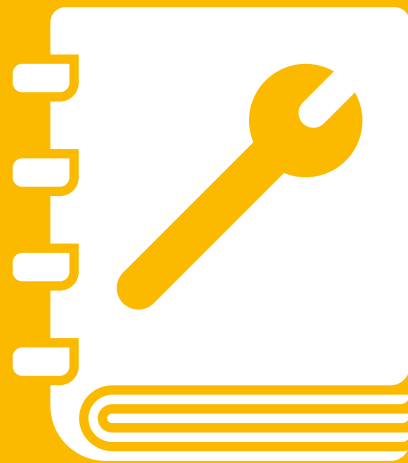


sikla



siMetrix
Installation Guidelines



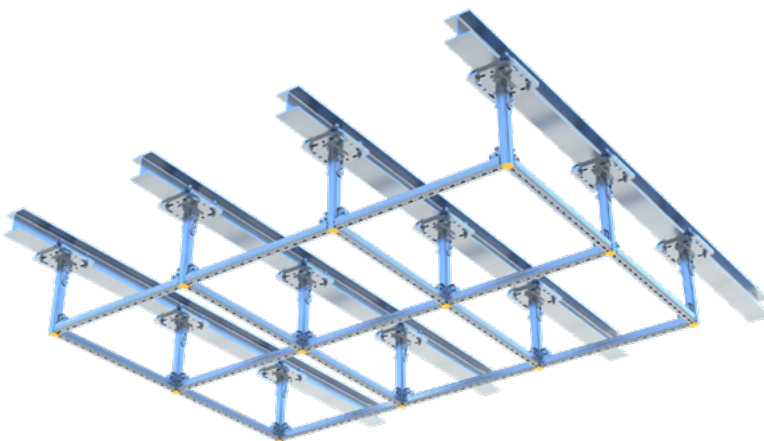
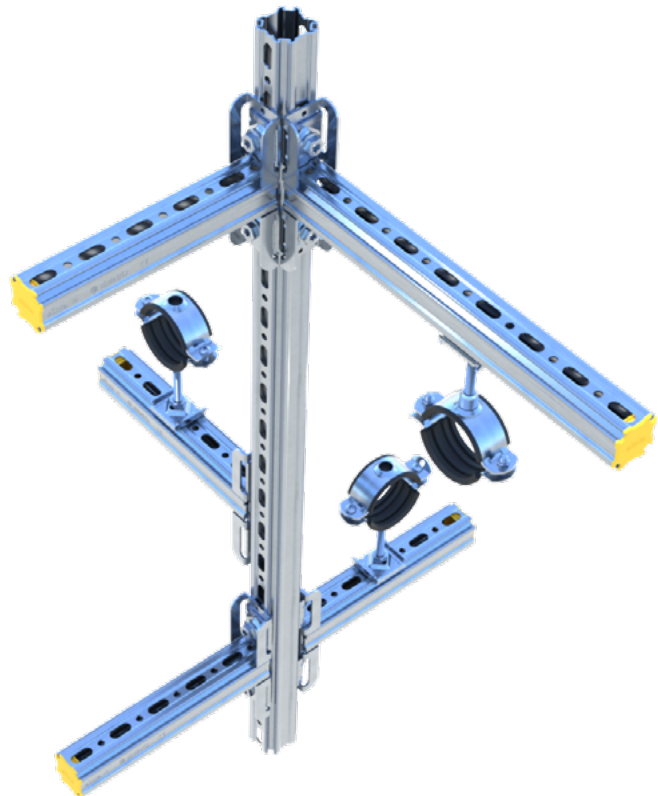
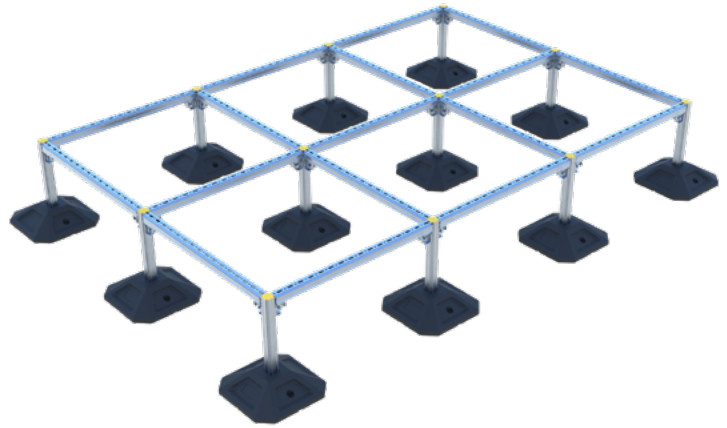
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Applications

- ◆ Frame supports
- ◆ Modular construction
- ◆ Ceiling supports and ceiling grids
- ◆ Roof-mounted units
- ◆ Air conditioning and ventilation systems
- ◆ Industrial and plant engineering
- ◆ Prefabricated modules
- ◆ Combination with SiFramo/Siconnect
- ◆ Electrical cable routing



Simple and quick installation

- ◆ One type of screw for all connections
- ◆ The innovative click-system aids fast assembly
- ◆ Installation of intermediate floors
- ◆ Flexible construction in production buildings
- ◆ Realization of complex structures using the innovative 1-2-3 principle

Area of application

This guide enables the user to easily select suitable application solutions with typical Sikla support frames.

Technical advice

Our customer service representatives and application engineers are happy to provide you with further detailed information – to answer your questions or to work with you to develop specific solutions using Sikla design software.

Disclaimer

This documentation is intended for the use of the recipient only and is the property of Sikla in all its parts. The technical representations and all information are given to the best of our knowledge. Illustrations and drawings are non-binding. Liability for printing errors or defects is excluded.

We reserve the right to make changes and improve the design, particularly in the interests of technical progress.

Product overview

The product range of the siMetrix system can be divided into four different blocks depending on the application, which are explained separately in this installation manual:

Internal connections / frame constructions	6
Installation to the building structure	13
Pipe connections	19
Combination of systems	23

Internal connections / frame constructions

Profile PRO 46

Material: Steel, HCP coating (Corrosion category \leq C4 according to DIN EN ISO 12944)

PRO 46

PRO 46-P

Hole pattern (only PRO 46-P)

$\varnothing 8$ mm

50mm

11mm

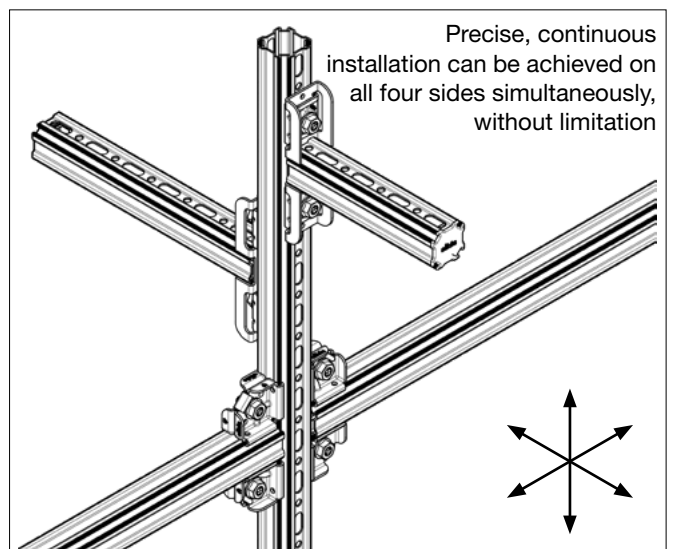
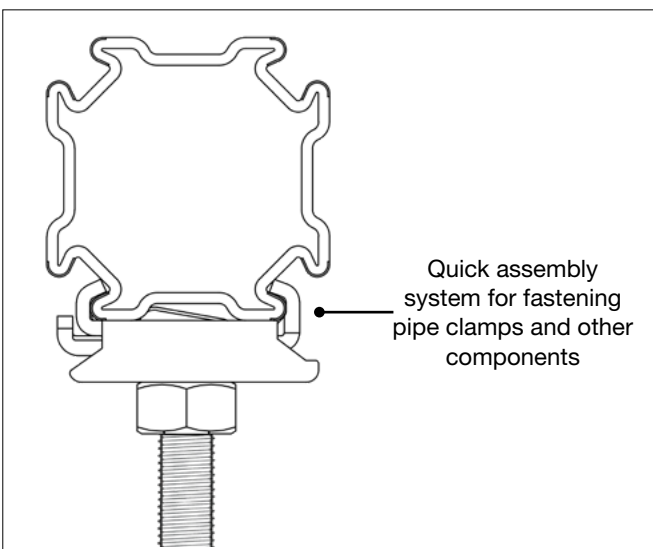
Profil with internal gearing

46mm

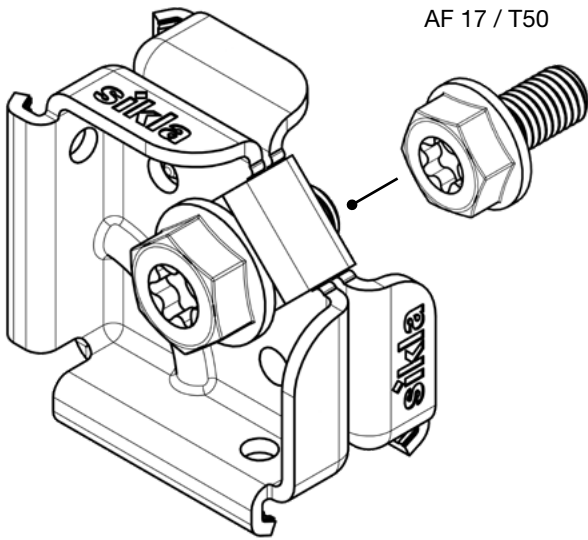
46mm

The closed shape not only provides high torsional rigidity but also allows for the adjustment of connecting parts and pipe support connections on all four sides without restriction.

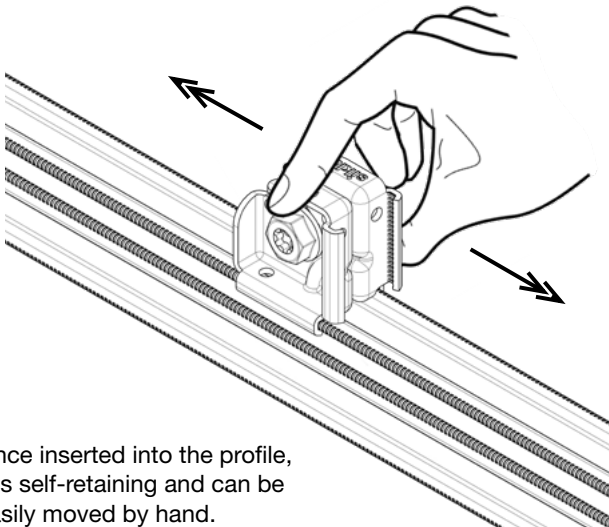
Type	Profile Modulus	Second Moment of Area	Radius of Gyration	Area of Section	Cut Lengths
PRO 46	$W_y = 4,12 \text{ cm}^3$	$I_y = 9,49 \text{ cm}^4$	$i_y = 1,60 \text{ cm}$	3,70 cm ²	2m, 6m
	$W_z = 4,12 \text{ cm}^3$	$I_z = 9,49 \text{ cm}^4$	$i_z = 1,60 \text{ cm}$		
PRO 46 -P	$W_y = 3,46 \text{ cm}^3$	$I_y = 7,96 \text{ cm}^4$	$i_y = 1,55 \text{ cm}$	3,33 cm ²	2m, 6m
	$W_z = 4,11 \text{ cm}^3$	$I_z = 9,45 \text{ cm}^4$	$i_z = 1,68 \text{ cm}$		



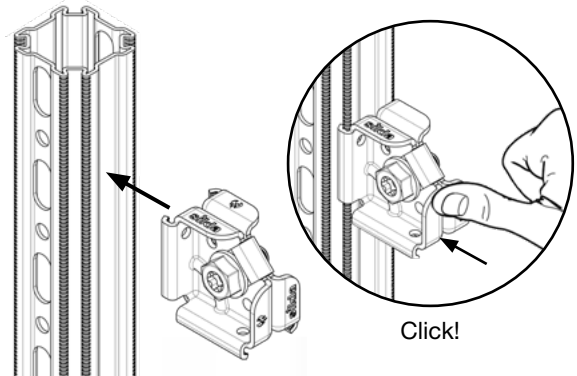
Connector CN 46



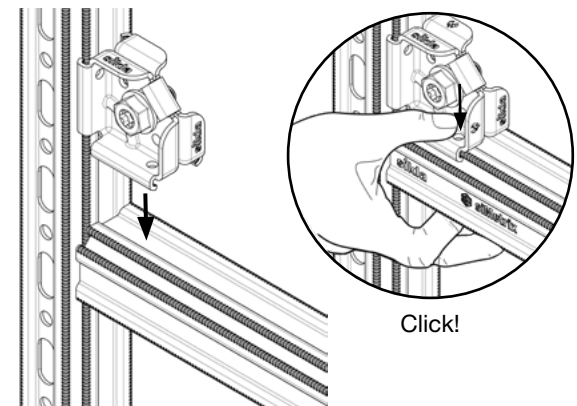
Connecting element for frame constructions and cantilevers. For cantilevers, the connector must always be used in pairs.



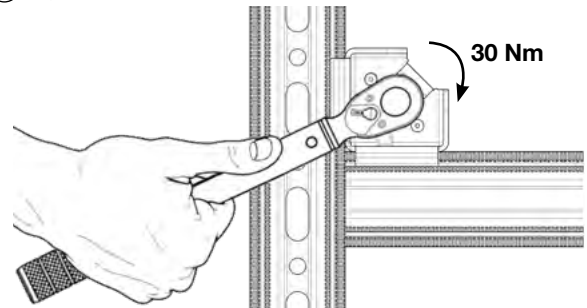
① The connector is pressed onto the profile.



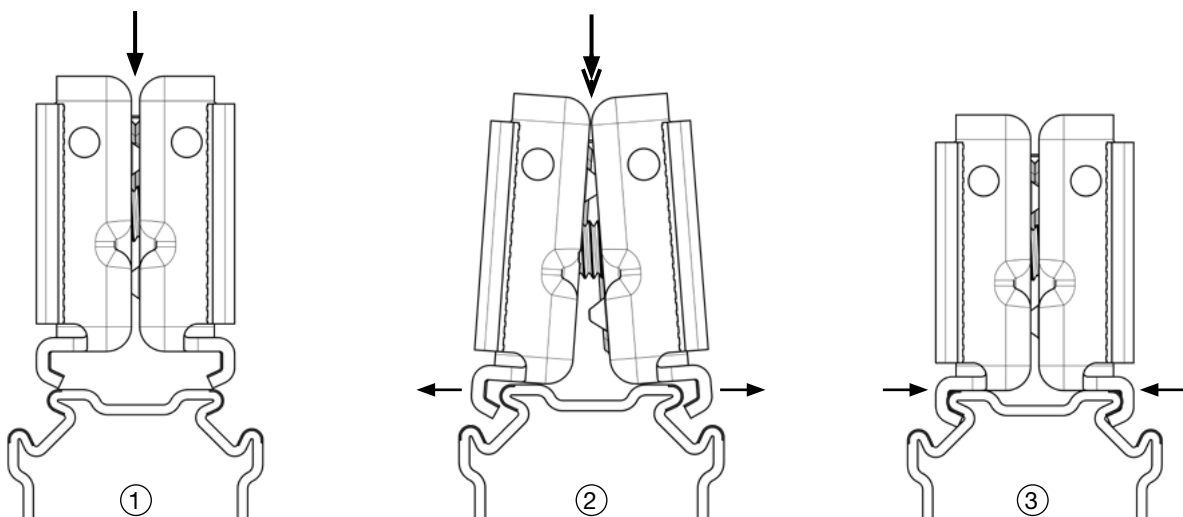
② Then press onto another profile at 90°



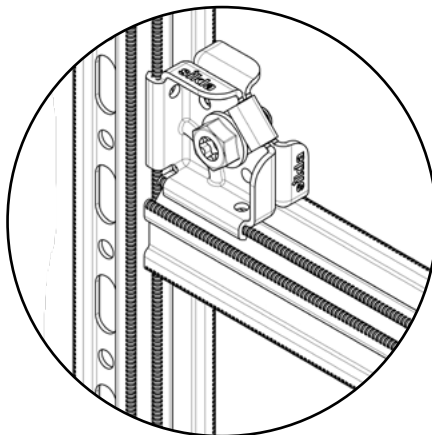
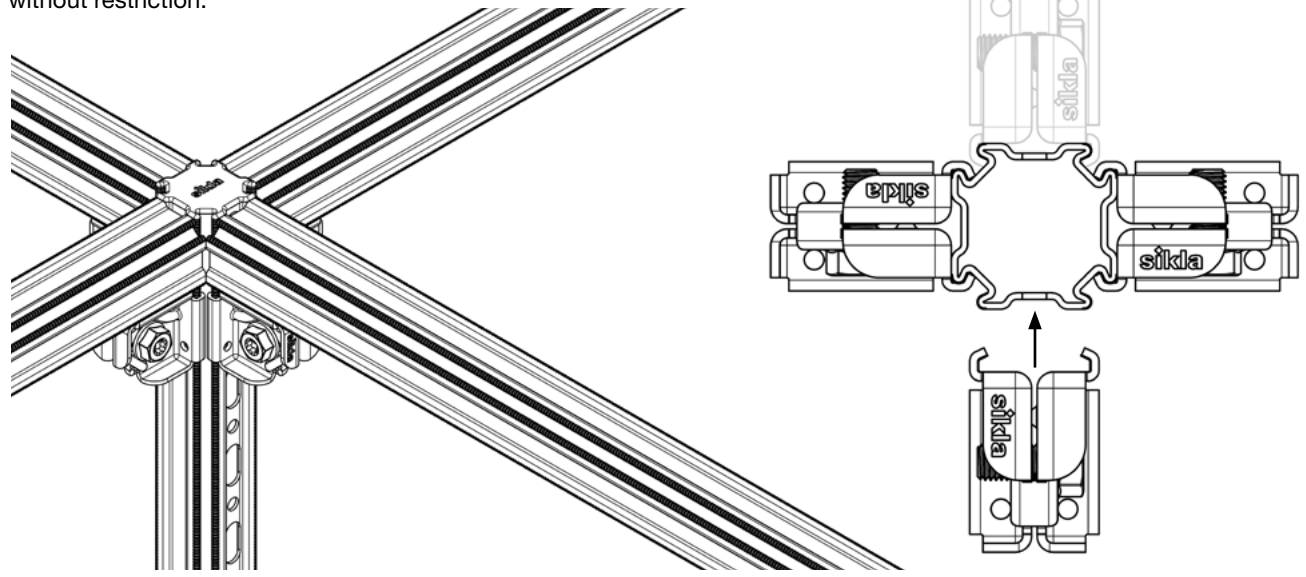
③ Tighten screw



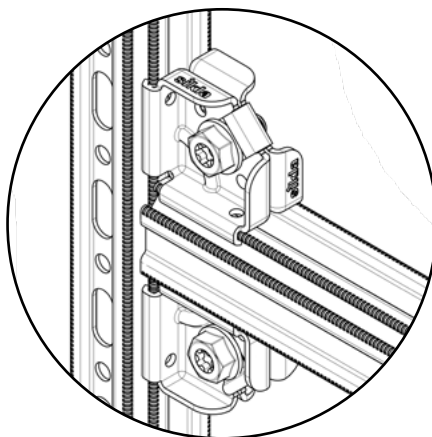
The central spring allows the connector to be pressed onto the profile and locked into place.



The closed and symmetrical profile shape enables the adaptation of connecting parts and pipe support connections on all four sides without restriction.

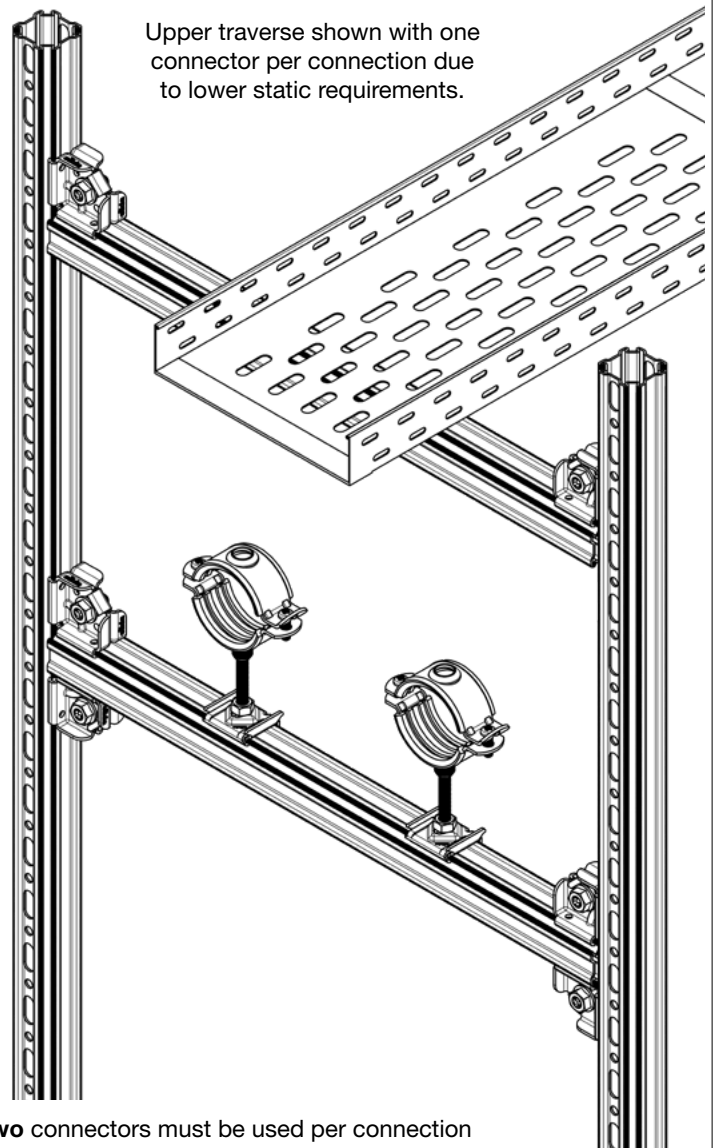


1x connector per connection

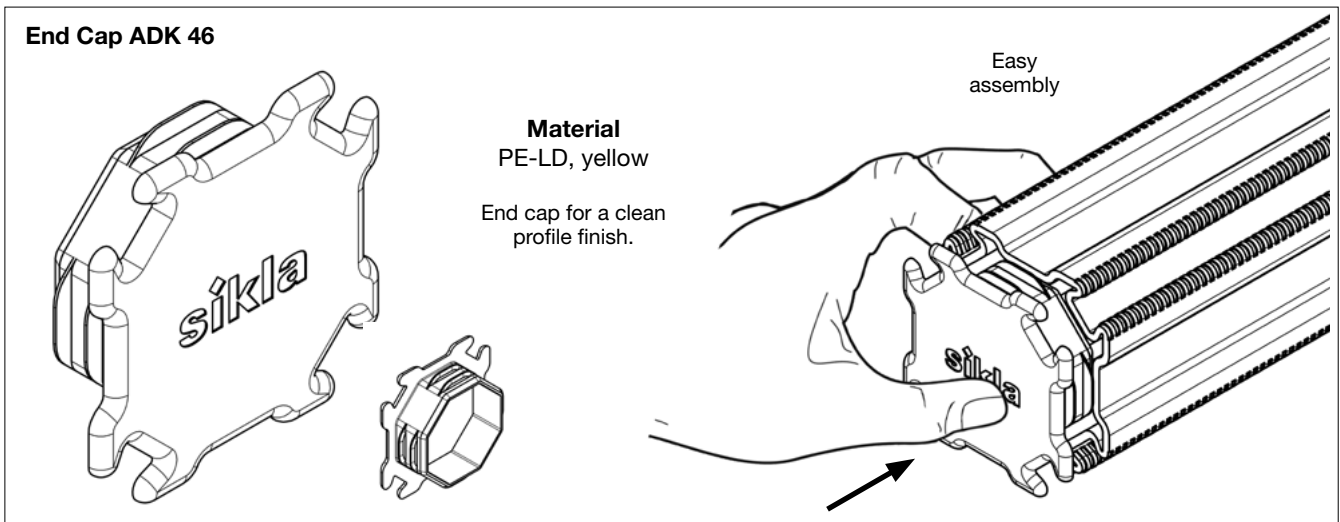
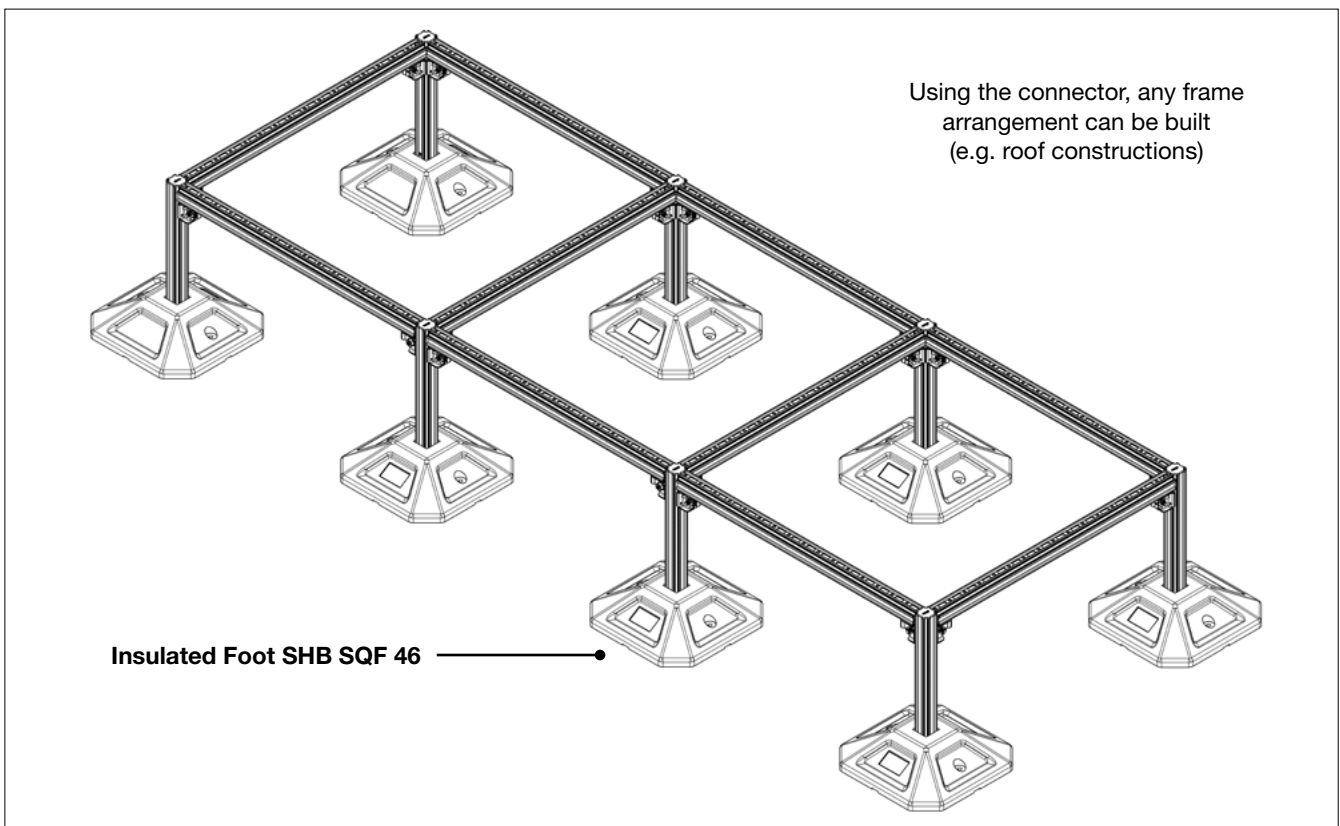
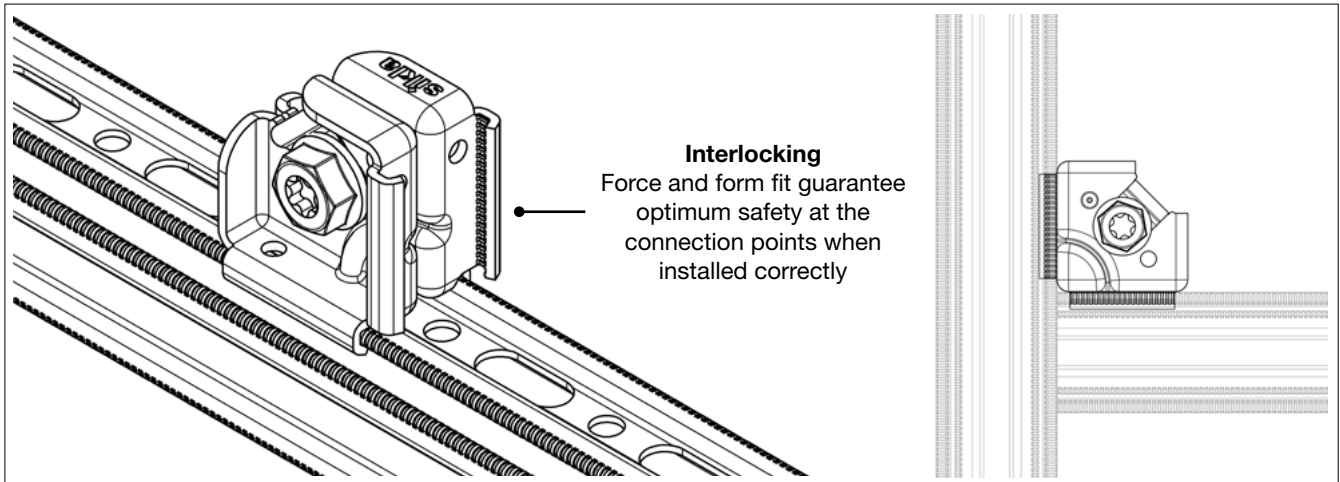


2x connectors per connection
(use in pairs)

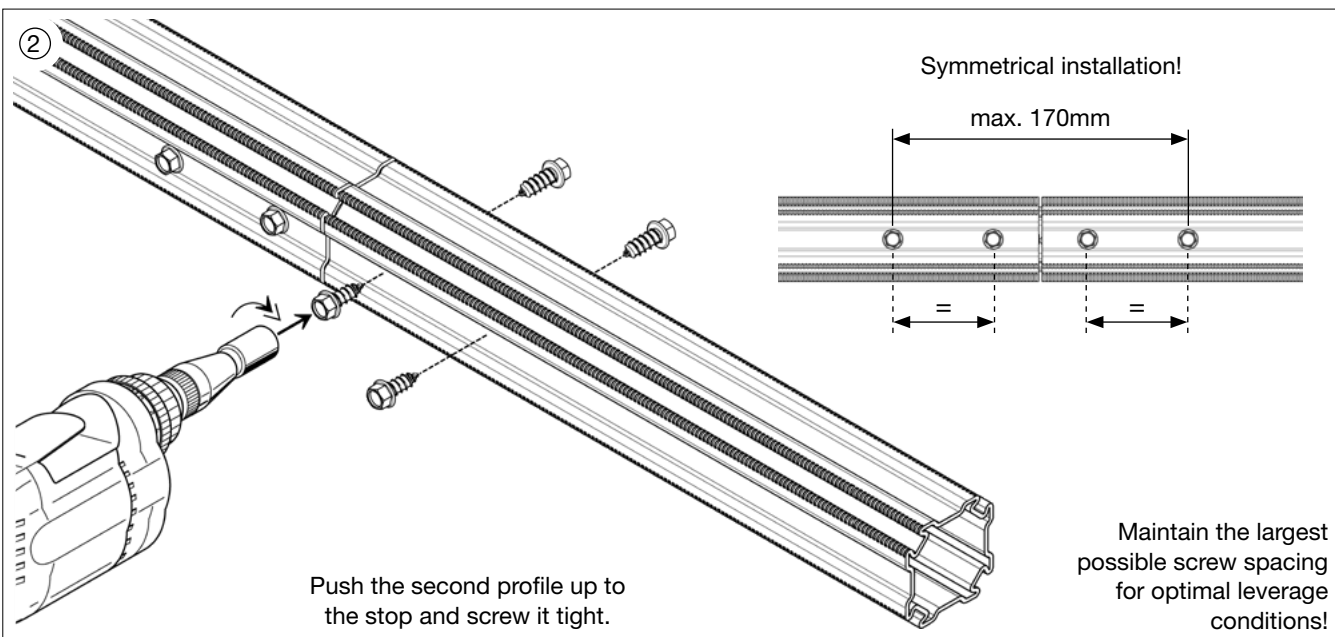
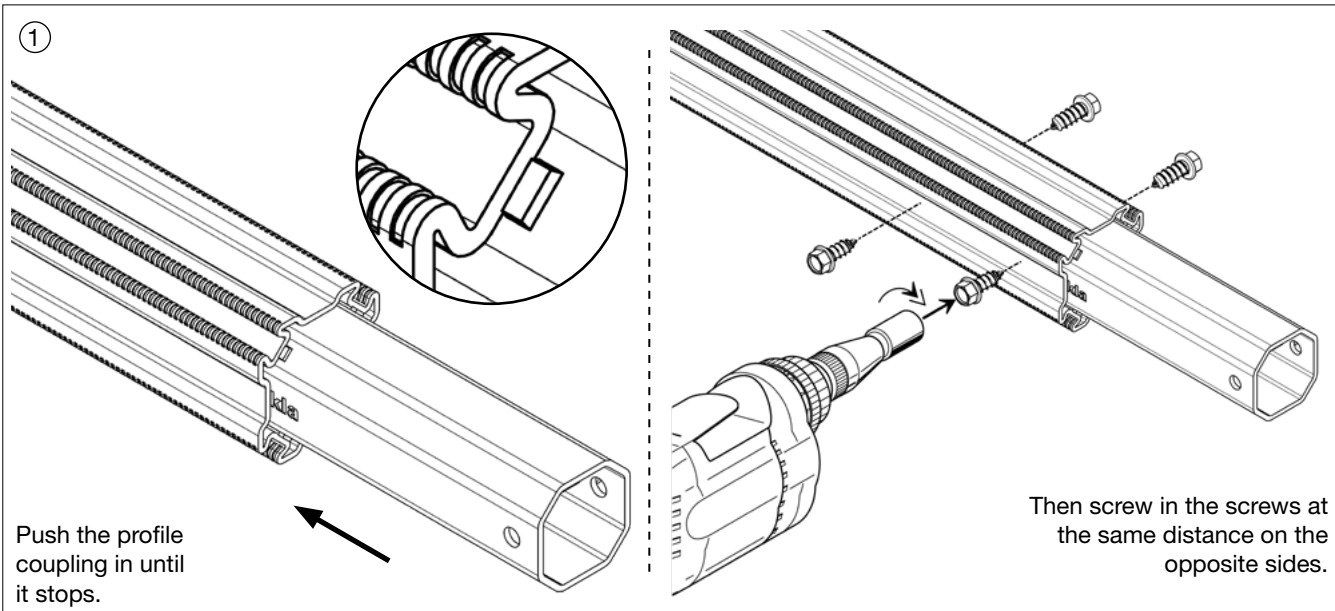
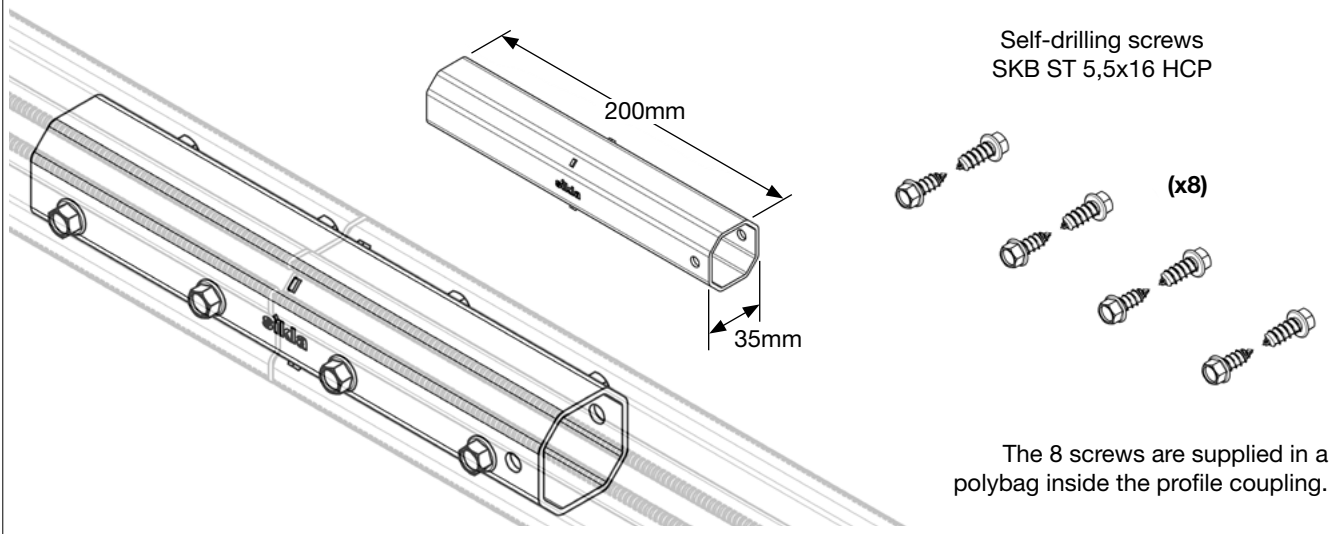
Upper traverse shown with one connector per connection due to lower static requirements.



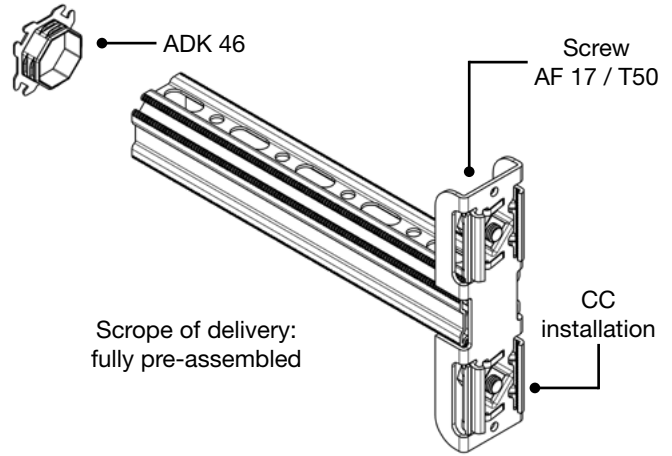
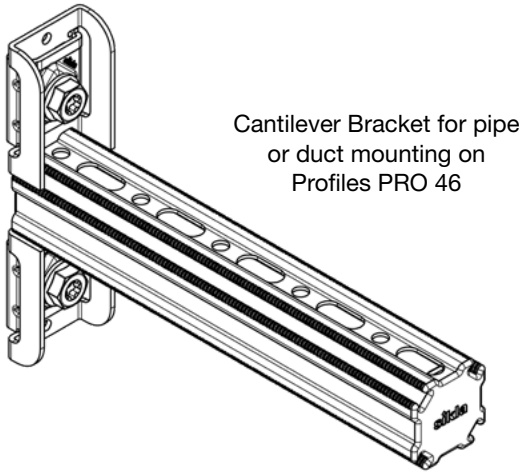
Depending on the impact, **one** or **two** connectors must be used per connection



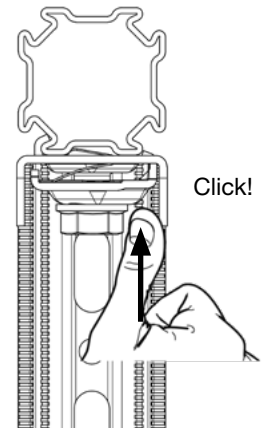
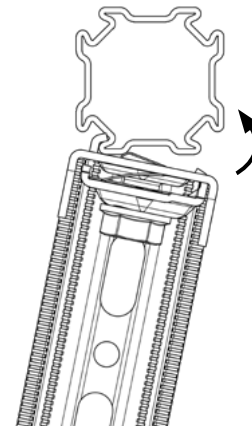
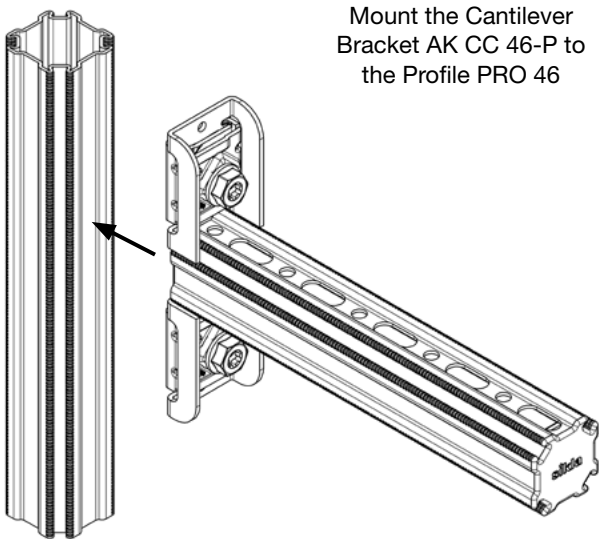
Profile Coupling PK 46



Cantilever Bracket AK CC 46-P

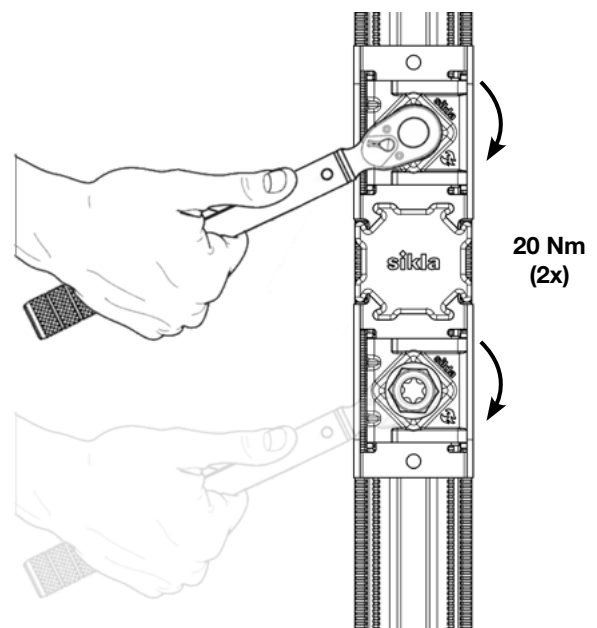
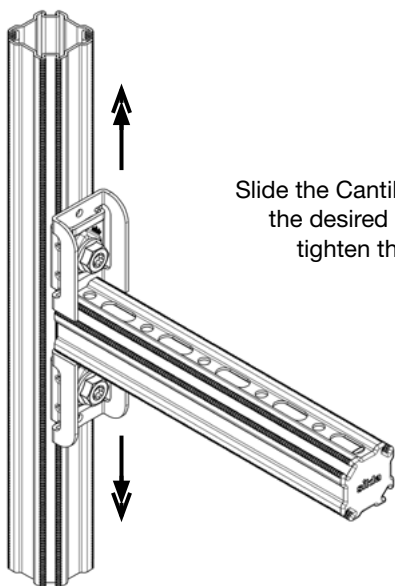


①

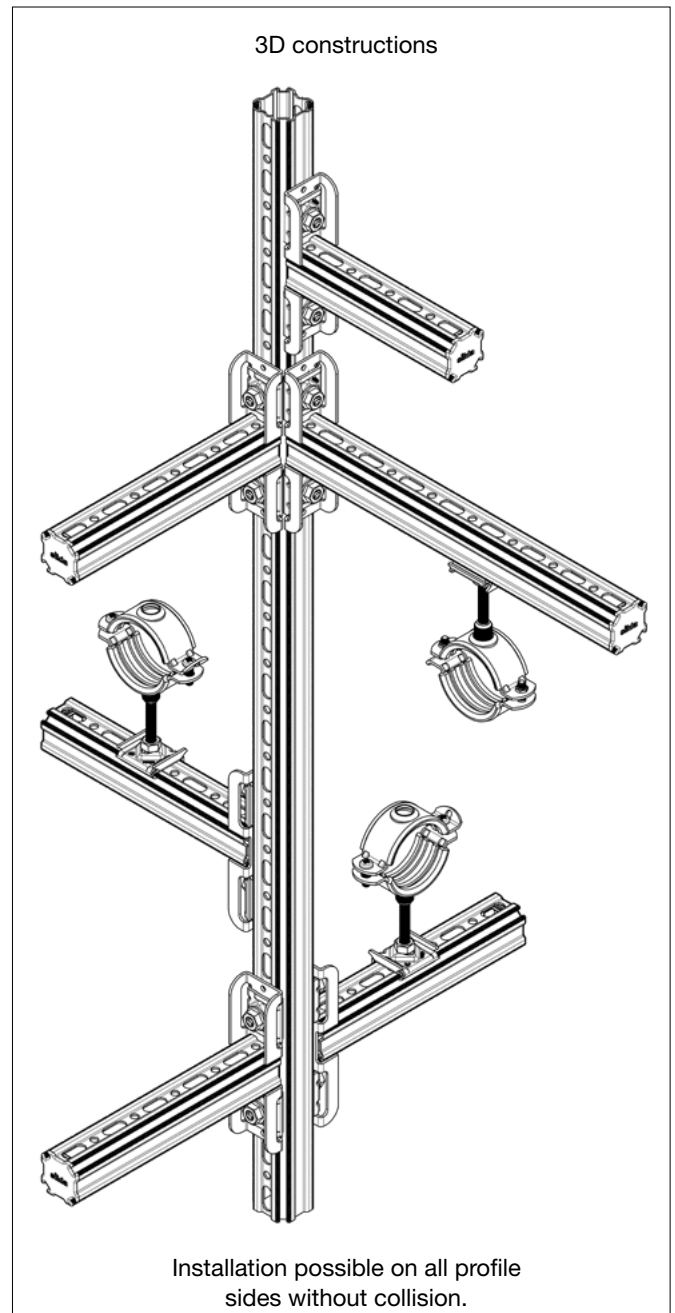
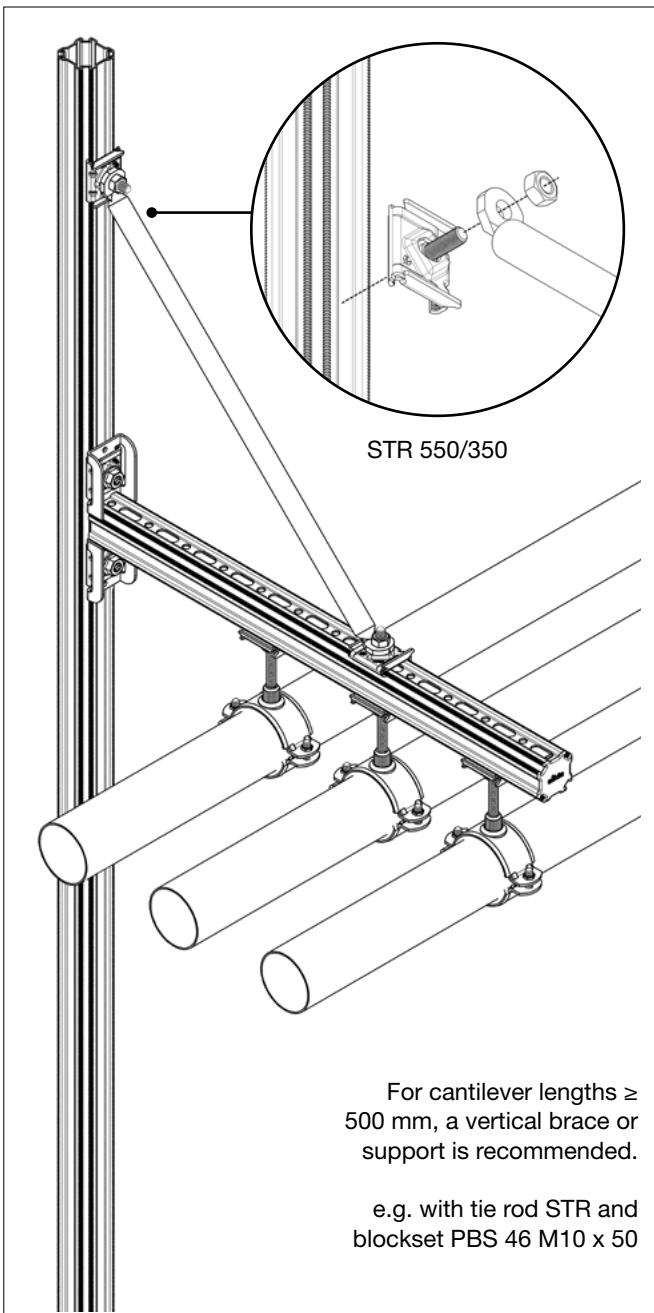
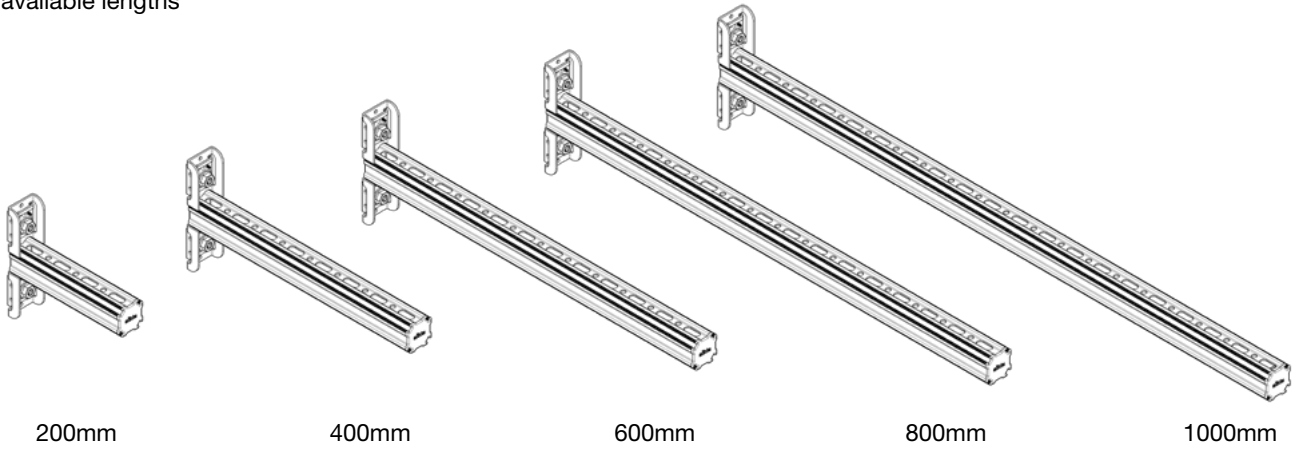


By pressing on the two locking parts, the Cantilever Bracket is locked to the profile.

②



AK CC 46-P
available lengths



Installation to the building structure

Connection to steel beam

Assembly with **U-Holder SB 46**
 Connecting element for fastening the Profile PRO 46 to steel beams facilitating perpendicular of cantilever connection

max. beam flange = 30mm

min. 50mm

Always use in pairs!

M10

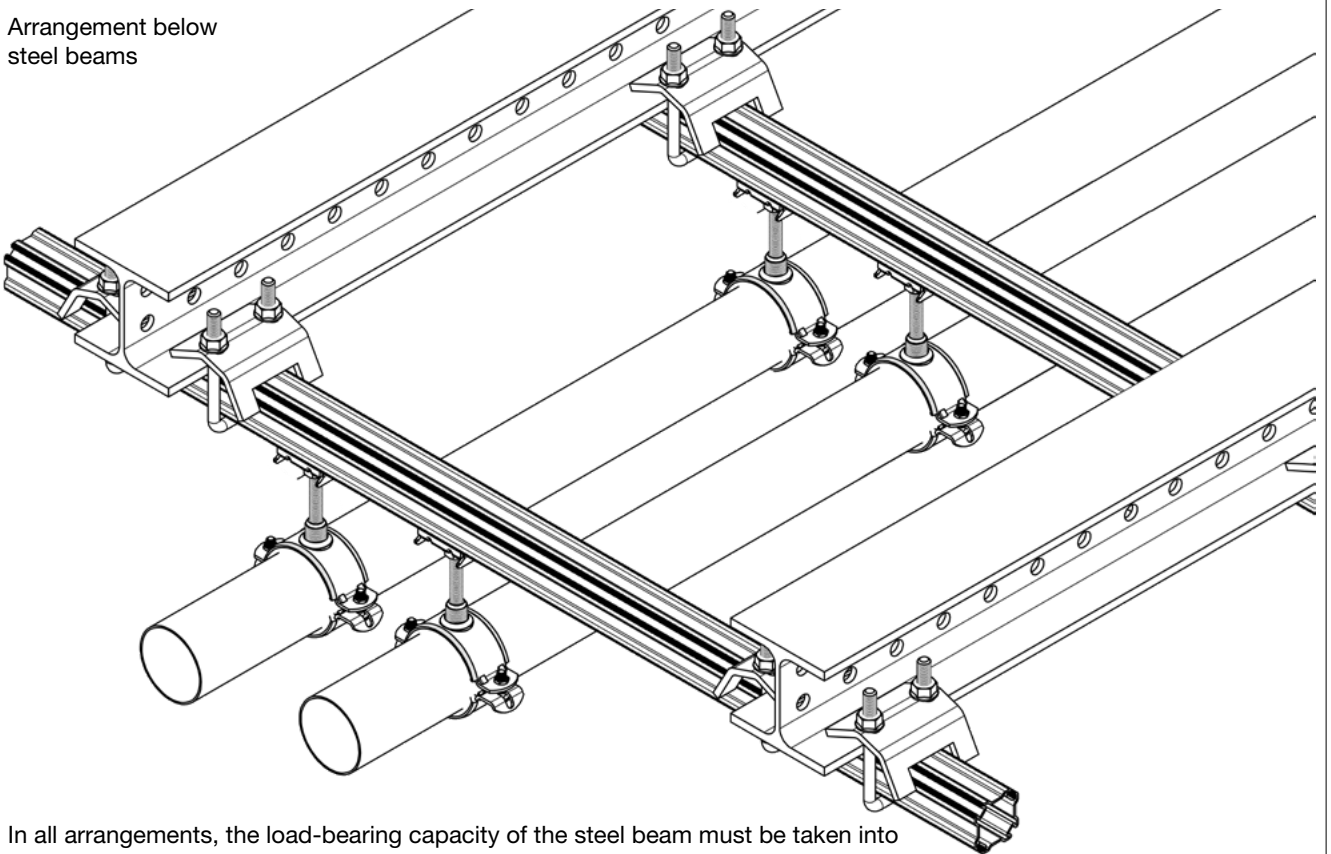
①

②

20 Nm

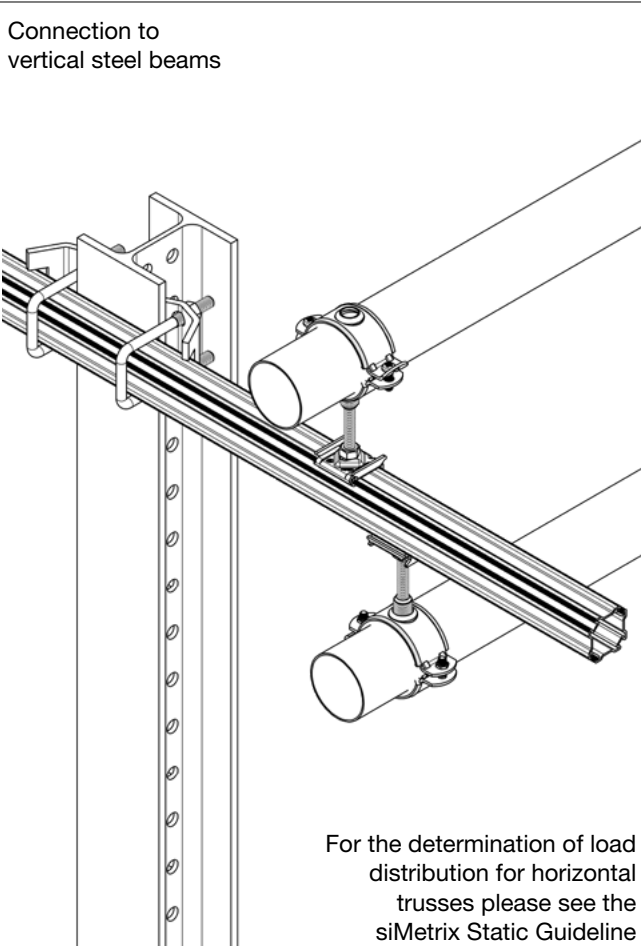
0 mm !

Arrangement below steel beams

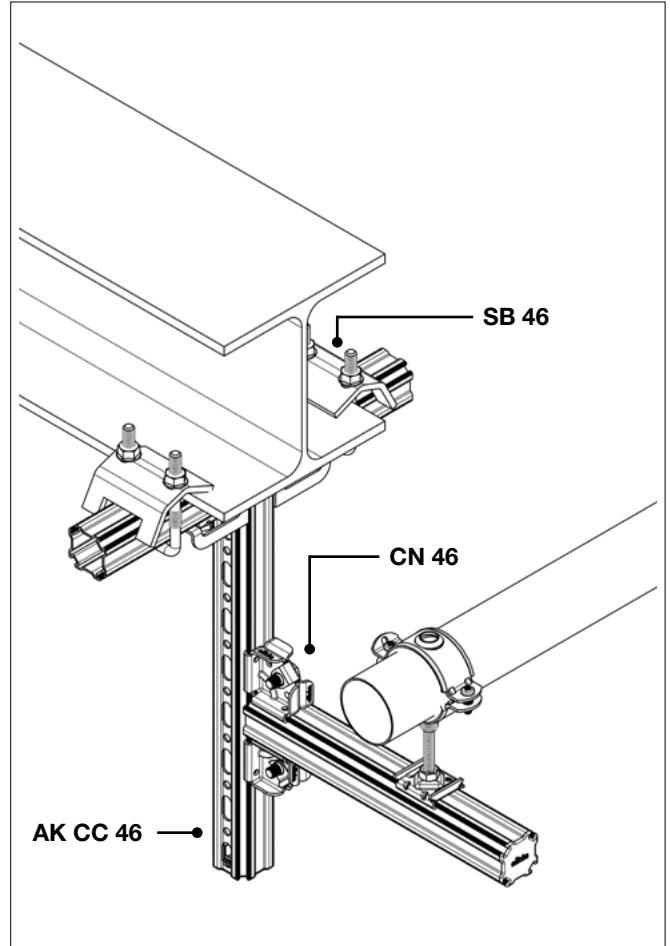


In all arrangements, the load-bearing capacity of the steel beam must be taken into account, and torsional stiffness in the case of a cantilevered arrangement.

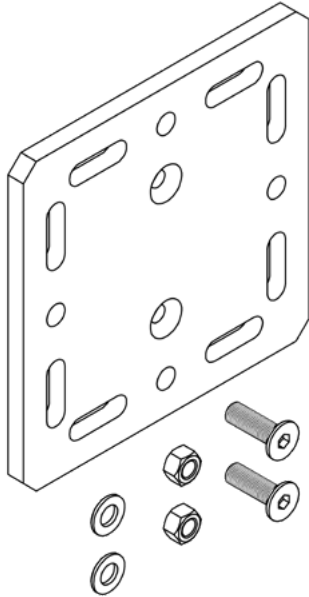
Connection to vertical steel beams



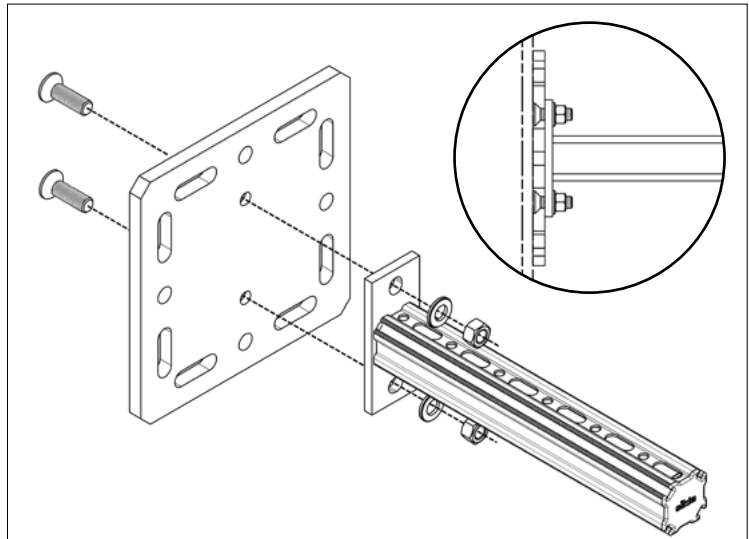
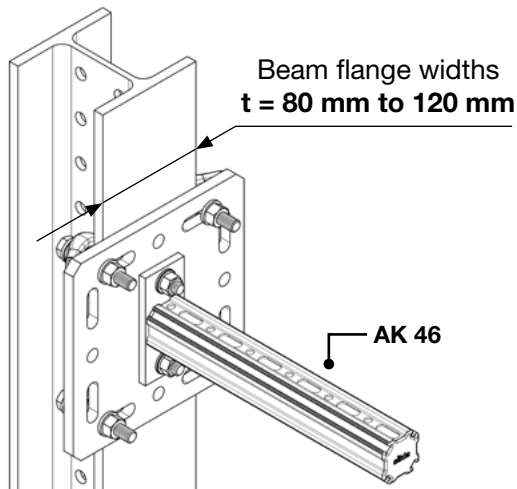
For the determination of load distribution for horizontal trusses please see the siMetrix Static Guideline



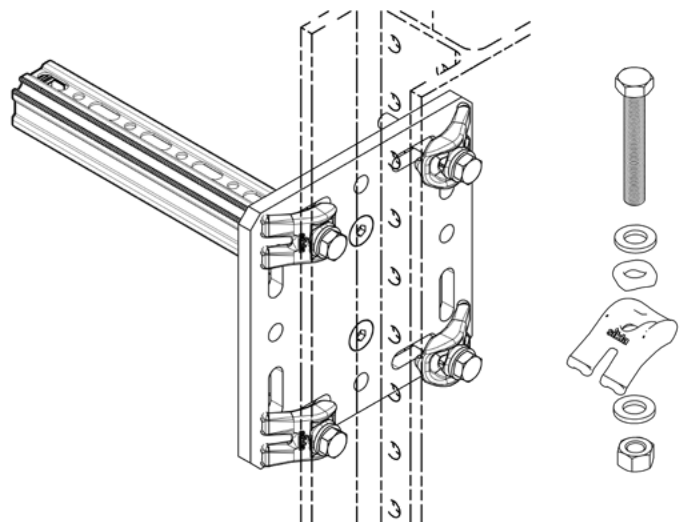
Mounting using **Joining Plate AP 46**



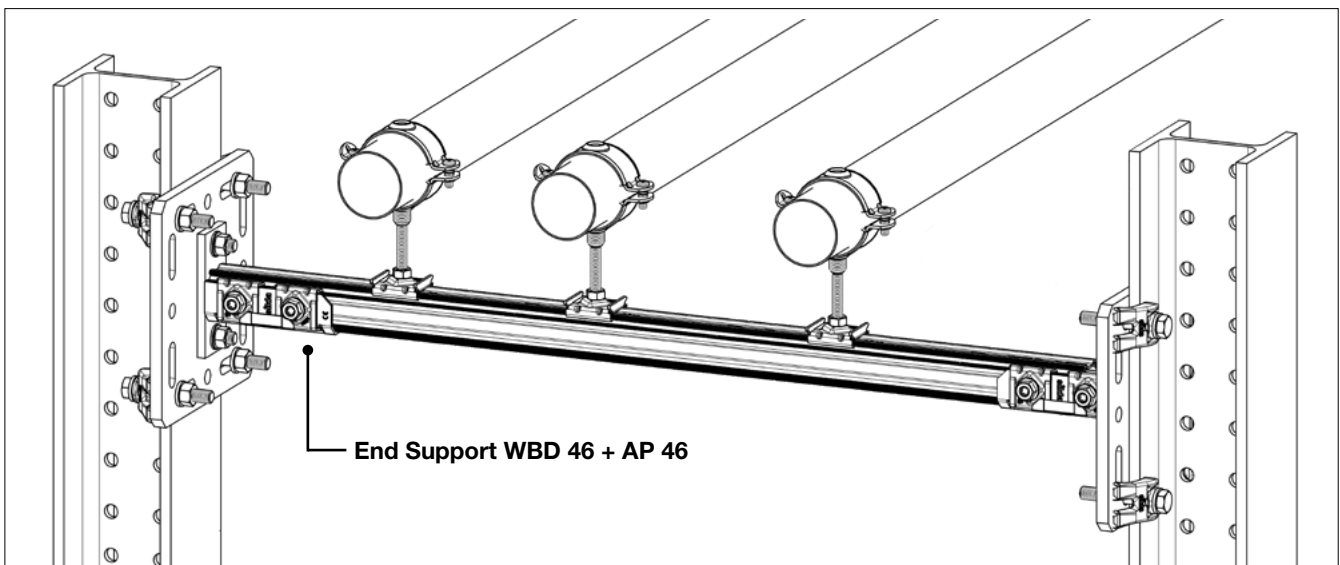
The scope of delivery includes countersunk screws, nuts and washers.



Form-locking connection of adapter plate with **AK 46** or **WBD 46** using countersunk screws and nuts.

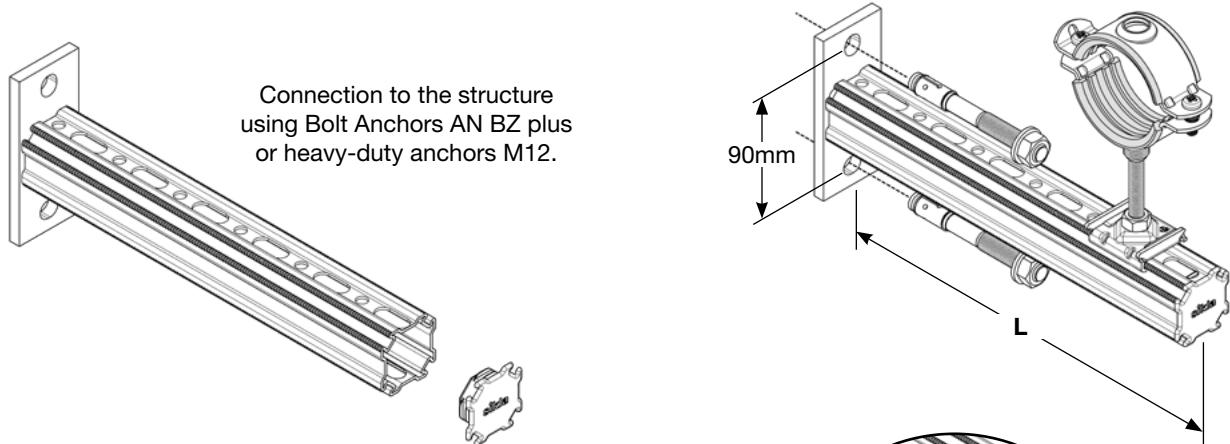


Force-locking fastening to steel beams using Assembly Set **MS 5P M12 S** (tightening torque = 60 Nm + 90° further rotation angle)



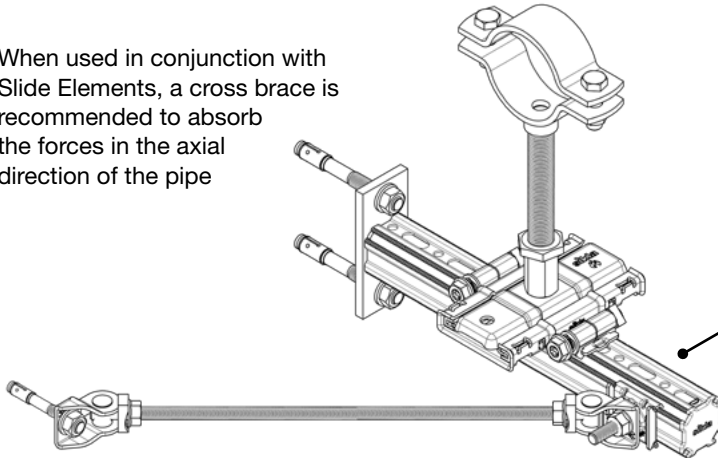
Wall, floor and ceiling connection

Connection via **Cantilever Bracket AK 46-P**



Connection to the structure using Bolt Anchors AN BZ plus or heavy-duty anchors M12.

When used in conjunction with Slide Elements, a cross brace is recommended to absorb the forces in the axial direction of the pipe

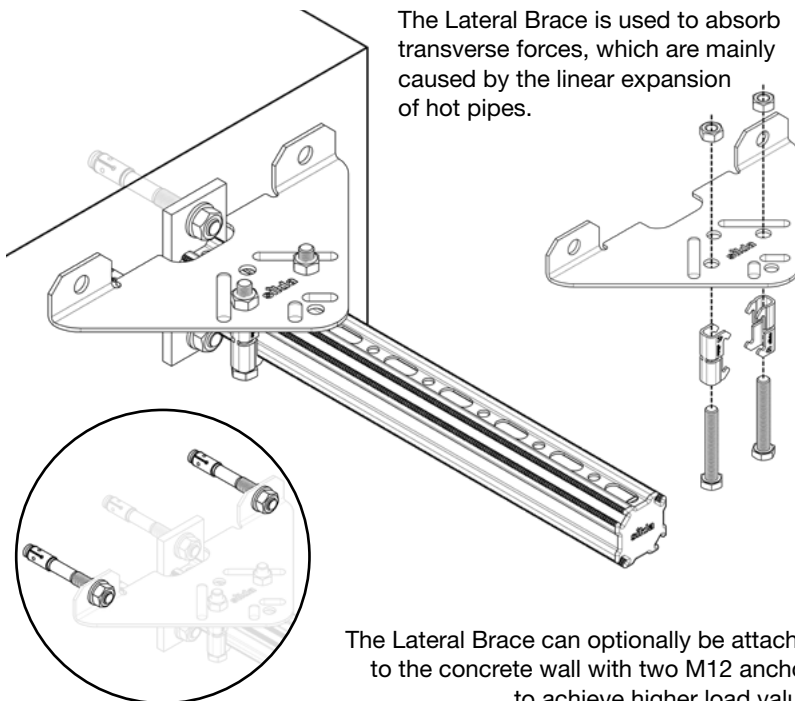


in combination with:

- ◆ Universal Joint UG, Blockset PBS M10x30 and threaded rod GST M10 HCP or alternatively with Tie Rod STR and Blockset PBS M10x50

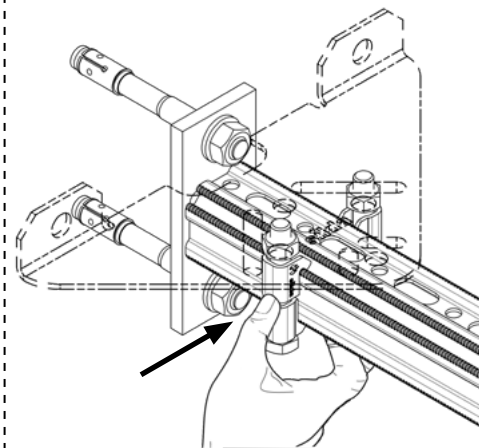
Lateral Brace CFB 46 HCP

The Lateral Brace is used to absorb transverse forces, which are mainly caused by the linear expansion of hot pipes.



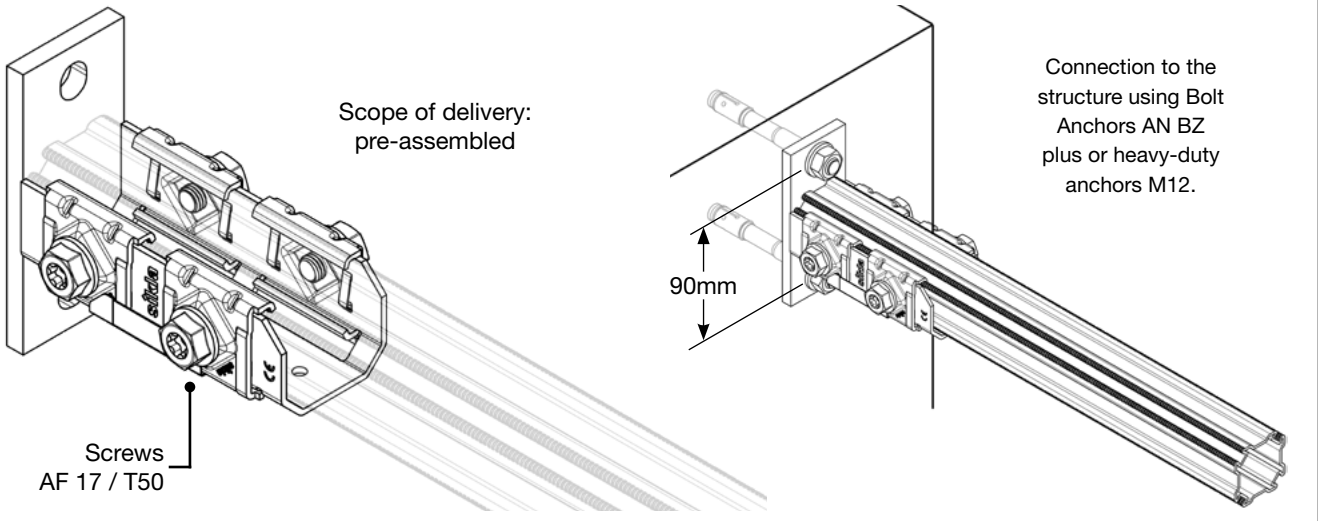
The Lateral Brace can optionally be attached to the concrete wall with two M12 anchors to achieve higher load values

Installation using Profile Clip **MPK 46** (pre-assembled).

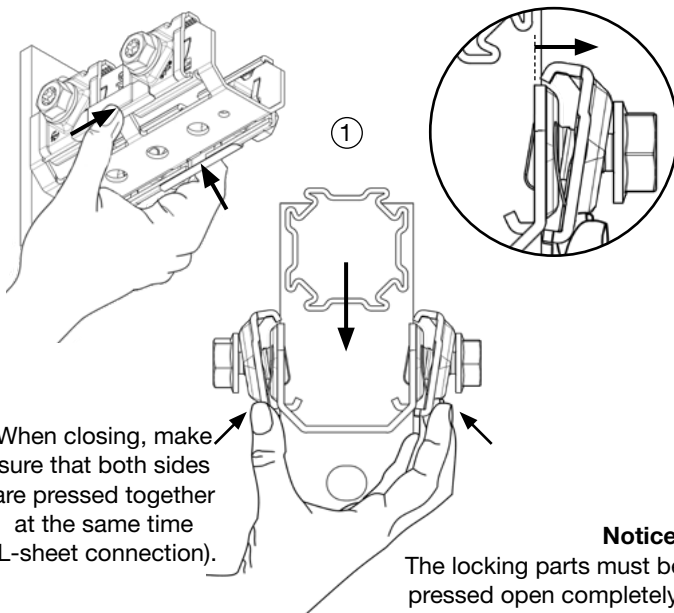


MPK 46 is simply pressed onto the PRO 46 profile.

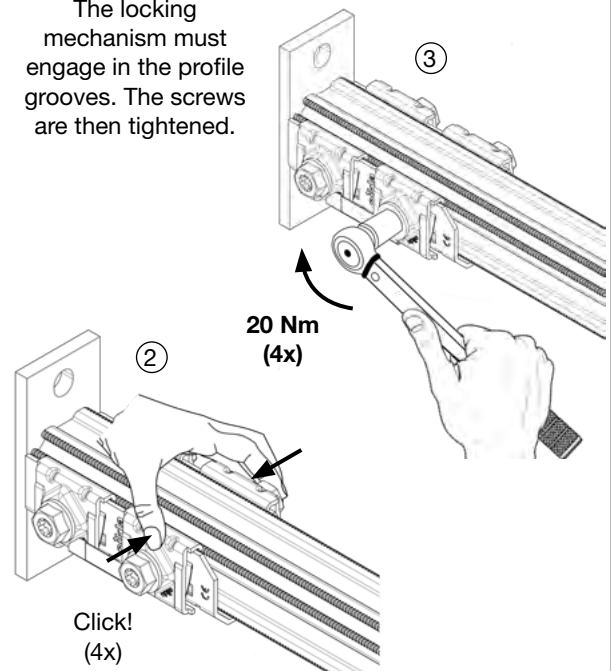
Connection via **End Support WBD 46**



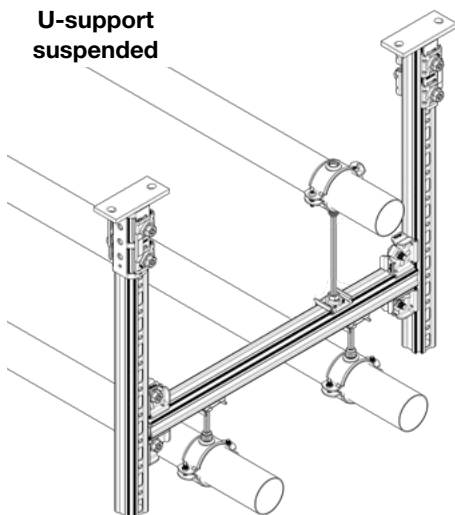
Depress both locking sides of the profile intake, insert the profile and release.



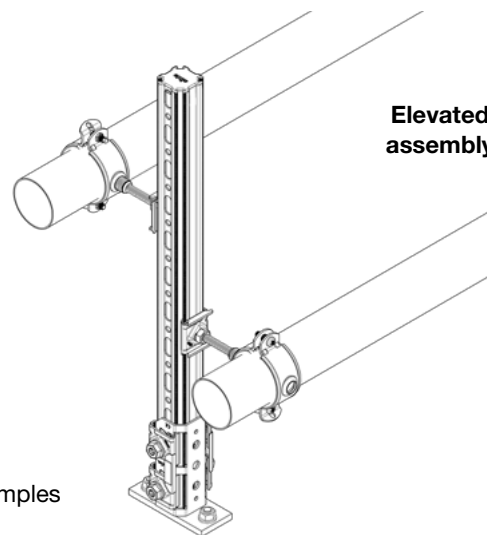
The locking mechanism must engage in the profile grooves. The screws are then tightened.



U-support suspended

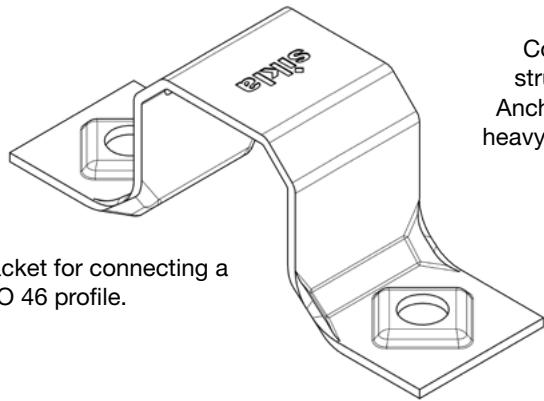


Elevated assembly



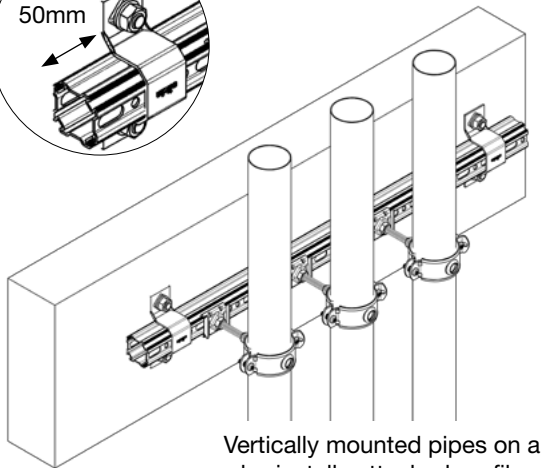
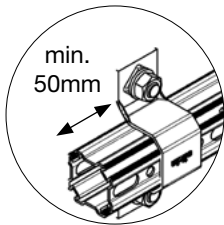
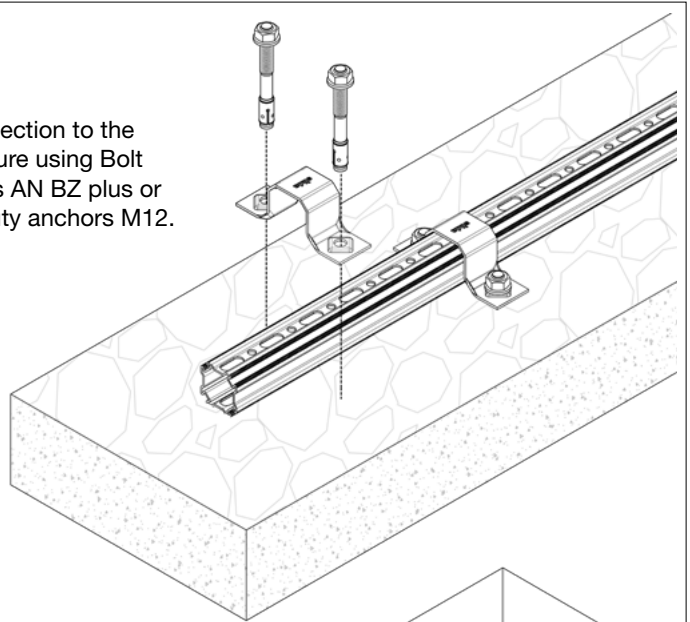
Assembly examples

Profile Holder MPH PRO 46 W

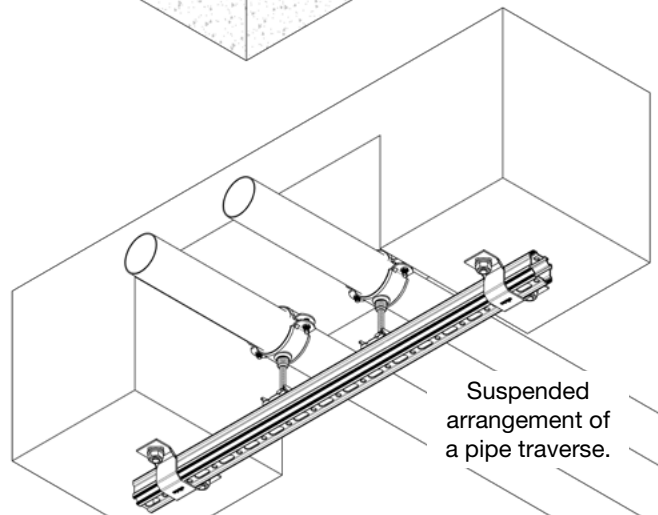


Bracket for connecting a PRO 46 profile.

Connection to the structure using Bolt Anchors AN BZ plus or heavy-duty anchors M12.



Vertically mounted pipes on a horizontally attached profile

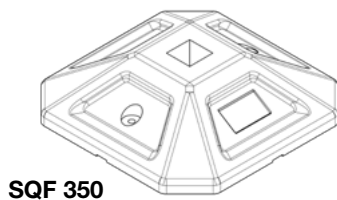


Suspended arrangement of a pipe traverse.

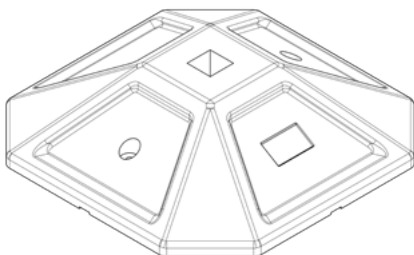
Insulated Foot SHB SQF 46

Insert the Profile PRO 46 into the Insulated Foot's slot.

Tests to determine the coefficient of friction shall be carried out by the customer

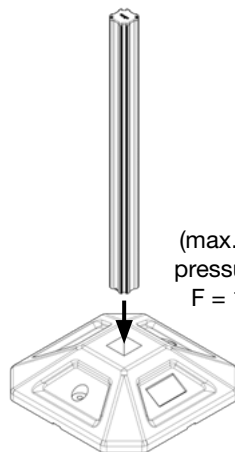


SQF 350

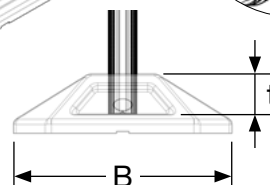
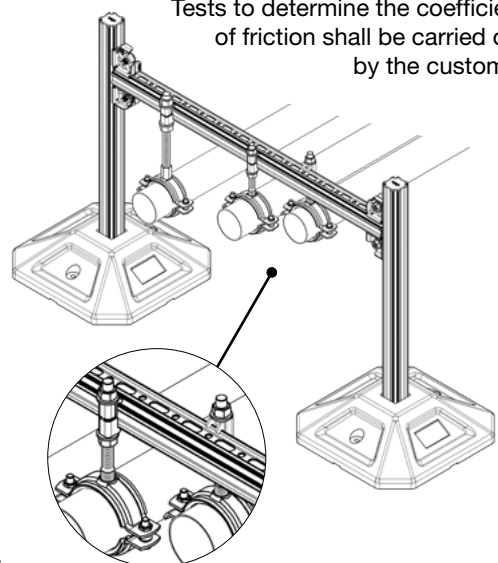


SQF 500

Suitable for equipment, pipes, ventilation ducts or walkways.

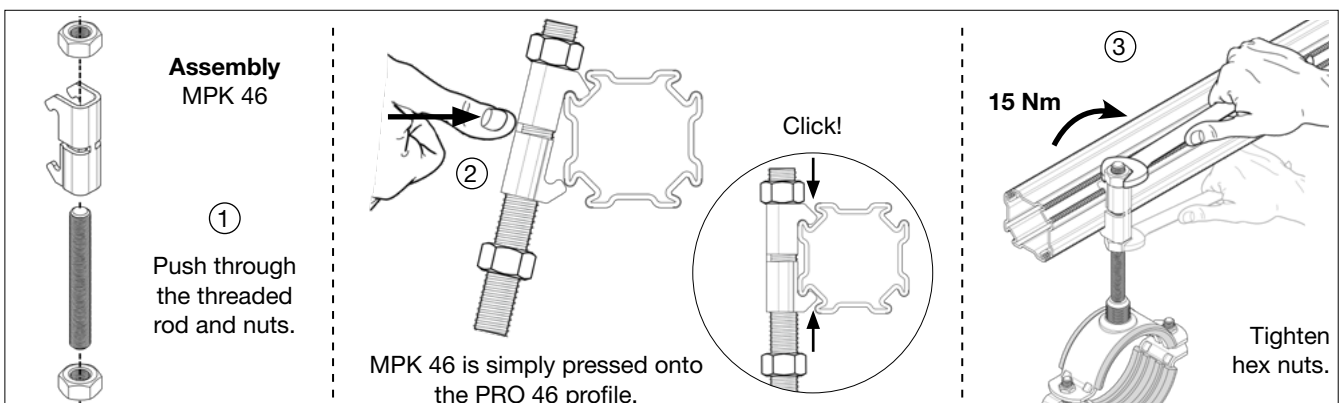
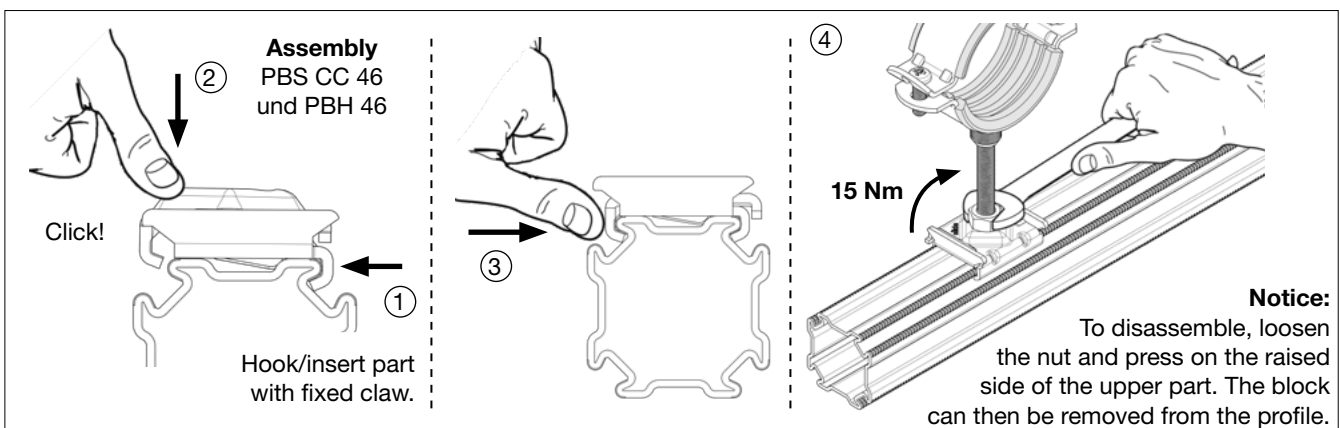
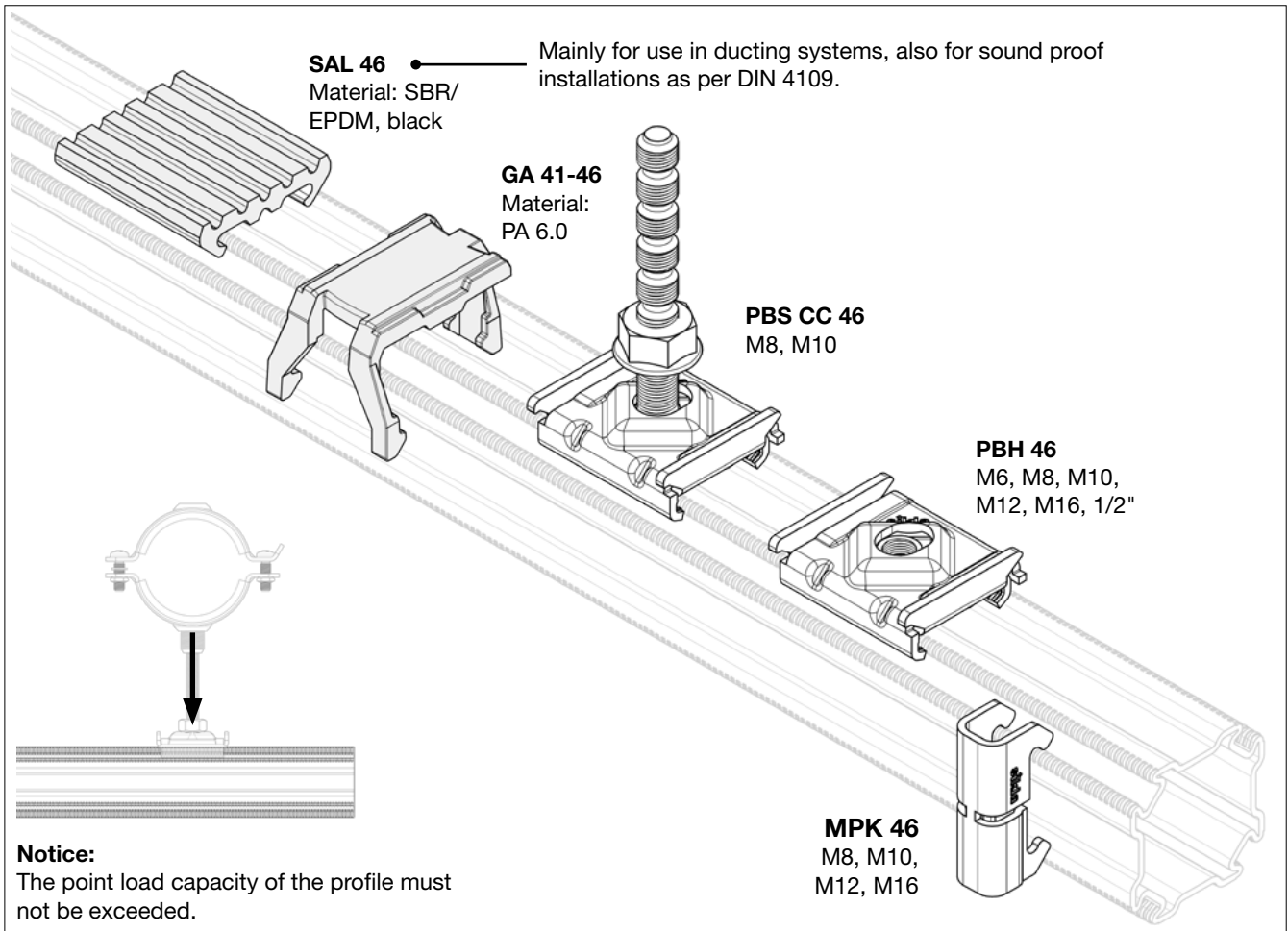


(max. perm. pressue load $F = 16\text{kN}$)

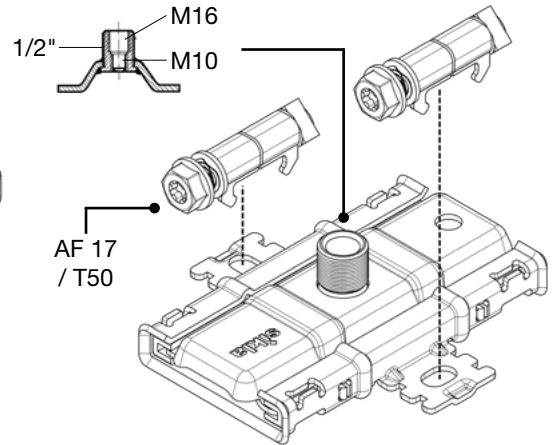
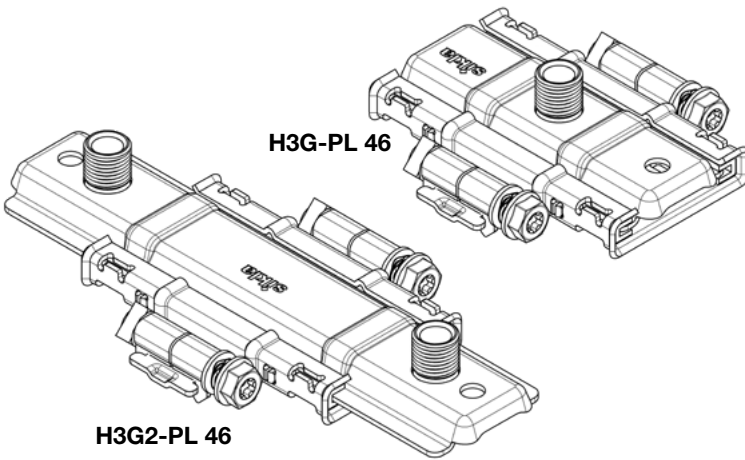


Type	t [mm]	B [mm]
SQF 350	60	350
SQF 500	90	500

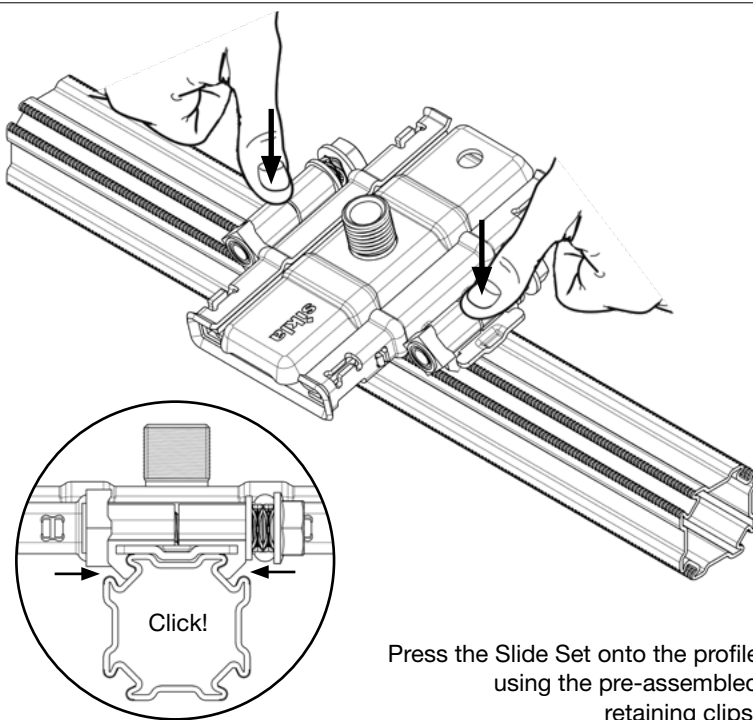
Pipe connections



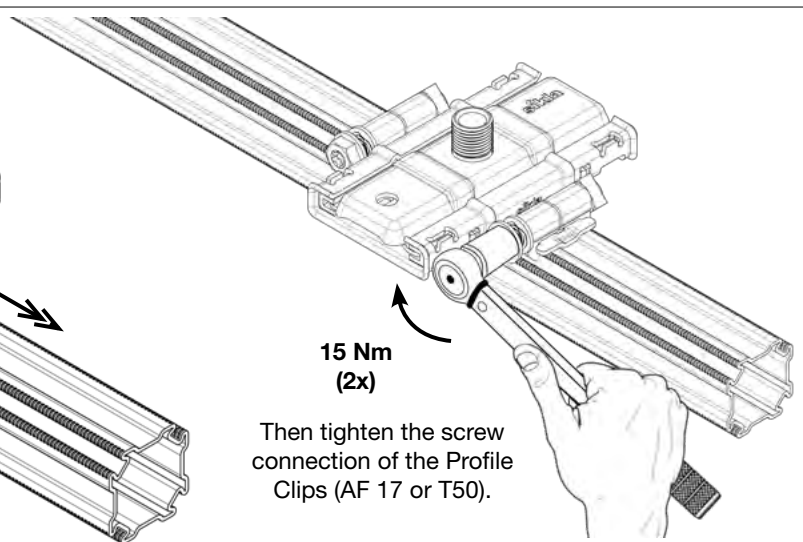
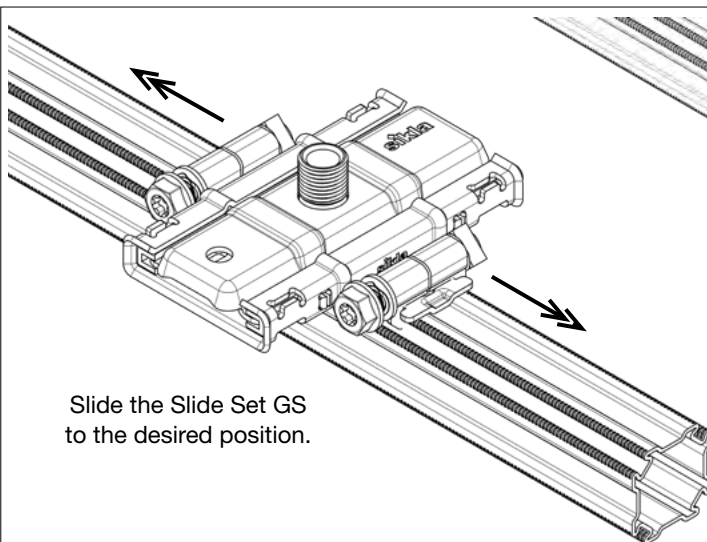
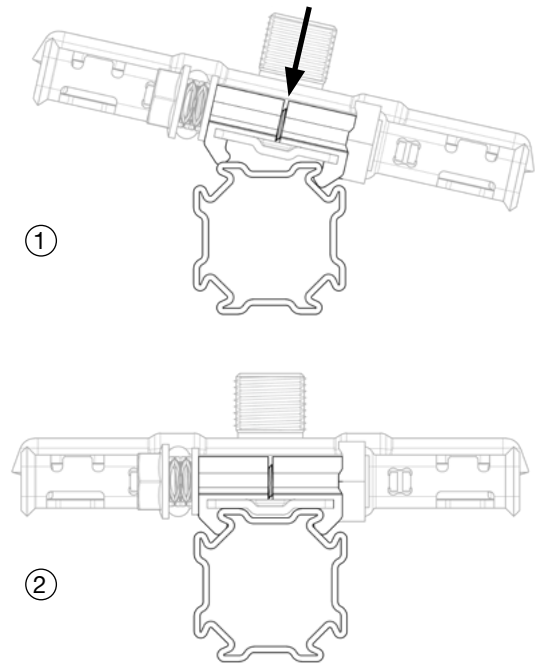
Slide Set GS H3G-PL 46

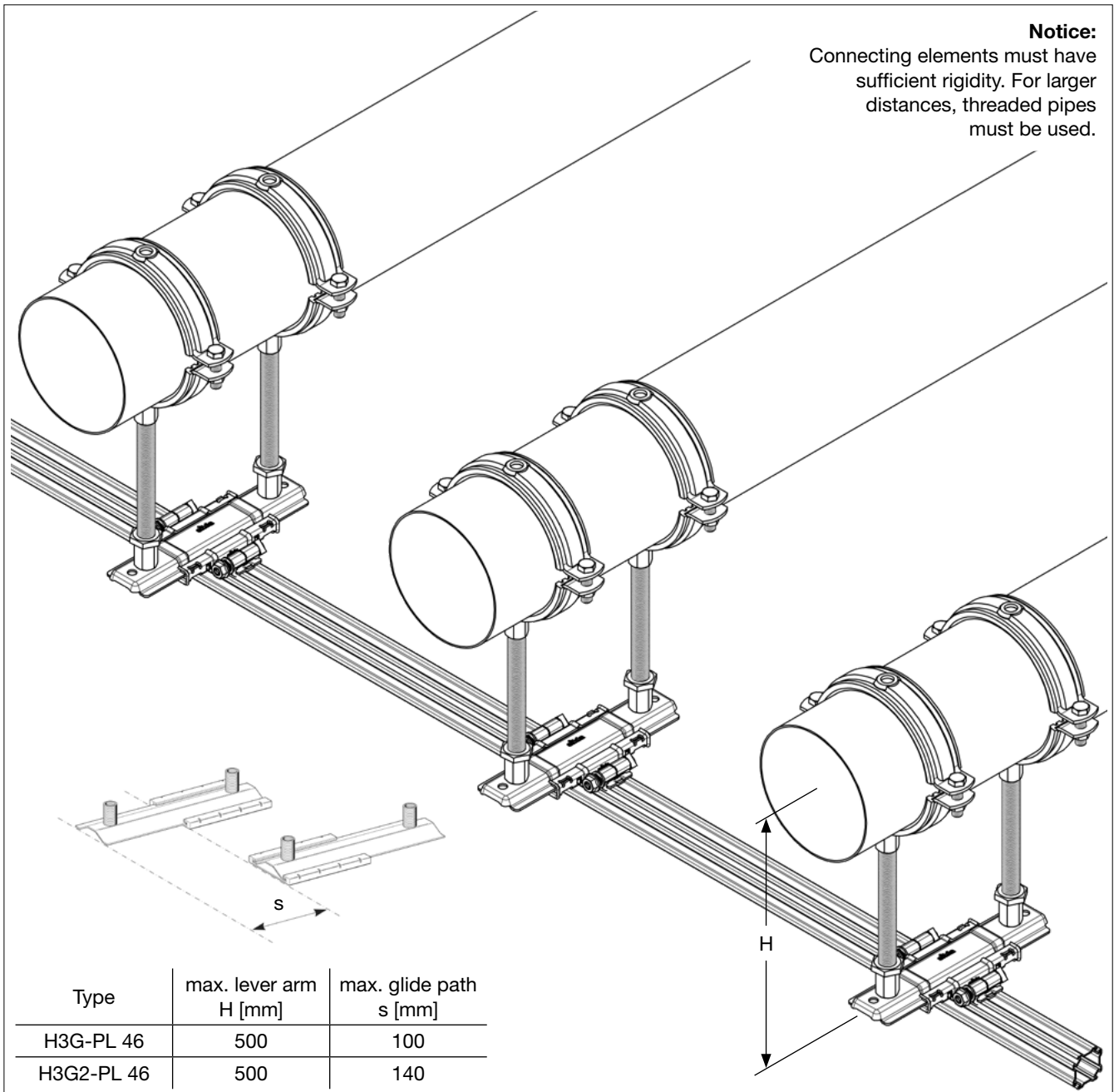
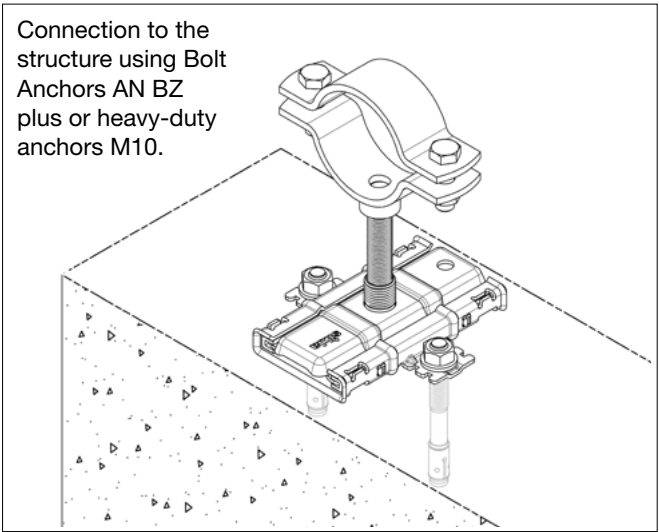
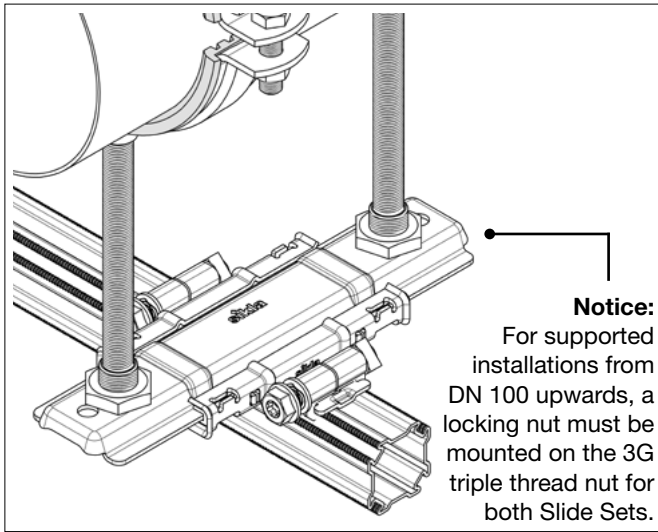


Scope of delivery: fully pre-assembled



Press the Slide Set onto the profile using the pre-assembled retaining clips.





Type	max. lever arm H [mm]	max. glide path s [mm]
H3G-PL 46	500	100
H3G2-PL 46	500	140

U Bolt RUB 46

Scope of delivery: Completely pre-assembled

U Bolt with sheath M8/M10/M12

Slide Support GA 41-46

MPK 46 (2x) (is simply pressed onto the PRO 46 profile.)

(2x) nuts on each side

Guide bearing

When used as a guide bearing, nuts arranged on both sides at the top and bottom of the round steel bracket must be tightened.

GA 41-46: Sound-absorbing and insulating pipe support surface

The pipe should remain freely movable.

Fixed point

①

When used as a fixed point, first tighten the lower nuts until the pipe is clamped.

②

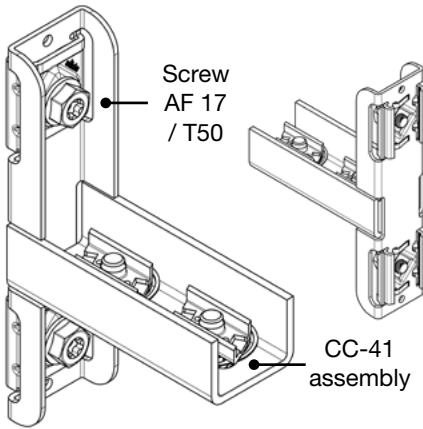
Then tighten the upper nuts.

For fixed points, the permissible forces of the structural connection and the bending loads of the U Bolt must not be exceeded.

Combination of systems

Channel Adapter SA PRO

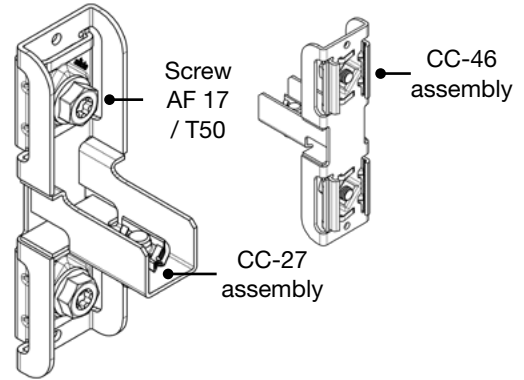
Combination with Siconnect



SA PRO 46 - 41

Combination with Assembly System Pressix CC 41

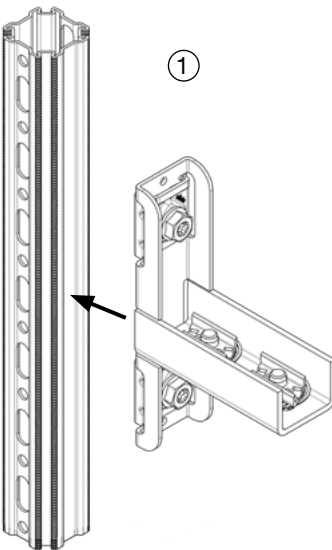
Scope of delivery: fully pre-assembled



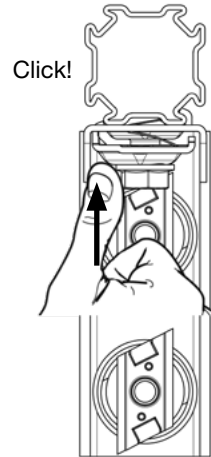
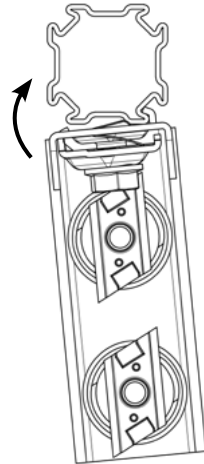
SA PRO 46 - 27

Combination with Assembly System Pressix CC 27

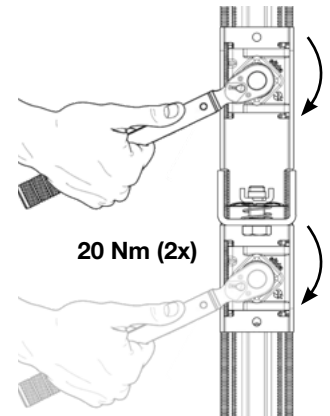
SA PRO assembly



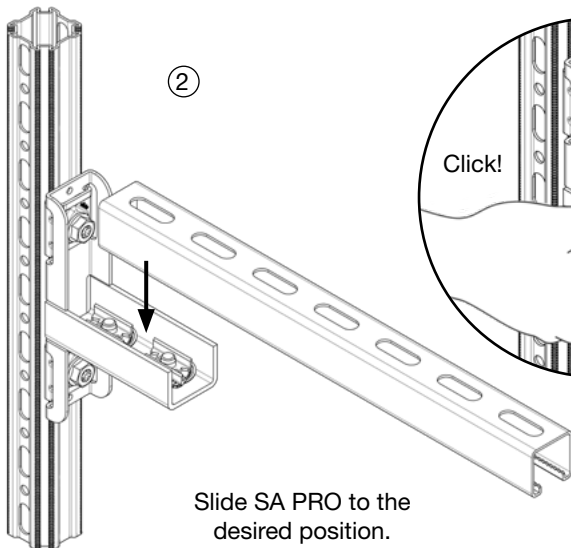
Place SA PRO at an angle on the profile and hook the rigid claw into the profile.



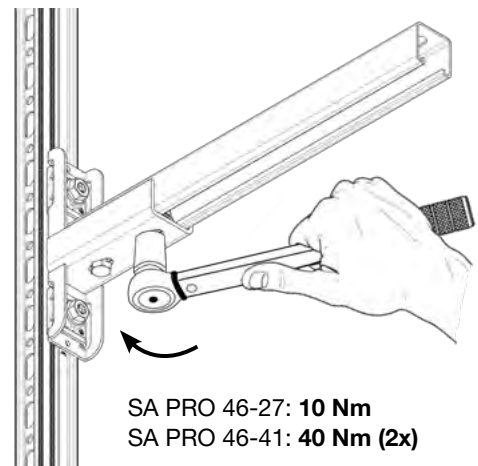
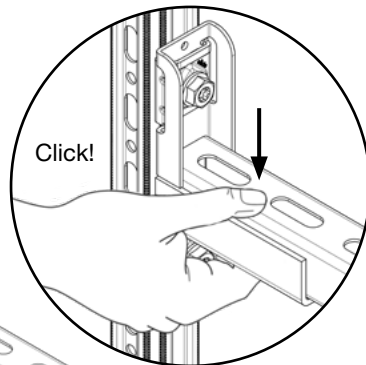
By pressing on the two locking parts, the SA PRO is locked to the profile.



Tighten screws

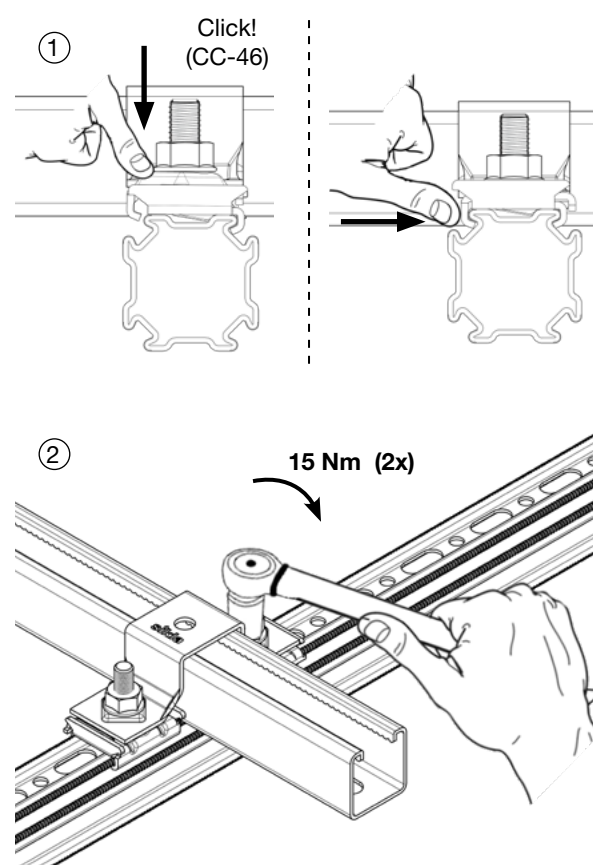
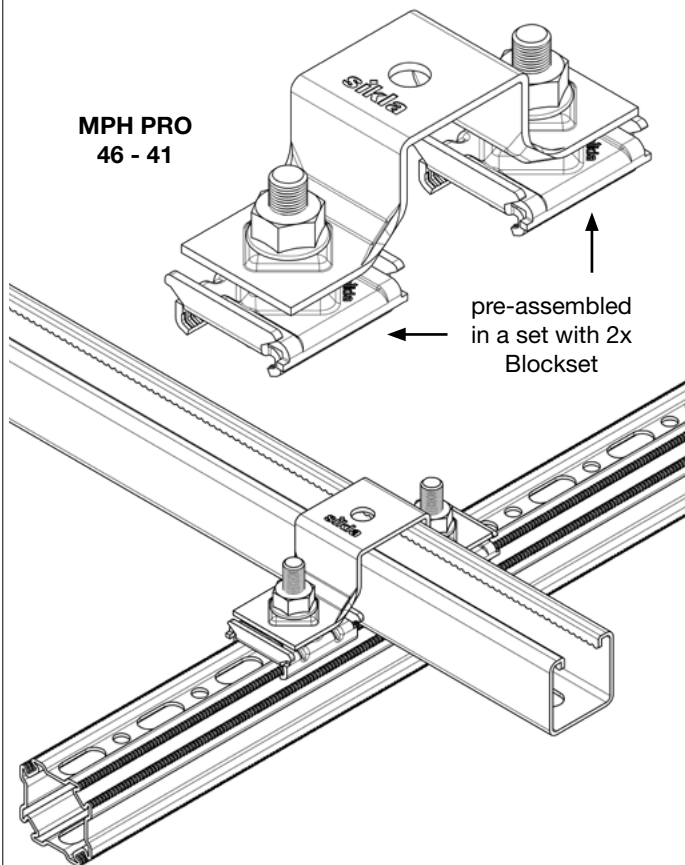
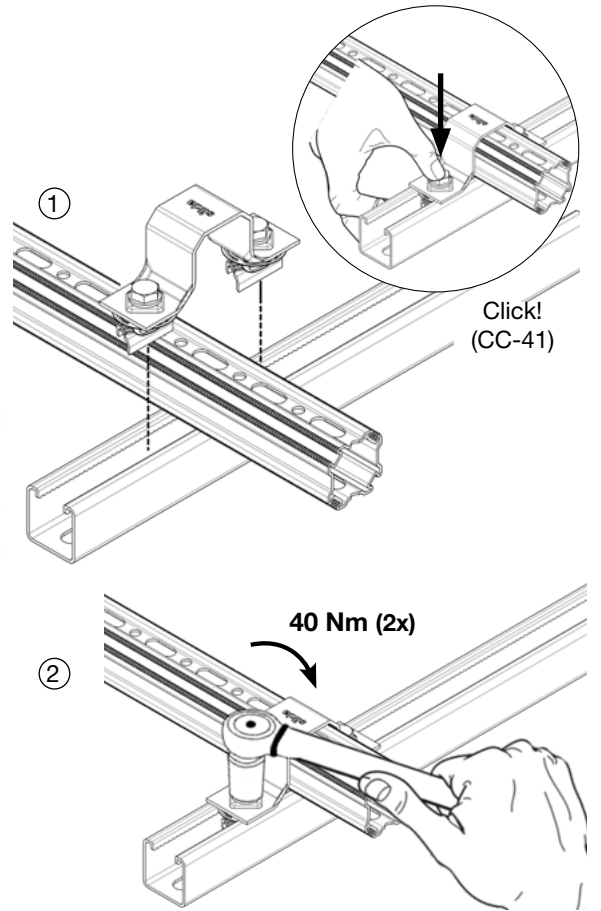
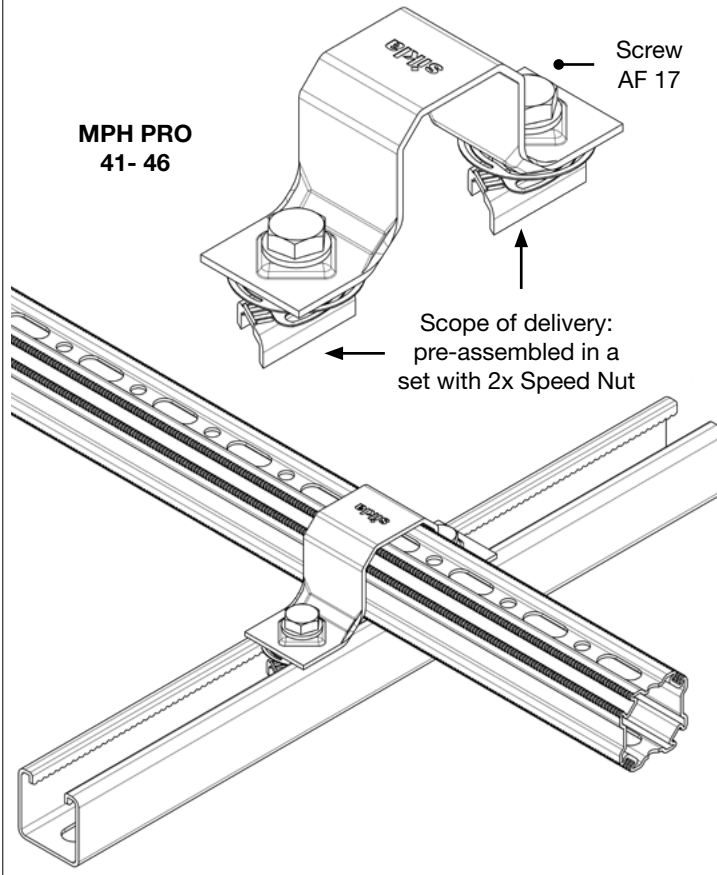


Slide SA PRO to the desired position.



Then insert the channel, press it firmly and tighten the screws.

Cross connection using **Profile Holder MPH PRO**



Combination with SiFramo

Cross connection using **Profile Holder MPH F 80/F 100 - 46**

available for Beam Section TP F 80 and TP F 100

Form-fitting connection to Beam Section TP F using 4 Self Forming screws FLS F

Profile Adapter MPA F 80/F 100 - 46

Scope of delivery: fully pre-assembled

Screws AF 17 / T50

① Press the locking parts together and insert the PRO 46 profile into the profile intake.

② Press the four locking parts onto the profile.

Click! (4x)

③ Tighten screws.

20 Nm (4x)

④ Form-fitting connection to the Beam Section TP F using 4 Self Forming Screws FLS F.

available for Beam Section TP F 80 and TP F 100

60 Nm (4x)

Notice: The locking parts must be pressed open completely.

Combination of Sikla systems: Assembly examples

