



**Connecting Strength**



Assembly instructions

# **InsertionRail System**

on trapezoidal and corrugated  
sheet metal with MultiRail



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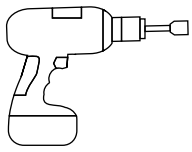
## Quality tested - several certifications

K2 Systems stands for secure connections, highest quality and precision. Our customers and business partners have known that for a long time. Independent institutes have tested, confirmed and certified our capabilities and components.

Please find our quality and product certificates under:

[www.k2-systems.com/en/technical-information](http://www.k2-systems.com/en/technical-information)

# Tools overview



6 mm



8 mm



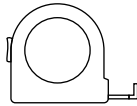
6 - 35 Nm  
(4.5 - 22.2 lb-ft)



4/6 mm



4/6 mm

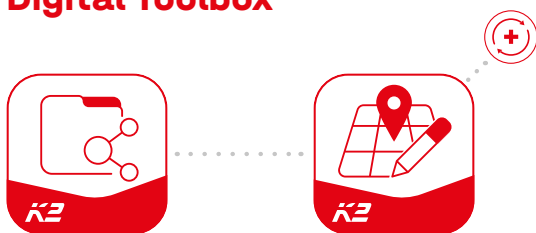


≥ 3.0 m



≥ 6.0 m

## Digital Toolbox



**Do you already know our digital services?** Use our K2 DocuApp now and record the first important data directly at the customer or project site.

Simply transfer the data to our online planning software K2 Base. Here you can plan your project easily, safely and quickly. You receive a detailed project report with assembly plan and static report.

The K2+ interface enables seamless project data transfer to the planning tools of well-known inverter manufacturers or yield planning tools.

**Get started and register now:**

[docuapp.k2-systems.com](https://docuapp.k2-systems.com) →

[base.k2-systems.com](https://base.k2-systems.com) →

# General safety information

Please note that our general mounting instructions must be followed at all times and can be viewed online at [k2-systems.com](https://www.k2-systems.com)

- The equipment may only be installed and operated by qualified and adequately trained installers.
- Prior to installation, ensure that the product complies with on-site static loading requirements. For roof-mounted systems, the roof load-bearing capacity must always be checked.
- National and local building regulations and environmental requirements must be adhered to.
- Compliance with health and safety regulations, accident prevention guidelines and applicable standards is required.
  - Protective equipment such as safety helmet, boots and gloves must be worn.
  - Roofing works must be in accordance with roofing regulations utilising fall protection safeguards when eaves height exceeds 3 m.
  - At least two people must be present for the duration of the installation work in order to provide rapid assistance in the event of an emergency.
- K2 mounting systems are continuously developed and improved and the installation process may thereby change at any time. Prior to installation consult our website at [www.k2-systems.com/en/technical-information](https://www.k2-systems.com/en/technical-information) for up-to-date instructions. We can send you the latest version on request.
- The assembly instructions of the module manufacturer must be adhered to.
- Equipotential bonding/grounding/earthing between individual parts is to be performed according to country specific standards, as well as national laws and regulations.
- At least one copy of the assembly instructions should be available on site throughout the duration of the installation.
- Failure to adhere to our general safety and assembly instructions and not using all system components, K2 is not liable for any resulting defects or damages. We do not accept liability for any damage resulting in the use of competitor's parts. Warranty is excluded in such cases.
- K2 Systems GmbH reserves the right to exclude liability in case of disregard of our General Safety Instructions as well as in case of installation or mounting of components of a competitor.
- If all safety instructions are adhered to and the system is correctly installed, there is a product warranty entitlement of 12 years! We strongly recommend reviewing our terms of guarantee, which can be viewed at [k2-systems.com/en/warranty-terms-and-conditions](https://www.k2-systems.com/en/warranty-terms-and-conditions). We will also send this information on request.
- Dismantling of the system is performed in reverse order to the assembly.
- K2 stainless steel components are available in different corrosion resistance classes. Each structure or component must be carefully checked for possible corrosion exposure.

# The following guidelines apply



This system can be used without further testing by K2 systems under the following standard conditions. It is also suitable for higher requirements, however if a value exceeds the standard conditions, please contact K2 Systems.



## Planning with K2 Base

We recommend our free online software K2 Base for the planning. In five steps, you can plan the right assembly system and get a construction recommendation, parts list and the structural analysis report. Simply register and start planning:

[base.k2-systems.com](http://base.k2-systems.com)



## Roof requirements

- Sufficient holding force of the roof covering on the supporting or substructure
- Roof pitch: 5 - 75°
- Trapezoidal sheet or corrugated sheet thickness:  
≥ 0.4 mm steel or ≥ 0.5 mm aluminium
- Steel grade min. S235 according to DIN EN 10025-1
- Minimum tensile strength aluminium  
165 N/mm<sup>2</sup>
- Trapezoidal sheet:
  - Minimum crest width: 22 mm
  - Plane support around the borehole:  
Ø ≥ 20 mm
- Corrugated sheet:
  - High bead radius: r = 22 - 45 mm



## Structural requirements

The static verification of the components is automatically calculated for the respective location by the K2 Base planning software. The design is provided by means of a project report and must be adhered to.



## Important mounting instructions

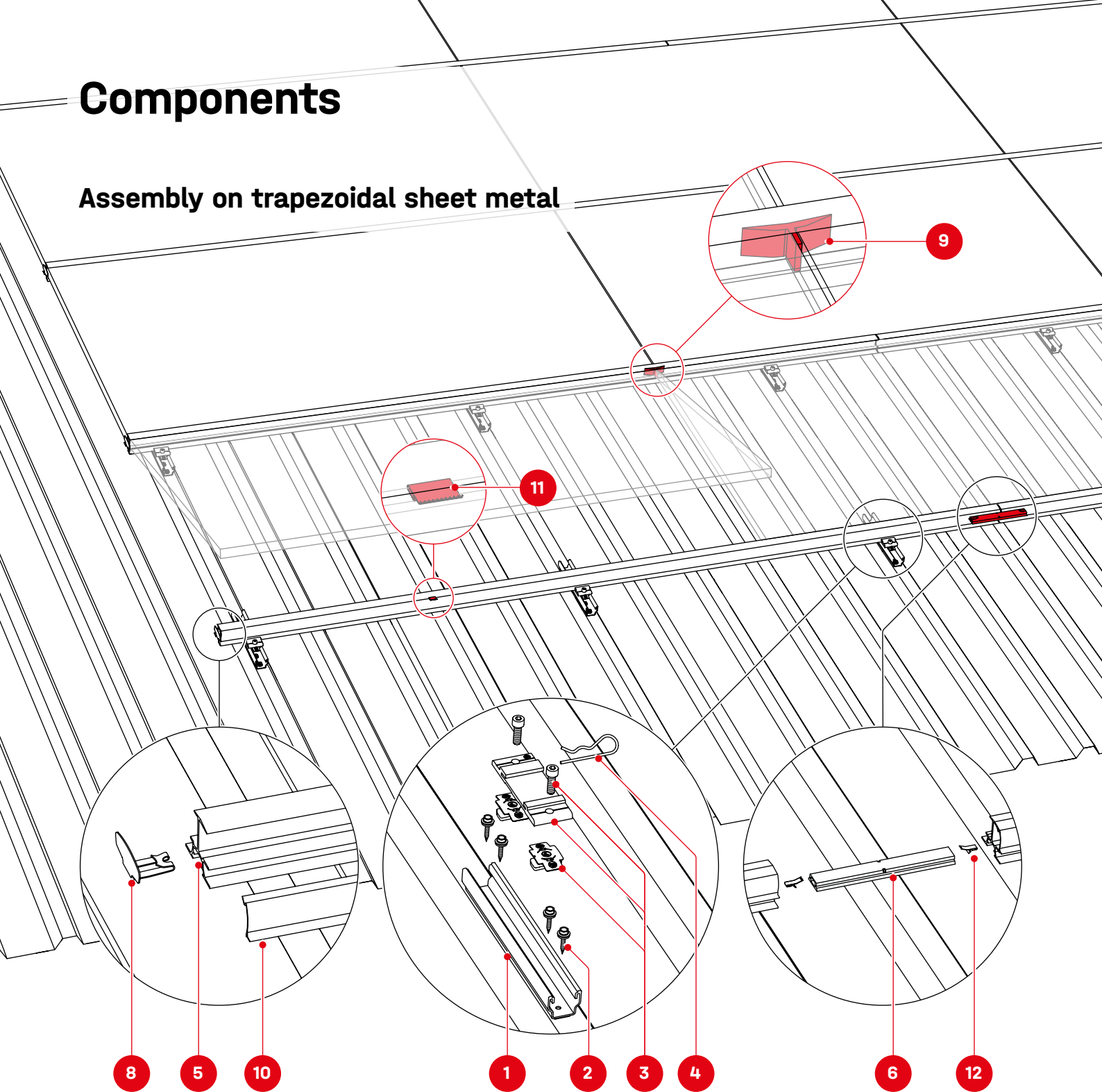
- On site, the general standards and regulations for lightning protection must be observed and, if necessary, a specialist must be called in to draw up a lightning protection concept (use lightning protection terminal if necessary). Country-specific regulations must be observed.
- If the trapezoidal sheet metal is fastened with calottes, the MultiRails must not be screwed onto them. It is absolutely necessary to measure the distances in advance.
- Fastening of the MultiRails on trapezoidal or corrugated sheet metal with building authority approved thin sheet metal screws.
- Thermal separation of module blocks:
  - MultiRail:  
max. 13.6 m
  - Insertion rails / module level:  
max. 21.0 m

### First/last MultiRail vertical axis

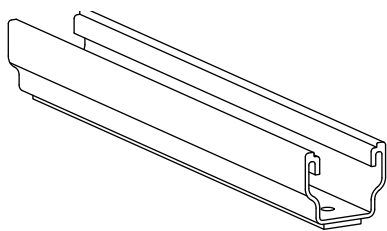
- For aesthetic reasons, the first and last MultiRail row can be moved further inwards. This makes the rail ends less visible. The distances to the next MultiRail row change in this area.
  - **Standard dimension  $D_R$**   
**= Width/Length<sub>Module</sub> - 236,5 mm**  
Please note that a minimum distance of 20 mm (standard 64 mm) must be maintained between the CrossConnector and the end of the rail, see also step 3a, page 11.
  - Calculation example for modified distance dimension with 20 mm rail projection:  
64 mm - 20 mm = 44 mm  
236,5 mm - 44 mm = 192,5 mm  
The distance dimension  $D_{R1}$  is as follows:  
 $D_{R1}$  = Width/Length<sub>Module</sub> - 192,5 mm  
 $D_{R2}$  = Width/Length<sub>Module</sub> - 236,5 mm

# Components

## Assembly on trapezoidal sheet metal



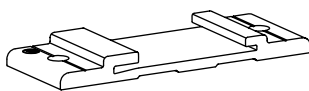
- 1** 2002793  
MultiRail 25



- 2** 1005207  
Thread-forming metal  
screw 6×25

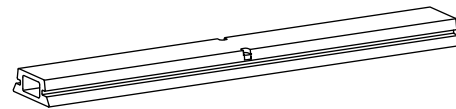
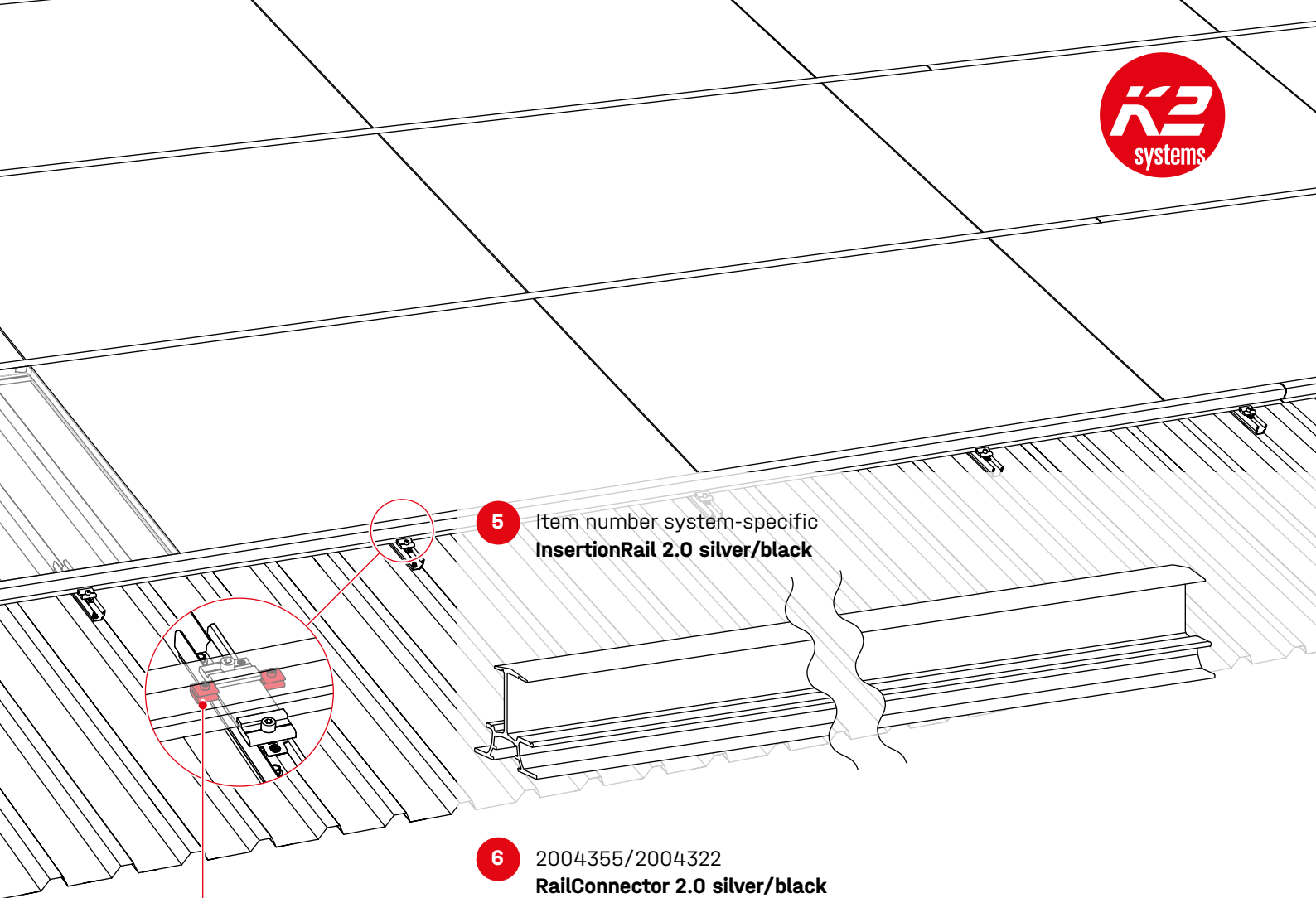


- 3** 2004374/2004375  
CrossConnector 2.0 Set  
silver/black



- 4** 2001196  
Spring Plug

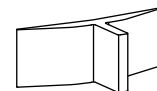




**8** 2004693/2004692  
**EndStop S silver/black**

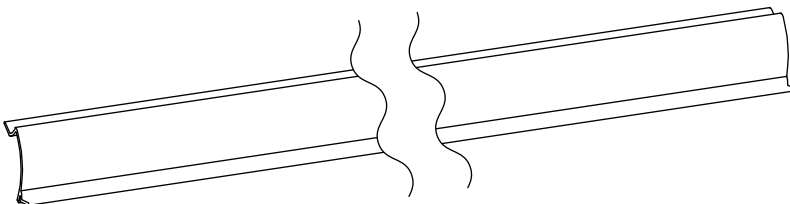


**9** 2004290  
**ModuleSafety**

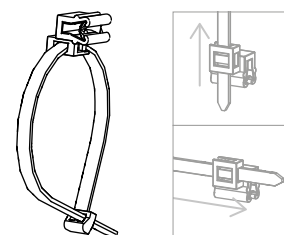


## Optional

**10** Item number system-specific  
**InsertionRail 2.0 Cover silver/black**



2002870  
**Cable Manager**



**11** 2000056  
**TerraGrif K2U17**

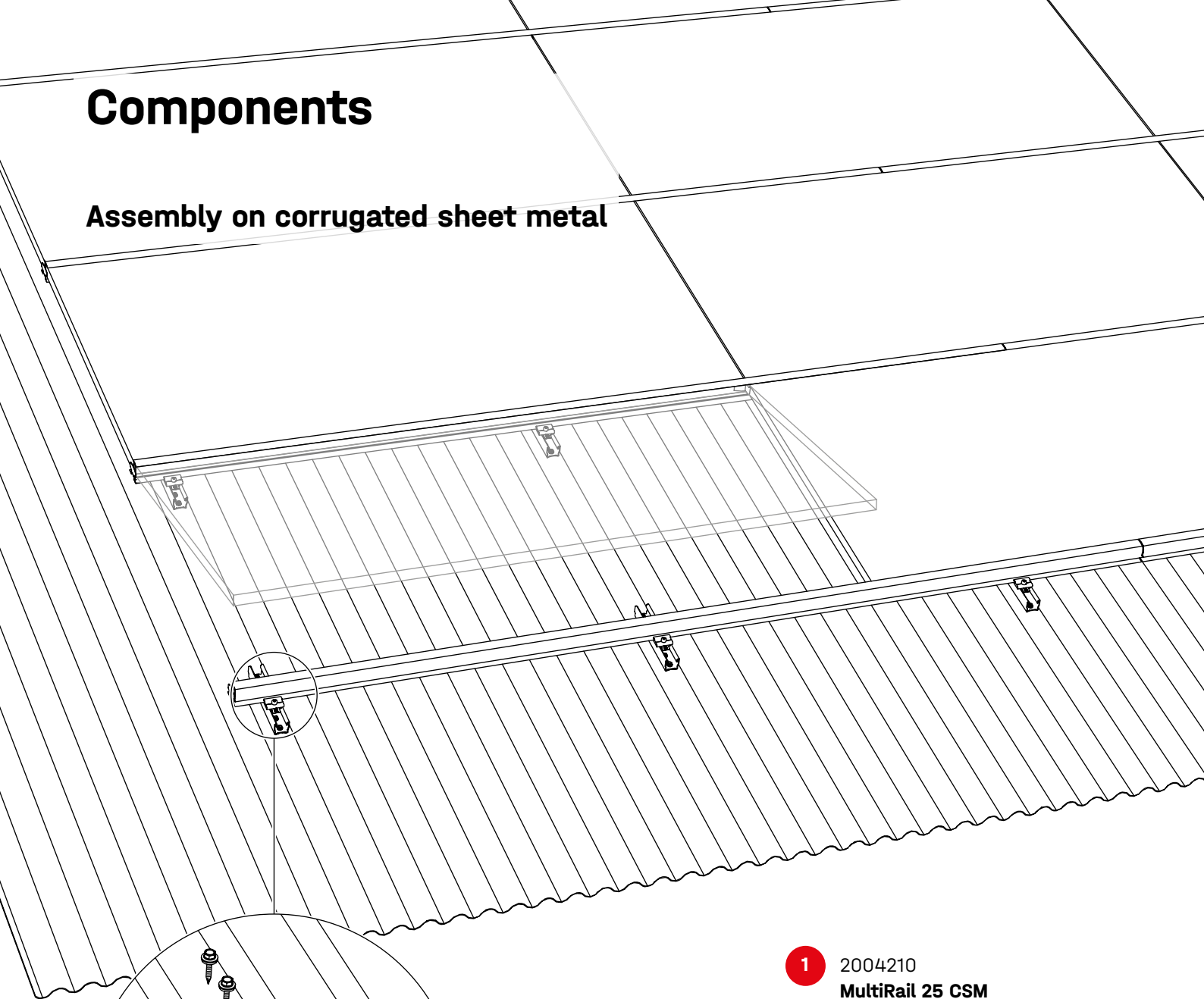


**12** 2004102  
**TerraGrif PL**

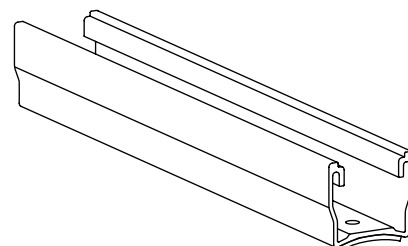


# Components

## Assembly on corrugated sheet metal



- 1** 2004210  
**MultiRail 25 CSM**



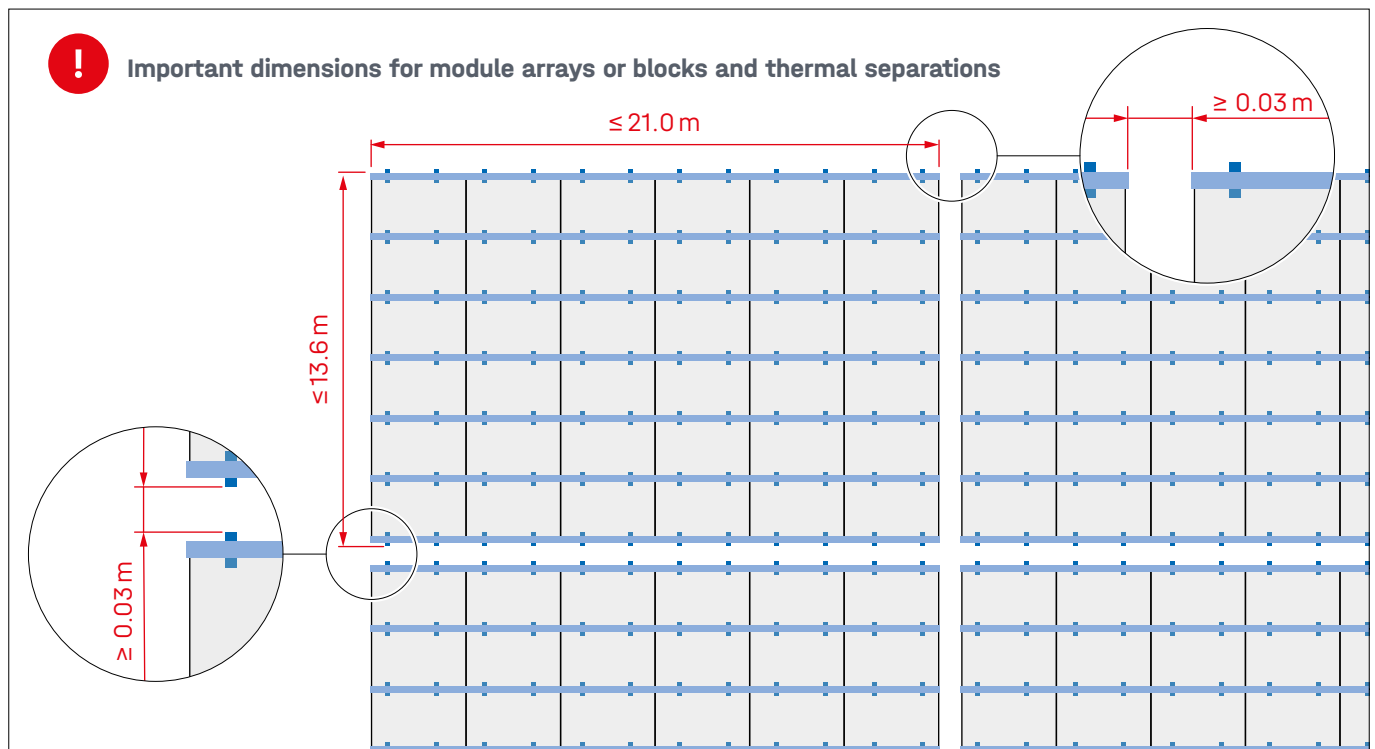
- 2** 1005207  
**Thread-forming metal  
screw 6×25**



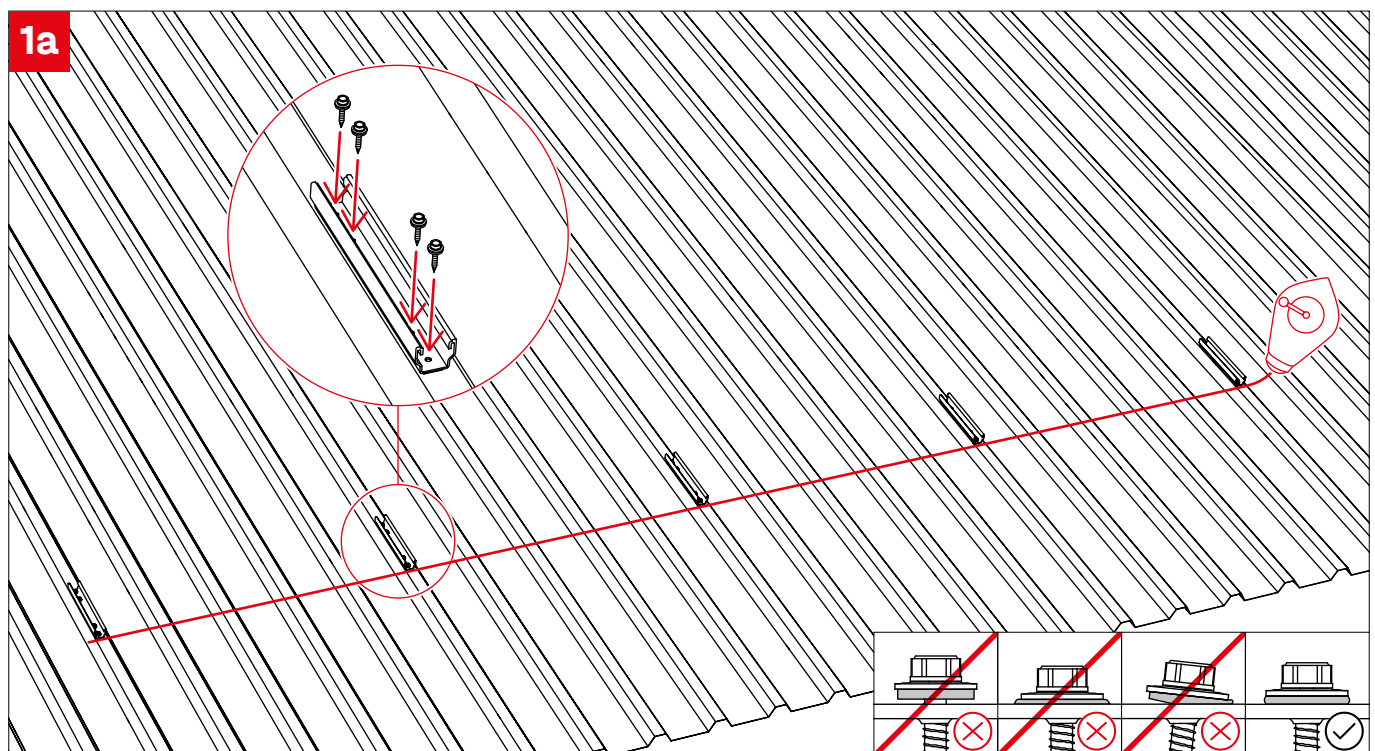
# Assembly - portrait and landscape



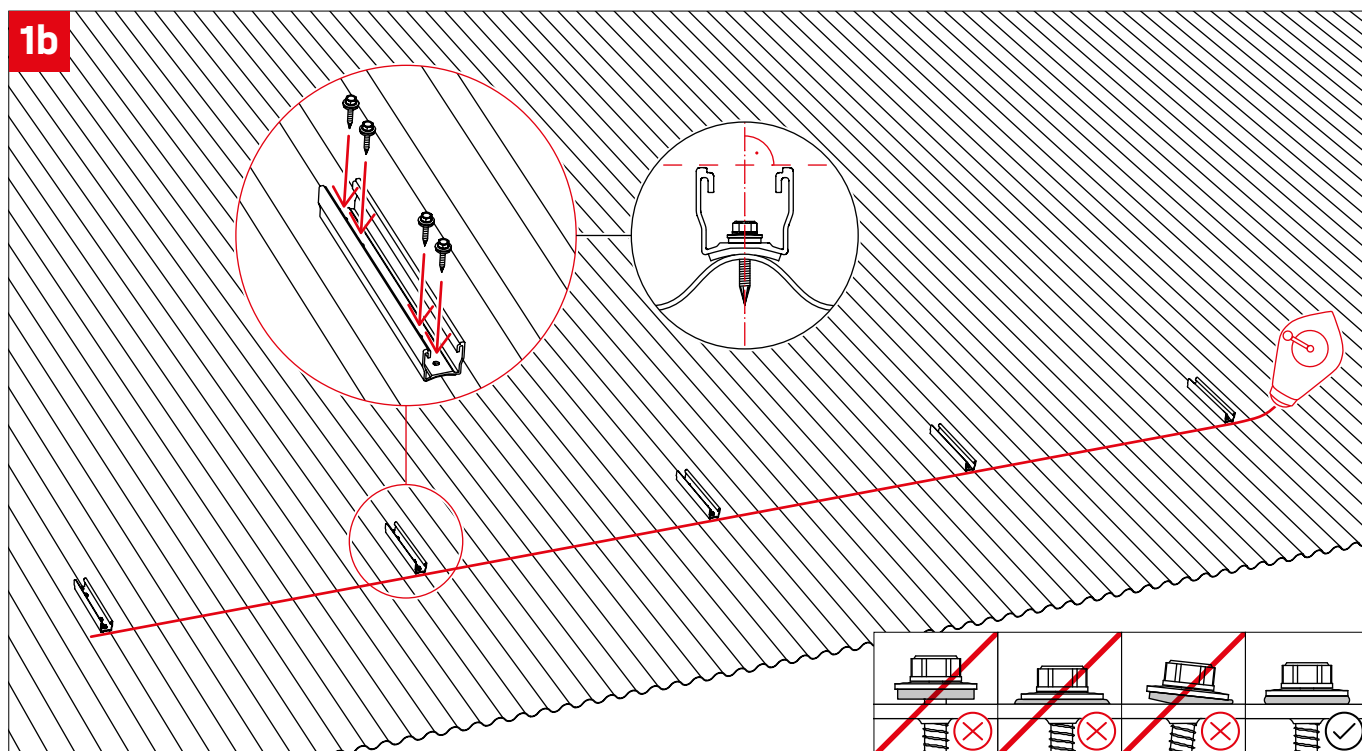
## Module block structure



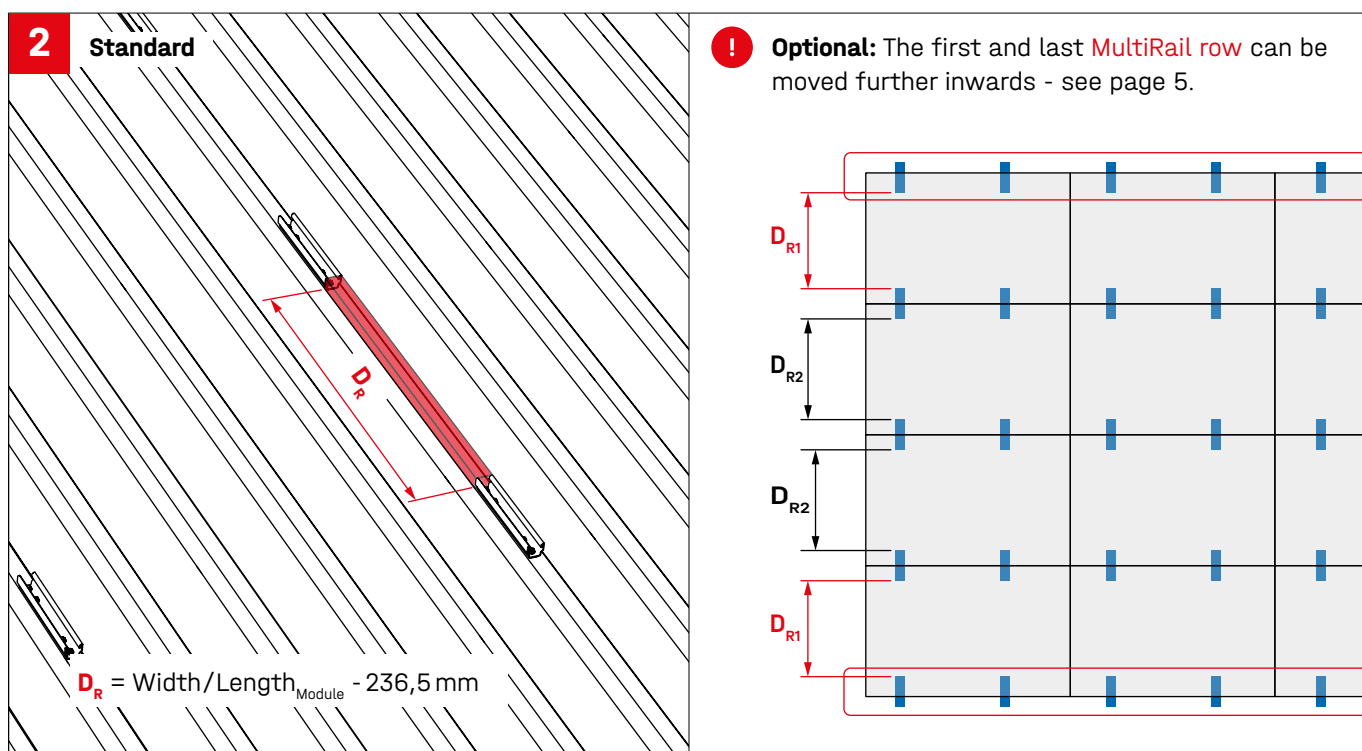
## Installation MultRail 25 on trapezoidal sheet metal



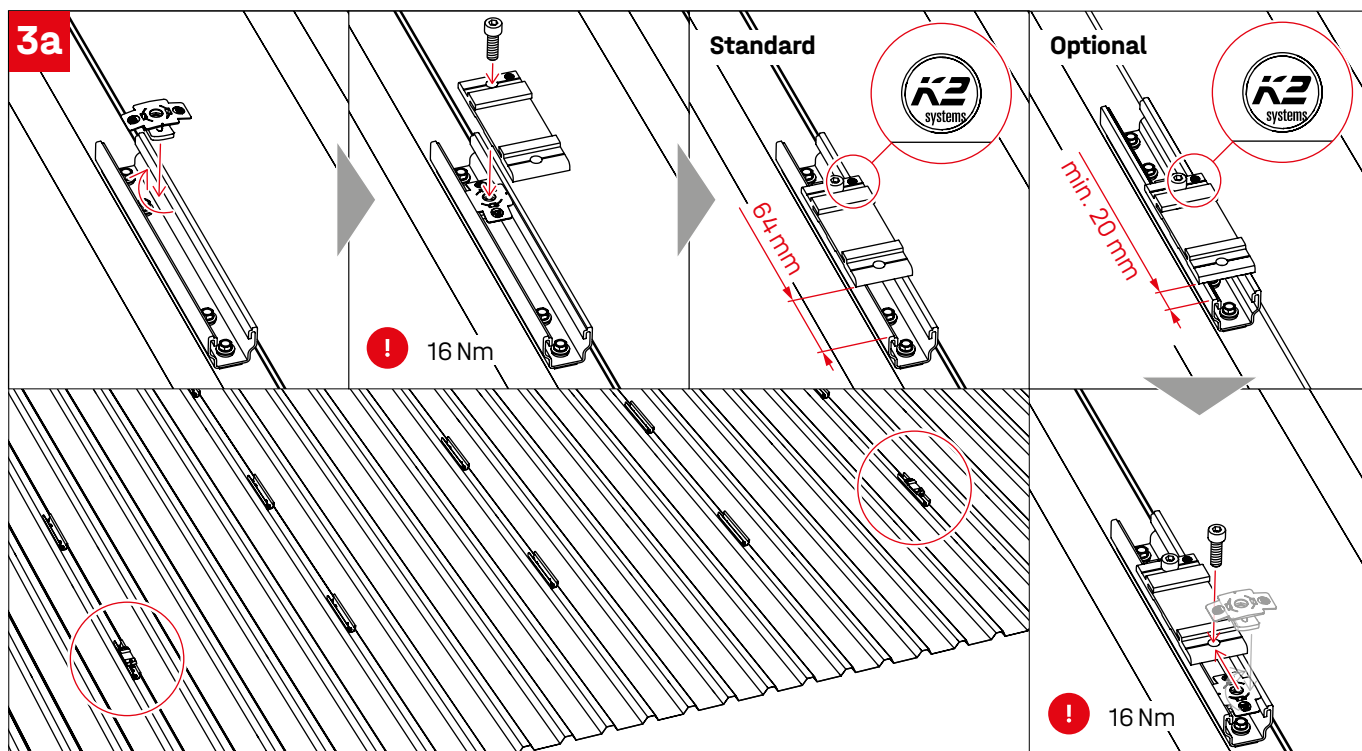
## Installation MultiRail 25 CSM on corrugated sheet metal



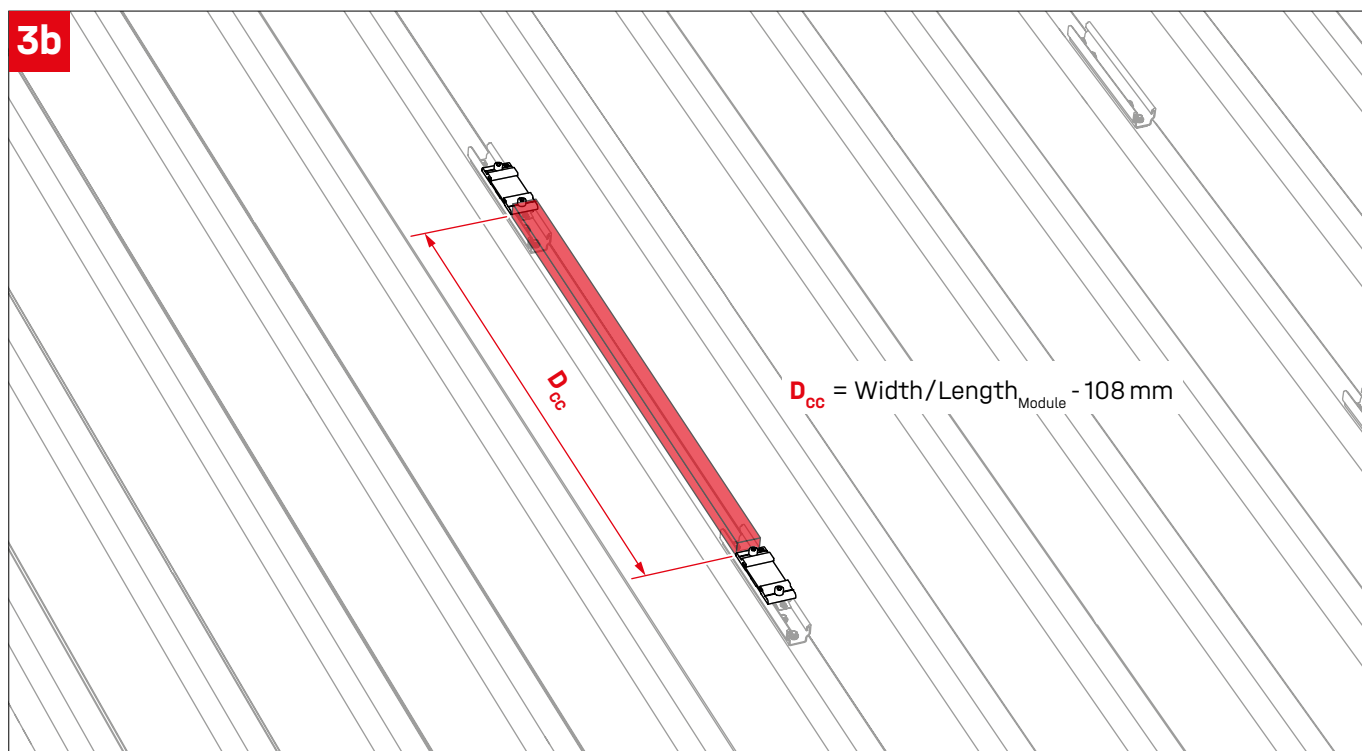
## Vertical distance MultiRails



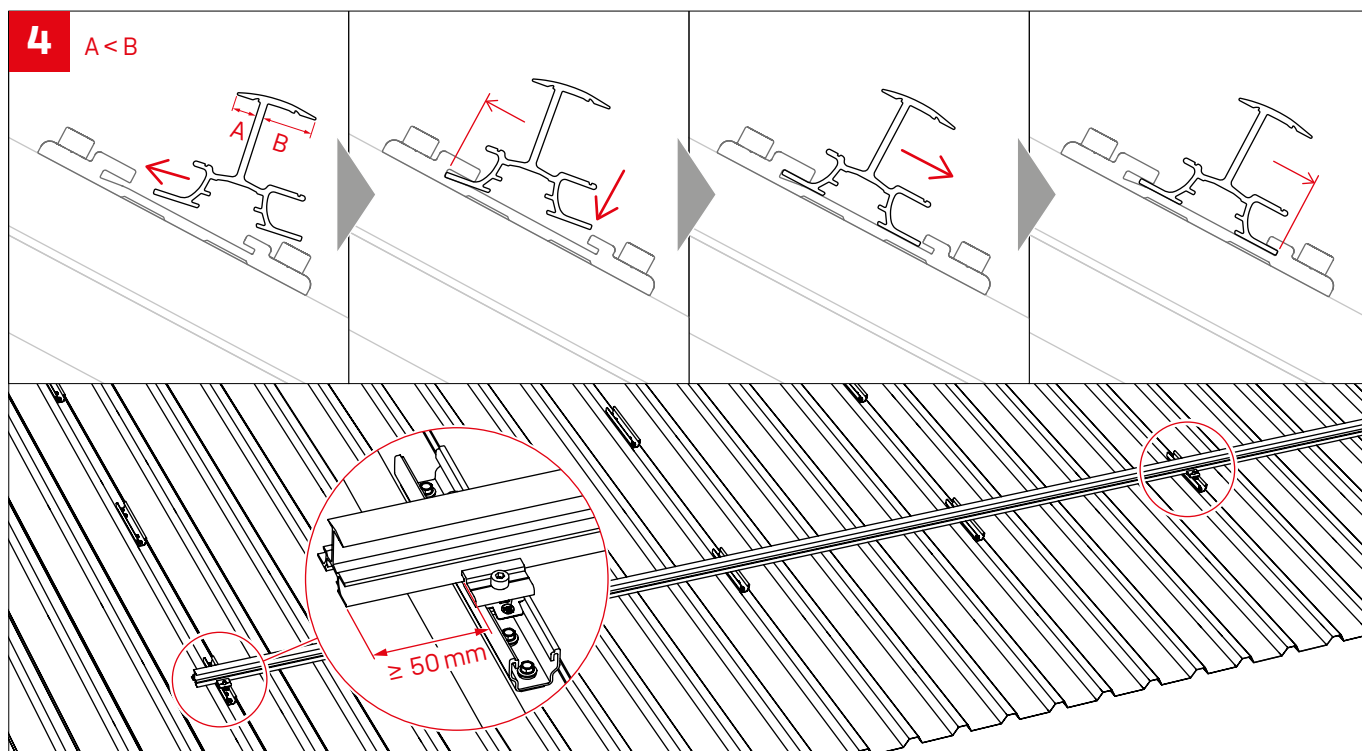
## CrossConnector part 1 - mount external CrossConnectors



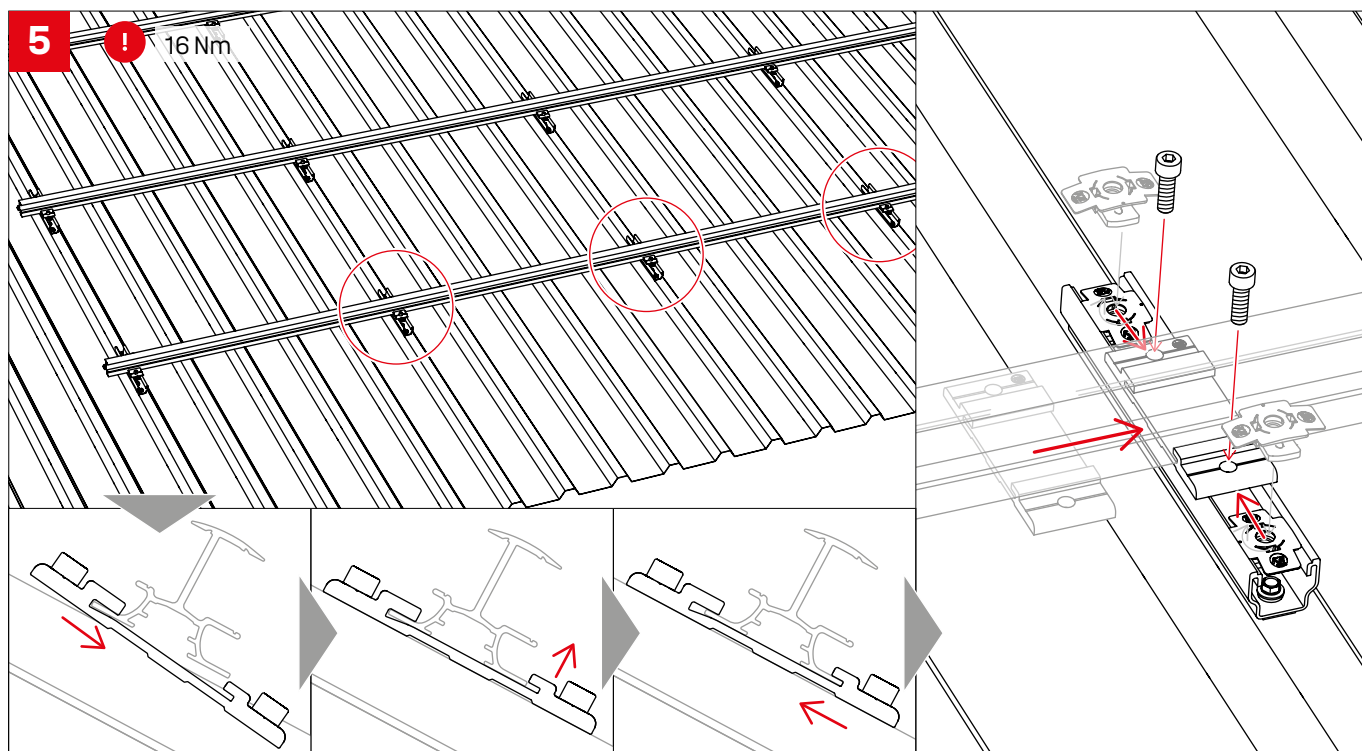
## Vertical distance CrossConnectors



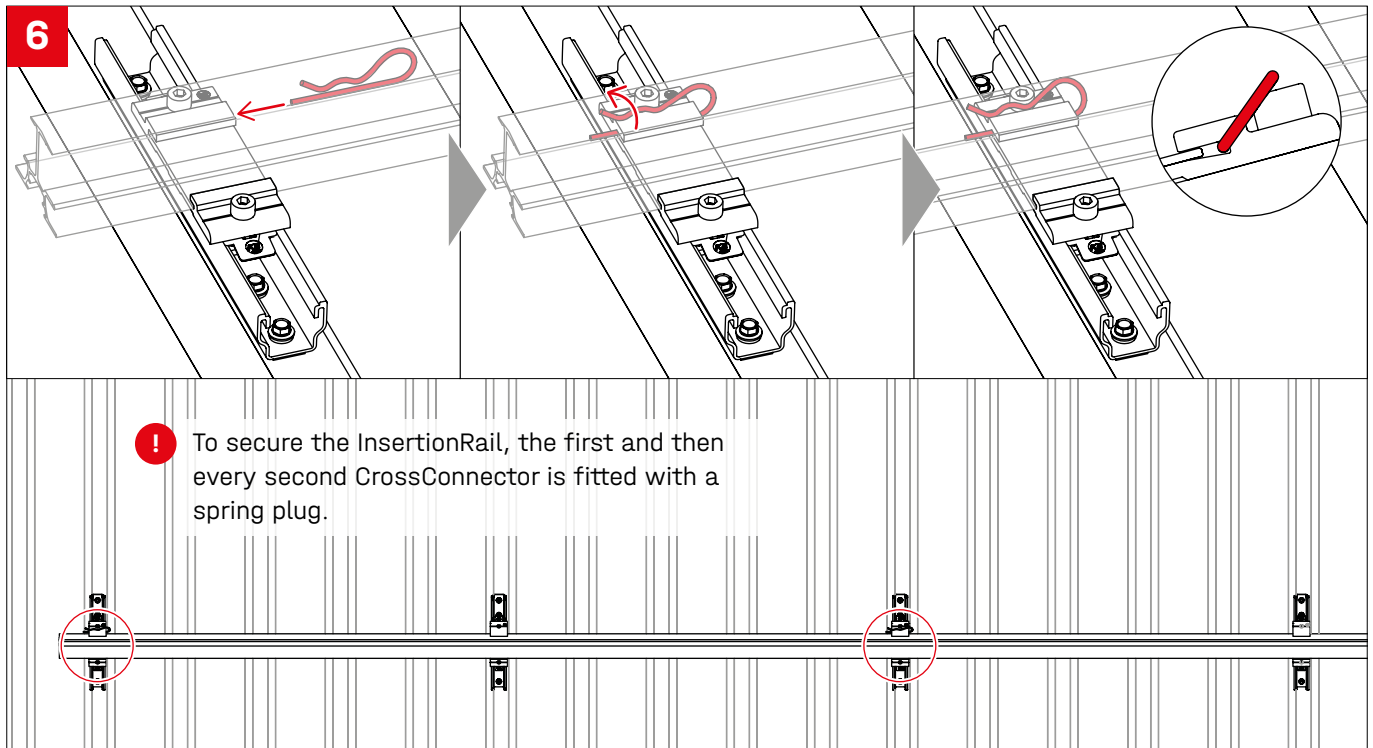
## Attach InsertionRail



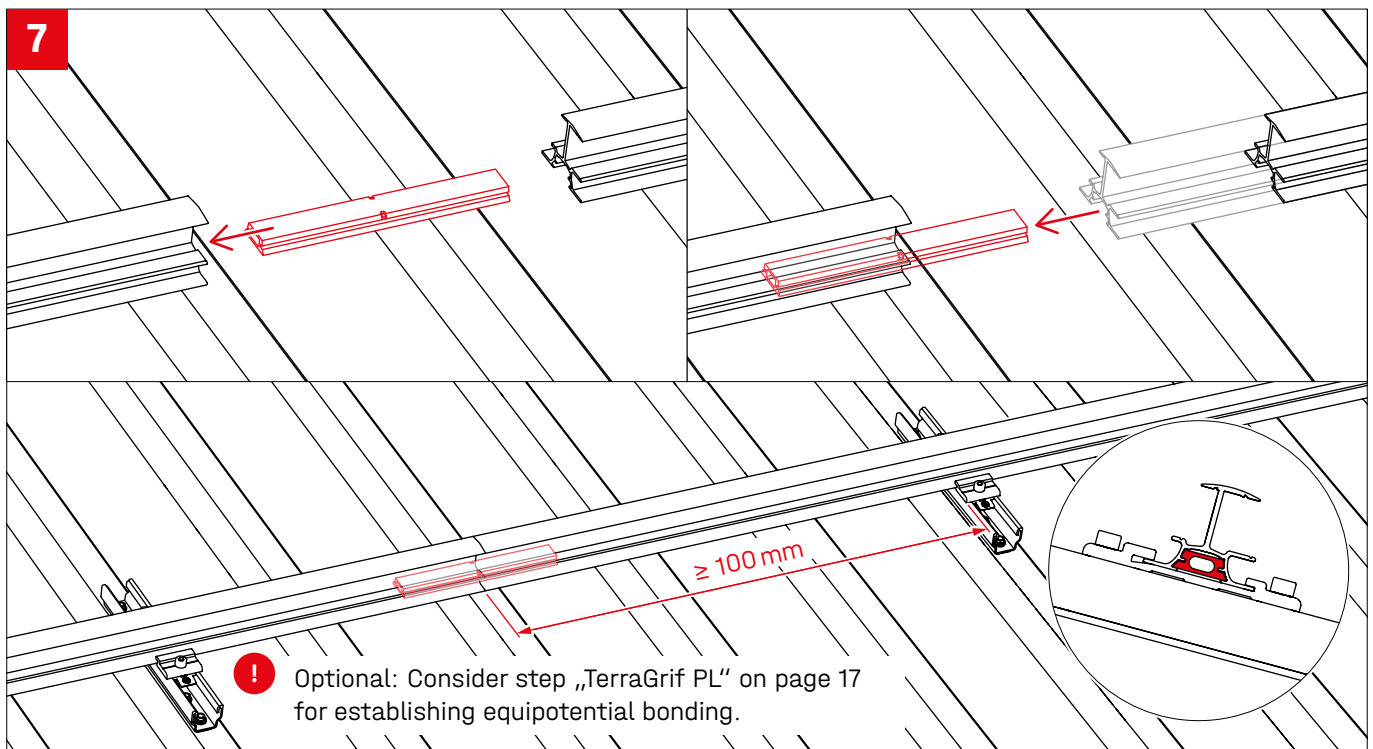
## CrossConnector part 2 - mount internal CrossConnectors



## Fixation with spring plug



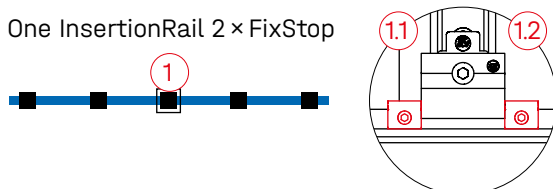
## Connecting rails with RailConnector



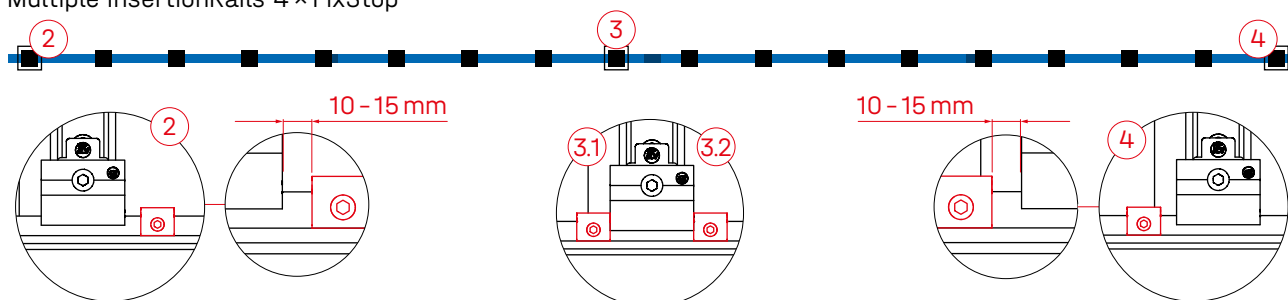
## FixStop positioning

9a

One InsertionRail 2 × FixStop



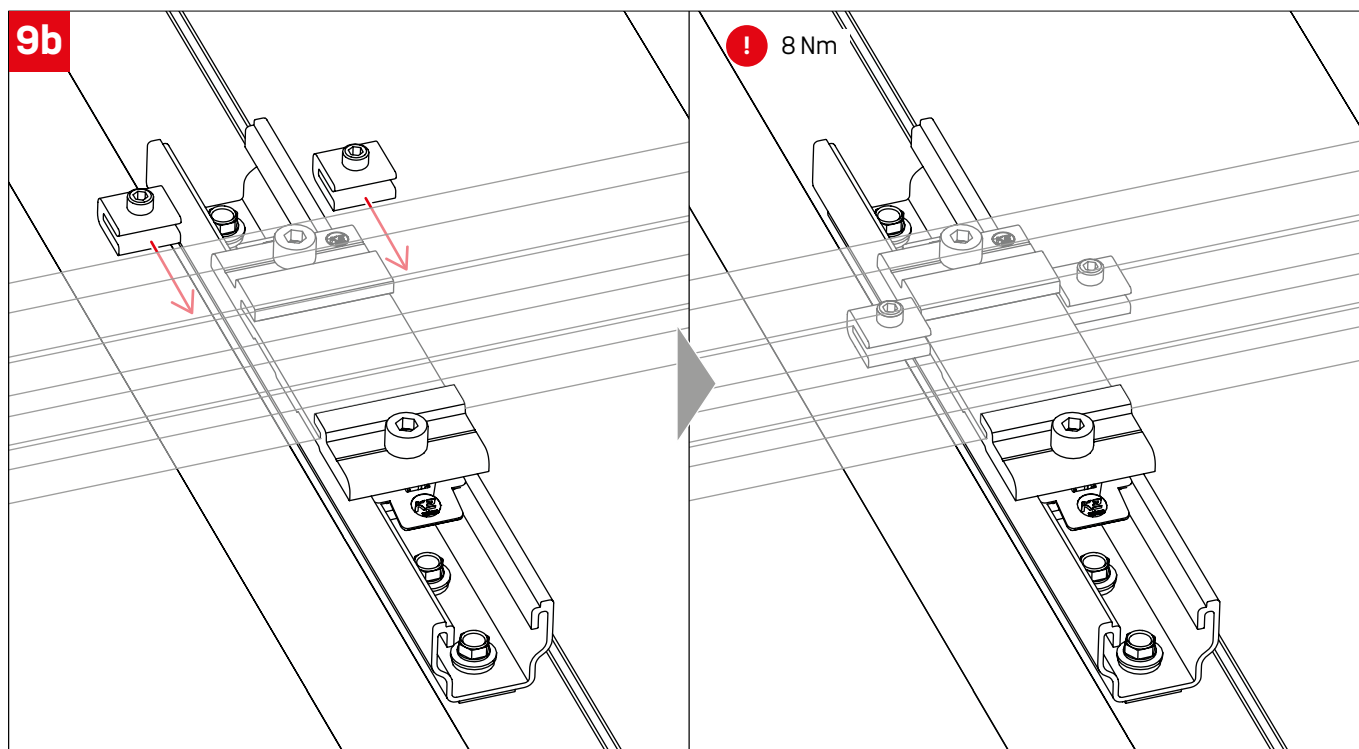
Multiple InsertionRails 4 × FixStop



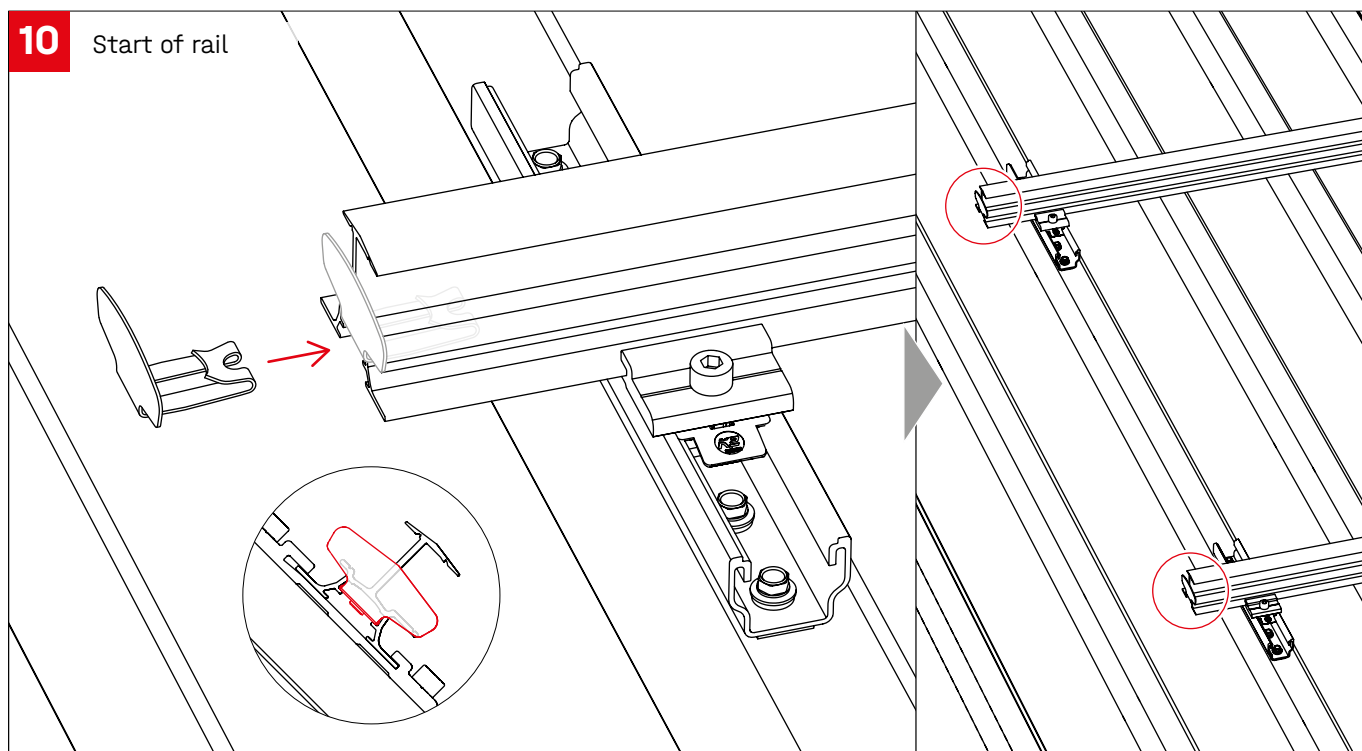
CrossConnector + FixStop
  CrossConnector
  RailConnector
  InsertionRail

## Assembly FixStop

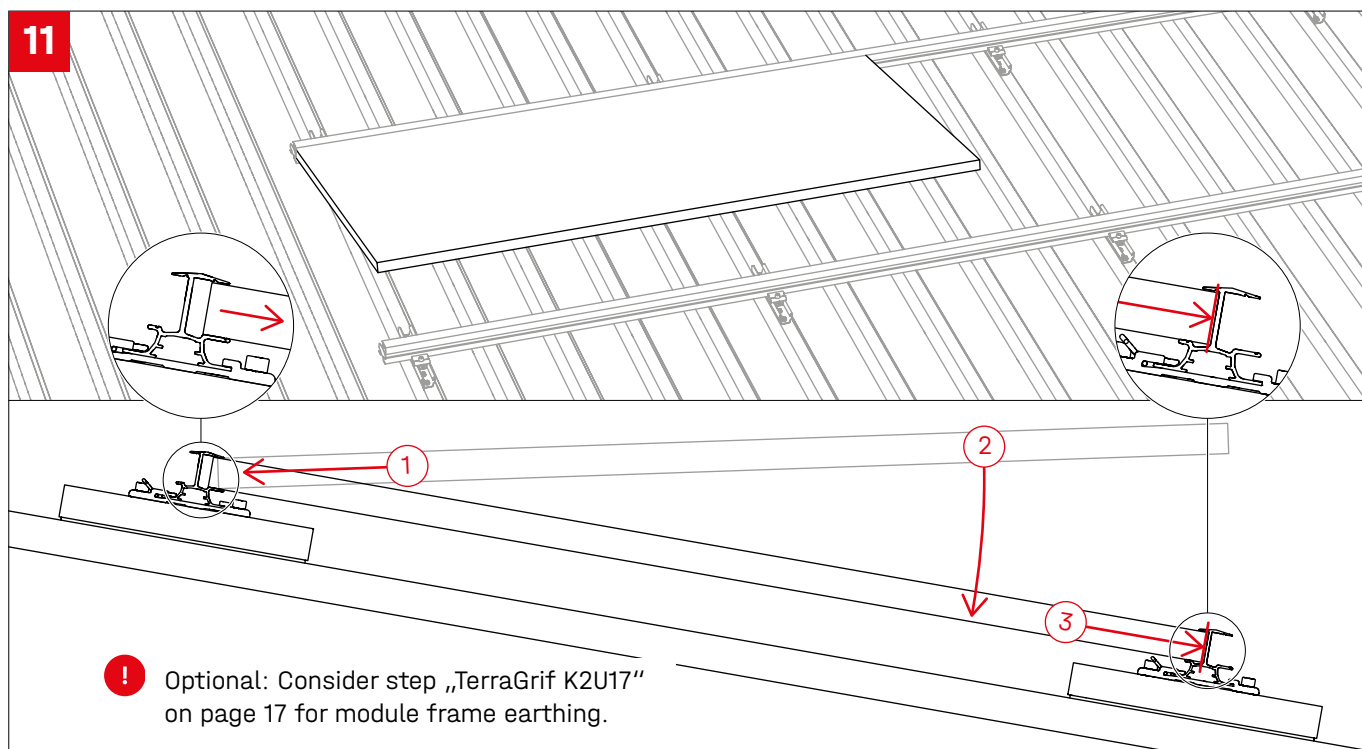
9b



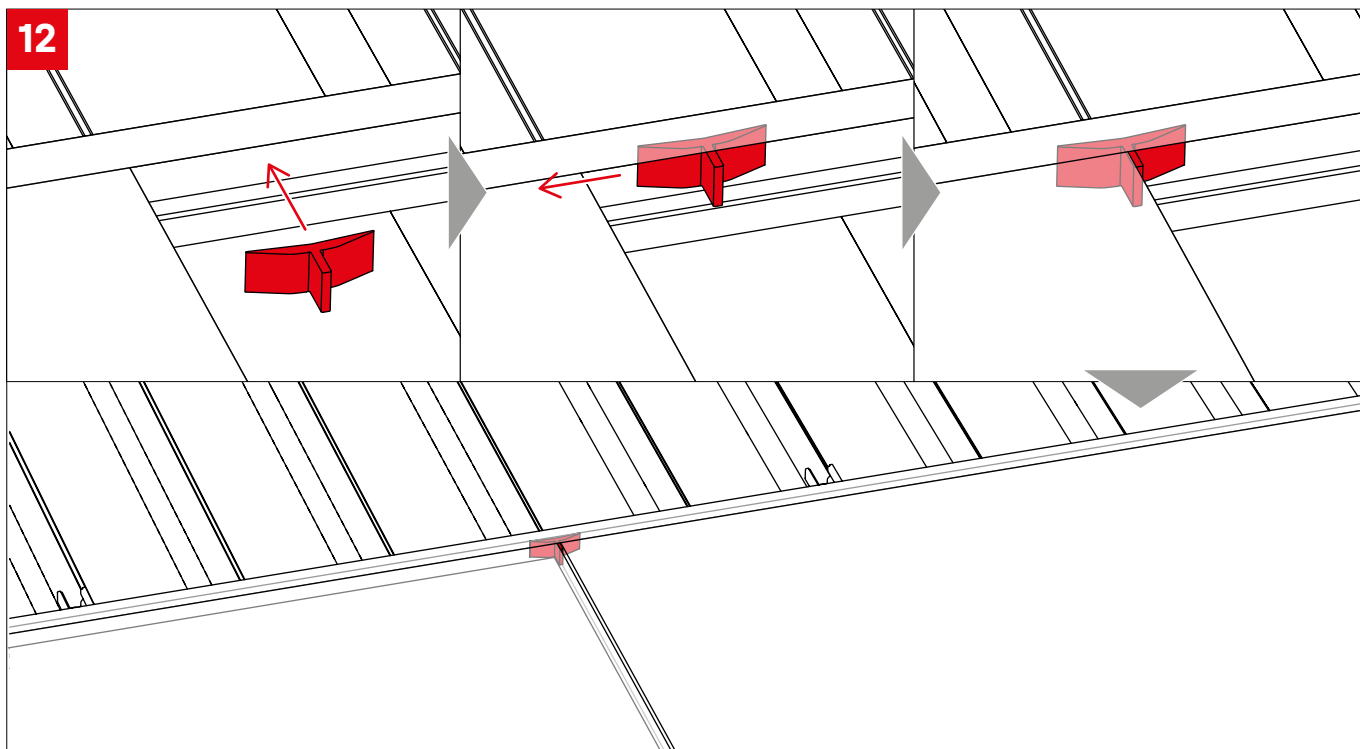
## Side guarding EndStop 1



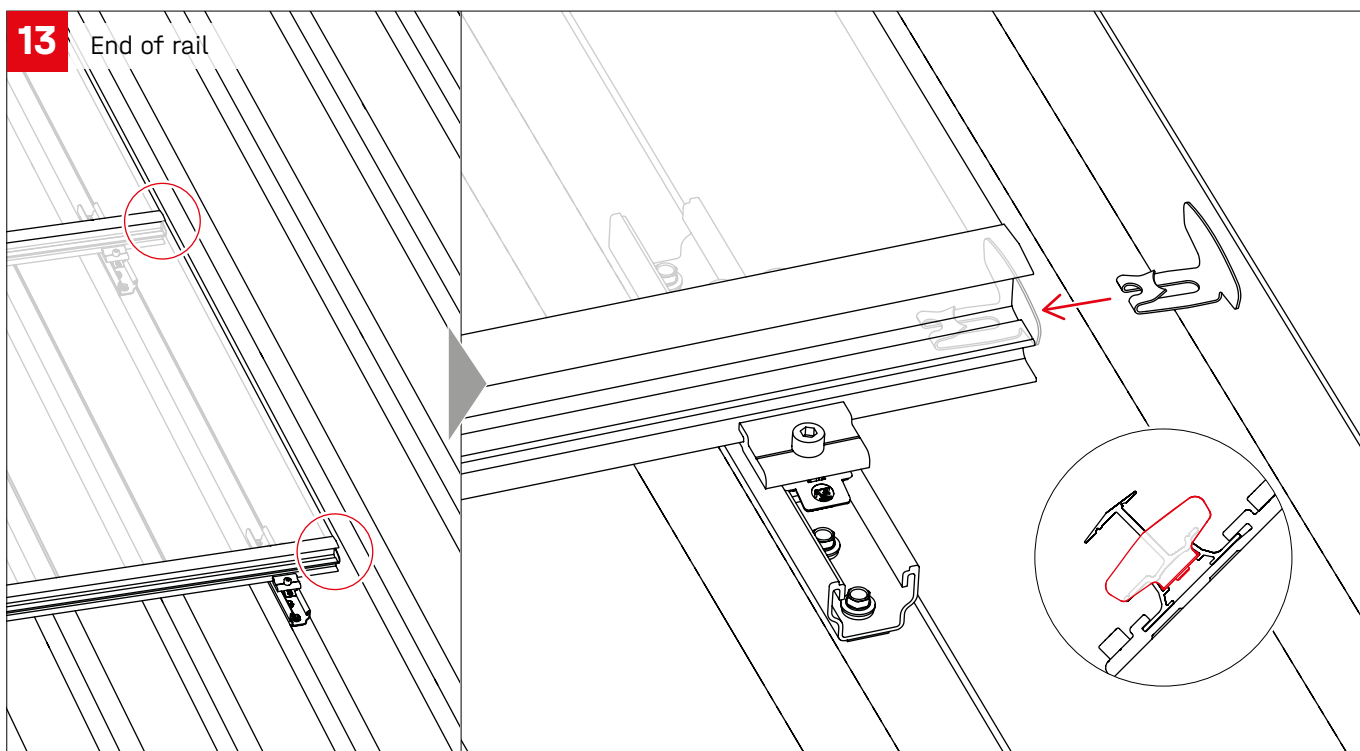
## Insert modules



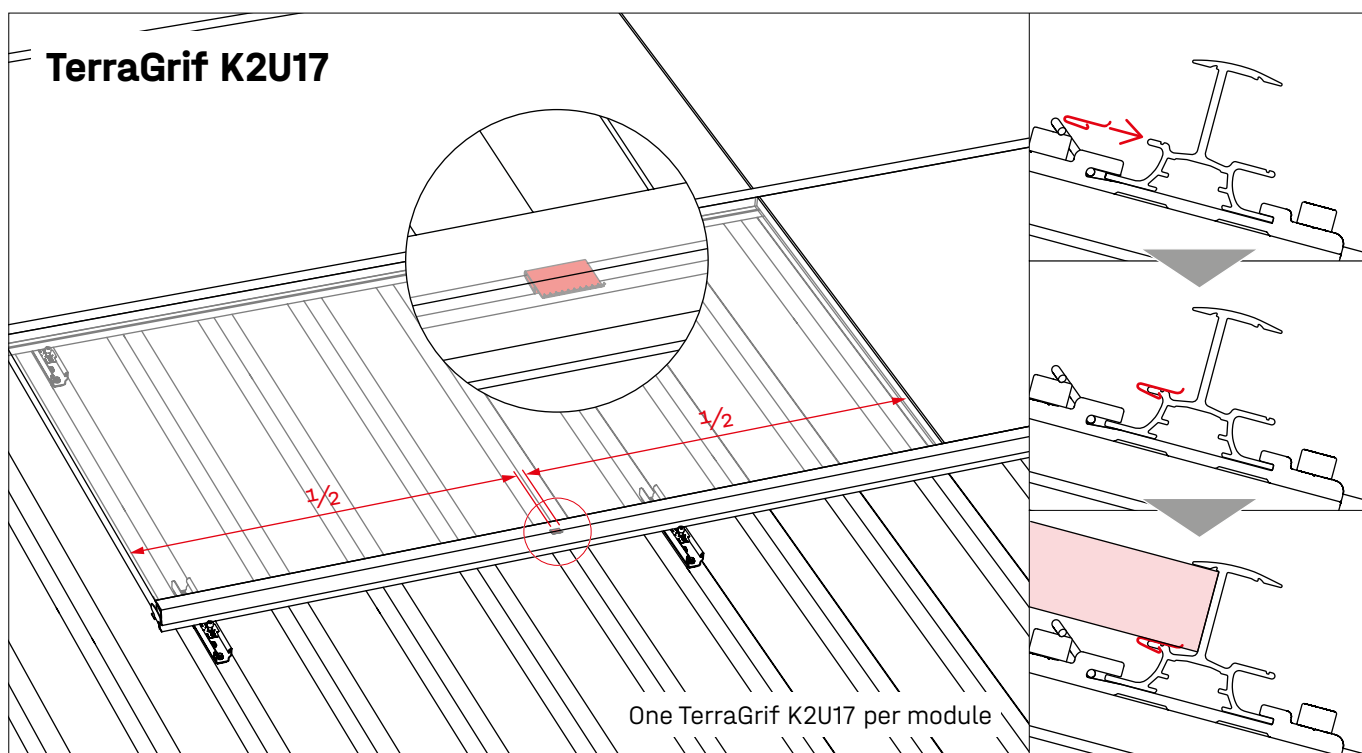
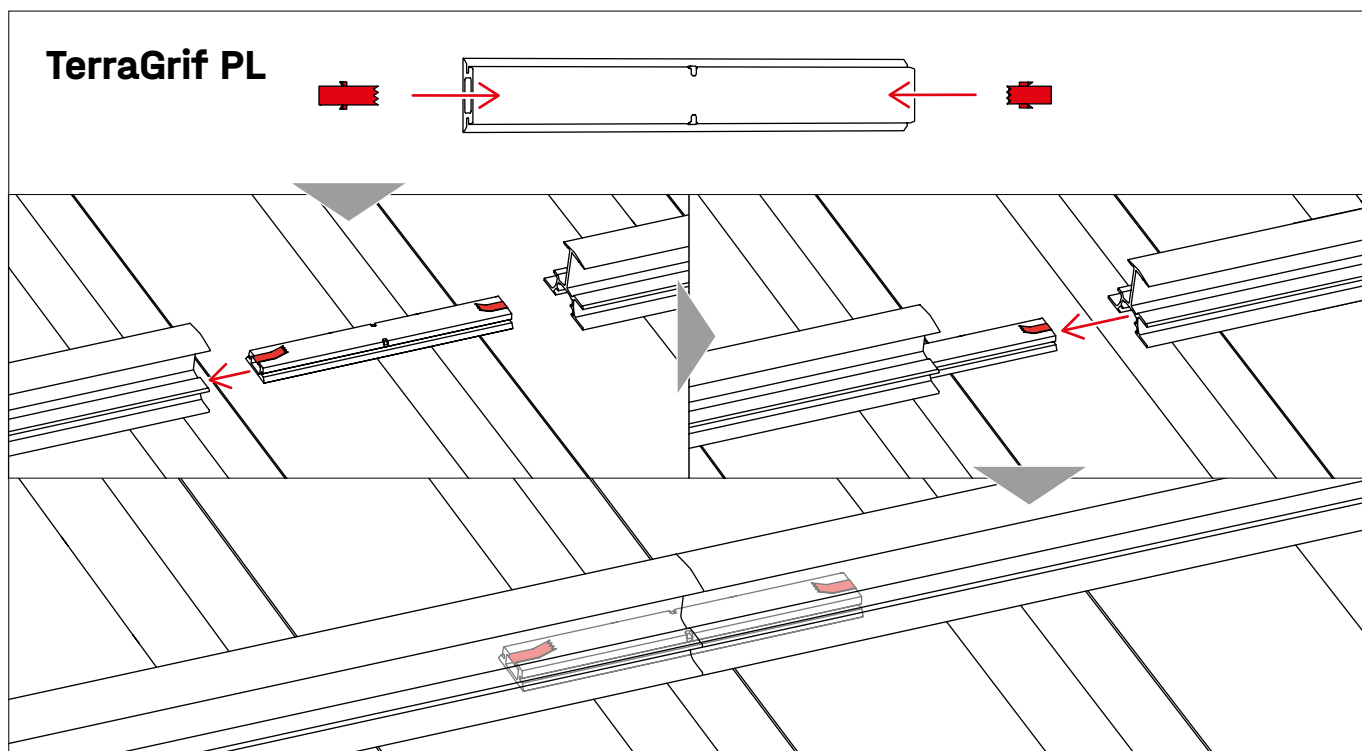
## Placement of spacers ModuleSafety



## Side guarding EndStop 2

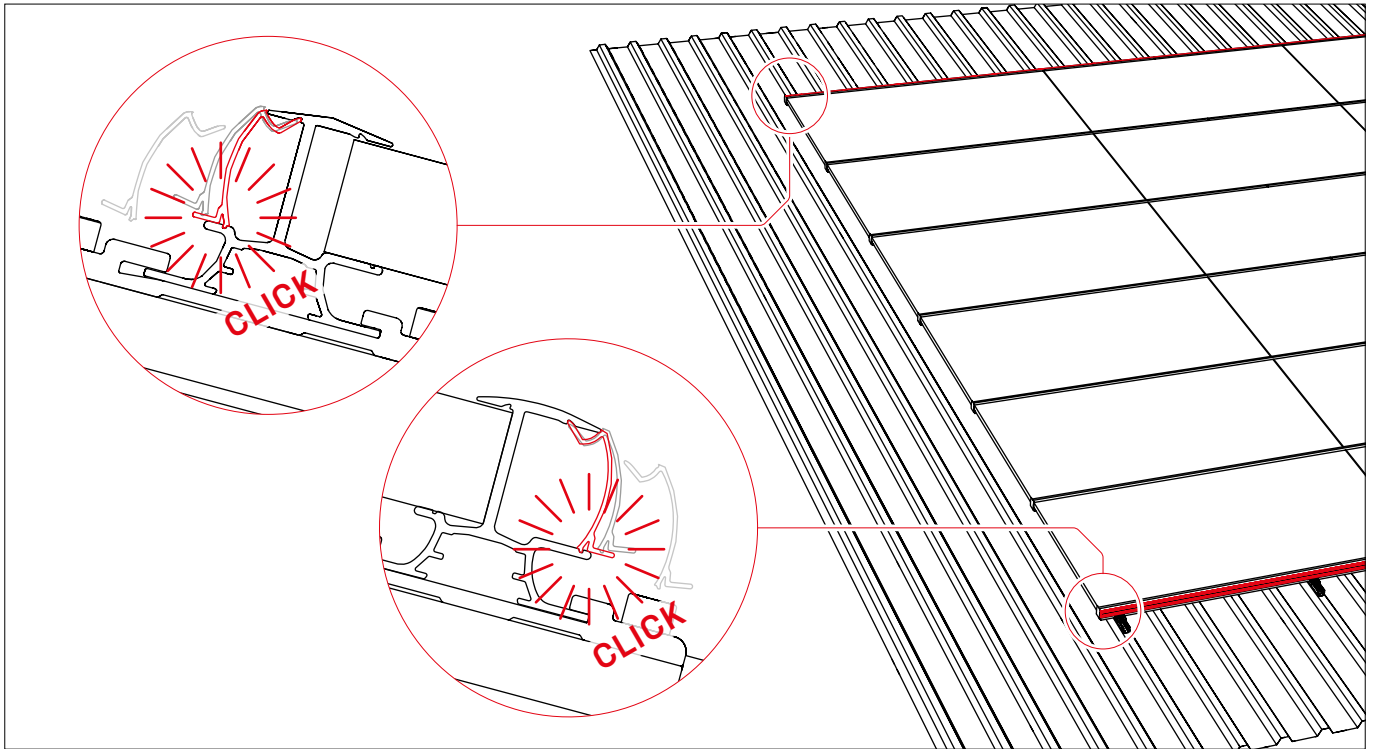


# Equipotential bonding / Module frame earthing

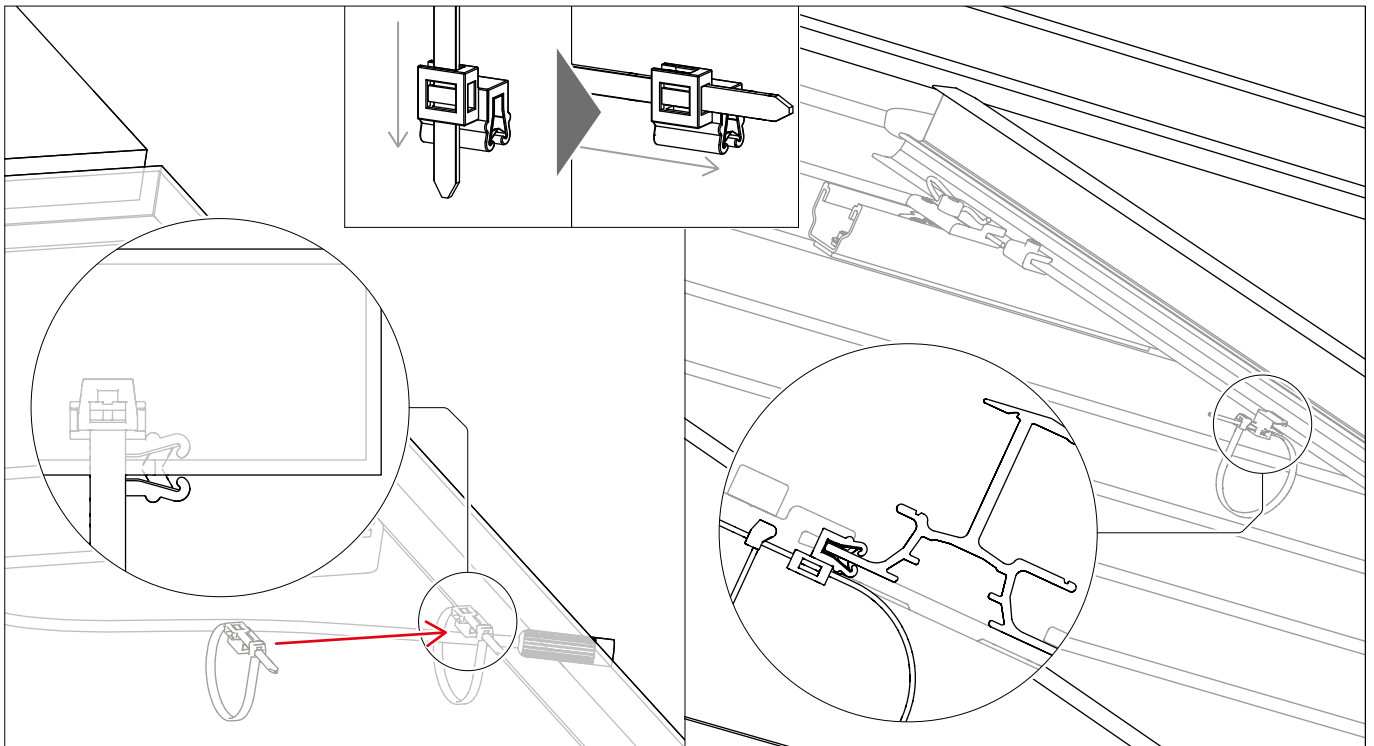


# Optional

## InsertionRail Cover



## Cabel management with Cable Manager



## Notes





# Connecting Strength

## Thank you for choosing a K2 mounting system.

Mounting systems from K2 Systems are quick and easy to install. We hope these instructions have helped. Please contact us with any questions or suggestions for improvement. Our contact data:

- [k2-systems.com/en/contact](https://k2-systems.com/en/contact)
- **Service Hotline: +49 7159 42059-0**

Our General Terms of Business apply. Please refer: [k2-systems.com](https://k2-systems.com)

### K2 Systems GmbH

Haldenstraße 1 · 71272 Renningen · Germany  
+49 (0) 7159 - 42059 - 0 · [info@k2-systems.com](mailto:info@k2-systems.com) · [k2-systems.com](https://k2-systems.com)

Insertion System MultiRail Assembly EN V5 | 0726 · Subject to change  
Product illustrations are exemplary and may differ from the original.