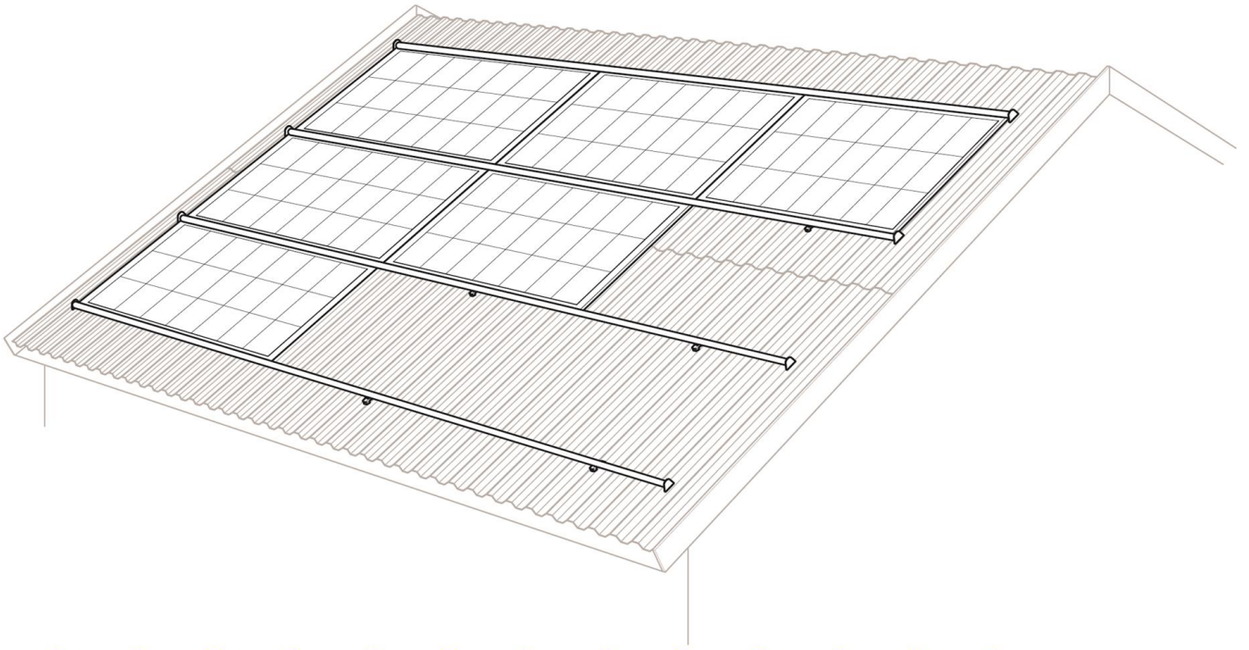
Installation manual

Inlay mounting system for a trapezoidal roof



Aelex

July 2024 | Version 1.0

Disclaimer

The instructions and safety provisions according to this installation manual must be observed with care during installation of any Aelex system. Failure to comply with the requirements stipulated in this document will void the customer's warranties, as is also indicated in the applicable general sales and delivery terms of Aelex; Aelex cannot be held liable for any damage on any grounds whatsoever in this case.

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1 Introduction

This installation manual describes installation of the Aelex inlay mounting system on a pitched trapezoidal roof. This manual is to support the installer in safe installation of the Aelex as intended.

Read the manual carefully before starting the installation. Observe all applicable safety requirements while installing the Aelex.

1.1 User description

This document is intended for professional Aelex installers.

The Aelex inlay mounting system should only be installed and serviced by authorised and competent installers who have read and understood the content of this installation manual.

1.2 Explanation of safety warnings

⚠DANGER

Danger indicates a danger with a high level of risk that will result in death or serious injury if not avoided.

⚠WARNING

Warning indicates a hazard with a medium level of risk that may result in death or serious injury if not avoided.

⚠CAUTION

Caution indicates a low-risk hazard that may result in minor to moderate injury if not avoided.

NOTICE

Notice marks information that is considered important but does not imply danger.

INFO

Info indicates useful information.

1.3 Instructions on use of this manual

You must read and understand this manual and the safety notices before installing and using this product. Failure to do so may lead to serious injury or death.

The Aelex inlay mounting system is also referred to as *Aelex*, the *system*, or the *product* in this manual.

Observe all instructions. This prevents the occurrence of fires, explosions, electric shocks, or other hazards that may lead to property damage and/or serious or fatal injuries.

The product must only be installed by persons who have fully read and understood the content of this user manual.

Keep all safety provisions and instructions for future use and pass them on to any subsequent users of the product.

The manufacturer cannot be held responsible for any cases of property damage or injury caused by improper handling or non-compliance with the safety notices. This will render the warranty void. This product is subject to the *General installation terms of Aelex* and the *General terms and conditions of Alius*.

1.4 Where to find documentation and information

1.4.1 Internet

The latest version of the documentation is available at: www.Aelex.nl

1.4.2 Other documentation

The following documentation is available to supplement this installation manual:

- List of certifications
- General terms and conditions of Alius
- General installation terms of Aelex

1.4.3 Support and service

For information on special tools, materials, service, technical support, ordering user manuals or for other information and/or questions, contact:

Aelex

Meerheide 101
5521 DX Eersel
Netherlands

Phone: +31 (0)850 208 538
Email: info@Aelex.nl
www.Aelex.nl

2 Safety notices

⚠DANGER

READ AND UNDERSTAND THIS MANUAL AND THE SAFETY NOTICES BEFORE USING THIS PRODUCT. FAILURE TO FOLLOW INSTRUCTIONS MAY LEAD TO SERIOUS INJURY OR DEATH.

2.1 General safety notices

+ Always use the Aelex configurator to design the inlay mounting system. Always use the technical drawing and sawing list output by the Aelex configurator for installation. The Aelex configurator can be found at Aelex.nl. The warranty claim shall lapse if you do not use the Aelex configurator to design your system.

2.2 Installation safety

+ Every installer must ensure their own safety and health and that of any other persons involved to the best of their ability in their actions at the workplace, in accordance with their training and the instructions provided by the employer.
+ Work equipment or any other installed protective devices must not be needlessly changed or removed or used improperly.
+ Report any detected hazards to health or safety to the employer for whom you are performing the work.
+ Always use the proper tools for the work at hand.
+ Installation of Aelex systems should be performed by qualified technical personnel. Professional installation is a requirement for a long service life and greater system efficiency.
+ Any electrical work must be performed by competent persons in compliance with locally applicable legislation.
+ Always be attentive and keep your mind on your work. Do not install the product if you are distracted, have impaired consciousness, or are under the influence of drugs, alcohol, or medication. Even a single moment of inattention may bring about serious accidents or injuries during installation.
+ Always observe the local standards, rules, and provisions on safe work and correct and safe installation.
+ **Risk of injury.** Always wear working gloves when handling the product. The product may have sharp edges.
+ **Risk of burns or frostbite**. Always wear working gloves when handling the product. The aluminium parts, such as the profiles, can become very hot or cold, resulting in burns or frostbite.

- **Risk of injury.** Always wear a hard hat while handling the product. Observe your surroundings when handling and moving the long profiles.
- **Risk of injury.** Always wear hearing protection, safety shoes, and safety goggles when working with a grinder.
- Always wear adequate protective clothing and personal protective equipment to match the environment and conditions where the product is to be installed during installation, including work gloves, hard hat, hearing protection, and safety goggles.
- Always use fall protection and, if necessary, safety nets and edge protection while working on roofs.
- Never leave out any system parts. Always install and set up all parts as described in the installation instructions. Do not forget any parts in the process. Missing parts may impair system function.
- Never install a system that is subject to any damage or manufacturing defects, such as bent roof hook clips or improperly tapped holes. Contact the supplier in this case.
- Strictly observe the installation instructions when connecting two or more inlay profiles to allow for dilatation (thermal expansion and contraction).
- Attach the inlay and cover profiles to the proficlicks strictly in accordance with the expansion table.
- Secure all individual inlay and cover profiles using the IP bender to prevent shifting due to thermal expansion and contraction.
- Never place any inlay mounting system over a gutter or ridge and do not let it to protrude beyond the roof surface.
- Always check that the PV panels to be installed correspond to the project plan. The buyer/installer of the system is responsible for ensuring this.
- Verify and validate that the system has been delivered completely and properly assembled. The buyer/installer of the system is responsible for verification and validation of the system.

2.3 Safety and your environment

- Always contact the supplier for advice before installing the system in situations where tall buildings or objects (such as wind turbines) that may affect wind pressure are located nearby.
- Recalculate the project and make any necessary adjustments if any data, information, and/or environmental factors turn out to deviate from your assumptions or the project report before, during, or after installation.
- Do not install the system in any coastal areas if the distance from open water is less than 500 m. This would accelerate corrosion caused by salt water on the system.

2.4 Safety concerns regarding roof stability and condition

- Check the condition and strength of the roof beforehand. The roof must be strong enough to support the weight of the system, including PV panels, as well as any wind and snow loads. Do not exceed the roof's load reserve in any one location and overall.
- Verify roof stability beforehand and adjust the roof and/or roof structure where necessary.
- Have the roof load recalculated by a qualified technician under consideration of applicable regulations beforehand. NEN 6702, NEN 7250, NEN 1991-1-4, and NEN 1991-1-1-3 are particularly relevant.
- Acquire the insurer's and structural engineer's prior approvals for:
  - the load on the building caused by the additional weight of the system with PV panels;
  - the load on the building caused by the changed geometry of the roof plane;
  - the load on the building caused by dynamic wind pressure and precipitation;
  - the interaction between the thermal effects of the building and the system with PV panels;
  - the consequences of any movement of the roof and the system with PV panels.

2.5 Safety during maintenance and repair

- Maintenance and repair of Aelex systems must be performed by qualified technical personnel.
- No changes to the system and technical modifications are permitted. They will render the warranty void.
- Only use genuine accessories and spare parts.

3 Description of the Aelex inlay mounting system for trapezoidal roofs

3.1 Intended use and reasonably foreseeable misuse

Intended use

+ The Aelex inlay mounting system as described in this installation manual should only be used for the installation of PV modules on trapezoidal roof.

Improper use

+ This product must not be installed:
  + by any private individuals without proper technical qualification;
  + in coastal areas closer than 500 m to open water;
  + without using the Aelex configurator;
  + without calculation of the roof load by a qualified technician;
  + without the insurer's and structural engineer's consent;
  + if the data, information, and/or environmental factors do not fully match the assumptions or the project report;
  + if the PV panels do not match the PV panels in the project plan;
  + in salty, humid environments;
  + in acidic environments or environments that contain chlorine.
+ This product should only be installed and used for the application described in this manual. Any other uses are unprofessional and considered dangerous. The manufacturer cannot be held liable for any damage resulting from errors, non-intended, or unprofessional use of the product.

3.2 Technical data

Parameter	Value
Product name	Aelex inlay mounting system for trapezoidal roofs
Application	Inlay mounting system for installing PV modules on trapezoidal roofs
Type	Aelex
Technical service life	20 years
Material	Aluminium, stainless steel, and plastic
Weight	+ Depending on project + System parts are packed in packages of up to 25 kg
Profile lengths	Maximum 6.2 m per profile
Temperature range for storage	+10 °C to +60 °C
Relative humidity before storage	0% to 95%

3.3 Supplied parts

3.3.1 Parts supplied for installation with flat proficlicks

The Aelex configurator will calculate the supplied quantities of each part depending on system configuration.

The Aelex inlay mounting system for trapezoidal roofs comprises the following parts:

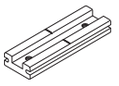

Cover profile (CP)

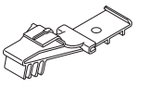

Inlay profile (IP)


Flat proficlick

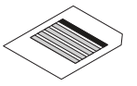

Inlay profile end stop (IP end stop)

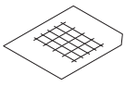

Inlay profile cover (IP cover)


Inlay profile connector


Optimizer clip


Rivet (6.5 × 23 mm)


Sawing list *


Technical drawing *

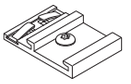
* The *Aelex configurator* will provide a technical drawing and a sawing list once you have finished planning your project. These are not delivered with the system.

3.3.2 Optional parts for installation with high proficlicks

High proficlicks can be used for installation instead of *flat proficlicks*.
The Aelex configurator will calculate the supplied quantities of each part depending on system configuration.
The following parts are included to replace the flat proficlicks:


High proficlick


Flat rail *


Proficlick *

* Only if required by the wind load calculation.

4 Preparations

4.1 Storage and transport

⚠WARNING

+ Never place any objects on or against any parts of the system to prevent deformation or damage.
+ Particular care is required when handling black profiles to avoid damage to the coating.
+ Always ensure that the system's parts are properly secured to prevent sliding of the load and damage during transport.
+ Use only approved lifting gear suitable for the material to be lifted and moving to the roof.
+ The profiles must never be submerged in water or come into in contact with any moisture during storage. Observe the temperature and humidity requirements during according to the table under *Technical data*.

4.2 Unpacking the system

⚠WARNING

Avoid damage to the profiles and parts:

+ Do not remove the protective packaging until the system is installed.
+ Do not use any knives or other sharp objects to open or remove the packaging materials.

When unpacking the system:

1. Remove all transport and packaging materials.
2. Dispose of all transport and packaging materials in accordance with the instructions in *8.2 Waste disposal*.
3. Check the content of the delivery against the project plan. Contact the supplier if any parts are missing.
4. Check the product for damage. Contact the supplier without installing the system if there is visible damage or any manufacturing defects.
5. Check that the dimensions of the supplied parts match the sawing list and the technical drawing.

4.3 Installation conditions

⚠WARNING

+ Do not install the inlay mounting system in any strong wind, snow, on wet (slippery) roof surfaces, with insufficient light, subject to extreme heat or any other conditions that make safe working impossible.
+ Always use fall protection and, if necessary, safety nets and edge protection while working on roofs.

5 Installation of the Aelex inlay mounting system for trapezoidal roofs

⚠WARNING

- The Aelex inlay mounting system should only be installed and serviced by authorised and competent installers who have read and understood the content of this installation manual.
- The system must not be installed if any damage or manufacturing defects such as bent roof hook clips or improperly tapped holes are present. Contact the supplier in this case.

5.1 Important information on wind zones and wind loads

5.1.1 Additional installation requirements for wind zones and wind loads in the Netherlands

Additional conditions in accordance with NEN-EN 1991-1-14 apply to PV systems that are installed in coastal areas. Buildings are deemed located in coastal areas if they are less than ten times their height away from water.

Additional requirements when installing the system:

- All buildings that are less than or equal to fifty times the building height away from open water must be reviewed by Aelex.
- Note the maximum building heights for installing a system with PV panels:
  - in wind zone 1: maximum height 10 m;
  - in wind zones 2 and 3: maximum height 15 m.
- Observe the sloping angle of the roof and install Aelex locking rings if necessary to prevent PV panels from being blown away:
  - in wind zone 1: install locking rings if the sloping angle is steeper than 20°;
  - in wind zones 2 and 3: install locking rings if the sloping angle is steeper than 15°.

  NOTICE
  Contact the supplier of the Aelex inlay mounting system for instructions and materials for installing locking rings.

- Always contact the supplier for advice before installing the system in situations where tall buildings or wind turbines that may affect wind pressure are located nearby.

5.1.2 Additional installation requirements for wind zones and wind loads in the Belgium

Additional conditions in accordance with NEN-EN 1991-14 apply to PV systems that are installed in coastal areas. Buildings are deemed located in coastal areas if they are less than ten times their height away from water.

Additional requirements when installing the system:

- All buildings that are less than or equal to fifty times the building height away from open water must be reviewed by Aelex.
- Note the maximum building heights for installing a system with PV panels:
  - in wind zone 26 m/s: maximum height 10 m;
  - in wind zones 23, 24, and 25 m/s: maximum height 15 m.
- Observe the sloping angle of the roof and install Aelex locking rings if necessary to prevent PV panels from being blown away. Install locking rings if the sloping angle is steeper than 15°.

  NOTICE
  Contact the supplier of the Aelex inlay mounting system for instructions and materials for installing locking rings.

- Always contact the supplier for advice before installing the system in situations where tall buildings or wind turbines that may affect wind pressure are located nearby.

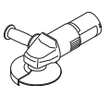
5.1.3 Additional requirements when using high proficlicks for installation

NOTICE
Always request advice from the supplier before installing the system with high proficlicks.

The wind load calculation will determine whether the lower and upper cover and inlay profiles need to be installed with flat rails and proficlicks when using high proficlicks.

5.2 Required tools

Ensure that the following tools are present:


Grinder


Screwdriver

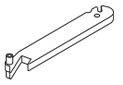

Rivet gun (for 6.5 × 23 mm rivets)


Measuring tape

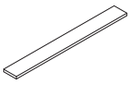

Hex key 3



Metal drill bit 6.5



Aelex IP bender



Measuring stick (make your own) with length indication: PV panel height minus 58 mm



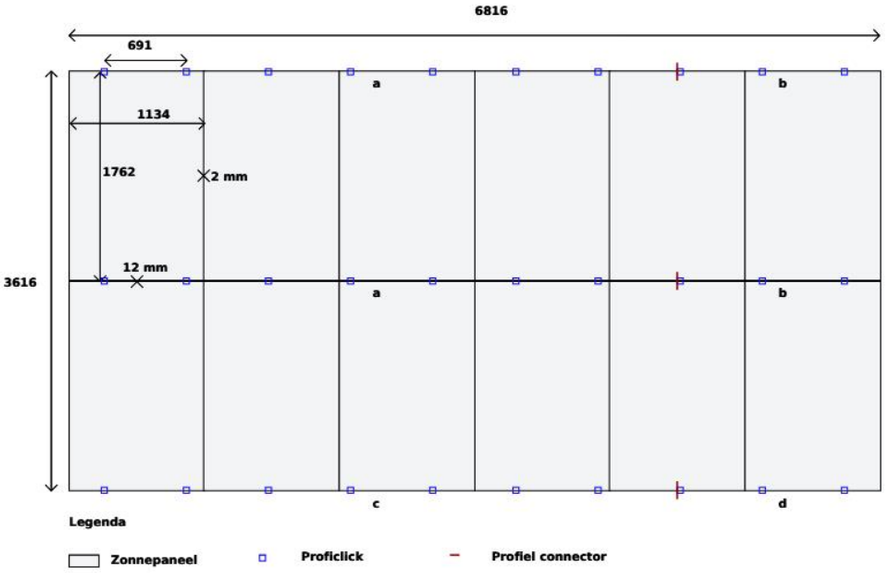
Rope or masonry cord

5.3 Taking system measurements

The Aelex configurator will provide a technical drawing and a sawing list once the project is planned out. This is necessary to measure the system and saw any required profiles to the correct lengths.

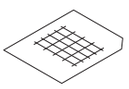
5.3.1 Performing system measurements on the roof

The letters and digits in the technical drawing correspond to the letters and digits in the sawing list. The technical drawing indicates the locations of the respective profiles.

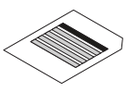


Example of a technical drawing

Required parts:



Technical drawing



Sawing list

Required tools:



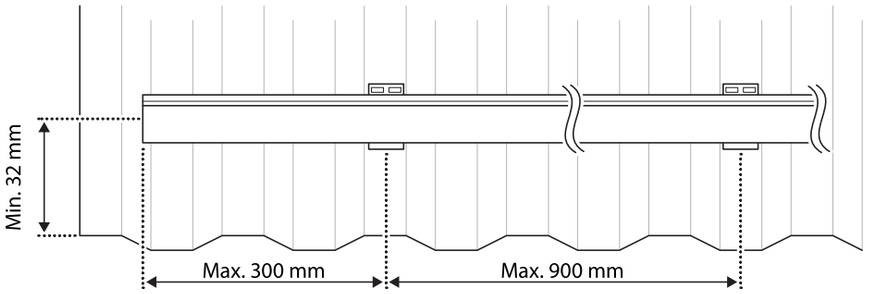
Measuring tape

When taking system measurements on the roof:

+ Measure the system on the roof to determine the proficlick positions.

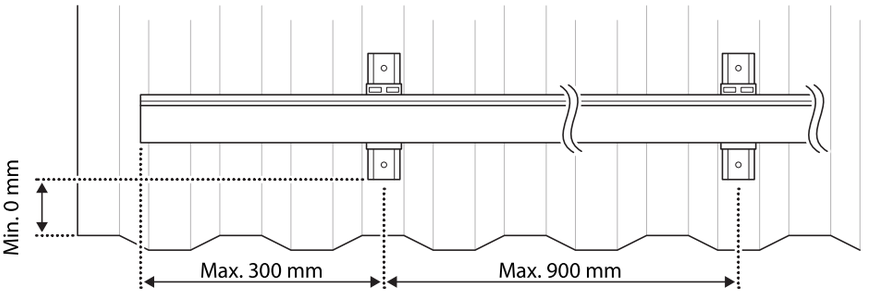
NOTICE

+ Mount the proficlicks on the top of the trapezoidal profile of the trapezoidal roof.
+ The system is intended for a proficlick spacing of 750 mm:
  + Mount the proficlicks alternately closer and further apart when the tops of the trapezoidal profile are less than 750 mm from each other. Finish at the gable end with the proficlicks closer together.
  + Contact the supplier if the distance between the trapezoidal profile tops exceeds 750 mm.
+ Inlay and cover profiles may protrude by up to 300 mm at the ends, measured from the proficlick centre.
+ The maximum horizontal distance between proficlicks is 900 mm, measured from the centre of the proficlick.
+ The minimum distance from the lower eaves is:
  + For installation with flat or high proficlicks: 32 mm, measured from the centre of the mounting hole in the bottom proficlick row.
    Consider the different position of the mounting hole when using high proficlicks.



Installation with flat or high proficlicks - comply with maximum and minimum distances

+ For installation with flat rails and proficlicks: 0 mm or more, measured from the underside of the flat rail.
  The flat rail should not protrude beyond the eaves or ridge.



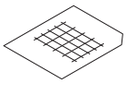
Installation with flat rails and proficlicks - comply with maximum and minimum distances

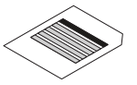
5.3.2 Sawing profiles to size

Required parts:

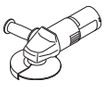

Cover profile (CP)


Inlay profile (IP)


Technical drawing


Sawing list

Required tools:


Grinder


Measuring tape

Consult the sawing list and saw the profiles to size if this has not been done yet. The letters and digits from the sawing list correspond to the letters and digits on the technical drawing. The sawing list indicates the lengths of the respective profiles.

Example of a sawing list

	Type	Number	Length (mm)
a	ALX01573 - Aelex inlay profile 40 mm black L = 5.2 m	4	5200
b	ALX01573 - Aelex inlay profile 40 mm black L = 5.2 m	4	3135
c	ALX01572 - Aelex cover profile 40 mm black L = 5.2 m	1	5200
d	ALX01572 - Aelex cover profile 40 mm black L = 5.2 m	1	3135

5.4 Mounting the proficlicks

5.4.1 Mounting the flat or high proficlicks

NOTICE

- Mount the proficlicks in accordance with the instructions in *5.4.2 Mounting flat rails and high proficlicks* if the wind load calculation when mounting high proficlicks requires flat rails to be installed.
- Mount the proficlicks on the top of the trapezoidal profile of the trapezoidal roof.
- Consider the different position of the mounting hole when using high proficlicks.
- Measure with your measuring stick based on the PV panel height minus 58 mm. Do not measure the hole spacing as such with your measuring stick.
- The maximum horizontal distance between proficlicks is 900 mm, measured from the centre of the proficlick.
- The minimum distance between the eaves and the mounting hole in the lower row of proficlicks is 32 mm, measured from the centre of the mounting hole.
  Consider the different position of the mounting hole when using high proficlicks.

Required parts:



Flat proficlick *



High proficlick *



Rivet (6.5 × 23 mm)

* Based on the chosen option.

Required tools:



Screwdriver



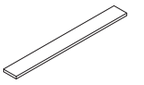
Metal drill bit 6.5



Rivet gun (for 6.5 × 23 mm rivets)



Measuring tape



Measuring stick (make your own) with length indication: PV panel height minus 58 mm

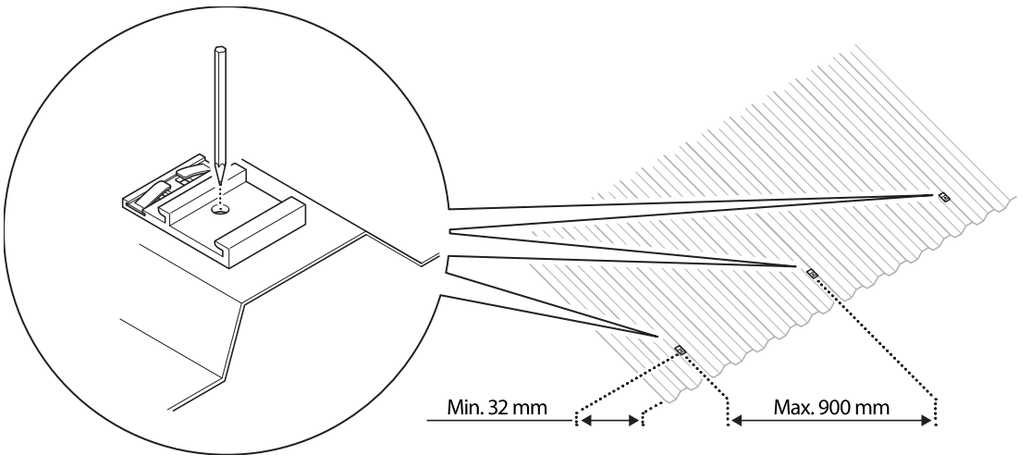
For mounting the flat or high proficlicks:

1. Installation of the bottom row of proficlicks:
   a. Mark the positions of the holes for mounting the bottom **proficlick** row on the trapezoidal roof.

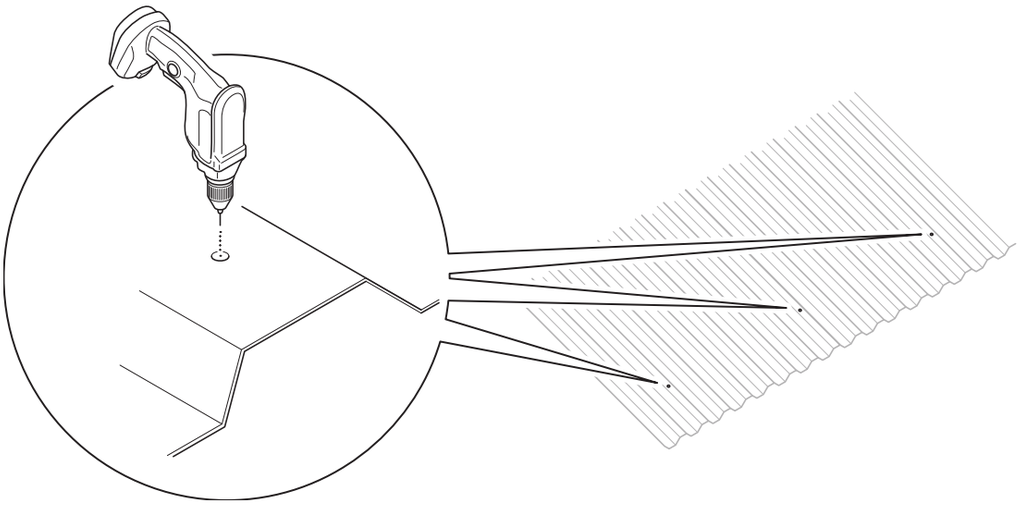
NOTICE

The minimum distance between the eaves and the mounting hole in the lower row of proficlicks is 32 mm, measured from the centre of the mounting hole. Consider the different position of the mounting hole when using high proficlicks.

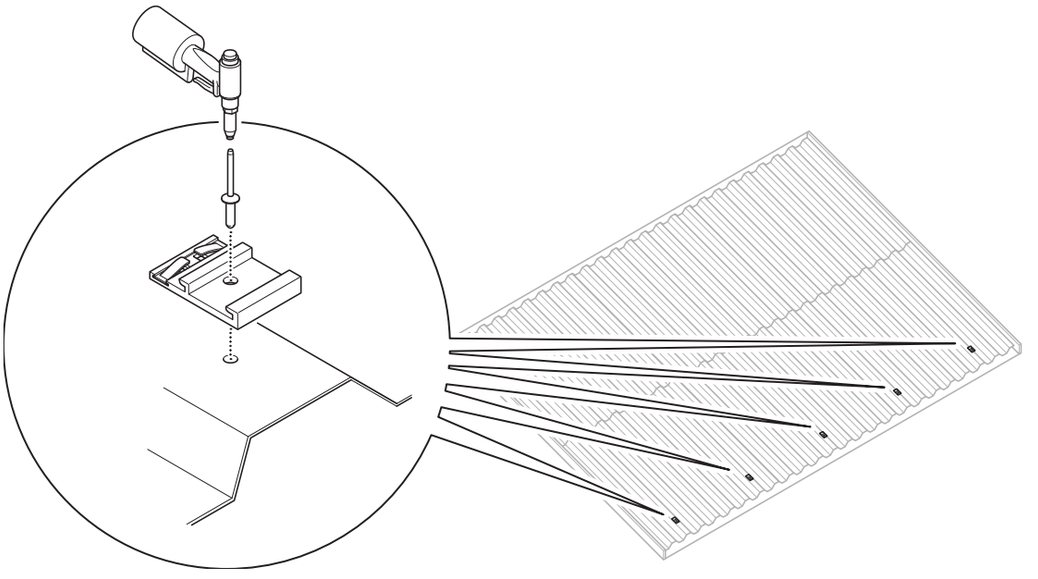
Align the proficlick hole heights using a rope/masonry cord.



b. Drill the holes for the bottom **proficlick** row.



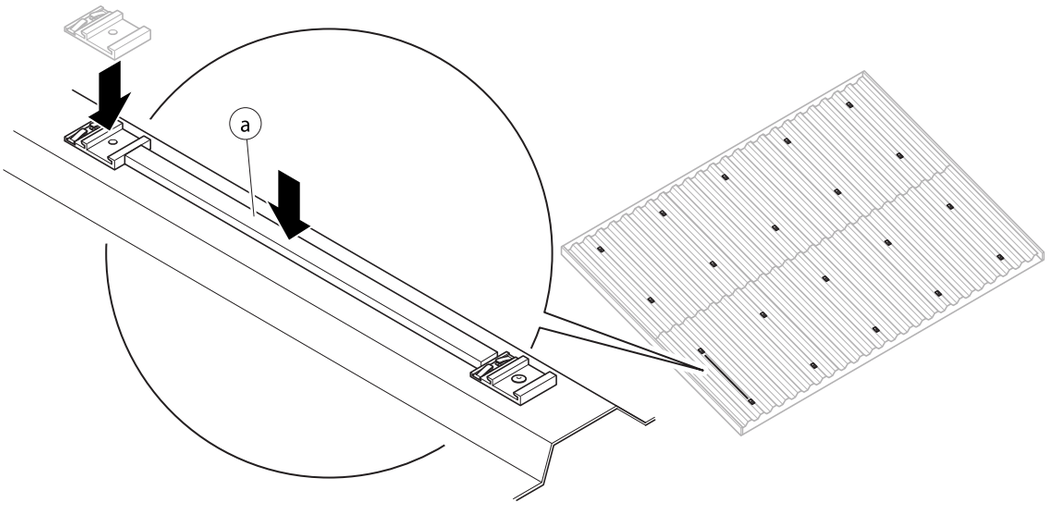
c. Mount the bottom **proficlick** row by securing the elements with a **rivet**.



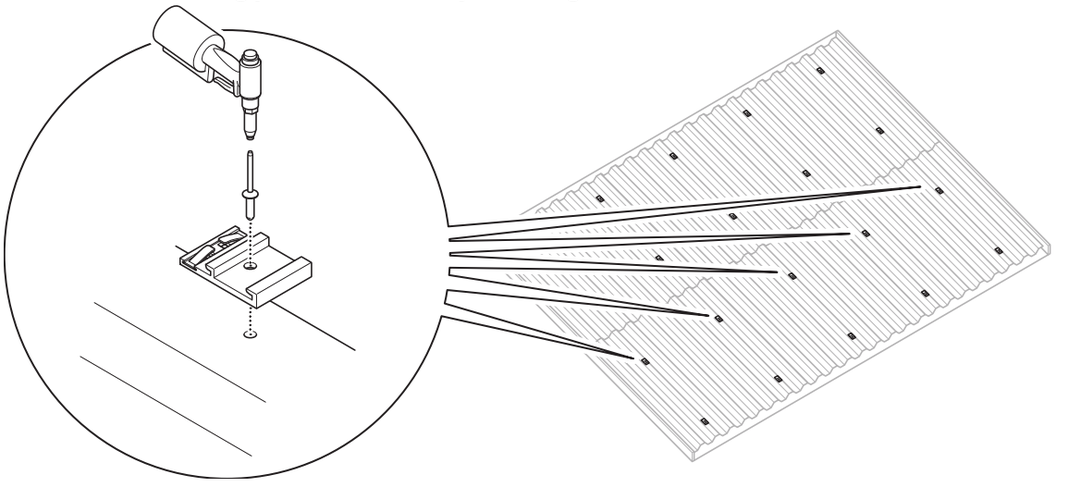
2. Mark the positions of the holes for the remaining **proficlick** rows on the trapezoidal roof. The vertical distance between the **proficlicks** equals PV panel height minus 58 mm.

INFO

Prepare a measuring stick ⓐ to quickly measure the distance between the proficlicks. The length of the measuring stick equals the PV panel height minus 58 mm.



3. Drill the holes for the remaining **proficlicks**.
4. Mount the remaining **proficlick** rows by securing the elements with a **rivet**.



5.4.2 Fit flat rails and high proficlicks (if required)

NOTICE

+ Flat rails only need to be installed if wind load calculations require it. Otherwise, install the high proficlicks in accordance with the instructions in *5.4.1 Mounting the flat or high proficlicks*.

+ The flat rails make the inset mounting system larger by protruding at the bottom and/or top.
+ The flat rails and high proficlicks are mounted on the top of the trapezoidal profile of the trapezoidal roof.
+ Consider the different position of the mounting hole when using high proficlicks.
+ Measure with your measuring stick based on the PV panel height minus 58 mm. Do not measure the hole spacing as such with your measuring stick.
+ The maximum horizontal distance between proficlicks is 900 mm, measured from the centre of the proficlick.
+ The minimum distance from the lower eaves to the flat rail is 0 mm, measured from the underside of the flat rail. The flat rail should not protrude beyond the eaves or ridge.
+ The proficlick must be mounted *between* the mounting holes on the flat rail.

The flat rails should be mounted in the lower or upper proficlick row, or in both rows, depending on distribution of the wind load on the roof. The *proficlicks* are subsequently fitted to the flat rails. *High proficlicks* are mounted directly on the trapezoidal roof in the remaining rows.

Required parts:



High proficlick



Proficlick



Flat rail



Rivet (6.5 × 23 mm)

Required tools:



Screwdriver



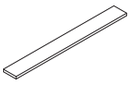
Metal drill bit 6.5



Rivet gun (for 6.5 × 23 mm rivets)



Measuring tape



Measuring stick (make your own) with length indication:
PV panel height minus 58 mm

5.4.2.1 Mounting flat rails and proficlicks in the bottom row

NOTICE

+ If you do not need to install flat rails in the *bottom* row, mount *high proficlicks* in the bottom row (in accordance with step 1 in *5.4.1 Mounting the flat or high proficlicks*).

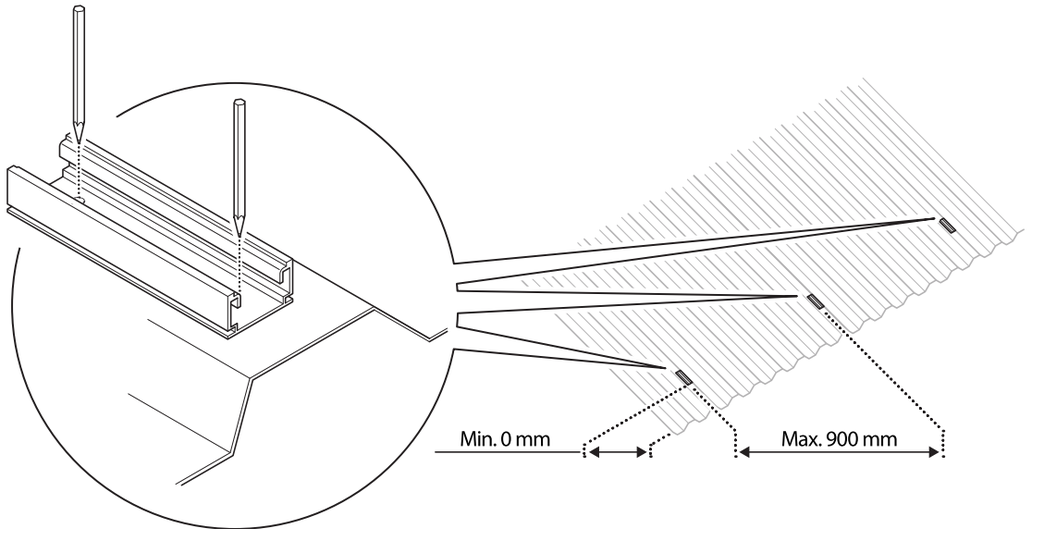
Mounting the flat rails and proficlicks in the bottom row:

1. Mark the positions of the holes for mounting the bottom row of **flat rails** on the trapezoidal roof.

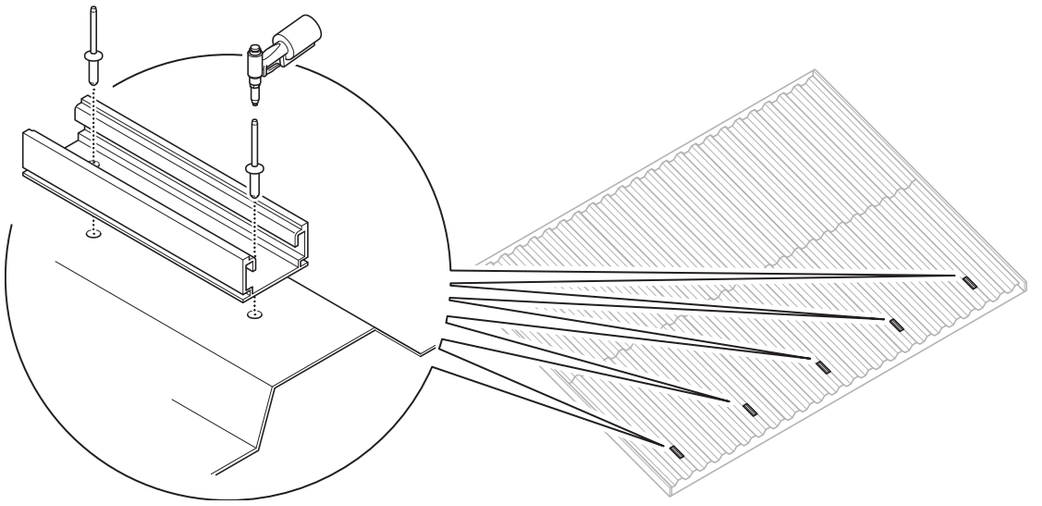
   NOTICE

   The centre of the flat rail should correspond to the position of the proficlick in the situation chart. The flat rail should not protrude beyond the eaves. Use both mounting holes to mount the flat rails.

   Align the flat rail heights using a rope/masonry cord.

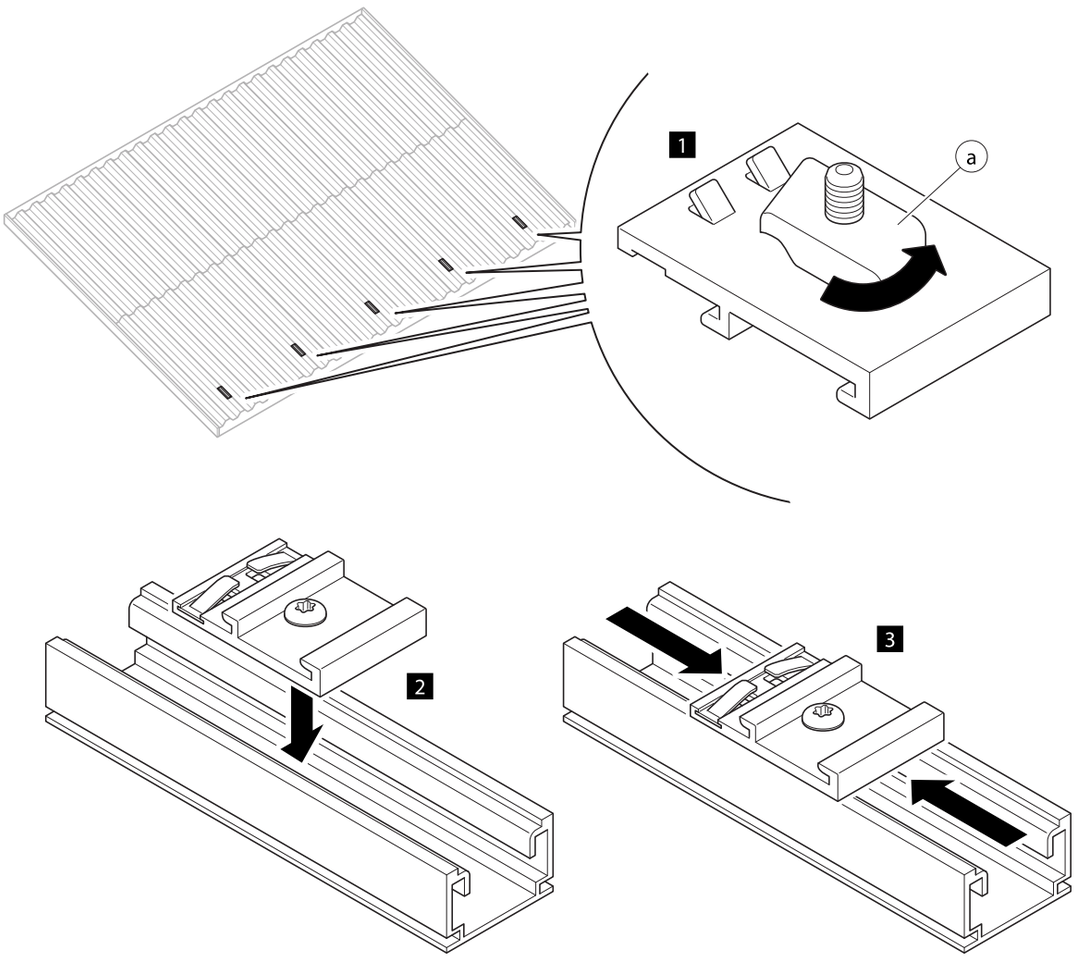


2. Drill the holes for the bottom row of **flat rails**.
3. Mount the bottom row of **flat rails** by securing the elements with **rivets**.



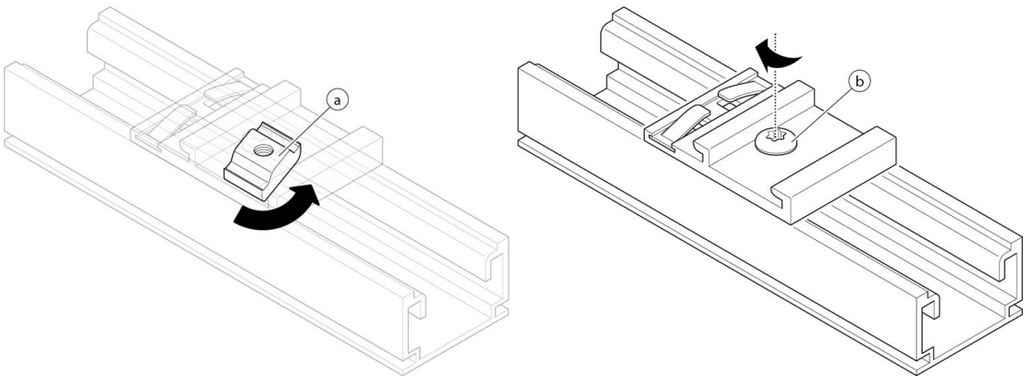
4. Mount the bottom row of **proficlicks** on the **flat rails**.
   a. Turn the **toggle nut** ⓐ until it is positioned vertically. Place the **proficlick** at the centre of the **flat rail**.

      INFO
      Align the proficlick heights using a rope/masonry cord.



   b. Turn the **toggle nut** ⓐ at the back of the **proficlick** by 90° and tighten the **screw** ⓑ to a torque of 25 Nm to fasten the **proficlick** to the **flat rail**.

      NOTICE
      Ensure that the toggle nut clamps the flat rail.



5.4.2.2 Mounting the high proficlicks in the intermediate rows

+ Mount the high proficlicks in accordance with steps 2 tot to 4 in *5.4.1 Mounting the flat or high proficlicks*.

5.4.2.3 Mounting flat rails and proficlicks in the top row

NOTICE

If you do not need to install flat rails in the *top* row, mount *high proficlicks* in the top row (in accordance with steps 2 to 4 in *5.4.1 Mounting the flat or high proficlicks*).

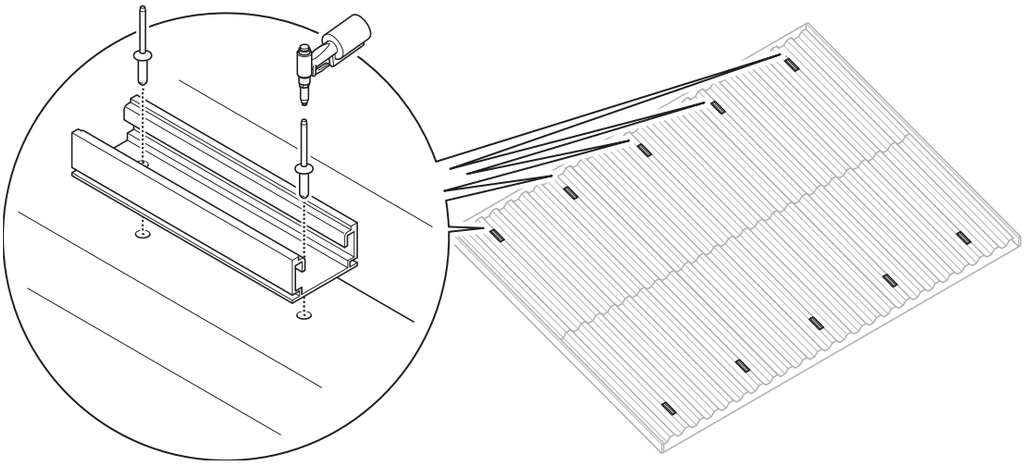
Mounting flat rails and proficlicks in the top row:

1. Mark the positions of the holes for mounting the top row of **flat rails** on the trapezoidal roof.

   NOTICE

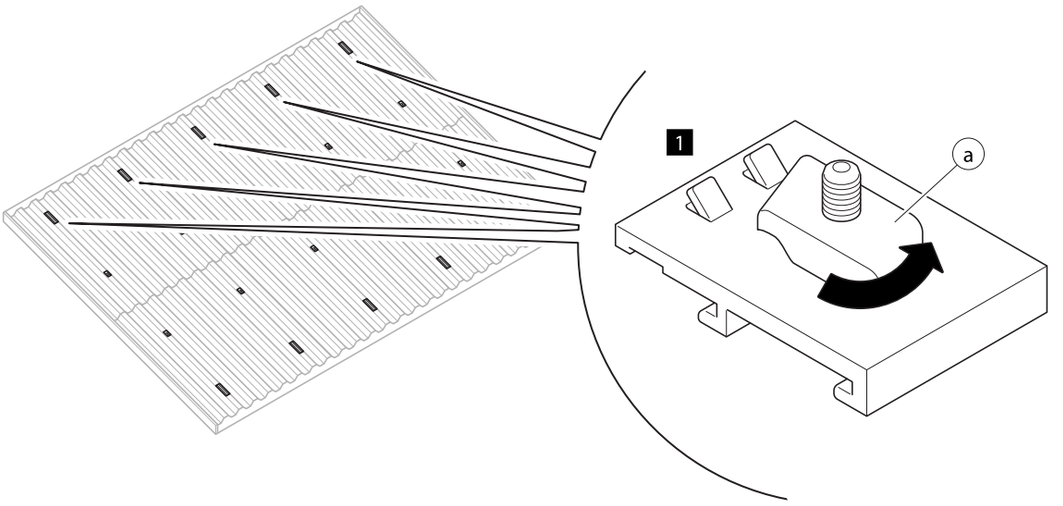
   The centre of the flat rail should correspond to the position of the proficlick in the situation chart. The flat rail should not protrude beyond the ridge. Use both mounting holes to mount the flat rails.
   Align the flat rail heights using a rope/masonry cord.

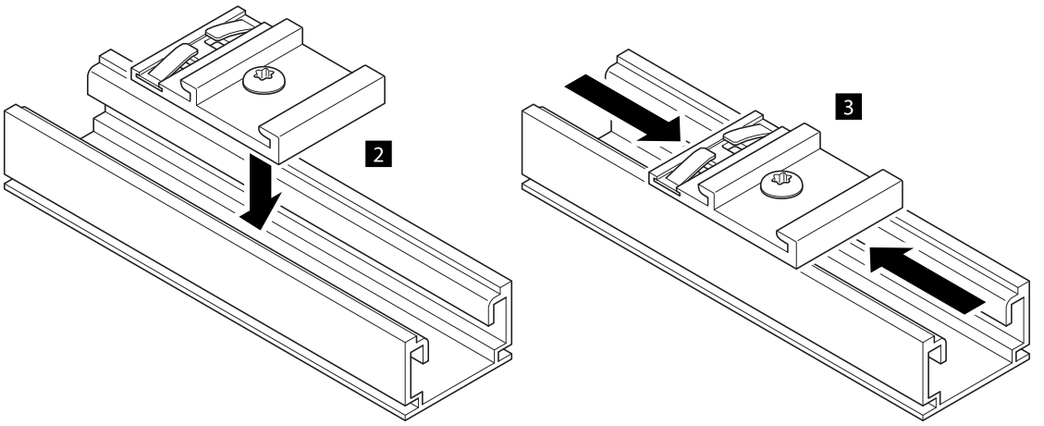
2. Drill the holes for the top row of **flat rails**.
3. Mount the top row of **flat rails** by securing the elements with **rivets**.



4. Mount the top row of **proficlicks** on the **flat rails**.
   a. Turn the **toggle nut** ⓐ until it is positioned vertically. Place the **proficlick** at the centre of the **flat rail**.

INFO
Align the proficlick heights using a rope/masonry cord.

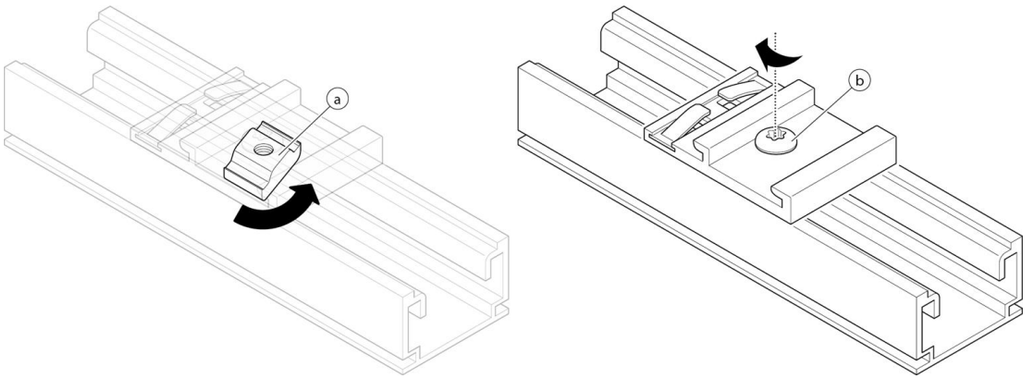




b. Turn the **toggle nut** ⓐ at the back of the **proficlick** by 90° and tighten the **screw** ⓑ to a torque of 25 Nm to fasten the **proficlick** to the **flat rail**.

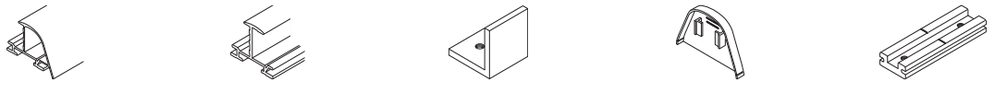
NOTICE

Ensure that the toggle nut clamps the flat rail.



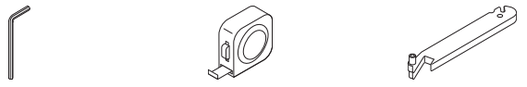
5.5 Connecting and mounting the cover and inlay profiles

Required parts:



Cover profile (CP) | Inlay profile (IP) | Inlay profile end stop (IP end stop) | Inlay profile cover (IP cover) | Inlay profile connector

Required parts:



Hex key 3 | Measuring tape | Aelex IP bender

5.5.1 Connecting the cover and inlay profiles (if required)

NOTICE

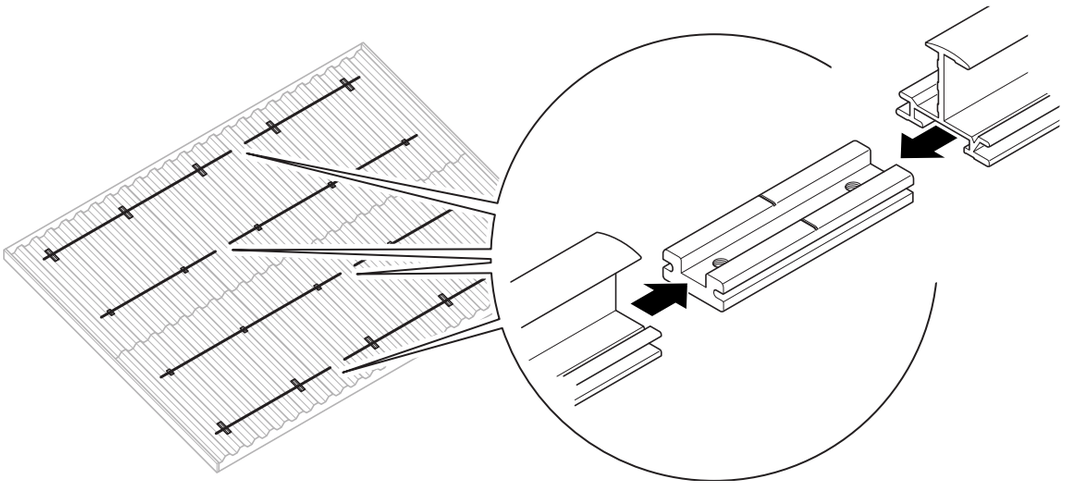
- Remember thermal expansion of the cover and inlay profiles connecting more than two cover profiles or more than two inlay profiles.
- Ensure that the inlay profile connector is evenly spread across the two profiles.
- Connect the cover/inlay profiles so that the connection between the profiles is placed alternately on the left and right sides of the system.
- Connect the cover and inlay profiles before mounting them. They cannot be connected once the profiles are in the proficlicks.

A certain distance must be maintained between the connected profiles to permit thermal expansion and contraction (dilatation) depending on the temperature of the cover/inlay profiles during installation.

The expansion table indicates the spacing required at different profile temperatures.

Expansion table

Distances between profiles, in case of a connected length of more than 12 metres (for cover profiles and inlay profiles)	
Profile processing temperature	Distance between two profiles (mm)
-10 °C	8
0°C	7
10°C	6
20°C	4
30°C	3
40°C	2
50°C	0



Example of staggered positions of the cover and inlay profiles

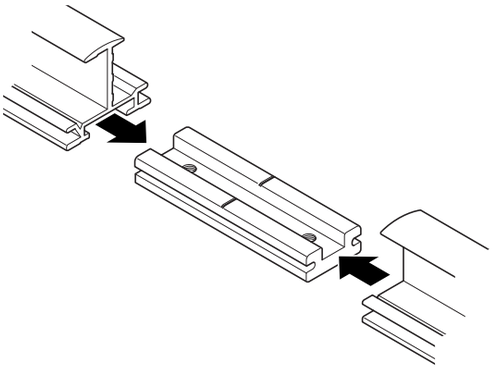
When connecting the cover/inlay profiles:

A. For lengths where two profiles must be connected:

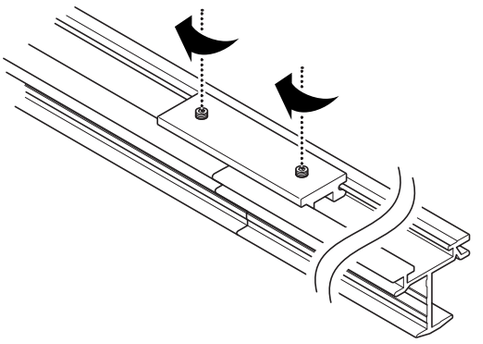
1. Connect the profiles with an **inlay profile connector** and push the profiles against each other.

NOTICE

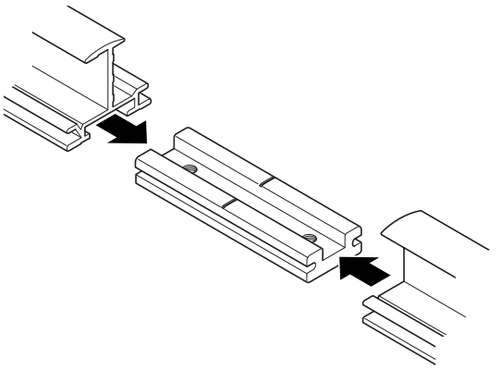
Ensure that the mark on the inlay profile connectors is always on the joint between the two profiles.



2. Tighten both screws of the **inlay profile connector**.

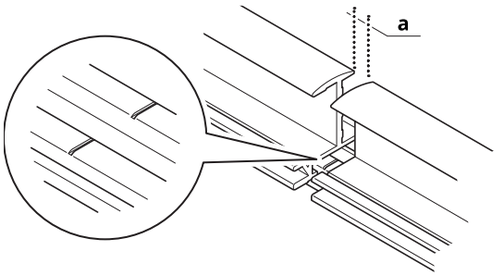


B. For lengths where three or more profiles must be connected:
   1. Check the profile temperature and check the expansion table for the distances to be maintained between the profiles.
   2. Connect the profiles with an **inlay profile connector.**



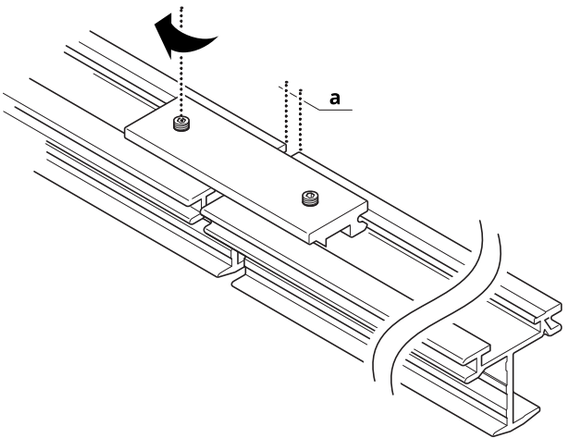
3. Adjust the **distance** ⓐ between the profiles as shown in the expansion table.

NOTICE
Ensure that the mark on the inlay profile is half-ways between the two profiles.



4. Tighten one screw of the **inlay profile connector**. Do not tighten the other screw.

NOTICE
Ensure that the inlay profile connector does not move while tightening the screw.



5.5.2 Mounting the cover and inlay profiles

NOTICE

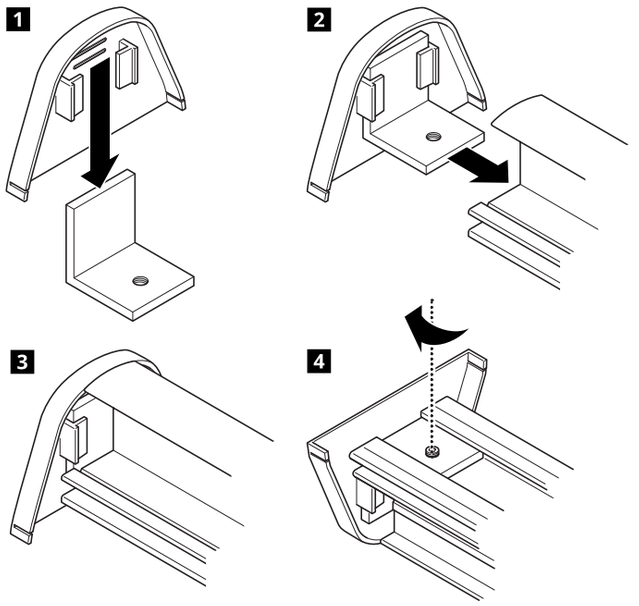
- Mount the cover and inlay profiles in accordance with the technical drawing:
  - Mount the cover profiles on the bottom row of proficlicks.
  - Mount the inlay profiles on the remaining rows of proficlicks.
- Cover and inlay profiles may protrude by up to 300 mm at the ends, measured from the proficlick centre.
- Mount the connected cover profiles and the connected inlay profiles so that the connection between the profiles is placed alternately on the left and right sides of the system.
- Ensure that the profiles are properly snapped into all proficlicks.

When mounting the cover/inlay profiles:

1. Push the **inlay profile cover** onto the **inlay profile end stop**.
2. Push the **inlay profile end stop** into the cover/inlay profile.
3. Ensure that the **inlay profile cover** abuts against the end of the cover/inlay profile but does not overlap.
4. Securely tighten the **screw** © of the **inlay profile end stops**.

NOTICE

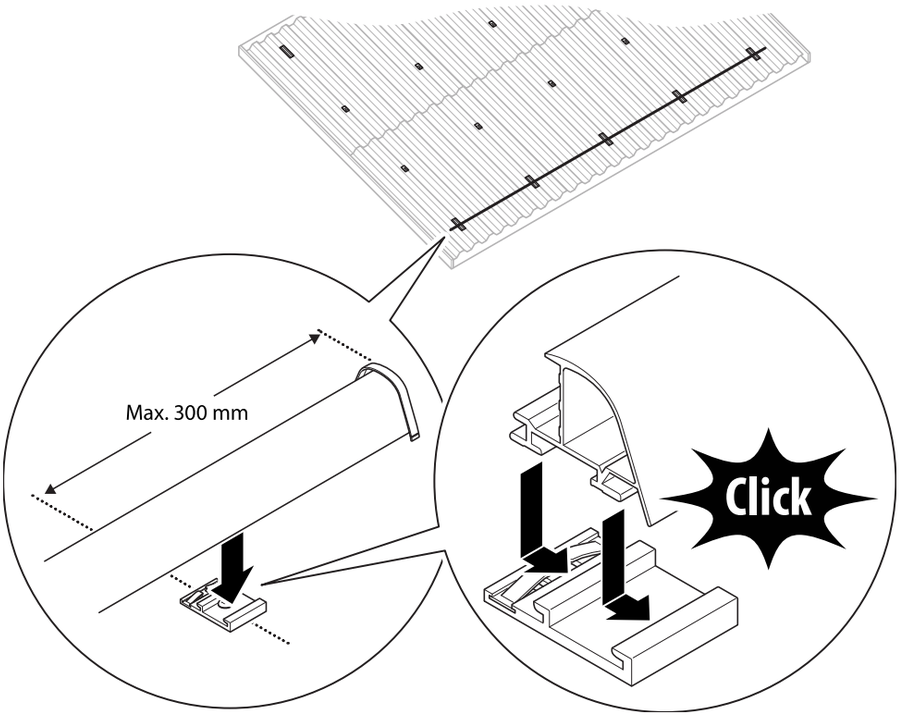
Ensure that the screw of the inlay profile end stop is tight. The inlay profile end stop prevents the PV panels from sliding out of the profiles due to expansion.



5. Push the (connected) **cover profile** into the bottom row of **proficlicks** from above.

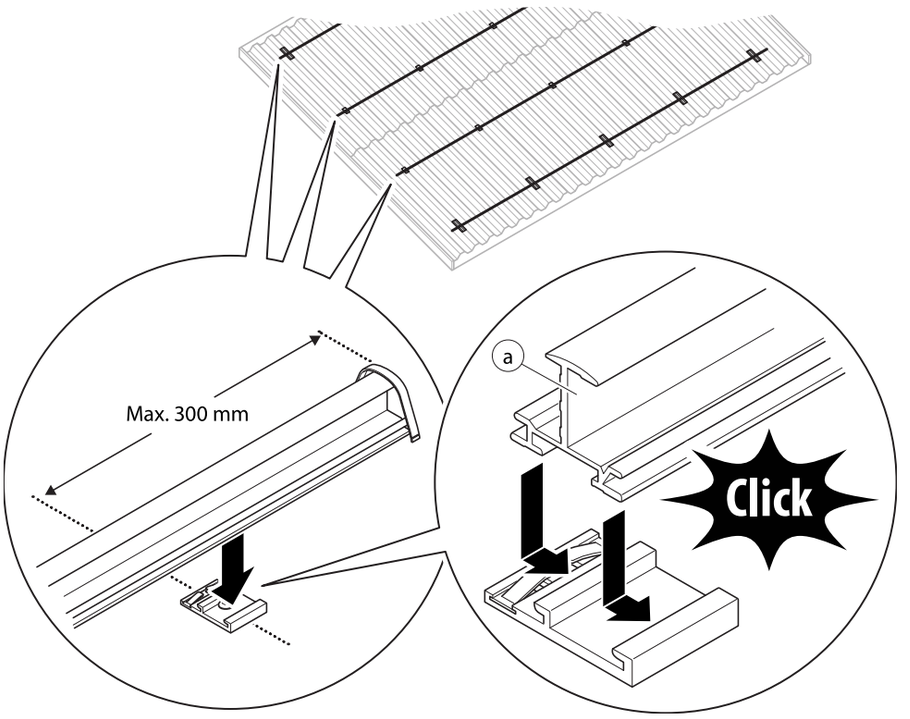
NOTICE

The closed side of the cover profile must be on the side of the gutter.



6. Push the (connected) inlay profiles into the remaining rows of **proficlicks** from above, with the **long tab** ⓐ on the gutter side.

NOTICE
The inlay profiles are asymmetrical. Closely observe the position of the long tab ⓐ ; it will be impossible to place the PV panels otherwise. Align the sides of the inlay profiles using a rope/masonry cord, a construction hook, or a PV panel.



5.5.3 Securing the cover and inlay profiles with the IP bender

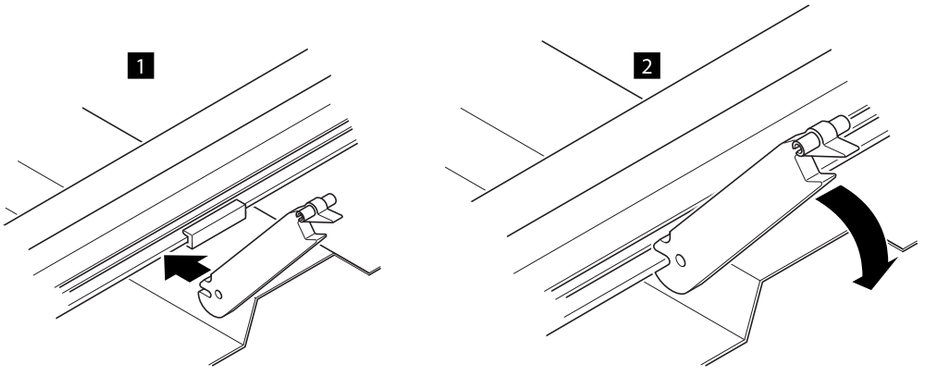
NOTICE
Each cover and inlay profile must be secured with the IP bender to prevent the profiles from shifting due to thermal expansion and contraction.

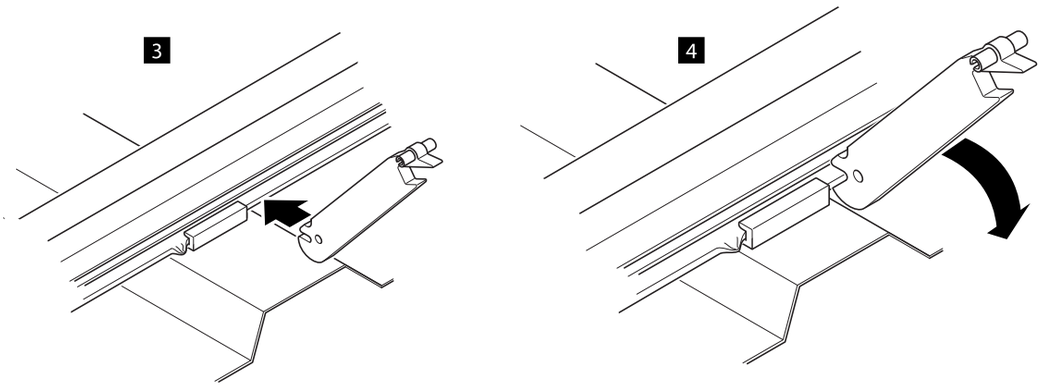
When securing the cover/inlay profiles with the IP bender:

1. Determine the **proficlick** at the centre of each **cover/inlay profile**.

NOTICE
Connected cover profiles and connected inlay profiles comprise two or more individual profiles. In this case, secure each individual profile with the IP bender.

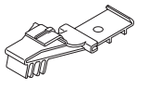
2. Deform each **cover/inlay profile** with the **IP bender** at the bottom at the left and right of the middle **proficlick**.





5.6 Mounting the optimizer clips

Required parts:



Optimizer clip

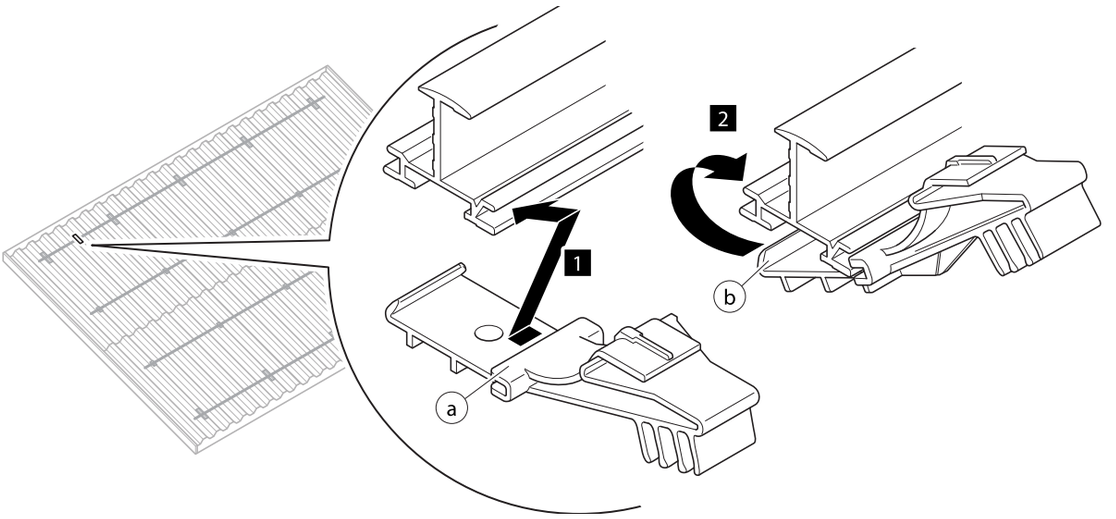
The optimizer clips are fitted to the bottom of the inlay profiles.

When mounting the optimizer clips:

1. Place the optimizer clip along the bottom of the **inlay profile** and place the **recess** ⓐ on the lower edge of the **inlay profile**.
2. Snap the **top** ⓑ of the **optimizer clip** onto the top edge of the **inlay profile**.
3. Mount the optimizer on the **optimizer clip**.

INFO

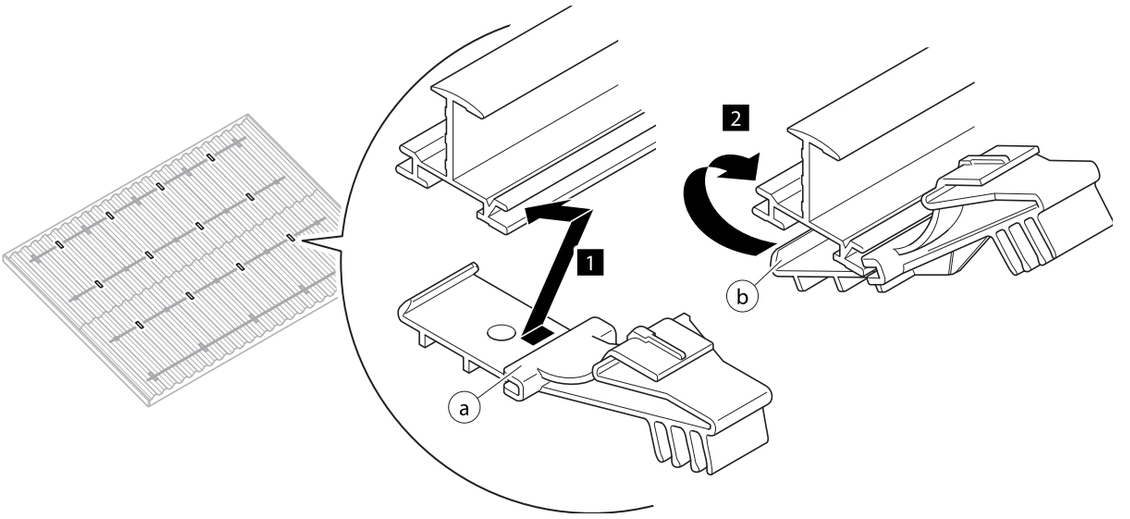
Use the cable clips at the bottom of the optimizer clip for proper cable management.



4. Mount the remaining **optimizer clips** and optimizers in accordance with steps 1 to 3.

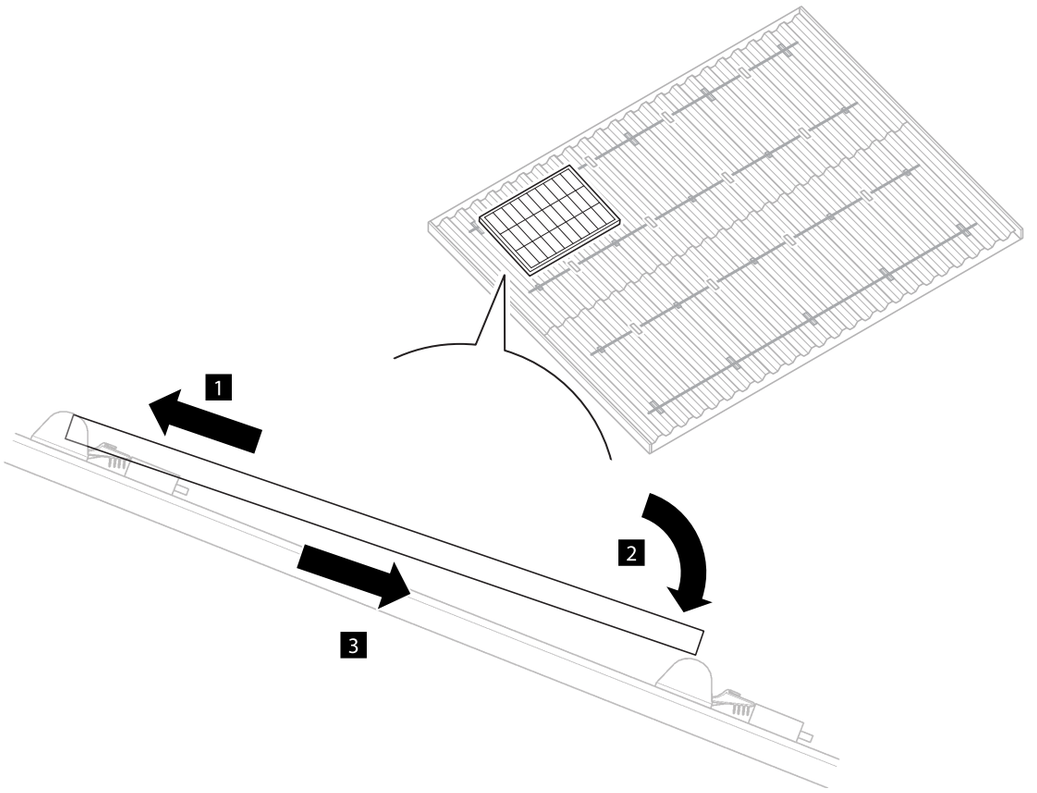
INFO

Place the string along with the optimizer string to avoid induction loops. The distances between optimizer clips are determined by the PV panels.

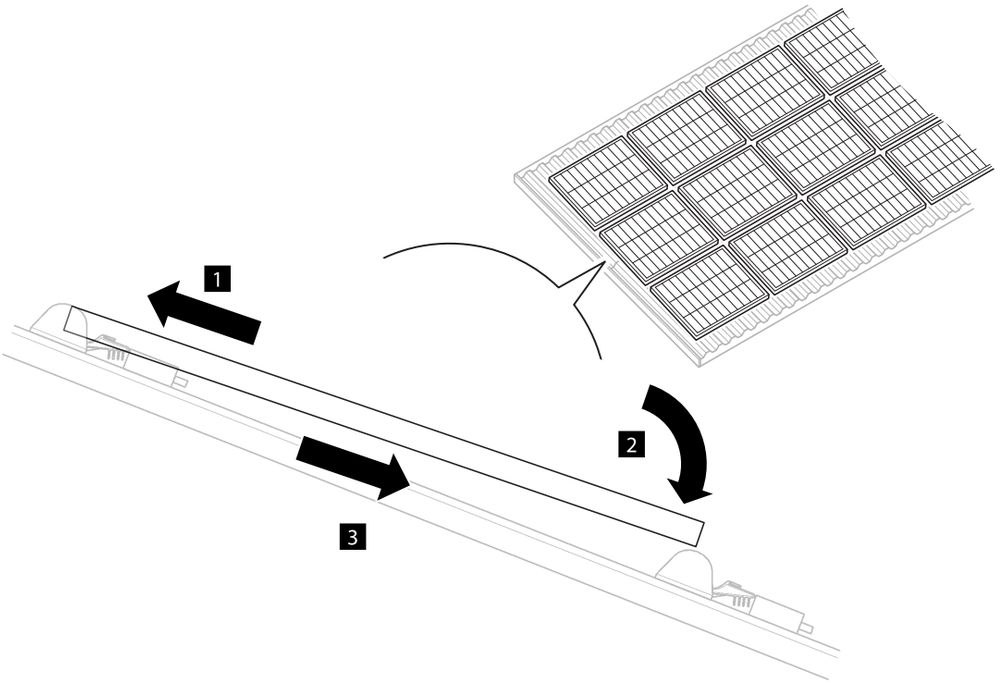


5.7 Placing the PV panels

1. Place the first PV panel at the top left:
   a. Insert the first PV panel into the recess in the top **inlay profile**.
   b. Push the PV panel all the way up and carefully lower it onto the lower inlay or cover profile.
   c. Slide the PV panel down until it is fully inserted into the recess of the **inlay** or **cover profile** at the bottom of the PV panel.



2. Place the remaining PV panels in accordance with step 1 and keep a clearance of 2 mm between them to allow for free expansion.


1
2
3

6 Maintenance and repair

⚠WARNING

Repair or maintenance of the Aelex inlay mounting system should only be performed by an authorised and competent installer who has read and understood the contents of this installation manual.

When servicing the Aelex inlay mounting system:

- The Aelex inlay mounting system is maintenance-free. Contact the supplier if there are any issues.
- During regular maintenance of the PV panels, ensure that:
  - any leaves and other wind-borne materials are removed;
  - any green deposits that may have formed are removed;
  - any empty bird nests are removed.

7 Troubleshooting

Problem	Cause	Remedy
Connecting the cover/inlay profiles is impossible/difficult.	Trying to connect from a cover or inlay profile already attached in a roof hook clip or proficlick.	Connect the cover/inlay profiles before installing them in the roof hook clips or proficlicks.
Inlay and cover profiles shift over time.	The spacing of the connected profiles does not match the spacing specified in *5.9.1 Connecting the cover and inlay profiles (if required).*	Check that the connected profiles are correctly installed (see *5.9 Connecting and mounting cover and inlay profiles*).
	Connected profiles are not secured with the IP bender as shown in *5.9.3 Securing the cover and inlay profiles with the IP bender.*	Check that the connected profiles are correctly installed (see *5.9 Connecting and mounting cover and inlay profiles*).

8 Removal

8.1 Removal of the product

⚠WARNING

The Aelex inlay mounting system should only be removed by authorised and competent installers who have read and understood the content of this installation manual.

When removing the product:

Dismount the product in the reverse order of installation. Check whether any reusable parts, such as metals and plastics, can be reused or recycled and dispose of them at a local collection point.

8.2 Waste disposal

Deliver the packaging material to a local recycling company. Properly disposing of packaging and packaging waste helps in preventing potential danger to the environment and public health.


Aelex