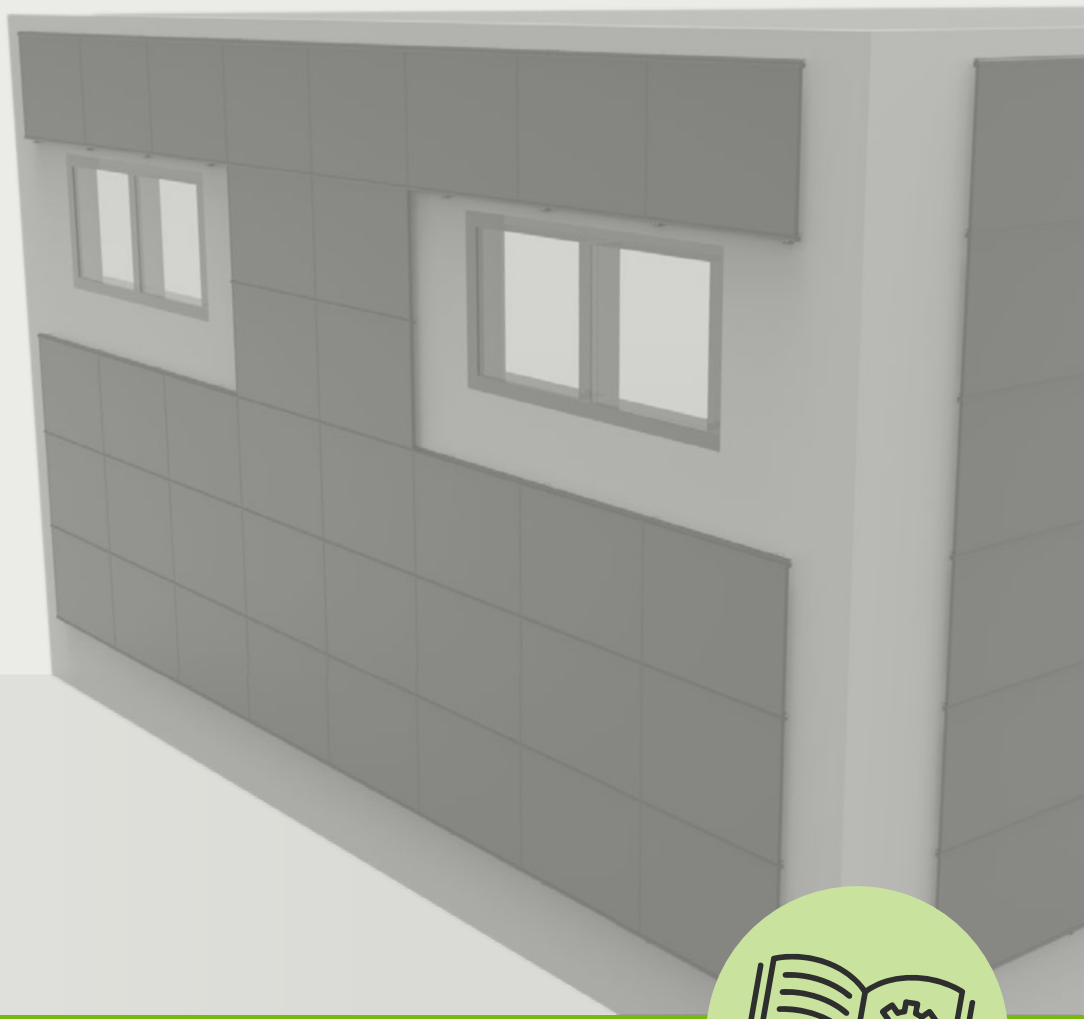
Insertion System
Brickwork facade



Mounting instructions V 1.0

Safety instructions

The following instructions are to be understood as generally valid for our novotegra installation system and are to be applied accordingly, regardless of the particular roof type and installation system.

Systems may only be installed and commissioned by persons who are able to ensure that they are carried out in accordance with the regulations on the basis of their professional qualifications (e.g. training or activity) or experience.

All relevant national and locally applicable occupational health and safety regulations, accident prevention regulations, standards, construction regulations and environmental protection regulations as well as all regulations of the employers' liability insurance associations must be observed.

- During the work, safety clothing must be worn in accordance with the relevant national regulations and guidelines.
- The assembly must be carried out by at least two persons in order to be able to guarantee help in case of an accident.
- The national regulations for work at heights and on roofs must be observed.
- The electrical work must be carried out in compliance with the national and locally applicable standards and guidelines in compliance with the safety regulations for electrical work.

The installer is responsible for dimensioning the novotegra mounting system.
Before installation, it must be checked whether the mounting system meets the static requirements on site For roof systems, the on-site load-bearing capacity of the roof must also be checked. Please note our instructions on static calculations, which can be viewed at novotegra.com/downloads.

The installer is responsible for connecting the interfaces between the mounting system and the building. This also includes the tightness of the building envelope. The mounting system must always be statically calculated individually for each project using the Solar-Planit design software.

The mounting system is suitable for mounting PV modules with standard market dimensions. The installation instructions of the module manufacturers must be observed and complied with.

There is no inspection by novotegra GmbH regarding constructability or mounting guidelines.

The specifications of the cable and inverter manufacturers must be observed. If there are any contradictions to these installation instructions, please be sure to consult your novotegra GmbH sales team or - in the case of components not supplied by novotegra GmbH - the manufacturer concerned before installing the novotegra mounting system.

It must be ensured that a copy of the assembly instructions is within reach in the immediate vicinity of the work on the construction site.

Since our assembly systems are constantly being further developed, assembly procedures or components may change. Therefore, please check the current status of the installation instructions on our website novotgera.com/downloads before installation. The assembly sequence of these instructions must be observed. We will also be happy to send you current versions on request.

In the event of improper use and non-compliance with our safety instructions and installation specifications, as well as non-use of associated installation components or use of third-party components that are not part of the installation system, all claims under guarantee, warranty and liability vis-à-vis novotegra GmbH shall lapse.
The user is liable for damage and resulting consequential damage to other components such as PV modules or to the building itself, as well as for personal injury.

The permissible roof pitch for the use of the mounting system in accordance with these installation instructions is 0 to 60 degrees for installation parallel to the roof on a pitched roof and 0 to 5 degrees for elevated installation on a flat roof. Facade systems are to be mounted parallel to the facade.

The grounding / potential equalization of the mounting system must be carried out in accordance with the national and locally applicable standards and guidelines.

If all safety instructions are observed and the system is installed properly, there is a product warranty claim of 12 years. Please note our warranty conditions, which can be viewed at novotegra.com/downloads.

The system can be dismantled in reverse order to the steps described below.

General conditions

Application	Facade
Pitch	90 degree
Mounting surface	Concrete / brickwork (solid bricks, hollow bricks, sand-lime bricks)
Facade mounting	Dowel and screw, fasteners provided by the customer
Module type	Framed modules
Module dimensions	Width up to 1340 mm, length up to 1890 mm for portrait installation, no restrictions for landscape mounting
Module installation	landscape/portrait
Module mounting	insertion system
Minimum distance between module rear and subsurface	47 mm
Potential bonding	Optional - from module to insertion rail
Lightning protection	no
Corrosion class	C 4
Warranty	12 years

General installation instructions

The contents of these installation instructions describe the construction of the substructure on uninsulated building facades made of concrete, brickwork, perforated brick or sand-lime brick. The substructure is not suitable for insulated facades or integrated system facades.

The planner/installer must ensure on site that the wall construction meets the requirements of the installation system in terms of load-bearing capacity, supporting structure and condition. It must be checked that the technical specifications of the wall construction, such as material, wall thickness, etc., comply with the specifications specified for the structural analysis and the design of the planning documents

The structural analysis of the mounting system only takes into account the fastening of the substructure to the facade. Fastening to the facade is carried out using facade dowels and the corresponding screws. The specifications for the fastening materials are specified during planning and on-site installation.

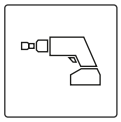
The country-specific rules for rear ventilation of the facade must be observed. Due to the mounting system design (insertion rail on C-rail), the distance between the facade and the module frame is 47 = 62 mm for C-rail 71 = 86 mm.

The required distance to the facade, taking into account country-specific fire protection regulations (fire protection regulations of the responsible building authority, state building regulations, model building regulations, general DIN and VDE regulations), must be determined on site by the planner/installer.

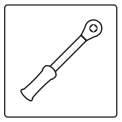
The planner/installer must ensure on site that the modules intended for this type of application are suitable and approved for use on the facade. If the system is installed in Germany, a module that has been approved by the building authorities must be used, or a project-specific type approval must be obtained in advance.

The country-specific regulations and general standards for lightning protection must be observed and, if necessary, a specialist must be consulted to draw up a lightning protection concept.

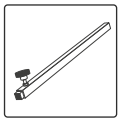
Tools



Cordless screwdriver



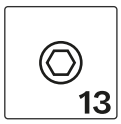
03-000037
Torque spanner
20 – 100 Nm



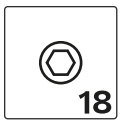
03-001745
Assembling jig
950 – 1500 mm

Mitre saw

Drill



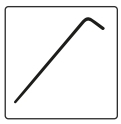
03-001471
Special nut socket
13 mm



03-000011
Special nut socket
18 mm

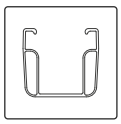
03-000315
Bit-Torx
TX-25

03-000104
Bit-Torx
TX-40

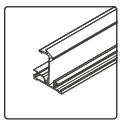


03-001470
Hexagon socket
3 mm

Required Components

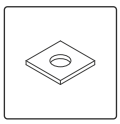


C-rail
C47

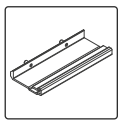


Insertion rail evo

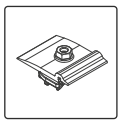
03-000832
Facade dowel
10 x 80 with bolt



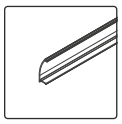
03-000242
Washer
30x30x3 D13,0 A2



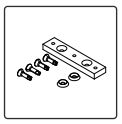
03-000648
Rail connector
Set IR



03-000321
Cross rail connector
Set C IR M8

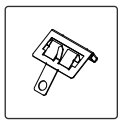


03-001835
Cover
Insertion rail evo



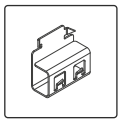
03-001785
Slip guard set
Fassade

03-001845
Edge stop set IR evo



03-0001815
Mute-Sheet
Insertion rail

Optional Components



03-001807
Contact latch
IR

The tools and components shown are for illustrative purposes only and may vary depending on the substrate, structural calculations and project-specific requirements. The illustrations are for illustrative purposes only and may differ from the components actually supplied. The installer is responsible for checking compatibility and compliance with local building regulations and safety regulations. Binding specifications can be found in the current version of the technical documentation and the EU declaration of conformity at **novotegra.com/downloads.**

Mounting the substructure

1 Measuring the C-rails and drill holes for the lowest rail position

A Align the lower/upper end of the C-rail according to the planning documents.

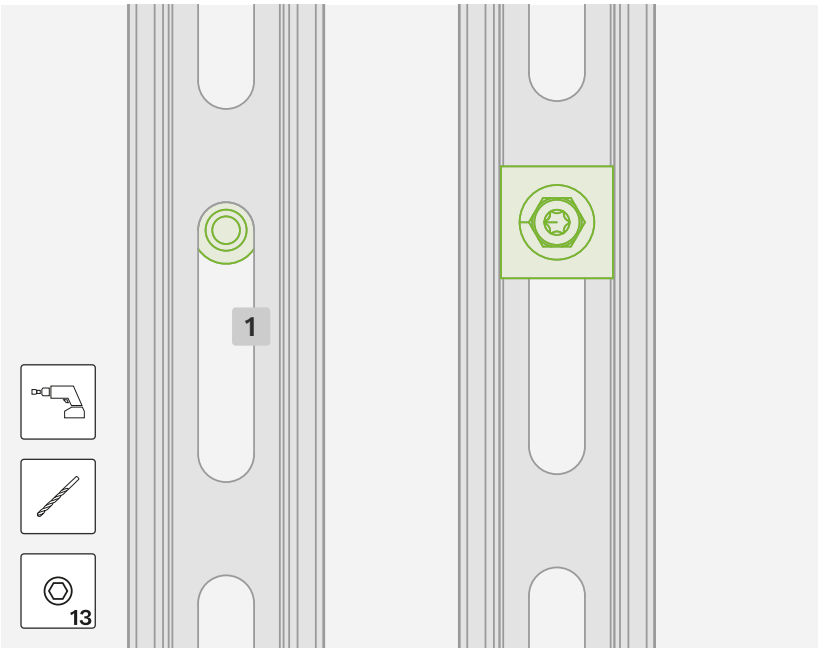
novo-tip:

Due to the cutting of the C-rails, the drill holes of several C-rails vary and are not aligned. The positions of the drill holes must therefore be determined separately for each rail.

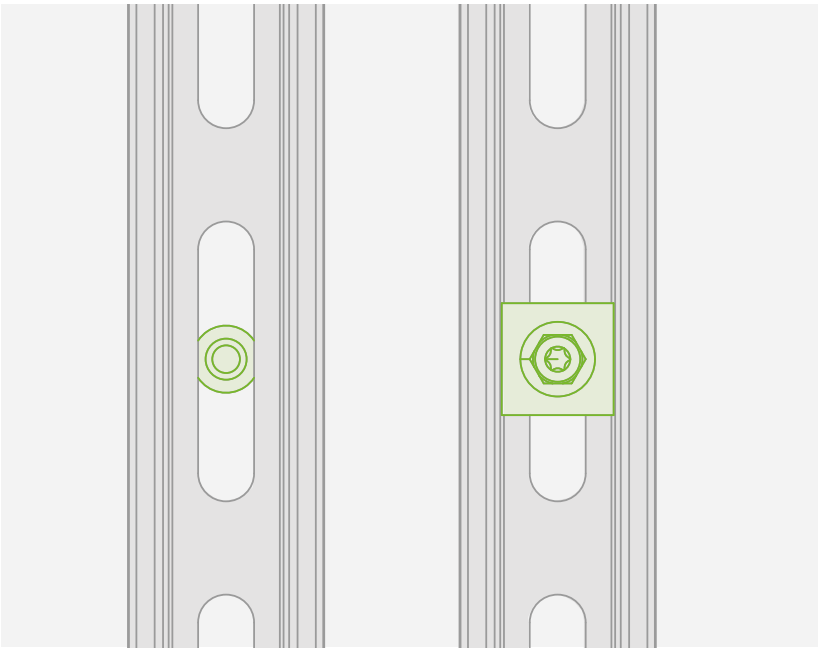
The lower end of the rail must be aligned.

The positions of the drill holes must be as close as possible to a closed elongated hole at the future intersection point of the C-rail and the insertion rail.

2 Installation of C-rails with facade dowels



Connection of C-rail at the upper end of the rail



Connection of C-rail at the lower end of the rail

A The wall drilling must be carried out according to the dowel manufacturer's instructions. The dowels must be anchored in the drill holes through the long holes 1 up to the collar and the screw must be screwed in. The screw manufacturer's instructions must be observed.

Note:
The C-rail may only be fastened to the upper edge of the slotted hole once per C-rail at the upper end of the rail.

The minimum distance between the drill hole and the end of the rail is 25 mm.

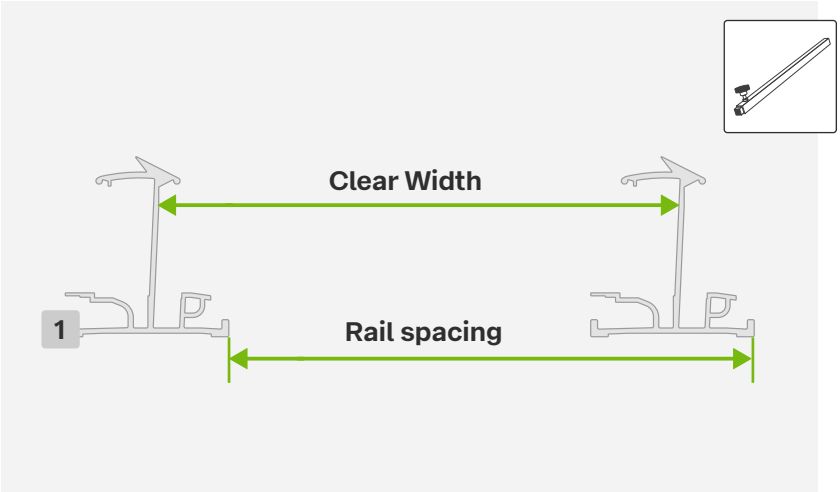
Warning:
Risk of injury when sawing the rails!

There is a risk of cutting yourself on the sharp edges of the rail and the saw blade.

- **Comply with national accident prevention rules**
- **Wear protective gloves**
- **Wear safety goggles**

Note:
The drill hole must be sealed on site.

3 Installation of the insertion rails

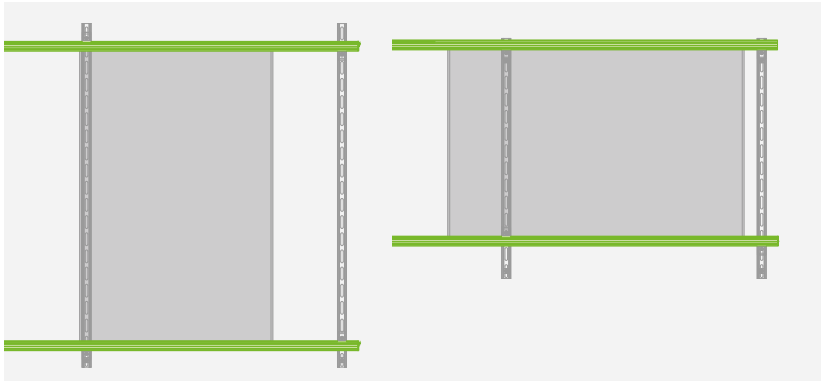


A Measure the insertion rails **1**.

Rail spacing
= Module width B + 12 mm

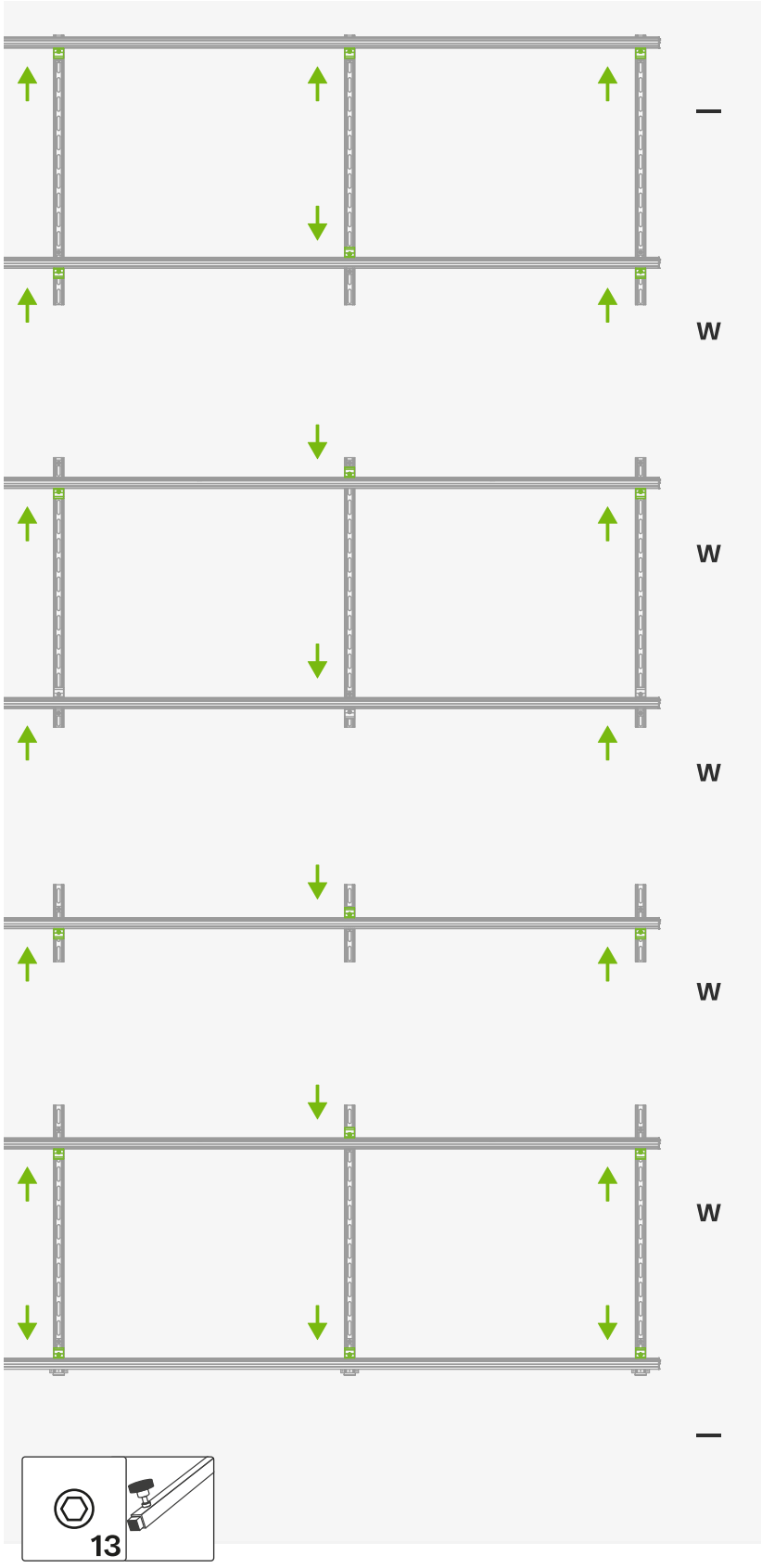
Clear width rails
= Module width B + 10 mm

novo-tip:
The assembly jig must be set to the clear width (module size + 10 mm)



novo-tip:
The modules can be mounted in a portrait or landscape orientation. Within a row, the modules must be arranged in the same way. The orientation can change between rows.

3 Installation of the insertion rails

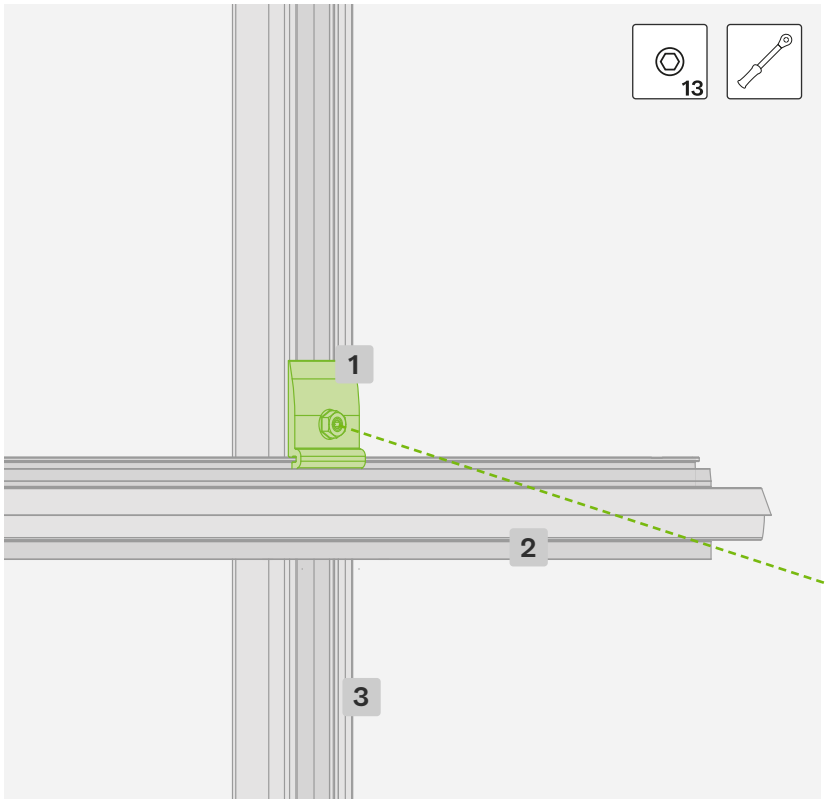


B Positioning cross rail connector set IR

The C IR M8 crossbar connector set must be mounted on the inside of the top and bottom insertion rails of a module field.

The C IR crossbar connector set must be mounted alternately at the top and bottom of the middle insertion rails in a W shape.

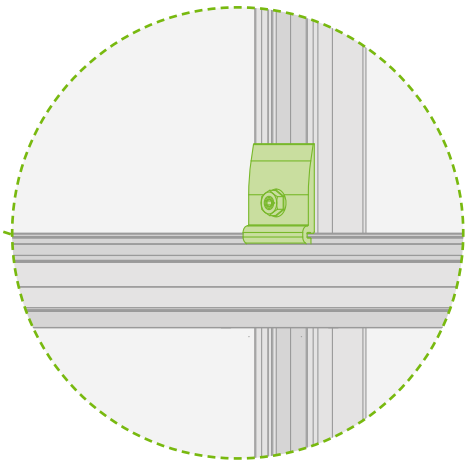
3 Installation of insertion rails



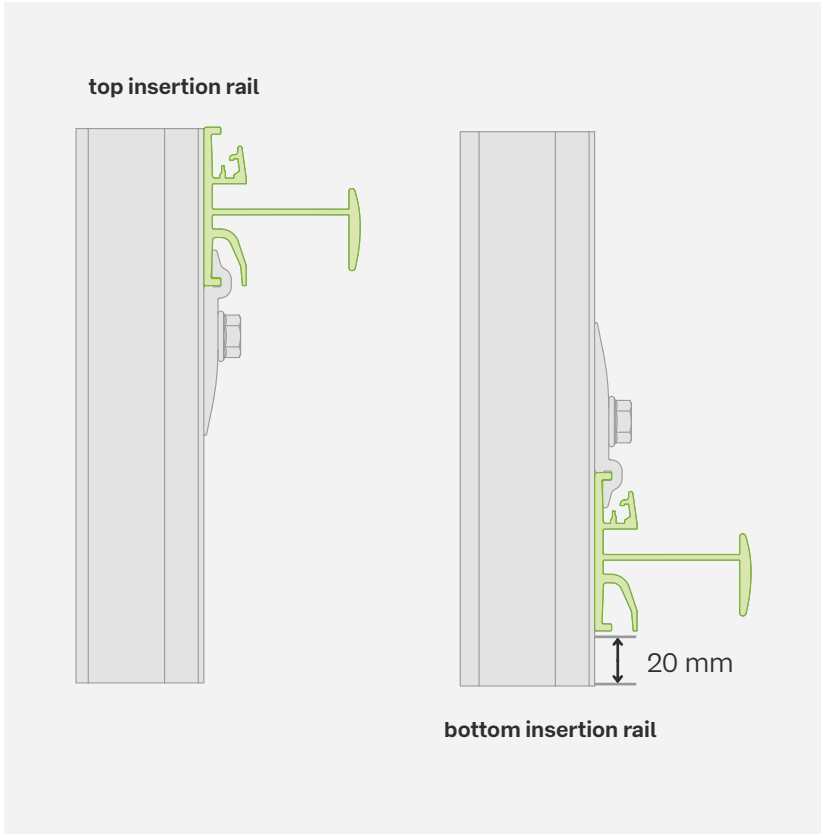
C Installation of cross rail connectors.

The cross rail connector **1** must engage in the retaining flange of the insertion rail **2**.

The plate of the cross-rail connector must rest fully on the C-rail **3**.



Tightening torque: 25 Nm

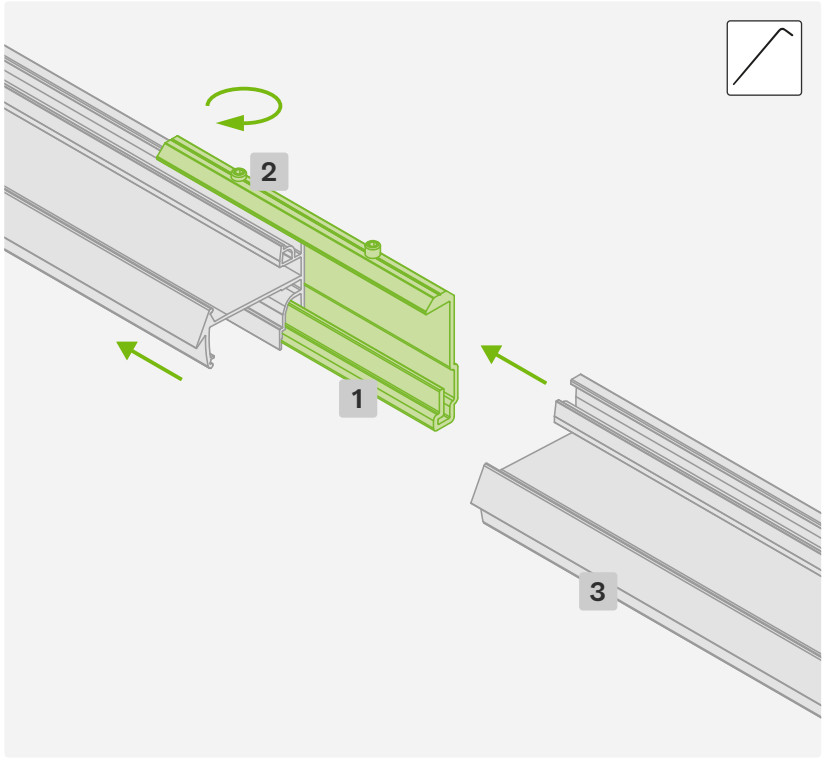


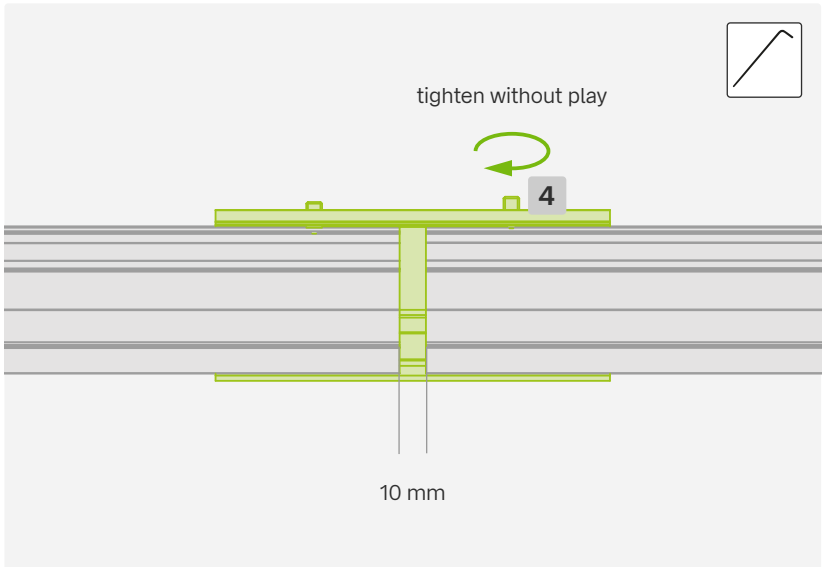
novo-tip:
The insertion rail can be mounted flush with the edge of the short rail in the upper row. In the lower row, the insertion rail can be mounted flush with the anti-slip guard.

It is possible to mount the anti-slip guard at this stage of installation (see step 6).

To install the perforated plate (page 15), an anti-slip device must also be installed at the top of the C-rail.

4 Installation of rail connectors IR





Warning:
Risk of injury when sawing the rails!

There is a risk of cutting yourself on the sharp edges of the rail and the saw blade.

- **Comply with national accident prevention rules**
- **Wear protective gloves**
- **Wear safety goggles**

A Installing rail connectors

a Slide the rail connector **1** up to the middle of the connector and tighten the threaded pin **2**.

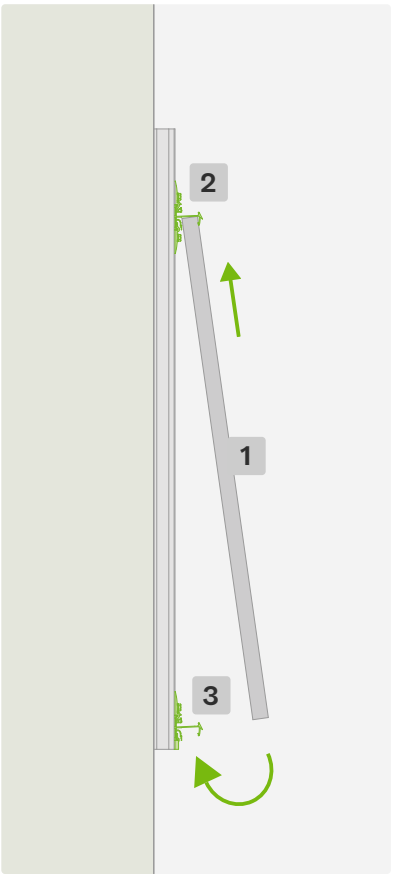
b Insert the rail **3** into the connector. A gap of 10 mm must be left between the rails.

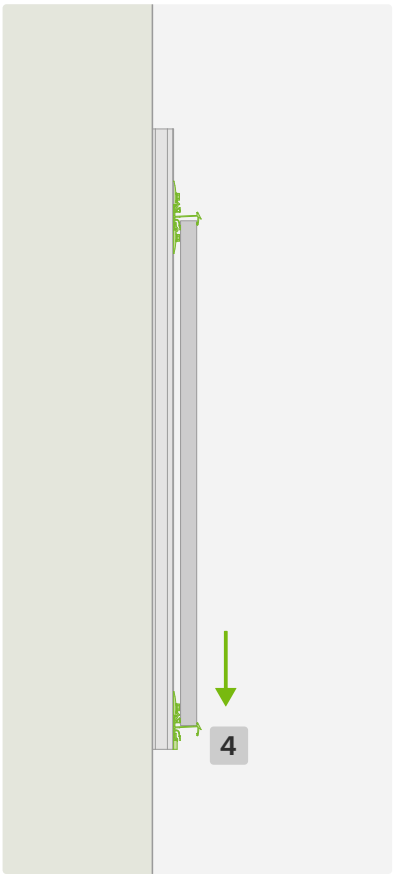
c Tighten the second threaded pin **4** without play so that longitudinal expansion during heating is not blocked.

Attention:
No connector may be placed beyond the last support point of the rail.

The connector cannot be installed in the support area. If this occurs, the rail cut or arrangement must be changed.

5 Installation of the modules





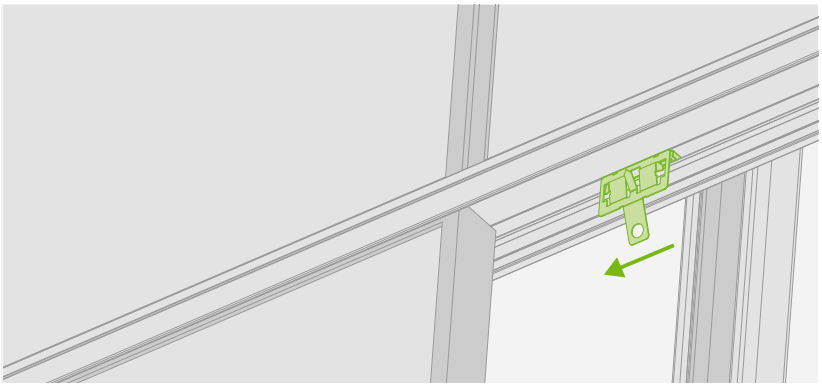
novo-tip:
If contact latches are to be fitted for the insertion rail evo, see page 13, these must now be inserted.

A Place module in insertion rail

a Insert the module 1 into the **upper** insertion rail 2.

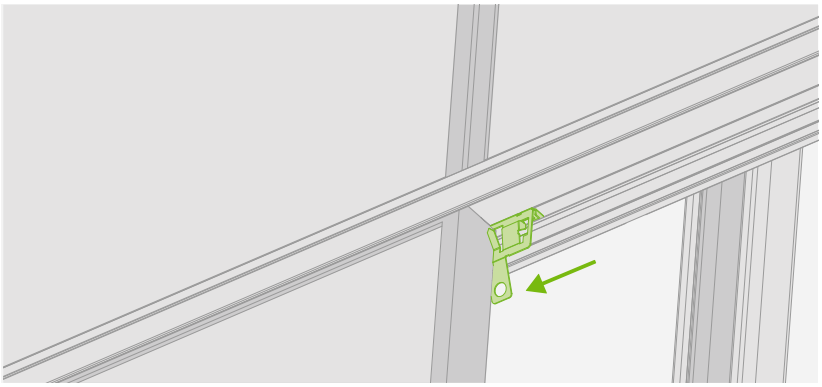
b Place the module onto the **lower** insertion rail 3.

c Slide the module into the lower insertion rail 4.

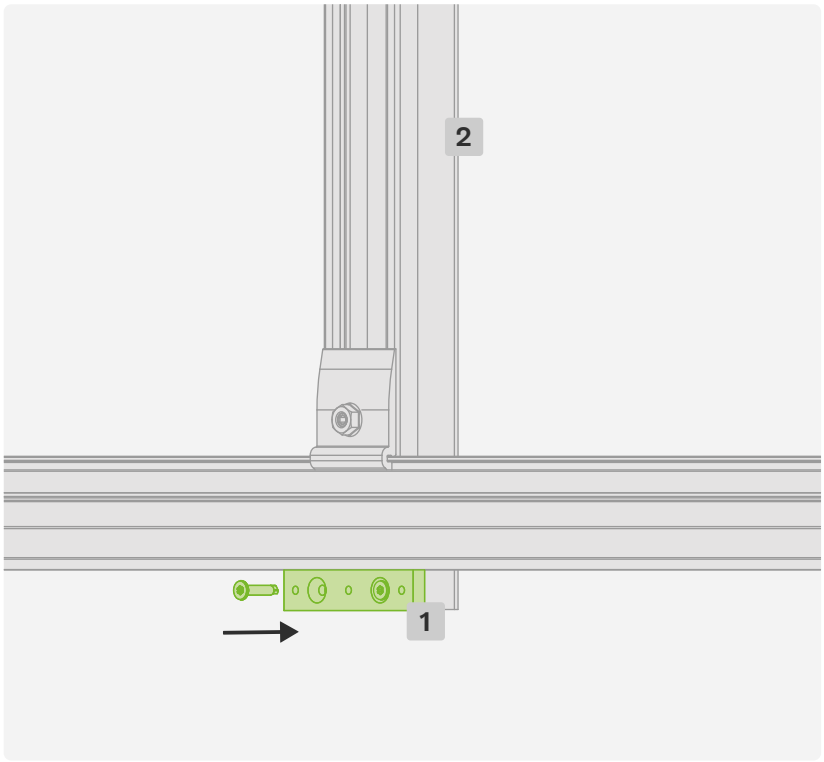


B Mounting the mute sheet

Press the mute sheet into the groove of the evo insertion rail and slide it towards the spacer behind the module. For horizontal mounting, an additional mute sheet must be installed in the centre of the module.

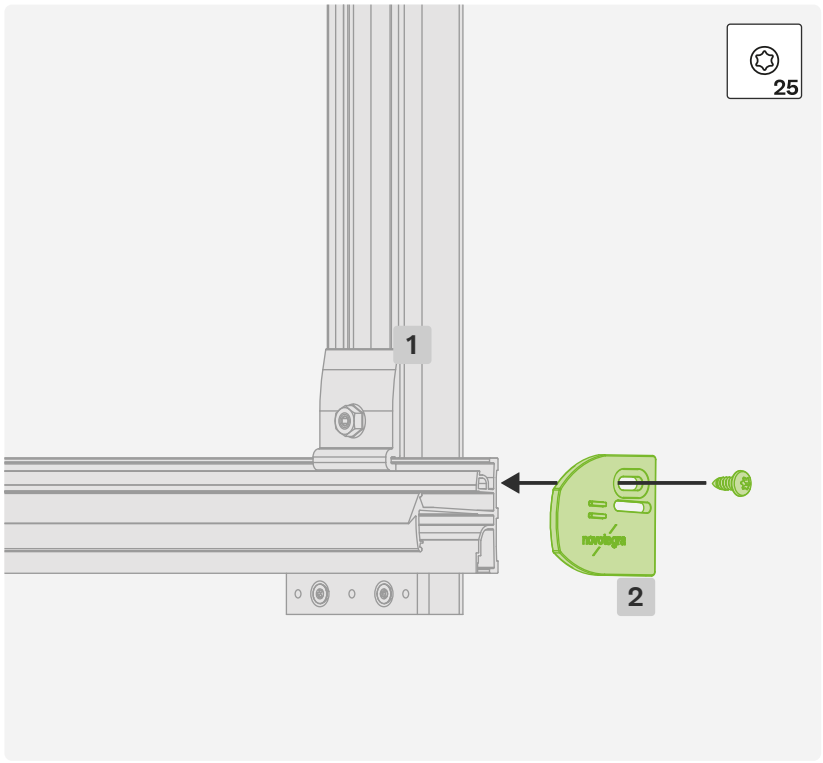


6 Installation of the slip guard



A The slip guard for facades 1 must be mounted on each C-rail 2 in the bottom row of the module field.

7 Installation of the edge stop

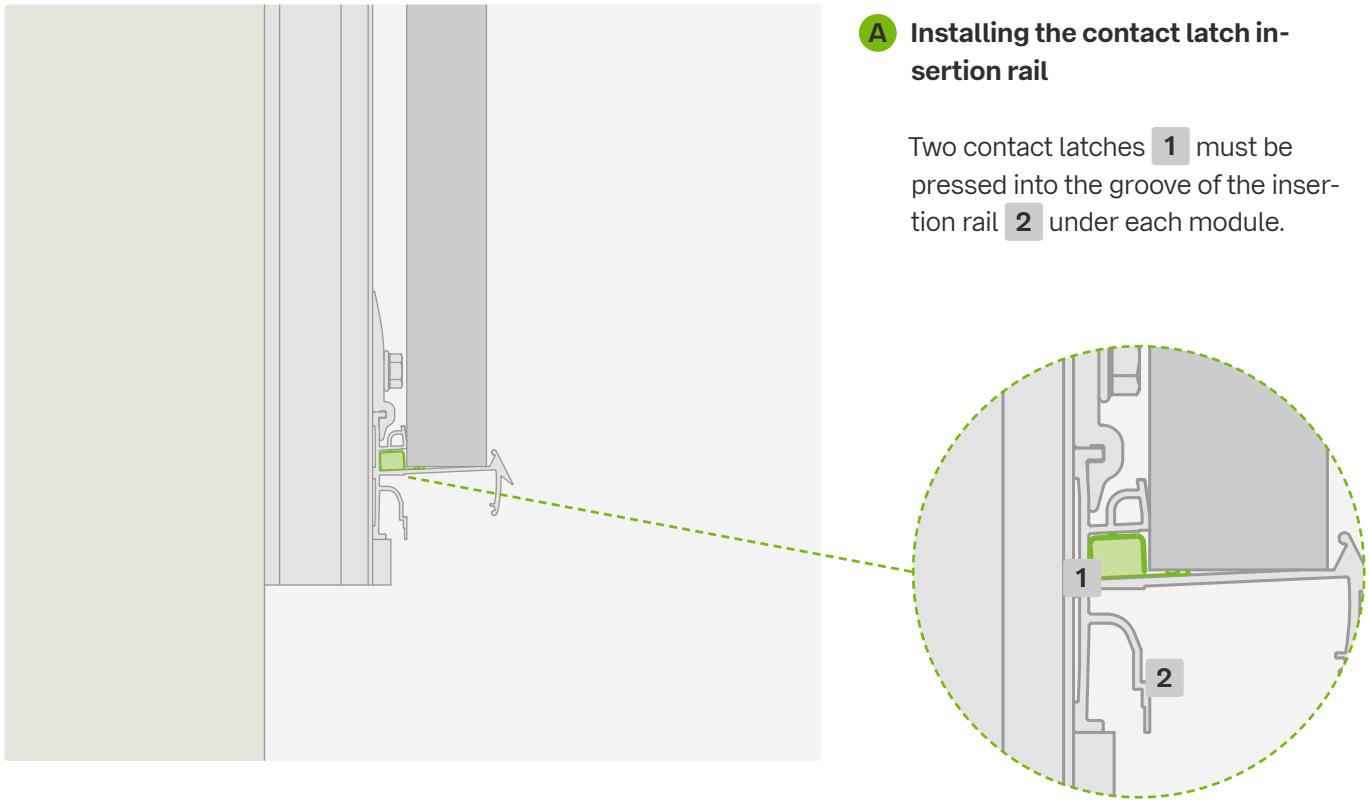


A At the end of a module series, at each insertion rail 2 an edge stop 1 must be installed.

i **Note:**
There is a risk of waterlogging. Ensure that the drainage holes in the module frame and the drainage channel in the insertion rail are clear.

Installation of optional components

1 Installation of the contact latch

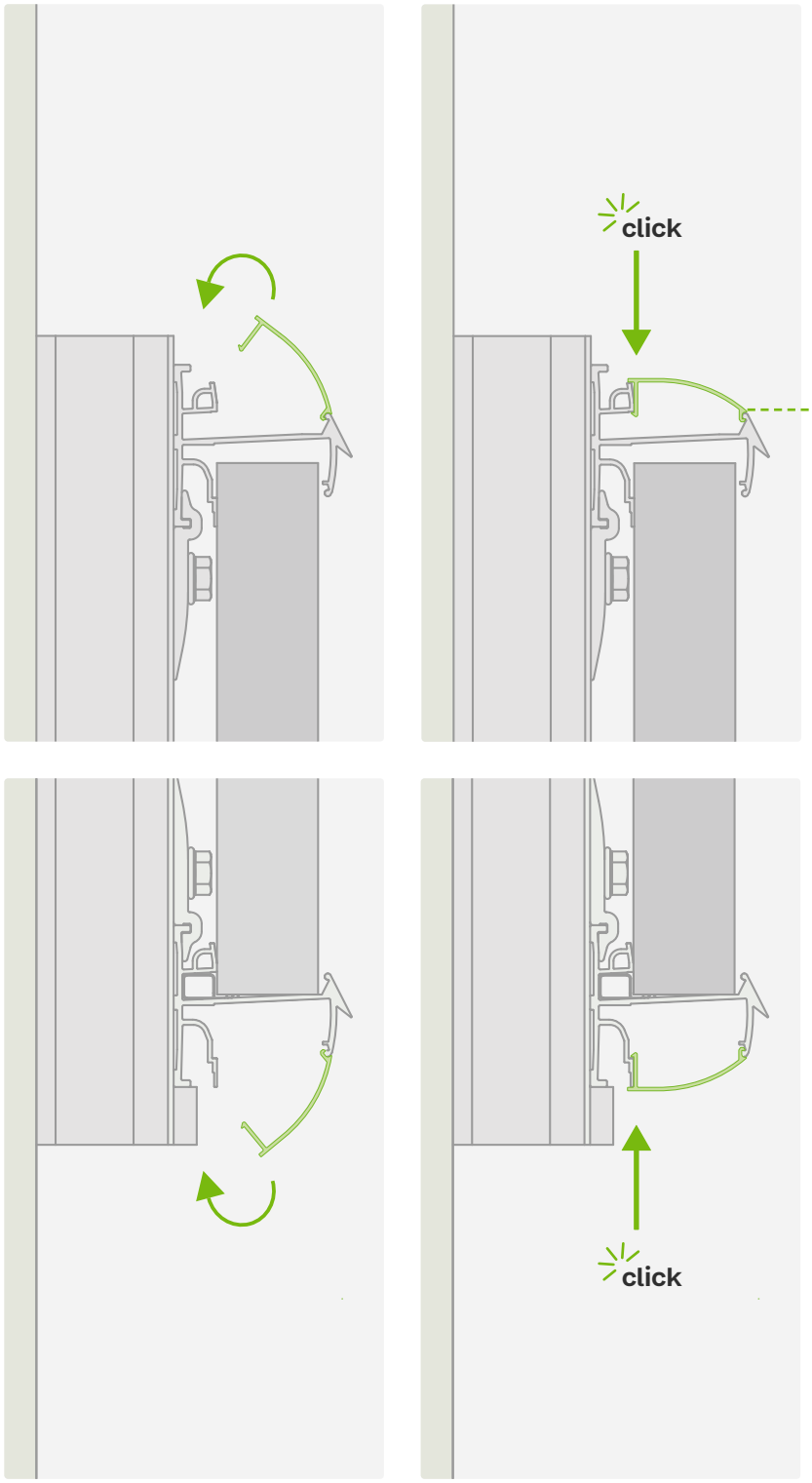


A Installing the contact latch insertion rail

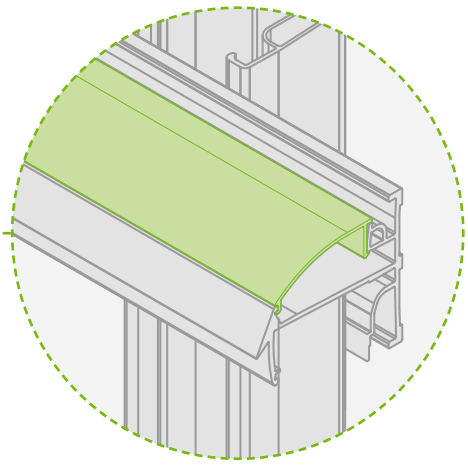
Two contact latches **1** must be pressed into the groove of the insertion rail **2** under each module.

Attention:
The applicable standards and guidelines for lightning protection and potential bonding must be observed.

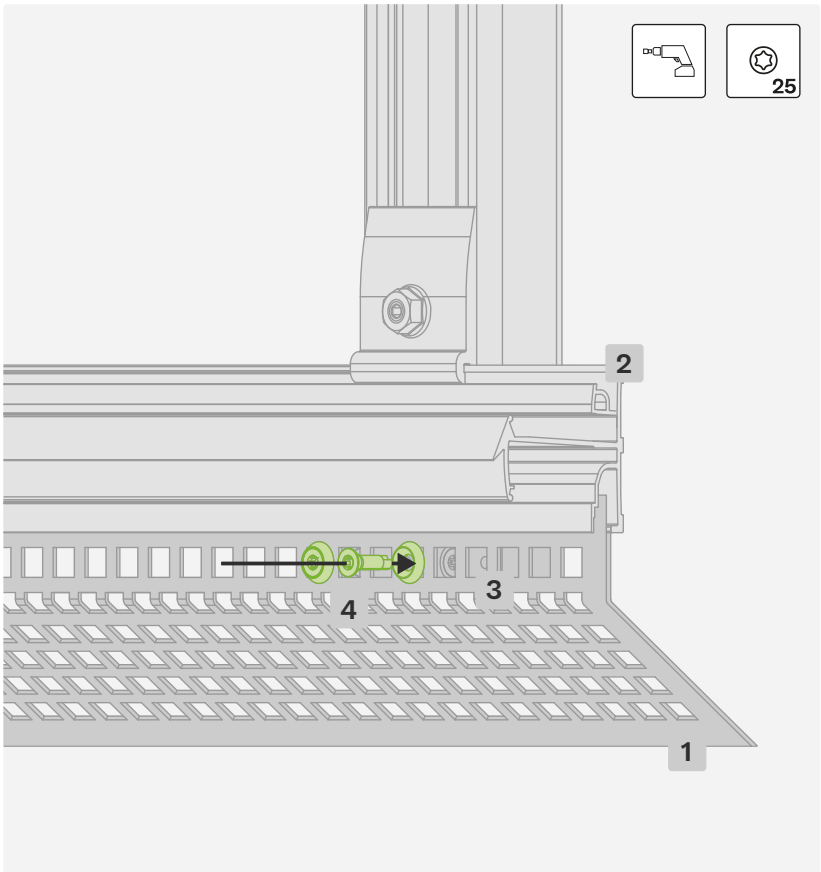
2 Installing the cover insertion rail



A Twist the lid into the **top** and **bottom** evo insertion rails until you hear a click.



3 Installation of the perforated sheet



Warning:
Risk of injury when sawing the perforated sheets!

There is a risk of cutting yourself on the sharp edges of the perforated sheets and the saw blade.

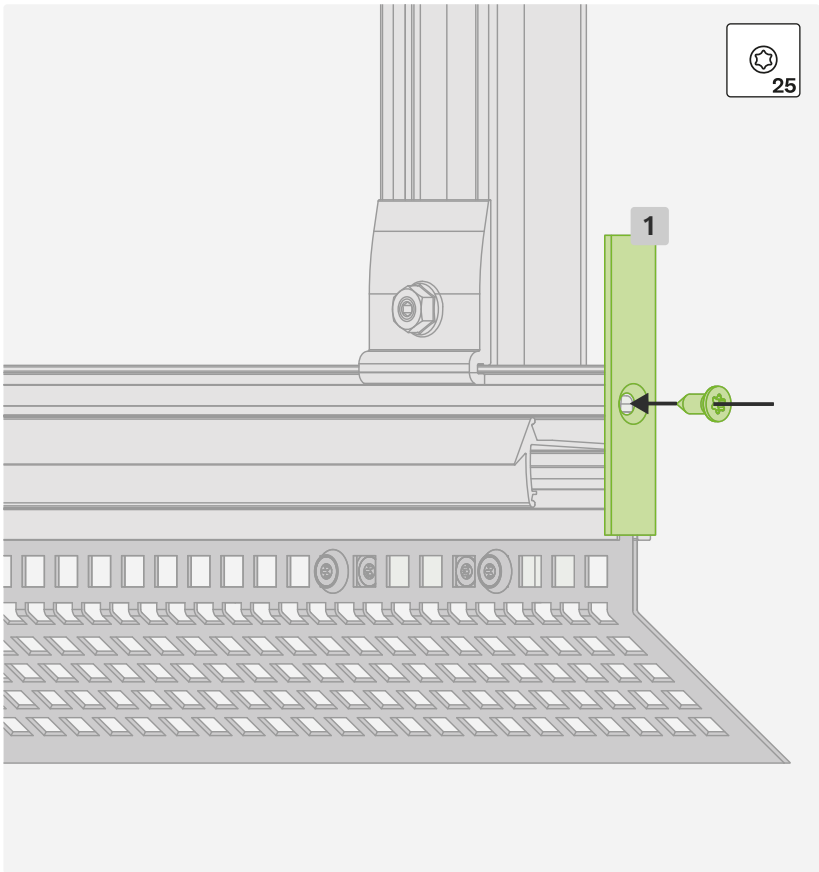
- **Comply with national accident prevention rules**
- **Wear protective gloves**
- **Wear safety goggles**

A Installation of the perforated sheet at the top and bottom

The perforated sheet 1 should be inserted evenly with the short side under the module support of the insertion rail evo 2. The perforated sheet must be flush with the end of the rail.

The perforated sheet must be attached to the slip guard 3 using a countersunk washer and self-tapping screw 4.

3 Installation of the perforated sheet

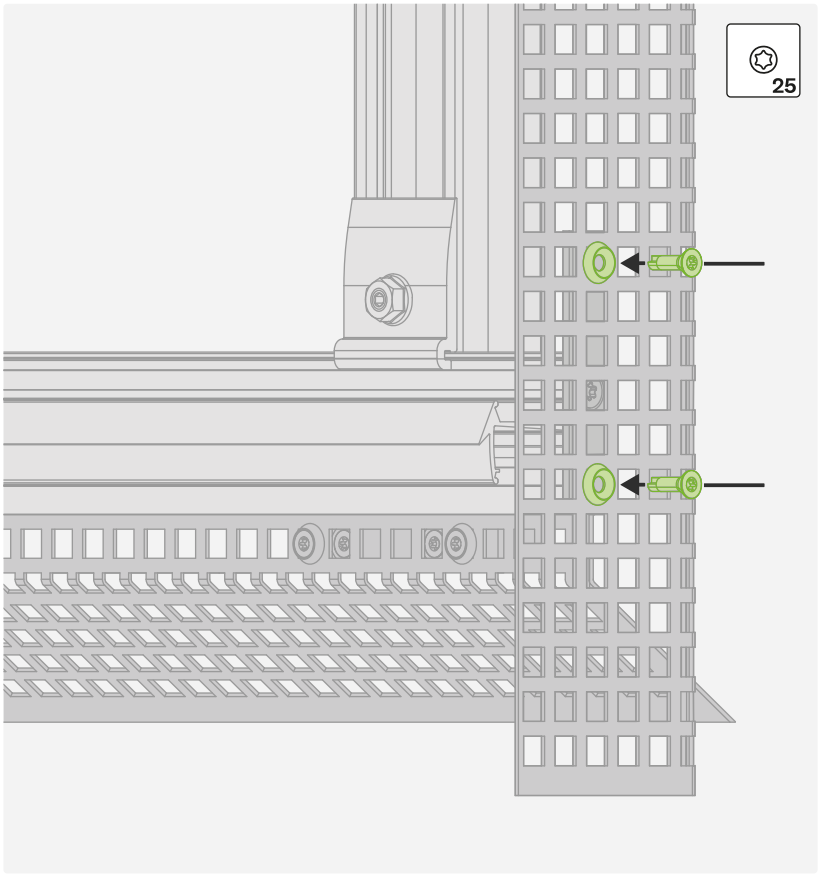


Note:
The adapter plate replaces the edge stop, which cannot be fitted on perforated side plates.

B **Installation of perforated sheet metal on the side**

The adapter plate **1** must be screwed into the screw channel of the evo insertion rail with the long side facing upwards.

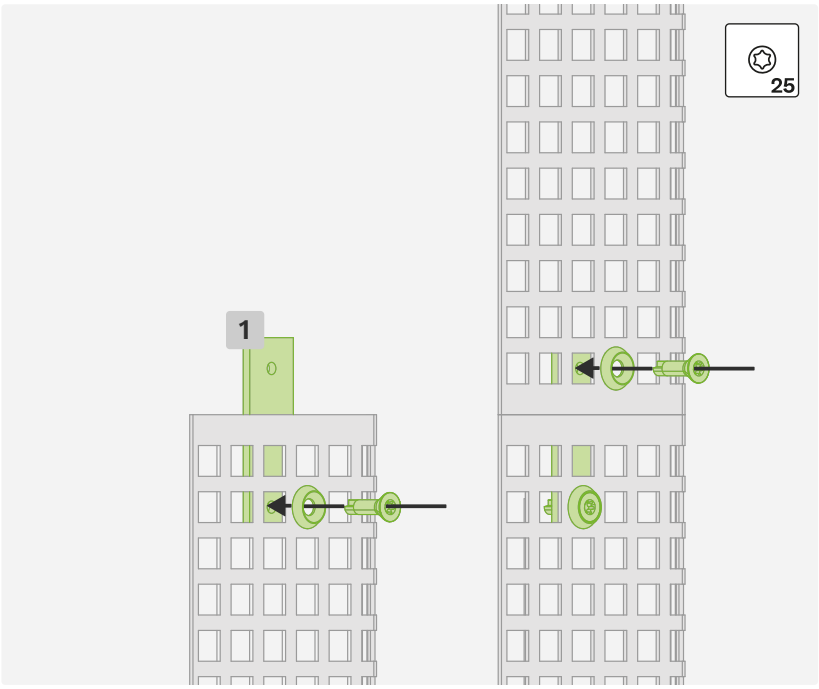
The adapter plate must be aligned parallel to the rail base and flush with the upper and lower perforated plates.



C The perforated plate must be aligned with the short side pointing downwards under the module array.

The long side must be mounted to the adapter plate using two countersunk washers and two self-tapping screws.

3 Installation of the perforated sheet

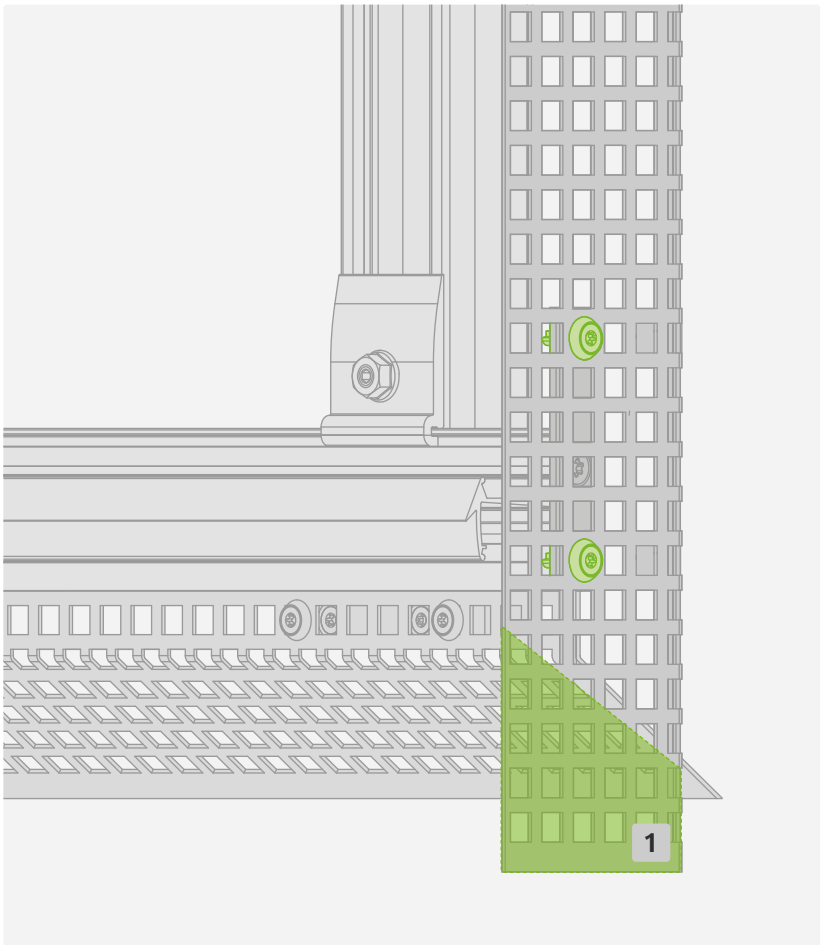


Note:
Screw slowly and carefully so that the connector plate does not twist.

D Connect perforated sheet metal

a The connector set perforated sheet **1** must be pushed centrally under the already mounted perforated sheet and fastened with a countersunk washer and self-tapping screw.

b Anschließend ist das zweite Lochblech bündig anzulegen und mit einer Senkscheibe und Bohrschraube zu befestigen.



Warning:
Risk of injury when sawing the perforated sheets!

There is a risk of cutting yourself on the sharp edges of the perforated sheets and the saw blade.

- **Comply with national accident prevention rules**
- **Wear protective gloves**
- **Wear safety goggles**

E Cut perforated sheet to size

The perforated sheet must be cut to size with sheet metal shears in the overlap area **1** of the corners and bent.

Maintenance of the mounting system

The mounting system must be checked at regular intervals during system maintenance to ensure that it is stable and functioning properly. We recommend an annual visual inspection.

In addition to visually inspecting the components, we recommend randomly checking the connections and ensuring that the insertion rail and slip guard are securely and correctly positioned. The screw connections must also be checked and, if necessary, retightened in accordance with the tightening torques specified in the assembly instructions.
All system components should be checked for damage caused by
e.g. weather conditions, animals, dirt, deposits, adhesions, vegetation (especially on green roofs), roof penetration, sealing, stability and corrosion.
The inspection of the system and maintenance work must be carried out by a specialist company with experience in electrical systems and working with mounting systems, or by an expert. After exceptionally severe events (e.g. earthquakes, heavy snowfall, storms, etc.), the system must always be inspected.

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