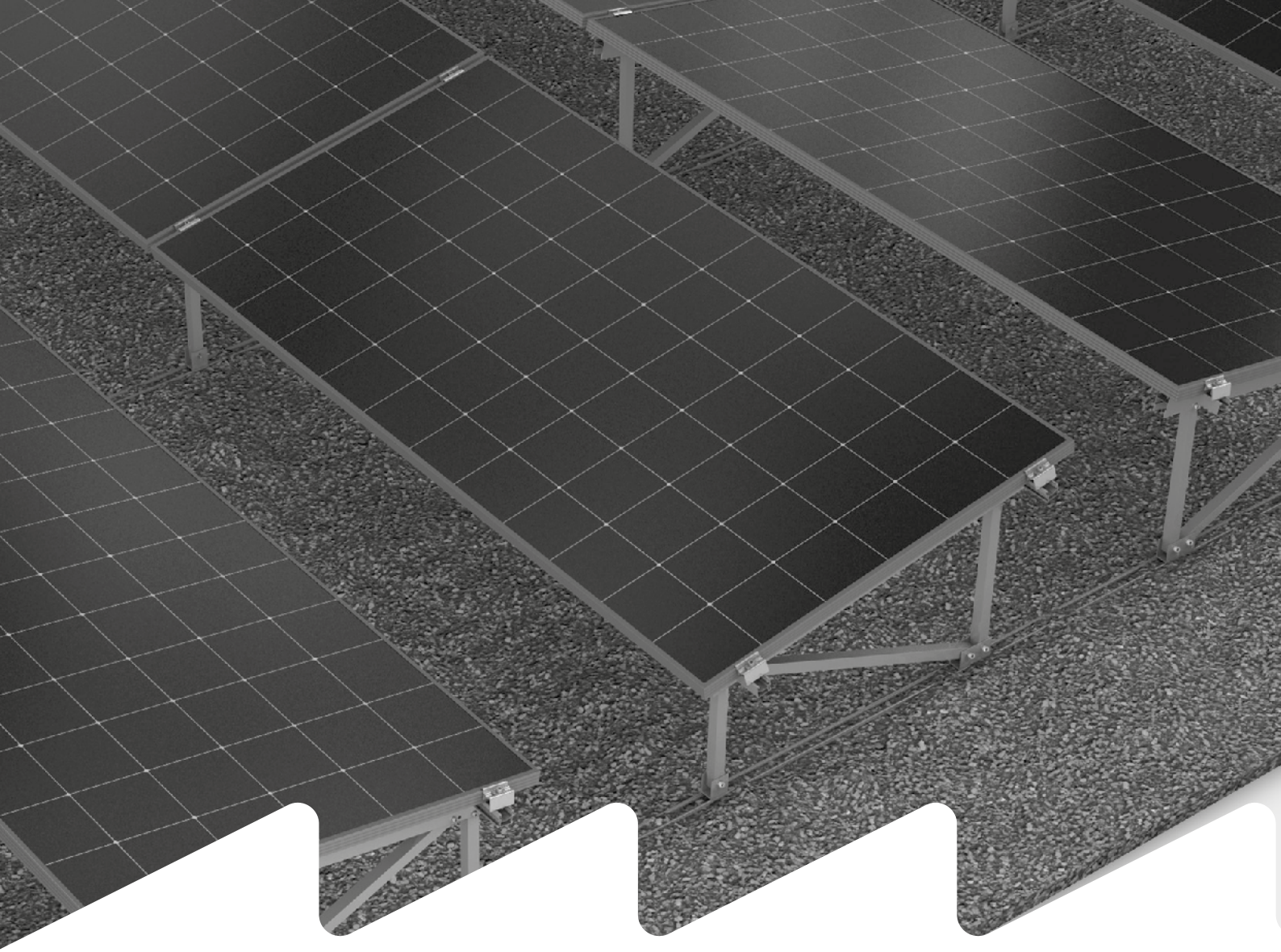


Assembly Manual

GreenRoof Vento System

Connecting Strength

k2-systems.com

Content

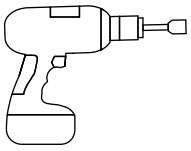
- **Tools overview** 3
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Quality tested - several certifications

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.

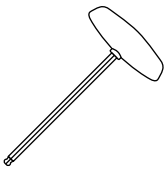
Please find our quality and product certificates under:
k2-systems.com

Tools overview



6 mm

8 + 13 mm

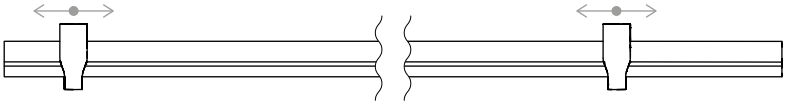


6 mm

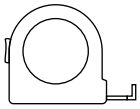


6 - 30 Nm
(4.5 - 22.2 lb-ft)

6 mm



Dome Speed Spacer 2,50 2004129
Distance template for module lengths

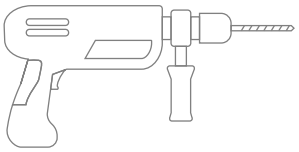


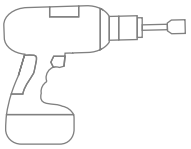
≥ 3,0 m



≥ 6,0 m

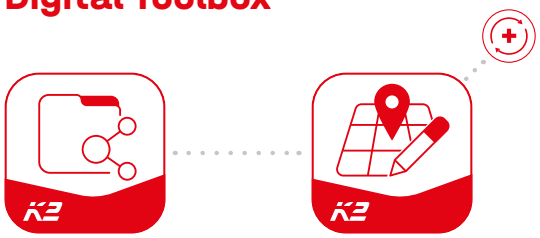
Optional for mounting on concrete blocks





T30

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 other manufacturers. With the K2 DocuApp, project documentation is done quickly and easily - without annoying paperwork.

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 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.
  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 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

- This system can be positioned on all common flat roofs with a pressure-resistant base and a roof pitch of ≤ 5° with ballast.
- For roof pitches > 3°, we recommend burying the stones or PE base plates used under the modules.

Static requirements

- It is essential to check that the roof structure has sufficient residual load capacity and that the pressure capacity of the roof insulation (where present) is not exceeded.
- Permissible module dimensions: length 1400 – 2400 mm, width 950 – 1350 mm

Important mounting instructions

Mounting system

- The elevation angle of the GreenRoof Vento system is either 10° or 15°
- A minimum distance to the roof edge of 600 mm must be observed. The minimum distance can be reduced for building heights of less than 5 metres.
- It can be mounted with only two elevations
- A thermal separation (distance between module blocks) must be maintained in the direction of the base rail and module rows:
  · Base rail: 17.5 m
  · Module row: 16.5 m
- In the event of exceptional circumstances (such as storms, heavy rain, earthquakes, etc.), the system should be checked by a specialist. Should an inspection find damage or plastic deformation (such as in the module clamp area) the components must be replaced.

Modules and clamping

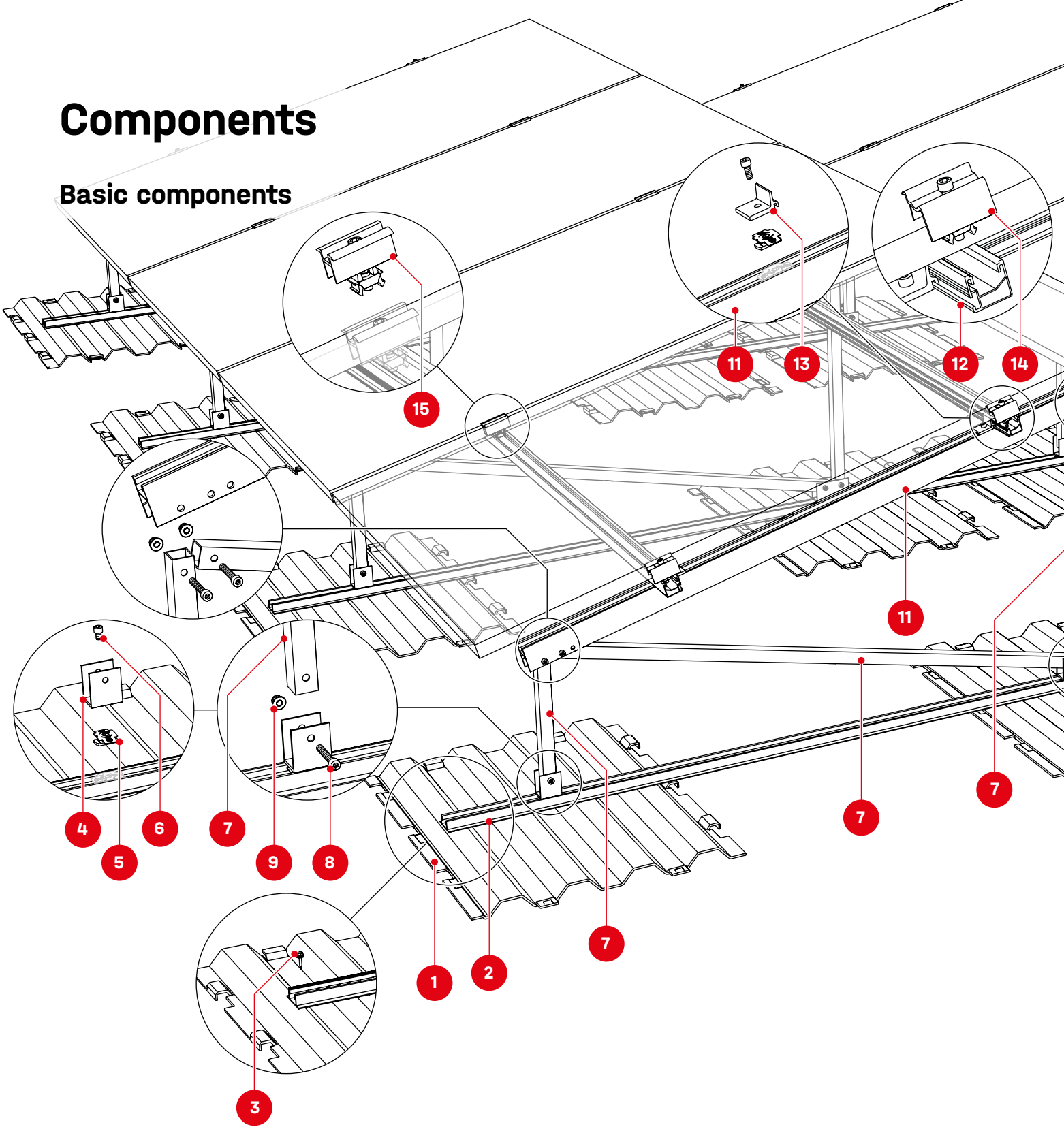
- Tightening torque of 16 Nm for all module clamps.
- Adhere to module manufacturer recommendations for clamping area and module installation (see module manufacturer instructions).

General information

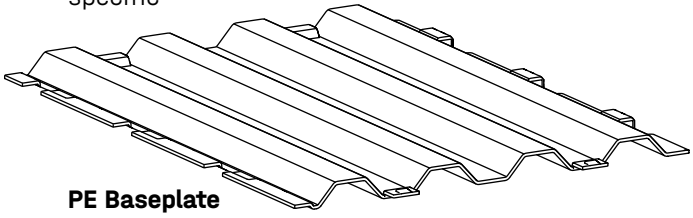
- External influences that act on this system are only reflected in the design of the ballast to a limited degree. For instance, unevenness, thermal elongation, moss, water accumulation and ageing of the sheeting cannot be considered, although these factors might also precipitate system displacement under certain circumstances. We recommend you check whether the system requires additional mechanical attachment, as the impact of these influences may be greater on slanted roofs.
- It is important to ensure that the rain water flow is not hindered.
- On-site general standards and regulations for lightning protection must be observed and consultation with a specialist to create a lightning protection concept is recommended (use lightning protection clamp if necessary).

Components

Basic components



1 Item number project specific



PE Baseplate

2 Item number project specific

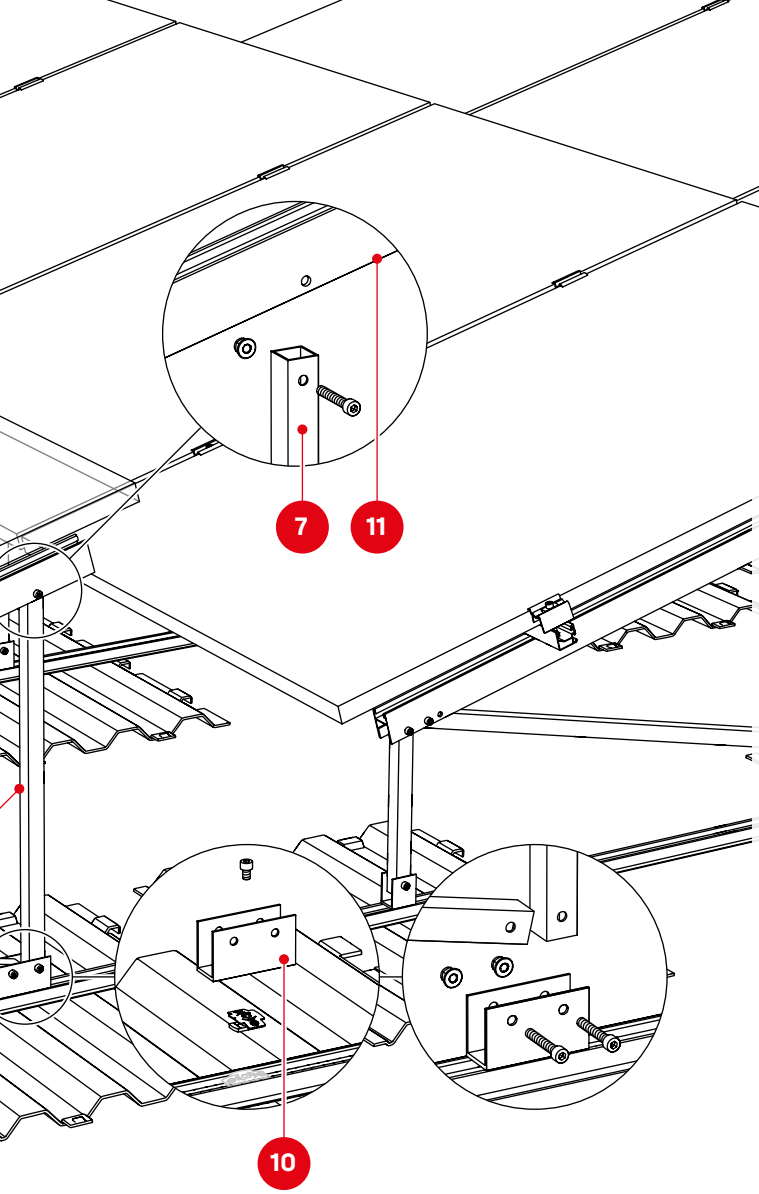


BasicRail

3 1000212



Self-tapping screw with sealing washer, 6×25



4 2003271



TiltUp Vento Foot

5 1001643



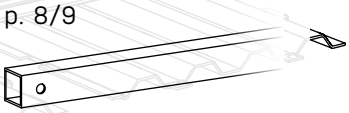
MK2 insertion nut

6 2001729



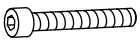
Hexagonal socket head cap screw M8 × 20

7 Item number project specific, see p. 8/9



GreenRoof Brace

8 2002184



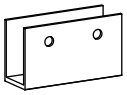
Hexagonal socket head cap screw M8 × 55

9 1000043



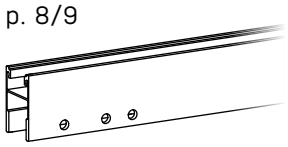
Hexagon Flange nut with serration M8

10 2004184



GreenRoof Foot

11 Item number project specific, see p. 8/9



GreenRoof Beam

12 Item number project specific



SingleRail

13 2003145



Climber 36/50 Set

14 2003451 / 2003452



K2 Clamp EC 30-40, Hybrid silver / black

2002514 / 2002589



OneEnd 30-42 mm, silver / black

15 2004146 / 2004148



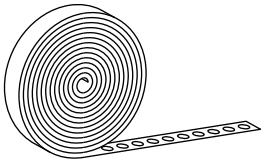
K2 Clamp MC 25-40, silver / black

2003071 / 2003072



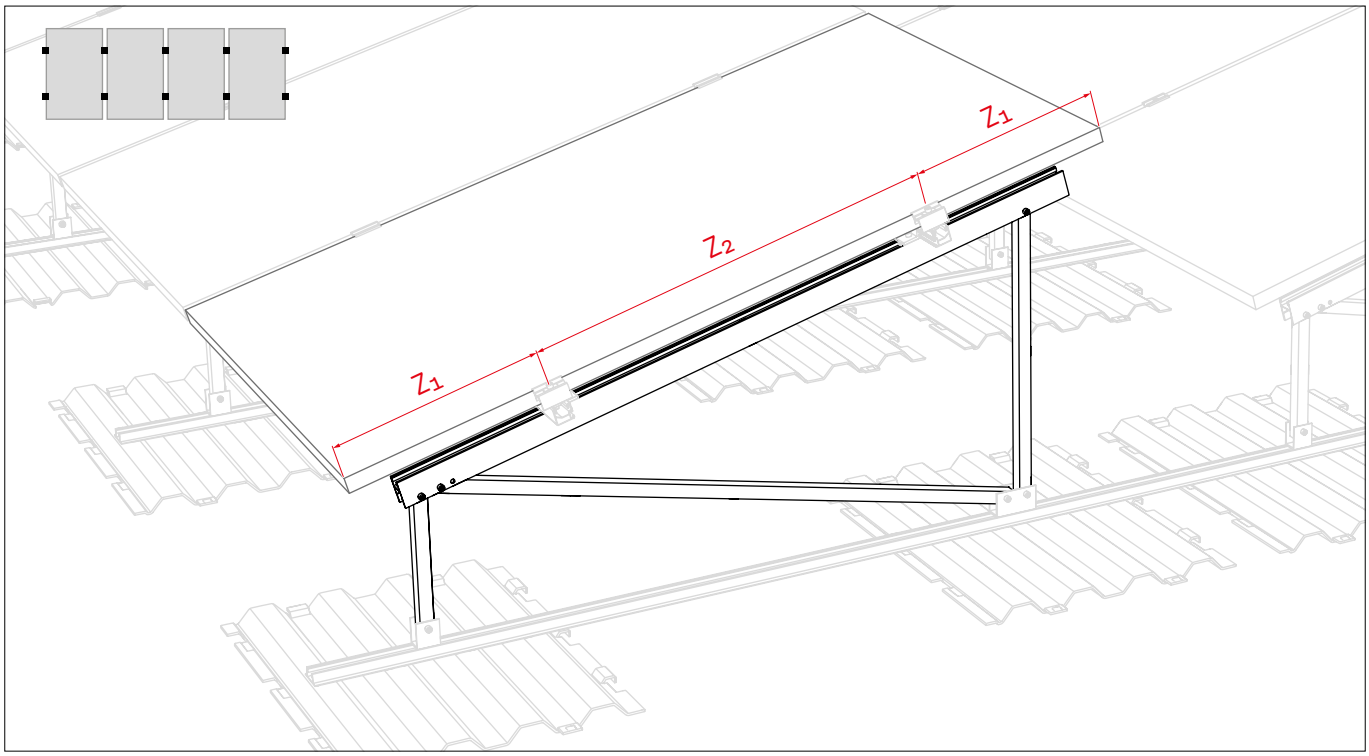
OneMid 30-42 mm, silver / black

16 2002735



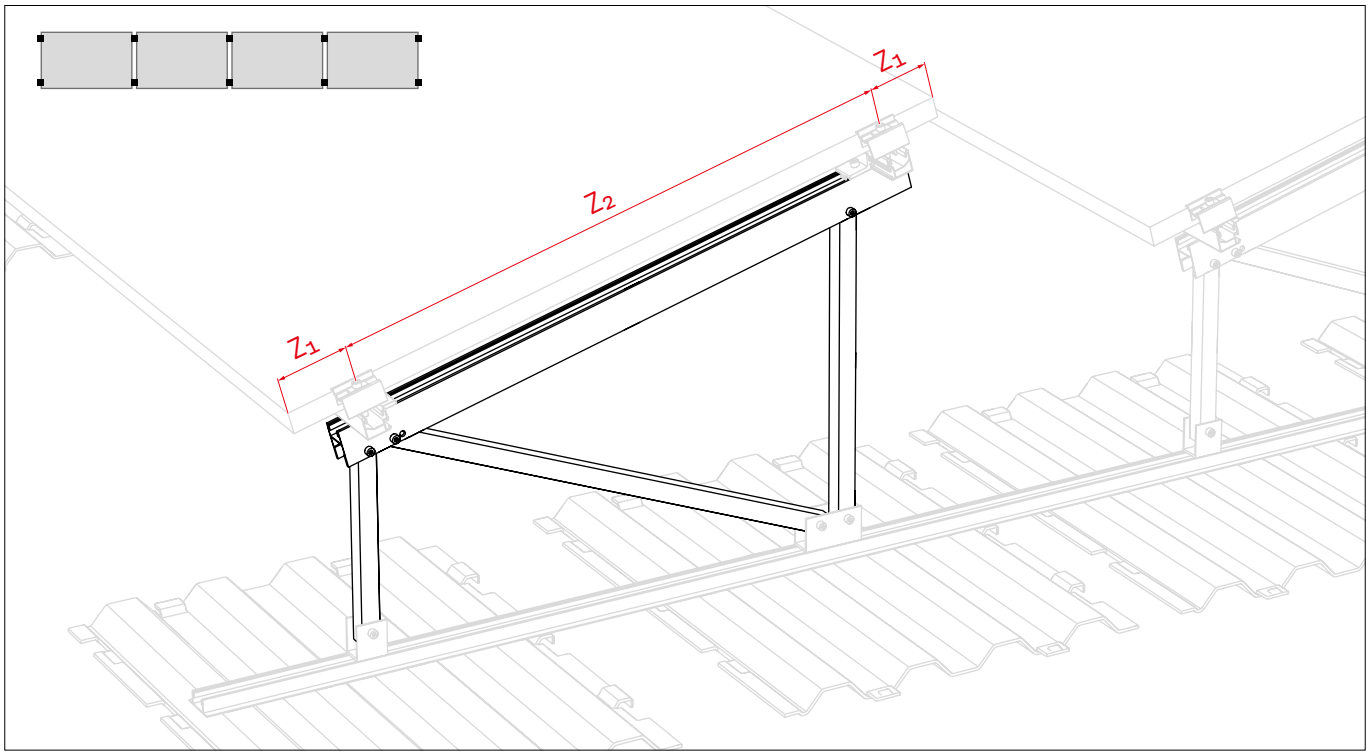
Metal perforated tie for wind bracing

Item numbers Brace / Beam Portrait



Inclination	Z_2	GreenRoof Brace		GreenRoof Beam	
	Z_2 = Module length - 2 × Z_1	Length [mm]	Item No.	Length [mm]	Item No.
10°	$Z_2 \leq 961$	332	2004185	1,000	2004194
		480	2004186		
		832	2004191		
	$Z_2 > 961$	332	2004185	1,600	2004195
		584	2004188		
		1,385	2004193		
15°	$Z_2 \leq 961$	332	2004185	1,000	2004194
		558	2004187		
		832	2004191		
	$Z_2 > 961$	332	2004185	1,600	2004195
		708	2004189		
		1,385	2004193		

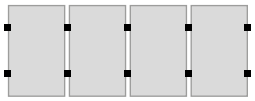
Item numbers Brace / Beam Landscape



Inclination	Z_2	GreenRoof Brace		GreenRoof Beam	
	Z_2 = **Module width** - 2 × Z_1	Length [mm]	Item No.	Length [mm]	Item No.
10°	$Z_2 \leq 961$	332	2004185	1,000	2004194
		480	2004186		
		832	2004191		
	$Z_2 > 961$	332	2004185	1,600	2004195
		584	2004188		
		1,385	2004193		
15°	$Z_2 \leq 961$	332	2004185	1,000	2004194
		558	2004187		
		832	2004191		
	$Z_2 > 961$	332	2004185	1,600	2004195
		708	2004189		
		1,385	2004193		

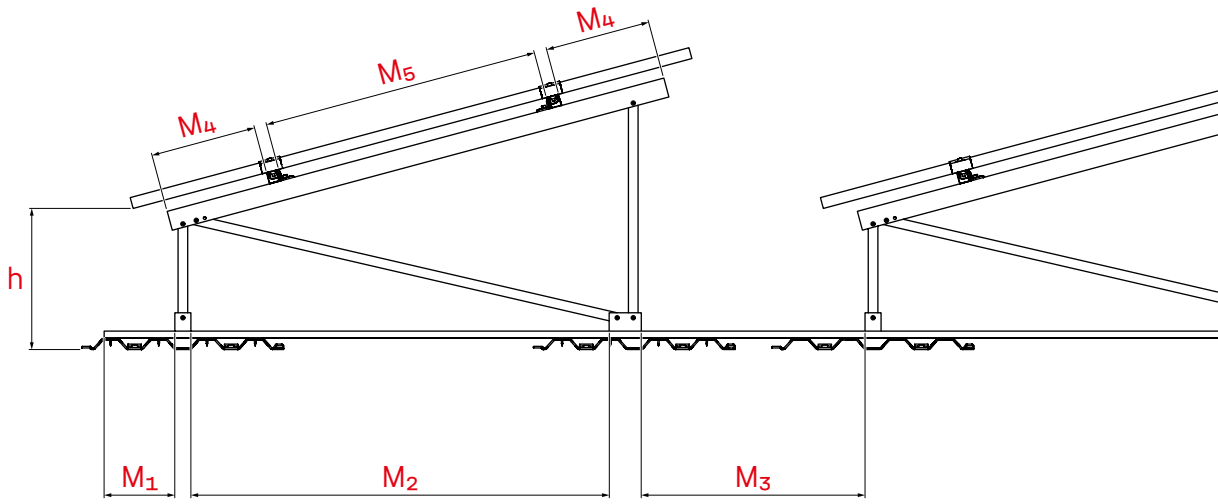
Assembly dimensions

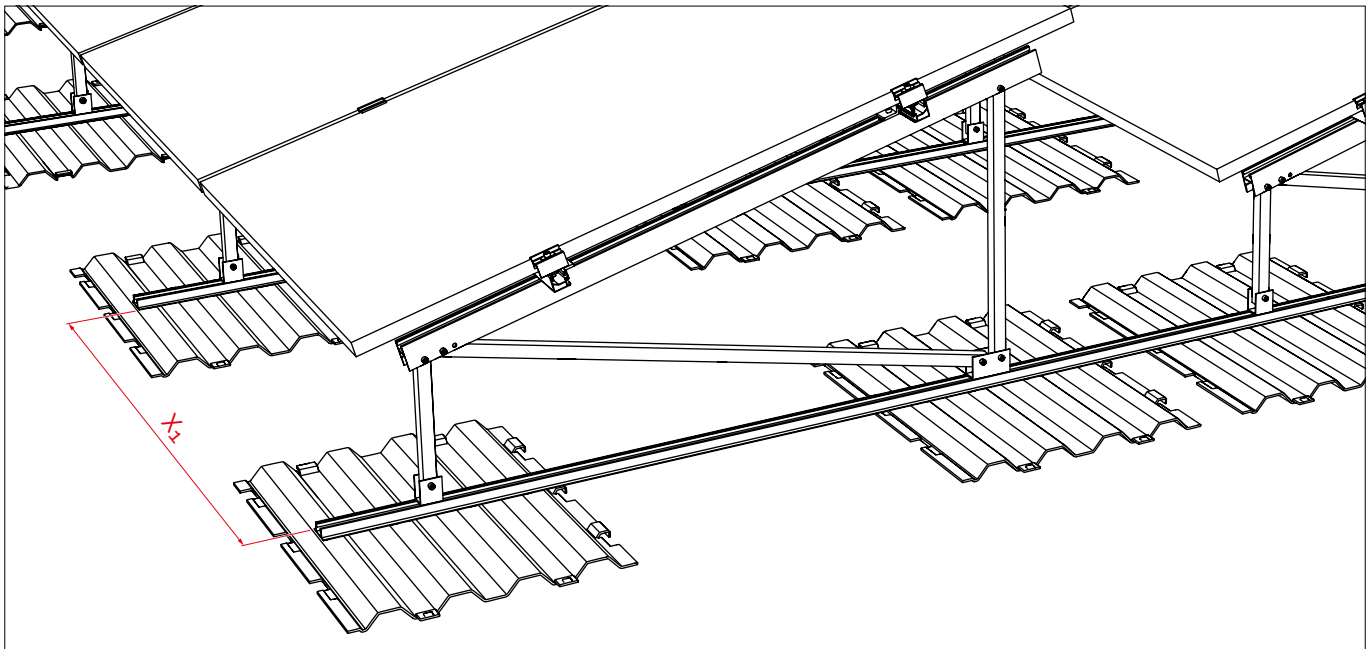
S-Shape Portrait



Mounting dimensions from K2 Base

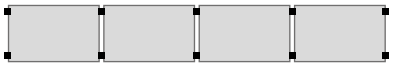
K2 Base calculates all the following dimensions automatically and outputs them in the project report.
Please only use these dimensions for the assembly.

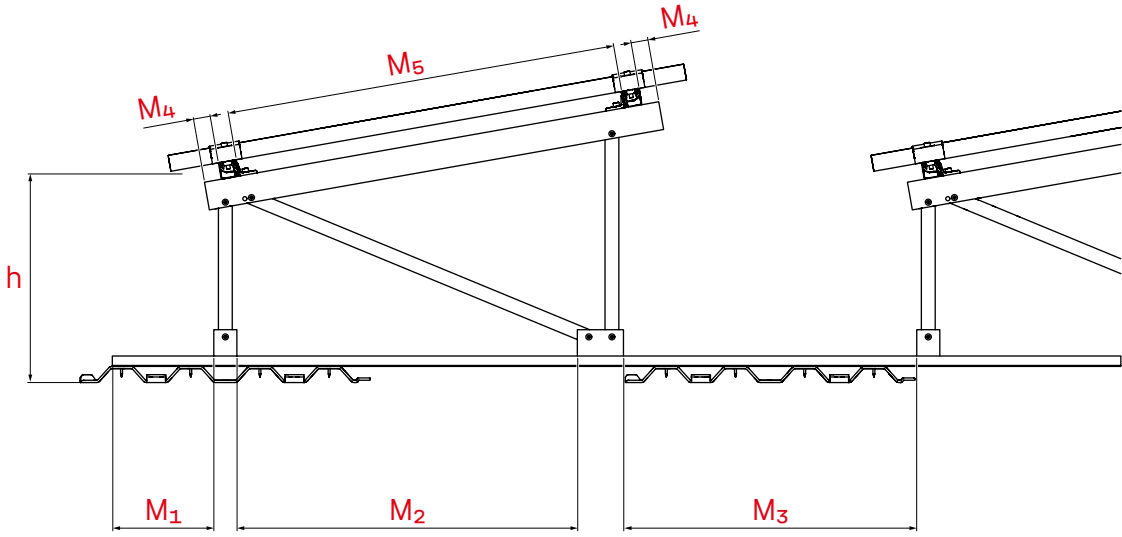


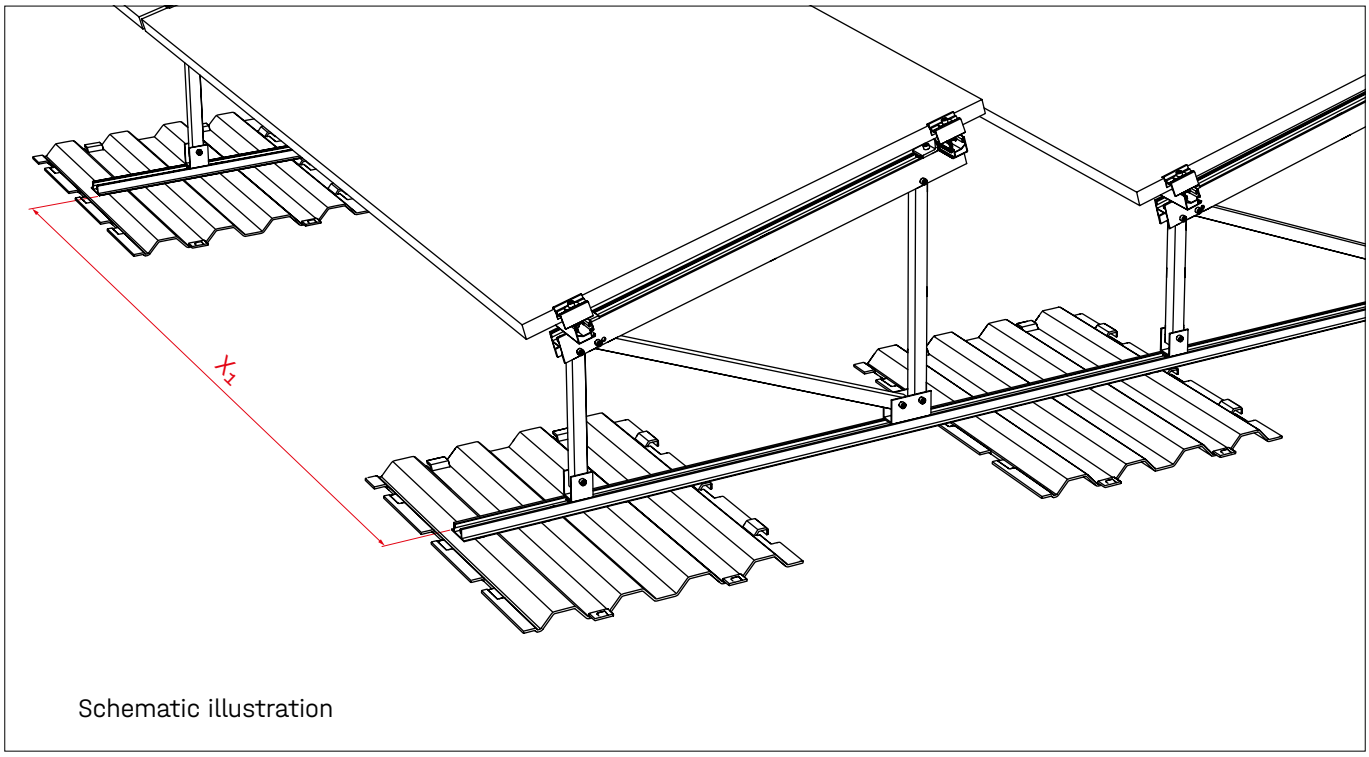


Schematic illustration

S-Shape Landscape

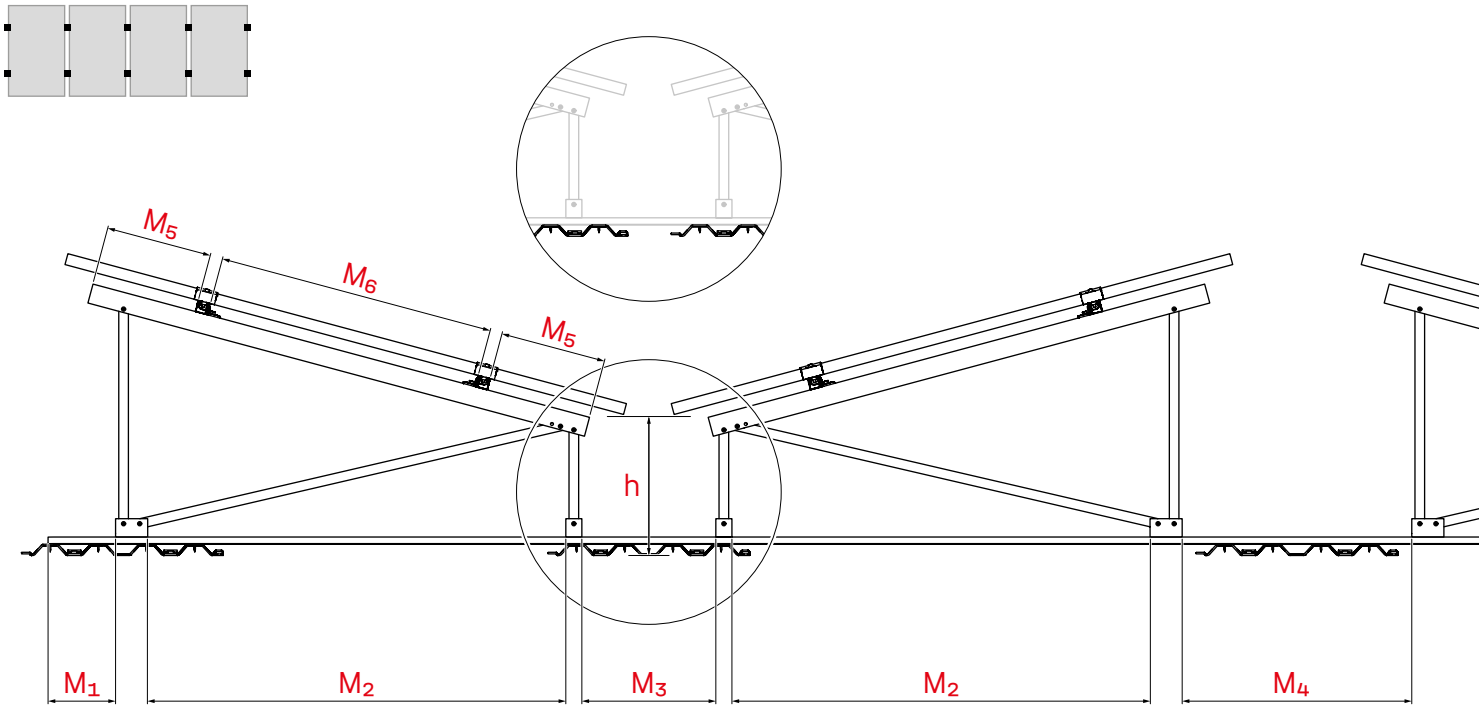


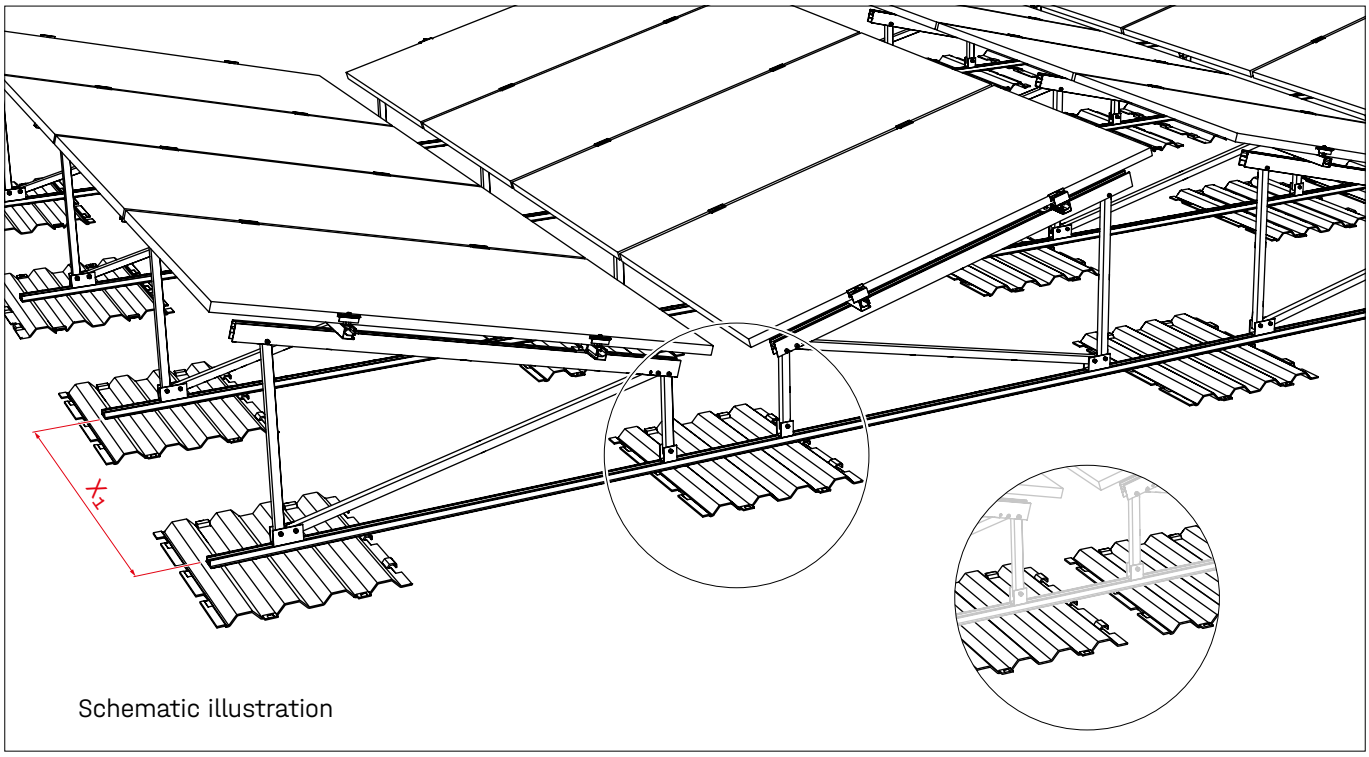




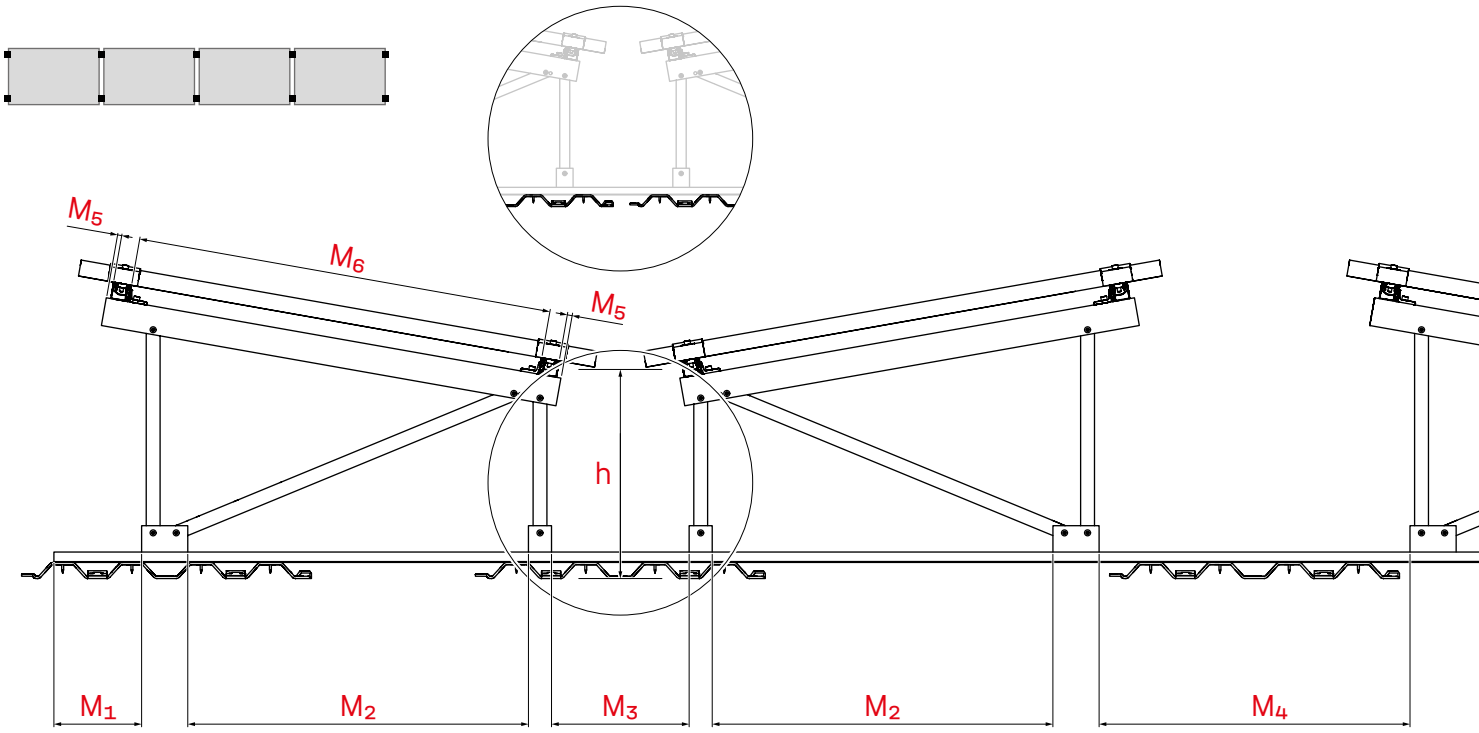
Schematic illustration

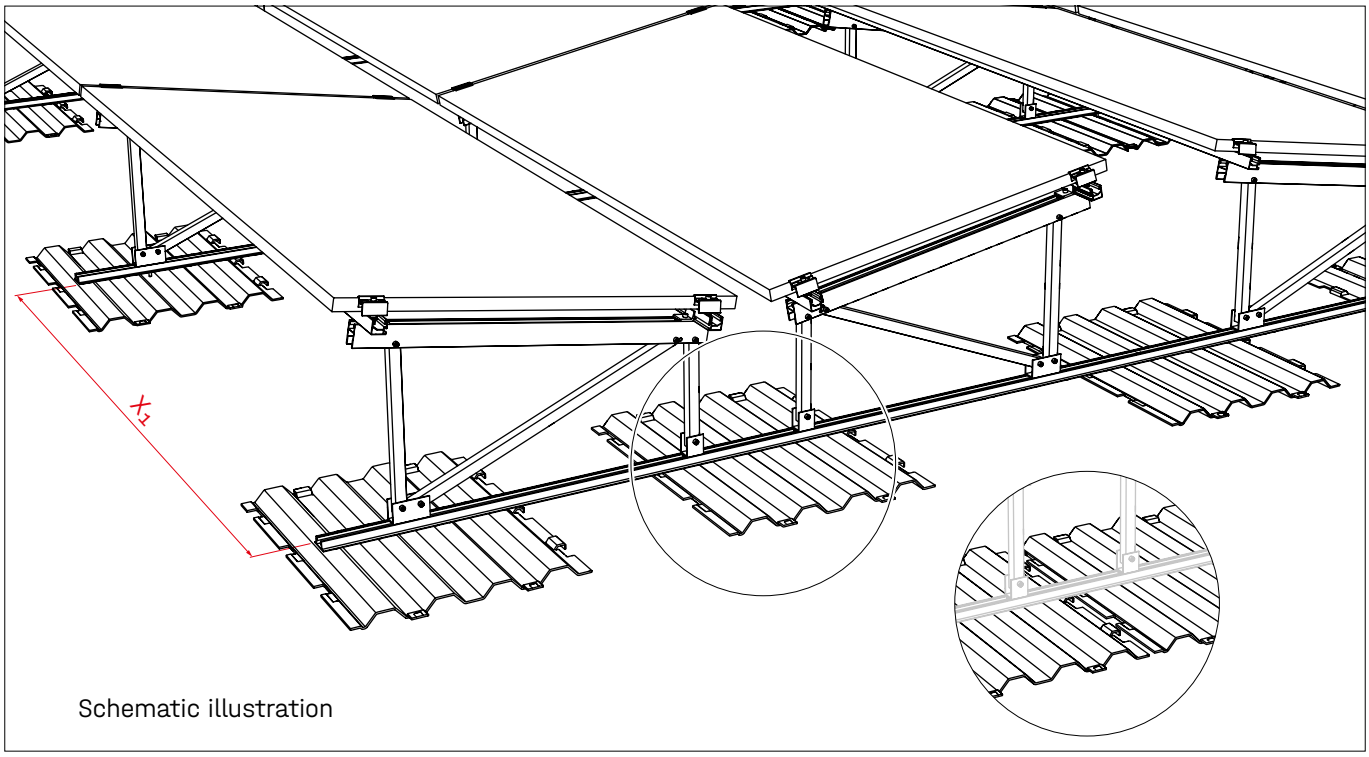
V-Shape Portrait





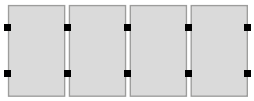
V-Shape Landscape

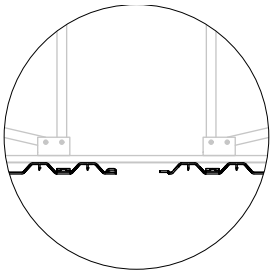


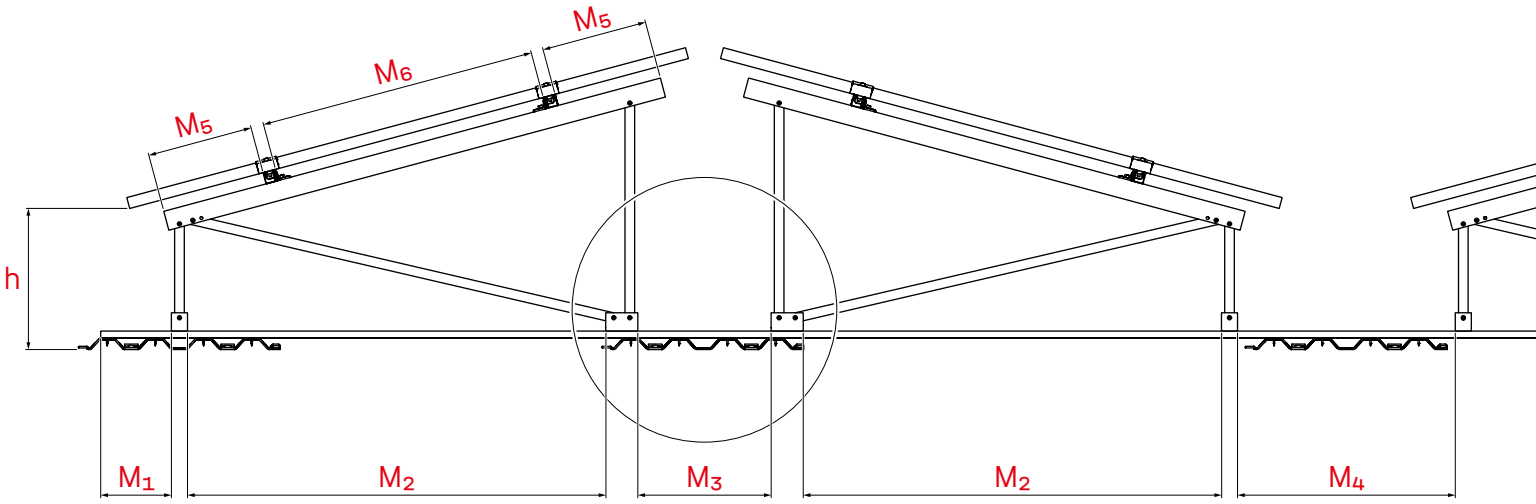


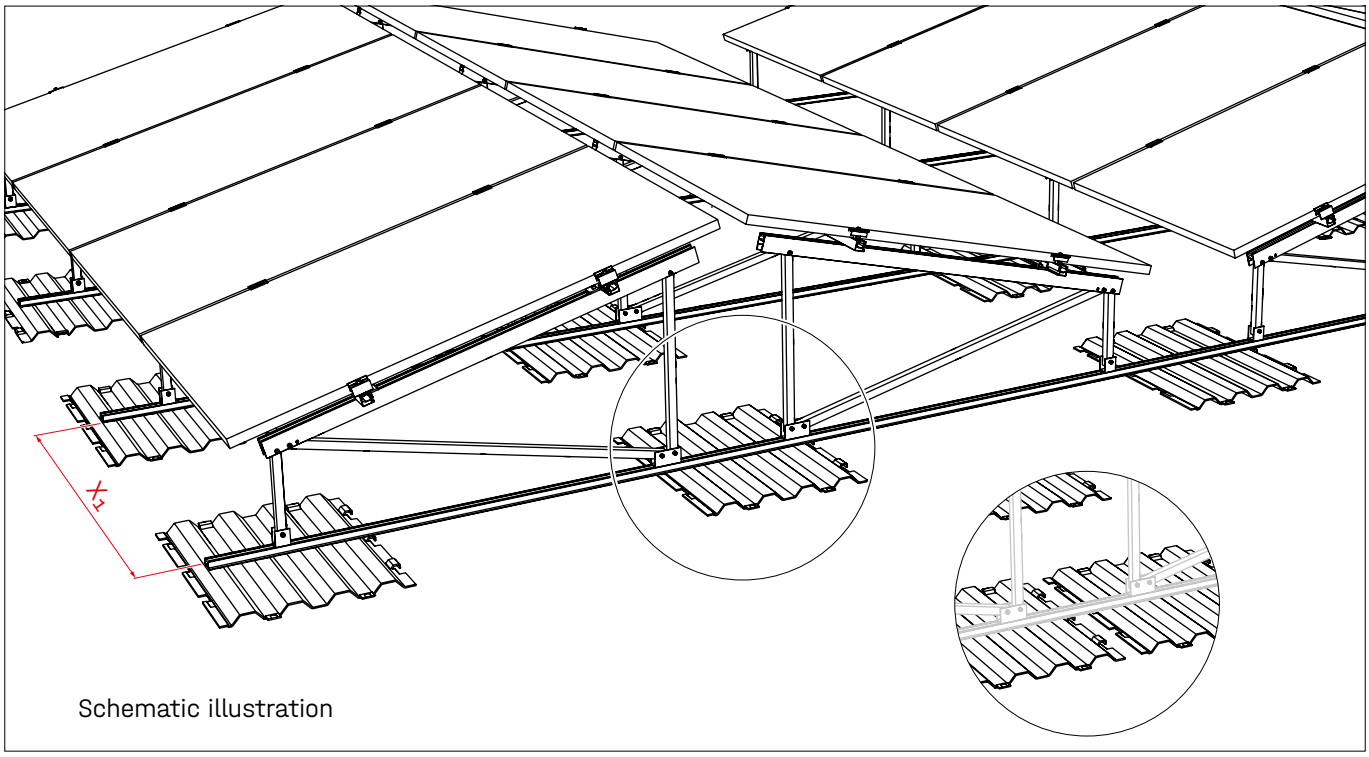
Schematic illustration

A-Shape Portrait



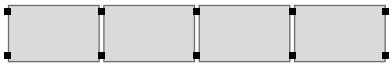


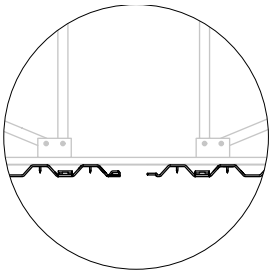


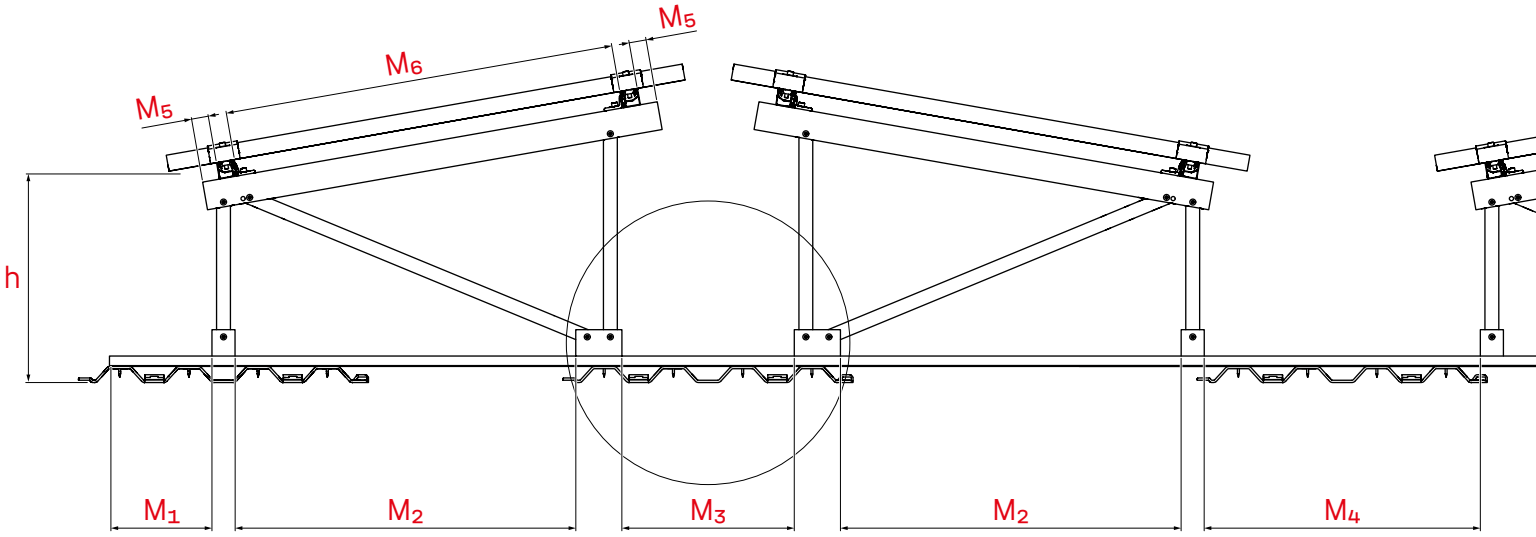


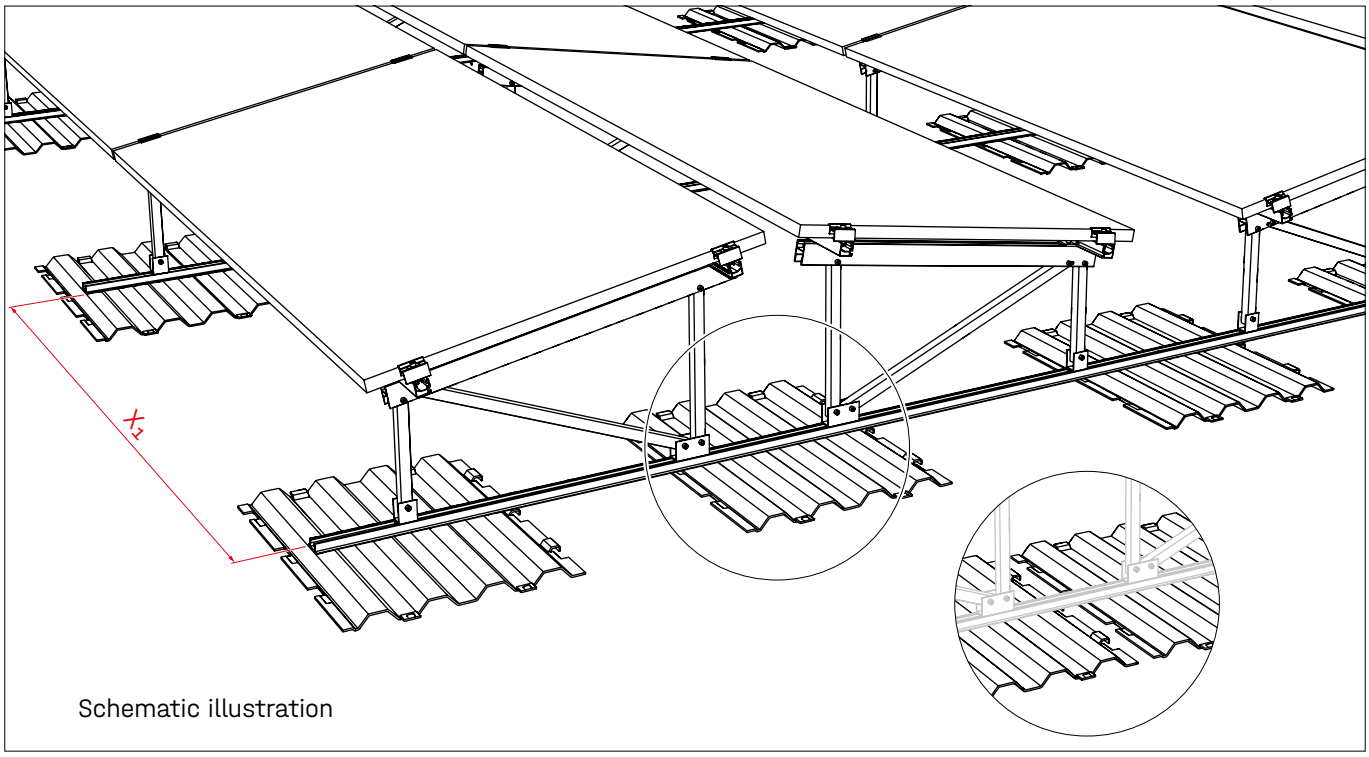
Schematic illustration

A-Shape Landscape

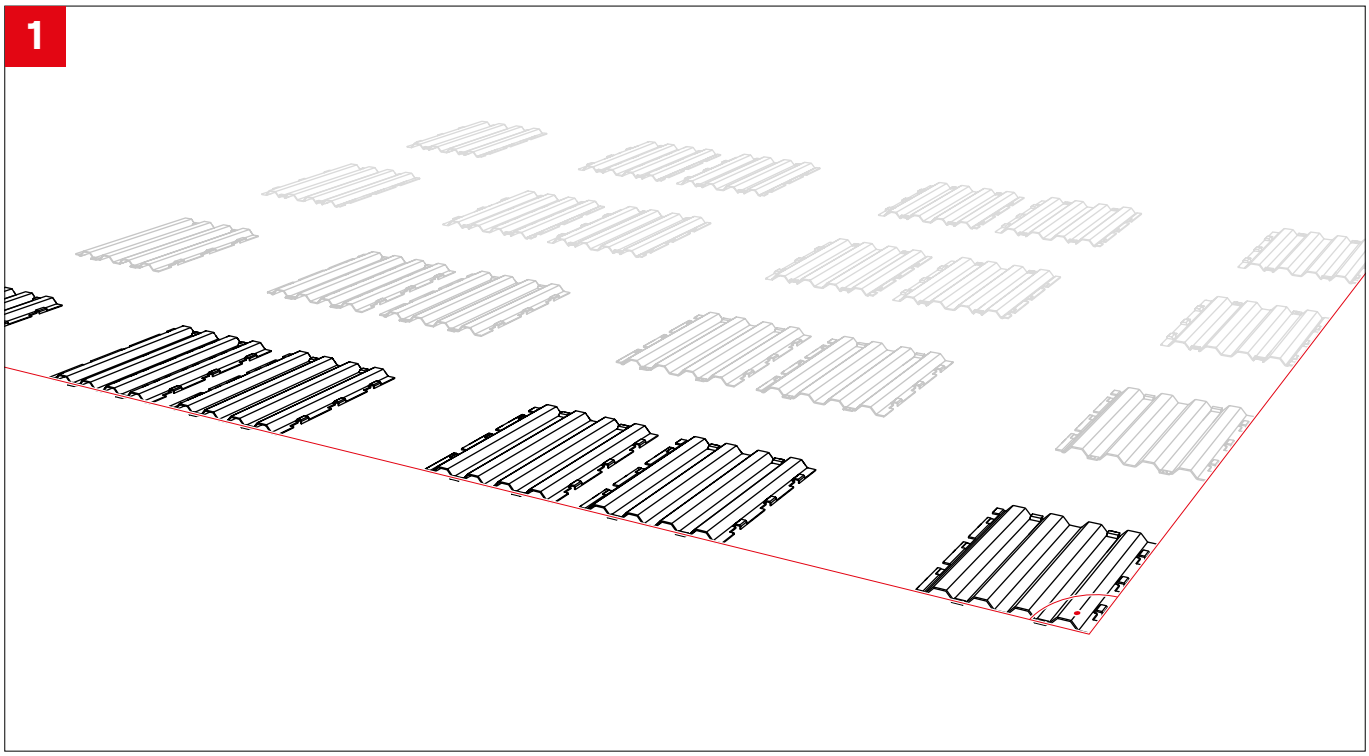




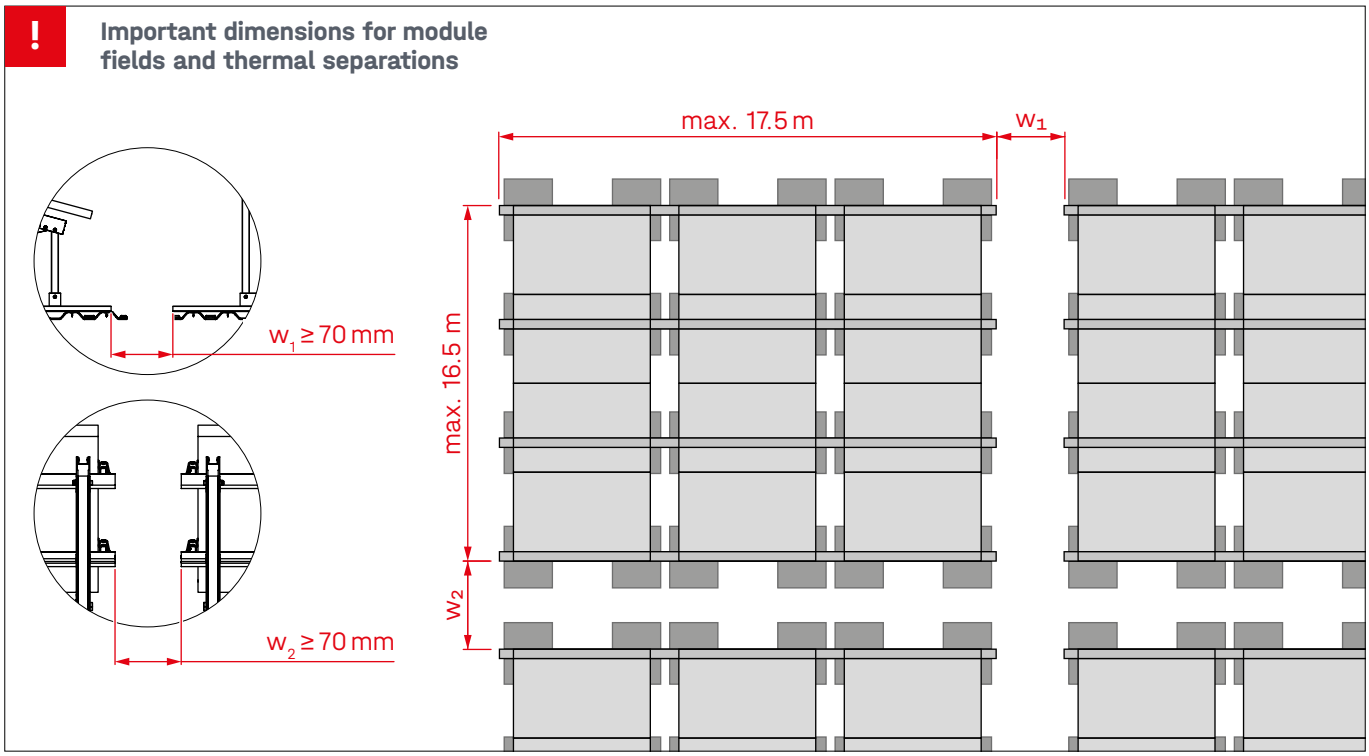




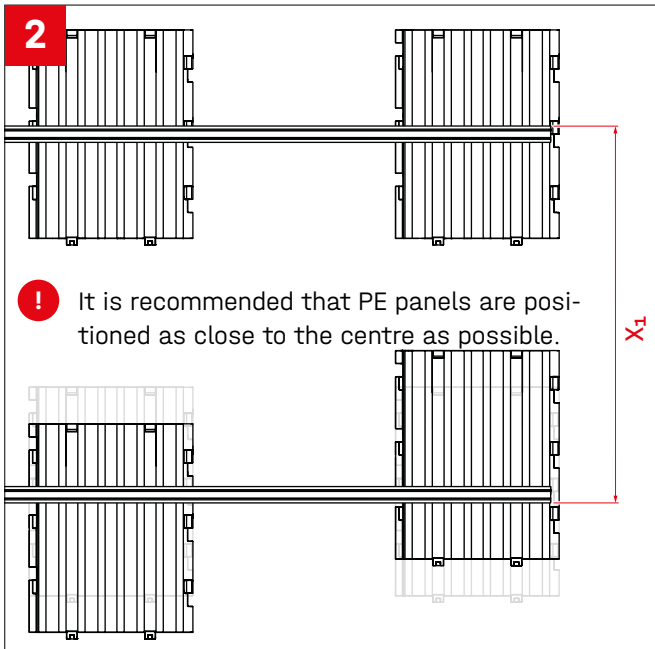
Assembly



Thermal separations

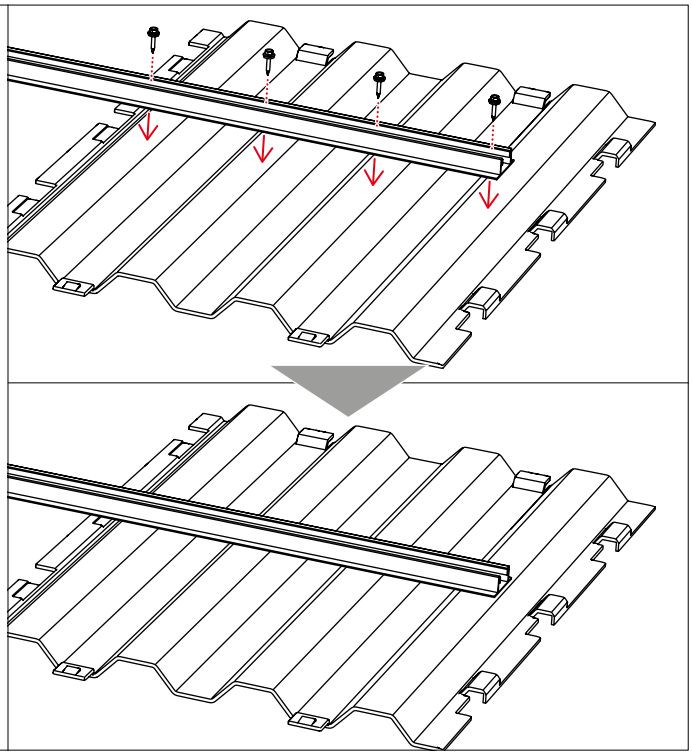


2



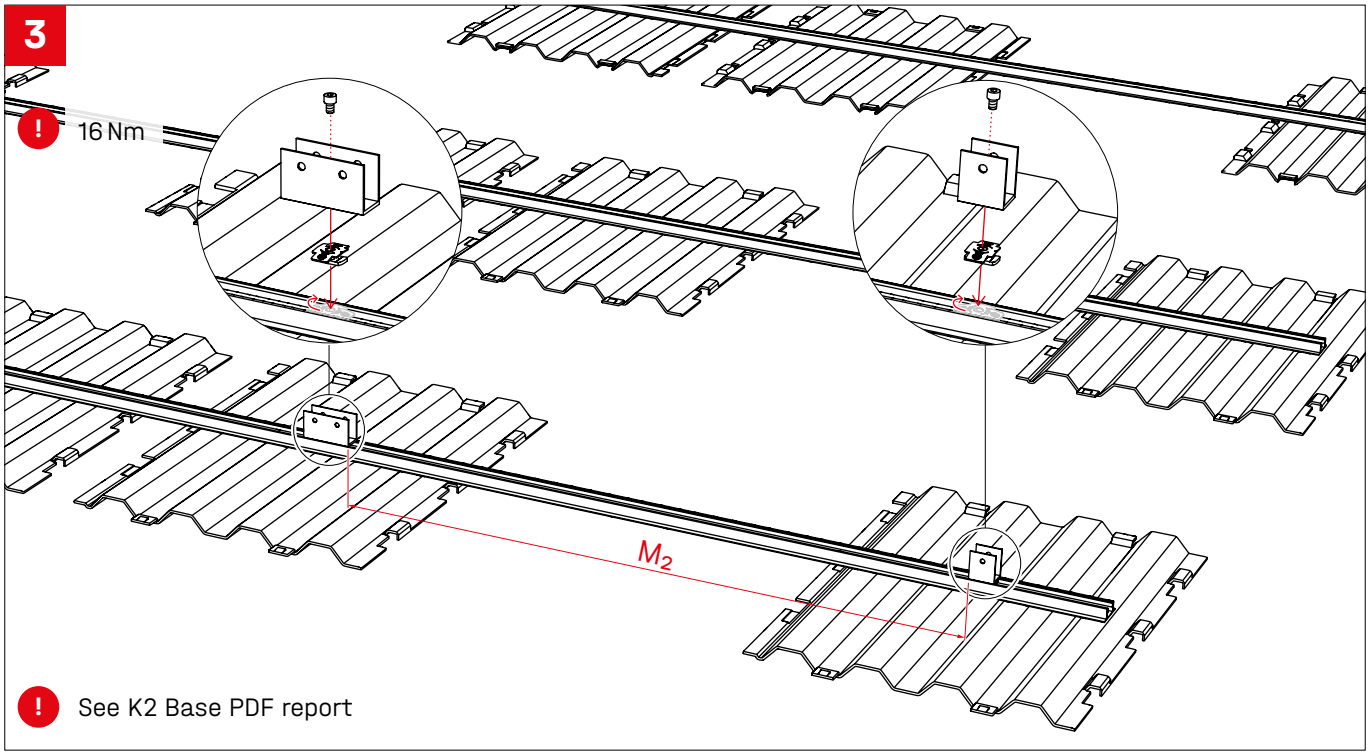
! It is recommended that PE panels are positioned as close to the centre as possible.

! If necessary, the PE panels can be retracted by ⅓ or ⅔.

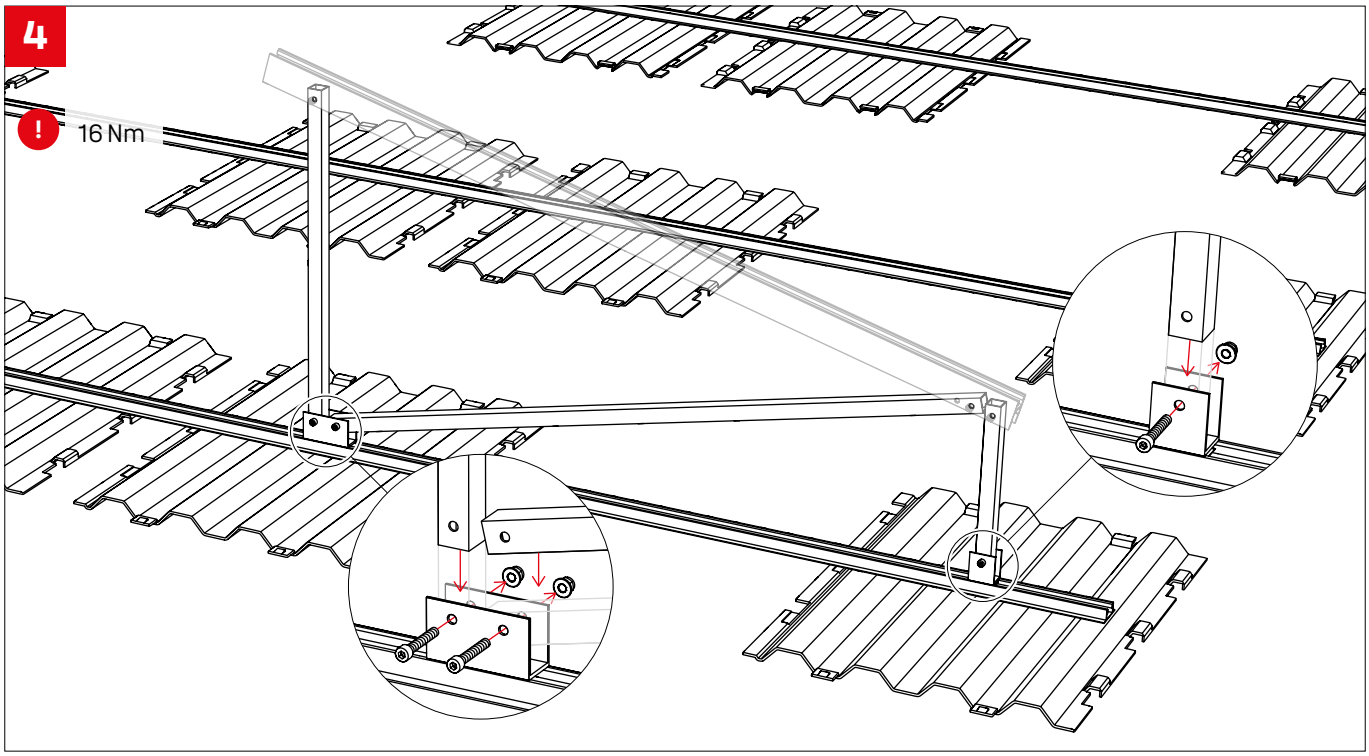


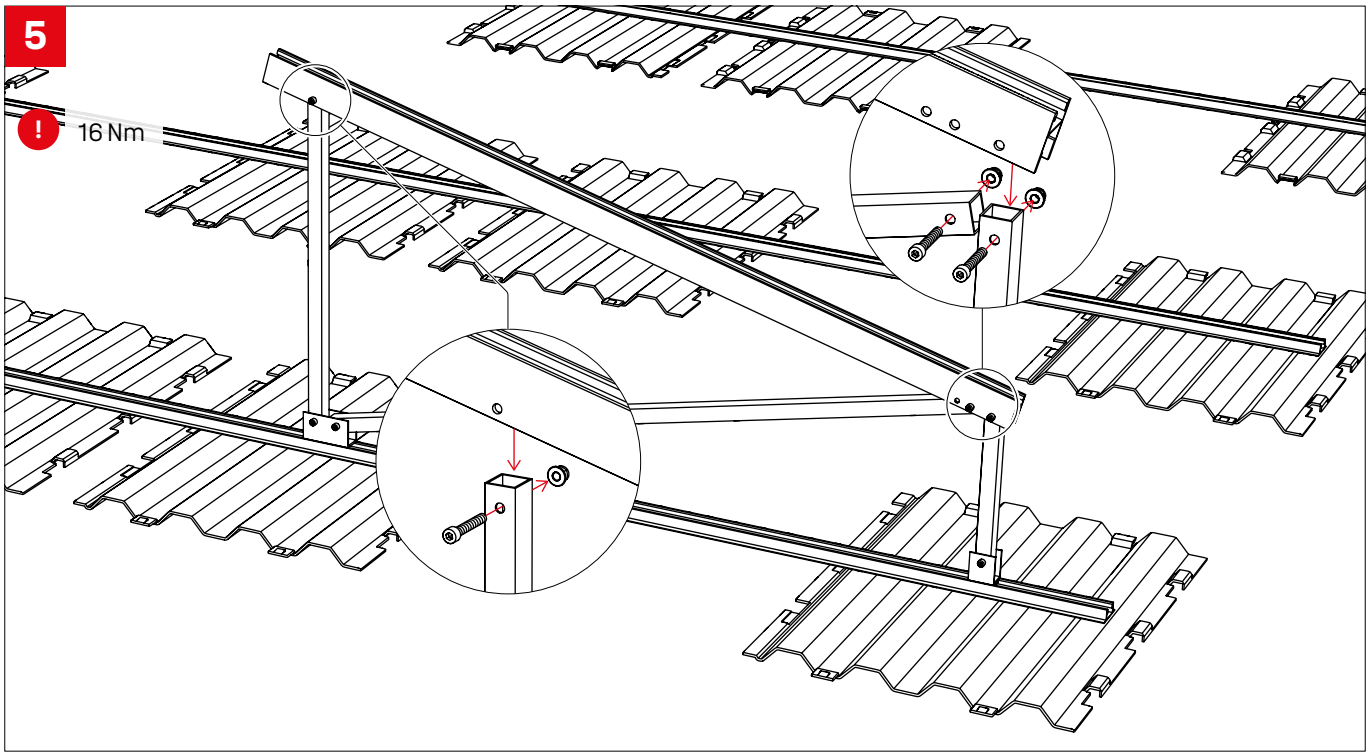
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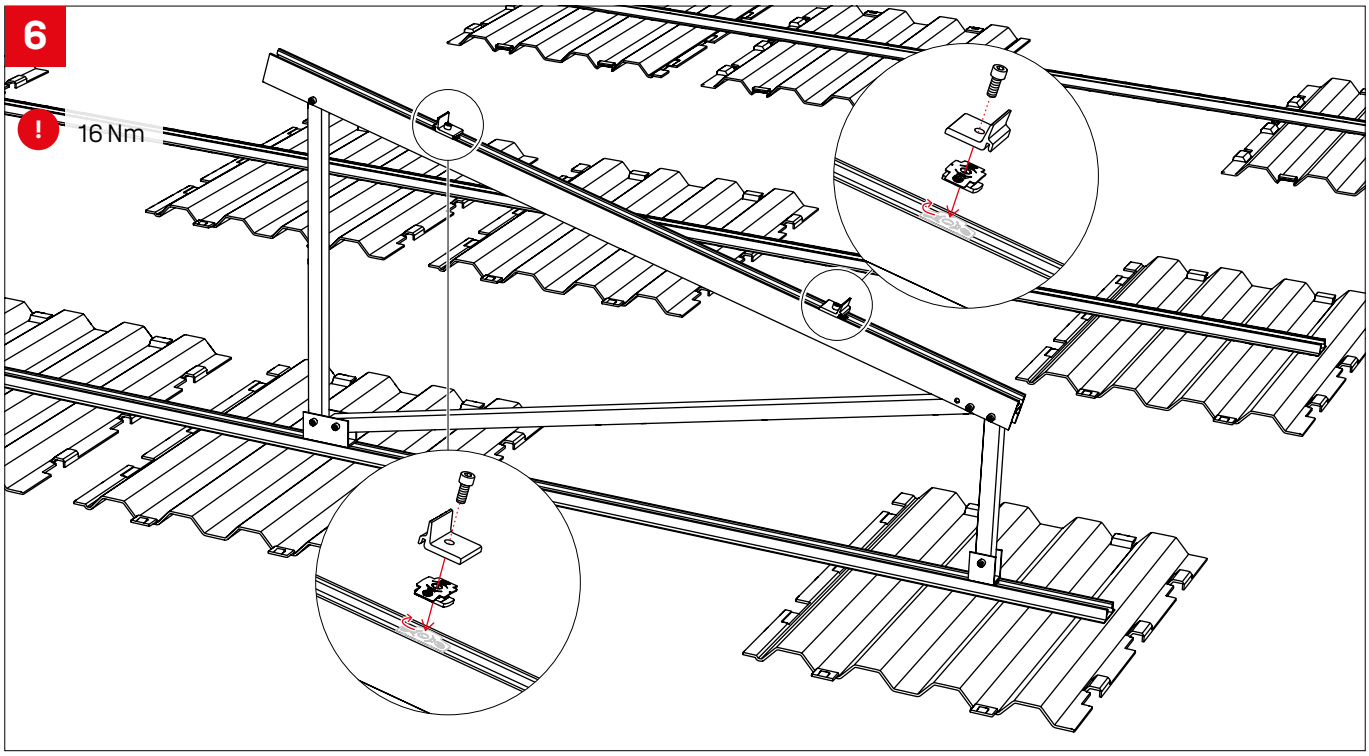
! 16 Nm

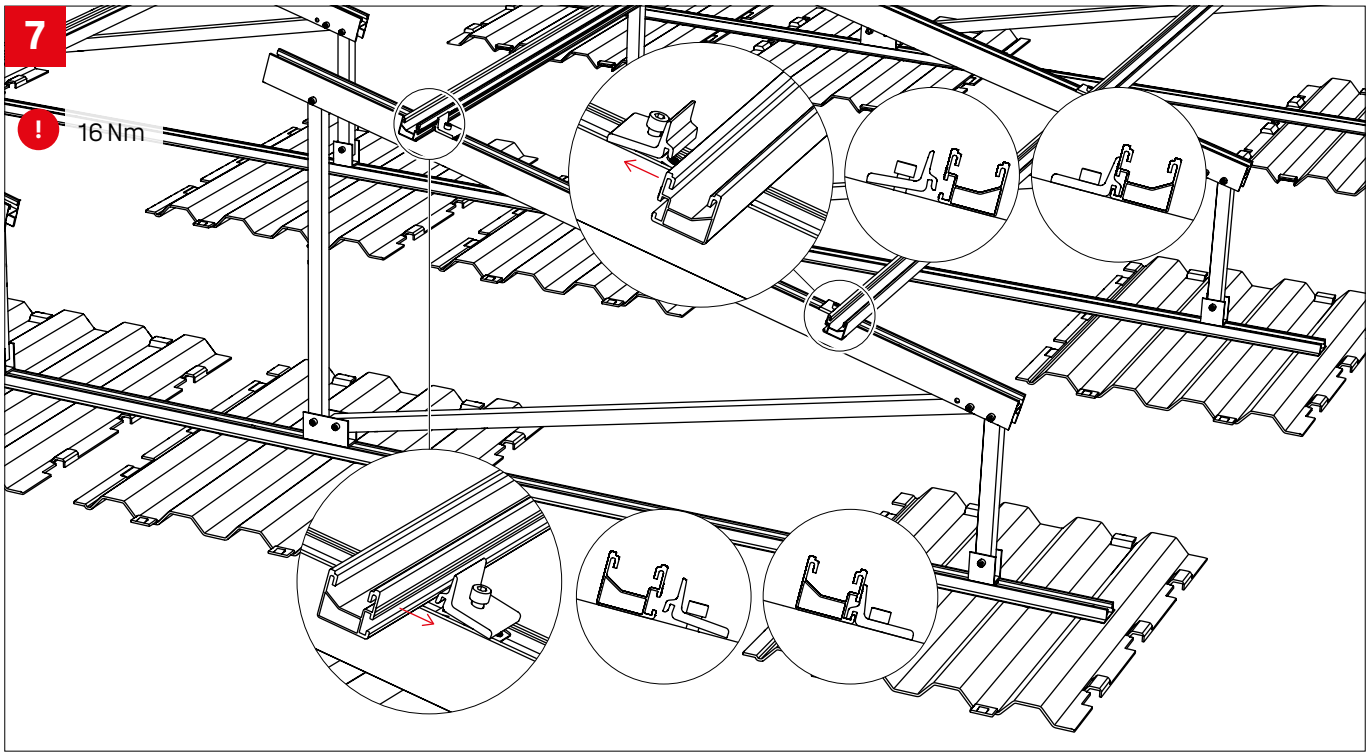


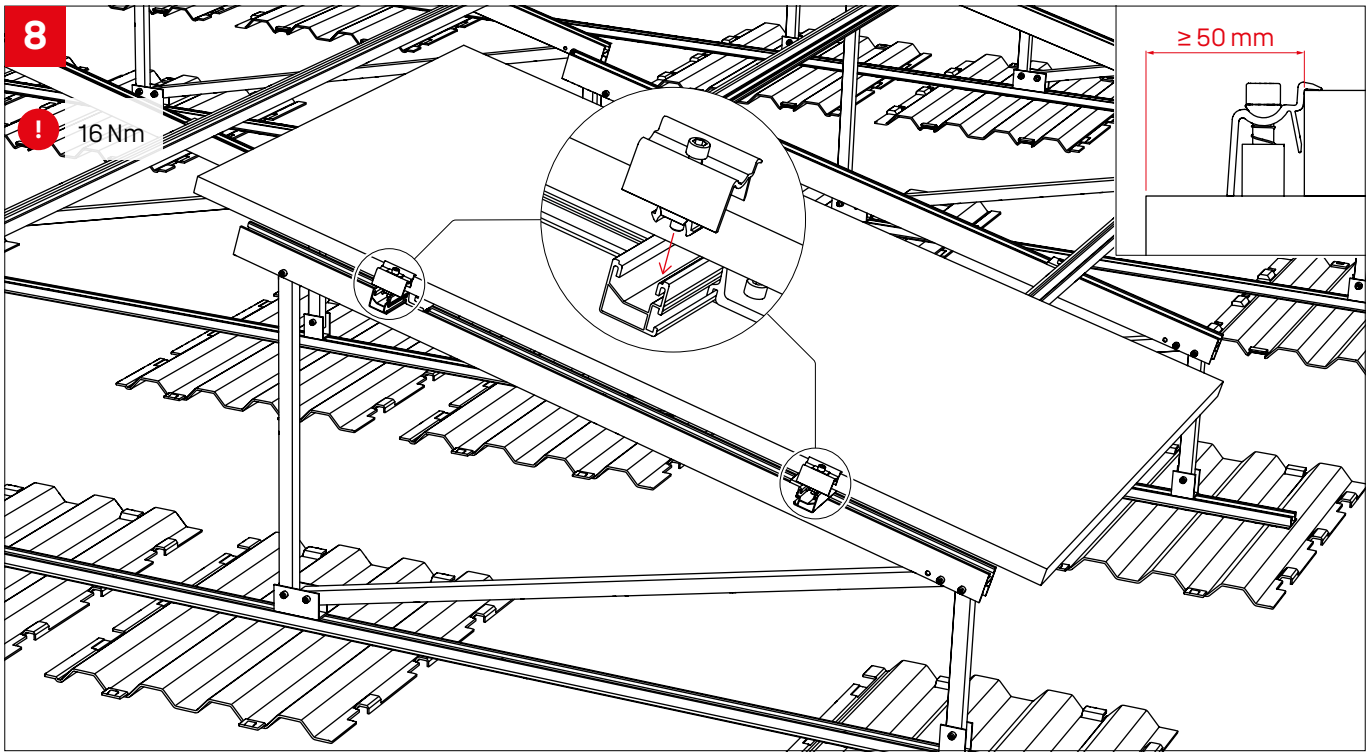
! See K2 Base PDF report

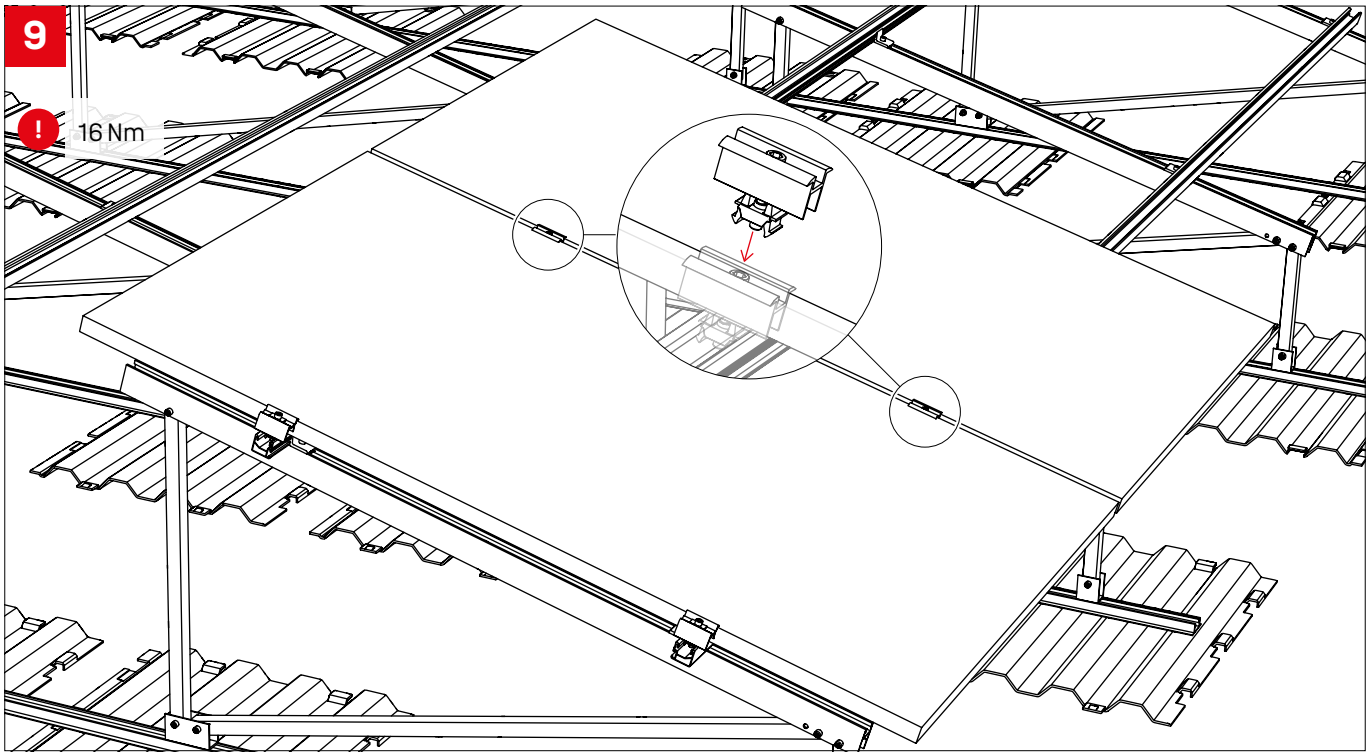

4
16 Nm


5
16 Nm

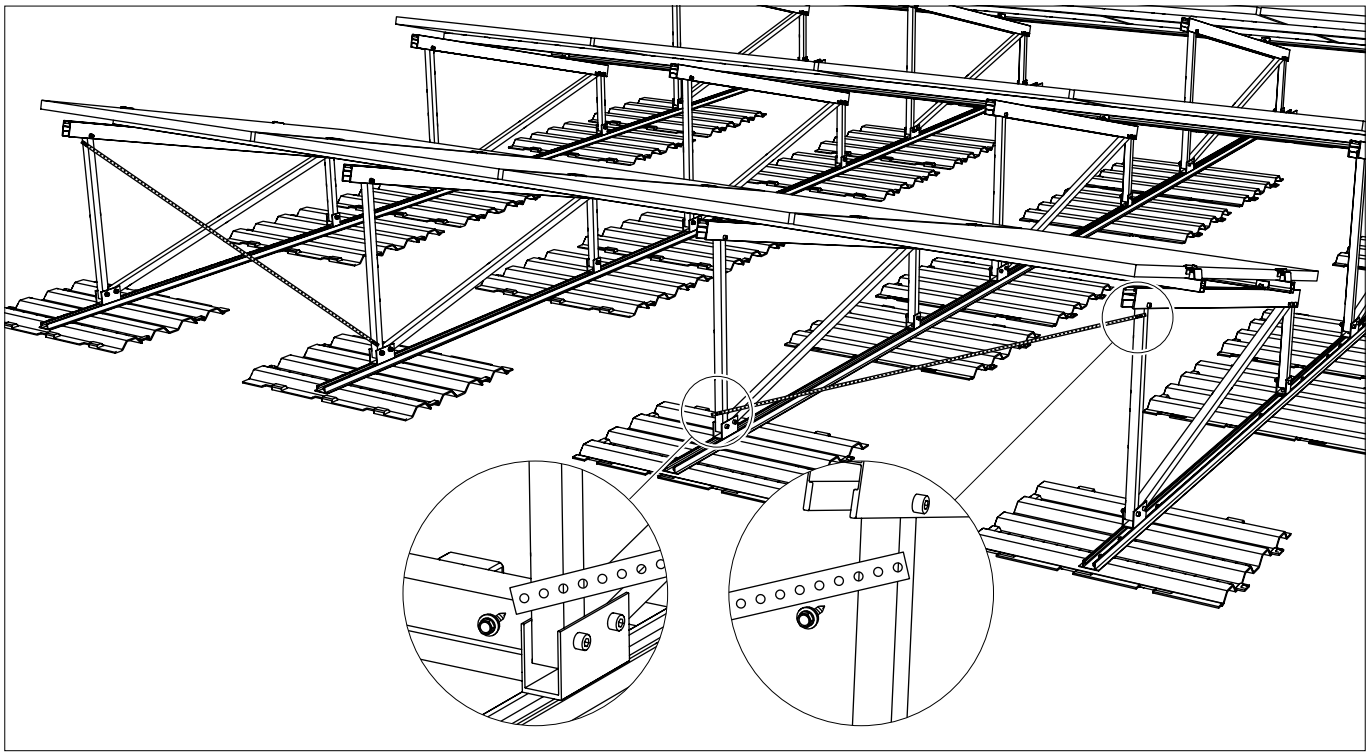

6
16 Nm


7
16 Nm

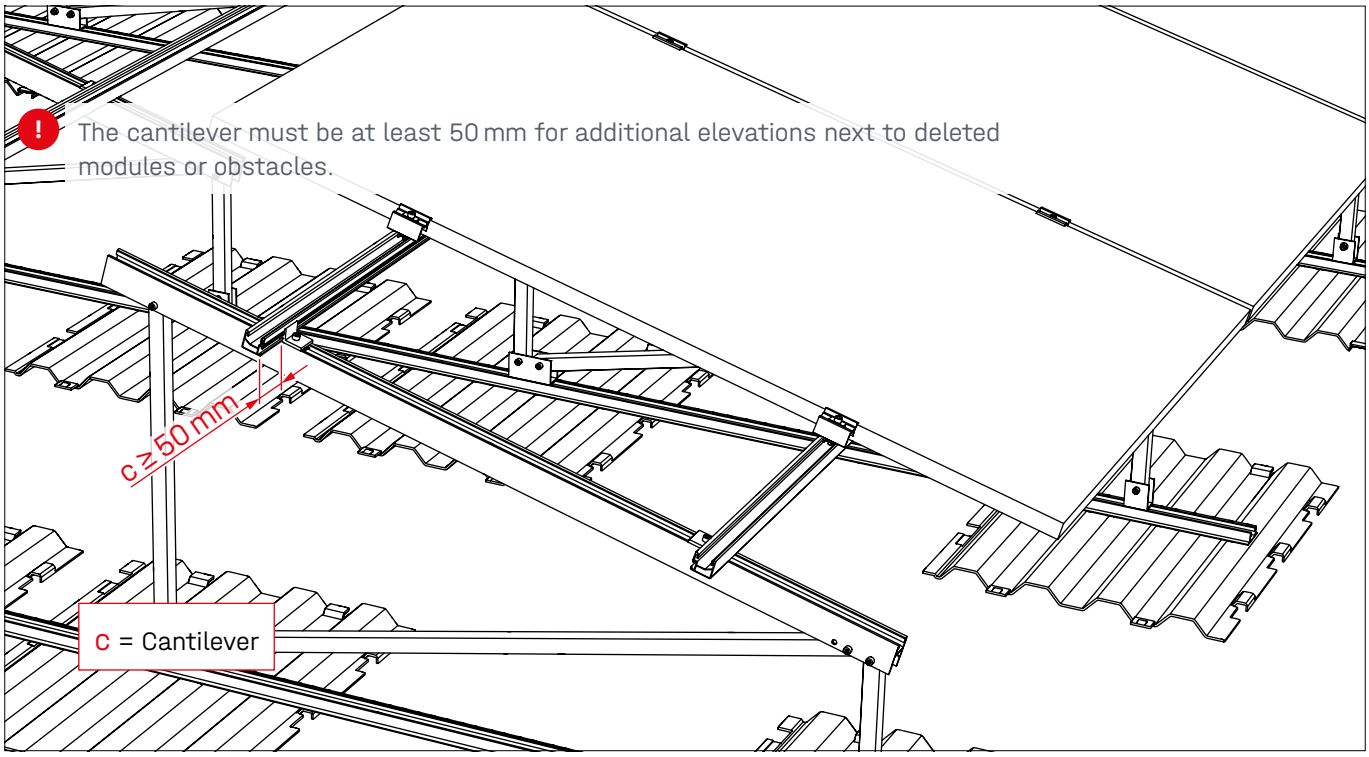

8
16 Nm
≥ 50 mm


9
16 Nm

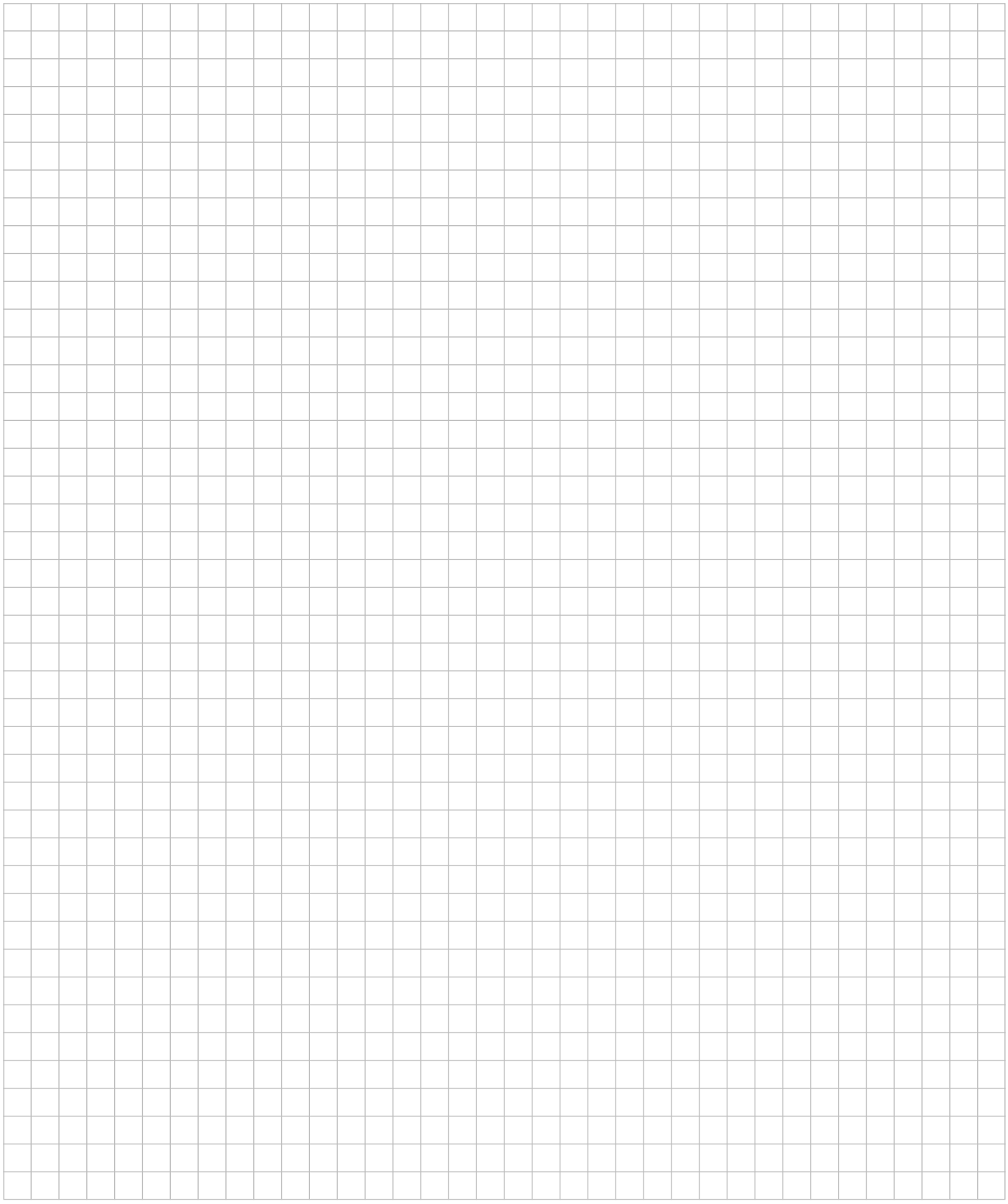
Wind bracing

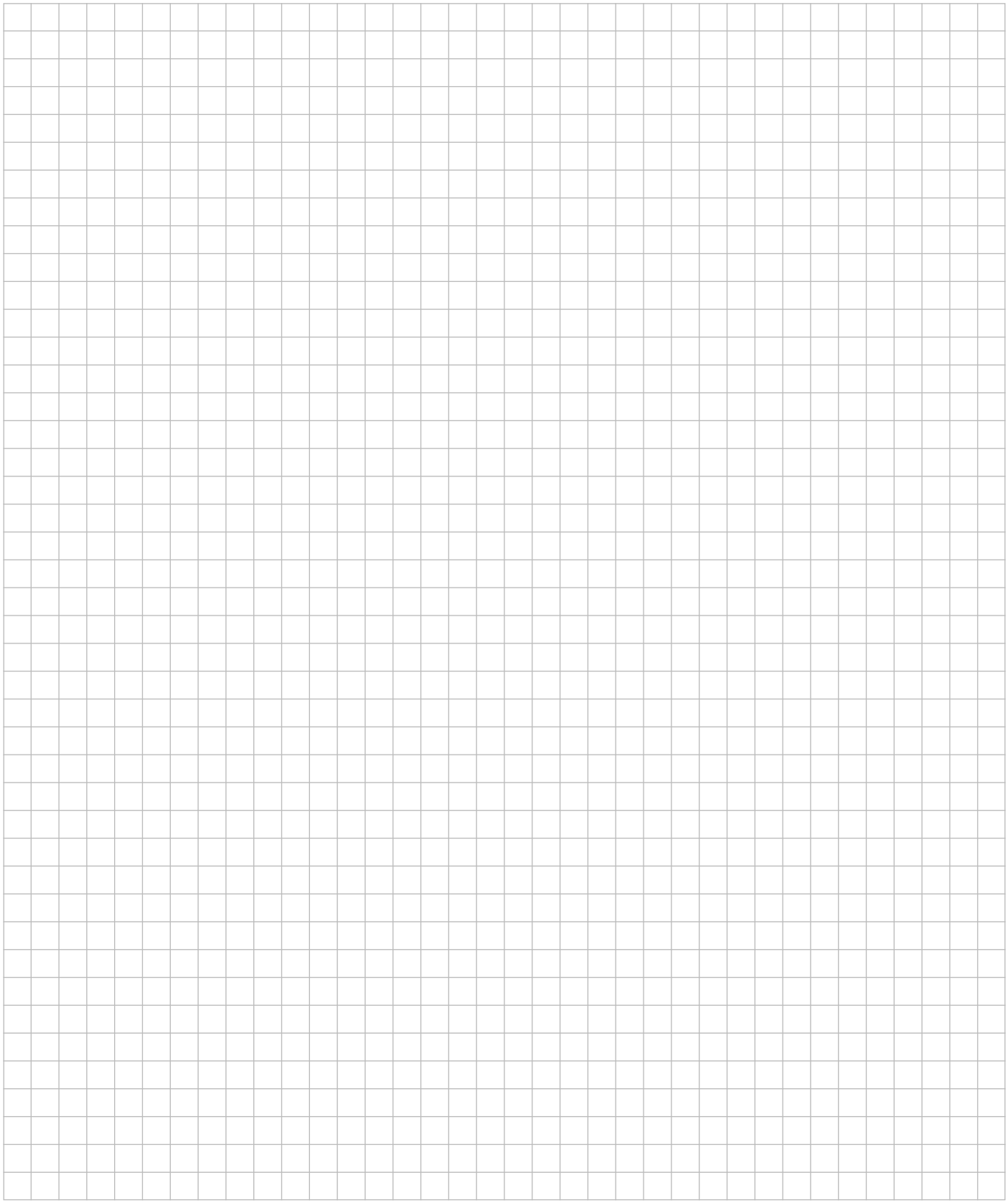


Cantilever



Notes





Thank you for choosing a K2 mounting system.

Mounting ystems 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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