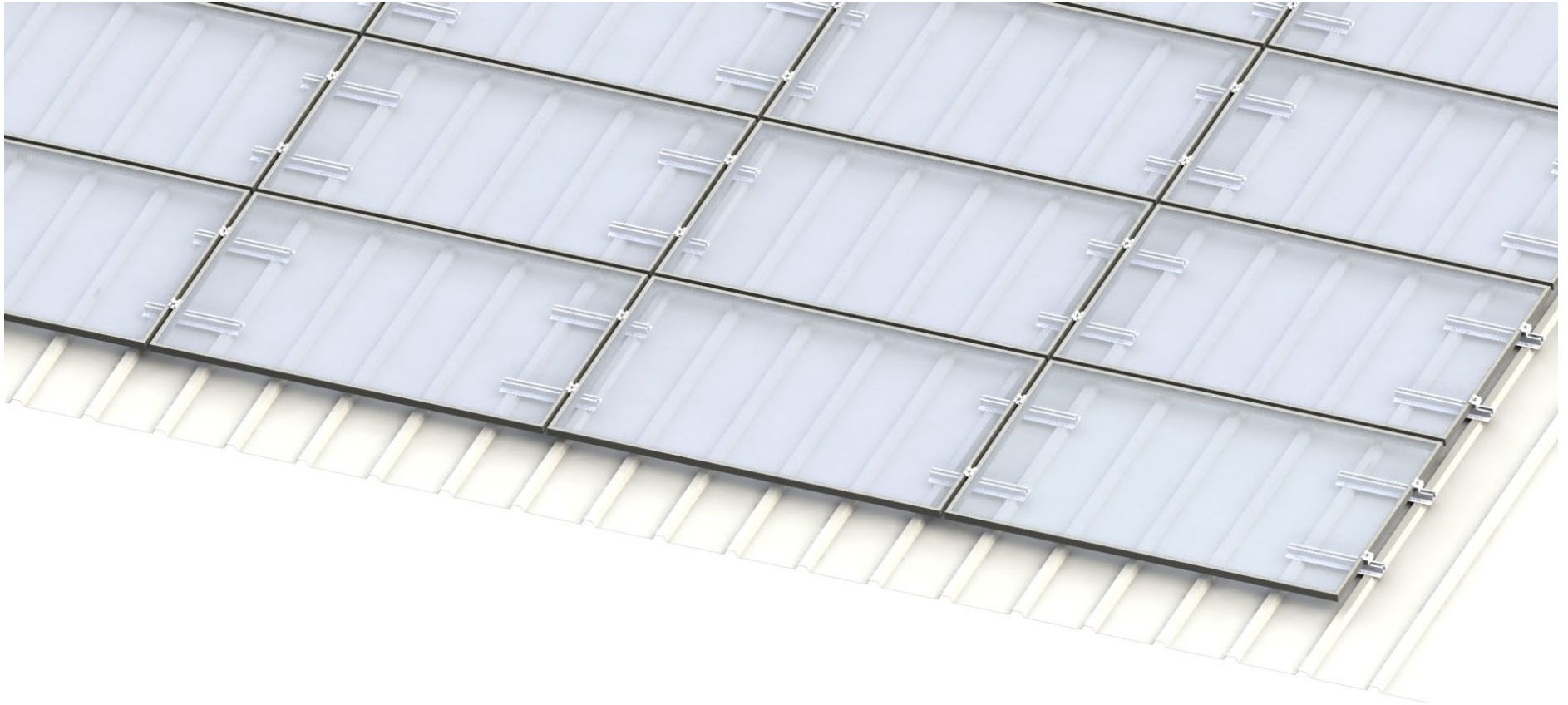
Install the last module of each module row with end clamps as described above. Install the remaining module rows in the same way.



Please note:

- + Distance between the clamps and the ends of the trapezoidal sheet metal bridges: **min. 20 mm!**
- + Only clamp the modules in the specified fastening areas! These can be found in the module manufacturer's module data sheet.
- + Distance (horizontal and vertical) between modules: **approx. 20 mm!**

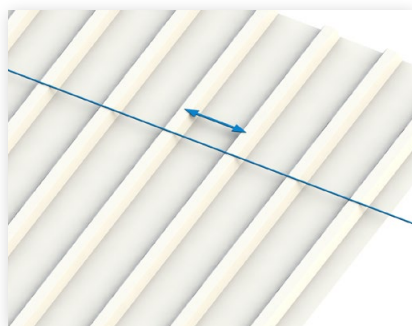
SUPERSTRUCTURE WITH TRAPEZOIDAL SHEET METAL BRIDGES MODULE ARRANGEMENT - HORIZONTAL



INSTALLATION

1 Measure and mark positions

Measure the positions of the trapezoidal sheet metal bridges on the roof according to the Solar.Pro.Tool project report and mark them using a chalk line. Measure the distance between the raised beads and position the trapezoidal sheet metal bridges.



2 Installation of the trapezoidal sheet bridges

Screw the trapezoidal sheet metal bridge onto the centre of two raised beads using 4 thin sheet metal screws. Ensure that the EPDM seal under the trapezoidal sheet metal bridge and the sealing discs of the thin sheet metal screws are not compressed by more than 50 %.

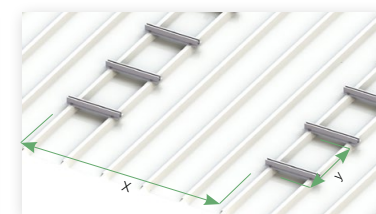
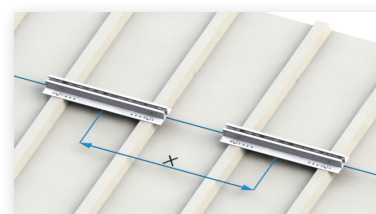
The distance between the thin sheet metal screws and the bead edge should be at least 8 mm



Bitte beachten: Montierte Trapezblechbrücken dürfen nicht als Trittleiter benutzt werden!

Place the next trapezoidal sheet metal bridges on the subsequent raised beads so that the **distance X** is maintained. The **distance X** depends on the module length + clamping width (20 mm) + minimum distance to the end of the respective trapezoidal sheet metal bridge (20 mm).

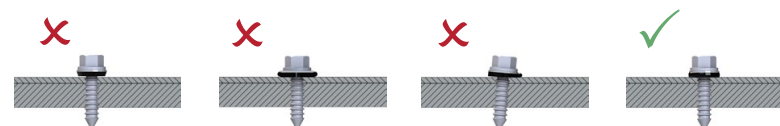
The **distance Y** depends on the module width and should correspond to the selected clamping area of the module.



Please note: Please refer to the installation instructions for the modules used for the clamping ranges and the resulting loads.

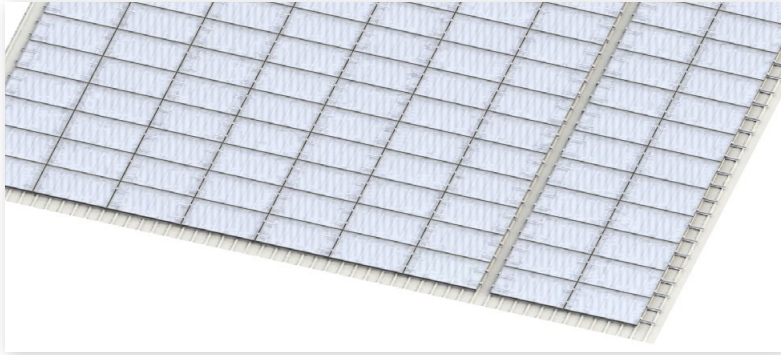
Note on the thin sheet metal screws

Screw the thin sheet metal screws slowly, in a controlled manner and with a low torque so as not to overtighten the screw or destroy the sheet metal. Only tighten the screw until the EPDM seal under the rail and the thin sheet metal screws is reduced to approx. 50 % of its original thickness. Further tightening does not increase the strength of the connection, but only the risk of failure.

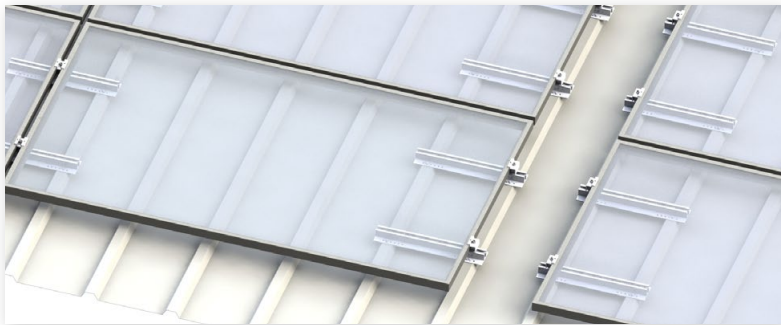


THERMAL SEPARATORS AND MAINTENANCE ROUTES

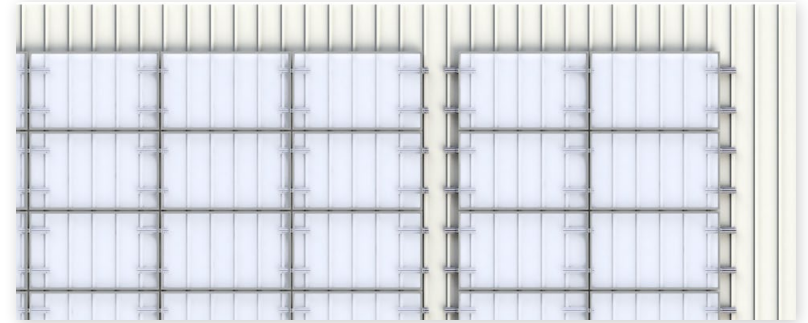
Observe the maximum module field length of 12 m. After this length, the modules must be thermally separated. A raised bead should be left free for this purpose.



Detail: thermal break after 12 m in horizontal direction.



For larger systems, you should always plan maintenance cycles in a horizontal and vertical direction.

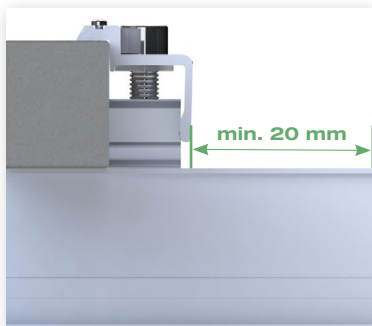
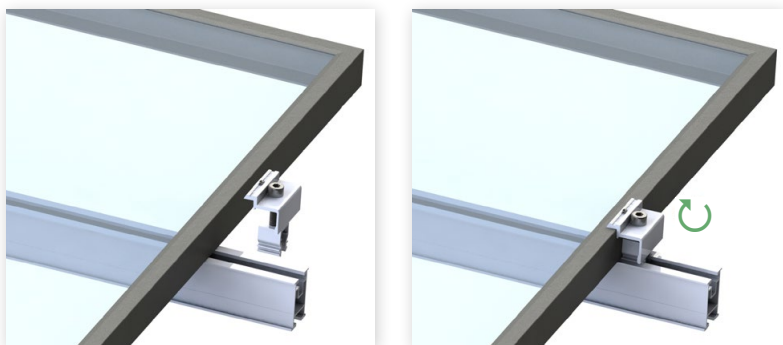


MODULE INSTALLATION

1 Installing end clamps

Start with the bottom row of modules. Place the first module on the trapezoidal sheet metal bridges and align.

Click in the Click end clamp at a slight angle and slide it towards the module frame. Tighten the Allen screw with a torque of **15 Nm**.



Please note:

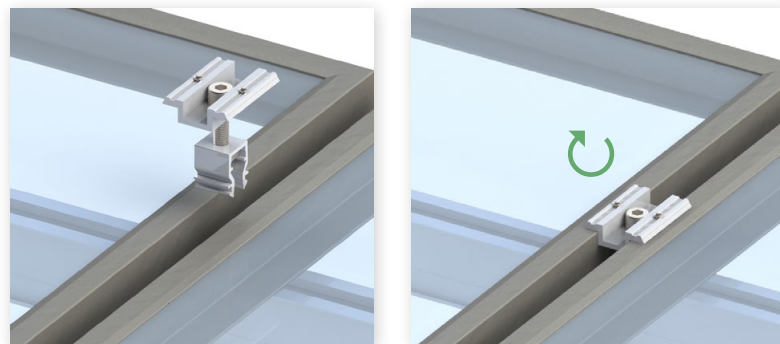
The end clamps must be fitted at least 20 mm from the end of the respective mounting profile.



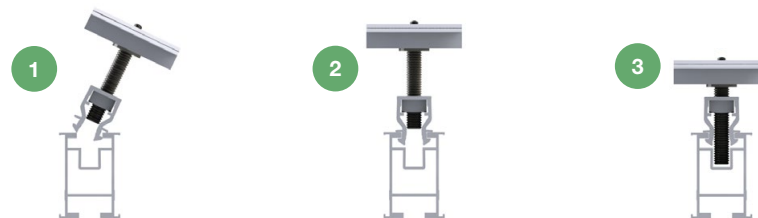
Attention: When using end clamps with threaded plates, attention must be paid to the alignment. The threaded plate must be at right angles to the profile channel.

2 Installing middle clamps

Place the Click centre clamp on the frame of the previous module and click in at a slight angle. Push the module in so that both modules are firmly in place. Tighten the Allen screw with a **torque of 15 Nm**.



Install the last module of each module row with end clamps as described above. Install the remaining module rows in the same way.



Please note:

- + Distance between the clamps and the ends of the trapezoidal sheet metal bridges: **min. 20 mm!**
- + Only clamp the modules in the specified fastening areas! These can be found in the module manufacturer's module data sheet.
- + Distance (horizontal and vertical) between modules: **approx. 20 mm!**

FASTENING THE MODULE CABLE

1

Module cables should not hang down or rest on the roof covering.

Press the clip attached to the cable tie into a profile channel of the carrier profile. Tie the cable together with the cable tie.

Remove the clip by sliding it out of the profile channel from the side.



POTENTIAL EQUALISATION

1

Potential equalisation between the individual system components must be carried out in accordance with the respective country-specific regulations. One option for earthing the ALUMERO trapezoidal sheet metal roof system is shown below. Cable cross-sections and the overall earthing concept are not included in these instructions and must be calculated or created by the installer in accordance with the applicable standards and guidelines. Other professional earthing methods than those listed here are also possible.

Grounding of the trapezoidal sheet bridge rows

Insert a wire clamp into the lower profile channel of the support profile in each row of trapezoidal sheet metal bridges. Insert the aluminium wire into the wire clamp and secure it by tightening the screw. In this way, connect all rows of modules to each other conductively.



Fastening the aluminium wire using a wire clamp



Fastening the earthing wire using a hammer-head screw

2

Grounding the modules

Whether the modules must be earthed is specified by the module manufacturer in the respective module data sheet. If so, the potential equalisation of the modules can be created in the following way recommended by ALUMERO:

To integrate the modules into the potential equalisation, you can use ALUMERO end and centre terminals with pins. The pins are located in the terminals, pierce the anodised layer of the module frames and thus connect all module rows to each other conductively.



Click end clamp with pin



Click middle clamp with pin



All product illustrations contained in these installation instructions are for illustrative purposes only and are not to scale. Changes and errors excepted!

Finished!

BITTE BEACHTEN SIE FOLGENDE HINWEISE!

Wir empfehlen Ihnen, die folgenden Hinweise aufmerksam zu lesen, da sie für den Umgang mit dem Produkt sehr wichtig sind.

Bitte informieren Sie sich auch über die Sicherheitsvorschriften der anderen Anlagenkomponenten.

SICHERHEITS- UND WARNHINWEISE

Das beschriebene System ist ausschließlich für die Aufnahme von PV-Modulen konzipiert. Jede andere Verwendung gilt als nicht bestimmungsgemäß. Zum bestimmungsgemäßen Gebrauch gehört auch die Einhaltung der Angaben dieser Montageanleitung. ALUMERO haftet nicht für Schäden, die aus Nichtbeachtung der Montageanleitung, insbesondere der Sicherheitshinweise, sowie aus missbräuchlicher Verwendung des Produkts entstehen.

ALUMERO übernimmt keinerlei Haftung für Leistungsverluste oder Schäden am Modul, welcher Art auch immer.

Bei allen Arbeiten an der PV-Anlage sollten Sie sich genau an diese Anleitung halten. Installation, Inbetriebnahme, Wartung, Reparatur dürfen nur von Personen ausgeführt werden, die entsprechend qualifiziert und autorisiert sind.

Bitte beachten Sie die gültigen Vorschriften und Sicherheitshinweise.

Diese Unfallverhütungsvorschriften müssen Sie berücksichtigen:

- + BGV A 1 – Allgemeine Vorschriften
- + BGV A 3 – Elektrische Anlagen und Betriebsmittel
- + BGV C 22 – Bauarbeiten (Persönliche Schutzausrüstungen gegen Absturz)
- + BGV D 36 – Leitern und Tritte
- + Berufsgenossenschaftliche Regeln für die Sicherheit und Gesundheit bei der Arbeit
- + BGR 203 (Dacharbeiten) und die DIN EN 516 Einrichtungen zum Betreten des Dachs
- + Arbeitskleidung und Arbeitsschutzbestimmungen gemäß den Vorschriften der Berufsgenossenschaft

Die folgenden DIN-Normen müssen Sie einhalten:

- + DIN 18299 – Allgemeine Regelungen für Bauarbeiten jeder Art
- + DIN 18338 – Dachdeckungs- und Dachabdichtungsarbeiten
- + DIN 18360 – Metallbauarbeiten, Schlosserarbeiten
- + DIN 4102 – Brandverhalten von Baustoffen und Bauteilen

Arbeiten an den Systemen der Alumero Systematic Solutions GmbH dürfen nur von autorisiertem Personal durchgeführt werden. Der Betreiber der Anlage hat folgende sicherheitsrelevante Pflichten:

Wir setzen voraus, dass mindestens einmal pro Jahr eine Inspektion und Wartung der verbauten Systemkomponenten und der Dachhaut stattfindet. Hierbei sollten mindestens die folgenden Punkte überprüft werden:

- + Alle mechanischen Verbindungen auf korrekten Sitz und Festigkeit
- + Die Lage des Systems auf dem Dach und das System selbst bezüglich Verformungen
- + Die Verkabelung auf Unversehrtheit
- + Die PV-Module auf Beschädigung
- + Die Montage des Gestells darf nur von Personen mit entsprechender Qualifikation, handwerklichen Fähigkeiten und Grundkenntnissen der Mechanik ausgeführt werden.
- + Es ist sicherzustellen, dass die beauftragten Personen die ihnen übertragenen Arbeiten beurteilen und mögliche Gefahren erkennen können.
- + Die Montageanleitung ist Bestandteil des Produktes und muss während der Montage verfügbar sein.
- + Es ist zu gewährleisten, dass die Montageanleitung und insbesondere die Sicherheitshinweise vom beauftragten Personal vor der Montage gelesen und verstanden werden.
- + Die Vorschriften der Berufsgenossenschaft, die örtlichen Arbeitsschutzbestimmungen und die Regeln der Technik müssen eingehalten werden.
- + Für die Montage sind geeignete Hebezeuge und Leitern zu verwenden. Es dürfen keine Anstell-Leitern verwendet werden.
- + Es ist erforderlich, eine Überprüfung der bestehenden Gebäudestatik durch einen fachkundigen Bauingenieur bezüglich der zusätzlichen Lasten aus einer PV-Anlage vornehmen zu lassen.
- + Eventuelle allgemeine Lastbegrenzungen durch die ALUMERO Systematic Solutions GmbH (z.B. Notwendigkeit für Schneeräumen, um die Schneelast zu begrenzen) sind zu berücksichtigen.

