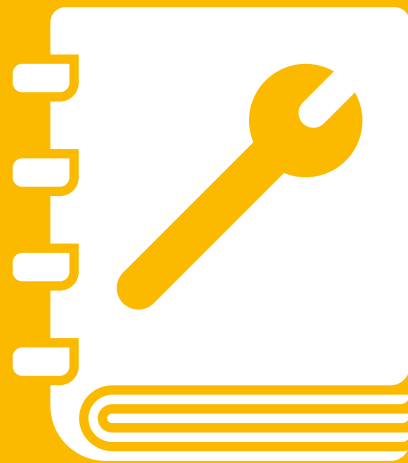


# sikla



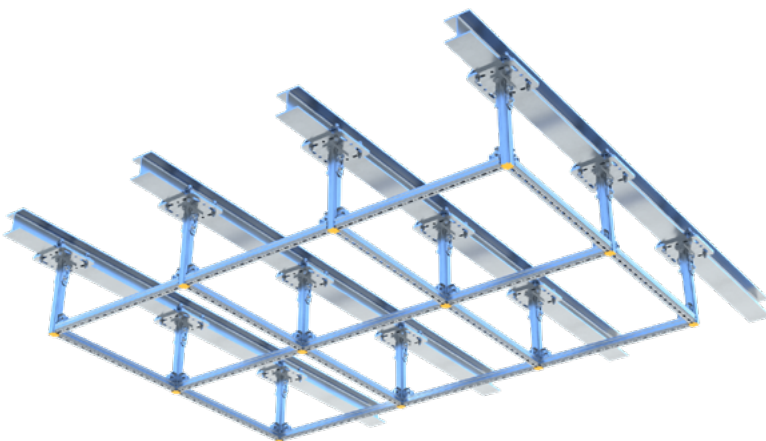
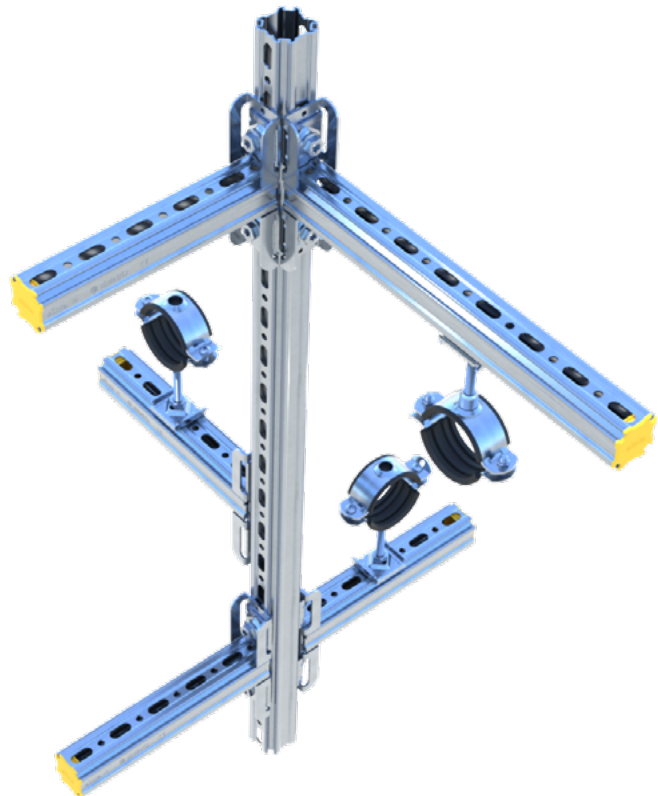
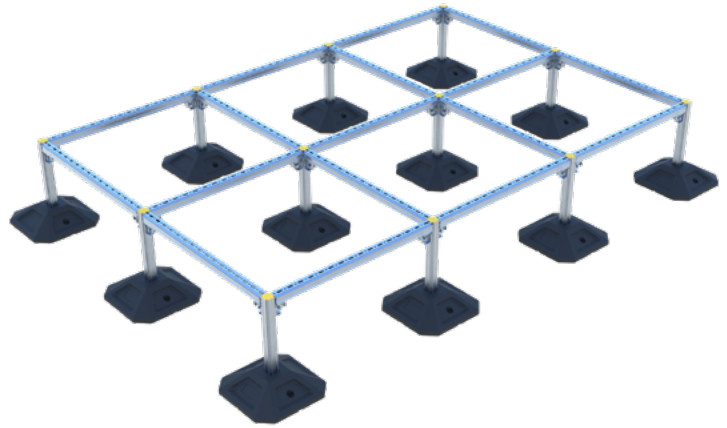
**siMetric**  
Installation Guidelines





## 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:

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

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

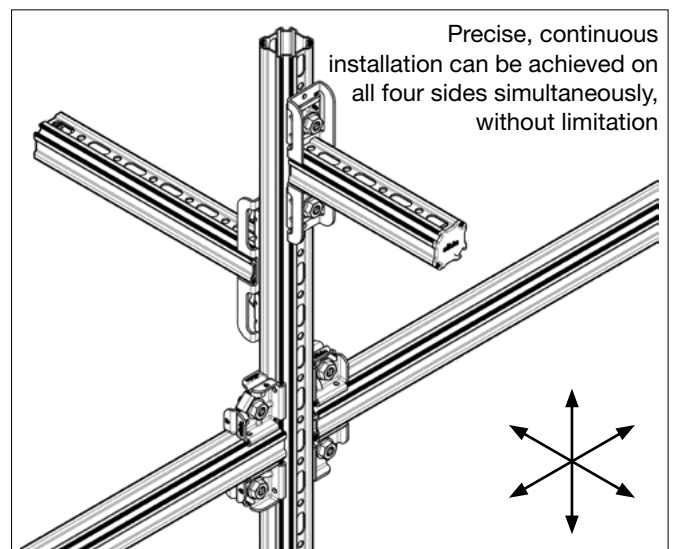
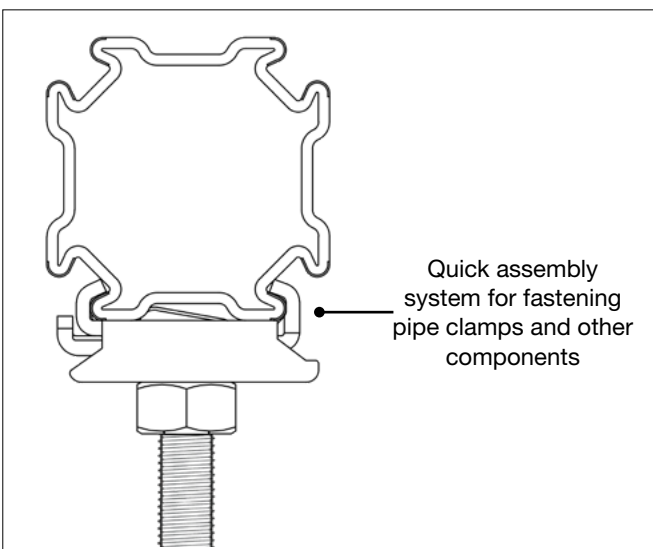
Profil with internal gearing

46mm

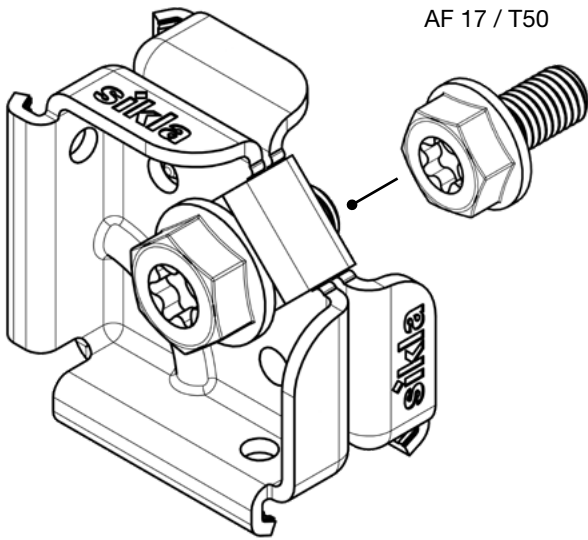
46mm

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.

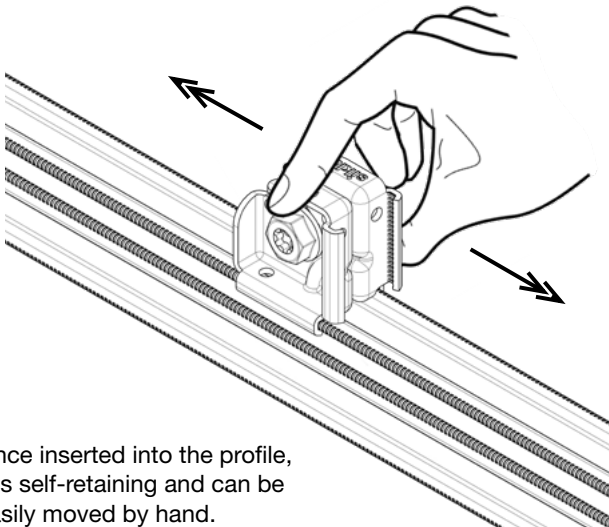
Type	Profile Modulus	Second Moment of Area	Radius of Gyration	Area of Section	Cut Lengths
<b>PRO 46</b>	$W_y = 4,12 \text{ cm}^3$	$I_y = 9,49 \text{ cm}^4$	$i_y = 1,60 \text{ cm}$	3,70 cm <sup>2</sup>	2m, 6m
	$W_z = 4,12 \text{ cm}^3$	$I_z = 9,49 \text{ cm}^4$	$i_z = 1,60 \text{ cm}$		
<b>PRO 46 -P</b>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

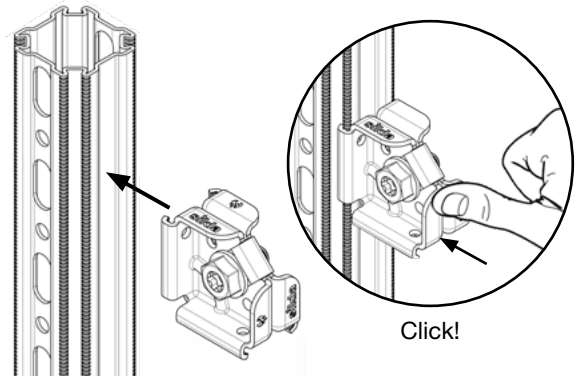


Connecting element for frame constructions and cantilevers. For cantilevers, the connector must always be used in pairs.

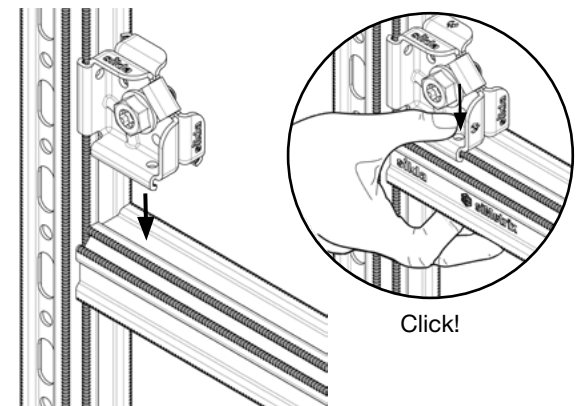


Once inserted into the profile, it is self-retaining and can be easily moved by hand.

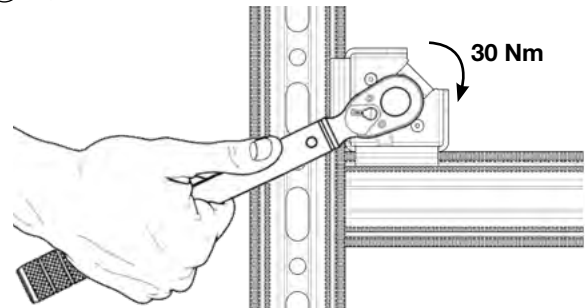
① The connector is pressed onto the profile.



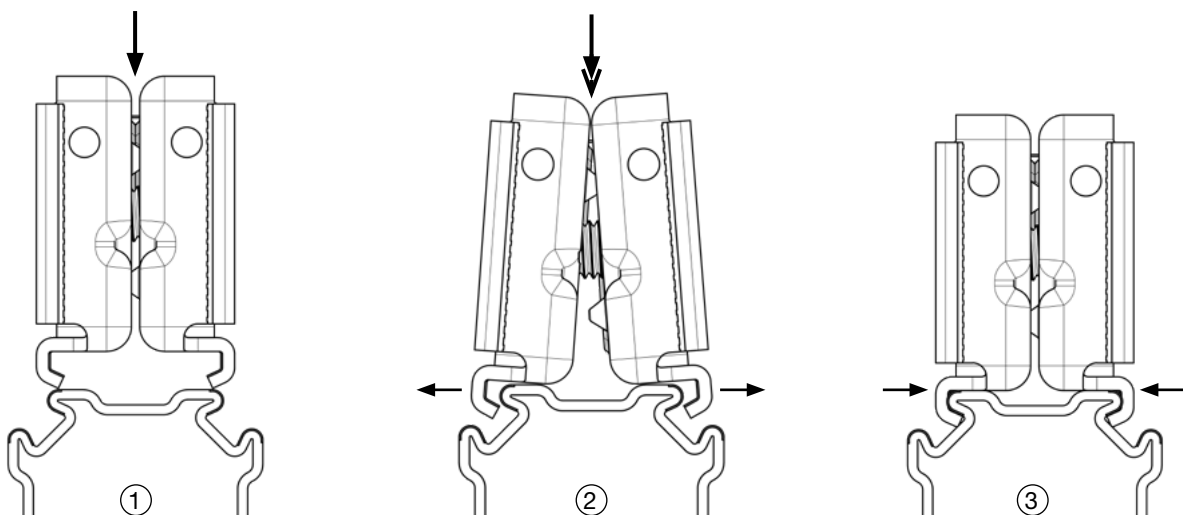
② Then press onto another profile at 90°



③ Tighten screw

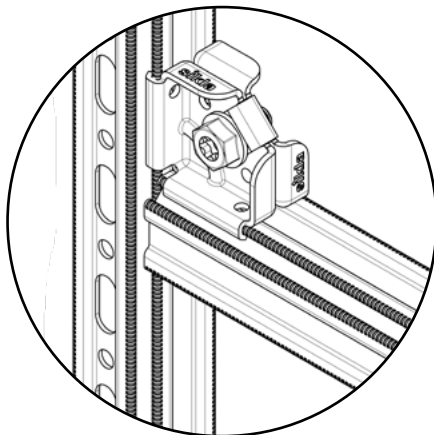
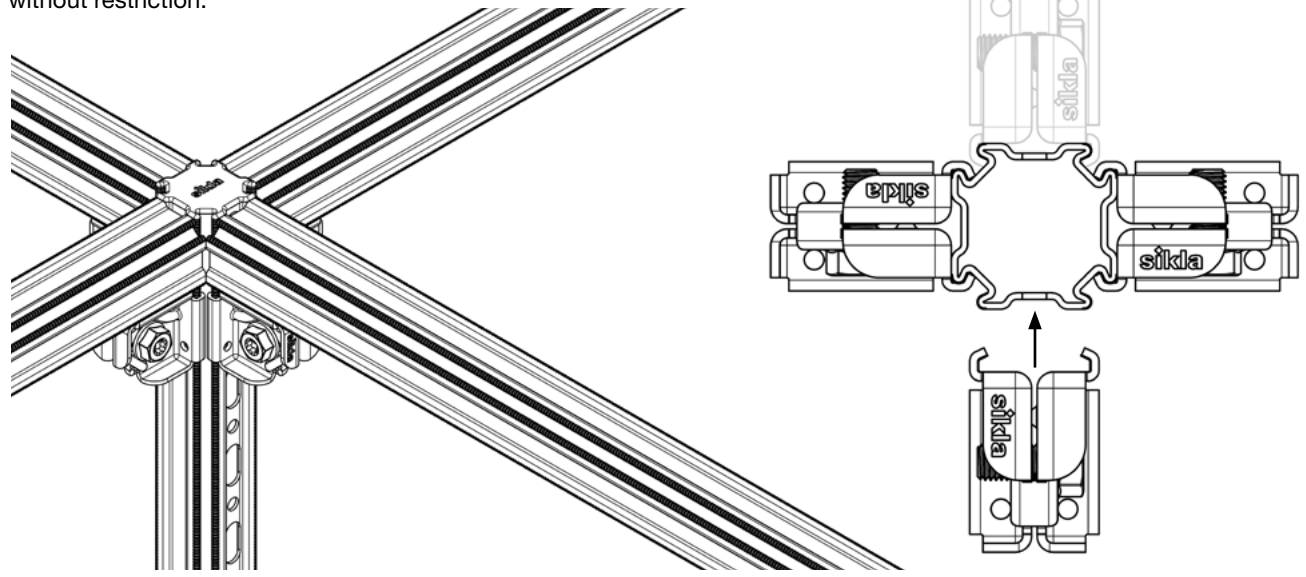


The central spring allows the connector to be pressed onto the profile and locked into place.

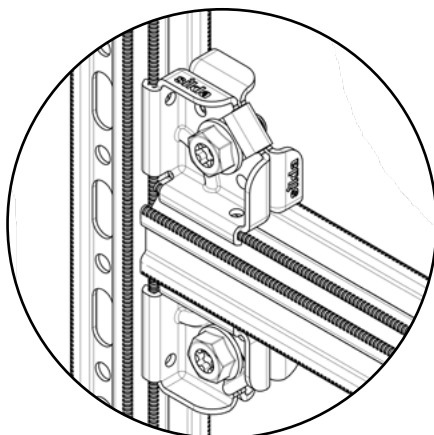




The closed and symmetrical profile shape enables the adaptation of connecting parts and pipe support connections on all four sides without restriction.

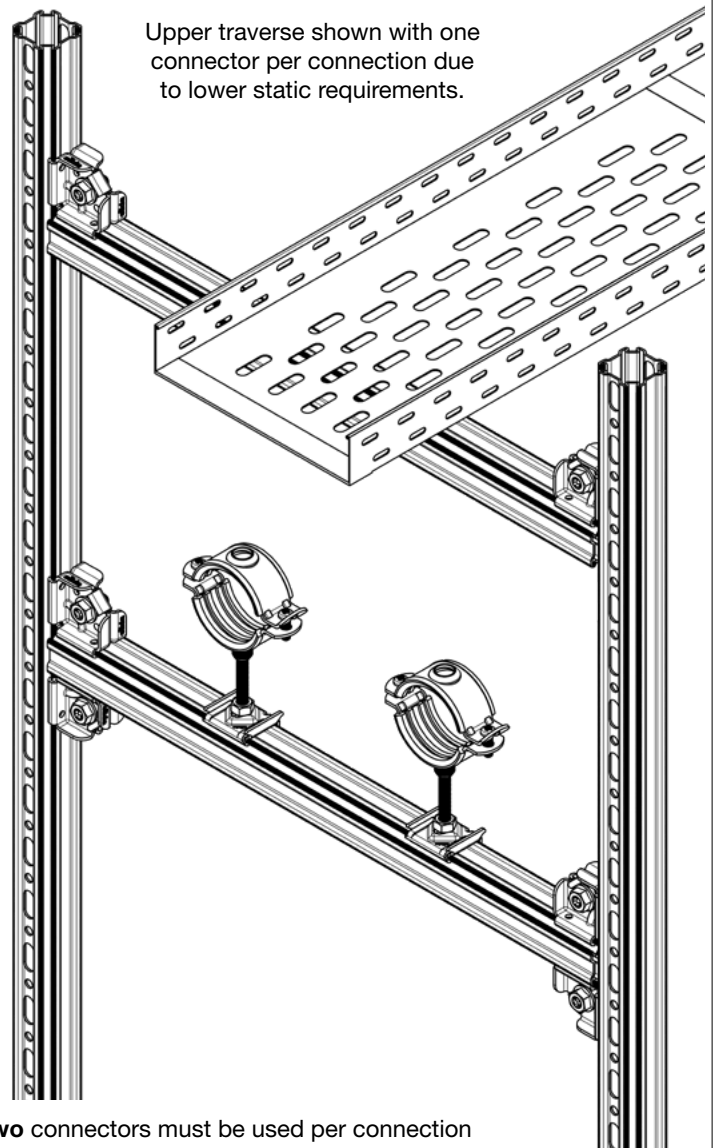


1x connector per connection



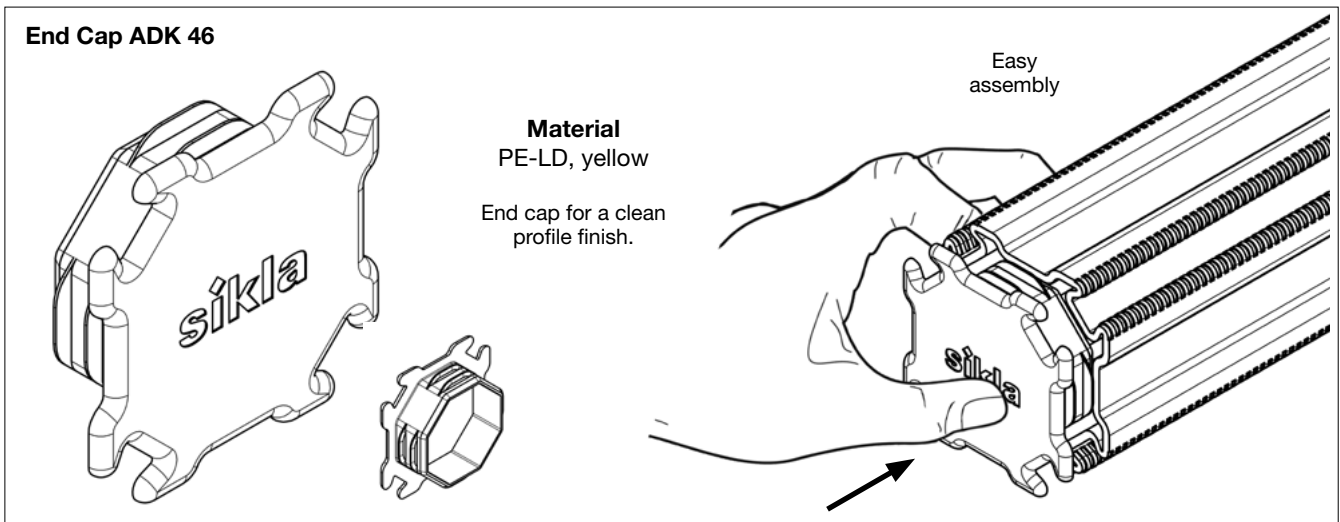
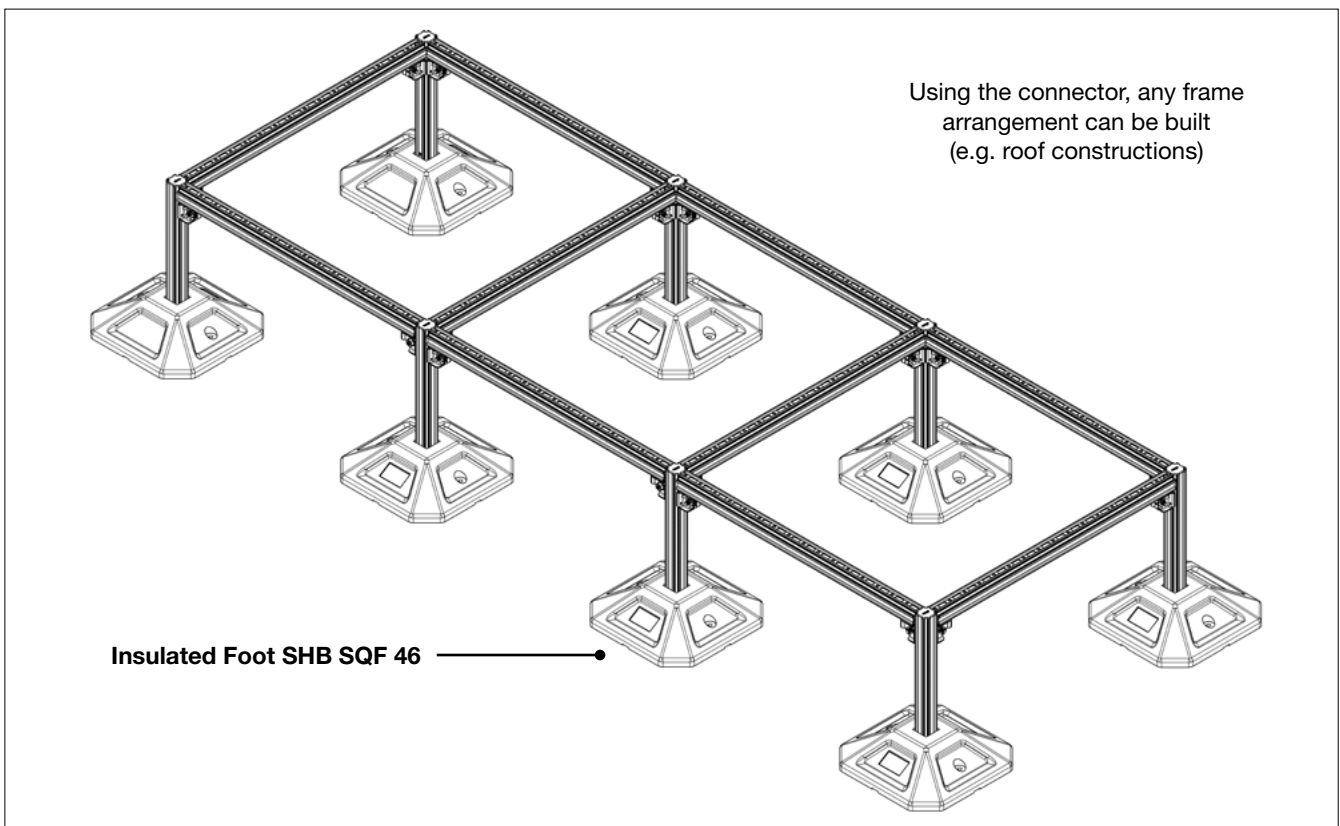
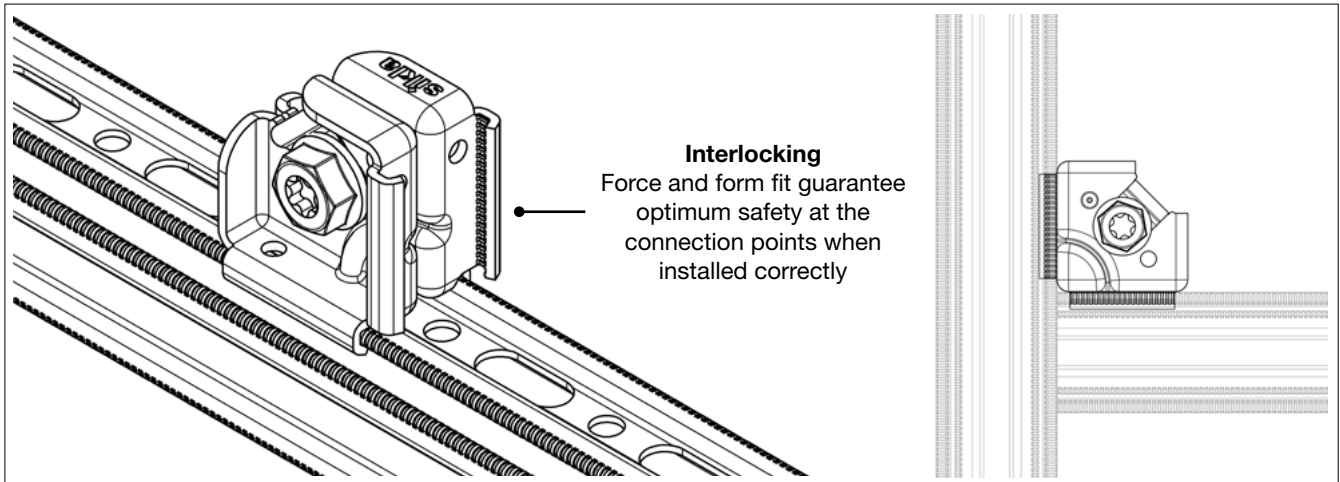
2x connectors per connection  
(use in pairs)

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

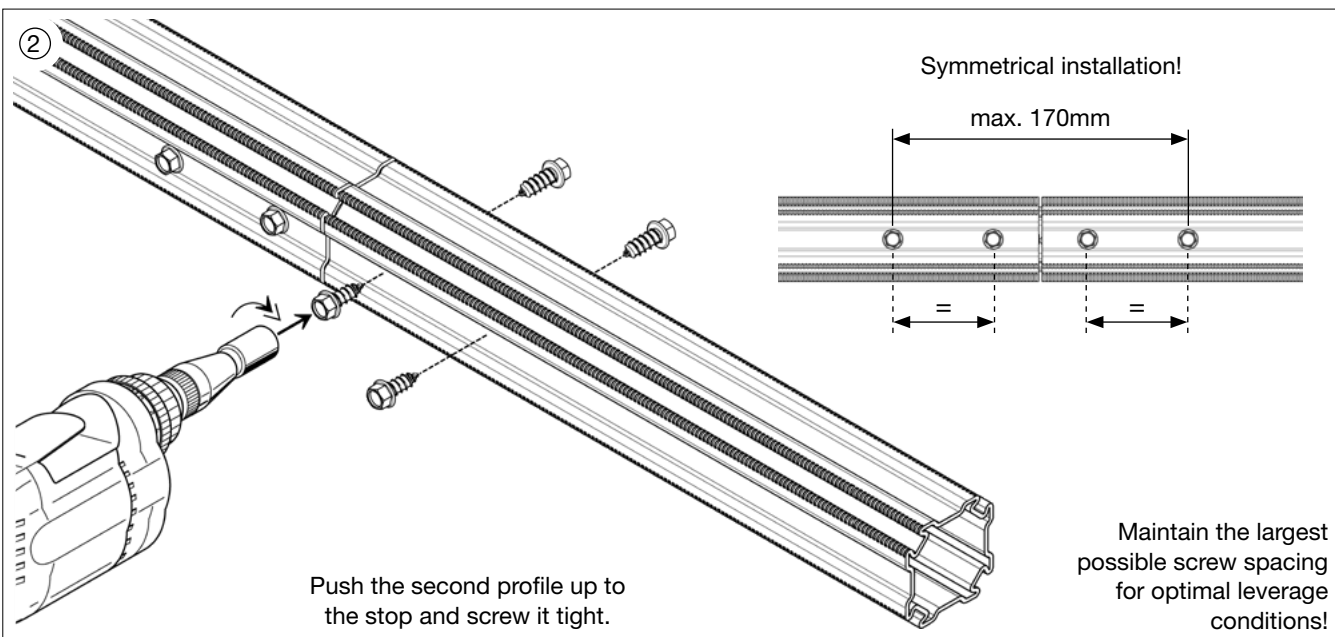
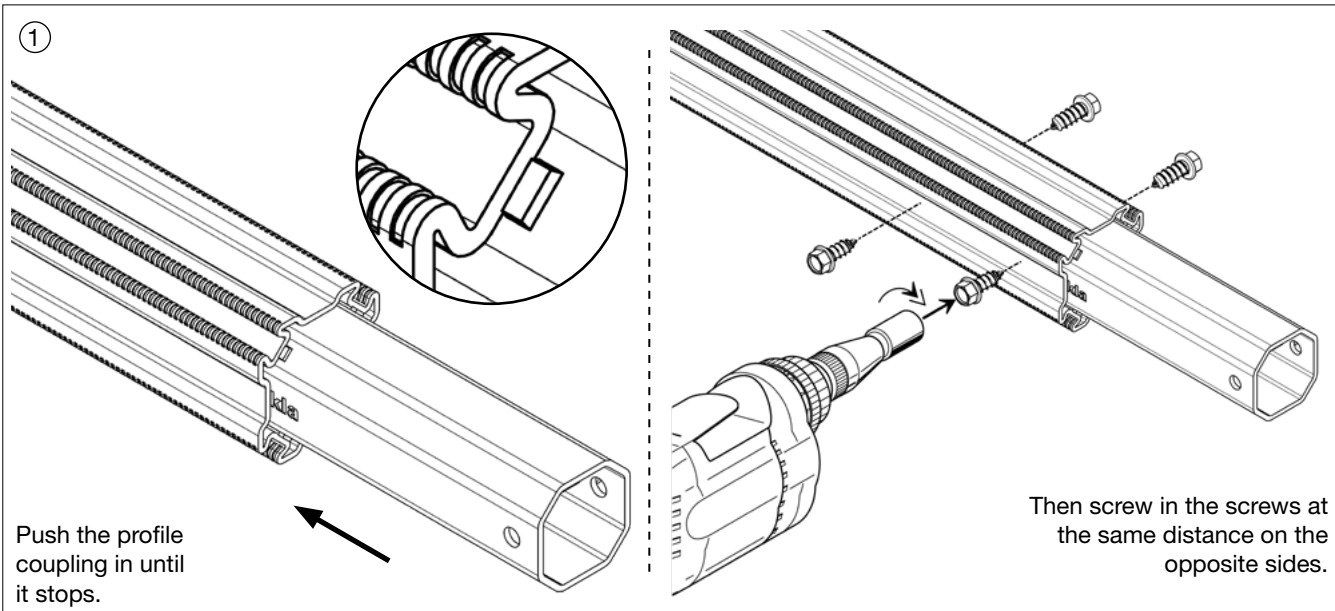
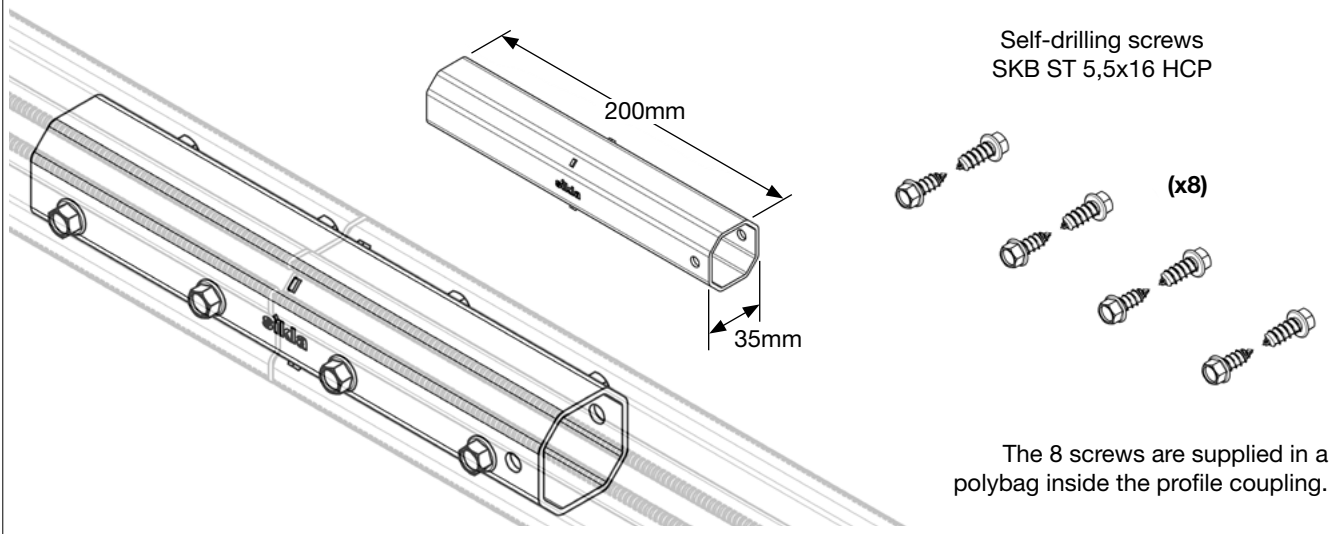


Depending on the impact, **one** or **two** connectors must be used per connection

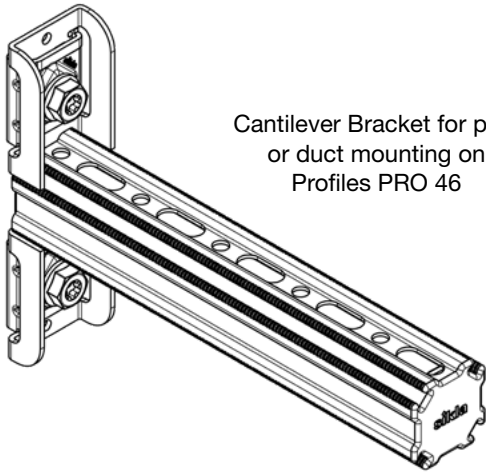




**Profile Coupling PK 46**



**Cantilever Bracket AK CC 46-P**

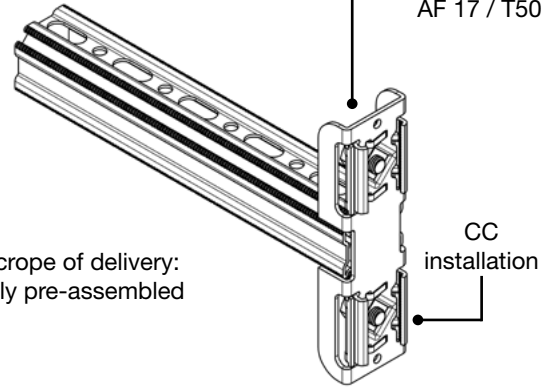


Cantilever Bracket for pipe or duct mounting on Profiles PRO 46

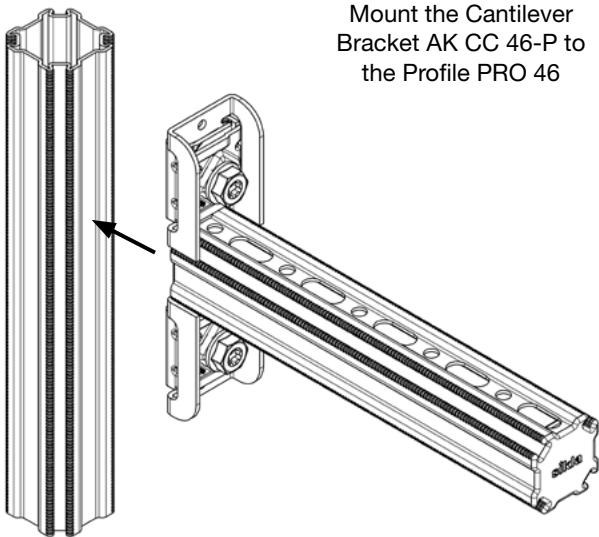


ADK 46

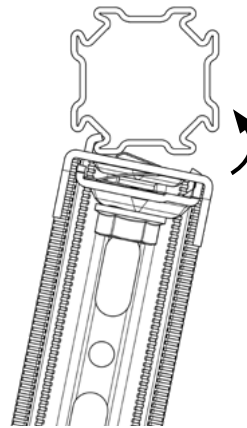
Scope of delivery: fully pre-assembled



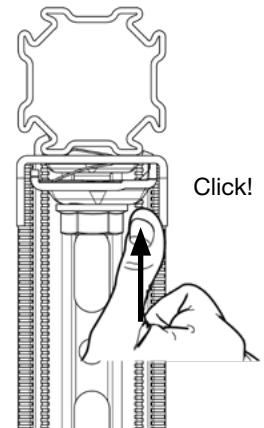
①



Mount the Cantilever Bracket AK CC 46-P to the Profile PRO 46

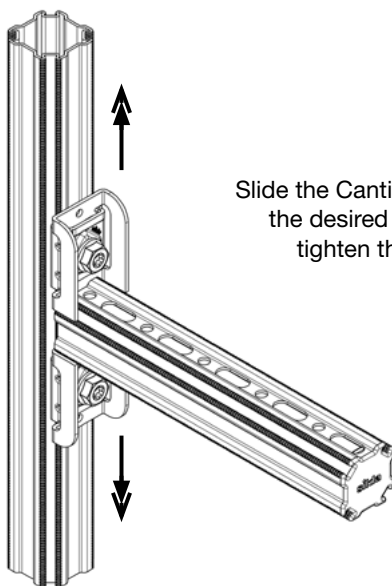


Place AK CC 46-P at an angle on the profile and hook the rigid claw into the profile.

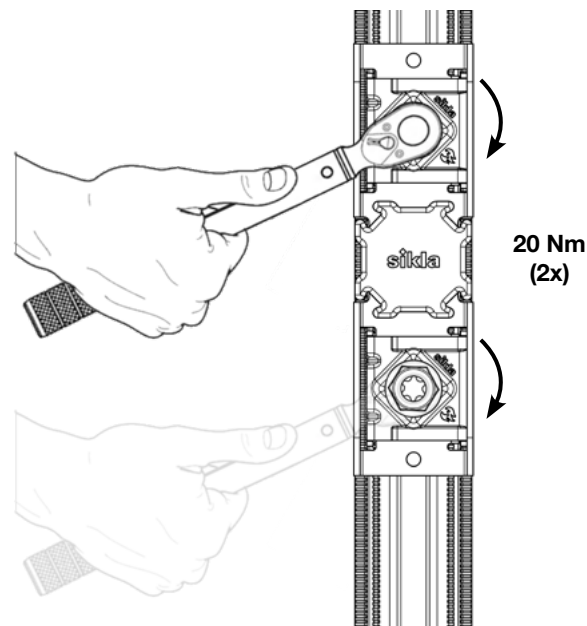


By pressing on the two locking parts, the Cantilever Bracket is locked to the profile.

②

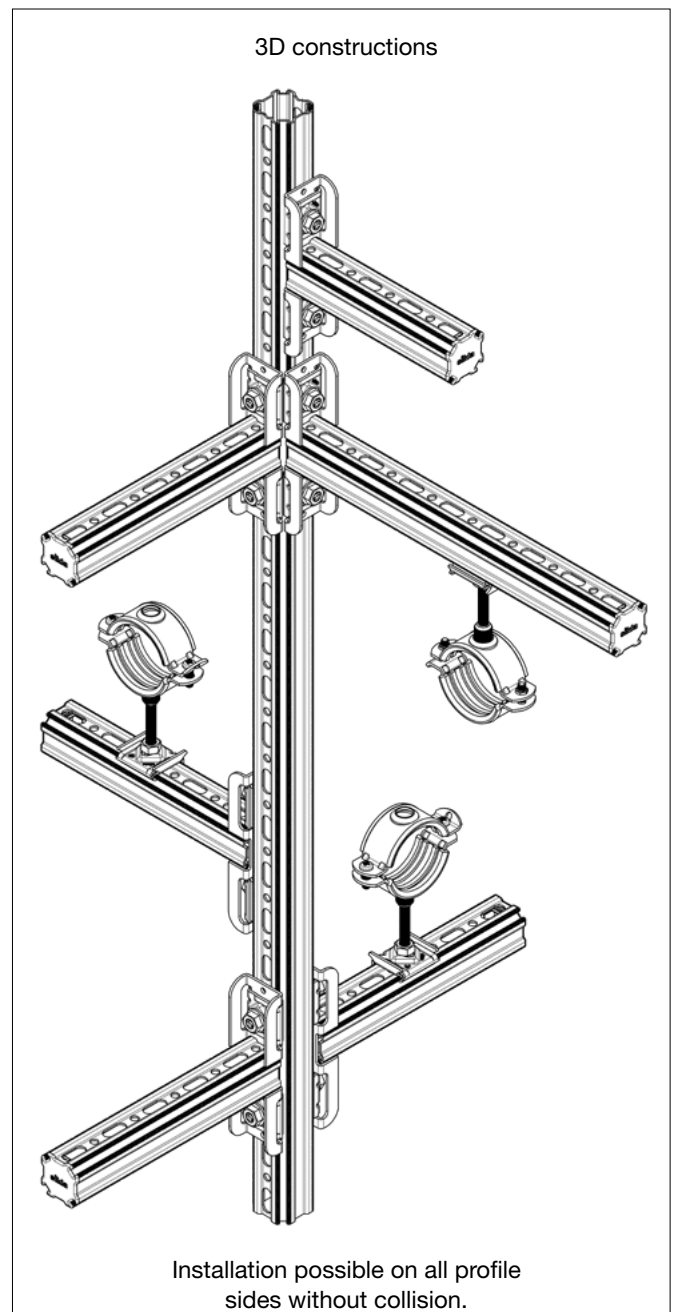
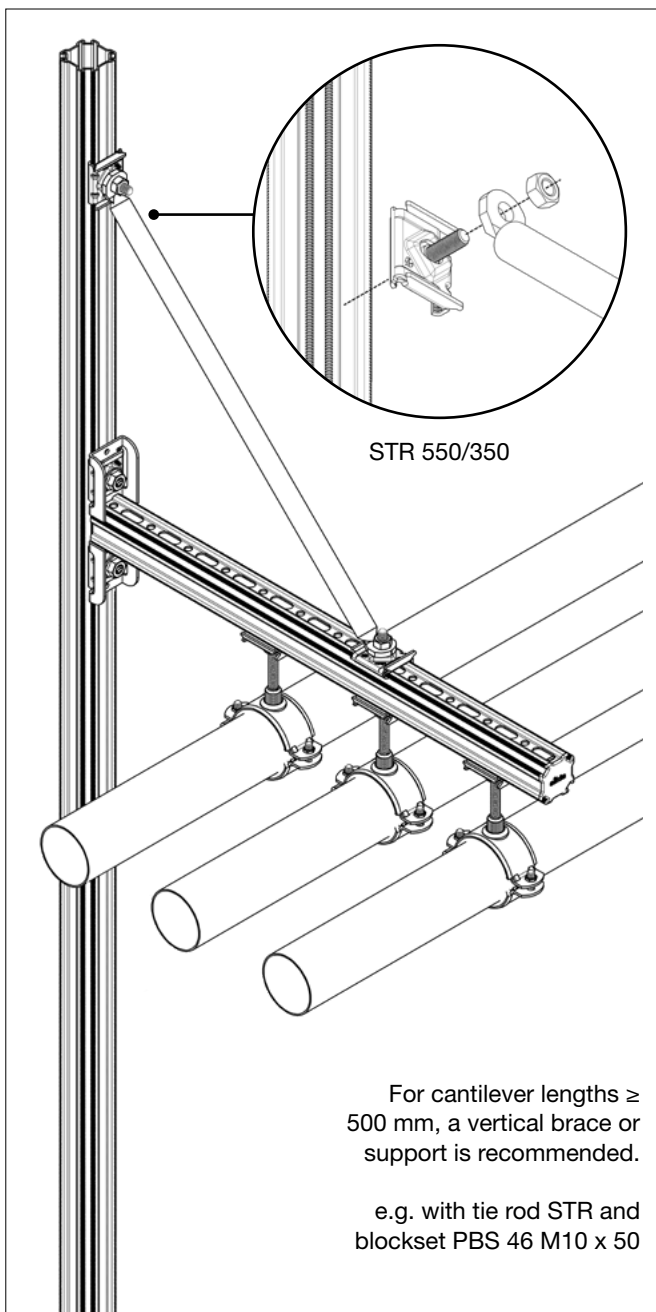
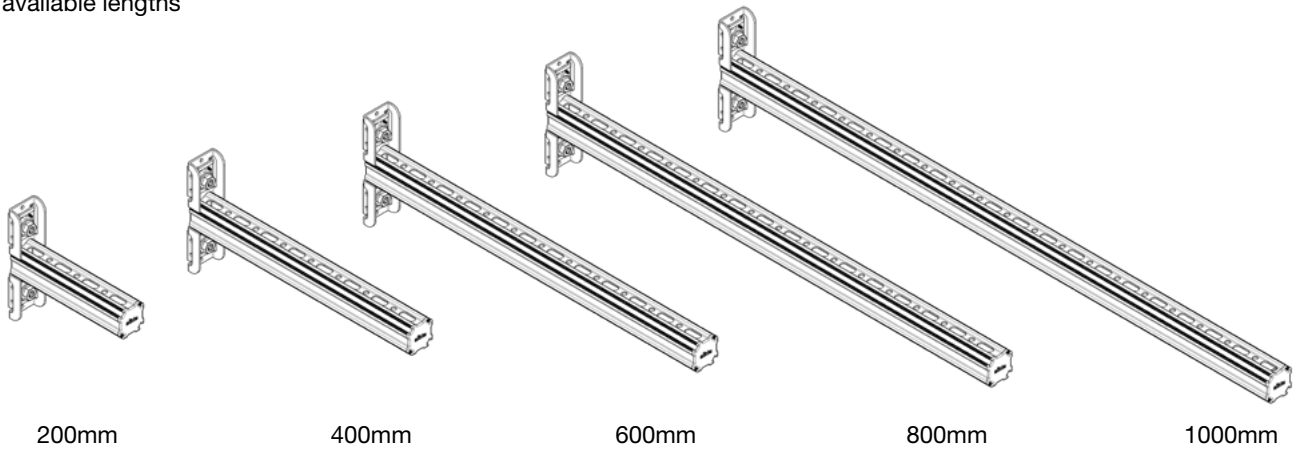


Slide the Cantilever Bracket to the desired position and tighten the screws.





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

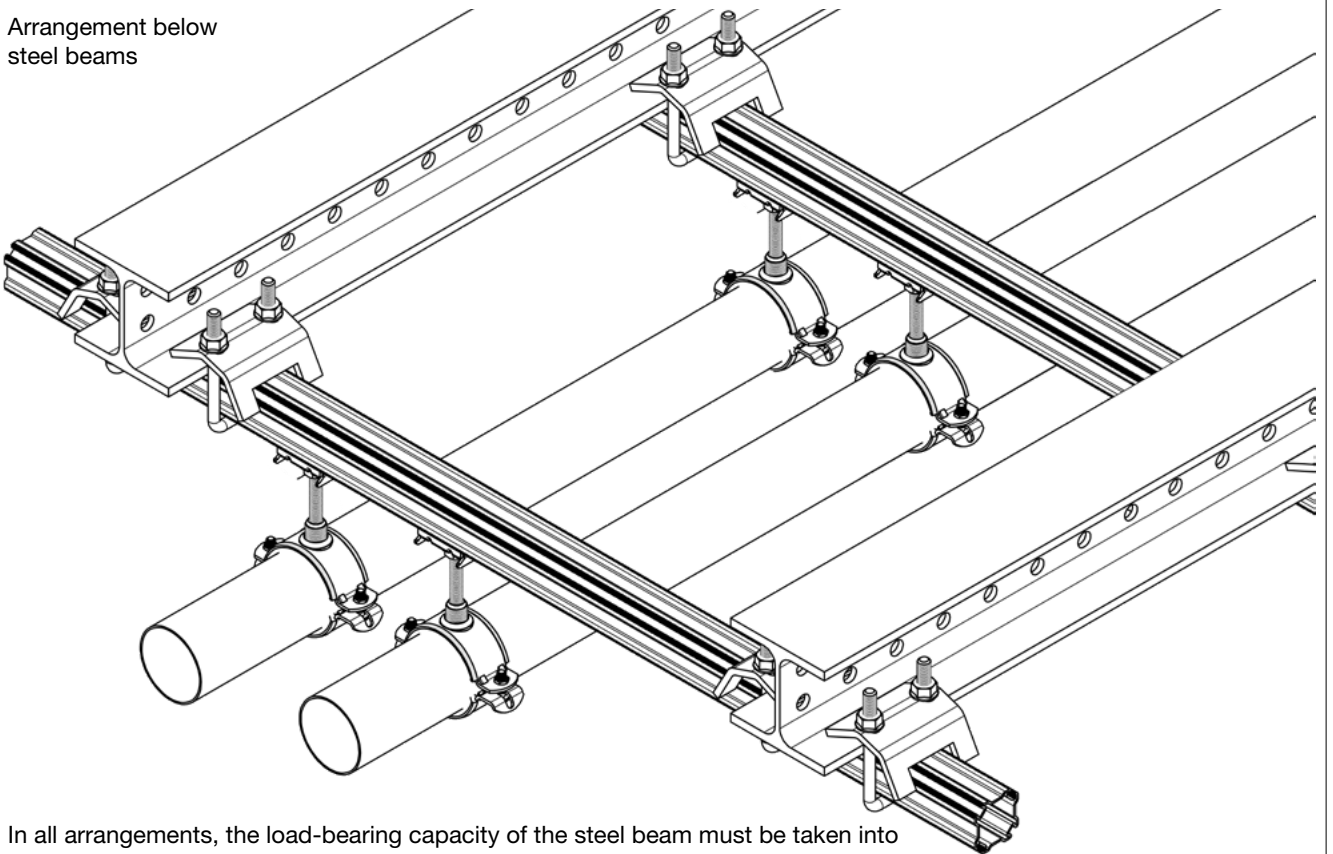
①

②

20 Nm

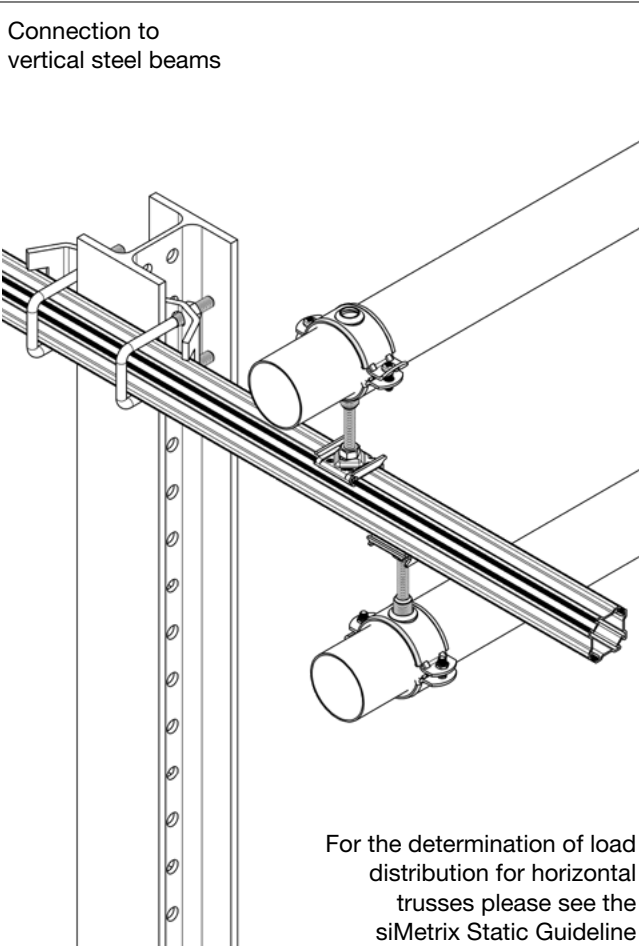
0 mm !

Arrangement below steel beams

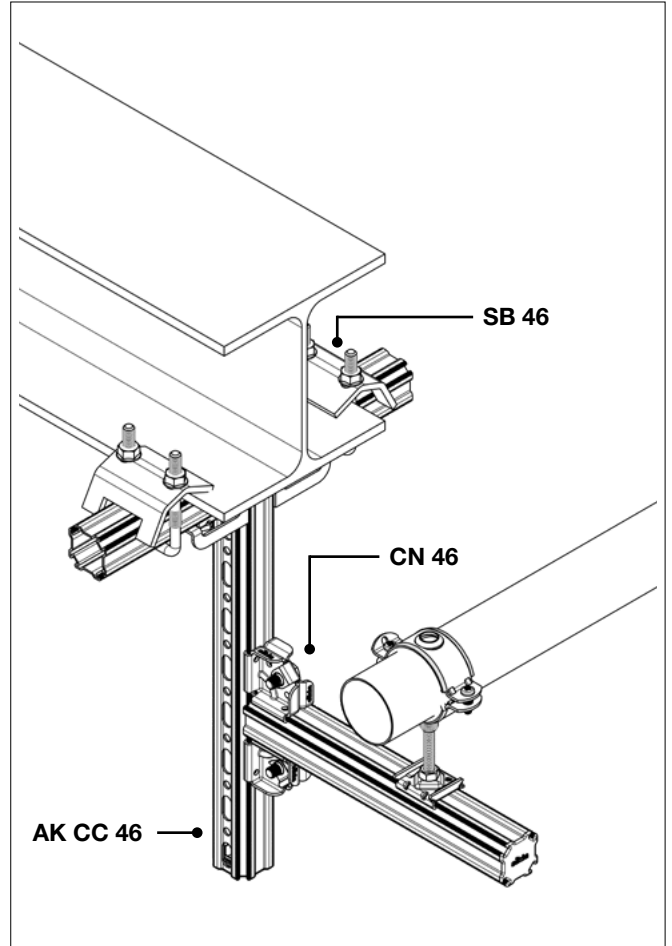


In all arrangements, the load-bearing capacity of the steel beam must be taken into account, and torsional stiffness in the case of a cantilevered arrangement.

Connection to vertical steel beams



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



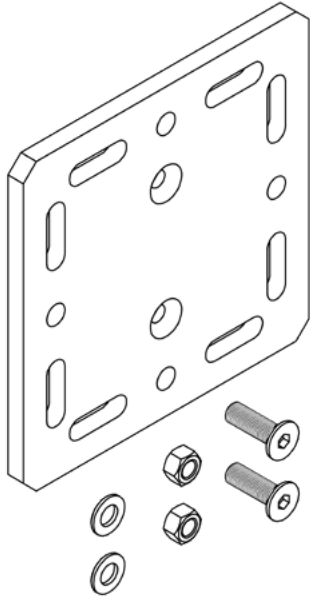
SB 46

CN 46

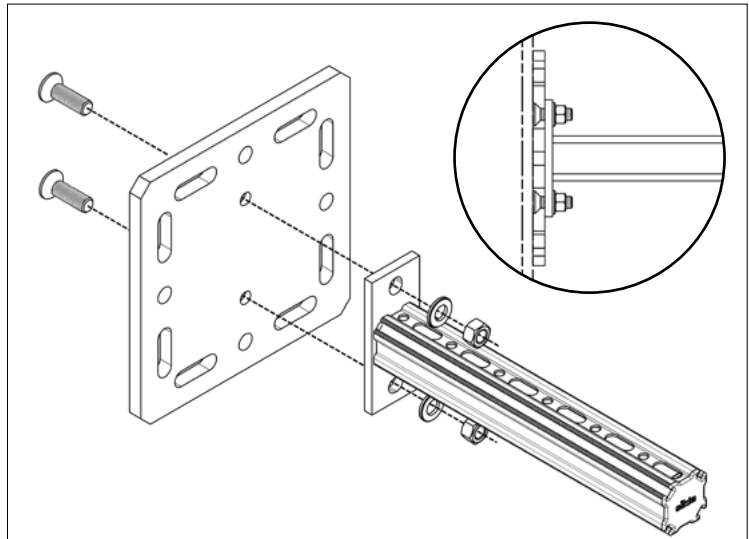
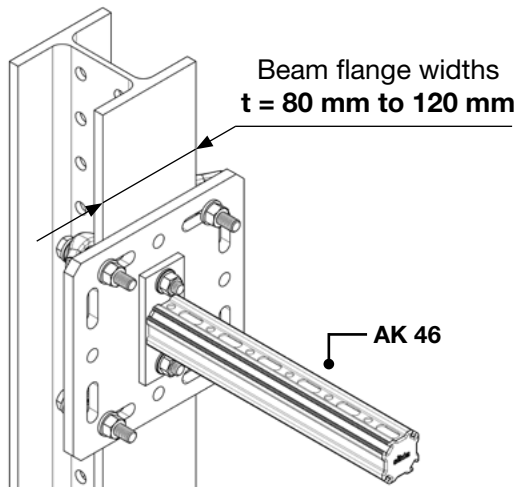
AK CC 46



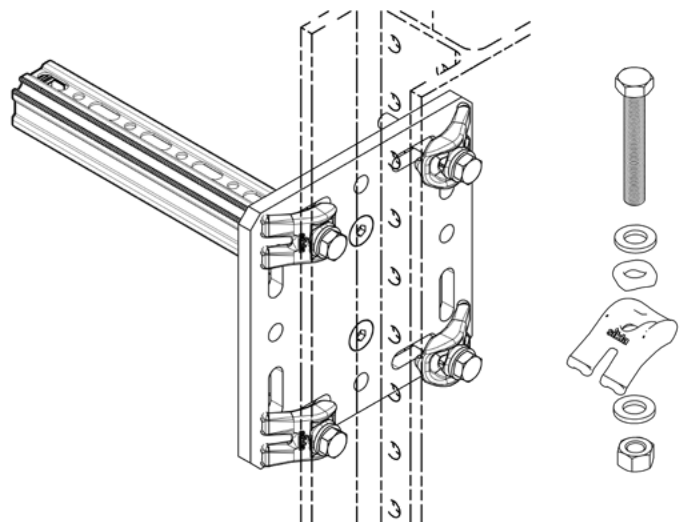
Mounting using **Joining Plate AP 46**



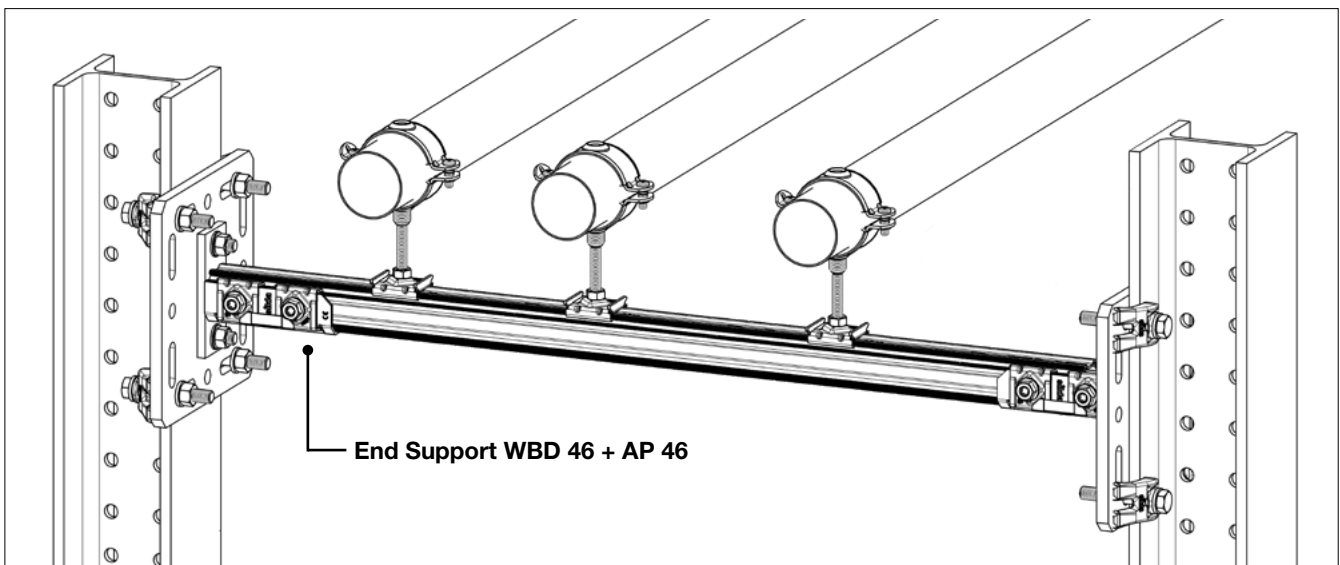
The scope of delivery includes countersunk screws, nuts and washers.



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

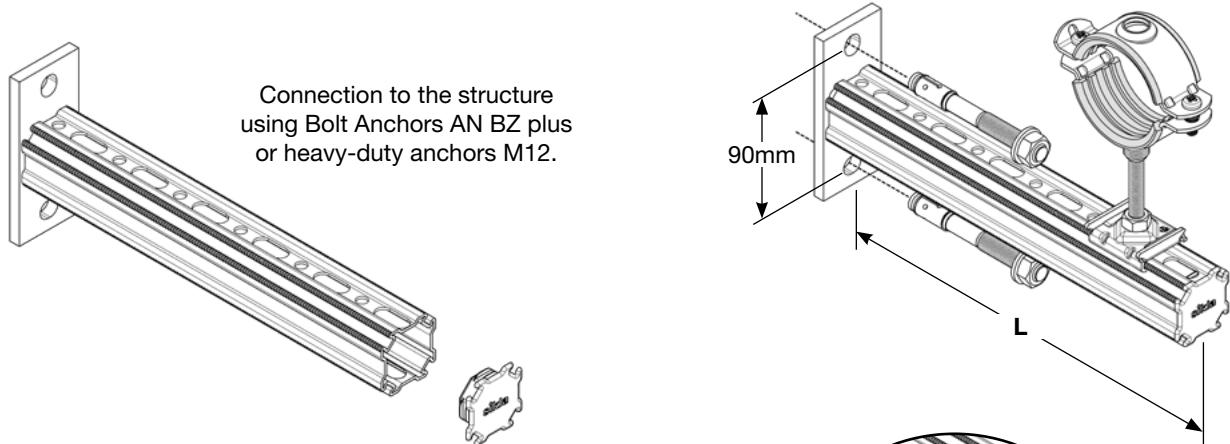


Force-locking fastening to steel beams using  
Assembly Set **MS 5P M12 S**  
(tightening torque = 60 Nm + 90° further rotation angle)



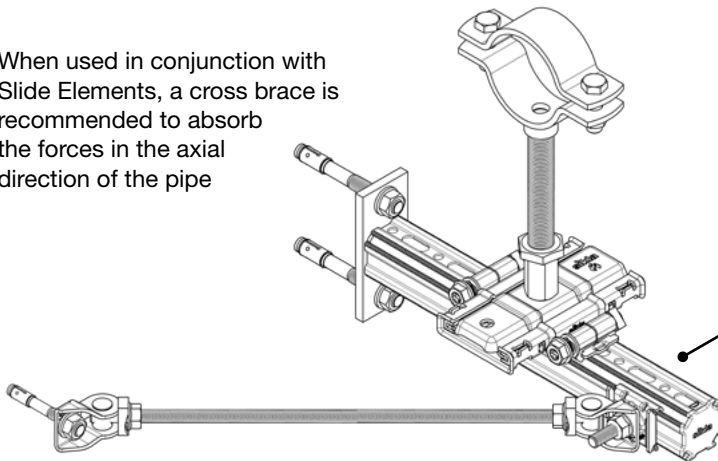
Wall, floor and ceiling connection

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

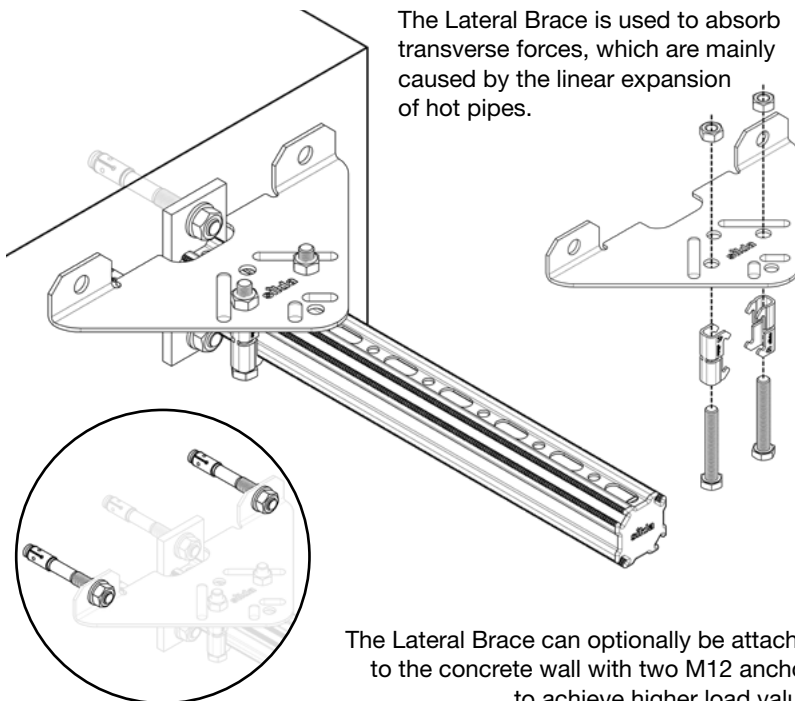


in combination with:

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

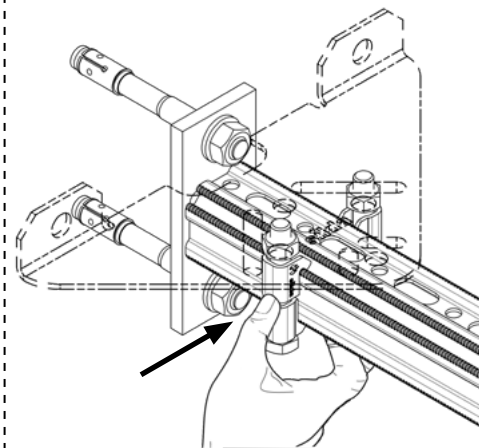
**Lateral Brace CFB 46 HCP**

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



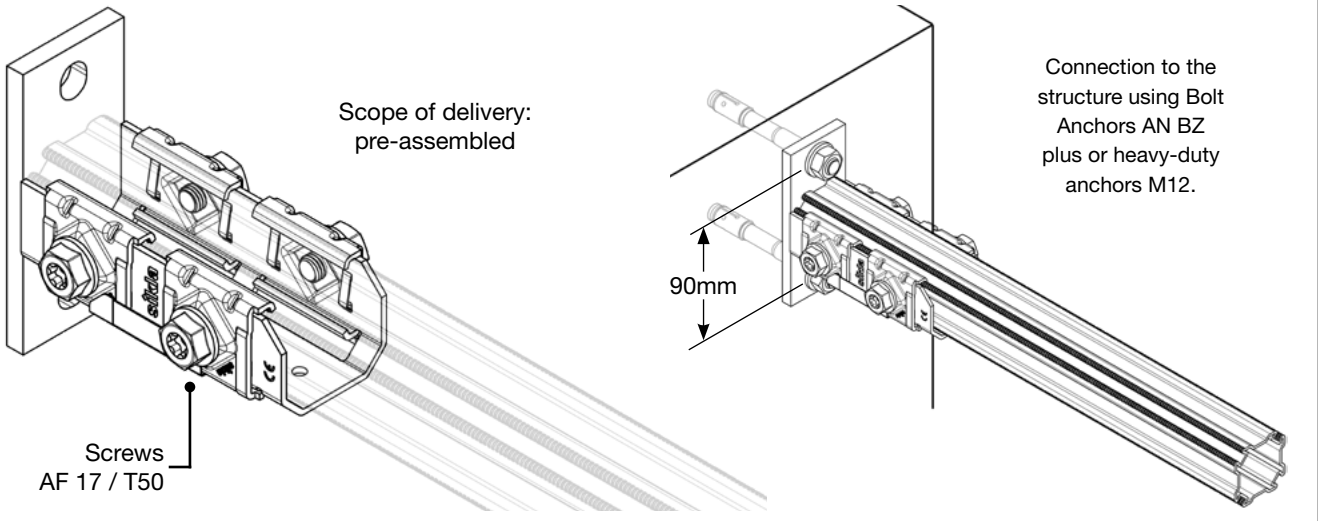
The Lateral Brace can optionally be attached to the concrete wall with two M12 anchors to achieve higher load values

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

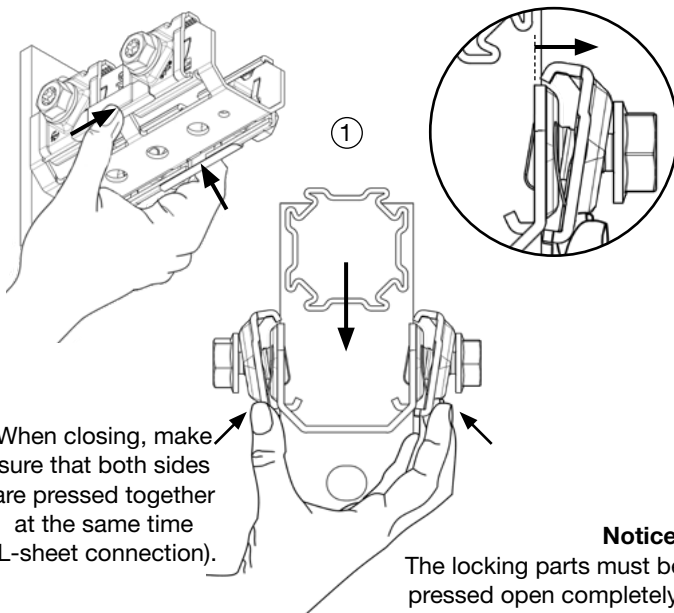


MPK 46 is simply pressed onto the PRO 46 profile.

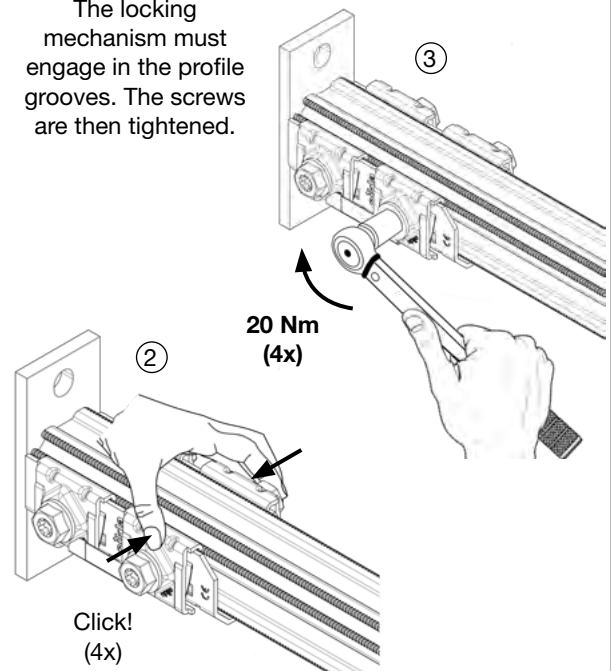
Connection via **End Support WBD 46**



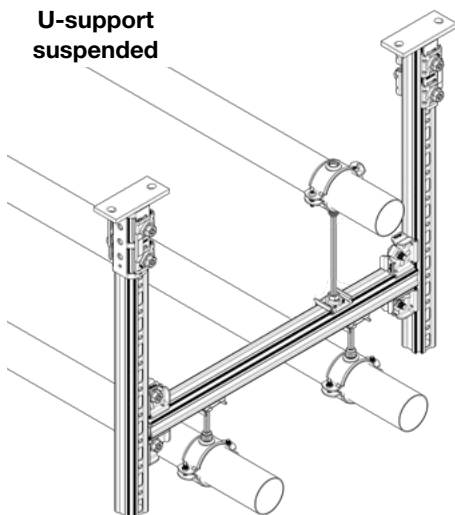
Depress both locking sides of the profile intake, insert the profile and release.



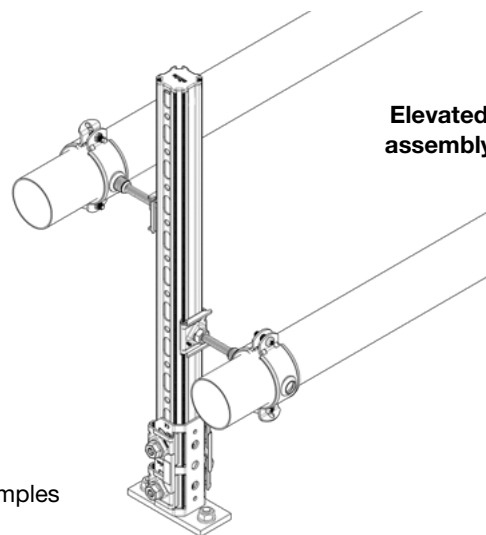
The locking mechanism must engage in the profile grooves. The screws are then tightened.



**U-support suspended**

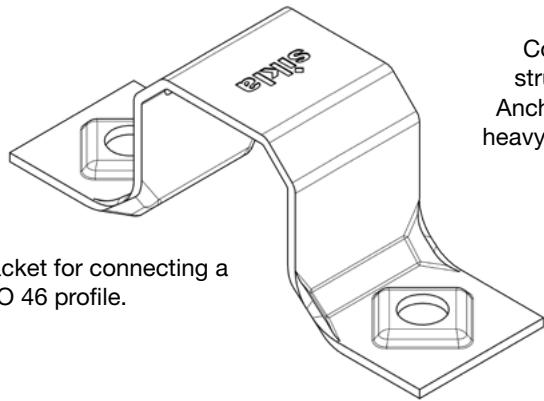


**Elevated assembly**



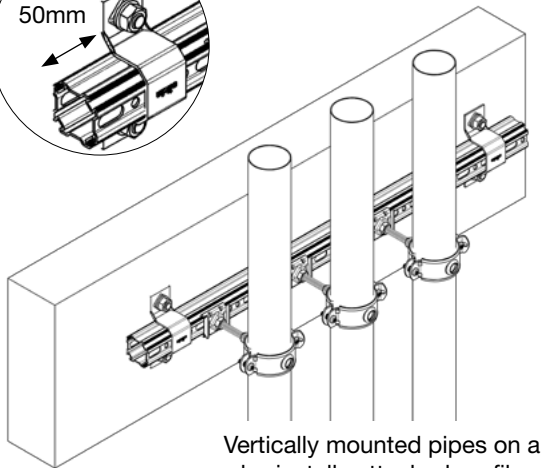
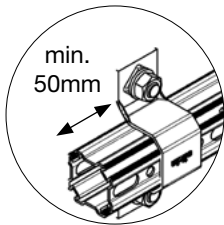
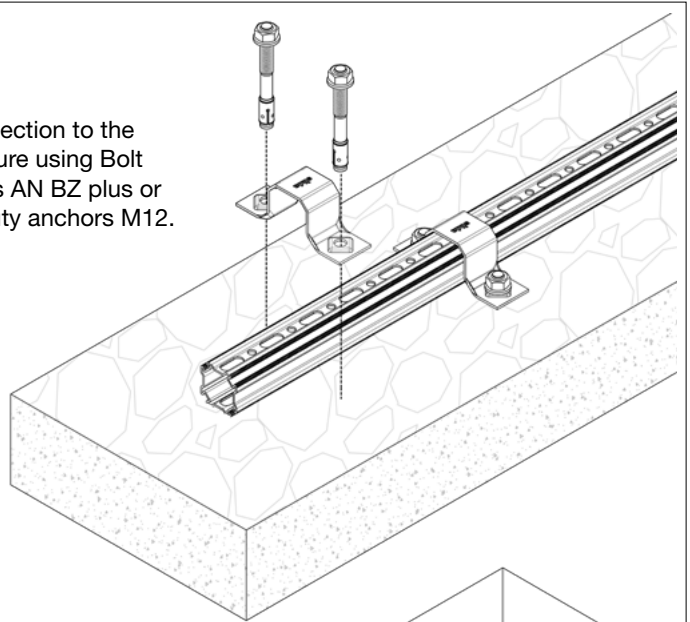
Assembly examples

**Profile Holder MPH PRO 46 W**

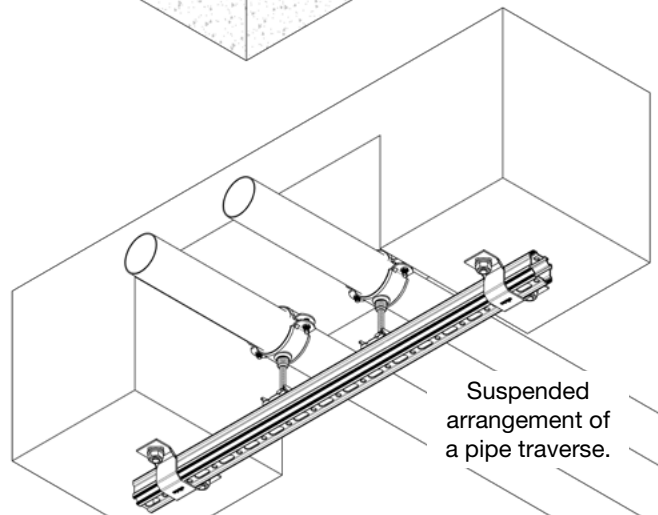


Bracket for connecting a PRO 46 profile.

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



Vertically mounted pipes on a horizontally attached profile

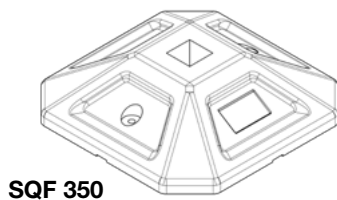


Suspended arrangement of a pipe traverse.

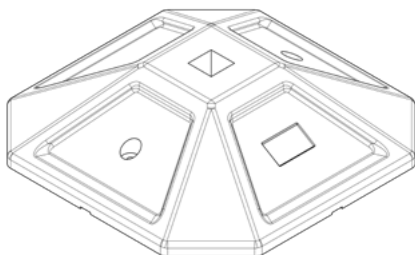
**Insulated Foot SHB SQF 46**

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

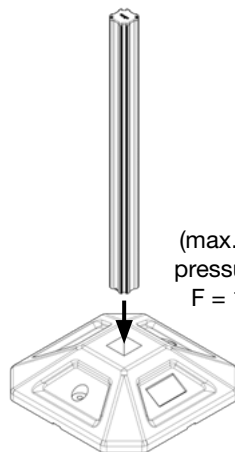


**SQF 350**

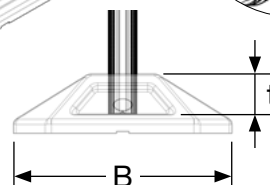
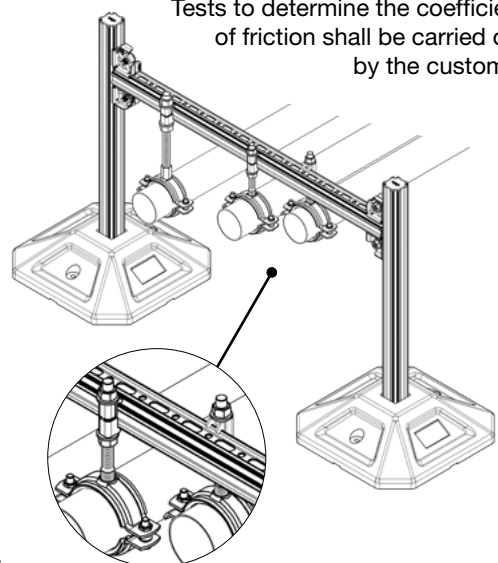


**SQF 500**

Suitable for equipment, pipes, ventilation ducts or walkways.



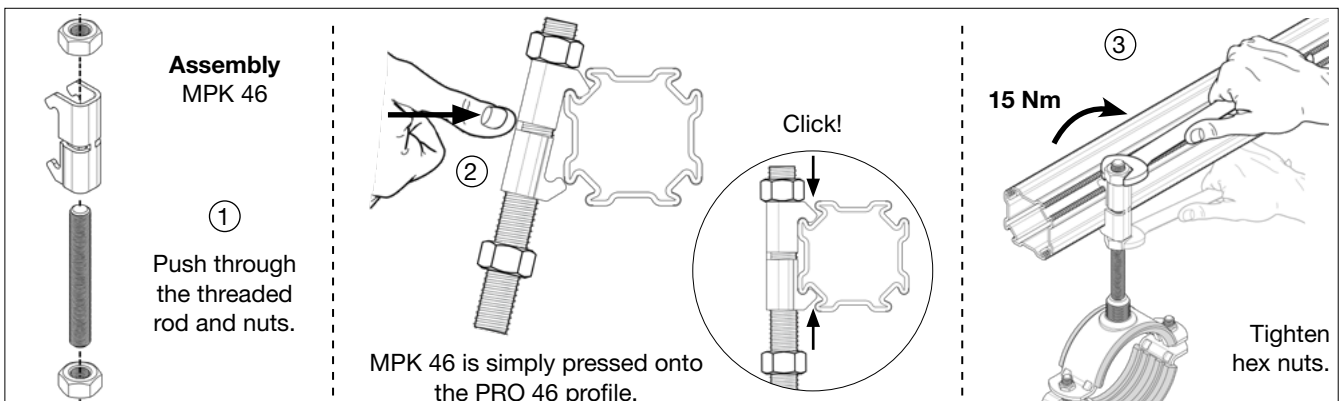
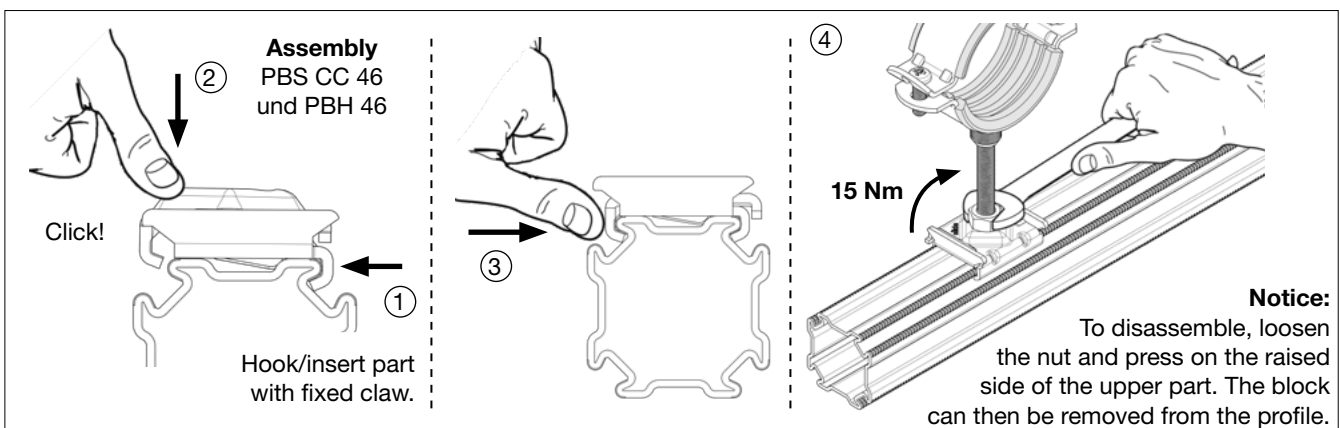
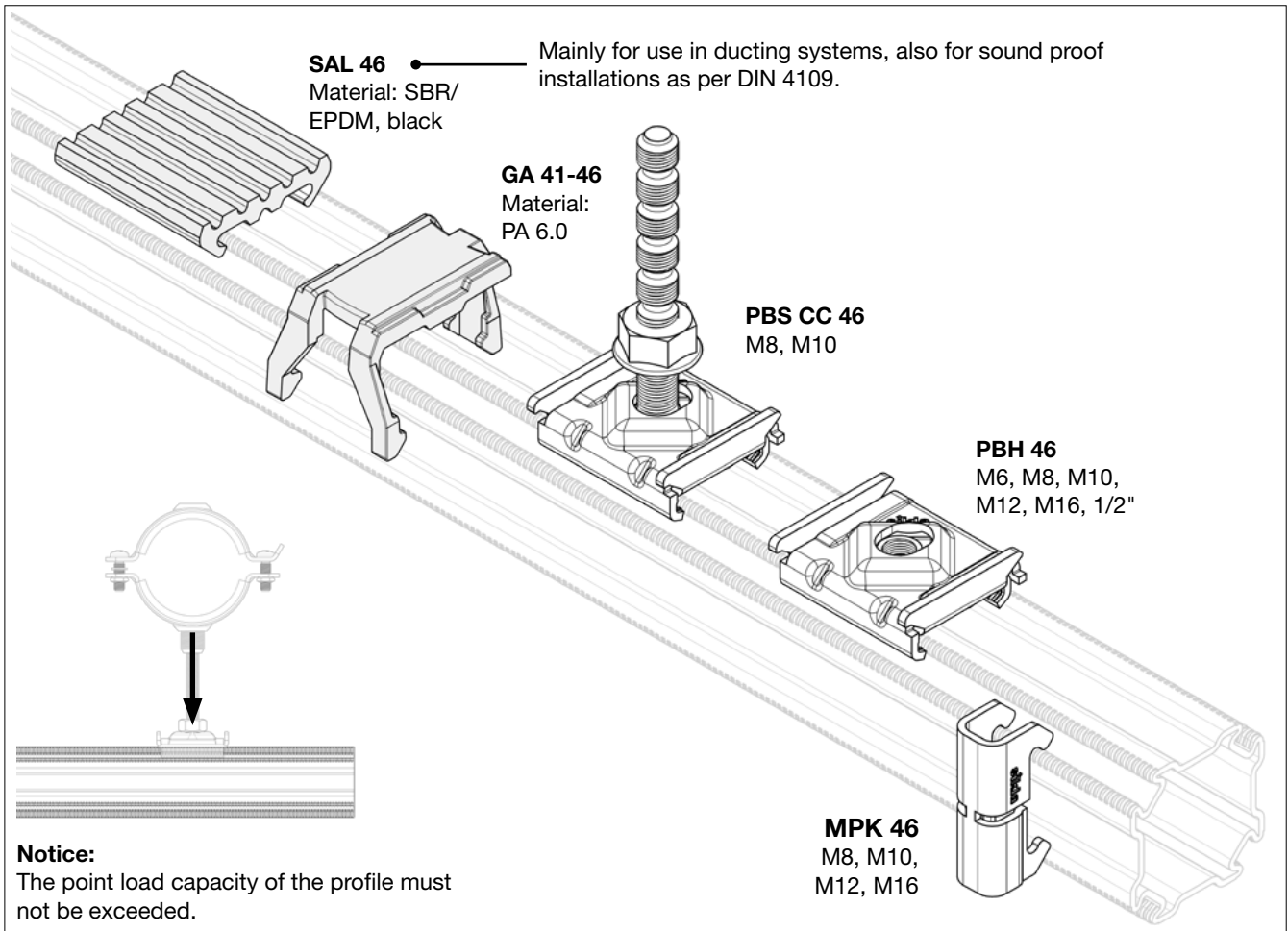
(max. perm. pressue load  $F = 16\text{kN}$ )



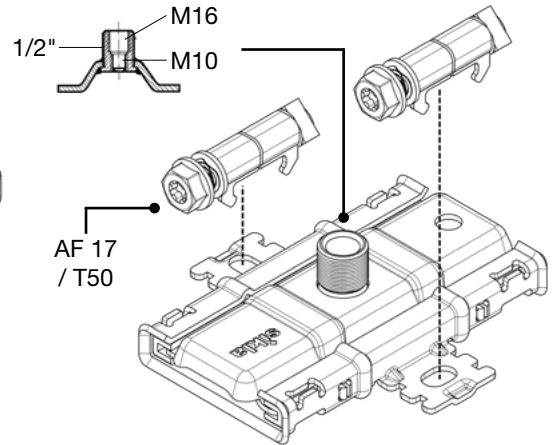
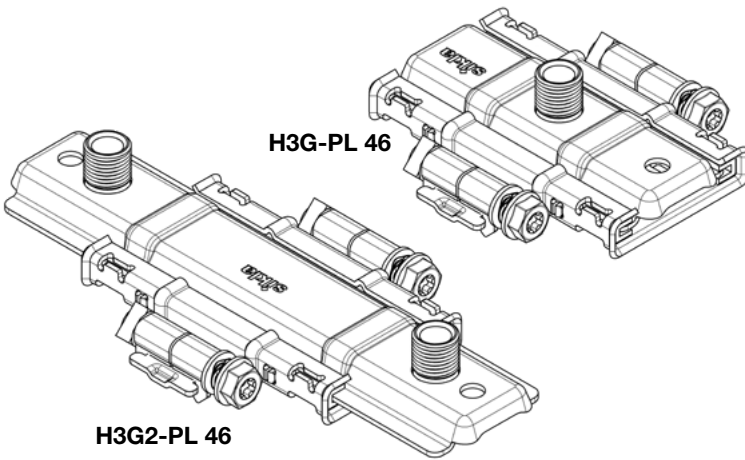
Type	t [mm]	B [mm]
SQF 350	60	350
SQF 500	90	500



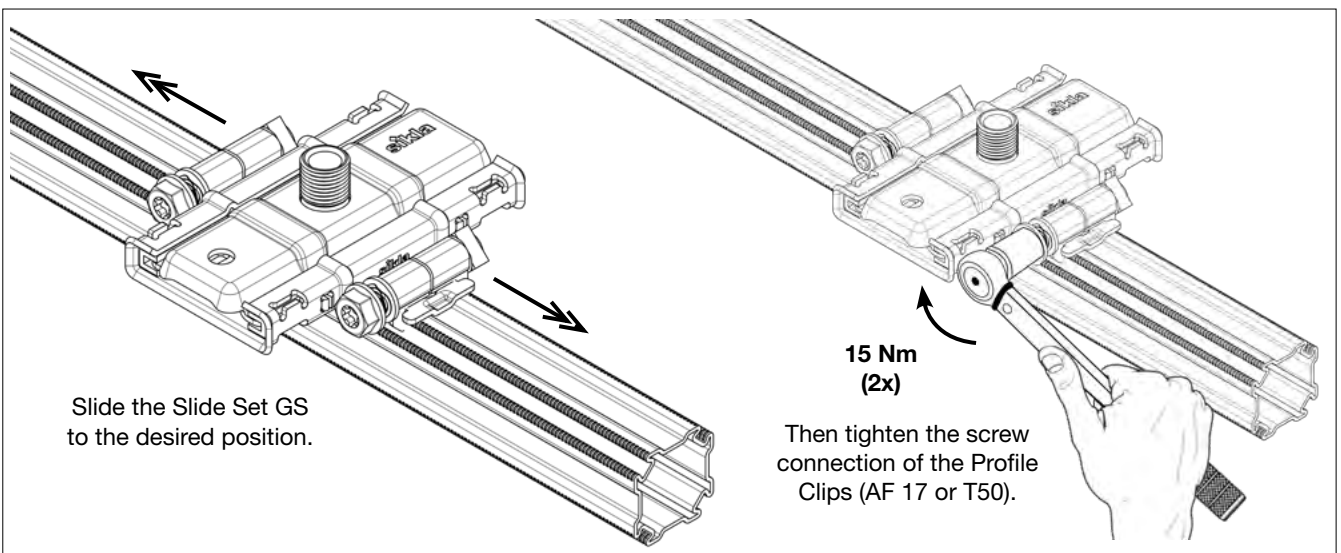
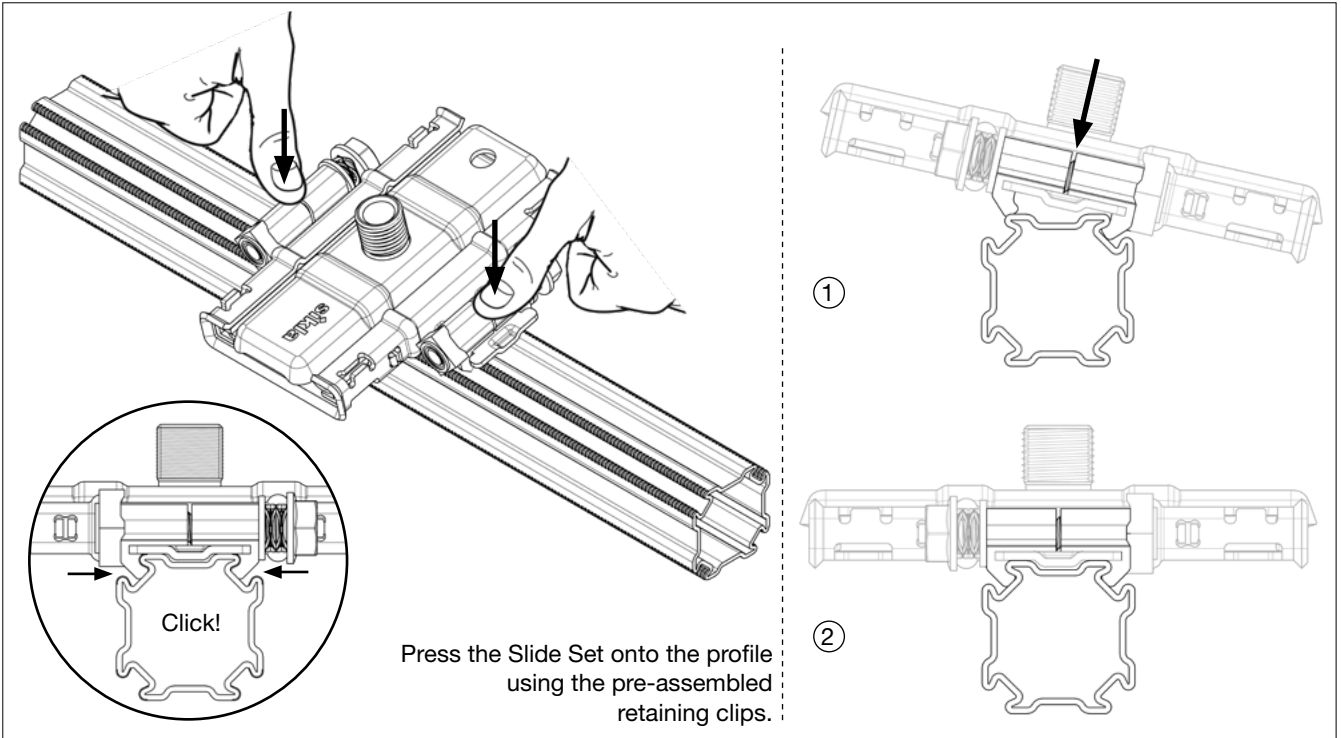
Pipe connections



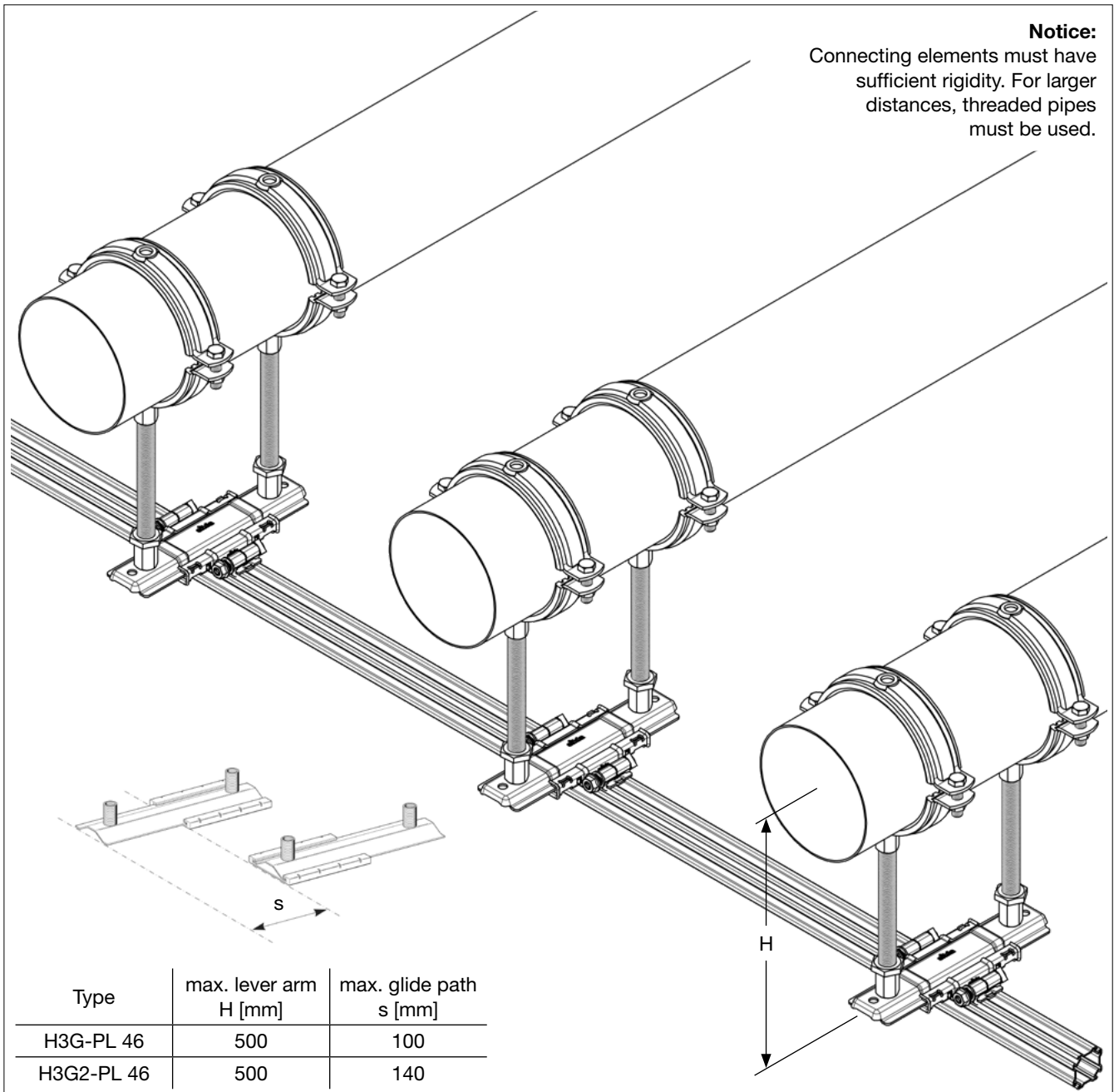
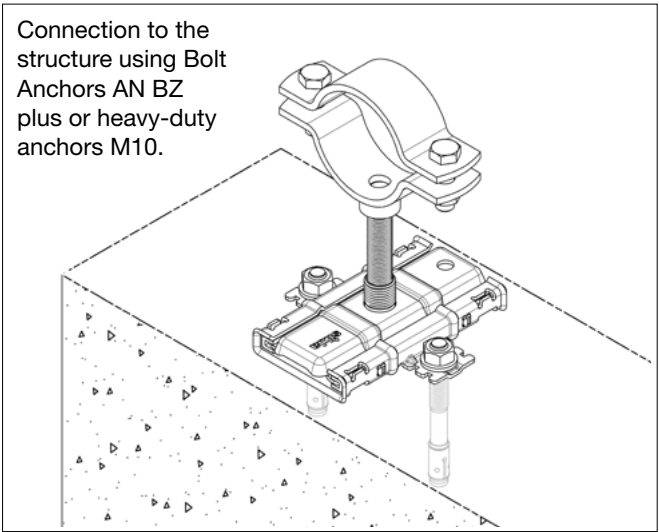
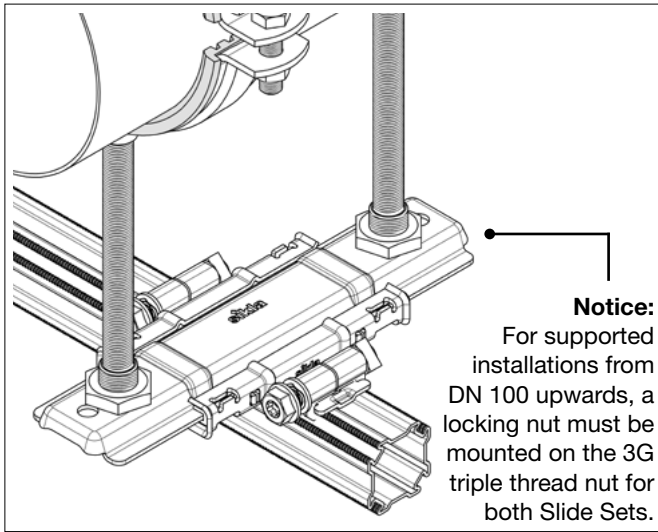
**Slide Set GS H3G-PL 46**



Scope of delivery: fully pre-assembled







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

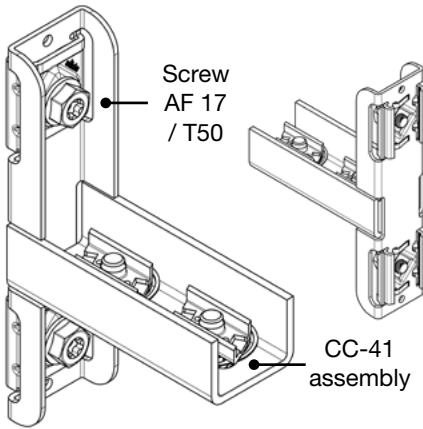
Then tighten the upper nuts.

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

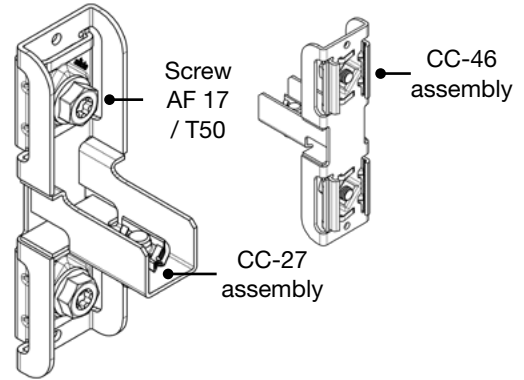
Combination with Siconnect



**SA PRO 46 - 41**

Combination with Assembly System Pressix CC 41

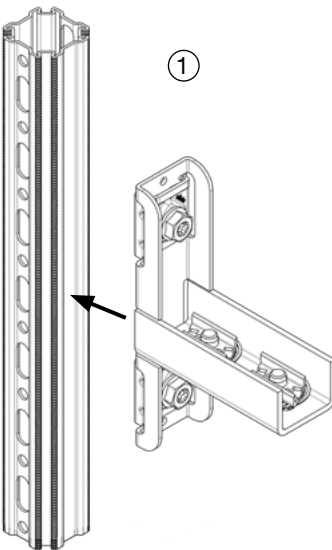
Scope of delivery: fully pre-assembled



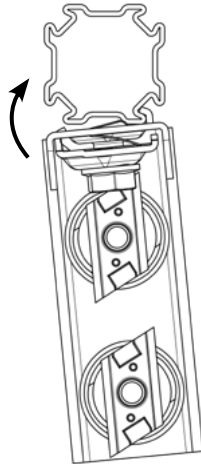
**SA PRO 46 - 27**

Combination with Assembly System Pressix CC 27

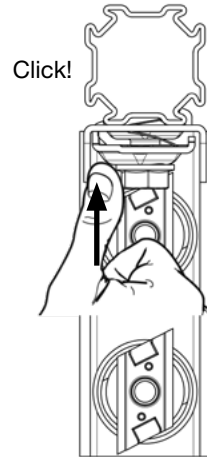
SA PRO assembly



①

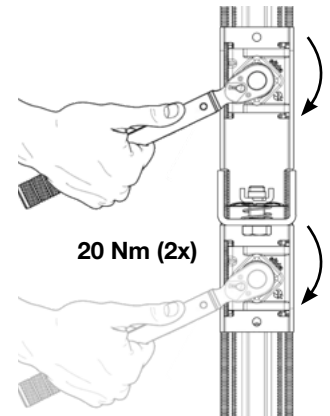


Place SA PRO at an angle on the profile and hook the rigid claw into the profile.



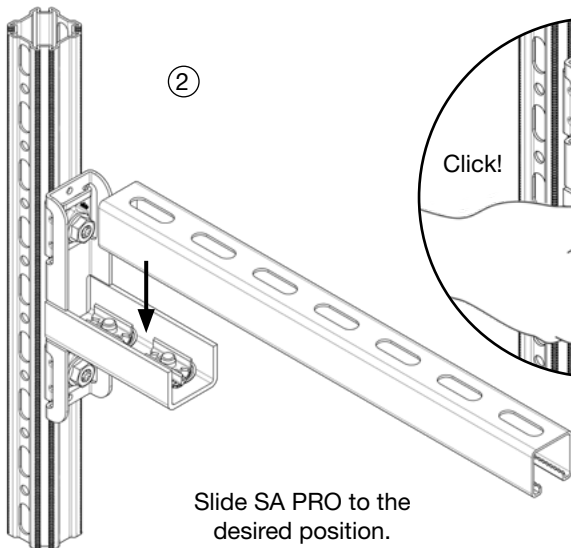
Click!

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



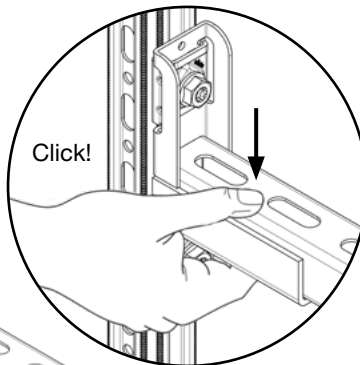
20 Nm (2x)

Tighten screws

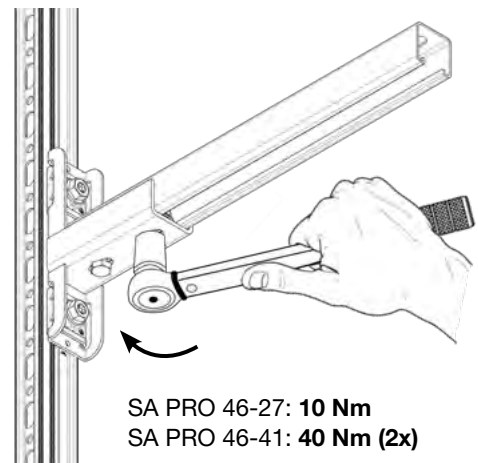


②

Slide SA PRO to the desired position.



Click!

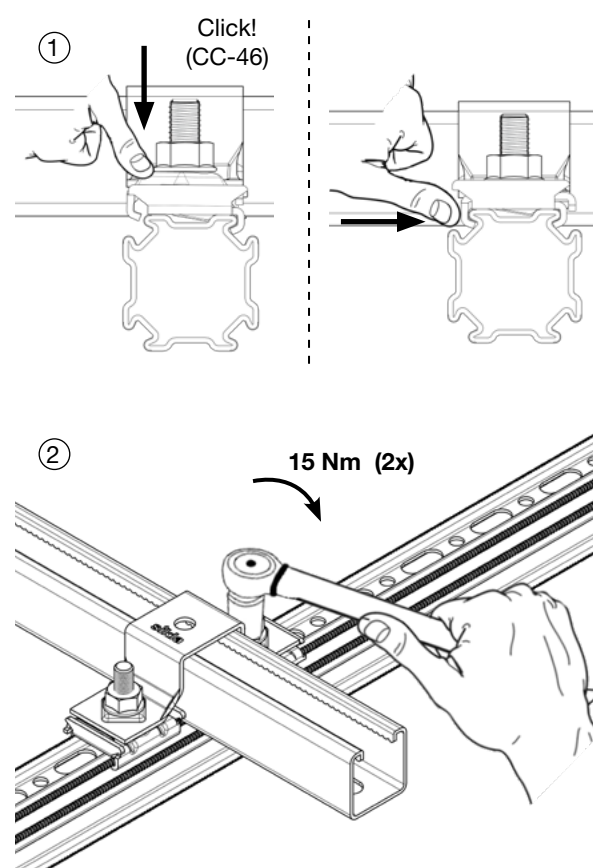
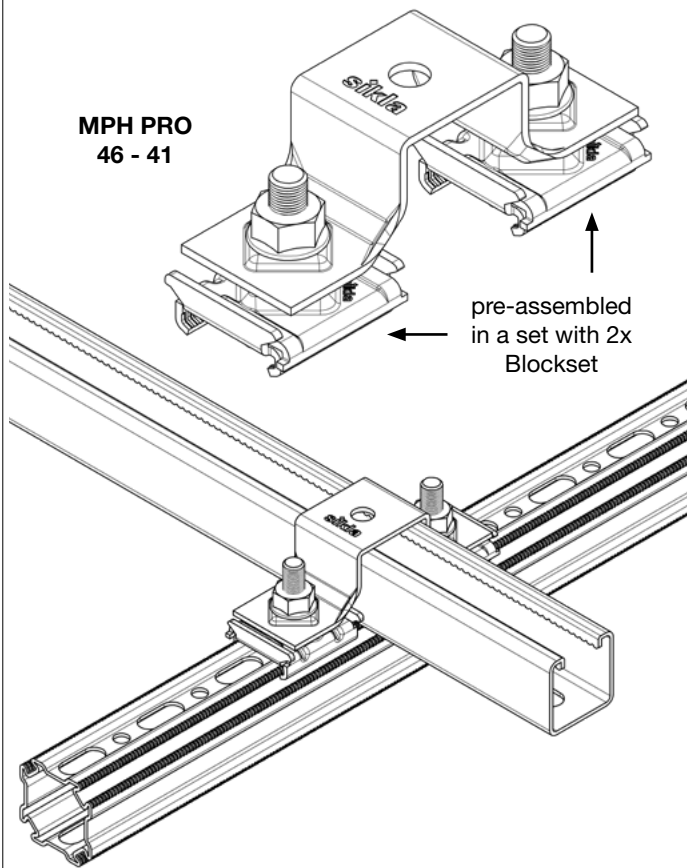
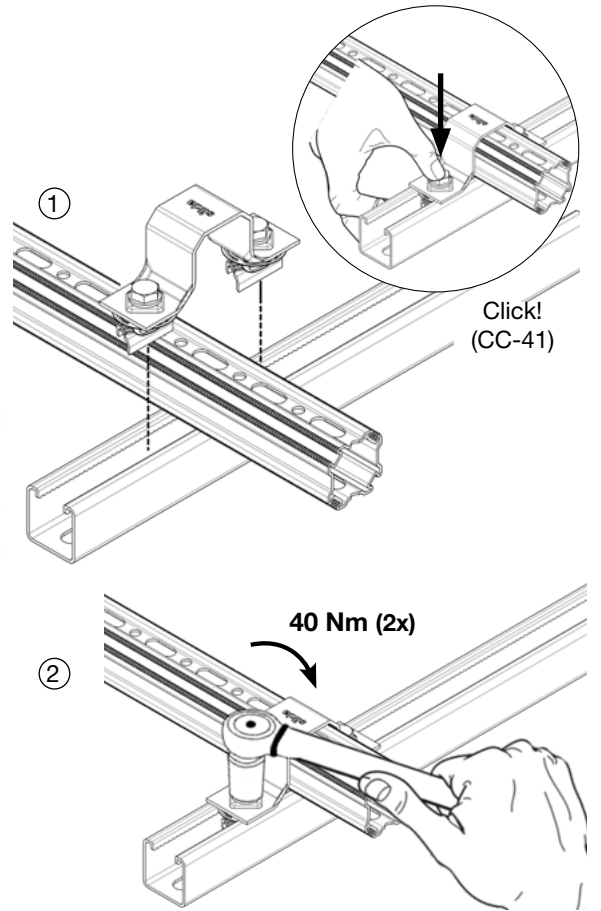
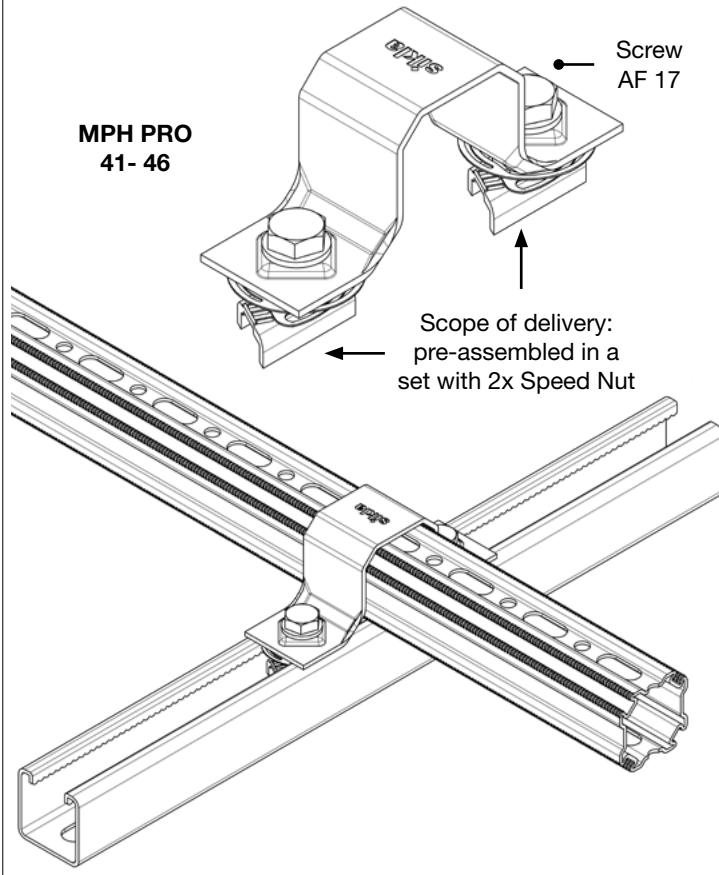


SA PRO 46-27: 10 Nm  
SA PRO 46-41: 40 Nm (2x)

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

