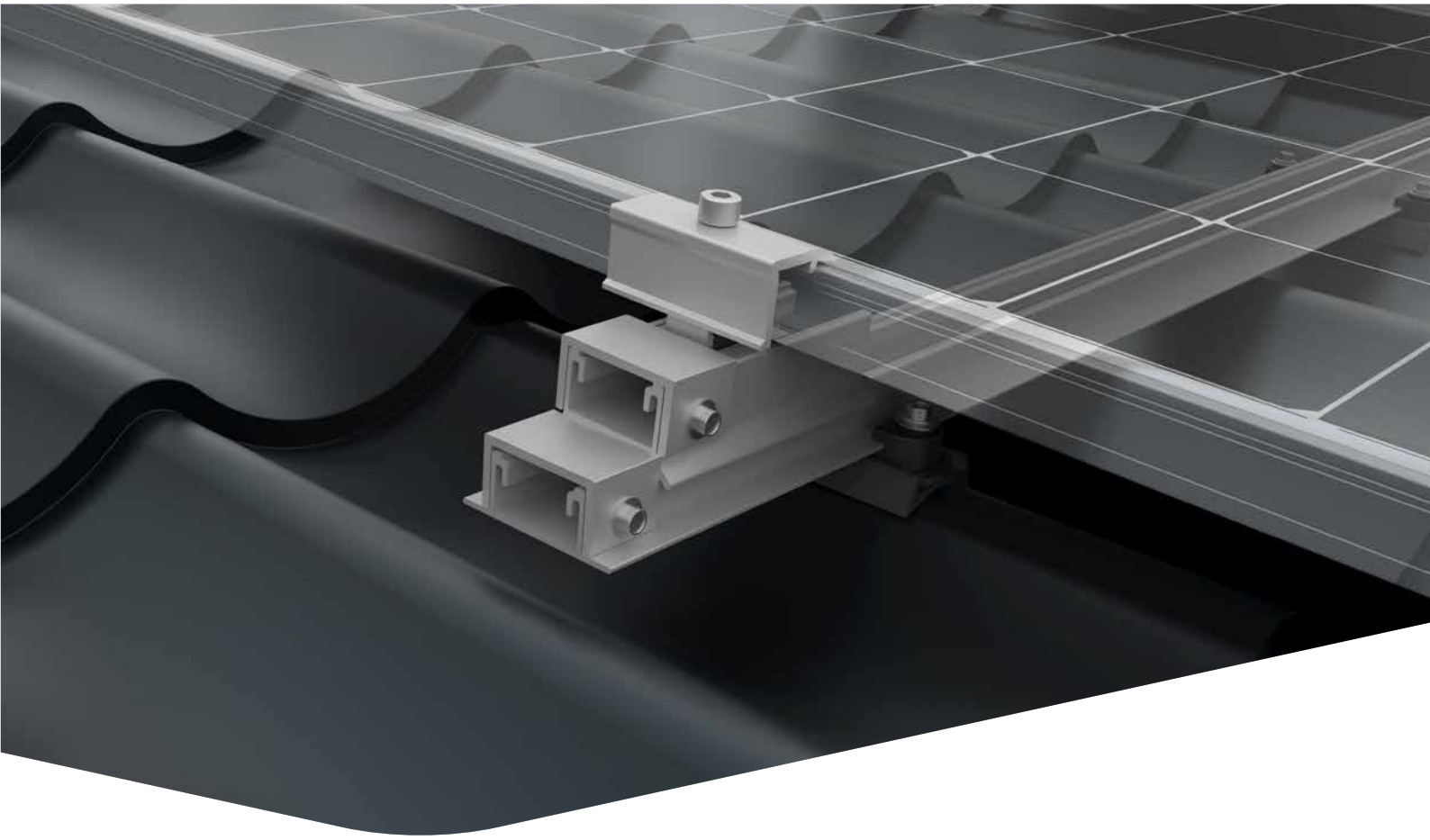
Connecting Strength



Assembly Instructions

BasicRail System

Tile effect sheet with FlexAdapter

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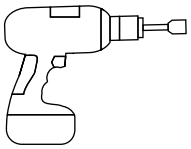
Quality tested - multiple certifications

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:
k2-systems.com/en/technical-information

Tools overview

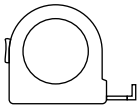


5 + 6 mm

8 mm

6 - 30 Nm
(4,5 - 22,2 lb-ft)

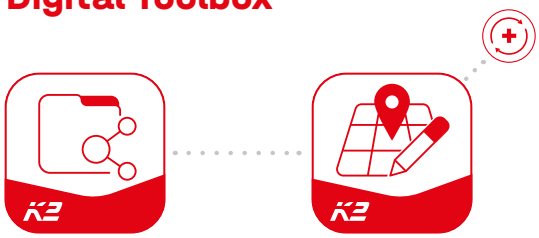
6 mm



≥ 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

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

- 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 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.
- German law shall apply excluding the UN Convention on CISG. Place of venue is Stuttgart. Our General Terms of Business apply.
- 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
  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

The BasicRail system can be used without further testing by K2 systems in the following standard conditions. The system 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

Roof requirements

- Sheet thickenss:
  - Aluminium ≥ 0.5 mm
  - Steel ≥ 0.4 mm
  - National regulations may require different material thicknesses.
- A metal roof tile must have a smooth surface.
- Textured surfaces can cause screw connections to leak!
- The minimum length of the imitation tile between steps is 229 mm – see step 1a on page 12.
- Minimum tensile strength for aluminium: 165 N/mm²; steel grade minimum S235
- Radius of high crests between r = 30 - 60 mm
- The raised ribs have no additional groove.
- Roof pitch inclination: 5 - 75°
- The angle (inclination) to be compensated for must be ≤ 7° – calculation: [180 ÷ π × tan (step height ÷ tile length)]

Structural requirements

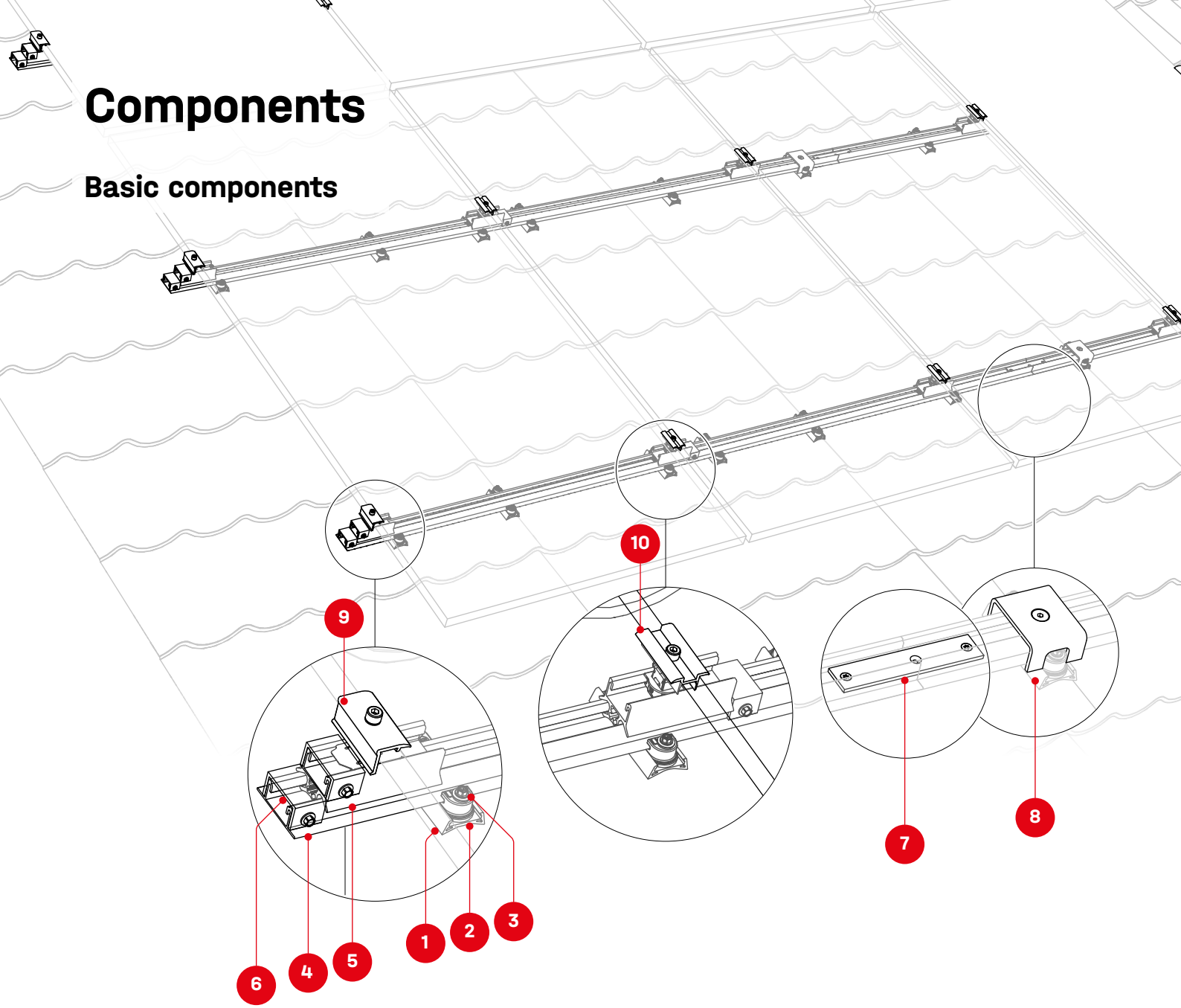
Sufficient holding force of the roof covering on the support or substructure

Important mounting instructions

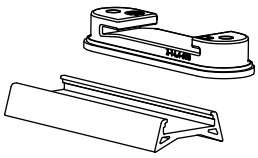
- Earthing must be ensured (use lightning protection clamp if necessary).
- The spacing between the BasicRails must be a multiple of the tile length and must also fall within the permissible clamping range of the modules used.
- All BasicClips on a roof surface must be fitted at equal distances from the ridge. See step 1a on page 8.
- BasicClips must not be attached to sheet metal overlaps – either horizontally or vertically.
- The roof must be checked for any calottes (e.g. sandwich panels). BasicClips must not be fitted to calottes.
- Every fourth or quarter of all BasicClips is mounted rotated 180° to fix vertical position. Rotated BasicClips must not be placed at the end of the rail; see assembly step 3c.
- For rail joints, BasicClips must be attached to the nearest high crest on both sides.
- Ensure a thermal separation after 9.60 m. The minimum distance between two rails should be 3 cm.
- Attention: Modules must never be clamped over the thermal expansion joint.
- One BasicLock per BasicRail up to 9.60 m in total length, is required (BasicRail connected via a rail connector counts as a BasicRail).
- MK2 insertion nuts and module clamps at rail joints must be avoided!
- A minimum mounting distance of 50 mm from the end of the rail / rail joint / FlexAdapter end to the module frame. .
- Only sheet metal screws must be used to secure the BasicClips and the CSM adapter. Self-drilling screws are not permitted, as their use with the CSM adapter increases the risk of leaks at the penetration points.

Components

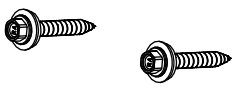
Basic components



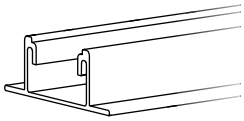
1 **2** 2004912 + 1001164
BasicClip CSM Adapter + BasicClip



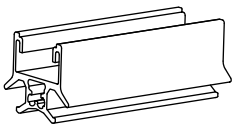
3 1005193
Self-tapping screw with sealing washer 6×38 mm



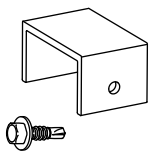
4 Item number system-specific!
BasicRail



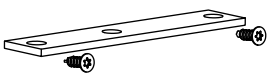
5 2004914
FlexAdapter



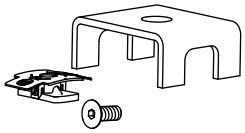
6 2004289 + 2004432
AntiSlip Clip + Self-tapping metal screw 5.5×19



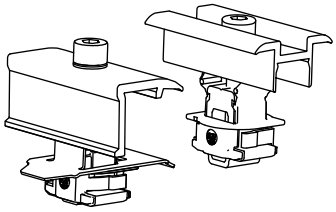
7 1003571
Rail Connector Set BasicRail



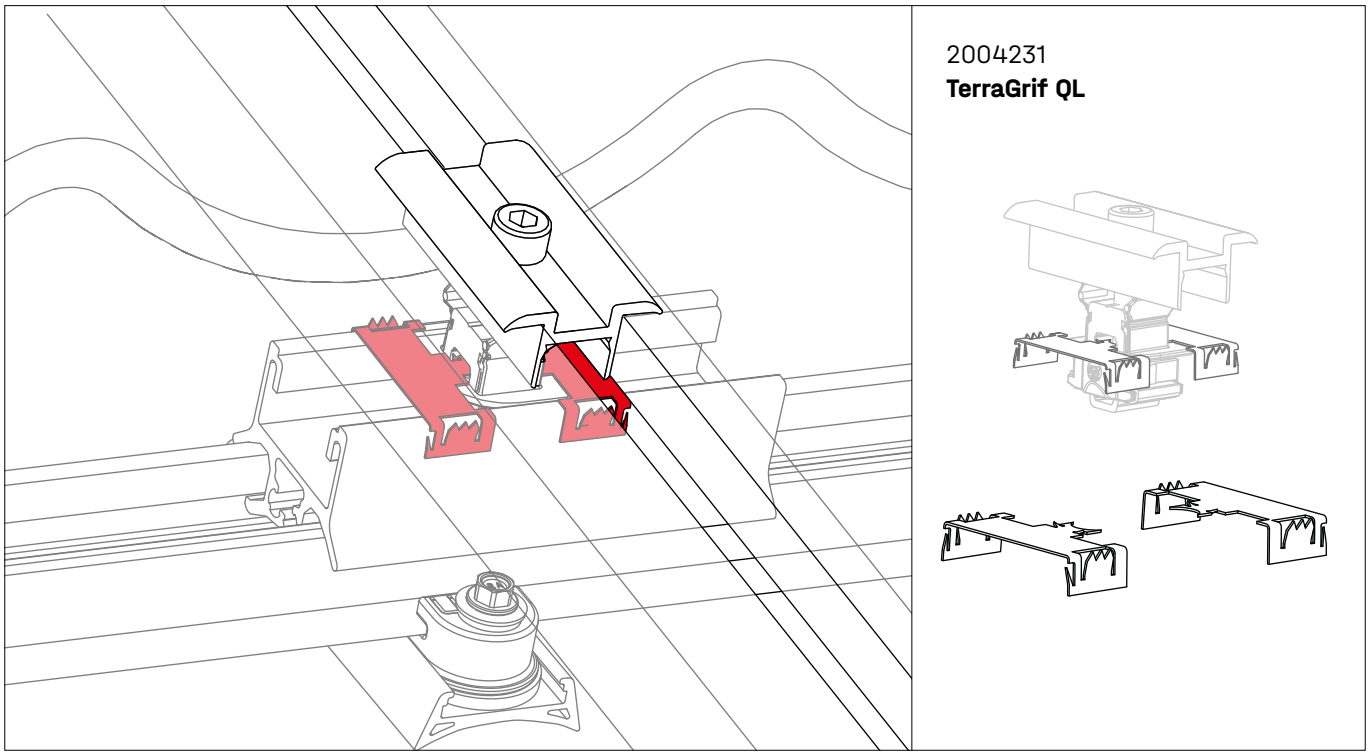
8 1003558
BasicLock 22 Set



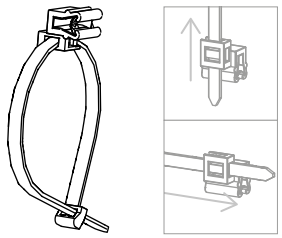
9 **10** Item number system-specific!
Module end/middle clamps



Optional

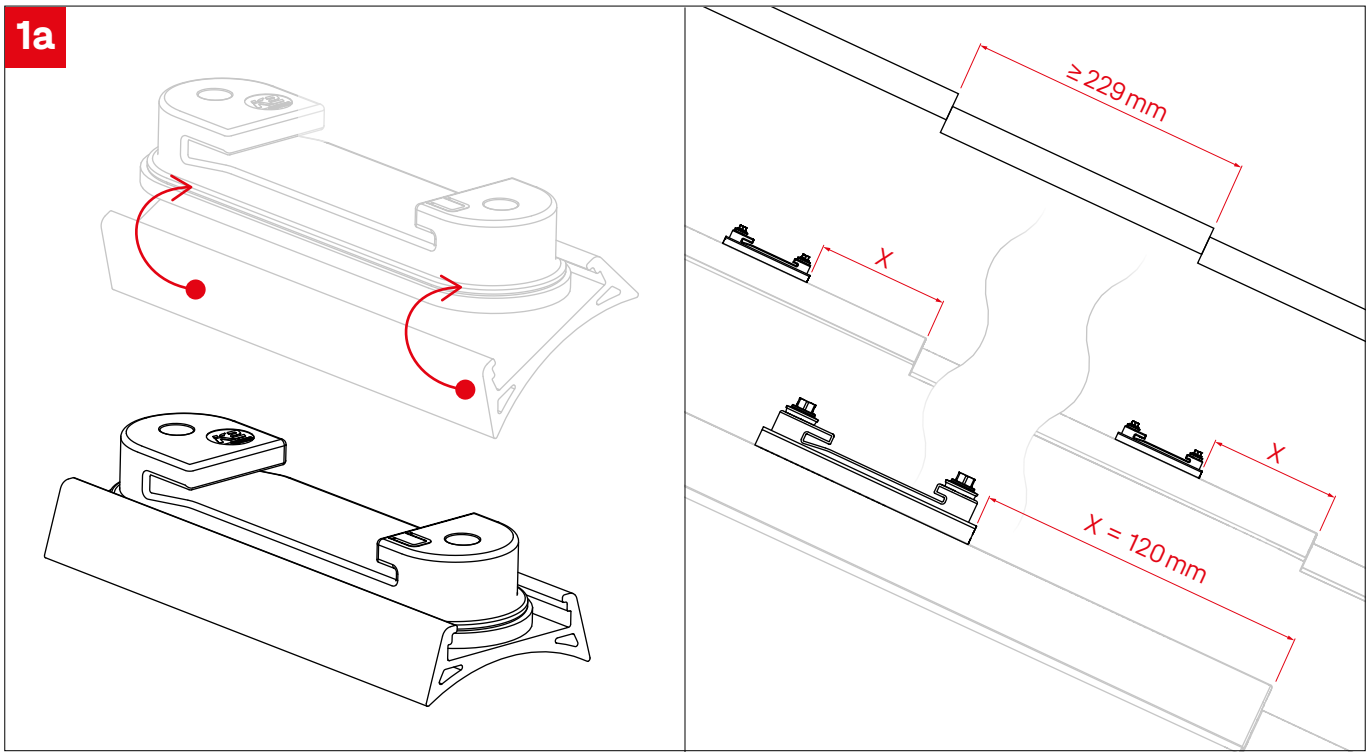


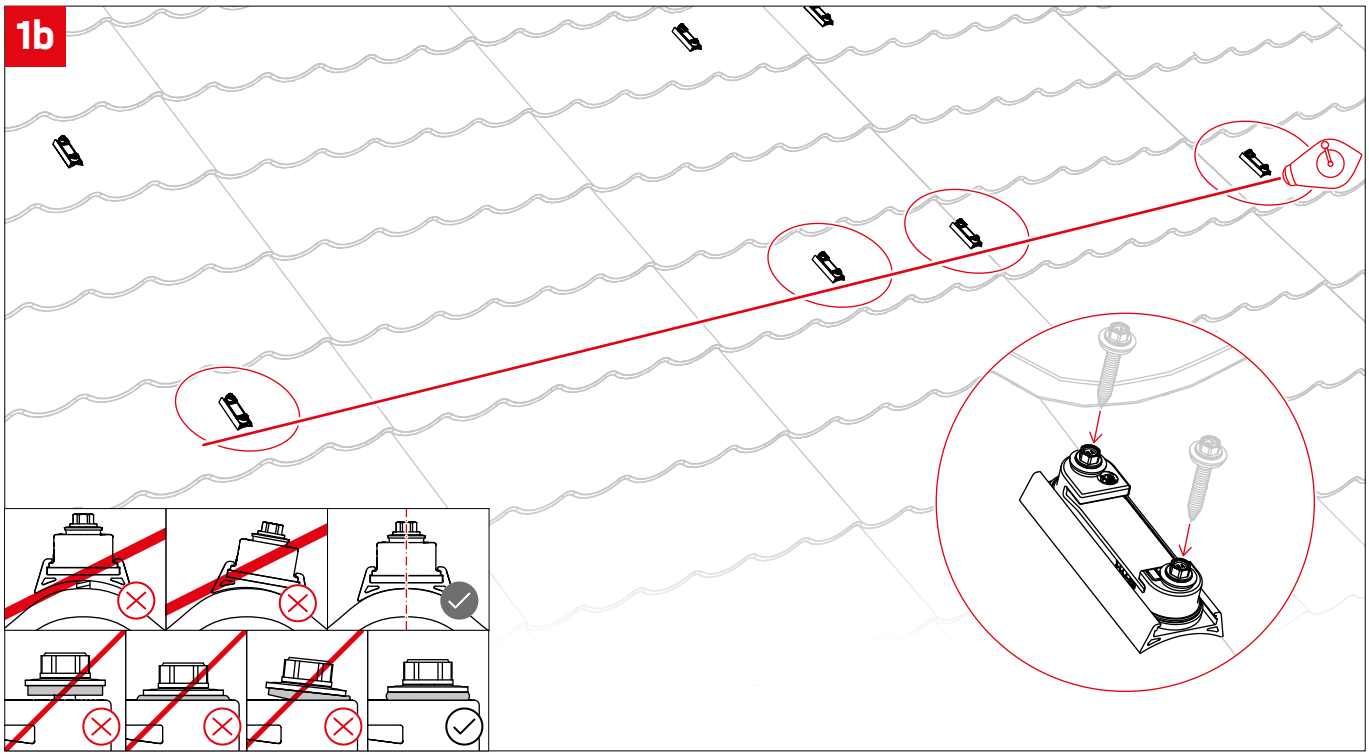
2002870
Cable-Manager



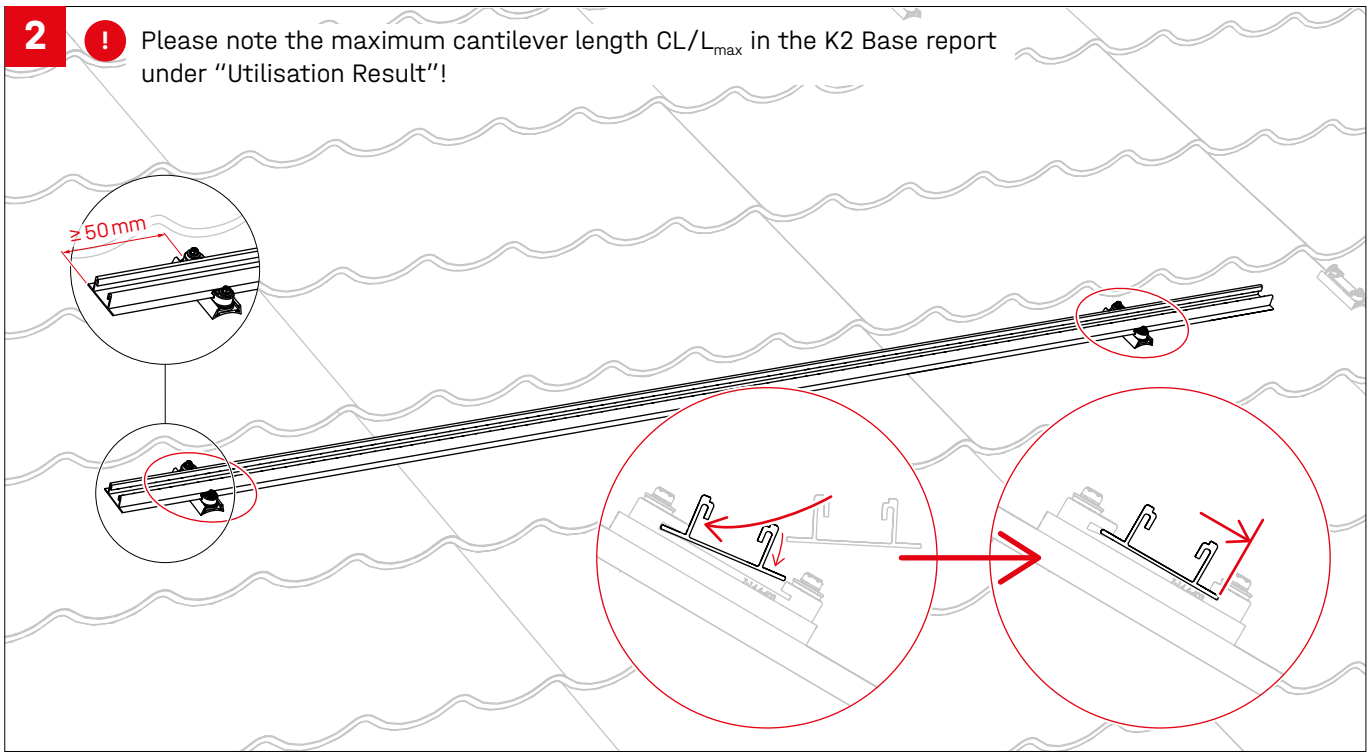
Assembly

Positioning external BasicClips using the CSM adapter

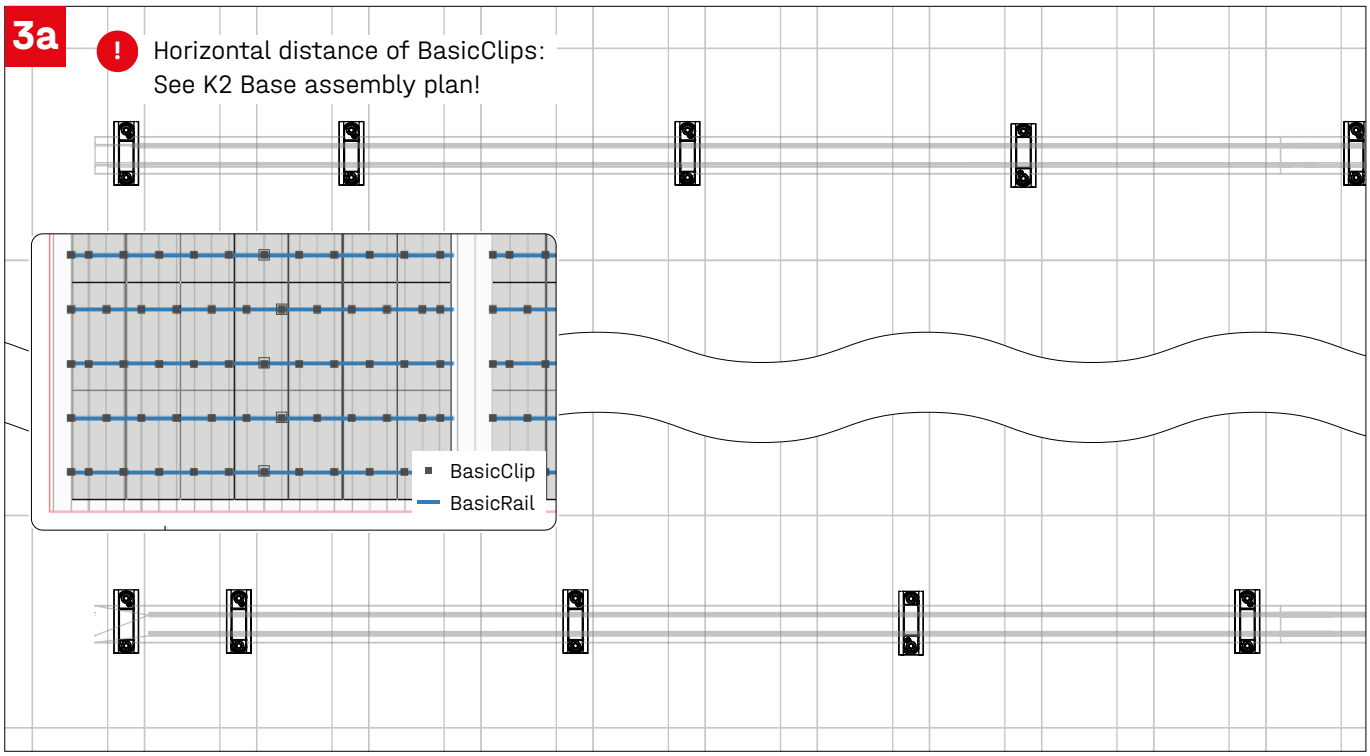


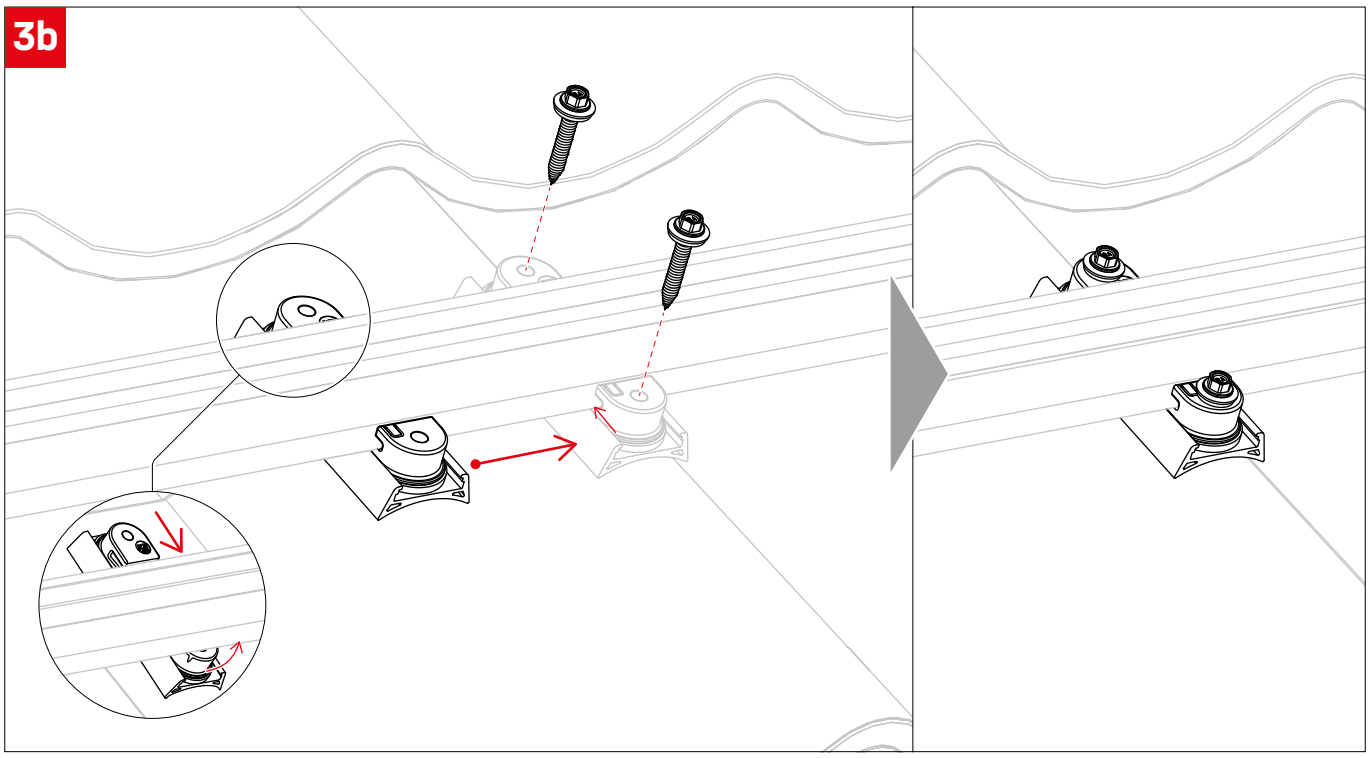


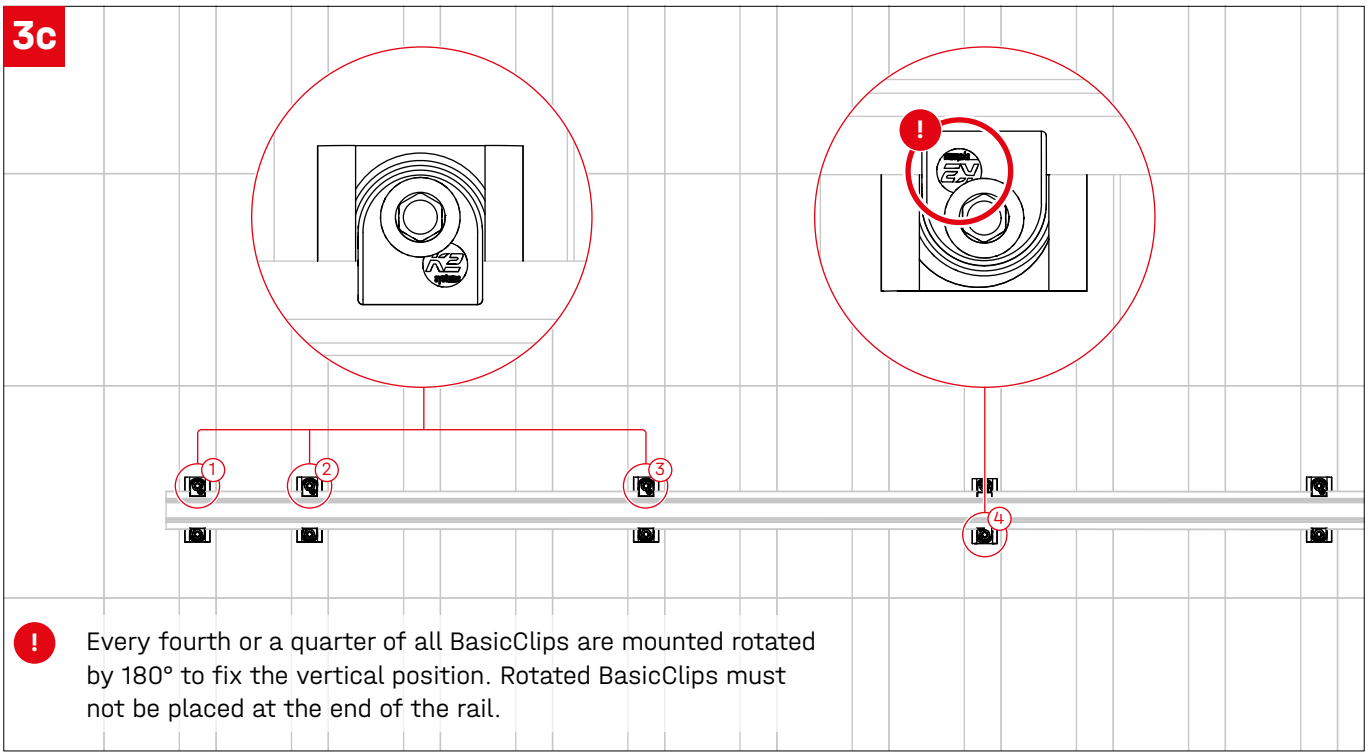
Inserting BasicRail



Installation of additional BasicClips using a CSM adapter

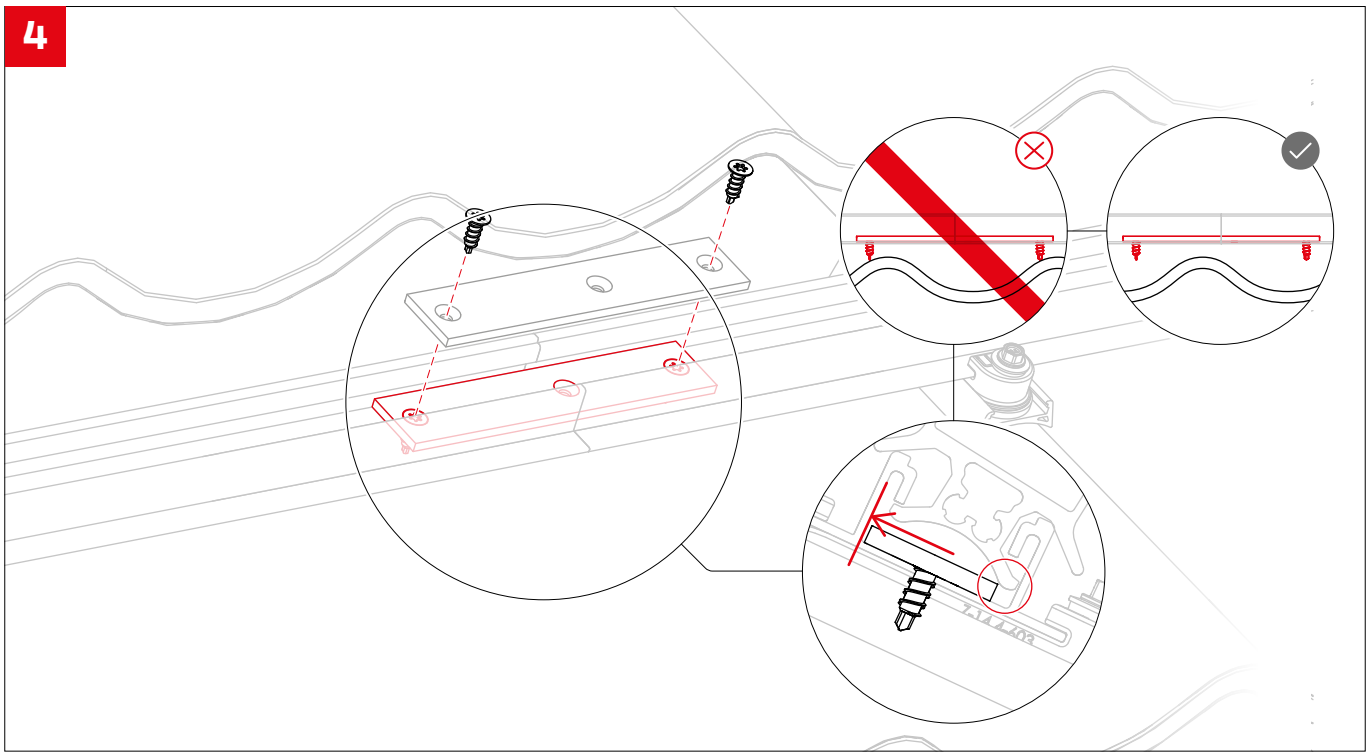




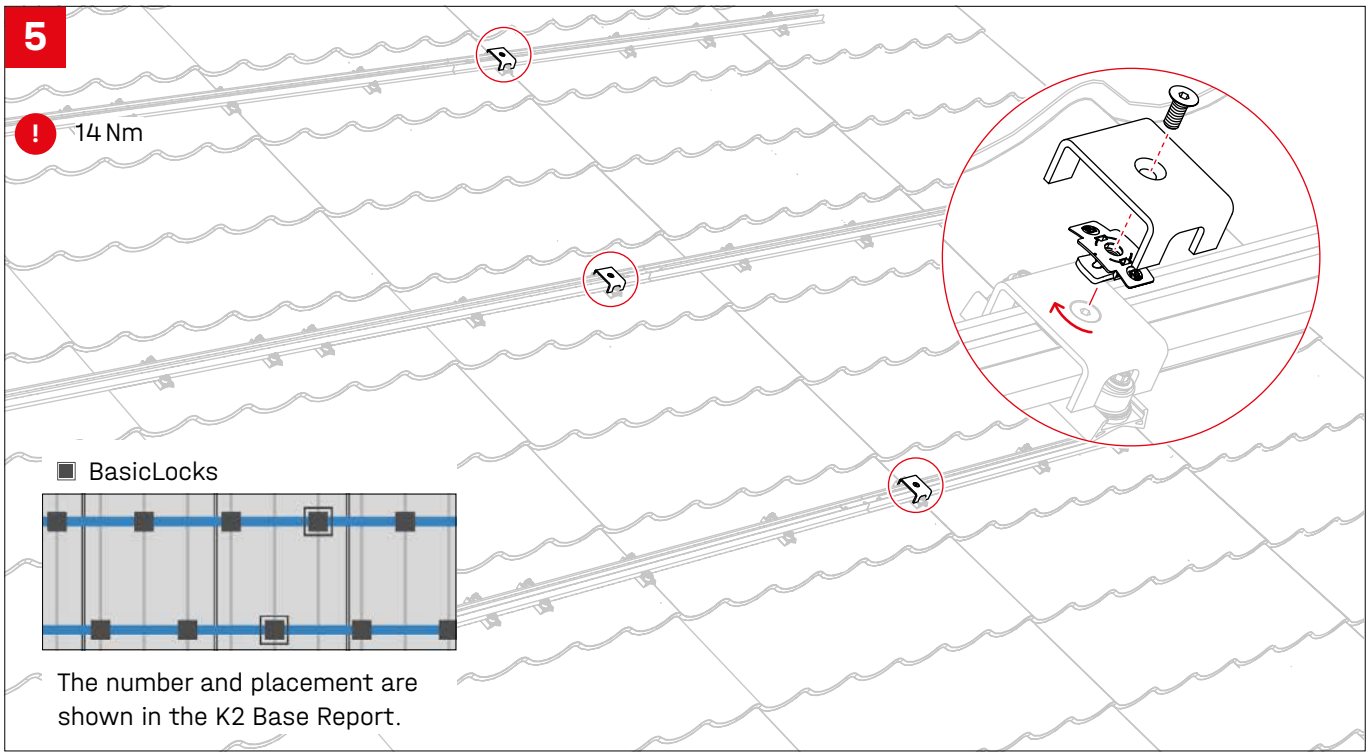


! Every fourth or a quarter of all BasicClips are mounted rotated by 180° to fix the vertical position. Rotated BasicClips must not be placed at the end of the rail.

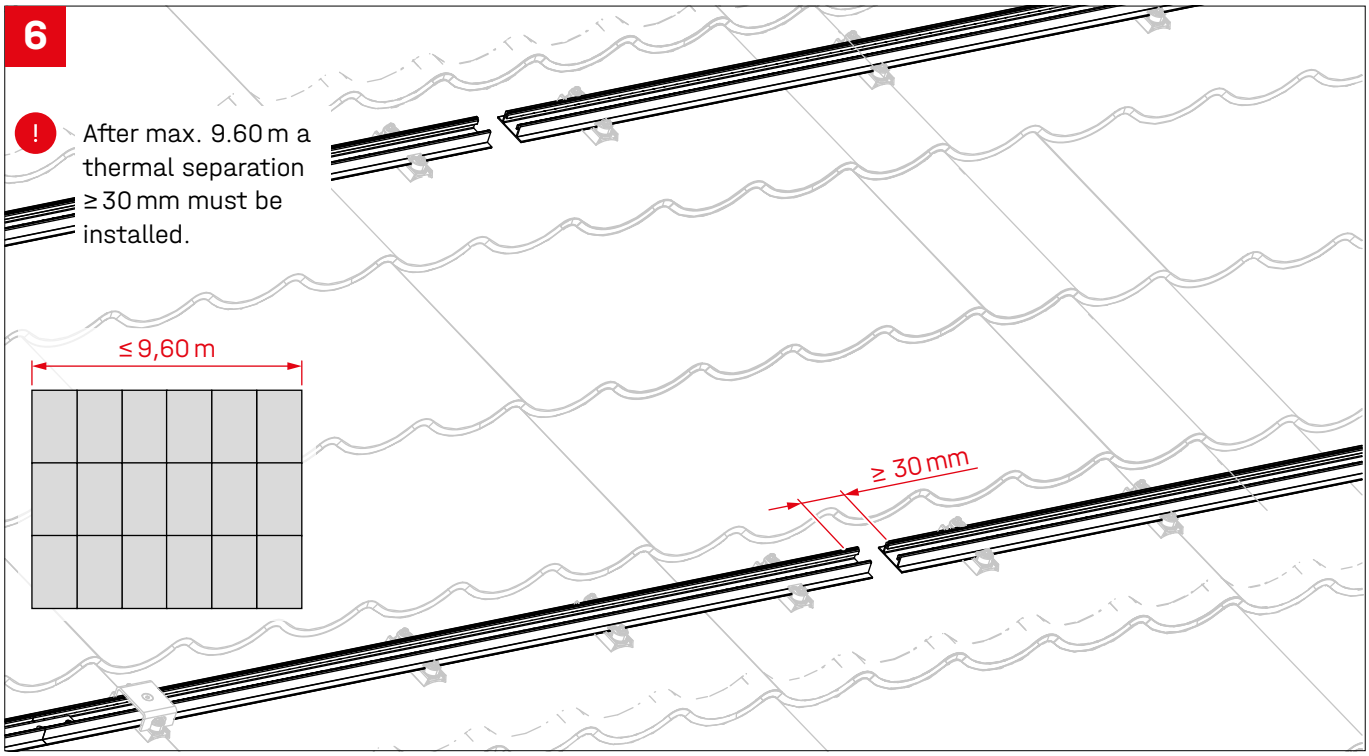
BasicRail rail connector



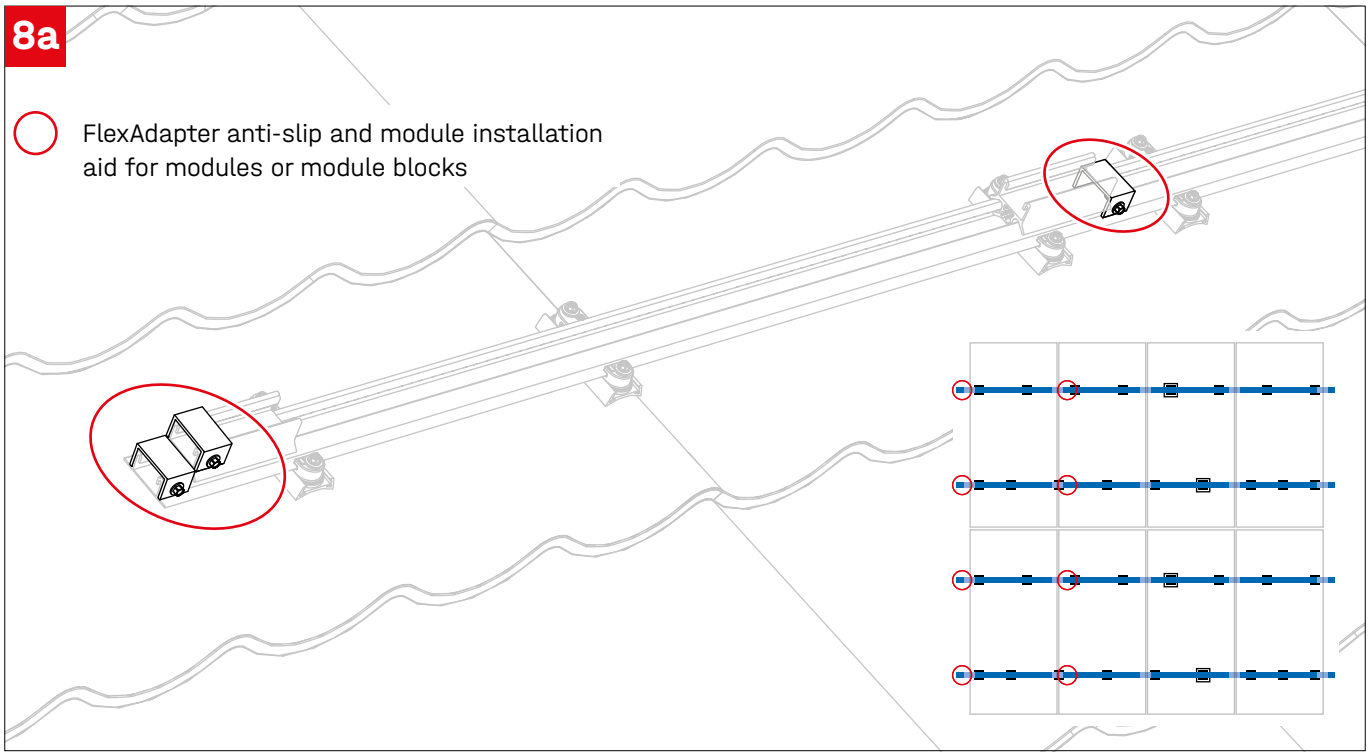
Placement of BasicLocks

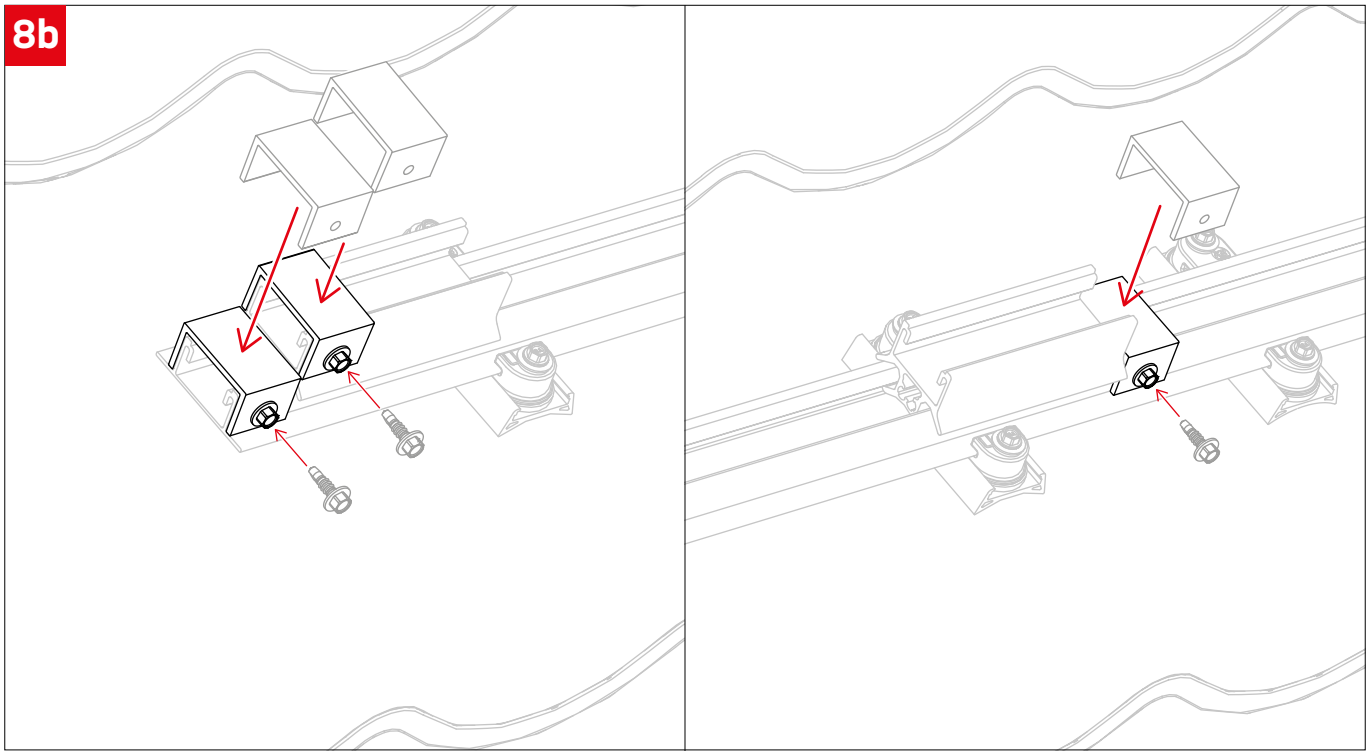


Thermal separations

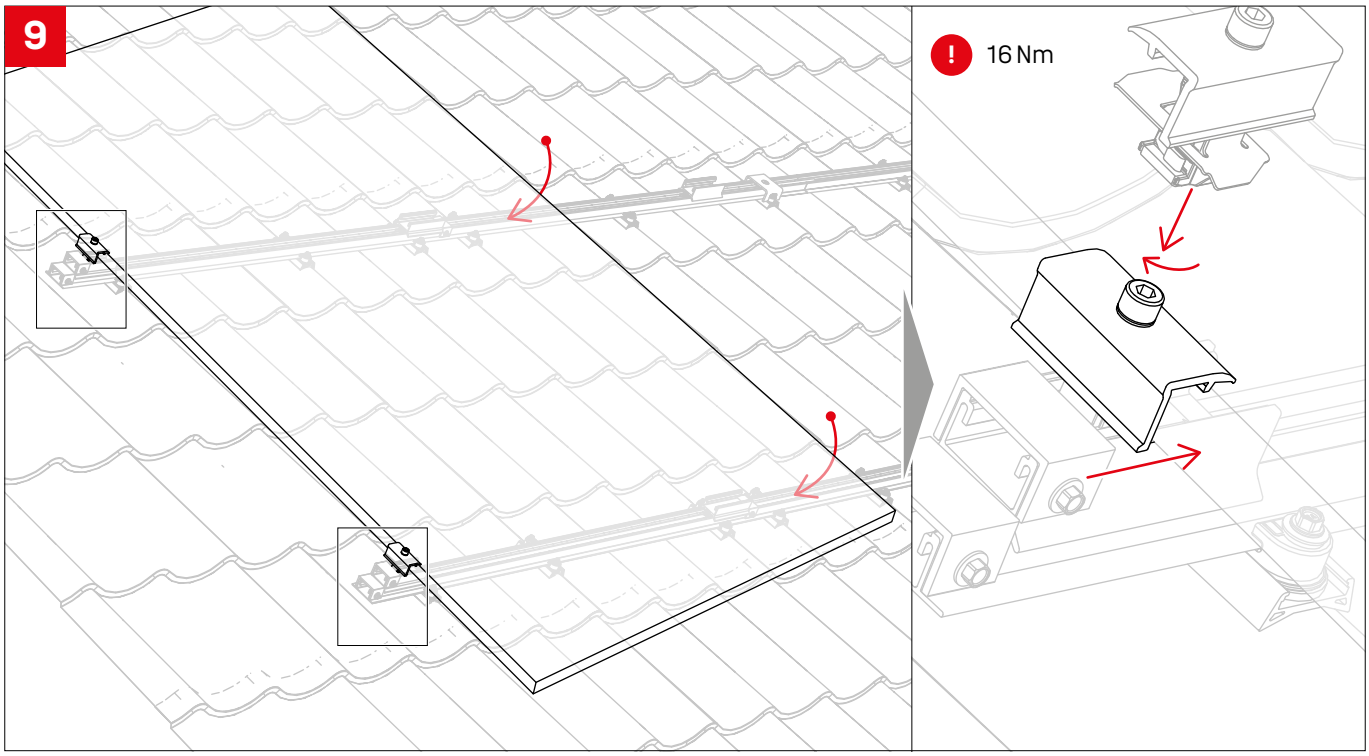


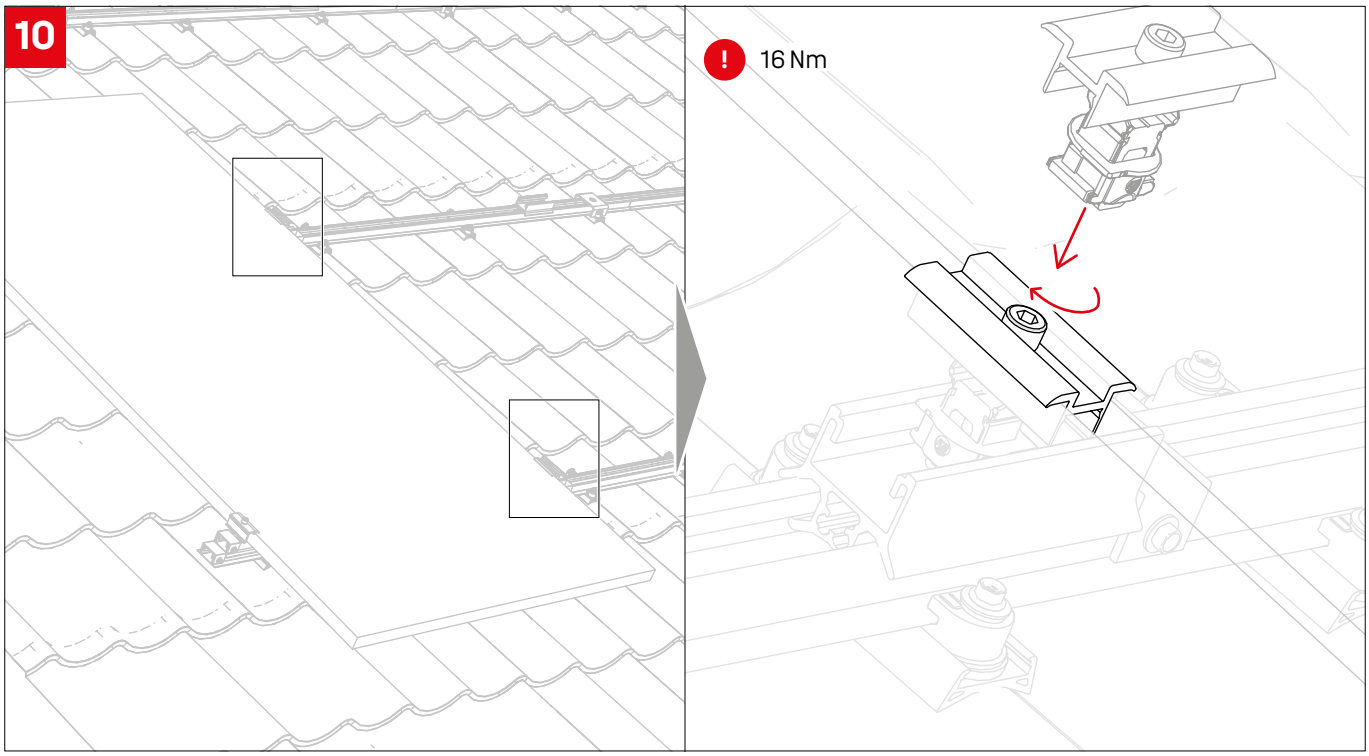
Positioning and securing the FlexAdapter


8a
FlexAdapter anti-slip and module installation aid for modules or module blocks


8b

Module assembly





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**
- **Service Hotline: +49 (0)7159 42059-0**

Our General Terms of Business apply. Please refer:
k2-systems.com

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BasicRail FlexAdapter Assembly EN V1 | 0626 · Subject to change
Product illustrations are exemplary and may differ from the original.