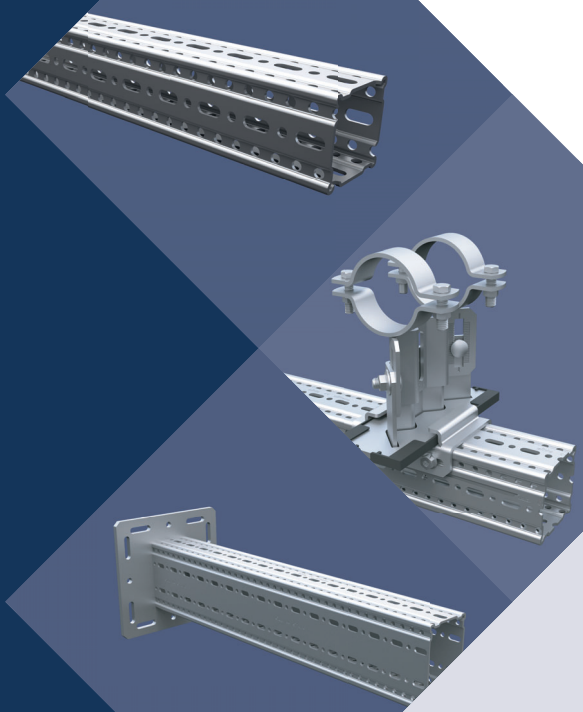
sikla



Modular Steelwork Solutions

Product Data

Technical Guide Lines

Contact us for a training session

The siFramo system by Sikla is a modular steel framing system designed to make up support frames on site or off site without a need for hot works for the following types of projects:

- Chemical & Petrochemical Plants
- Data Centre
- Oil & Gas
- Mining
- Pharmaceutical Manufacturing
- Premium Building Services (rooftop supports & plant rooms)
- Power Engineering (CCGT, EfW)
- Water Treatment

Time and cost saving is at the heart of Sikla's product range and solutions. Our DfMA include the design and manufacture of steel framing to optimise assembly/fabrication time on the shopfloor with the added benefits of:

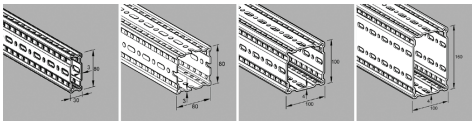
- CAD & Structural Design
- Customised Components
- Pre-assembly
- Simplifed logistics

Benefits:

- Easy-to-use modular steelwork support system
- Significant productivity gains versus conventional steel fabrication
- One size and type of vibration-proof thread forming screw for all connections
- Compliance to EN 1090-1 (CE)
- HDG coating to EN-ISO1461 and AS/NZS2312
- No nuts or back plates at member joints
- Connection to all types of primary building structures
- Higher performance / lower weight of steel ratio
- Maximum flexibility / minimum installation time
- Parts re-usable after disassembly
- Adjustable components to allow for revisions and building tolerances
- Typical support shapes documented including load capacities and dimensions
- Compatible with generic strut systems
- No hot works – no clashes – no shut down
- Easy Mothballing of temporary frame installations

What is siFramo?

siFramo is a versatile, multifunctional support system that offers maximum flexibility using a compact range of off-the-shelf components. All of our systems can be fully implemented in to the piping design process at detailed engineering stage.

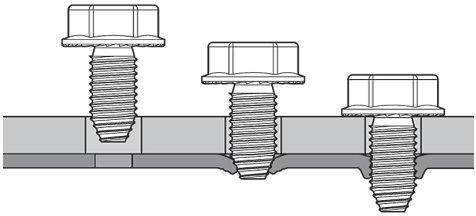


Sikla products offer these four key benefits:

- All parts are reusable without wastage
- Strong but lightweight, cutting down the total tonnage of steel required for the project
- Our products are readily available from stock, with a distribution network that offers quick lead times
- And there is no need for hot works!

These benefits form the foundation of siFramo:

- Lightweight from only 4.3kg per M
- Easily adjustable connections secured
- Minimal assembly by using a thread forming, shake proof fastening.



All siFramo products are fully compatible with engineered hangers and supports from global suppliers including our own Simotec pipe support range.

To see how we can help benefit your project, please contact us with your requirements.

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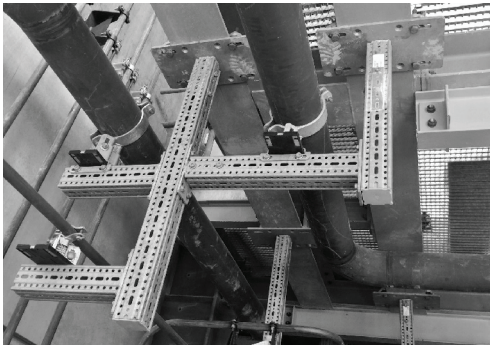
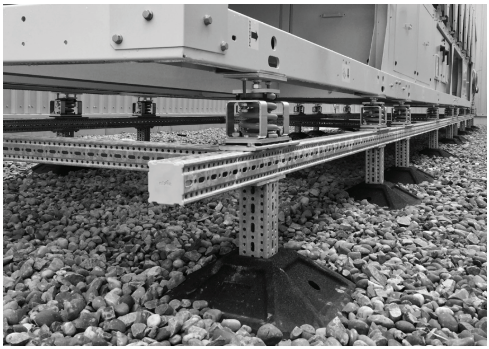




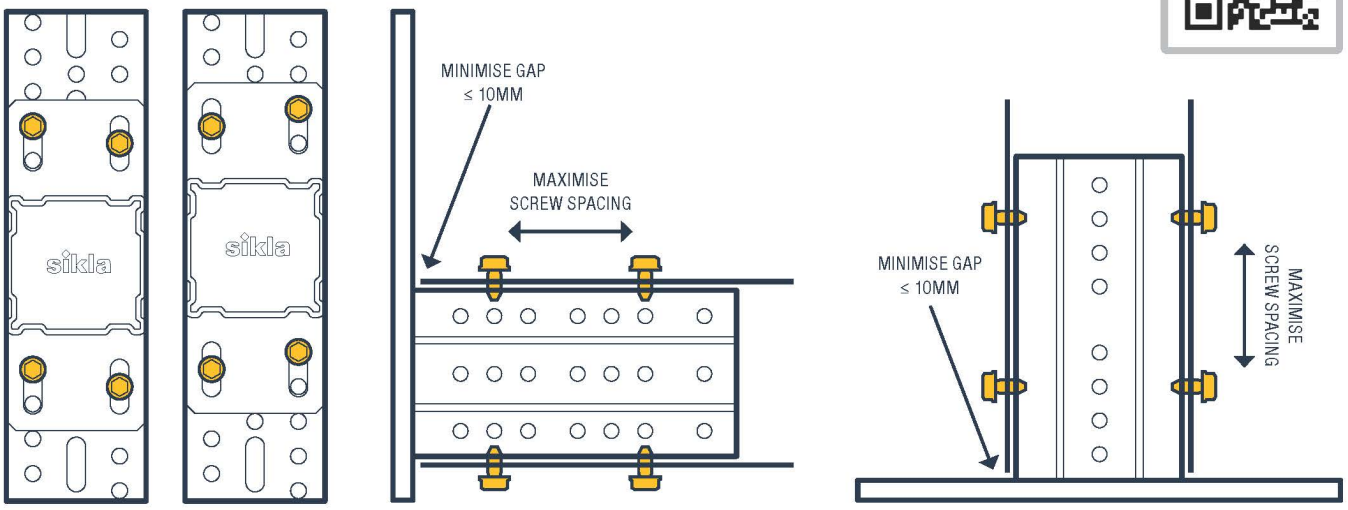
What you need...

TRAINING INCLUDED!

Claim your on-site or remote installation induction. You will receive a certificate that validates the warranty on your frame installation.

50Nm TORQUE **X4 SCREWS**

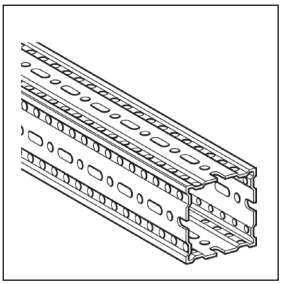
SEE HOW!

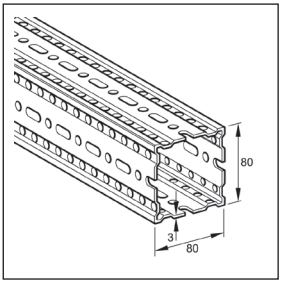


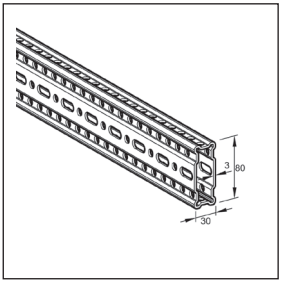
STA STA WBD

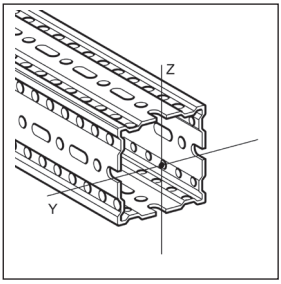
siFramo One-Screw Technology for all Modular Steel Support Applications

Sikla UK & Ireland | +44 (0) 1908 281 052 | sikla.co.uk | miltonkeynes@sikla.co.uk









Beam Section TP F 80

Group: A410

Application

Galvanised hollow-box-section for fabrication of steel frames. Designed for both simple two-dimensional supports and complex volumetric arrangements. Holes designed to receive Self Forming Screw FLS in conjunction with the relevant component.

Technical Data

Type	Section modulus [cm^3]	Moment of inertia [cm^4]	Radius of inertia [cm]	Torsional moment It [cm^4]	Cross section A [cm^2]
TP F 80	Wy: 15.83 Wz: 15.83	Iy: 62.47 Iz: 62.47	iy: 3.58 iz: 3.58	48.40	4.85
TP F 80/30	Wy: 10.38 Wz: 4.78	Iy: 35.40 Iz: 6.74	iy: 3.63 iz: 1.58	8.58	2.69

Mechanical properties shown above take into account perforations.

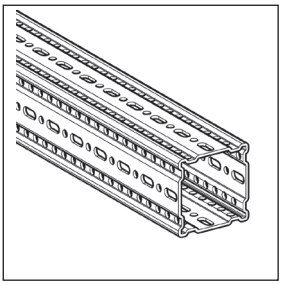
The specific values marked * are effective values established by tests, geometrical quantities (analytically determined) can be significantly higher.

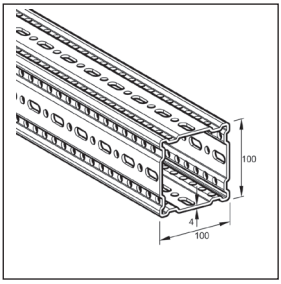
Material: Steel, HCP

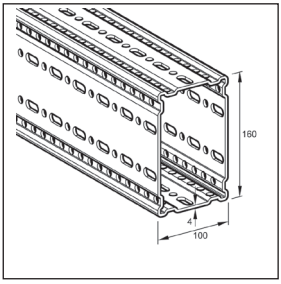
Approvals / Compliance

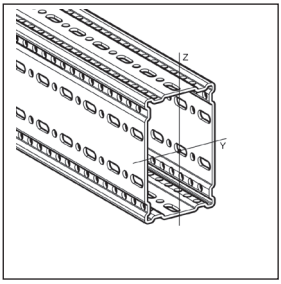
CE mark (Declaration of performance see www.sikla.co.uk/service/downloads)

Type	Weight [kg/m]	Qty. [m]	Part number
TP F 80	6.4	6	**192539**
TP F 80/30	4.3	6	**113407**









Beam Section TP F 100

Group: A810

Application

Galvanised hollow-box-section for fabrication of steel frames. Designed for both simple two-dimensional supports and complex volumetric arrangements. Holes designed to receive Self Forming Screw FLS in conjunction with the relevant component.

Technical Data

Type	Section modulus [in^3]	Moment of inertia [in^4]	Radius of inertia [in]	Torsional moment It [in^4]	Cross section A [in^2]
TP F 100	Wy: 2.25 * Wz: 2.25 *	Iy: 4.32 * Iz: 4.32 *	iy: 1.89 * iz: 1.89 *	4.36	1.21 *
TP F 100/160	Wy: 4.61 * Wz: 2.82 *	Iy: 13.44 * Iz: 6.74 *	iy: 2.43 * iz: 1.72 *	9.25	2.28 *

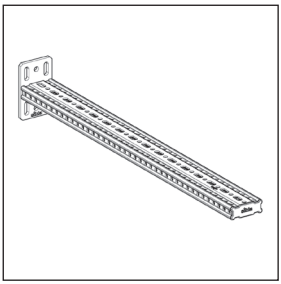
Type	Section modulus [cm^3]	Moment of inertia [cm^4]	Radius of inertia [cm]	Torsional moment It [cm^4]	Cross section A [cm^2]
TP F 100	Wy: 36.93 Wz: 36.93	Iy: 179.85 Iz: 179.85	iy: 4.80 iz: 4.80	135.00	7.80
TP F 100/160	Wy: 75.52 Wz: 46.26	Iy: 559.42 Iz: 280.34	iy: 6.16 iz: 4.36	193.00	14.74

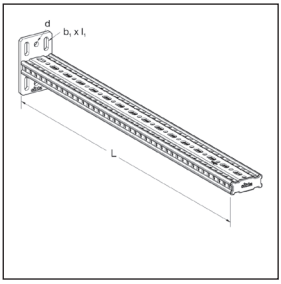
Mechanical properties shown above take into account perforations.

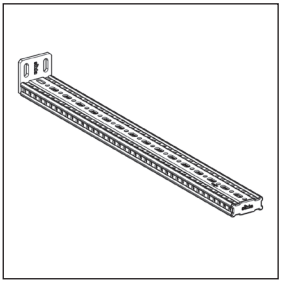
The specific values marked * are effective values established by tests, geometrical quantities (analytically determined) can be significantly higher.

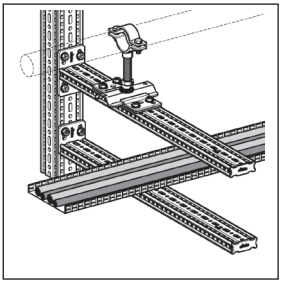
Material: Steel, HCP

Type	Weight [kg/m]	Qty. [m]	Part number
TP F 100	10.8	6	**112904**
TP F 100/160	14.3	6	**112905**









Cantilever Bracket AK F 80/30

Group: A420

Application

Galvanised box-section with welded end-plate to serve as cantilever arm. May be used as a crossbar when combined with End Support STA and 4 x Self Forming Screw FLS.

Installation

With 4 x Self Forming Screw FLS when fixed to another siFramo box-section.

Technical Data

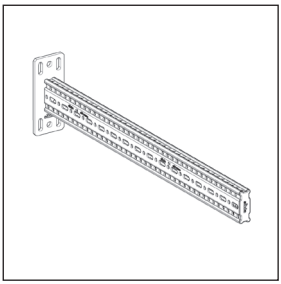
Type	Dimensions of base plate [mm]	L [mm]	b_1 x l_1 [mm]	d [mm]
AK F 80/30-400	130 x 80 x 8	400	11 x 20	14
AK F 80/30-800	130 x 80 x 8	800	11 x 20	14
AK F 80/30-E-400	80 x 80 x 8	400	11 x 20	-
AK F 80/30-E-800	80 x 80 x 8	800	11 x 20	-

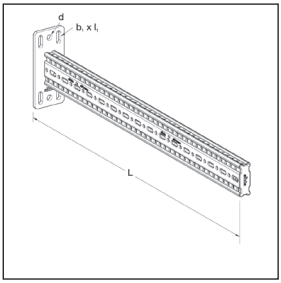
Configuration: Plate welded with Beam Section F 80/30
Material:
Plate: Steel, HCP
Beam section: Steel, HCP

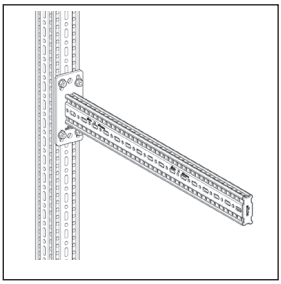
Approvals / Compliance

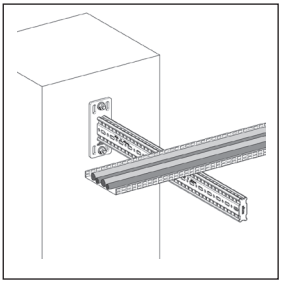
CE mark (Declaration of performance see www.sikla.co.uk/service/downloads)

Type	W [kg]	Quantity [pack]	Part number
AK F 80/30-400	2.4	1	**113064**
AK F 80/30-800	4.2	1	**113065**
AK F 80/30-E-400	2.2	1	**113625**
AK F 80/30-E-800	4.0	1	**113626**









Cantilever Bracket AK F 80/30-Q

Group: A420

Application

Galvanised box-section with welded end-plate to serve as cantilever arm for Beam Section TP F 80 or Beam Bracket TKO F 80.

Solid cantilevers e.g. for cable containment when fixed to walls with suitable wall anchors M12.

Installation

With 4 x Self Forming Screw FLS when fixed to another siFramo hollowbox-section. Fixing to walls and ceilings with suitable wall anchors M12.

Technical Data

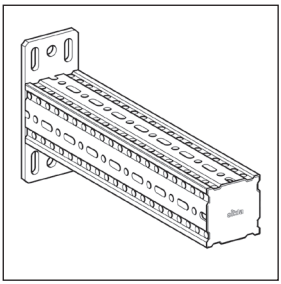
Typ	Dimensions of base plate [mm]	L [mm]	d [mm]	b_1 x l_1 [mm]
AK F 80/30-Q-400	190 x 80 x 8	400	14	11 x 20
AK F 80/30-Q-800	190 x 80 x 8	800	14	11 x 20

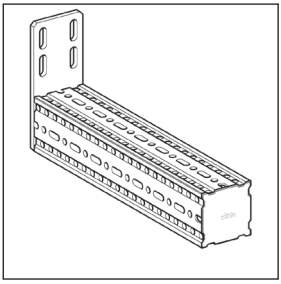
Material: Steel, HCP

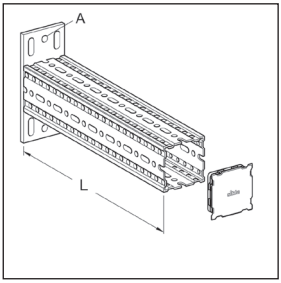
Approvals / Compliance

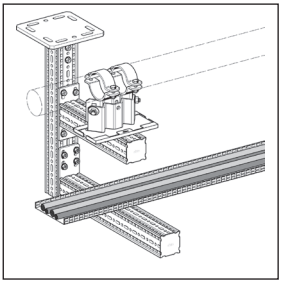
CE mark (Declaration of performance see www.sikla.co.uk/downloads)

Type	W [kg]	Quantity [pack]	Part number
AK F 80/30-Q-400	2.5	1	**117292**
AK F 80/30-Q-800	4.3	1	**117293**









Cantilever Bracket AK F 80

Group: A420

Application

Galvanised hollow-box-section with welded end-plate to serve as cantilever arm. May be used as a crossbar when combined with End Support STA and 4 x Self Forming Screw FLS.

Scope of delivery

With pre-assembled End Cap ADK F 80

Installation

With 4 x Self Forming Screw FLS when fixed to another siFramo box-section.

Technical Data

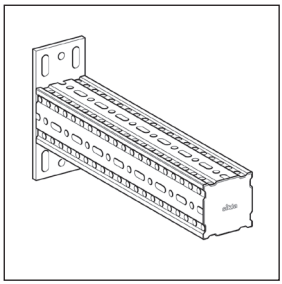
Type	L [mm]	Dimensions of base plate [mm]	slots in base plate for [mm]	A [mm]
AK F 80-400	400	190 x 80 x 8	20 x 11	14
AK F 80-800	800	190 x 80 x 8	20 x 11	14
AK F 80-E-600	600	165 x 80 x 8	20 x 11	-

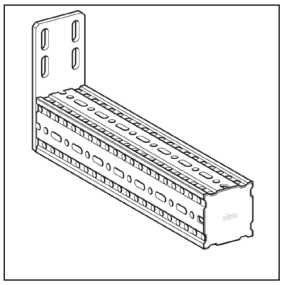
Configuration: Plate welded to Beam section F 80
Material:
Plate Steel, HCP
Beam section Steel, HCP

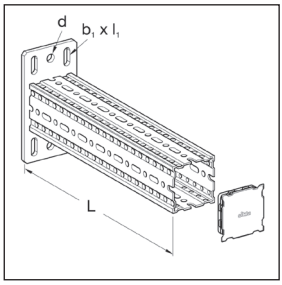
Approvals / Compliance

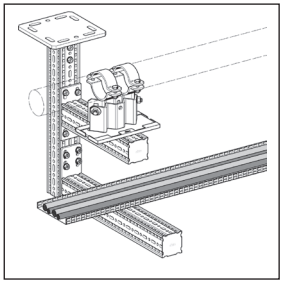
CE mark (Declaration of performance see www.sikla.co.uk/downloads)

Type	W [kg]	Quantity [pack]	Part number
AK F 80-400	3.4	1	**192764**
AK F 80-800	5.8	1	**192771**
AK F 80-E-600	4.5	1	**110370**









Cantilever Bracket AK F 100

Group: A820

Application

Galvanised hollow-box-section with welded end-plate to serve as cantilever arm. May be used as a crossbar when combined with End Support STA and 4 x Self Forming Screw FLS. The round holes in the base plate allow direct connection to existing pre-cast channels. The cantilever types F 100-80 and F 100-80-E allow the for the combination of a F80/80 Cantilever Arm to be combined with F 100 profile.

Installation

With 4 x Self Forming Screw FLS when fixed to another siFramo hollow-box-section. Alternatively with two suitable wall anchors through holes “A” when fixed directly to building structure.

Technical Data

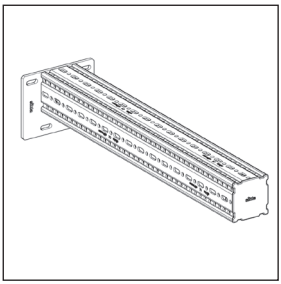
Type	Dimensions of base plate [mm]	L [mm]	d [mm]	b_1 x l_1 [mm]
AK F 100-400	210 x 100 x 8	400	14	11 x 20
AK F 100-800	210 x 100 x 8	800	14	11 x 20
AK F 100-1200	210 x 100 x 8	1200	14	11 x 20
AK F 100-E - 600	185 x 100 x 8	600	-	11 x 20
AK F 100-80 - 400	190 x 100 x 8	400	14	11 x 20
AK F 100-80 - 800	190 x 100 x 8	800	14	11 x 20
AK F 100-80-E - 600	170 x 100 x 8	600	-	11 x 20

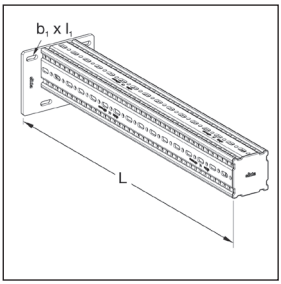
Configuration: Plate welded to Beam Section F 100
material: Steel, HCP

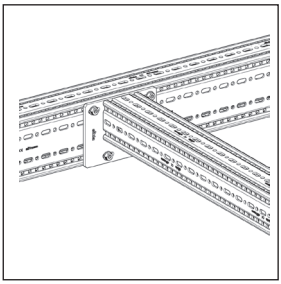
Approvals / Compliance

CE mark (Declaration of performance see www.sikla.co.uk/downloads)

Type	W [kg]	Quantity [pack]	Part number
AK F 100-400	5.7	1	**113068**
AK F 100-800	10.1	1	**113069**
AK F 100-1200	14.7	1	**113419**
AK F 100-E-600	7.8	1	**113070**
AK F 100-80 - 400	3.6	1	**117143**
AK F 100-80 - 800	6.0	1	**117144**
AK F 100-80-E - 600	4.7	1	**117254**







Cantilever Bracket AK F 160-100-E

Group: A820

Application

Galvanised box-section with welded end-plate to serve as cantilever arm for Beam Section TP F 100/160 (flange side 160) or Beam Bracket TKO F 100/160.

Installation

With 4 x Self Forming Screw FLS when fixed to another siFramo 100/160 (flange side 160) box-section. Fixing to walls and ceilings with suitable wall anchors M10.

Technical Data

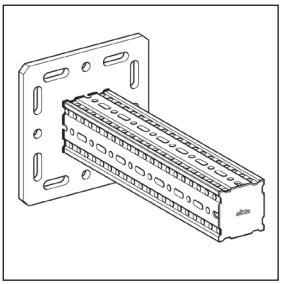
Type	Dimensions of base plate [mm]	L [mm]	b_1 x l_1 [mm]
AK F 160-100-E-800	160 x 200	800	11 x 20
AK F 160-100-E-1200	160 x 200	1200	11 x 20

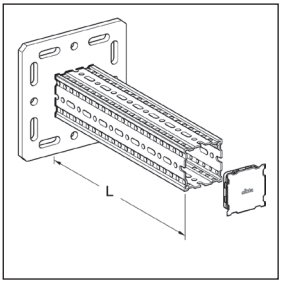
Configuration: Plate welded with Beam Section F 100
material: Steel, HCP

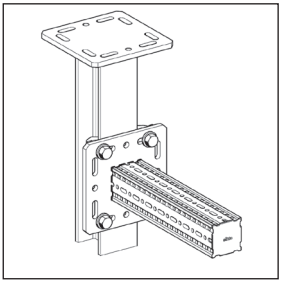
Approvals / Compliance

CE mark (Declaration of performance see www.sikla.co.uk/downloads)

Type	W [kg]	Quantity [pack]	Part number
AK F 160-100-E-800	10.9	1	**117145**
AK F 160-100-E-1200	15.4	1	**117146**







Beam Bracket TKO F 80

Group: A423

Application

Galvanised hollow-box-section with welded end-plate to serve as cantilever arm. May be used as a crossbar when combined with End Support STA/End Support WBD and 4 x Self Forming Screw FLS .

Scope of delivery

With pre-assembled End Cap ADK F 80.

Installation

Depending on the situation, different options are recommended:

a) Directly to building structure: 4 x suitable wall anchors
b) To traditional steel beams between 80 – 120 mm flange dimensions: 1x Assembly Set 5P M12 S
c) To traditional steel beams > 120 flange dimension: with on-demand Adaptor Plate (tbc)
d) To Sikla Simotec steel beams 100/120: with Bracket Plates FV 100/120 when positive mechanical connection required

Technical Data

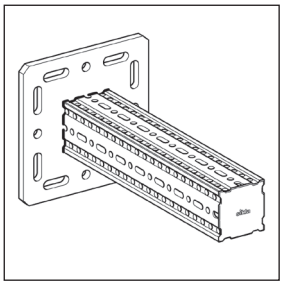
Type	L [mm]	Dimensions of base plate [mm]	Slots in base plate for
TKO F80-400	400	220 x 220 x 12	M12
TKO F80-800	800	220 x 220 x 12	M12

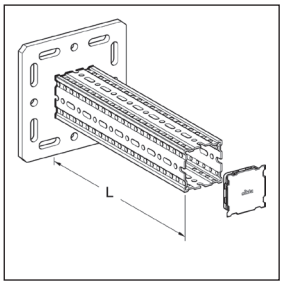
Configuration Base plate welded to Beam Section F 80
Material:
Base plate Steel, HCP
Beam section Steel, HCP

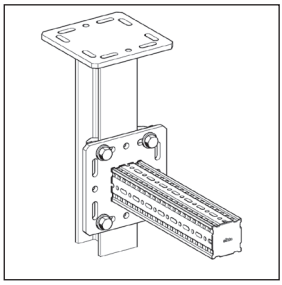
Approvals / Compliance

CE mark (Declaration of performance see www.sikla.co.uk/service/downloads)
MPA tested

Type	W [kg]	Quantity [pack]	Part number
TKO F 80-400	6.6	1	**192788**
TKO F 80-800	9.2	1	**192795**







Beam Bracket TKO F 100

Group: A823

Application

Galvanised hollow-box-section with welded end-plate to serve as cantilever arm. May be used as a crossbar when combined with End Support STA/End Support WBD and 4 x Self Forming Screw FLS.

Scope of delivery

With pre-assembled End Cap ADK F100

Installation

Depending on the situation, different options are recommended:

a) Directly to building structure: 4x suitable wall anchors.
b) To traditional steel beams between 80 - 120 mm flange dimensions: with on-demand Adaptor Plate(tbc).
c) To traditional steel beams > 120 flange dimension: with on-demand Adaptor Plate (tbc)
d) To Sikla Simotec steel beams 100/120: with Bracket Plates FV 100/120 when positive mechanical connection required.

Technical Data

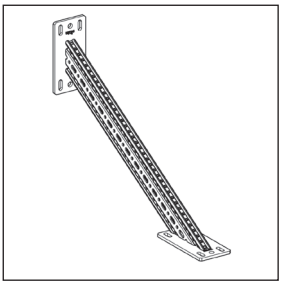
Type	L [mm]	Dimensions of base plate [mm]	Slots in base plate for
TKO F 100-400	400	220 x 220 x 12	M12
TKO F 100-800	800	220 x 220 x 12	M12
TKO F 100-1200	1200	220 x 220 x 12	M12

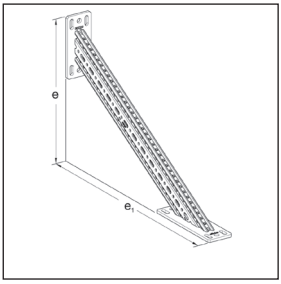
Configuration: Base plate welded to Beam Section F 100
Material:
Plate: Steel, HCP
Beam section: Steel, HCP

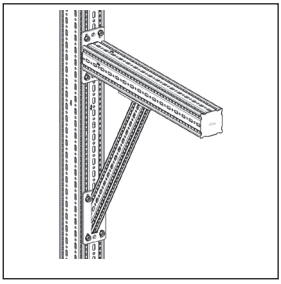
Approvals / Compliance

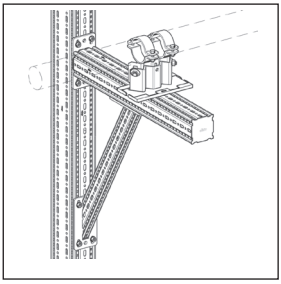
CE mark (Declaration of performance see www.sikla.co.uk/service/downloads)

Type	W [kg]	Quantity [pack]	Part number
TKO F 100-400	8.6	1	**113071**
TKO F 100-800	12.8	1	**113072**
TKO F 100-1200	17.5	1	**113421**









Bracing Arm SKO F 80

Group: A423

Application

Bracing arm for reinforcement of frames made from Beam Section TP F 80 and/or Cantilever Bracket AK F 80.

Installation

With 2 x 4 Self Forming Screw FLS when used inside a corner of two F 80 size box-sections.

With 4 x Self Forming Screw FLS and 2 x suitable M12 wall anchors/fixings when used to connect between one F 80 size box-section and the building structure.

Technical Data

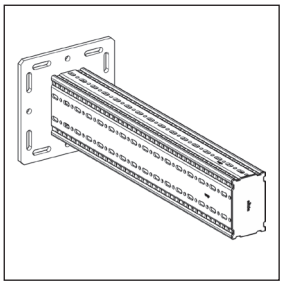
Type	Dimensions of base plate [mm]	e [mm]	e_1 [mm]
SKO F 80	265 x 80 x 8	438	719

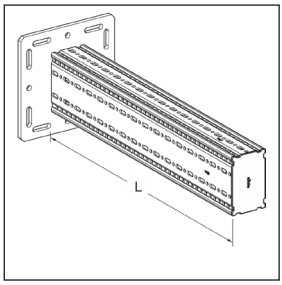
material: Steel, HCP

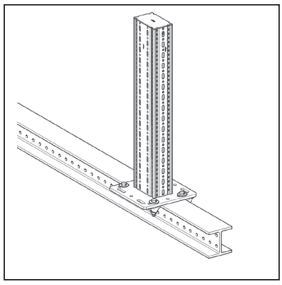
Approvals / Compliance

CE mark (Declaration of performance see www.sikla.co.uk/service/downloads)

Type	W [kg]	Quantity [pack]	Part number
SKO F 80	6.2	1	**117152**







Beam Bracket TKO F 100/160

Group: A823

Application

Galvanised hollow-box-section with welded end-plate to serve as cantilever arm. May be used as a crossbar when combined with End Support STA/End Support WBD and 4 x Self Forming Screw FLS.

Scope of delivery

With pre-assembled End Cap ADK F100

Installation

Depending on the situation, different options are recommended:

a) Directly to building structure: 4x suitable wall anchors.

b) To traditional steel beams between 80 - 120 mm flange dimensions: with on-demand Adaptor Plate(tbc).

c) To traditional steel beams > 120 flange dimension: with on-demand Adaptor Plate (tbc)

Technical Data

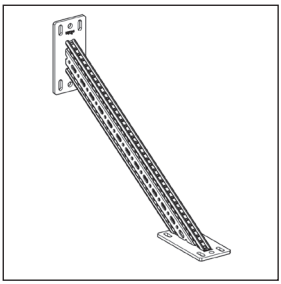
Type	L [mm]	Dimensions of base plate [mm]	Slots in base plate for
TKO F 100/160-800	800	280 x 280 x 12	M12
TKO F 100/160-1200	1200	280 x 280 x 12	M12

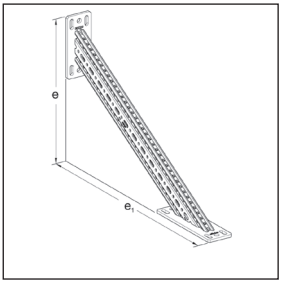
Configuration: Base plate welded to Beam Section F 100/160
Material:
base plate: Steel, HCP
Beam section: Steel, HCP

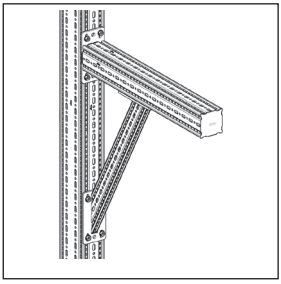
Approvals / Compliance

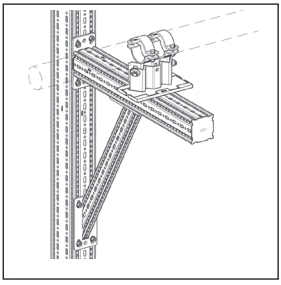
CE mark (Declaration of performance see www.sikla.co.uk/service/downloads)

Type	W [kg]	Quantity [pack]	Part number
TKO F 100/160-800	18.5	1	**113097**
TKO F 100/160-1200	24.5	1	**113420**









Bracing Arm SKO F 100

Group: A823

Application

Bracing arm for reinforcement of frames made from Beam Section TP F100 and/ or Cantilever Bracket AK F100.

Installation

- With 2x4 Self Forming Screw FLS when used inside a corner of two F100 size hollow-box sections.
- With 4x Self Forming Screw FLS and 2x suitable wall anchors/fixings when used to connect between one
F 100 size hollow-box section and the building structure.

Technical Data

Type	Dimensions of Base plate [mm]	e [mm]	e_1 [mm]
SKO F 100	210 x 100 x 8	450	710

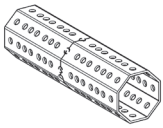
Material: Steel, HCP

Approvals / Compliance

CE mark (Declaration of performance see www.sikla.co.uk/service/downloads)

Type	W [kg]	Quantity [pack]	Part number
SKO F 100	5.5	1	**113096**

Octagonal Coupling PK F 80 HCP



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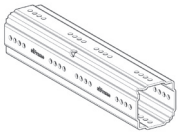
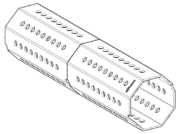
Square Coupling PK F 80 HCP



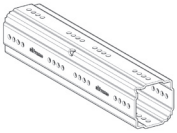
Page 34

Octagonal Coupling PK F 100 HCP



Page 35

Square Coupling PK F 100 HCP



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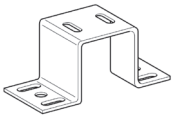
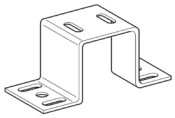
Beam Section Holder TPH F 80



Page 37

Beam Section Holder TPH F 100



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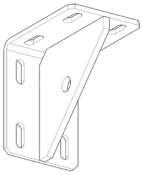
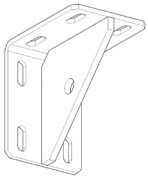
Corner Bracket WD F 100



Page 39

Corner Bracket WD F 80



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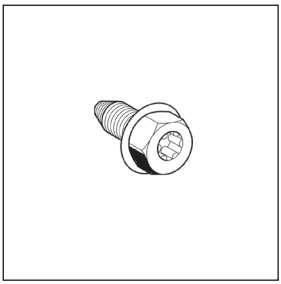
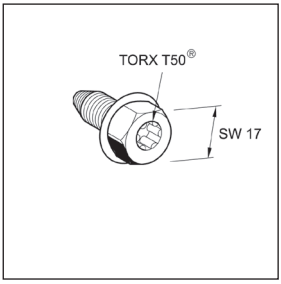




Self Forming Screw FLS

Group: A430

Application

The Self Forming Screw FLS creates its own thread inside the wall of the siFramo pilot hole. During the screw-driving operation, the base steel is re-shaped and hardened to form an air-tight seal between the threads of the screw and the surrounding steel, making it exceptionally resistant to vibrational loosening and increasing fastening strength.

Technical Data

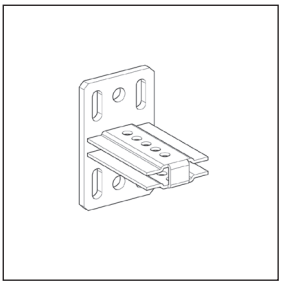
Application	Tightening torque [Nm]
System siFramo	50 +10/-0
Connection to channels 41	35

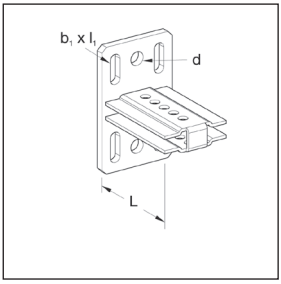
Material: Steel, HCP

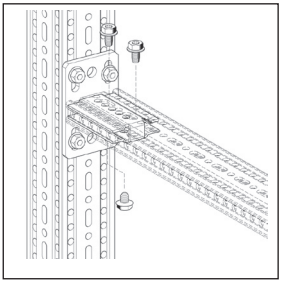
Approvals / Compliance

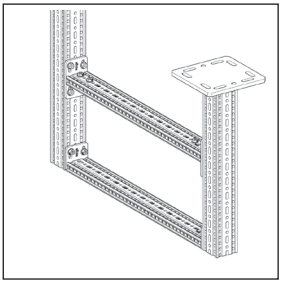
MPA tested

Type	W [kg]	Quantity [pack]	Part number
FLS F	0.03	100	**192512**









End Support STA F 80/30

Group: A422

Application

Plug-in component designed to create an end plate at the open end of a beam section TP F 80 or TP F 80/30. A connection to Cantilever brackets AK F 80 or AK F 80/30 can also be realised.

Installation

Depending on the situation, different options are recommended:
a) With 2x4 Self Forming Screws FLS when used to connect 2 Beam Sections.
b) With 4 Self Forming Screws FLS applied to the insert and 2 suitable M12 wall anchors/fixings when connected to the building structure.

Technical Data

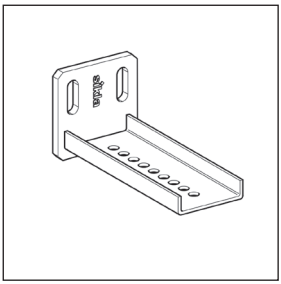
Type	Dimensions of base plate [mm]	L [mm]	d [mm]	b_1 x l_1 [mm]
STA F 80/30	130 x 80 x 8	99	14	11 x 20

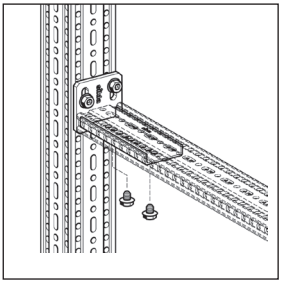
material: Steel, HCP

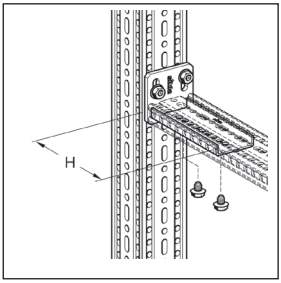
Approvals / Compliance

CE mark (Declaration of performance see www.sikla.co.uk/downloads)

Type	W [kg]	Quantity [pack]	Part number
STA F 80/30	1.1	1	**117160**







End Support STA F 80/30 E

Group: A422

Application

Plug-in component designed to create an endplate at the open end of a Beam Section TP F80/30 a Cantilever bracket AK F80/30.

Installation

The Beam Section TP F 80/30 E connected to the End Support STA F 80/30 E has to be screwed with 2 Self Forming Screws FLS F.

Technical Data

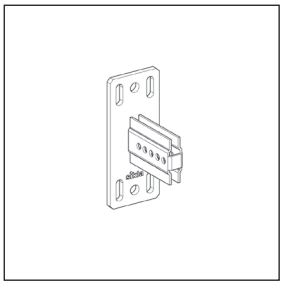
Type	Dimensions of Base plate [mm]	Slots in base plate for	H [mm]
STA F 80/30-80-E	80 x 80 x 8	M10	178

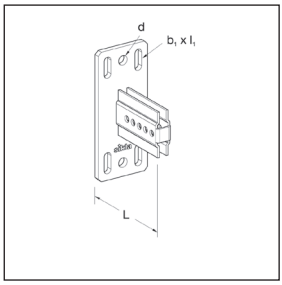
Material: Steel, HCP

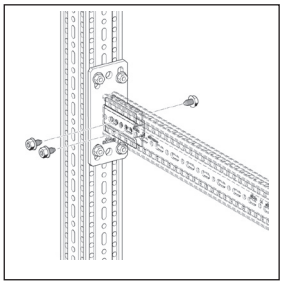
Approvals / Compliance

CE mark (Declaration of performance see www.sikla.co.uk/service/downloads)

Type	W [kg]	Quantity [pack]	Part number
STA F 80/30-80-E	0.8	1	**113066**







End Support STA F 80/30-Q

Group: A422

Application

Plug-in component designed to create an end plate at the open end of a Beam Section TP F 80 or TP F 80/30. A connection to Cantilever brackets AK F 80 or AK F 80/30 can also be realised.

Installation

Depending on the situation, different options are recommended:
a) With 2x4 Self Forming Screws FLS when used to connect 2 Beam Sections.
b) With 4 Self Forming Screws FLS applied to the insert and 2 suitable M12 wall anchors/fixings when connected to the building structure.

Technical Data

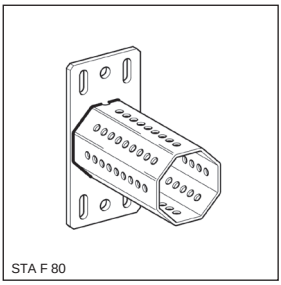
Type	Dimensions of base plate [mm]	L [mm]	d [mm]	b_1 x l_1 [mm]
STA F 80/30-Q	190 x 80 x 8	99	14	11 x 20

material: Steel, HCP

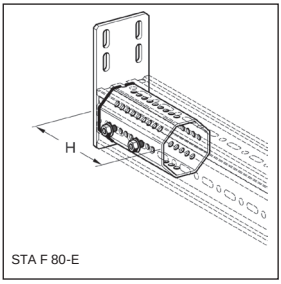
Approvals / Compliance

CE mark (Declaration of performance see www.sikla.co.uk/downloads)

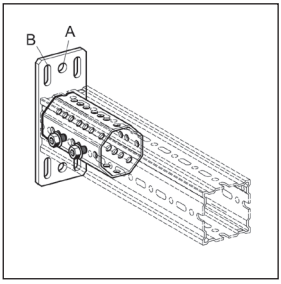
Type	W [kg]	Quantity [pack]	Part number
STA F 80/30-Q	1.3	1	**117294**

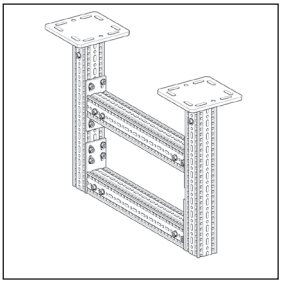


STA F 80



STA F 80-E





End Support STA F 80

Group: A422

Application

Plug-in component designed to create an endplate at the open end of a Beam Section TP F80 or a Cantilever bracket AK F80. Durch die Rundlöcher in der Grundplatte ist eine direkte Anbindung an eingelassenen Ankerschienen möglich.

Installation

Depending on the version, following mountings solutions are possible:

a) With 2x4 Self Forming Screws FLS when used to connect 2 Beam Sections.

b) With 4 Self Forming Screws FLS applied to the octagonal insert and 2 suitable wall anchors/fixings when connected to the building structure.

The Beam Section TP F 80/80 connected to the End Support STA F 80 has to be screwed with 4 Self Forming Screws FLS F. On each of the opposite sides 2 Self Forming Screws FLS F are necessary.

Technical Data

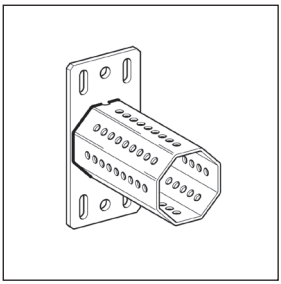
Type	Dimensions of Base plate [mm]	A [mm]	B [mm]	H [mm]
STA F 80	190 x 80 x 8	14	20 x 11	148
STA F 80-E	165 x 80 x 8	-	20 x 11	148

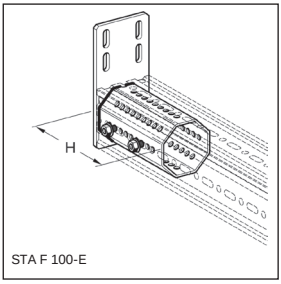
Configuration: Base plate welded to octagonal element F 80
Material:
Plate Steel, HCP
Octagonal element Steel, HCP

Approvals / Compliance

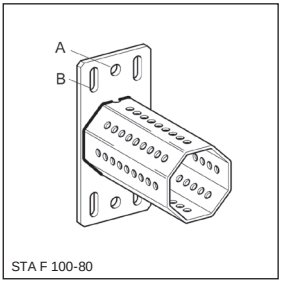
CE mark (Declaration of performance see www.sikla.co.uk/downloads)

Type	W [kg]	Quantity [pack]	Part number
STA F 80	1.6	1	**192856**
STA F 80-E	1.5	1	**192863**

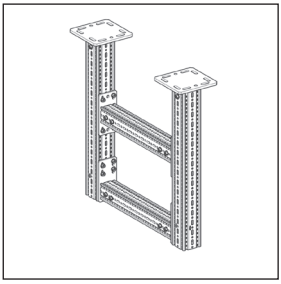




STA F 100-E



STA F 100-80



End Support STA F 100

Group: A822

Application

Plug-in component designed to create an endplate at the open end of a Beam Section TP F 100 or a Cantilever bracket AK F 100. Variation types F 100-80 (E) are designed to combine F 100 with F 80 beam sections. Octagonal insert allows full utilisation of beam section within the space required by the End Support STA itself.

Installation

Depending on the situation, different options are recommended:

a) With 2x4 Self Forming Screws FLS when used to connect 2 Beam Sections.

b) With 4 Self Forming Screws FLS applied to the octagonal insert and 2 suitable wall anchors/fixings when connected to the building structure.

The Beam Section TP F 100/100 connected to the End Support STA F 100 has to be screwed with 4 Self Forming Screws FLS F. On each of the opposite sides 2 Self Forming Screws FLS F are necessary. Alternatively with two suitable wall anchors through holes “A” when fixed directly to building structure.

Technical Data

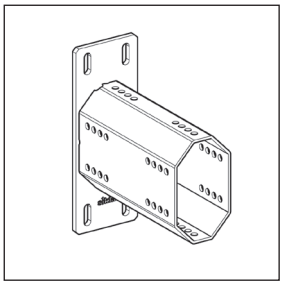
Type	Dimensions of base plate [mm]	A [mm]	B [mm]	H [mm]
STA F 100	210 x 100 x 8	14	20 x 11	188
STA F 100-E	185 x 100 x 8	-	20 x 11	188
STA F 100-80	210 x 100 x 8	14	20 x 11	148
STA F 100-80-E	185 x 100 x 8	-	20 x 11	148

Configuration: Base plate welded to Octagon F 100 or F 80
Material:
Base plate: Steel, HCP
Octagon: Steel, HCP

Approvals / Compliance

CE mark (Declaration of performance see www.sikla.co.uk/downloads)

Type	W [kg]	Quantity [pack]	Part number
STA F 100	2.4	1	**113073**
STA F 100-E	2.2	1	**113074**
STA F 100-80	2.0	1	**113337**
STA F 100-80-E	1.8	1	**113481**



End Support STA F 100 - 100/160

Group: A822

Application

Plug-in component designed to create an endplate at the open end of a Beam Section TP F 100 and TP F 100/160 or a Cantilever bracket AK F 100.

Installation

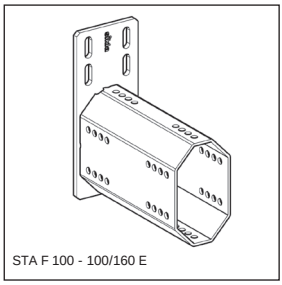
For the connection to Beam Section TP F 100 or TP F 100/160 (flange side 100) 4 Self Forming Screws FLS F are necessary. The Beam Section TP F 100/160 connected to the End Support STA F 100 - 100/160 has to be screwed with 8 Self Forming Screws FLS F. On each of the broader sides 4 Self Forming Screws FLS F are necessary.

Technical Data

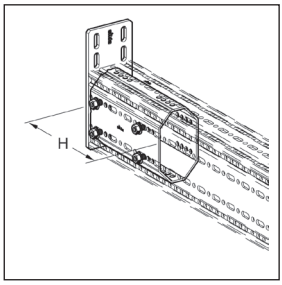
Type	Dimensions of base plate [mm]	Slotting in base plate for	H [mm]
STA F 100 - 100/160	270 x 100 x 8	M10	238
STA F 100 - 100/160 E	245 x 100 x 8	M10	238

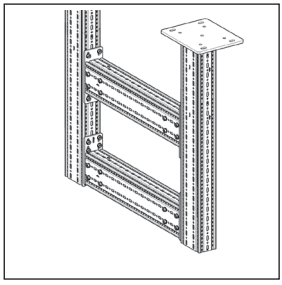
Configuration: Base plate welded to Octagon F 100/160
Material:
Plate: Steel, HCP
Octagon: Steel, HCP

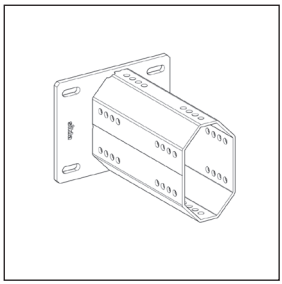
Type	W [kg]	Quantity [pack]	Part number
STA F 100 - 100/160	4.4	1	**114878**
STA F 100 - 100/160 E	4.2	1	**114879**

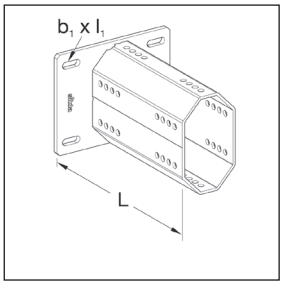


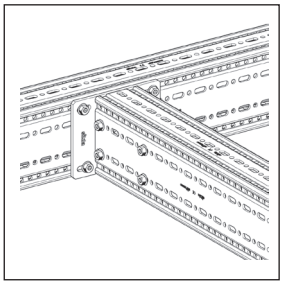
STA F 100 - 100/160 E

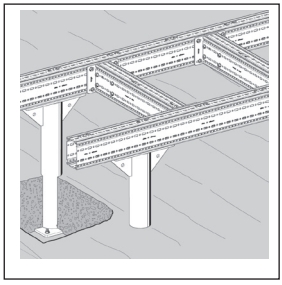












End Support STA F 160-Q

Group: A822

Application

Plug-in component designed to create an endplate at the open end of a Beam Section TP F 100/160.

Installation

For the connection to Beam Section TP F 100/160 (flange side 160) 4 Self Forming Screws FLS F are necessary. The Beam Section TP F 100/160 connected to the End Support STA F 160-Q has to be screwed with 8 Self Forming Screws FLS F. On each of the broader sides 4 Self Forming Screws FLS F are necessary. Fixing to walls and ceilings with suitable wall anchors M10.

Technical Data

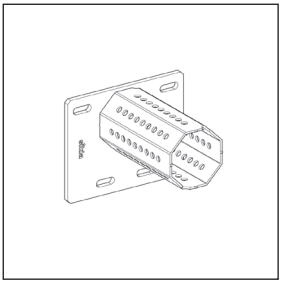
Type	Dimensions of base plate [mm]	L [mm]	b_1 x l_1 [mm]
STA F 160-Q	160 x 200	230	11 x 20

configuration: Grundplatte verschweißt mit Achtkant F 100/160
material: Steel, HCP

Approvals / Compliance

CE mark (Declaration of performance see www.sikla.co.uk/downloads)

Type	W [kg]	Quantity [pack]	Part number
STA F 160-Q	4.8	1	**117147**



End Support STA F 160-100-E

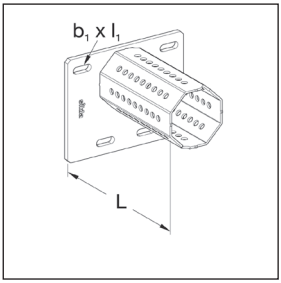
Group: A822

Application

Plug-in component designed to create an end plate at the open end of a Beam Section TP F 100/160.

Installation

For the connection to Beam Section TP F 100/160 (flange side 160) 4 Self Forming Screws FLS F are necessary. The Beam Section TP F 100 connected to the End Support STA F 160-100-E has to be screwed with 4 Self Forming Screws FLS F. On each of the broader sides 2 Self Forming Screws FLS F are necessary. Fixing to walls and ceilings with suitable wall anchors M10.



Technical Data

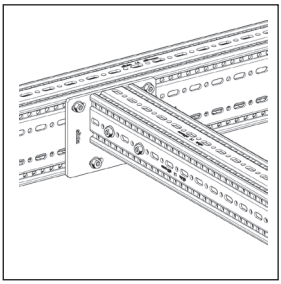
Type	Dimensions of base plate [mm]	L [mm]	b_1 x l_1 [mm]
STA F 160-100-E	160 x 200	180	11 x 20

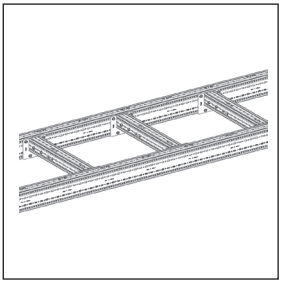
configuration: Plate welded with to Octagon F 100
material: Steel, HCP

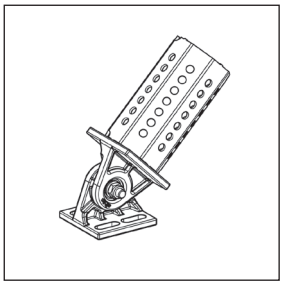
Approvals / Compliance

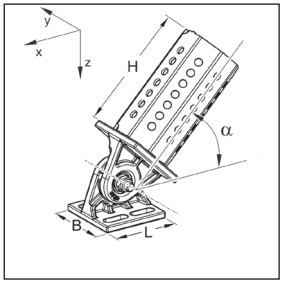
CE mark (Declaration of performance see www.sikla.co.uk/downloads)

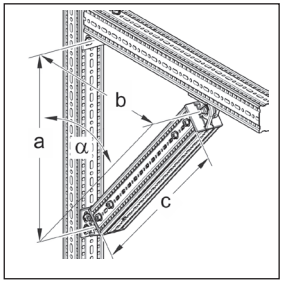
Type	W [kg]	Quantity [pack]	Part number
STA F 160-100-E	3.1	1	**116875**

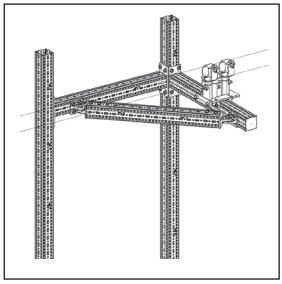












Pivot Joint GE F 80

Group: A437

Application

Applicable as a bracing element for single-arm cantilevers in conjunction with siFramo 80 section, and for the knee-brace reinforcing of siFramo 80 frame constructions. The pivot can be installed with angles from 25° to 155°.

Installation

Attachment of Joint GE F 80 to Beam Section TP F 80 by means of 4 Self Forming Screws FLS F at the base plate. The support profile TP F 80 plugged onto the octagon is also attached by means of 4 Self Forming Screws, so 8 Self Forming Screws are necessary in total. The cutting length of the support profile can be determined by the table below-mentioned. After installation at the desired angle the screws have to be tightened with 40 Nm.

Technical Data

Type	Height H [mm]	Length L [mm]	Width B [mm]	Angle α
GE F 80 - 80	140	80	80	25° - 155°

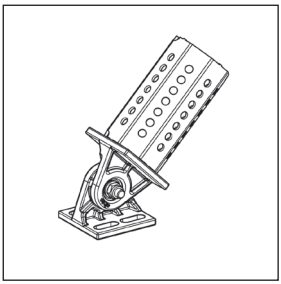
Cutting length c of support profile between two joints:

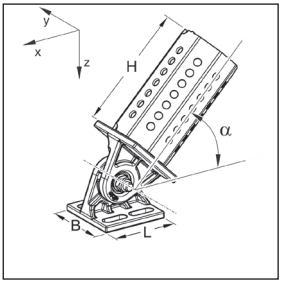
	b [mm] 1000	b [mm] 1500	b [mm] 2000	b [mm] 2500	b [mm] 3000
α	c [mm]	c [mm]	c [mm]	c [mm]	c[mm]
25°	2155	3340	4525	5710	6890
30°	1810	2810	3810	4810	5810
35°	1565	2435	3305	4180	5050
40°	1380	2160	2940	3720	4495
45°	1245	1955	2660	3370	4075
50°	1145	1800	2450	3100	3755
55°	1060	1670	2285	2895	3505
60°	1000	1580	2155	2730	3310
65°	950	1500	2055	2605	3155

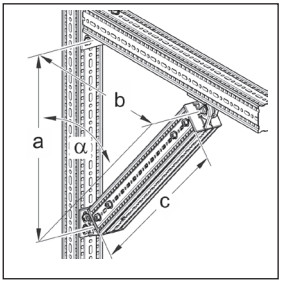
a = vertical length from centerline of joint to bottom of profile at connection
b = horizontal length of cantilever from connection to centerline of joint
c = cutting length of support profile between two joints
α = angle at the opposite of the vertical bracing

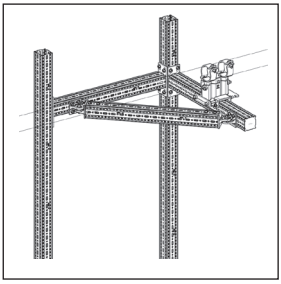
Material: Steel, HCP

Type	W [kg]	Quantity [pack]	Part number
GE F 80 - 80	2.1	1	**113835**









Pivot Joint GE F 100

Group: A437

Application

Applicable as a bracing element for single-arm cantilevers in conjunction with siFramo 100 section, and for the knee-brace reinforcing of siFramo frame constructions. The pivot can be installed with angles from 25° to 155°.

Installation

Attachment of the Joints to Beam Section TP F 100 by means of 4 Self Forming Screws FLS F at the base plate. The support profile TP F 80 or TP F 100 (depending on joint type) plugged onto the octagon is also attached by means of 4 Self Forming Screws, so 8 Self Forming Screws are necessary in total. The cutting length of the support profile can be determined by the table below-mentioned. After installation at the desired angle the screws have to be tightened with 40 Nm.

Technical Data

Type	Height H [mm]	Length L [mm]	Width B [mm]	Angle α
GE F 100 - 80	140	100	100	25° - 155°
GE F 100 - 100	180	100	100	25° - 155°

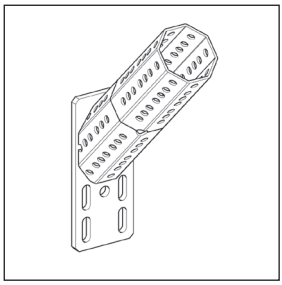
Cutting length c of support profile between two joints:

	b [mm] 1000	b [mm] 1500	b [mm] 2000	b [mm] 2500	b [mm] 3000
α	c [mm]	c [mm]	c [mm]	c [mm]	c[mm]
25°	2155	3340	4525	5710	6890
30°	1810	2810	3810	4810	5810
35°	1565	2435	3305	4180	5050
40°	1380	2160	2940	3720	4495
45°	1245	1955	2660	3370	4075
50°	1145	1800	2450	3100	3755
55°	1060	1670	2285	2895	3505
60°	1000	1580	2155	2730	3310
65°	950	1500	2055	2605	3155

a = vertical length from centerline of joint to bottom of profile at connection
b = horizontal length of cantilever from connection to centerline of joint
c = cutting length of support profile between two joints
α = angle at the opposite of the vertical bracing

Material: Steel, HCP

Type	W [kg]	Quantity [pack]	Part number
GE F 100 - 80	2.3	1	**113838**
GE F 100 - 100	3.0	1	**113837**



End Support STA F - E 45°

Group: A422

Application

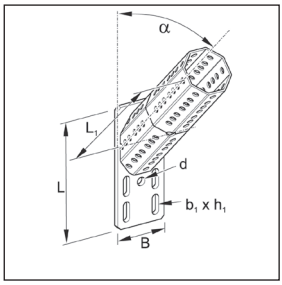
The End Support STA F - E 45° is designed to generate a 45° bracing element in combination with F80 beam sections or F80 Cantilever Brackets.

Installation

Depending on the situation on site there are two options to use this product:

a) Connection within the siFramo system by connecting with 4 FLS screws to each beam section F80.

b) Connection to building fabric by using 2 suitable wall anchors in diagonal configuration.



Technical Data

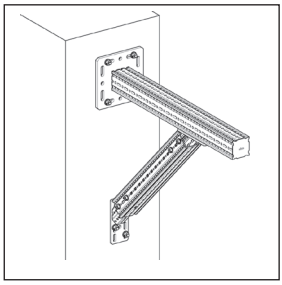
Type	L [mm]	B [mm]	L_1 [mm]	d [mm]	b_1 [mm]	h_1 [mm]	α [°]
STA F 80-E 45°	190	80	244,5	14	11	20	45

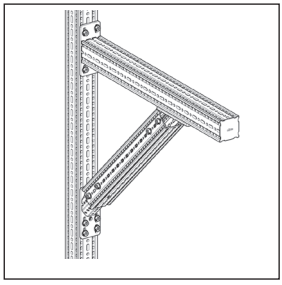
Configuration: Base plate welded to octagonal element F 80
Material: Steel, HCP

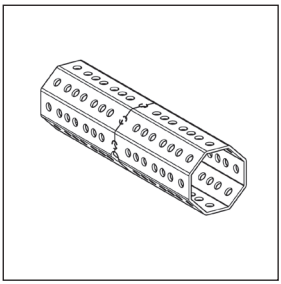
Approvals / Compliance

CE-Kennzeichen (Leistungserklärung unter www.sikla.xx/downloads)

Type	W [kg]	Quantity [pack]	Part number
STA F 80-E 45°	2.0	1	**406001**
STA F 100-80-E 45°	2.4	1	**406002**



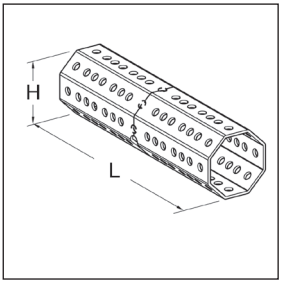




Octagonal Coupling PK F 80 HCP

Application
Internal splice connecting element for TP F 80 Beam Section, particularly suitable for vertical extension. Should the component be used for horizontal application, the bending moment needs to be considered.
This particular connection element allows rotation of the siFramo TP F 80 Beam Section by 45°.

Installation
To be fastened with 2 x 4 FLS F Self Forming Screws. For optimal bending moment, distance between screws to be as far from each other as possible.



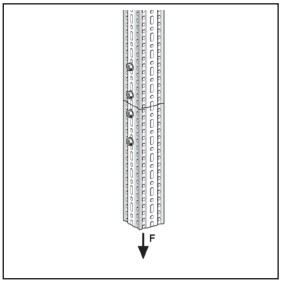
Self Forming Screw FLS F to be fastened on two sides with a distance of minimum of 50 mm and to be fastened symmetrically.
To optimise the bending moment the FLS F should be installed to maintain the pipe weight of the effective flow - i.e. Screws are located top and bottom for horizontal cross bars not sideways.

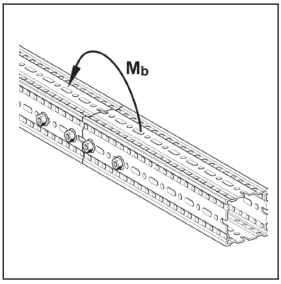
Technical Data

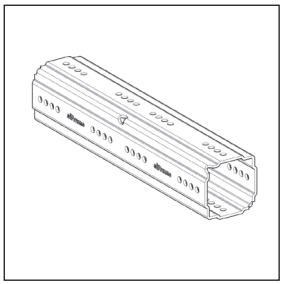
Type	adm. longitudinal force (tension/pressure) F [kN]	adm. bending moement Mb [Nm]
PK F 80 8kt	10,0	250

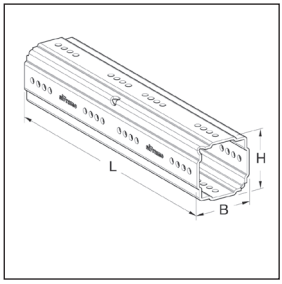
Material: Steel, HCP

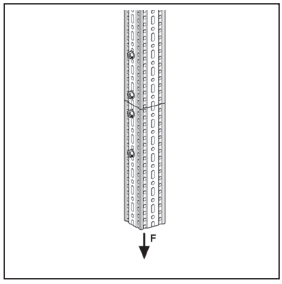
Type	H [mm]	L [mm]	W [kg]	Quantity [pack]	Part number
PK F 80 8kt	73	280	1.4	1	**111446**

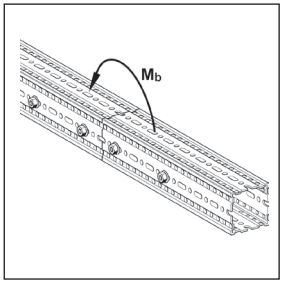












Square Coupling PK F 80 HCP

Application
Internal splice connecting element for TP F 80 Beam Section, particularly suitable for vertical extension. Should the component be used for horizontal application, the bending moment needs to be considered.

Installation
To be fastened with 2 x 4 FLS F Self Forming Screws. For optimal bending moment, distance between screws to be as far from each other as possible.

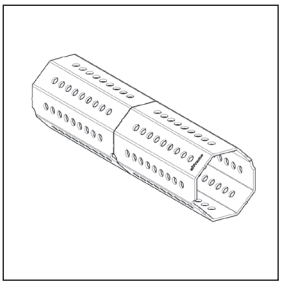
Notice:
Self Forming Screw FLS F to be fastened on two sides with a distance of minimum of 100mm and to be fastened symmetrically. To optimise the bending moment the FLS F should be installed to maintain the pipe weight of the effective flow - i.e. Screws are located top and bottom for horizontal cross bars not sideways.

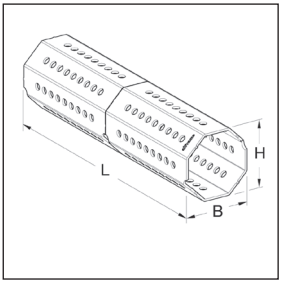
Technical Data

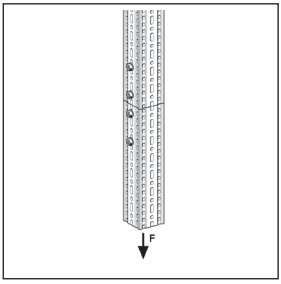
Type	L [mm]	H [mm]	B [mm]	F_{max} [kN]	Mb_{max} [kNm]
PK F 80 4kt	382	73	73	10.0	0.5

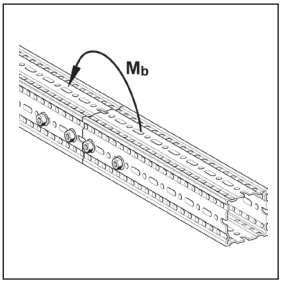
Material: Steel, HCP

Type	W [kg]	Quantity [pack]	Part number
PK F 80 4kt	2.1	1	**111445**









Octagonal Coupling PK F 100 HCP

Group: A430

Application

Internal splice connecting element for TP F 100 Beam Section, particularly suitable for vertical extension. Should the component be used for horizontal application, the bending moment needs to be considered. This particular connection element allows rotation of the siFramo TP F 100 Beam Section by 45°.

Installation

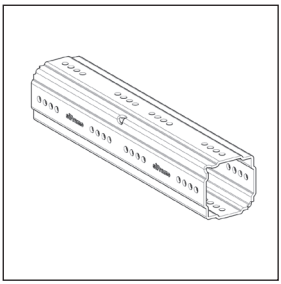
To be fastened with 2 x 4 FLS F Self Forming Screws. For optimal bending moment, distance between screws to be as far from each other as possible.
Note:
Self Forming Screw FLS F to be fastened on two sides with a distance of minimum of 50 mm and to be fastened symmetrically. To optimise the bending moment the FLS F should be installed to maintain the pipe weight of the effective flow - i.e. Screws are located top and bottom for horizontal cross bars not sideways.

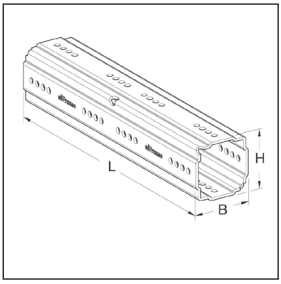
Technical Data

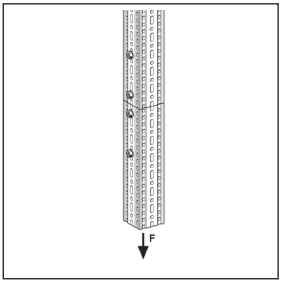
Type	L [mm]	H [mm]	B [mm]	F_{max} [kN]	Mb_{max} [kNm]
PK F 100 8kt	360	90	90	10.0	0.25

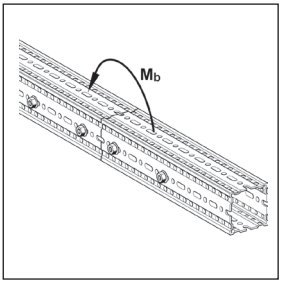
material: Steel, HCP

Type	W [kg]	Quantity [pack]	Part number
PK F 100 8kt	2.3	1	**400389**









Square Coupling PK F 100 HCP

Group: A430

Application

Internal splice connecting element for TP F 100 Beam Section, particularly suitable for vertical extension. Should the component be used for horizontal application, the bending moment needs to be considered.

Installation

To be fastened with 2 x 4 FLS F Self Forming Screws. For optimal bending moment, distance between screws to be as far from each other as possible.

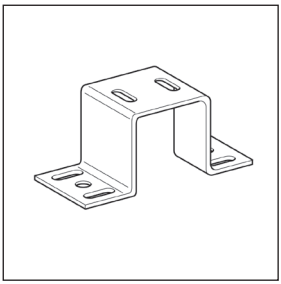
Note:
Self Forming Screw FLS F to be fastened on two sides with a distance of minimum of 100mm and to be fastened symmetrically. To optimise the bending moment the FLS F should be installed to maintain the pipe weight of the effective flow - i.e. Screws are located top and bottom for horizontal cross bars not sideways.

Technical Data

Type	L [mm]	H [mm]	B [mm]	F_{max} [kN]	Mb_{max} [kNm]
PK F 100 4kt	442.5	90	90	10.0	0.5

material: Steel, HCP

Type	W [kg]	Quantity [pack]	Part number
PK F 100 4kt	3.4	1	**400390**



Beam Section Holder TPH F 80

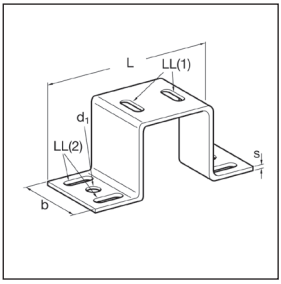
Group: A425

Application

Interface element to connect 90° intersecting Beam Sections F80. Alternatively the Beam Section Holder TPH may be used to connect only one beam section to an even surface with suitable wall anchors or with cast-in channel accessories.

Installation

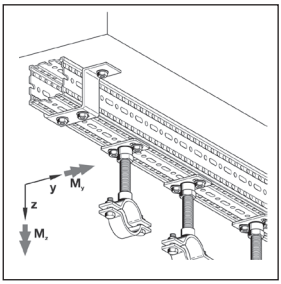
Connecting one Beam Section F80 90° to another one by using 6 x Self Forming Screw FLS applied through all elongated holes. Connecting to any other surface or member by using 2 x Self Forming Screws FLS through the two elongated holes on the top of the Beam Section Holder TPH F80 plus 2 appropriate fixing elements up to M12 through the two holes “d1”.



Technical Data

Type	L x w x th [mm]	Ш d_1 [mm]	Elongated hole LL1 d x a [mm]	Elongated hole LL2 d x a [mm]
TPH F 80/30	181 x 50 x 4	13	11 x 20	-
TPH F 80/30 C	199 x 80 x 4	14	11 x 20	11 x 20
TPH F 80	181 x 50 x 4	13	11 x 20	-
TPH F 80 C	199 x 80 x 4	14	11 x 20	11 x 20

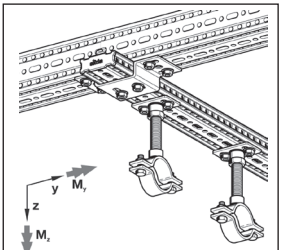
Type	F_x [kN]	F_y [kN]	F_z [kN]	M_y [kNm]	M_z [kNm]
TPH F 80/30	6.2	20.8	13.6	0.9	0.9
TPH F 80/30 C	6.2	12.7	12.3	0.6	0.5
TPH F 80	6.2	20.8	13.6	0.9	0.9
TPH F 80 C	6.2	12.7	12.3	0.6	0.5



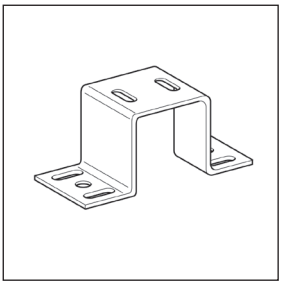
The above load data indicates permissible loads and includes Partial Safety Factors γ_{M2} = 1.25 (EN 1993-1-8:2010-12, Tab. 2.1) and γ_G = 1,35 (EN 1990:2010-12, Tab. A1.2(B)) for general permanent actions.

Material: Steel, HCP

Type	W [kg]	Quantity [pack]	Part number
TPH F 80/30	0.4	10	**116672**
TPH F 80/30 C	0.5	10	**116673**
TPH F 80	0.5	10	**195765**
TPH F 80 C	0.8	10	**111732**



TPH F 80/30 C



Beam Section Holder TPH F 100

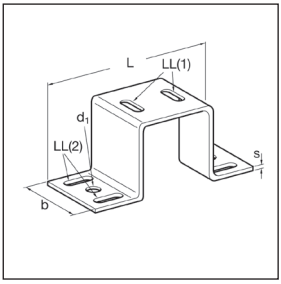
Group: A825

Application

Interface element to connect 90° intersecting Beam Sections F100. Alternatively the Beam Section Holder TPH may be used to connect only one beam section to an even surface with suitable wall anchors or with cast-in channel accessories.

Installation

Connecting one Beam Section F100 90° to another one by using 6 x Self Forming Screw FLS applied through all elongated holes. Connecting to any other surface or member by using 2 x Self Forming Screws FLS through the two elongated holes on the top of the Beam Section Holder TPH F100 plus 2 appropriate fixing elements up to M12 through the two holes “d1”.

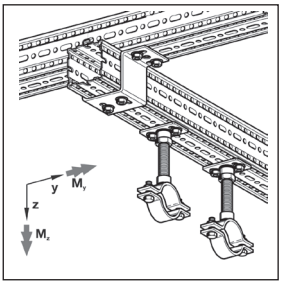


Technical Data

Type	L x b x s [mm]	Шd_1 [mm]	Elongated hole LL1 d x a [mm]	Elongated hole LL2 d x a [mm]
TPH F 100 C	219 x 100 x 4	14	11 x 20	11 x 20
TPH F 100/80 C	199 x 100 x 4	14	11 x 20	11 x 20

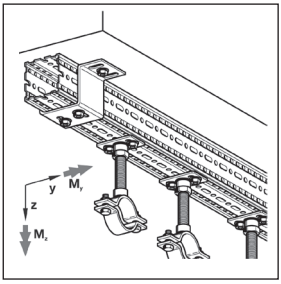
Type	F_x [kN]	F_y [kN]	F_z [kN]	M_y [kNm]	M_z [kNm]
TPH F 100 C	6.2	12.7	12.3	0.6	0.5
TPH F 100/80 C	6.2	12,7	12.3	0.6	0.5

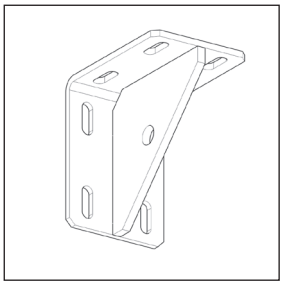
The above load data indicates permissible loads and includes Partial Safety Factors γ_{M2} = 1.25 (EN 1993-1-8:2010-12, Tab. 2.1) and γ_G = 1,35 (EN 1990:2010-12, Tab. A1.2(B)) for general permanent actions.

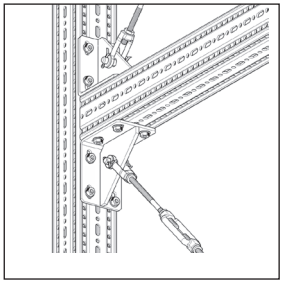


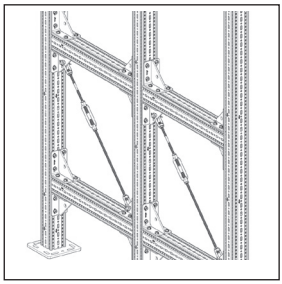
Material: Steel, HCP

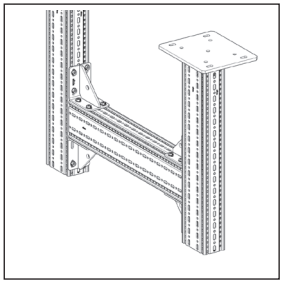
Type	W [kg]	Quantity [pack]	Part number
TPH F 100 C	1.2	10	**113084**
TPH F 100/80 C	1.0	10	**113085**











Corner Bracket WD F 100

Group: A430

Application

Component to be used for connections between two F100 or F100/160 sections when the structural design requires an alternative to the End Support STA F 100 as the default solution. Connections with the Corner Bracket WD F 100 allow flexible constructions and provide a high load capacity at the same time. The central hole allows for the integration of diagonal cross-bracing allowing more complex structures the be made.

Installation

To be used in pairs only. 8 pieces of Self Forming Screw FLS are necessary for one Corner Bracket.

Technical Data

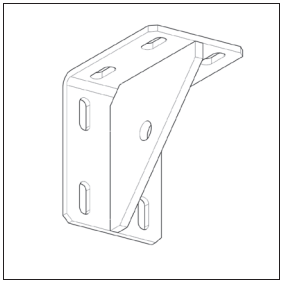
Type	max. tensile load boring [kN]
WD F 100 140/140	45,3

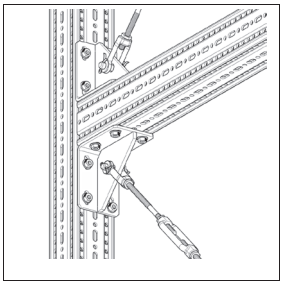
tabelle_t Material:
#zelle Steel, HCP#/tabelle

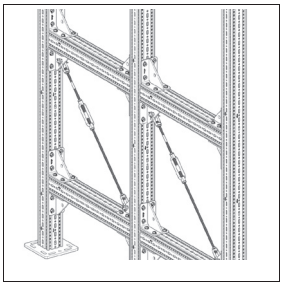
Approvals / Compliance

CE mark (Declaration of performance see www.sikla.co.uk/service/downloads)

Type	W [kg]	Quantity [pack]	Part number
WD F 100 140/140	1.9	1	**113095**







Corner Bracket WD F 80

Group: A430

Application

Component to be used for connections between two F 80 sections when the structural design requires an alternative to the End Support STA F 80 as the default solution. Connections with the Corner Bracket WD F 80 allow flexible constructions and provide a high load capacity at the same time. The central hole allows for the integration of diagonal cross-bracing allowing more complex structures to be made.

Installation

To be used in pairs only. 8 pieces of Self Forming Screw FLS are necessary for one Corner Bracket.

Technical Data

Type	max. tensile load boring [kN]
WD F 80 120/120	45,3

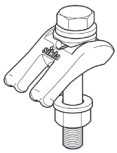
material: Steel, HCP

Approvals / Compliance

CE mark (Declaration of performance see www.sikla.co.uk/service/downloads)

Type	W [kg]	Quantity [pack]	Part number
WD F 80 120/120	1.5	1	**117153**

Assembly Set MS 5P



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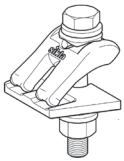
Assembly Set MS 5P MA



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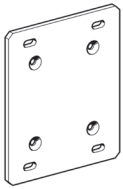
Joining Plate AP



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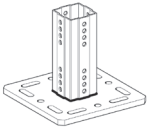
End Support WBD F 80



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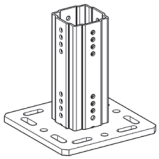
End Support WBD F 100



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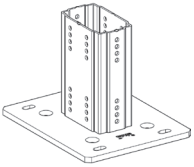
End Support WBD F 100/160



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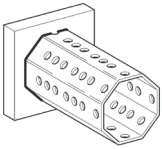
Welding Adapter ASA F 80 Octagon



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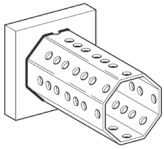
Welding Adapter ASA F 100 Octagon



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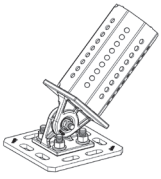
Pivot Joint GE F 100/160



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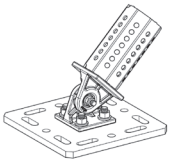
Pivot Joint GE F - ST F 80



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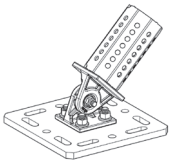
Pivot Joint GE F - ST F 100



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Welding Adapter ASA F 80 Square

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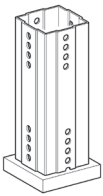
Welding Apater ASA F 100 Square



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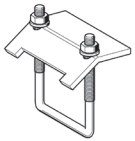
U-Holder SB F 80



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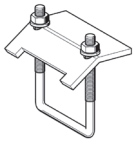
U-Holder SB F 100



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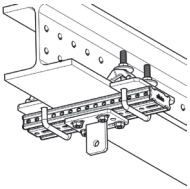
Beam Connection LKA



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Weld-on Eye-Plate HPA

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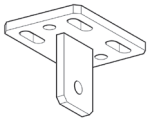
Eye-Plate HP F 80



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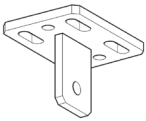
Eye-Plate HP F 100



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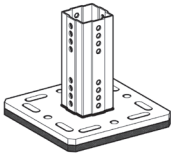
Insulated Foot Plate SHB F 80



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Insulated Foot SHB SQF F 80

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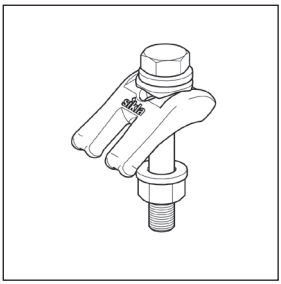
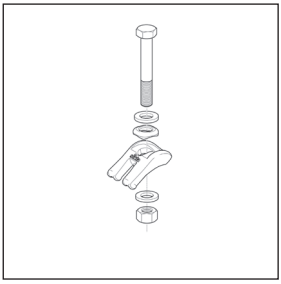
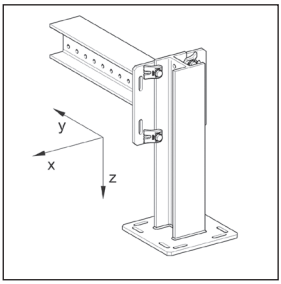
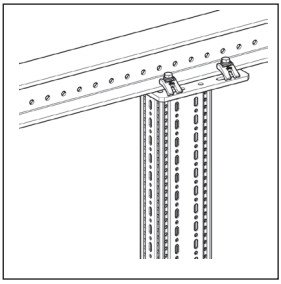








Assembly Set MS 5P

Group: A640

Application

Element for connecting Beam Bracket TKO, Angled Beam Bracket SKO, End Support WBD or Pivot Joint GE F to a beam section.

Scope of delivery

Type	Beam Clip [Quantity]	Support plate [Quantity]	HR trimming * [Quantity]
M12 S	4 x M12	4 x M12	4 x M12 x 80
M16 S	4 x M16	4 x M16	4 x M16 x 100
M12 S2	2 x M12	2 x M12	2 x M12 x 80

* HR trimming according EN 14399-3 consisting of: Hexagon bolt M12 or M16, 2 washers, 1 hexagon nut

Installation

1. Position Beam Clip with the split end on beam section.
2. Install support plate and HR trimming and tighten accordingly.

The support plate secures a rectangular assembly of the bolt and prevents its shifting or bending stress. In conjunction with the HR trimming a continuous and predictable preload force is guaranteed.

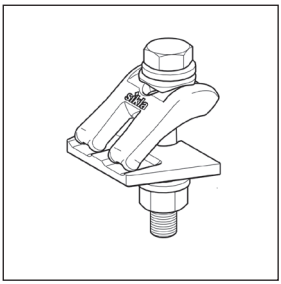
Technical Data

Type	Size range [mm]	Tightening torque M_A [Nm]	F_y perm. per Beam Clip [kN]	Shear force load capacity $F_{v,z}$ per set = 4 Beam Clips kN]
M12 S	1 - 30	85	26,3	12,0 *
M16 S	4 - 40	150	32,0	13,6 *

* The specified data relate to the worst case with flange thicknesses 30 mnm (M12) or 40 mm (M16) as well as a coefficient of adhesion $\mu_{adhesion}$ = 0,20.
A possibly operating tensile force Fy isn't included.

Material: Steel, HCP

Type	W [kg]	Qty. [set]	Part number
M12 S	1.2	10	**115843**
M16 S	2.2	10	**115844**
M12 S2	0.6	10	**115845**



Assembly Set MS 5P MA

Group: A640

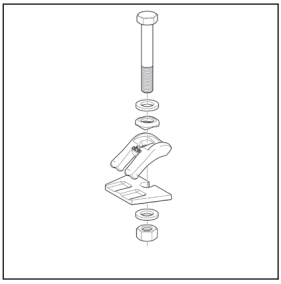
Application

Element for connecting Beam Bracket TKO, Angled Beam Bracket SKO, End Support WBD or Pivot Joint GE F to a beam section.

Scope of delivery

Type	Beam Clip [Quantity]	Support plate [Quantity]	Stop plate [Quantity]	HR trimming * [Quantity]
M12 MA S	4 x M12	4 x M12	4 x M12	4 x M12 x 80
M16 MA S	4 x M16	4 x M16	4 x M16	4 x M16 x 100

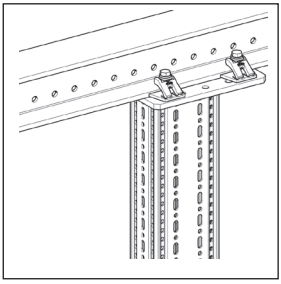
* HR trimming according EN 14399-3 consisting of: Hexagon bolt M12 or M16, 2 washers, 1 hexagon nut



Installation

1. Position stop plate on component to be mounted.
2. Position the Beam Clip with the slit side into the indentations of the stop plate and with the lug on the steel girder.
3. Install support plate and HR trimming and tighten accordingly.

The support plate secures a rectangular assembly of the bolt and prevents its shifting or bending stress. In conjunction with the HR trimming a continuous and predictable preload force is guaranteed. The stop plate ensures a tight fit of the Beam Clip.

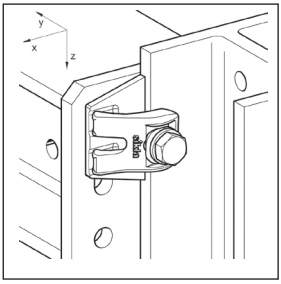


Technical Data

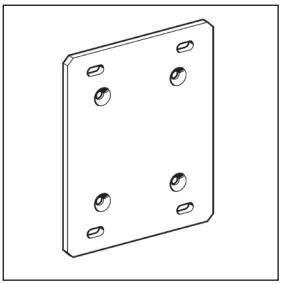
Type	Size range [mm]	Tightening torque M_A [Nm]	F_y perm. per Beam Clip [kN]	Shear force load capacity $F_{v,z}$ per Set = 4 Beam Clips [kN]
M12 MA S	1 - 30	85	32,9	15,1 *
M16 MA S	4 - 40	150	39,1	16,7 *

* The specified data relate to the worst case with flange thicknesses 30 mnm (M12) or 40 mm (M16) as well as a coefficient of adhesion $\mu_{adhesion}$ = 0,20.
A possibly operating tensile force Fy isn't included.

Material: Steel, HCP



Type	W [kg]	Qty. [set]	Part number
M12 MA S	1.6	10	**114886**
M16 MA S	2.8	10	**114887**



Joining Plate AP

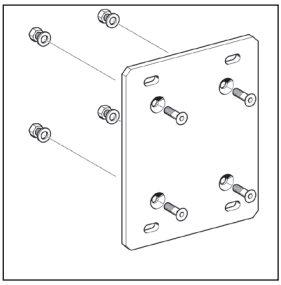
Group: A630

Application

Interface element to enable the connection of standard endplates of Beam Brackets TKO F80 or F100, TKO 100 or 120 to primary steel with flange width >120 mm. Alternatively this product may be used to achieve a greater distance between wall anchor positions when required by the anchor calculation's result.

Scope of delivery

Adapter Plate AP
4 Countersink Screws M12 x 40
4 Hexagon Nuts M12
4 Washers



Installation

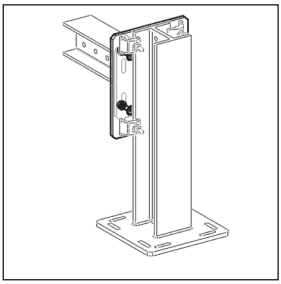
Connect the Adapter Plate AP to the Beam Bracket TKO's end plate by using the accessories above. Then continue with either heavy-duty anchors or Assembly Set 5P/Beam Clips as required by the building structure.

Technical Data

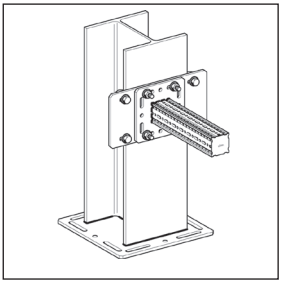
Type	Dimension of Base Plate L x B [mm]	Perforation for	Connection to flange width [mm]
AP 121/160	320 x 260 x 12	M12	121 - 160
AP 161/200	320 x 310 x 12	M16	161 - 200
AP 201/300	420 x 220 x 12	M16	246 - 300
AP 301/310	440 x 220 x 12	M16	301 - 310

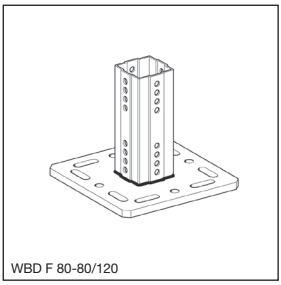
Material:

Joining Plate	Steel, HCP
Bolts	Steel DIN 7991, class 8.8, HCP
Nuts	Steel, class 8, HCP
Washers	Steel, HCP

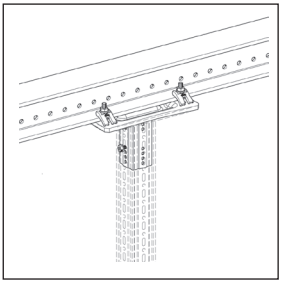


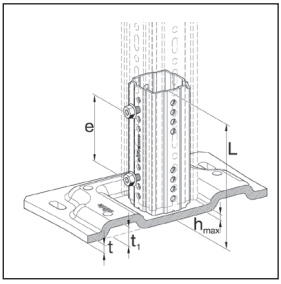
Type	W [kg]	Quantity [pack]	Part number
AP 121/160	7.7	1	**183953**
AP 161/200	9.3	1	**183962**
AP 201/300	8.4	1	**183980**
AP 301/310	9.8	1	**113129**

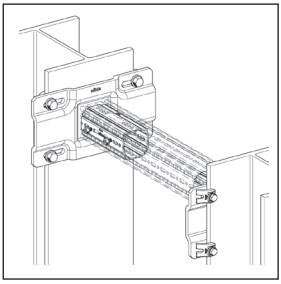




WBD F 80-80/120







End Support WBD F 80

Group: A421

Application

Plug-in component designed to create a square end plate at the open end of a Beam Section TP F80 or a Beam Bracket/Cantilever bracket AK F80. Variation "T" with octagonal insert allows full utilisation of beam section within the space required by the End Support WBD itself.

Installation

Depending on the situation, different options are recommended:
a) Directly to building structure: 4 x suitable wall anchors and 4 Self Forming Screws FLS applied to the square/octagonal insert
b) To traditional steel beams between 80 – 310 mm flange dimensions: 1x Assembly Set 5P M12 S, M16 S and 4 Self Forming Screws FLS applied to the square/octagonal insert
c) To traditional steel beams > 120 flange dimension: with on-demand Adaptor Plate (tbc)
d) To Sikla Simotec steel beams 100/120: with Bracket Plates FV 100/120 when positive mechanical connection required

The Beam Section TP F 80 connected to the End Support WBD F 80 has to be screwed with 4 Self Forming Screws FLS F. On each of the opposite sides 2 Self Forming Screws FLS F are necessary.

Technical Data

Type	Base plate finish	for flange width [mm]	Dimensions of base plate [mm]	Slots in base plate [l x b]
WBD F 80-80/120	flat	80 - 120	220 x 220 x 12	30 x 14
WBD-P F 80-121/160	corrugated	121 - 160	320 x 260 x 12	20 x 14
WBD-P F 80-161/200	corrugated	161 - 200	320 x 310 x 12	20 x 18
WBD-P F 80-201/310	corrugated	201 - 310	420 x 220 x 12	55 x 18
WBD F 80-T	flat	80 - 120	220 x 220 x 12	30 x 14

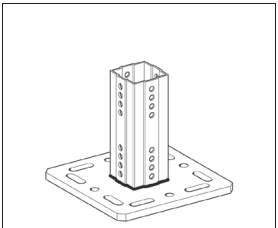
Type	e [mm]	L [mm]	t [mm]	t_1 [mm]	h_{max} [mm]	Slots in base plate for
WBD F 80-80/120	max.	202	12	-	30	M12
WBD-P F 80-121/160	max.	202	12	27	30	M12
WBD-P F 80-161/200	max.	202	12	27	30	M16
WBD-P F 80-201/310	max.	202	12	27	30	M16
WBD F 80-T	max.	152	12	-	30	M12

configuration: Plate welded to square F 80 resp. octagonal element F 80 (only WBD F 80-T)
material: Steel, HCP

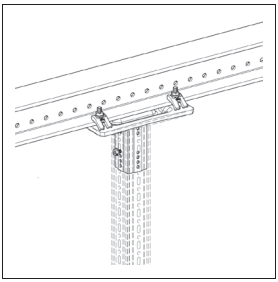
Approvals / Compliance

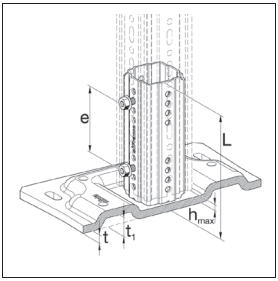
CE mark (Declaration of performance see www.sikla.co.uk/service/downloads)

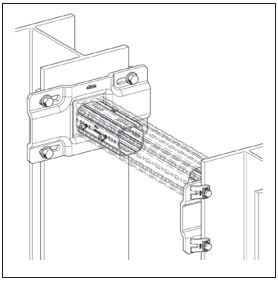
Type	W [kg]	Quantity [pack]	Part number
WBD F 80-80/120	5.2	1	**192801**
WBD-P F 80-121/160	8.7	1	**117164**
WBD-P F 80-161/200	10.2	1	**117165**
WBD-P F 80-201/310	9.4	1	**117166**
WBD F 80-T	4.8	1	**192849**



WBD F 100-80/120







End Support WBD F 100

Group: A821

Application

Plug-in component designed to create a square end plate at the open end of a Beam Section TP F 100 or a Beam Bracket/Cantilever bracket AK F 100. Variation "T" with octagonal insert allows full utilisation of beam section within the space required by the End Support WBD itself.

Installation

Depending on the situation, different options are recommended:
a) Directly to building structure: 4 x suitable wall anchors and 4 Self Forming Screws FLS applied to the square/octagonal insert
b) To traditional steel beams between 80 – 310 mm flange dimensions: 1x Assembly Set 5P M12 S, M16 S and 4 Self Forming Screws FLS applied to the square/octagonal insert
c) To traditional steel beams > 120 flange dimension: with on-demand Adaptor Plate (tbc)
d) To Sikla Simotec steel beams 100/120: with Bracket Plates FV 100/120 when positive mechanical connection required

The Beam Section TP F 100 connected to the End Support WBD F 100 has to be screwed with 4 Self Forming Screws FLS F. On each of the opposite sides 2 Self Forming Screws FLS F are necessary.

Technical Data

Type	Base plate finish	for flange width [mm]	Dimensions of base plate	Slots in base plate [l x b]
WBD F 100-80/120	flat	80 - 120	220 x 220 x 12	30 x 14
WBD-P F 100-121/160	corrugated	121 - 160	320 x 260 x 12	20 x 14
WBD-P F 100-161/200	corrugated	161 - 200	320 x 310 x 12	20 x 18
WBD-P F 100-201/310	corrugated	201 - 310	420 x 220 x 12	55 x 18
WBD F 100-T	flat	80 - 120	220 x 220 x 12	30 x 14

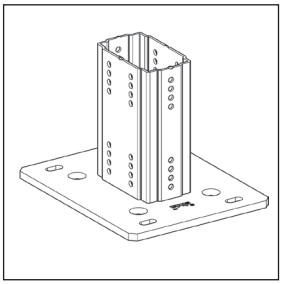
Type	e [mm]	L [mm]	t [mm]	t_1 [mm]	h_{max} [mm]	Slots in base plate for
WBD F 100-80/120	max.	232	12	-	30	M12
WBD-P F 100-121/160	max.	232	12	27	30	M12
WBD-P F 100-161/200	max.	232	12	27	30	M16
WBD-P F 100-201/310	max.	232	12	27	30	M16
WBD F 100-T	max.	192	12	-	30	M12

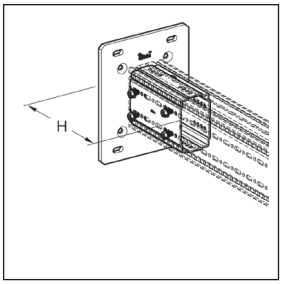
configuration: Plate welded to square F 100 resp. octagonal element F 100 (only WBD F 100-T)
material: Steel, HCP

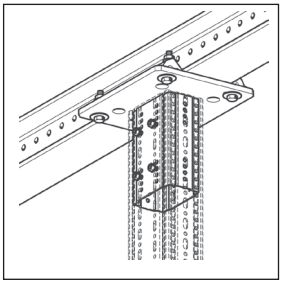
Approvals / Compliance

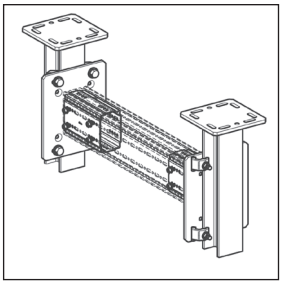
CE mark (Declaration of performance see www.sikla.co.uk/service/downloads)

Type	W [kg]	Quantity [pack]	Part number
WBD F 100-80/120	6.1	1	**113075**
WBD-P F 100-121/160	9.7	1	**117167**
WBD-P F 100-161/200	11.2	1	**117168**
WBD-P F 100-201/310	10.3	1	**117169**
WBD F 100-T	5.3	1	**113079**









End Support WBD F 100/160

Group: A821

Application

Plug-in component designed to create a square endplate at the open end of a Beam Section TP F100 or a Beam Bracket.

Installation

Depending on the situation, different options are recommended:

a) Directly to building structure: 4 x suitable wall anchors and 4 Self Forming Screws FLS applied to the square/octagonal insert.

b) To traditional steel beams between 80 – 300 mm flange dimensions: 1x Assembly Set 5P M12 S, M16 S and 4 Self Forming Screws FLS applied to the square/octagonal insert.

c) To traditional steel beams > 120 flange dimension: with on-demand Adaptor Plate (tbc).

The Beam Section TP F 100/160 connected to the End Support WBD F 100/160 has to be screwed with 8 Self Forming Screws FLS F. On each of the broader sides 4 Self Forming Screws FLS F are necessary.

Technical Data

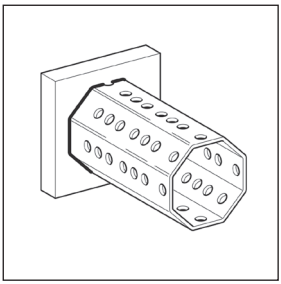
Type	for flange width [mm]	Dimensions of base plate [mm]	Slots in base plate for	H [mm]
WBD F 100/160-121/160	121 - 160	320 x 260 x 12	M12	232
WBD F 100/160-161/200	161 - 200	320 x 310 x 12	M16	232
WBD F 100/160-201/300	201 - 300	420 x 220 x 12	M16	232

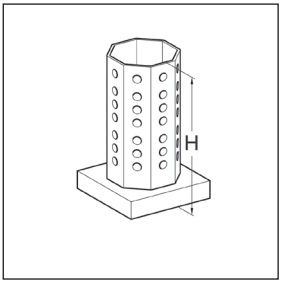
Configuration: Base plate welded to square F 100/60
Material:
Plate: Steel, HCP
Square F 100: Steel, HCP

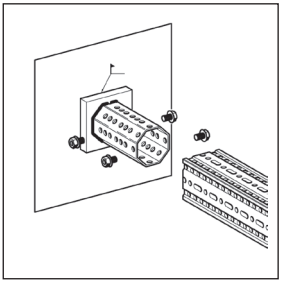
Approvals / Compliance

CE mark (Declaration of performance see www.sikla.co.uk/service/downloads)

Type	W [kg]	Quantity [pack]	Part number
WBD F100/160-121/160	10.53	1	**113098**
WBD F100/160-161/200	11.95	1	**113099**
WBD F100/160-201/300	11.14	1	**113100**







Welding Adapter ASA F 80 Octagon

Group: A428

Application

Welding plate with octagonal insert to receive siFramo section. May be implemented into the structural steel design in anticipation of siFramo-frames or used in situ as a connection element when clamping is not an option but hot works are permitted. The octagonal insert allows for full utilisation of beam section within the space required by the Welding Adapter ASA itself.

Scope of delivery

Mounting Plate 100 with welded on octagonal joint

Installation

The welding plate of the ASA can be welded directly without previous treatment due to a corrosion-resistant weld-thru coating which is compatible with both the HDG surface of the siFramo section and the health and safety requirements of the welding process. Once the ASA adapter has been connected, the coating may also receive paint without previous treatment. The siFramo section must be connected to the Welding Adapter ASA with 4 x Self Forming Screw FLS.

Technical Data

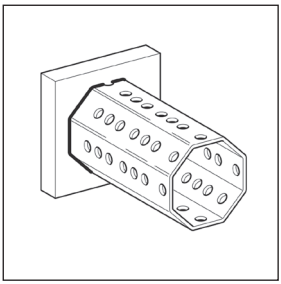
Type	Adapter size H [mm]	Mounting Plate size [mm]
ASA F 80 GPL 8kt	160	100 x 100 x 20

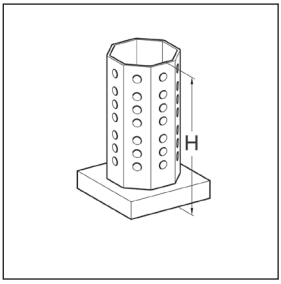
Adm. load cantilever: max. 0.6 kNm
Material: Steel, HCP

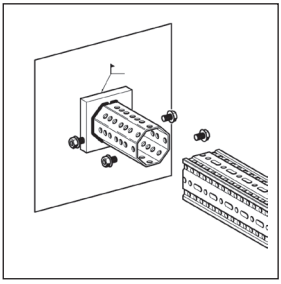
Approvals / Compliance

CE mark (Declaration of performance see www.sikla.co.uk/service/downloads)

Type	W [kg]	Quantity [pack]	Part number
ASA F 80 GPL 8kt	2.2	1	**112212**







Welding Adapter ASA F 100 Octagon

Group: A828

Application

Welding plate with octagonal insert to receive siFramo section. May be implemented into the structural steel design in anticipation of siFramo-frames or used in situ as a connection element when clamping is not an option but hot works are permitted. The octagonal insert allows for full utilisation of beam section within the space required by the Welding Adapter ASA itself.

Scope of delivery

Mounting Plate 100 with welded on octagonal joint.

Installation

The welding plate of the ASA can be welded directly without previous treatment due to a corrosion-resistant weld-thru coating which is compatible with both the HDG surface of the siFramo section and the health and safety requirements of the welding process. Once the ASA adapter has been connected, the coating may also receive paint without previous treatment. The siFramo section must be connected to the Welding Adapter ASA with 4 x Self Forming Screw FLS.

Technical Data

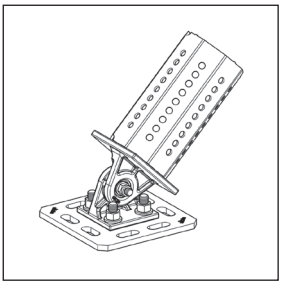
Type	Adapter size H [mm]	Mounting Plate size [mm]
ASA F 100 GPL 8kt	200	120 x 120 x 20

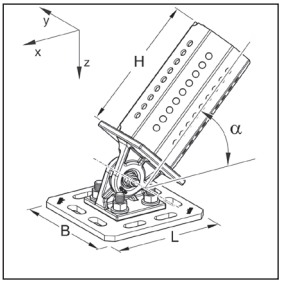
Material: Steel, HCP

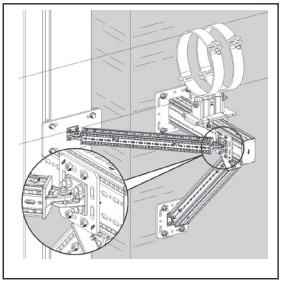
Approvals / Compliance

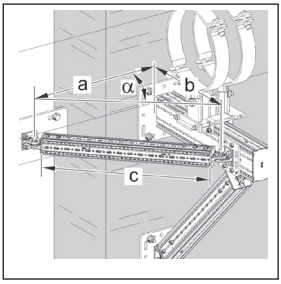
CE mark (Declaration of performance see www.sikla.co.uk/service/downloads)

Type	W [kg]	Quantity [pack]	Part number
ASA F 100 GPL 8kt	3.3	1	**113080**









Pivot Joint GE F 100/160

Group: A437

Application

Applicable as a bracing element for single-arm cantilevers in conjunction with siFramo 100/160 section, and for the knee-brace reinforcing of all frame constructions. The pivot can be installed with angles from 25° to 155°.

Scope of delivery

Pivot Joint GE F 100/160 with pre-attached 100/160 joining plate

Installation

Attachment of the Joints to the 160 mm face of Beam Section TP F 100/160 by means of 4 Self Forming Screws FLS F at the base plate. The support profile TP F 80 or TP F 100 (depending on joint type) plugged onto the octagon is also attached by means of 4 Self Forming Screws, so 8 Self Forming Screws are necessary in total. The cutting length of the support profile can be determined by the table below-mentioned. After installation at the desired angle the screws have to be tightened with 40 Nm.

Technical Data

Typ	Height H [mm]	Length L [mm]	Width B [mm]	Angle α
GE F 160 - 80	140	160	160	25° - 155°
GE F 160 - 100	180	160	160	25° - 155°

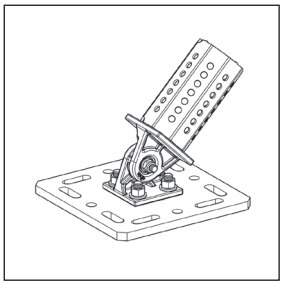
Cutting length c of support profile between two joints:

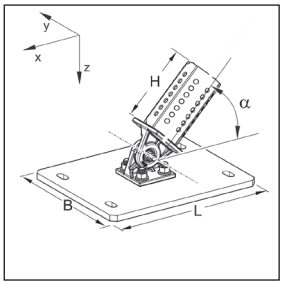
	b [mm] 1000	b [mm] 1500	b [mm] 2000	b [mm] 2500	b [mm] 3000
α	c [mm]	c [mm]	c [mm]	c [mm]	c[mm]
25°	2140	3323	4506	5689	6872
30°	1792	2792	3792	4792	5792
35°	1549	2420	3292	4164	5035
40°	1370	2148	2926	3704	4482
45°	1236	1943	2650	3357	4065
50°	1133	1786	2438	3091	3744
55°	1053	1663	2273	2884	3494
60°	990	1567	2145	2722	3299
65°	941	1493	2044	2596	3148

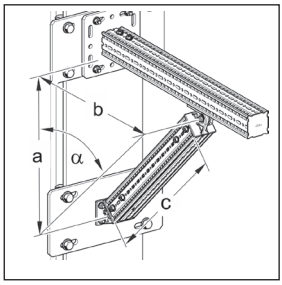
a = horizontal length of distance from centerline of joint at steel structure to profile side of connection 100/160
b = length of cantilever from connection to centerline of joint
c = cutting length of support profile between two joints
α = angle at the opposite of the vertical bracing

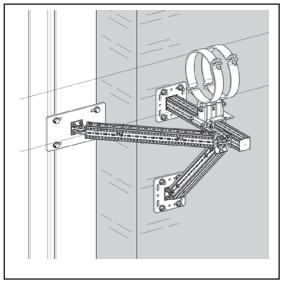
Material: Steel, HCP

Type	W [kg]	Quantity [pack]	Part number
GE F 160 - 80	3.6	1	**115854**
GE F 160 - 100	4.3	1	**115855**









Pivot Joint GE F - ST F 80

Group: A437

Application

Applicable as a bracing element for single-arm cantilevers supported from primary steelwork or concrete surfaces, also for the knee-brace reinforcing of all siFramo 80 frame constructions. The pivot can be installed with angles from 25° to 155°.

Scope of delivery

Pivot Joint GE F - ST F 80 with pre-attached base plate

Installation

Attachment of the Joints to steel structure by means of Assembly Set MS 5P M12 S while connecting the base plate. From size 161/200 plate, beam clamp set MS 5P M16 S must be used for clamping to steel beams. Another option is to fix the Joint to concrete walls by means of 4 heavy-duty anchors. The support profile TP F 80 plugged onto the octagon is attached by means of 4 Self Forming Screws. The cutting length of the support profile can be determined by the table below-mentioned. After installation at the desired angle the screws have to be tightened with 40 Nm.

By loosening the screw connection between Joint and Joining Plate it is possible to rotate the Joint by 90° and to use it for a cross member then (see figure 4).

Technical Data

Type	Height H [mm]	Length L [mm]	Width B [mm]	Angle α
GE F 80/120 - 80	140	220	220	25° - 155°
GE F 121/160 - 80 - 1	140	320	260	25° - 155°
GE F 161/200 - 80 - 1	140	320	310	25° - 155°
GE F 201/300 - 80 - 1	140	220	420	25° - 155°

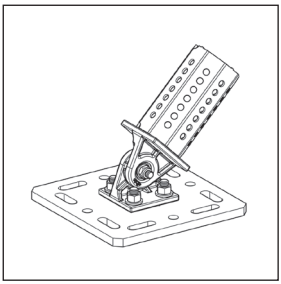
Cutting length c of support profile between two joints:

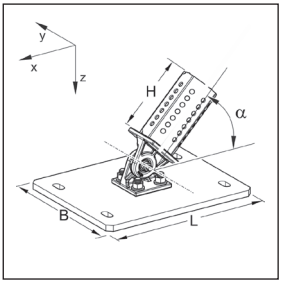
	b [mm] 1000	b [mm] 1500	b [mm] 2000	b [mm] 2500	b [mm] 3000
α	c [mm]	c [mm]	c [mm]	c [mm]	c[mm]
25°	2130	3313	4496	5679	6862
30°	1784	2784	3784	4784	5784
35°	1542	2413	3285	4157	5028
40°	1364	2142	2920	3698	4476
45°	1230	1938	2645	3352	4059
50°	1128	1780	2433	3086	3738
55°	1048	1658	2268	2879	3489
60°	985	1563	2140	2717	3295
65°	937	1488	2040	2592	3143

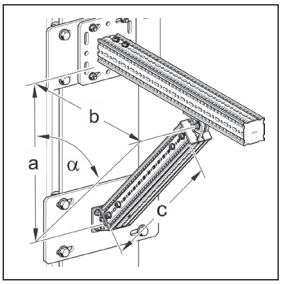
a = vertical length from centerline of joint to bottom of profile at connection
b = horizontal length of cantilever from connection to centerline of joint
c = cutting length of support profile between two joints
α = angle at the opposite of the vertical bracing

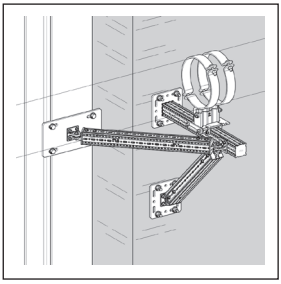
Material: Steel, HCP

Type	W [kg]	Quantity [pack]	Part number
GE F 80/120 - 80 *	6.2	1	**115856**
GE F 121/160 - 80 - 1	9.8	1	**115857**
GE F 161/200 - 80 - 1	11.3	1	**115859**
GE F 201/300 - 80 - 1	10.4	1	**115861**









Pivot Joint GE F - ST F 100

Group: A437

Application

Applicable as a bracing element for single-arm cantilevers supported from primary steelwork or concrete surfaces, also for the knee-brace reinforcing of all siFramo 100 frame constructions. The pivot can be installed with angles from 25° to 155°.

Scope of delivery

Pivot Joint GE F - ST F 100 with pre-attached base plate

Installation

Attachment of the Joints to steel structure by means of Assembly Set MS 5P M12 S while connecting the base plate. From size 161/200 plate, beam clamp set MS 5P M16 S must be used for clamping to steel beams. Another option is to fix the Joint to concrete walls by means of 4 heavy-duty anchors M12. The support profile TP F 100 plugged onto the octagon is attached by means of 4 Self Forming Screws. The cutting length of the support profile can be determined by the table below-mentioned. After installation at the desired angle the screws have to be tightened with 40 Nm.

By loosening the screw connection between Joint and Joining Plate it is possible to rotate the Joint by 90° and to use it for a cross member then (see figure 4).

Technical Data

Type	Height H [mm]	Length L [mm]	Width B [mm]	Angle α
GE F 80/120 - 100	180	220	220	25° - 155°
GE F 121/160 - 100 - 1	180	320	260	25° - 155°
GE F 161/200 - 100 - 1	180	320	310	25° - 155°
GE F 201/300 - 100 - 1	180	220	420	25° - 155°

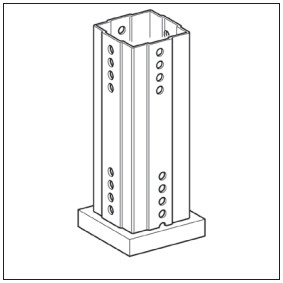
Cutting length c of support profile between two joints:

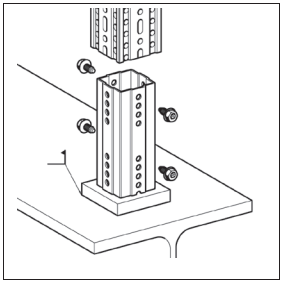
	b [mm] 1000	b [mm] 1500	b [mm] 2000	b [mm] 2500	b [mm] 3000
α	c [mm]	c [mm]	c [mm]	c [mm]	c[mm]
25°	2130	3313	4496	5679	6862
30°	1784	2784	3784	4784	5784
35°	1542	2413	3285	4157	5028
40°	1364	2142	2920	3698	4476
45°	1230	1938	2645	3352	4059
50°	1128	1780	2433	3086	3738
55°	1048	1658	2268	2879	3489
60°	985	1563	2140	2717	3295
65°	937	1488	2040	2592	3143

a = vertical length from centerline of joint to bottom of profile at connection
b = horizontal length of cantilever from connection to centerline of joint
c = cutting length of support profile between two joints
α = angle at the opposite of the vertical bracing

Material: Steel, HCP

Type	W [kg]	Quantity [pack]	Part number
GE F 80/120 - 100 *	6.9	1	**115863**
GE F 121/160 - 100 - 1	10.5	1	**115864**
GE F 161/200 - 100 - 1	11.9	1	**115866**
GE F 201/300 - 100 - 1	11.1	1	**115868**





Welding Adapter ASA F 80 GPL Square

Group: A428

Application

Welding plate with square insert to receive siFramo section. May be implemented into the structural steel design in anticipation of siFramo-frames or used in situ as a connection element when clamping is not an option but hot works are permitted.

Scope of delivery

Mounting Plate 80 with welded on square joint.

Installation

The welding plate of the ASA can be welded directly without previous treatment due to a corrosion-resistant weld-thru coating which is compatible with both the HDG surface of the siFramo section and the health and safety requirements of the welding process. Once the ASA adapter has been connected, the coating may also receive paint without previous treatment. The siFramo section must be connected to the Welding Adapter ASA with 4 x Self Forming Screw FLS.

Technical Data

Type	Adapter size H [mm]	Mounting Plate size [mm]
ASA F 80 GPL 4kt	210	100 x 100 x 20

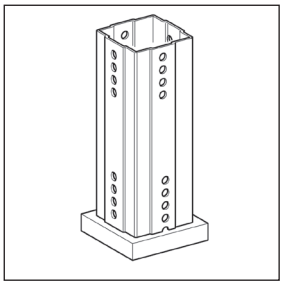
Adm. load:
Cantilever: max. 1.0 kNm
Crossbar: see siFramo Installation Guidelines

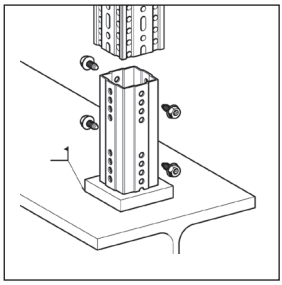
Material: Steel, HCP

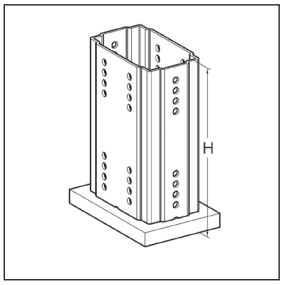
Approvals / Compliance

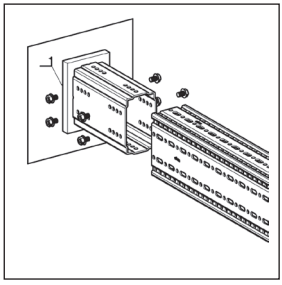
CE mark (Declaration of performance see www.sikla.co.uk/downloads)

Type	W [kg]	Quantity [pack]	Part number
ASA F 80 GPL 4kt	2.4	1	**111741**









Welding Apater ASA F 100 Square

Group: A828

Application

Welding plate with square insert to receive siFramo section. May be implemented into the structural steel design in anticipation of siFramo-frames or used in situ as a connection element when clamping is not an option but hot works are permitted.

Scope of delivery

Mounting Plate 100 with welded on square joint.

Installation

The welding plate of the ASA can be welded directly without previous treatment due to a corrosion-resistant weld-thru coating which is compatible with both the HDG surface of the siFramo section and the health and safety requirements of the welding process. Once the ASA adapter has been connected, the coating may also receive paint without previous treatment. The siFramo section must be connected to the Welding Adapter ASA with 4 x Self Forming Screw FLS. 8 pieces of Self Forming Screws are to be used for the Beam Section TP F 100/160, whereas 4 Self Forming Screws have to be screwed together on the flat flanks' opposite sides.

Technical Data

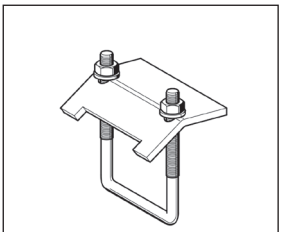
Type	Adapter size H [mm]	Mounting Plate size [mm]
ASA F 100 GPL 4kt	240	120 x 120 x 20
ASA F 100/160 GPL 4kt	240	180 x 120 x 20

Material: Steel, HCP

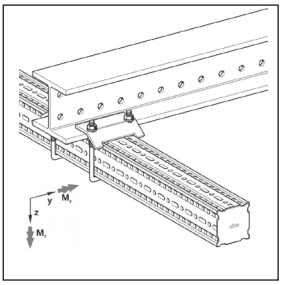
Approvals / Compliance

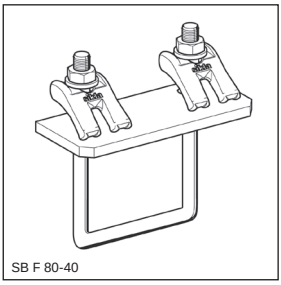
CE mark (Declaration of performance see www.sikla.co.uk/service/downloads)

Type	W [kg]	Quantity [pack]	Part number
ASA F 100 GPL 4kt	4.4	1	**113339**
ASA F 100/160 GPL 4kt	6.5	1	**113410**



SB F 80-16





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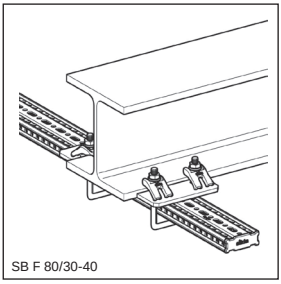


SB F 80/30-40

U-Holder SB F 80

Group: A439

Application
Pre-assembled component to clamp Beam Section F80 bzw. F 80/30 to the flange side of traditional steel sections.

Scope of delivery
Type SB F 80-16 bzw. F 80/30-16:
Holder with thread M10
Plate
2 Hexagon nuts M10
2 Washers

Type SB F 80-40 bzw. F 80/30-40:
Holder with thread M12
Plate
2 Beam Clips SPA 5P AU
2 Hexagon nuts M12

Installation
U-holder to be used in pairs.
Type 16 up to flange thickness 16 mm
Type 40 up to flange thickness 40 mm

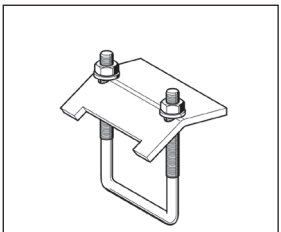
Technical Data

Type	Thread	Tightening torque [Nm]	F_z per U-Holder [kN]	F_y [kN]	M_y [kNm]	M_z [kNm]
SB F 80-16	M10	40	9,5	*	*	*
SB F 80-40	M12	85	16	*	*	*
SB F 80/30-16	M10	40	9,5	*	*	*
SB F 80/30-40	M12	85	16	*	*	*

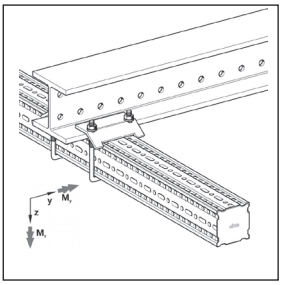
* Please compare the suitable type's dimensions by means of the Simotec user guideline to get the permissible lateral forces and torques.

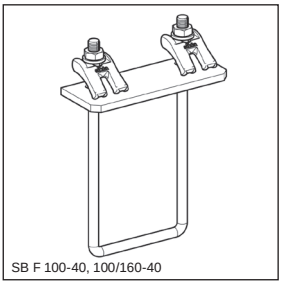
Material: Steel, HCP

Type	W [kg]	Quantity [pack]	Part number
SB F 80-16	0.6	20	**192683**
SB F 80-40	1.4	10	**194010**
SB F 80/30-16	0.5	20	**115840**
SB F 80/30-40	1.4	10	**115839**

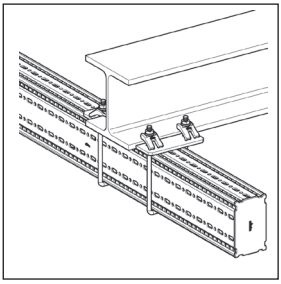


SB F 100-16





SB F 100-40, 100/160-40



U-Holder SB F 100

Group: A839

Application
Pre-assembled component to clamp Beam Section F100 to the flange side of traditional steel sections.

Scope of delivery
Type SB F 100-16:
Holder with thread M10
Plate
2 Hexagon nuts M10
2 Washers

Type SB F 100-40 and 100/160-40
Holder with thread M12
Plate
2 Beam Clips SPA 5P AU
2 Hexagon nuts M12

Installation
U-Holder to be used in pairs.
Type 16 up to flange thickness 16 mm
Type 40 up to flange thickness 40 mm

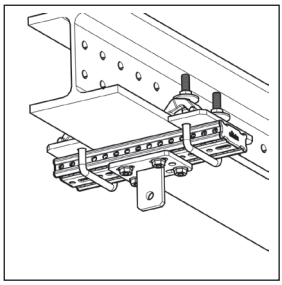
Technical Data

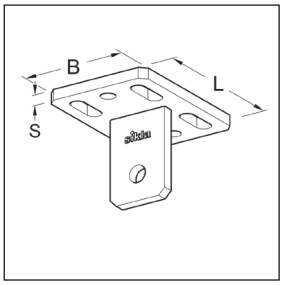
Typ	Gewinde	Anzugsmoment [Nm]	F_z je Spannbügel [kN]	F_y [kN]	M_y [kNm]	M_z [kNm]
SB F 100-16	M10	40	9,5	*	*	*
SB F 100-40	M12	85	16	*	*	*
SB F 100/160-40	M12	85	16	*	*	*

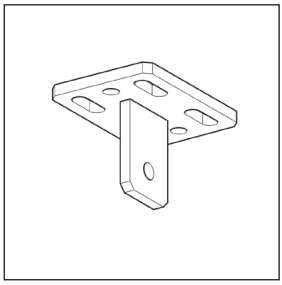
* Für die zulässigen Querkräfte und Momente bitte in den Simotec Anwenderrichtlinien das passende Typical in der entsprechenden Dimension vergleichen.

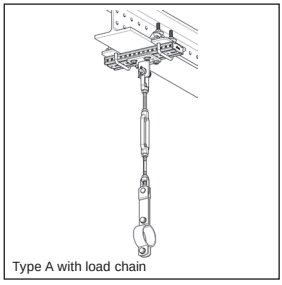
Material: Steel, HCP

Type	W [kg]	Quantity [pack]	Part number
SB F 100-16	0.7	20	**113082**
SB F 100-40	1.6	10	**113083**
SB F 100/160-40	1.7	10	**113101**








Type A with load chain

Beam Connection LKA

Group: A299

Application

Connecting assembly for the direct attachment of rod hanger assemblies to beam sections with a flange width 100-310mm. The pre-welded Eye-Plate which is fastened to the siFramo80/30 section serves as a basic element for the connection of the Rod Hanger Load Chain Assembly LKV in sizes M10 up to M16 rod and Pipe Clamps type Stabil Form C LK.

Scope of delivery

Support assembly to connect the rod hanger load chain LKV to the beam, consisting of:
1 Beam Section siFramo 80/30 (see length variants in table below) with pre-welded siFramo Eye-Plate HP F 80
2 U-Holders SB F 80/30-40

Installation
Connect the Beam Section siFramo 80/30 length with pre-welded siFramo Eye-Plate HP F 80 to the underside of the existing steel beam by means of the U-Holders SB F 80/30-40.
Tightening torque for the U-Holder clamps : 40 Nm
Type A: Load Chain runs crosswise to the beam
Type B: Load Chain runs longitudinally to the beam

Technical Data

Max. perm. tensile load according beam width:

Type	100 - 199 mm	200 - 310 mm
M10	10.9 kN	10.8 kN
M12	11.5 kN	11.3 kN
M16	12.1 kN	11.9 kN

The implementation and construction requirements of the components, their design as well as their verifications and load tests were carried out following the standards VGB R 510 L part I, KTA 3205.3 and DIN EN 13480-3.

siFramo Eye-Plate HP F 80:

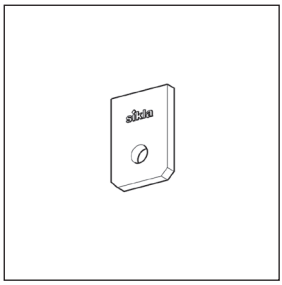
L [mm]	B [mm]	S [mm]
110	80	8

siFramo 80/30:

Beam width [mm]	L [mm]	B [mm]	H [mm]
100 - 160	300	80	30
161 - 310	440	80	30

Material: Steel, HCP

Type	W [kg]	Quantity [pack]	Part number
LKA-A 100/160 M10	5.0	2	**115833**
LKA-A 100/160 M12	5.0	2	**115834**
LKA-A 100/160 M16	5.0	2	**115835**
LKA-A 161/300 M10	5.6	2	**115836**
LKA-A 161/300 M12	5.6	2	**115837**
LKA-A 161/300 M16	5.6	2	**115838**
LKA-B 100/160 M10	5.0	2	**115826**
LKA-B 100/160 M12	5.0	2	**115827**
LKA-B 100/160 M16	5.0	2	**115828**
LKA-B 161/300 M10	5.6	2	**115829**
LKA-B 161/300 M12	5.6	2	**115831**
LKA-B 161/300 M16	5.6	2	**115832**



Weld-on Eye-Plate HPA

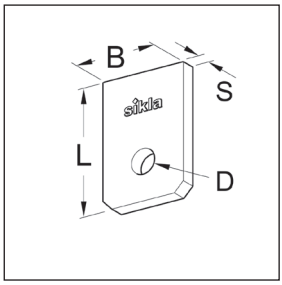
Group: A299

Application

Weld-on Eye Plate to primary steel beam sections and steel plates. The Weld-on Eye-Plate serves as a basic element for the connection of the Rod Hanger Load Chain Assembly LKV in sizes M10 up to M16 rod and Pipe Clamps type Stabil Form C LK. It may also be welded directly to the Welding Plates type SPL if required.

Installation

Align the Weld-on Eye Plate to the primary steel section and weld in place. The weld-on eye plate can be welded directly without prior treatment due to a weldable corrosion-resistant coating (no zinc impurity to weld).
Recommended fillet weld 4mm thick (throat thickness = 4mm)



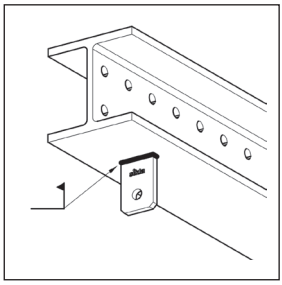
Technical Data

Type	max. perm. tensile load [kN]
M10	11.2
M12	12.1
M16	12.5

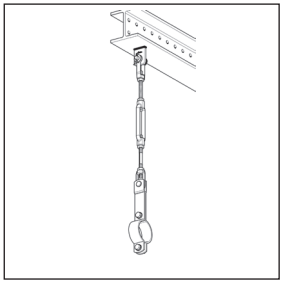
The implementation and construction requirements of the components, their design as well as their verifications and load tests were carried out following the standards VGB R 510 L part I, KTA 3205.3 and DIN EN 13480-3.

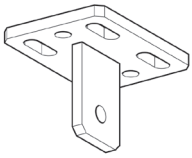
Type	L [mm]	B [mm]	S [mm]	D [mm]
M10	65	45	8	11
M12	65	45	8	13
M16	65	45	8	17

Material: Steel, HCP

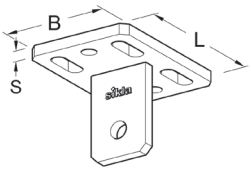


Type	W [kg]	Quantity [pack]	Part number
HPA M10-2	0.2	10	**113017**
HPA M12-2	0.2	10	**113018**
HPA M16-2	0.2	10	**113019**

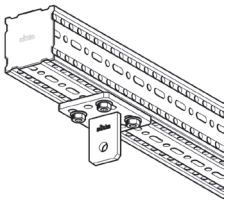




Type B



Type A



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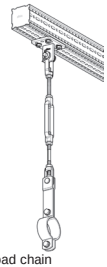


Type A with load chain

Eye-Plate HP F 80

Group: A299

Application

Connecting component for the direct attachment of rod hanger assemblies to the siFramo 80 system. The pre-welded Eye-Plate serves as a basic element for the connection of the Rod Hanger Load Chain Assembly LKV in sizes M10 up to M16 rod and Pipe Clamps type Stabil Form C LK.

Installation

The siFramo Eye-Plate HP F 80 is fastened to the supporting siFramo 80 section by means of 4no. FLS F screws. The siFramo Eye-Plate can also be fastened directly to concrete by means of 2no. M10 anchors.
Type A: Load Chain runs crosswise to the beam
Type B: Load Chain runs longitudinally to the beam

Technical Data

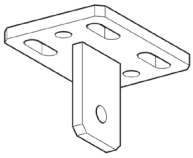
Type	max. perm. tensile load [kN]
M10	11.2
M12	12.1
M16	12.5

The implementation and construction requirements of the components, their design as well as their verifications and load tests were carried out following the standards VGB R 510 L part I, KTA 3205.3 and DIN EN 13480-3.

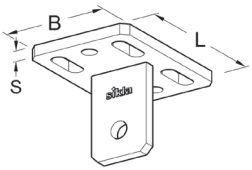
L [mm]	B [mm]	S [mm]
110	80	8

Material: Steel, HCP

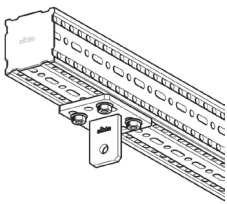
Type	W [kg]	Quantity [pack]	Part number
HP F 80 - A M10	0.6	10	**113023**
HP F 80 - A M12	0.6	10	**113024**
HP F 80 - A M16	0.6	10	**113025**
HP F 80 - B M10	0.6	10	**113020**
HP F 80 - B M12	0.6	10	**113021**
HP F 80 - B M16	0.6	10	**113022**



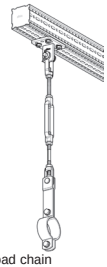
Type B



Type A



Type A



Type A with load chain

Eye-Plate HP F 100

Group: A299

Application

Connecting component for the direct attachment of rod hanger assemblies to the siFramo 100 system. The pre-welded Eye-Plate serves as a basic element for the connection of the Rod Hanger Load Chain Assembly LKV in sizes M10 up to M16 rod and Pipe Clamps type Stabil Form C LK.

Installation

The siFramo Eye-Plate HP F 100 is fastened to the supporting siFramo 100 section by means of 4no. FLS F screws. The siFramo Eye-Plate can also be fastened directly to concrete by means of 2no. M10 anchors.
Type A: Load Chain runs crosswise to the beam
Type B: Load Chain runs longitudinally to the beam

Technical Data

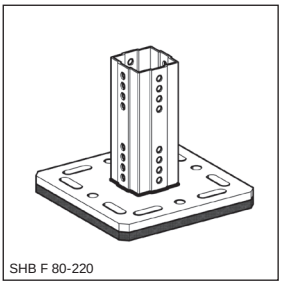
Type	max. perm. tensile load [kN]
M10	11.2
M12	12.1
M16	12.5

The implementation and construction requirements of the components, their design as well as their verifications and load tests were carried out following the standards VGB R 510 L part I, KTA 3205.3 and DIN EN 13480-3.

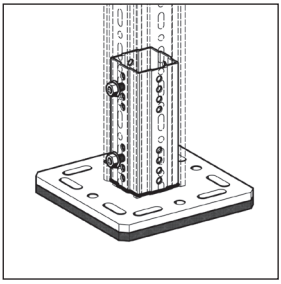
L [mm]	B [mm]	S [mm]
110	100	8

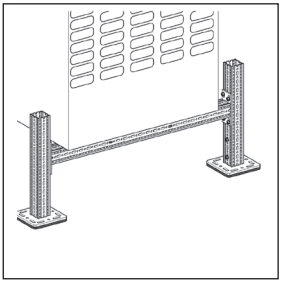
Material: Steel, HCP

Type	W [kg]	Quantity [pack]	Part number
HP F 100 - A M10	0.8	10	**115050**
HP F 100 - A M12	0.8	10	**115051**
HP F 100 - A M16	0.8	10	**115052**
HP F 100 - B M10	0.8	10	**115047**
HP F 100 - B M12	0.8	10	**115048**
HP F 100 - B M16	0.8	10	**115049**



SHB F 80-220





Insulated Foot Plate SHB F 80

Group: A440

Application

Integrated footplate and permeable rubber compound mat to provide a solution for the support of building services, without the need for penetrative supports. In combination with the Sikla siFramo TP F 80 section, any frame structure may be built up from the footplates.
Especially suitable for maintaining the thermal and waterproofing integrity of a roof or basement floor as no penetrative fixings are required to secure the footplates for service supports.

Installation

Assembly to beam section F 80 by means of 4 self forming screws FLS F.

Technical Data

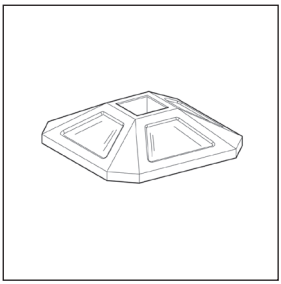
statical E-module:	according to DIN 53513	0.8 - 0.9 N/mm^2
dynamical E-module:	according to DIN 53513	0,6 - 2.2 N/mm^2
Compression set:	DIN 53572	approx. 4.0 % measured 30 min. after release at 50 % compression / 23°C after 72 Std.
Tensile strength:	DIN 53571	0.40 N/mm^2 min.
Ultimate elongation:	DIN 53571	70 % minimum value
Tear strength:	DIN 53515	3.4 N/mm^2 minimum value
Fire resistance:	DIN 4102	B2

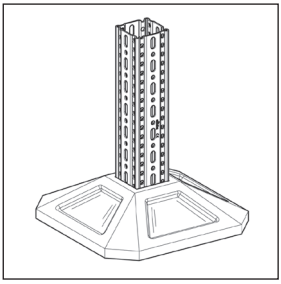
Tests to determine the static friction coefficient shall be carried out by the customer. Depending on the used roofing film the customer has to decide if an additional separation layer (e.g. fleece) is necessary. Furthermore the statics have to be verified by a qualified engineer.

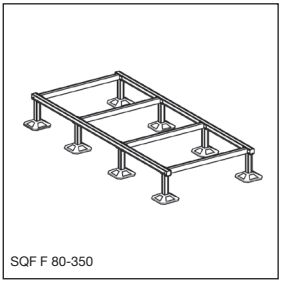
Further dimensions of SHB F 80-200 see End Support WBD F 80.

Material: steel, HCP, rubber-compound material

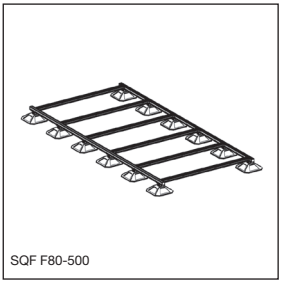
Type	Plate dimensions [mm]	W [kg]	Quantity [pack]	Part number
SHB F 80-220	220 x 220	5.7	1	**198926**







SQF F 80-350



SQF F80-500

Insulated Foot SHB SQF F 80

Group: A440

Application

Integrated footplate and permeable rubber compound mat to provide a solution for the support of building services, without the need for penetrative supports. In combination with the Sikla Framo TP F 80 section, any low level frame structure may be built up from the footplates.
Especially suitable for maintaining the thermal and waterproofing integrity of a roof or basement floor as no penetrative fixings are required to secure the footplates for service supports.

The SQF foot is a primary element when supporting such plant as AHU and Chiller Units and is available 0° or with a 2.5° or 5° pitch.

Technical Data

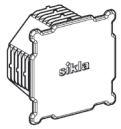
Type	max. perm. pressure load F_N [kN]	Height [mm]	Insertion depth [mm]
SQF 350	16	100	70
SQF 500	16	130	90

Tests to determine the coefficient of friction shall be carried out by the customer. Depending on the used roofing film the customer has to decide if an additional separation layer (e.g. felt) is necessary. Furthermore the statics have to be verified by a qualified engineer.

Material: SBR-Recycled Rubber. Bound using a ratio of high quality moisture curing
Polyurethane Pre-Polymer BS7188 & BS5696 Part 3

Type	Plate dimensions [mm]	W [kg]	Quantity [pack]	Part number
SHB SQF F 80-350	350 x 350	5.0	1	218865
SHB SQF F 80-350 (Pitch 2.5)	350 x 350	5.0	1	218866
SHB SQF F 80-350 (Pitch 5)	350 x 350	5.0	1	218867
SHB SQF F 80-500	500 x 500	13.5	1	218868
SHB SQF F 80-500 (Pitch 2.5)	500 x 500	13.5	1	218869
SHB SQF F 80-500 (Pitch 5)	500 x 500	13.5	1	218870

End Cap ADK F 80



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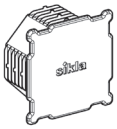
End Cap ADK F 100



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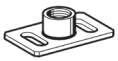
Mounting Plate GPL F



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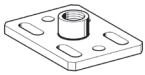
Mounting Plate GPL F 80 Stabil



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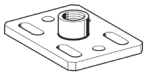
Mounting Plate GPL F Stabil HCP



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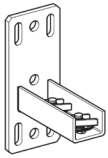
41/41 Channel Adapter SA F 80



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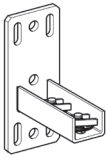
41/41 Channel Adapter SA F 100



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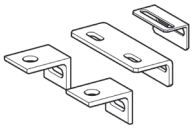
U Bolt Docking Bracket F



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Pad U-UB F

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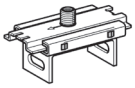
Slide Set GS F 80 2G



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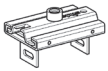
Slide Set GS F 1G



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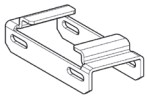
Guiding Bracket FW F



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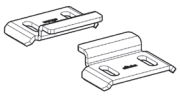
Guiding Bracket FW F L/Z



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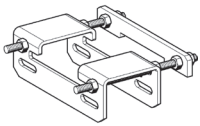
Fixed Point Bracket XW F



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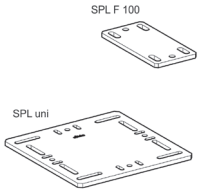
Welding Plate SPL



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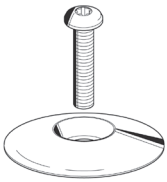
Floor Grating Kit GRB



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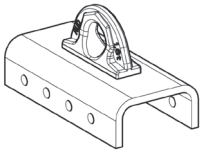
Lifting Lug KLA F



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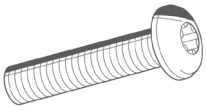
Flange Screw SCR FLA HCP



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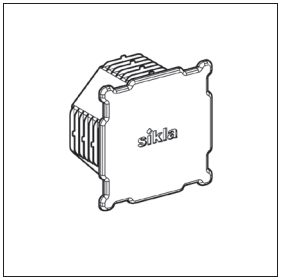
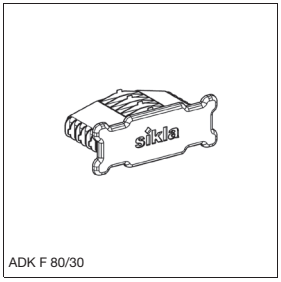
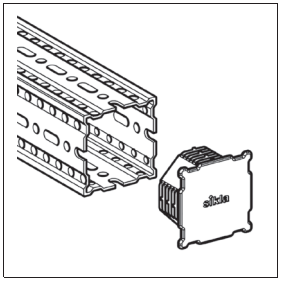
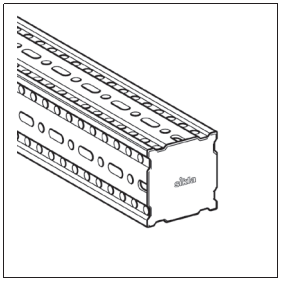




ADK F 80/30





End Cap ADK F 80

Group: A430

Application

Plastic end cap to close cut ends of Beam Section F80 to meet both visual and health & safety requirements. Standard Cantilever- and Beam Brackets (AK F80 and TKO F80) already include this end cap.

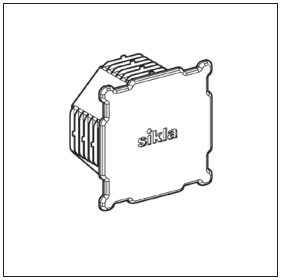
Installation

Mallet required.

Technical Data

Material: PE

Type	Colour	W [kg]	Quantity [pack]	Part number
ADK F 80	yellow	0.03	25	**192674**
ADK F 80	silver	0.03	25	**392674**
ADK F 80/30	yellow	0.02	25	**113067**
ADK F 80/30	silver	0.02	25	**313067**



End Cap ADK F 100

Group: A430

Application

Plastic end cap to close cut ends of Beam Section F100 to meet both visual and health & safety requirements. Standard Cantilever- and Beam Brackets (AK F100 and TKO F100) already include this end cap.

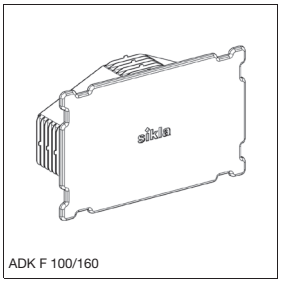
Installation

Mallet required.

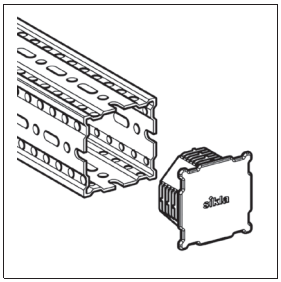
Technical Data

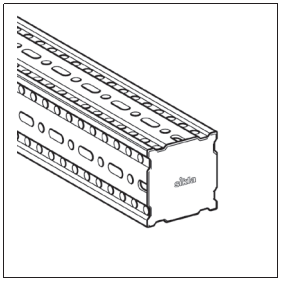
Material: PE

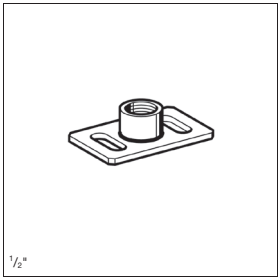
Type	Colour	W [kg]	Quantity [pack]	Part number
ADK F 100	yellow	0.05	25	**113086**
ADK F 100	silver	0.05	25	**313086**
ADK F 100/160	yellow	0.08	25	**113102**
ADK F 100/160	silver	0.08	25	**313102**

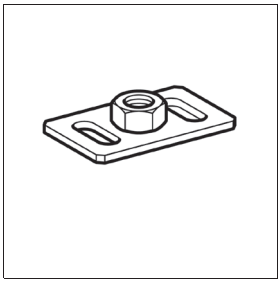


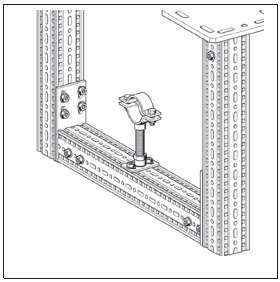
ADK F 100/160











Mounting Plate GPL F

Group: A438

Application

Interface component to connect threaded bar and threaded tube to Beam Section F 80 or F 100.

Installation

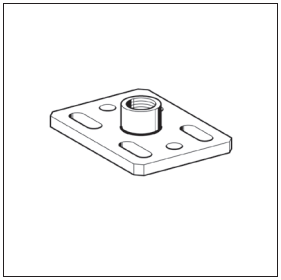
Requires 2 x Self Forming Screw FLS per Mounting Plate GPL.

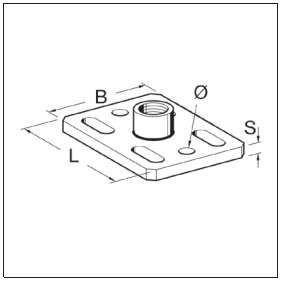
Technical Data

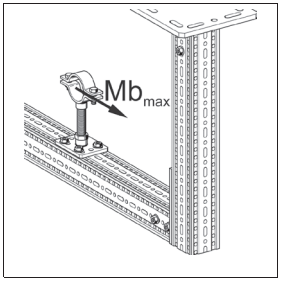
Type	Tension [kN]	Perm. bending moment [Nm]
GPL F 80-1/2"	8.0	53
GPL F 80-M10	8.0	15
GPL F 80-M12	8.0	26
GPL F 80-M16	8.0	62
GPL F 100-1/2"	8.0	53
GPL F 100-M10	8.0	15
GPL F 100-M12	8.0	26
GPL F 100-M16	8.0	62

Dimensions of base plate GPL F 80: 80 x 50 x 4 mm
Dimensions of base plate GPL F 100: 100 x 50 x 4 mm
Material: Steel, HCP

Type	W [kg]	Quantity [pack]	Part number
GPL F 80-1/2"	0.1	50	**192900**
GPL F 80-M10	0.1	50	**113004**
GPL F 80-M12	0.1	50	**112911**
GPL F 80-M16	0.2	50	**195833**
GPL F 100-1/2"	0.2	50	**113089**
GPL F 100-M10	0.2	50	**113338**
GPL F 100-M12	0.2	50	**113646**
GPL F 100-M16	0.2	50	**113090**







Mounting Plate GPL F 80 Stabil

Group: 1227

Application

Adapter plate for installing pipe clamps to Beam Section TP F80 or Channel System by means of threaded tube $^1/_2$".

Installation

Direct connection of plate to Beam Section TP F80 by means of 4 Self Forming Screws FLS F 80. Connection to the Channel System by means of Speed Nut CC41 and Hexagon Bolts. The two drilled holes in the Adapter Plate mean that the Plate may also be installed to concrete.

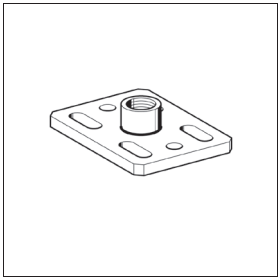
Technical Data

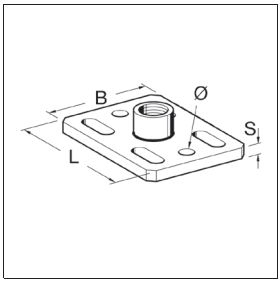
Permissible bending moment of the Threaded Tube $^1/_2$" $MB_{max,}$ should not be exceeded. Any lateral loads on the pipe clamp also need to be considered.

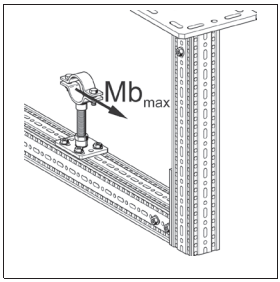
Type	Tension [kN]	Lateral force [kN]	Perm. bending moment [Nm]
GPL F 80 ST-$^1/_2$"	18.0	13.0	53
GPL F 80 ST-$^3/_4$"	18.0	13.0	138
GPL F 80 ST-1"	18.0	13.0	277

Material: Steel, electro-galvanised

Type	Dimension L x W x Th [mm]	Elongated hole d x a [mm]	Ш [mm]	W [kg]	Quantity [pack]	Part number
GPL F 80 ST-$^1/_2$"	110 x 80 x 8	11 x 31	11	0.50	25	**451280**
GPL F 80 ST-$^3/_4$"	110 x 80 x 8	11 x 31	11	0.50	25	**451281**
GPL F 80 ST-1"	110 x 80 x 8	11 x 31	11	0.50	25	**451282**







Mounting Plate GPL F Stabil HCP

Group: A438

Application

Adapter plate for installing pipe clamps to Beam Section TP F80 or Channel System by means of threaded tube $^1/_2$" or thread Connection.

Installation

Direct connection of plate to Beam Section TP F80 by means of 4 Self Forming Screws FLS F 80. Connection to the Channel System by means of Speed Nut CC41 and Hexagon Bolts. The two drilled holes in the Adapter Plate mean that the Plate may also be installed to concrete.

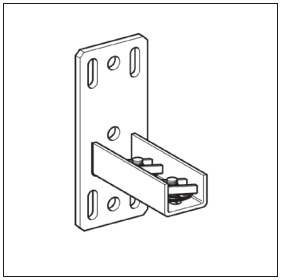
Permissible bending moment of the Threaded Tube $^1/_2$" $Mb_{max,}$ should not be exceeded. Any lateral loads on the pipe clamp also need to be considered.

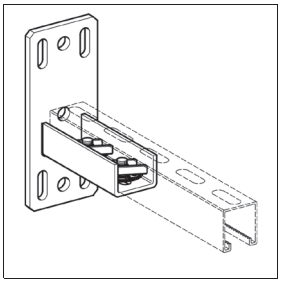
Technical Data

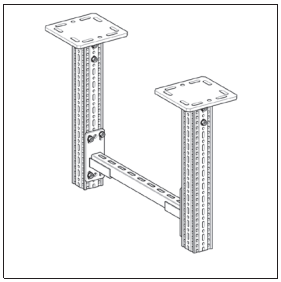
Type	Tension [kN]	Lateral force [kN]	Perm. bending moment [Nm]
GPL F 80 ST-$^1/_2$"	18.0	13.0	53
GPL F 100 ST-$^1/_2$"	18.0	13.0	53

#zeile material: #zelle Steel, HCP #/tabelle

Type	Dimension L x W x Th [mm]	Elongated hole d x a [mm]	Ш [mm]	W [kg]	Quantity [pack]	Part number
GPL F 80 ST-$^1/_2$"	110 x 80 x 8	11 x 20	11	0.50	25	**112719**
GPL F 100 ST-$^1/_2$"	110 x 100 x 8	11 x 20	11	0.80	25	**117266**
GPL F 100 ST-1"	110 x 100 x 8	11 x 20	11	0.80	25	**117268**







41/41 Channel Adapter SA F 80

Group: A427

Application

Interface element to enable a stiff and solid connection between the siFramo profile and strut channel of the international 41/41 mm standard. The 41/41 Channel Adapter SA F80 is equipped with automatically locking spring nuts which means that no accessories from the strut channel's range are required in order to make the connection.

Installation

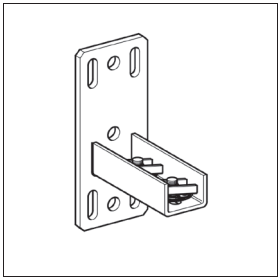
The 41/41 Channel Adapter requires 4 x Self Forming Screw FLS in order to be connected to the siFramo profile. The strut channel must be inserted with the slot first whilst pressing the two bolt's heads triggering an automatic 90°-locking operation of the two channel spring nuts. The strut channel is now securely held and can be adjusted. Finally the two screws must be tightened with the appropriate torque for the strut channel used.

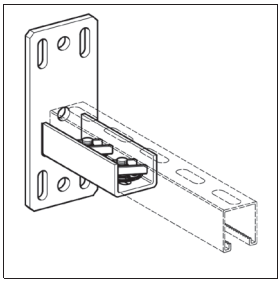
Technical Data

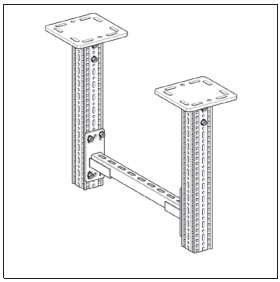
Type	Dimension of base plate [mm]	Langlöcher [mm]	Rundlöcher [mm]
SA F 80-41	190 x 80 x 8	20 x 11	14

Material: steel, HCP

Type	W [kg]	Quantity [pack]	Part number
SA F 80-41	1.4	1	**192887**







41/41 Channel Adapter SA F 100

Group: A827

Application

Interface element to enable a stiff and solid connection between the siFramo profile and strut channel of the international 41/41 mm standard. The 41/41 Channel Adapter SA F100 is equipped with automatically locking spring nuts which means that no accessories from the strut channel's range are required in order to make the connection.

Installation

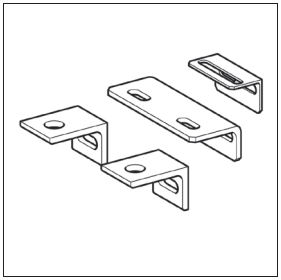
The Channel Adapter SA F100-41 requires 4 x Self Forming Screw FLS in order to be connected to the siFramo profile. The strut channel must be inserted with the slot first whilst pressing the two bolt's heads triggering an automatic 90°-locking operation of the two channel spring nuts. The strut channel is now securely held and can be adjusted. Finally the two screws must be tightened with the appropriate torque for the strut channel used.

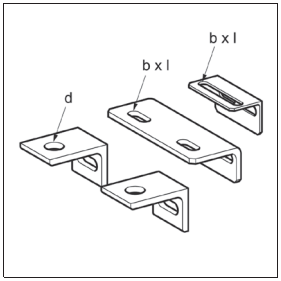
Technical Data

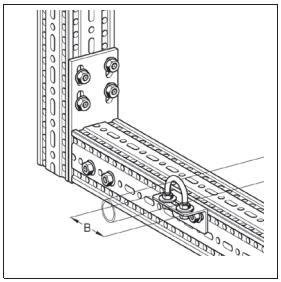
Type	Dimension of base plate [mm]	Langlöcher [mm]	Rundlöcher [mm]
SA F 100-41	210 x 100 x 8	20 x 11	14

Material: steel, HCP

Type	W [kg]	Quantity [pack]	Part number
SA F 100-41	1.8	1	**113081**







U Bolt Docking Bracket F

Group: A430

Application

Docking bracket to connect standard U-Bolts required for pipework to the supporting Beam Sections, Cantilever Brackets and Beam Brackets F80 or F100.

Scope of delivery

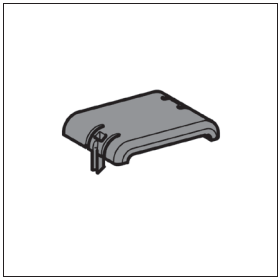
For U-bolts ≥ 4" always 2 U-bolt fastenings F are needed.

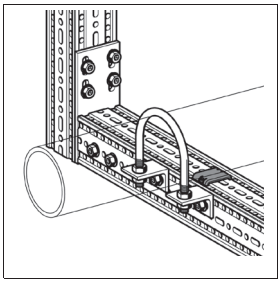
Technical Data

Typ	d [mm]	b x l [mm]	B [mm]
UB F ½" - 1 ½"	-	65 x 11	85
UB F 2" - 3"	-	20 x 13	165
UB F 4" - 6"	17	-	45
UB F 8" - 12"	22	-	45
UB F 378 - 530	26	-	45

Material: Steel, HCP

Type	W [kg]	Quantity [pack]	Part number
UB F ½" - 1 ½"	0.13	25	**192931**
UB F 2" - 3"	0.44	10	**196212**
UB F 4" - 6"	0.18	20	**113124**
UB F 8" - 12"	0.18	20	**113125**
UB F 378 - 530	0.18	20	**113126**





Pad U-UB F

Group: A430

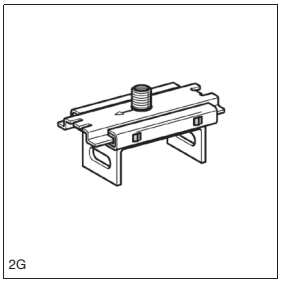
Application

Insulation and surface protection pad to be used on demand when a pipes' expansion and contraction occurs directly on the F80 section.

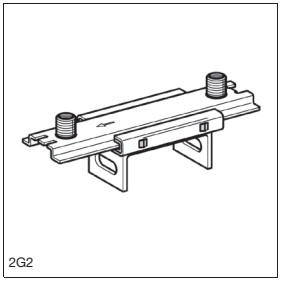
Technical Data

Material: Polyamide PA 6.0
Range of temperature: -20° up to +130° C

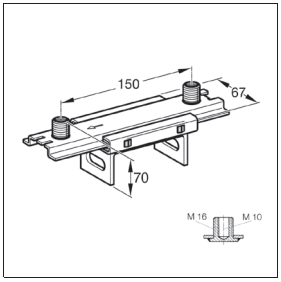
Type	W [kg]	Quantity [pack]	Part number
U-UB F 80	0.01	50	**198797**
U-UB F 100	0.01	50	**113094**



2G



2G2



Slide Set GS F 80 2G

Group: A436

Application

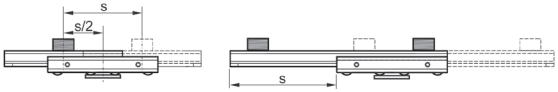
Pipe guide for twin-clamp connection designed to clutch the Beam Section F80 fixed by 2 x Self Forming Screws FLS.

Installation

Pipe clamp connection points “2G” receive M10 studs or M16 by adapter connection.

Technical Data

Type	a [mm]	b [mm]	c [mm]
GS F 80 2G2	150	67	70,0

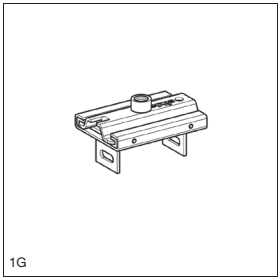


Type	Max. lever arm [mm]	Max. travel s [mm]
GS F 80 2G	150	100
GS F 80 2G2	150	135

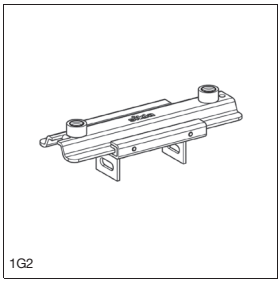
Perm. load elevated position: 1,2 kN
Perm. load suspended position: 0,6 kN
Permanent temperature range: 130° C
Static friction coefficient μ_0: 0,20
Sliding friction coefficient μ: 0,15

Material:
Slide element: Steel, HCP
Slide bar: Polyamide (glass-fibre reinforced)
Retaining plate: Steel, HCP

Type	W [kg]	Quantity [pack]	Part number
GS F 80 2G	0.6	10	**196700**
GS F 80 2G2	0.7	10	**196717**



1G



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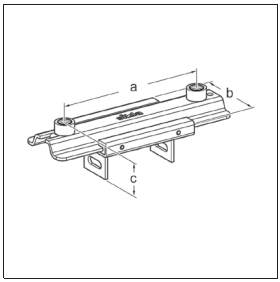


Slide Set GS F 1G

Group: A436

Application

Slide Set in solid construction for installation on top of siFramo Beam Sections TP F. $^1/_2$" thread connection allows direct connection to pipe clamp Stabil I -$^1/_2$" by means of threaded tube without further adaption parts.

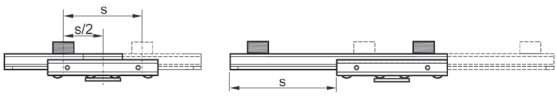
Installation

Installation on top of Beam Section TP F with two Self Forming Screws FLS F. Not suitable for side mounting in the horizontal orientation.

Technical Data

Type	a [mm]	b [mm]	c [mm]	perm. load support [kN]	perm. load suspended [kN]
GS F 80 1G	-	102	80.5	17.0	5.4
GS F 80 1G2	210	102	80.5	12.0	8.4
GS F 100 1G	-	102	85.5	17.0	5.7
GS F 100 1G2	210	102	85.5	12.0	8.7

The perm. loads have been determined by load tests following DIN EN 13480-3 annex J.
The pipe clamp and the possibly used $^1/_2$" threaded tube have to be verified seperately.

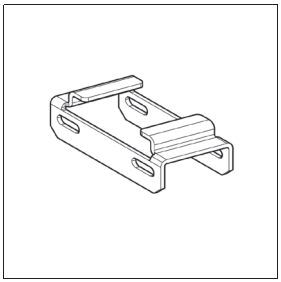


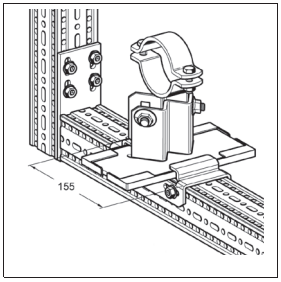
Type	Max. lever arm [mm]	Max. travel s [mm]
GS F 80 1G	200	100
GS F 80 1G2	300	135
GS F 100 1G	200	100
GS F 100 1G2	300	135

Temperature range (permanent exposure): 130°C
Static friction coefficient μ_0: 0.20
Sliding friction coefficient μ: 0.15

Material:
Metal components: Steel, HCP
Slide bar: Polyamide, glass fibre reinforced

Type	W [kg]	Quantity [pack]	Part number
GS F 80 1G	1.3	10	**113885**
GS F 80 1G2	1.7	10	**113886**
GS F 100 1G	1.4	10	**113091**
GS F 100 1G2	1.8	10	**113092**





Guiding Bracket FW F

Group: A705

Application

Element for modification of Simotec Pipe Shoes to Guided Pipe Shoes.

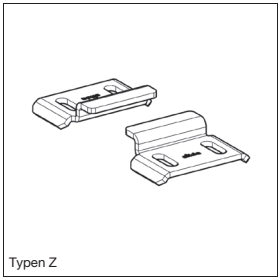
Installation

Connection to Beam Section F 80 or F 100 by means of 4 Self-Forming Screws FLS F.

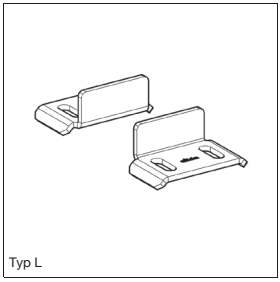
Technical Data

Material: Steel, HCP

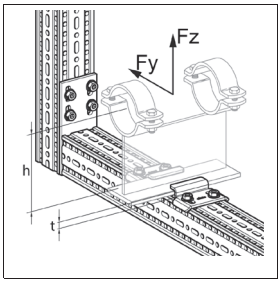
Type	W [kg]	Quantity [pack]	Part number
FW F 80	0.6	1	**110349**
FW F 100	0.7	1	**113088**

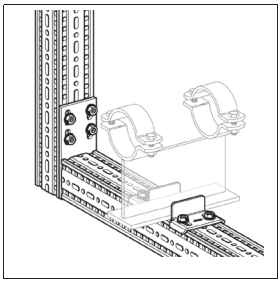


Typen Z



Typ L





Guiding Bracket FW F L/Z

Group: A705

Application

Using this Guiding Bracket it's possible to guide Pipe Shoes with different plate thicknesses. The different versions of Type Z are suitable for the respective specified maximum plate thickness (t)and so additionally allow the absorption of lifting forces.

Scope of delivery

Delivery as set comprising 2 Guiding Brackets.

Installation

Installation on top of Beam Section TP F 80 repectively F 100 with 2 Self Forming Screws FLS F per Guiding Bracket, i.e. per set 4 Self Forming Screws have to be used altogether. You can find the Self Forming Screw in the siFramo chapters (section Siconnect).
For Type Z exists a clearance of 3 mm in the vertical z-axis. Please ensure a clearance of 3 mm in the vertical y-axis for all types.

Technical Data

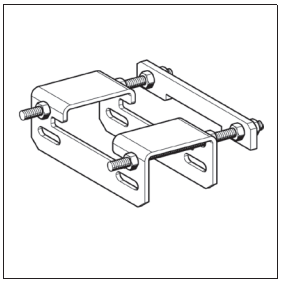
Type	perm. load Fy [kN]	perm. torque via Fy* [kNm]	perm. load Fz [kN]
FW F 80, all Types Z	1.9	0.4	5.0
FW F 80, Typ L	1.9	-	-
FW F 100, all Types Z	1.9	0.4	6.4
FW F 100, Typ L	1.9	-	-

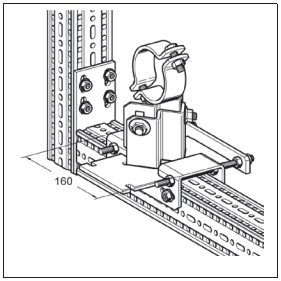
* the torque is calculated by M = Fy x h, whereas the perm. load for Fy may not be exceeded. Dimension h refers from the middle of the pipe to the top of the base plate.
The perm. loads have been determined by load tests following DIN EN 13480-3 annex J.
The used Pipe Shoe has to be verified separately.

Material: Steel, HCP

* suitable for Sikla Pipe Shoes

Type	t [mm]	W [kg]	Qty. [set]	Part number
FW F 80 Z 6	6	0.5	25	**113628**
FW F 80 Z 9	9	0.5	25	**113629**
FW F 80 Z 12 *	12	0.5	25	**113630**
FW F 80 Z 15	15	0.5	25	**113975**
FW F 80 L	-	0.5	25	**113627**
FW F 100 Z 6	6	0.6	25	**113632**
FW F 100 Z 9	9	0.6	25	**113633**
FW F 100 Z 12 *	12	0.6	25	**113634**
FW F 100 Z 15	15	0.6	25	**113976**
FW F 100 L	-	0.6	25	**113631**





Fixed Point Bracket XW F

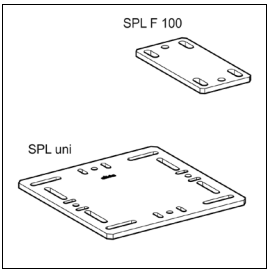
Application
Element for modification of Simotec Pipe Shoes to Fixed Point Pipe Shoes.

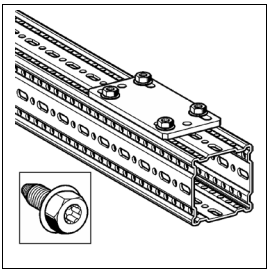
Installation
The slide plate of the Pipe Shoe is disassembled. Connection to the Beam Section F 80 or F 100 by means of 4 Self-forming screws FLS F.

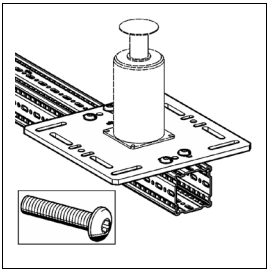
Festpunktkräfte in axialer Richtung können nur bei fachgerechter Verwendung von Durchrutschsicherungen (z.B. Knaggen) erreicht werden. Diese müssen bei der Auslegung der Rohrleitung vorgesehen werden und liegen in der Verantwortung des Rohrleitungsherstellers.

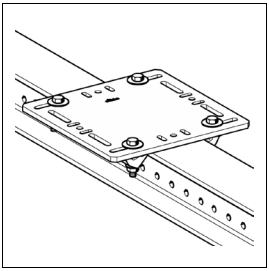
Technical Data
Material: Steel, HCP

Type	W [kg]	Quantity [pack]	Part number
XW F 80	1.3	1	**110356**
XW F 100	1.6	1	**113087**









Welding Plate SPL

Group: A430

Application

Interface elements to connect welding lugs of engineered primary pipe supports such as Rod Hangers, Constant- and Variable Hangers & Supports to Beam Sections TP F, Cantilever Brackets AK F and Beam Brackets TKO F. Outside the siFramo system type “Universal" may be used to connect to I-beams up to a flange width of 300mm. The HCP-coating is welding-compatible.

Installation

Depending on the type, different installation methods are recommended:

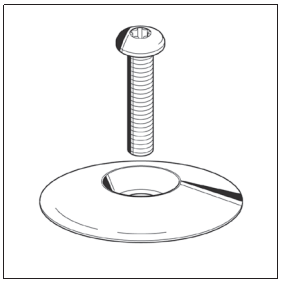
a) SPL F 80 and F 100 with 4 x Self Forming Screw FLS
#: SPL Universal with Flange Screws SCR FLA TT M10 x 30 (item code 116479)
c) SPL Universal with Assembly Set 5P M12 S to flanges of existing steel between 100 - 300 mm.

Technical Data

Typ	Installation surface [mm]	Mounting Plate size [mm]
SPL F 80	90 x 70	190 x 80 x 8
SPL F 100	110 x 90	210 x 100 x 8
SPL universal	220 x 220	370 x 370 x 12

Material: Steel, HCP

Type	2 [kg]	Quantity [pack]	Part number
SPL F 80	0.9	9	**117833**
SPL F 100	1.3	9	**117834**
SPL universal	99-8	9	**113636**



Floor Grating Kit GRB

Group: A441

Application

Kit for professional connection of GRP/FRP or open mesh flooring onto a base frame made from siFramo F80 or F100 section. Suitable for grating up to 50 mm Bearing Bar depth and bar spacing between minimum 10 mm and maximum 40 mm.

Scope of delivery

1 Kit comprising:
4 x Floor Disk FBT
4 x Self-forming Flange Screw M10 x 60

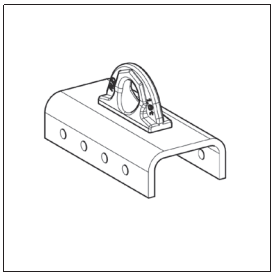
Installation

Place at least 4 no off Floor Disks per panel, preferably near the corners. Mark the appropriate round holes on the siFramo section by using a colour marker. Remove the panel and pre-drill the marked holes slightly using an FLS screw (192512). Put the grating panel back onto the frame and fix the Floor Disks by using the Flange Screws.

Technical Data

Diameter:	55 mm
Circular Hole:	10,3 mm for M10
Crossbar space:	minimum 10 mm
Bearing Bar Depth:	up to 40 mm
Screw:	Hexalobular Screw ISO 10664 - 50 M10 x 60
Material:	Steel, HCP

Type	W [kg]	Qty. [set]	Part number
GRB	0.03	1	**116818**



Lifting Lug KLA F

Group: A430

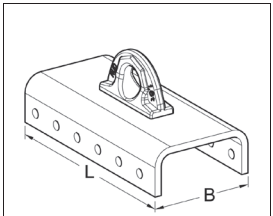
Application

Fixture for lifting siframo skids by using a lifting tool (e.g. crane). Indestructible design for multiple lifting operations in multiple projects.

Installation

The Lifting Lug KLA F is connected to Beam Sections TP F:
TP F 80: 8 x SCR FLA TT M10 x 30 HCP (item code 116479)
TP F 100 and 100/160: 12 x SCR FLA TT M10 x 30 HCP (item code 116479)
(Lifting Lug supplied with the correspondent screws.)

Tightening torque SCR FLA TT: 20 Nm



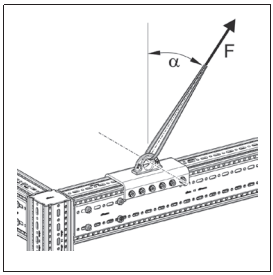
KLA F 100

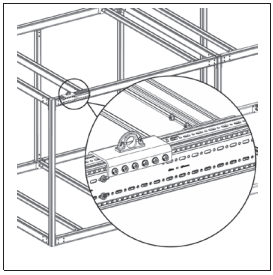
Technical Data

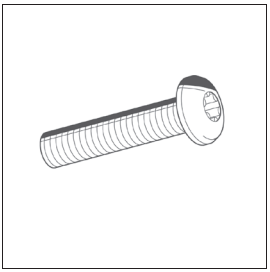
Type	L [mm]	B [mm]	F_{max} [kN] $\alpha = 0°$	F_{max} [kN] $\alpha \geq 0° - 45°$	F_{max} [kN] $\alpha \geq 45° - 60°$
KLA F 80	200	100	16.0	11.0	8.0
KLA F 100	250	120	16.0	11.0	8.0

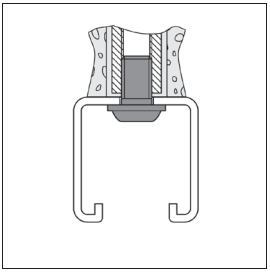
Material: Steel
Surface: power coating, RAL 2005 (signal orange)

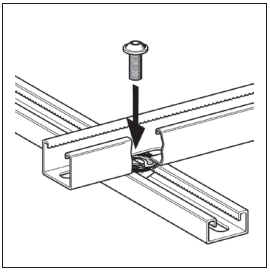
Type	W [kg]	Quantity [pack]	Part number
KLA F 80	3.0	1	**292874**
KLA F 100	3.6	1	**292873**











Flange Screw SCR FLA HCP

Group: 1875

Application

Type M10 x 15 allows fixation of Channels by means of Drive Plug AN, without exceeding the max. permissible screw-in depth or to go under the min. screw-in depth required.
Type M10 x 25 is the ideal connecting part for two Sikla Channels MS 41.

Versions "TT" are self-forming screws.

Installation

The maximum admissible tightening torque strictly has to be observed.

Technical Data

M10 x 15 and M10 x 25
max. adm. tightening torque: 50 Nm (max. adm.)
Drive: Internal hexagon SW 6

TT M10 x 30 and TT M10 x 60
max. adm. tightening torque: 20 Nm (max. adm.)
Drive: Torx-T50
Material: Steel, HCP

Type	Length [mm]	W [kg]	Quantity [pack]	Part number
M10 x 15	15	0.01	100	**199107**
M10 x 25	25	0.02	100	**198353**
TT M10 x 30	30	0.02	100	**116479**
TT M10 x 60	60	0.04	100	**116817**

Application

Sikla „Installation Guidelines“ is intended to provide guidance for supporting constructions within industrial pipework and plant engineering consisting of the Sikla Systems siFramo 80, siFramo 100, Beam System 100 and Beam System 120.
All CE marked systems are subject to the certified factory production control according to EN 1090 and may therefore be used to EXC 2 for load-bearing structures.

Basis of calculation

Eurocode 3 (DIN EN 1993) „Design of steel structures“ provides the basis for determining the load capacity. Regarding serviceability the specified restrictions are allocated separately according to the design of the individual constructions. These limits may also be specified differently by the client. All deformations are determined on the basis of characteristic loads (γ_F = 1.0). The values of the permissible loads comply simultaneously the ultimate limit state and the serviceability limit state design. The respective governing load is listed as $F_{z, perm}$ in the Installation Guideline.

Load effects

Specified are permissible vertical loads $F_{z, perm}$ in kN (e.g. pipeline weights), which have to be understood as maximum values of characteristic load effects and consider a safety factor γ_F = 1.35.
Some Sikla constructions take into account additional friction forces $F_x = F_z * \mu_0$ for Sikla Pipe Shoes based on hot-dipped galvanized surface of Sikla beams which are calculated from pipe weight F_z and a friction coefficient μ_0 = 0.2. These variable forces from pipe expansion are taken into account with a safety factor γ_F = 1.5. Sliding or guided Pipe Shoes (Sikla slide elements) with a higher coefficient $\mu_0 > 0.2$ (e.g. steel on steel) require an individual calculation.

Conditions

All loads are static loads at room temperature unless stated otherwise. Technical notes of the respective product data sheets for use and application range must be observed.

Load transmission into building structure

When fixing by anchors, or connection to existing cast-in channels, the structural safety analysis for the components used for this purpose must be done separately. When connecting to existing steel structures on site, resilience, support and torsional rigidity of the existing structure must be checked separately. In addition, when connecting with clamping sets, the static friction between clamping set and the on-site steel structure must fulfill the condition $\mu_0 \geq 0.2$ (Sliding Surfaces Class D). On-site steel structure sizes (flange widths) of ≥ 100 mm are considered by using clamps for connection points.
Unless shown otherwise: force direction F_x = steel structure longitudinal axis.
Connections to concrete are designed with anchor type VMZ-A M12 (ETA-10/0260) in concrete strength C20/C25 under the design specifications $h_{std} \geq 2\ h_{ef}$ edge distance c ≥ 120 mm. Axis distances are determined by the components.
Reduction factor α_A = 0.7 for structural steel flange sizes ≥ 201 mm for End Support WBD F80, F100 and F100/160.

Technical Information

Installation conditions are summarized at the end of this brochure - in particular specifications regarding tightening torques, bolt spacing, general installation instructions etc.

Recyclebility of Products

Products must only be re-used if the recommended working loads have not been previously exceeded and if the coating has not been discernibly damaged.

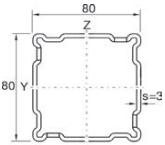
General Remarks/ Disclaimer

This document is solely for being used by the receiver but remains property of Sikla. The technical drawings and all other content are to the best of our knowledge. Pictures and illustrations are non-committing. We can not be held responsible for printing errors and their implications. We reserve the right of making alterations and improvements without notice.

The present Guideline allows the user to select and to design supporting structures (constructions) easily. This document has been prepared in close cooperation with the following external specialists.

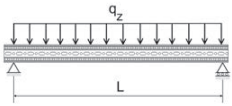
MPA STUTTGART Otto-Graf-Institut Materialprüfungsanstalt Universität Stuttgart
ipu Ingenieurgesellschaft Peil, Ummenhofer mbH Beratende Ingenieure Prüfingenieure für Baustatik
Breinlinger Ingenieure
KIT Karlsruher Institut für Technologie

Beam Section TP F 80



Single-span beam with uniaxial load
dead weight of the profile is considered

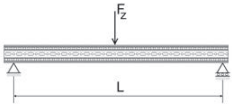
Distributed Load



L_{max}	$q_{z,\,perm}$	F_z ($q_{z,\,perm}$ * L)
[mm]	[kN/m]	[kN]
1000	**30,21**	**30,21**
1500	**13,38**	**20,07**
2000	**6,30**	**12,59**
2500	**3,22**	**8,06**
3000	**1,87**	**5,60**
3500	**1,17**	**4,11**

q_z [kN/m] as permanent load over L.

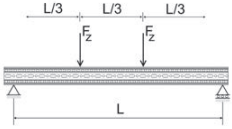
Point Load



L_{max}	$F_{z,\,perm}$
[mm]	[kN]
1000	**15,10**
1500	**10,04**
2000	**7,49**
2500	**5,04**
3000	**3,50**
3500	**2,57**

F_z [kN] as a permanent load at distance L/2.

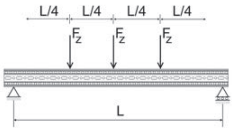
2 Point Loads



L_{max}	$F_{z,\,perm}$
[mm]	[kN]
1000	**11,33**
1500	**7,53**
2000	**4,62**
2500	**2,96**
3000	**2,05**
3500	**1,51**

F_z [kN] as permanent loads at distance L/3 and 2*L/3.

3 Point Loads



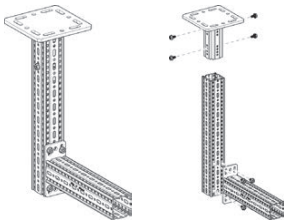
L_{max}	$F_{z,\,perm}$
[mm]	[kN]
1000	**7,55**
1500	**5,02**
2000	**3,31**
2500	**2,12**
3000	**1,47**
3500	**1,08**

F_z [kN] as permanent loads at distance L/4, L/2 and 3*L/4.

Max. bending L/200.

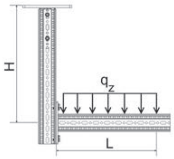
Working loads in accordance with Eurocode 3

L-Construction TP F 80



Part List
1 x End Support WBD F 80
1 x Beam Section TP F 80
1 x Cantilever Bracket AK F 80
8 x Self-Forming-Screw FLS F

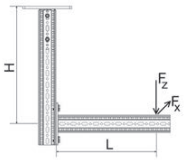
Distributed Load



H_{max} \ L_{max}	300		500		700	
	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)
[mm]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]
500	**10,42**	**3,13**	**4,07**	**2,03**	**2,10**	**1,47**
1000	**8,25**	**2,47**	**3,25**	**1,62**	**1,69**	**1,18**
1500	**6,82**	**2,05**	**2,70**	**1,35**	**1,40**	**0,98**
2000	**5,81**	**1,74**	**2,31**	**1,15**	**1,20**	**0,84**

q_z [kN/m] as permanent load over L.

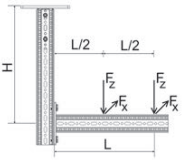
Point Load



H_{max} \ L_{max}	300		500		700	
	F_z	$F_x = \mu_0 * F_z$	F_z	$F_x = \mu_0 * F_z$	F_z	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
500	**1,70**	**1,70**	**1,06**	**1,06**	**0,75**	**0,75**
1000	**1,36**	**1,36**	**0,85**	**0,85**	**0,60**	**0,60**
1500	**1,13**	**1,13**	**0,71**	**0,71**	**0,50**	**0,50**
2000	**0,96**	**0,96**	**0,61**	**0,61**	**0,43**	**0,43**

F_z [kN] as a permanent load at distance L; F_x [kN] as a variable load at distance L.

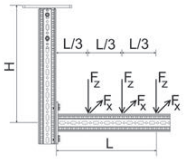
2 Point Loads



H_{max} \ L_{max}	300		500		700	
	F_z	$F_x = \mu_0 * F_z$	F_z	$F_x = \mu_0 * F_z$	F_z	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
500	**1,11**	**1,11**	**0,70**	**0,70**	**0,50**	**0,50**
1000	**0,88**	**0,88**	**0,56**	**0,56**	**0,40**	**0,40**
1500	**0,73**	**0,73**	**0,47**	**0,47**	**0,34**	**0,34**
2000	**0,63**	**0,63**	**0,40**	**0,40**	**0,29**	**0,29**

F_z [kN] as permanent loads at distance L and L/2; F_x [kN] as variable loads at distance L and L/2.

3 Point Loads



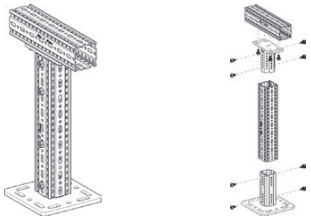
H_{max} \ L_{max}	300		500		700	
	F_z	$F_x = \mu_0 * F_z$	F_z	$F_x = \mu_0 * F_z$	F_z	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
500	**0,82**	**0,82**	**0,52**	**0,52**	**0,37**	**0,37**
1000	**0,65**	**0,65**	**0,41**	**0,41**	**0,30**	**0,30**
1500	**0,54**	**0,54**	**0,35**	**0,35**	**0,25**	**0,25**
2000	**0,46**	**0,46**	**0,30**	**0,30**	**0,21**	**0,21**

F_z [kN] as permanent loads at distance L, 2*L/3 and L/3; F_x [kN] as variable loads at distance L, 2*L/3 and L/3.

All illustrated structures are able to be installed standing as well.
Friction coefficient $\mu_0 = 0,2$ for friction in longitudinal direction. Max. deviation H/100; L/100.

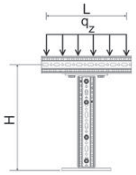
Working loads in accordance with Eurocode 3

T-Support F 80



Part List
1 x End Support WBD F 80
2 x Beam Section TP F 80
1 x End Support STA F 80
12 x Self-Forming-Screw FLS F

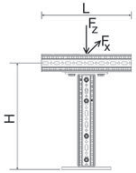
Distributed Load - symmetrical



H_{max}	$q_{z, perm}$	F_z ($q_{z, perm}$ x 1m)
[mm]	[kN/m]	[kN]
500	**13,19**	**13,19**
1000	**13,15**	**13,15**
1500	**13,12**	**13,12**
2000	**13,08**	**13,08**

q_z [kN/m] as permanent load over L; L_{max} = 1.100 mm.

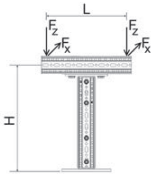
Point Load - centrical



H_{max}	$F_{z, perm}$ for $F_x = 0$	$F_{z, perm}$ for $F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]
500	**11,53**	**8,78**
1000	**11,50**	**3,65**
1500	**10,63**	**2,10**
2000	**9,15**	**1,41**

F_z [kN] as a permanent load; F_x [kN] as a variable load;
central load introduction for planned eccentricity ± 50 mm.

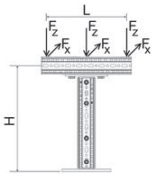
2 Point Loads - symmetrical



H_{max}	$F_{z, perm}$ for $F_x = 0$	$F_{z, perm}$ for $F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]
500	**6,46**	**4,32**
1000	**6,46**	**1,88**
1500	**6,46**	**1,07**
2000	**6,46**	**0,71**

F_z [kN] as permanent loads; F_x [kN] as variable loads; L_{max} = 1.100 mm.

3 Point Loads - symmetrical



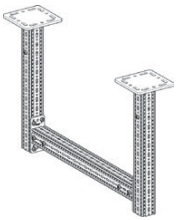
H_{max}	$F_{z, perm}$ for $F_x = 0$	$F_{z, perm}$ for $F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]
500	**4,39**	**3,16**
1000	**4,38**	**1,25**
1500	**4,37**	**0,71**
2000	**4,36**	**0,47**

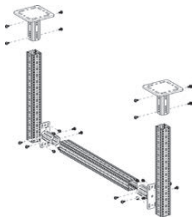
F_z [kN] as permanent loads; F_x [kN] as variable loads; L_{max} = 1.100 mm.

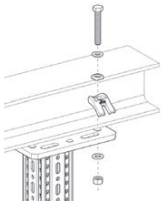
Friction coefficient μ_0= 0,2 for friction in longitudinal direction. Max. deviation H/150.

Working loads in accordance with Eurocode 3

Frame F 80

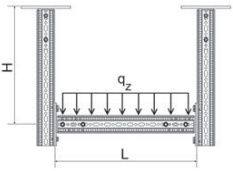






Part List
2 x End Support WBD F 80
3 x Beam Section TP F 80
2 x End Support STA F 80
24 x Self-Forming-Screw FLS

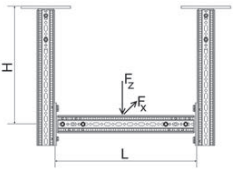
Distributed Load



H_{max} \ L_{max}	500		1000		1500		2000		2500		3000	
	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)
[mm]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]
1000	**39,47**	**19,37**	**19,37**	**19,37**	**12,56**	**18,85**	**6,76**	**13,52**	**3,89**	**9,71**	**2,43**	**7,30**
1500	**39,47**	**19,37**	**19,37**	**19,37**	**12,66**	**18,99**	**6,65**	**13,29**	**3,82**	**9,55**	**2,39**	**7,18**
2000	**39,47**	**19,37**	**19,37**	**19,37**	**12,56**	**18,83**	**6,55**	**13,09**	**3,76**	**9,41**	**2,36**	**7,07**
2500	**39,47**	**19,37**	**19,37**	**19,37**	**12,43**	**18,64**	**6,46**	**12,91**	**3,71**	**9,28**	**2,32**	**6,97**
3000	**39,47**	**19,37**	**19,37**	**19,37**	**12,27**	**18,40**	**6,38**	**12,75**	**3,67**	**9,16**	**2,29**	**6,88**

q_z [kN/m] as permanent load over L.

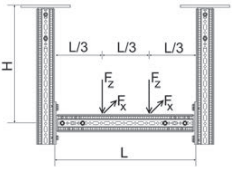
Point Load



H_{max} \ L_{max}	500		1000		1500		2000		2500		3000	
	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
1000	**19,67**	**9,02**	**16,21**	**8,76**	**11,21**	**8,18**	**8,63**	**6,56**	**6,08**	**5,38**	**4,52**	**4,25**
1500	**19,67**	**5,49**	**16,13**	**5,42**	**11,15**	**5,26**	**8,51**	**5,00**	**5,99**	**4,63**	**4,45**	**4,18**
2000	**19,67**	**3,74**	**16,04**	**3,72**	**11,09**	**3,66**	**8,40**	**3,56**	**5,92**	**3,41**	**4,39**	**3,22**
2500	**19,67**	**2,74**	**15,96**	**2,73**	**11,04**	**2,70**	**8,31**	**2,65**	**5,85**	**2,59**	**4,34**	**2,49**
3000	**19,67**	**2,09**	**15,89**	**2,09**	**10,98**	**2,08**	**8,22**	**2,05**	**5,78**	**2,02**	**4,29**	**1,97**

F_z [kN] as a permanent load at distance L/2; F_x [kN] as a variable load at distance L/2.

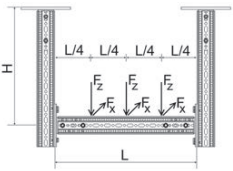
2 Point Loads



H_{max} \ L_{max}	500		1000		1500		2000		2500		3000	
	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
1000	**9,85**	**4,52**	**9,60**	**4,40**	**7,61**	**4,15**	**5,10**	**3,76**	**3,61**	**3,27**	**2,69**	**2,53**
1500	**9,85**	**2,75**	**9,60**	**2,72**	**7,49**	**2,65**	**5,02**	**2,53**	**3,55**	**2,37**	**2,65**	**2,17**
2000	**9,85**	**1,87**	**9,60**	**1,86**	**7,38**	**1,84**	**4,95**	**1,79**	**3,51**	**1,73**	**2,61**	**1,64**
2500	**9,85**	**1,37**	**9,60**	**1,36**	**7,29**	**1,35**	**4,89**	**1,33**	**3,46**	**1,30**	**2,58**	**1,26**
3000	**9,85**	**1,05**	**9,60**	**1,04**	**7,20**	**1,04**	**4,83**	**1,03**	**3,42**	**1,01**	**2,55**	**0,99**

F_z [kN] as permanent loads at distance 2*L/3 and L/3; F_x [kN] as variable loads at distance 2*L/3 and L/3.

3 Point Loads



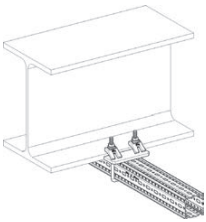
H_{max} \ L_{max}	500		1000		1500		2000		2500		3000	
	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
1000	**6,57**	**3,01**	**6,42**	**2,94**	**5,37**	**2,78**	**3,63**	**2,54**	**2,58**	**2,22**	**1,93**	**1,81**
1500	**6,57**	**1,83**	**6,42**	**1,81**	**5,29**	**1,77**	**3,57**	**1,70**	**2,54**	**1,60**	**1,90**	**1,47**
2000	**6,57**	**1,25**	**6,42**	**1,24**	**5,21**	**1,23**	**3,52**	**1,20**	**2,50**	**1,16**	**1,87**	**1,10**
2500	**6,57**	**0,91**	**6,42**	**0,91**	**5,14**	**0,90**	**3,48**	**0,89**	**2,47**	**0,87**	**1,85**	**0,85**
3000	**6,57**	**0,70**	**6,42**	**0,70**	**5,08**	**0,69**	**3,44**	**0,69**	**2,44**	**0,68**	**1,82**	**0,66**

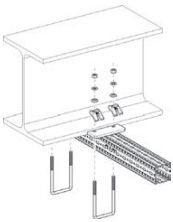
F_z [kN] as permanent loads at distance 3*L/4, L/2 and L/4; F_x [kN] as variable loads at distance 3*L/4, L/4 and L/4.

All illustrated structures are able to be installed standing as well.
Friction coefficient μ_0 = 0,2 for friction in longitudinal direction. Max. deviation H/100; L/200.

Working loads in accordance with Eurocode 3

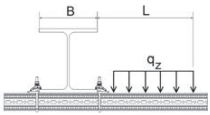
Joining Beam Bracket F 80 horizontal





Part List
1 x Beam Section TP F 80
2 x U-Holder SB F 80-40

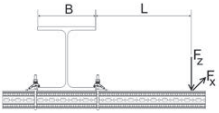
Distributed Load



B	100		150		200		250		300	
L_{max}	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)
[mm]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]
300	**14,39**	**4,32**	**20,42**	**6,13**	**24,82**	**7,45**	**28,17**	**8,45**	**30,72**	**9,22**
500	**5,64**	**2,82**	**8,38**	**4,19**	**10,53**	**5,26**	**12,27**	**6,13**	**12,28**	**6,14**
700	**3,02**	**2,12**	**4,62**	**3,23**	**5,93**	**4,15**	**6,19**	**4,34**	**6,19**	**4,34**
900	**1,88**	**1,69**	**2,93**	**2,64**	**3,72**	**3,35**	**3,72**	**3,35**	**3,72**	**3,35**
1100	**1,28**	**1,41**	**2,02**	**2,22**	**2,47**	**2,72**	**2,47**	**2,72**	**2,47**	**2,72**

q_z [kN/m] as permanent load over L.

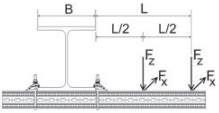
Point Load



B	100		150		200		250		300	
	$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for	
L_{max}	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
300	**2,36**	**1,12**	**3,51**	**1,67**	**4,43**	**2,10**	**5,04**	**2,45**	**5,04**	**2,75**
500	**1,55**	**0,74**	**2,41**	**1,14**	**3,02**	**1,49**	**3,02**	**1,79**	**3,02**	**2,05**
700	**1,16**	**0,55**	**1,83**	**0,87**	**2,16**	**1,15**	**2,16**	**1,41**	**2,16**	**1,63**
900	**0,92**	**0,44**	**1,48**	**0,70**	**1,68**	**0,94**	**1,68**	**1,16**	**1,68**	**1,36**
1100	**0,77**	**0,36**	**1,24**	**0,59**	**1,37**	**0,79**	**1,37**	**0,99**	**1,37**	**1,16**

F_z [kN] as a permanent load at distance L; F_x [kN] as a variable load at distance L.

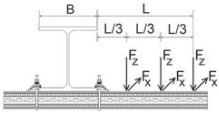
2 Point Loads



B	100		150		200		250		300	
	$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for	
L_{max}	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
300	**1,46**	**0,69**	**2,12**	**1,01**	**2,62**	**1,24**	**3,01**	**1,43**	**3,32**	**1,57**
500	**0,98**	**0,47**	**1,50**	**0,71**	**1,92**	**0,91**	**2,01**	**1,08**	**2,01**	**1,22**
700	**0,74**	**0,35**	**1,16**	**0,55**	**1,44**	**0,72**	**1,44**	**0,86**	**1,44**	**0,99**
900	**0,60**	**0,28**	**0,94**	**0,45**	**1,12**	**0,59**	**1,12**	**0,72**	**1,12**	**0,84**
1100	**0,50**	**0,24**	**0,79**	**0,38**	**0,91**	**0,50**	**0,91**	**0,62**	**0,91**	**0,72**

F_z [kN] as permanent loads at distance L and L/2; F_x [kN] as variable loads at distance L and L/2.

3 Point Loads



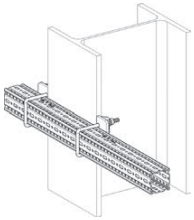
B	100		150		200		250		300	
	$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for	
L_{max}	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
300	**1,06**	**0,50**	**1,52**	**0,72**	**1,86**	**0,88**	**2,12**	**1,00**	**2,33**	**1,10**
500	**0,72**	**0,34**	**1,08**	**0,52**	**1,38**	**0,65**	**1,51**	**0,77**	**1,51**	**0,87**
700	**0,55**	**0,26**	**0,84**	**0,40**	**1,08**	**0,52**	**1,08**	**0,62**	**1,08**	**0,71**
900	**0,44**	**0,21**	**0,69**	**0,33**	**0,84**	**0,43**	**0,84**	**0,52**	**0,84**	**0,61**
1100	**0,37**	**0,18**	**0,58**	**0,28**	**0,68**	**0,37**	**0,68**	**0,45**	**0,68**	**0,53**

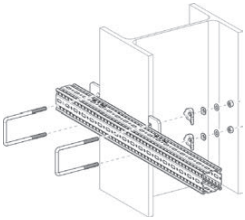
F_z [kN] as permanent loads at distance L, 2*L/3 and L/3; F_z [kN] as variable loads at distance L, 2*L/3 and L/3.

Friction coefficient μ_0 = 0,2 for friction in longitudinal direction. Max. deviation L/100.

Working loads in accordance with Eurocode 3

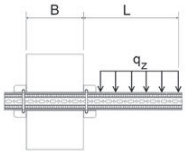
Joining Beam Bracket F 80 vertical





Part List
1 x Beam Section TP F 80
2 x U-Holder SB F 80-40

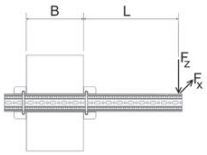
Distributed Load



B	100		150		200		250		300	
L_{max}	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)
[mm]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]
300	**3,21**	**0,96**	**4,46**	**1,34**	**5,34**	**1,60**	**5,99**	**1,80**	**6,49**	**1,95**
500	**1,36**	**0,68**	**1,98**	**0,99**	**2,47**	**1,23**	**2,86**	**1,43**	**3,17**	**1,58**
700	**0,75**	**0,52**	**1,13**	**0,79**	**1,44**	**1,00**	**1,69**	**1,18**	**1,91**	**1,34**
900	**0,47**	**0,43**	**0,73**	**0,65**	**0,94**	**0,85**	**1,12**	**1,01**	**1,28**	**1,15**
1100	**0,33**	**0,36**	**0,51**	**0,56**	**0,67**	**0,73**	**0,80**	**0,88**	**0,92**	**1,02**

q_z [kN/m] as permanent load over L.

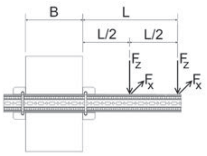
Point Load



B	100		150		200		250		300	
	$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for	
L_{max}	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
300	**0,59**	**0,56**	**0,88**	**0,84**	**1,11**	**1,06**	**1,29**	**1,24**	**1,45**	**1,39**
500	**0,39**	**0,37**	**0,60**	**0,58**	**0,79**	**0,75**	**0,94**	**0,90**	**1,08**	**1,03**
700	**0,29**	**0,28**	**0,46**	**0,44**	**0,61**	**0,58**	**0,74**	**0,71**	**0,86**	**0,83**
900	**0,23**	**0,22**	**0,37**	**0,35**	**0,50**	**0,48**	**0,61**	**0,59**	**0,72**	**0,69**
1100	**0,19**	**0,18**	**0,31**	**0,30**	**0,42**	**0,40**	**0,52**	**0,50**	**0,61**	**0,59**

F_z [kN] as a permanent load at distance L; F_x [kN] as a variable load at distance L.

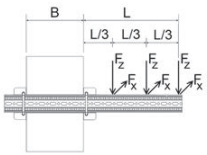
2 Point Loads



B	100		150		200		250		300	
	$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for	
L_{max}	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
300	**0,37**	**0,35**	**0,53**	**0,51**	**0,65**	**0,63**	**0,75**	**0,72**	**0,83**	**0,80**
500	**0,25**	**0,24**	**0,37**	**0,36**	**0,48**	**0,46**	**0,57**	**0,54**	**0,64**	**0,62**
700	**0,19**	**0,18**	**0,29**	**0,28**	**0,38**	**0,36**	**0,46**	**0,44**	**0,52**	**0,50**
900	**0,15**	**0,14**	**0,24**	**0,23**	**0,31**	**0,30**	**0,38**	**0,36**	**0,44**	**0,42**
1100	**0,13**	**0,12**	**0,20**	**0,19**	**0,27**	**0,26**	**0,33**	**0,31**	**0,38**	**0,37**

F_z [kN] as permanent loads at distance L and L/2; F_x [kN] as variable loads at distance L and L/2.

3 Point Loads



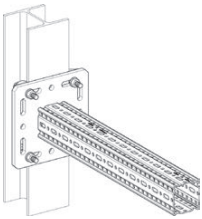
B	100		150		200		250		300	
	$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for	
L_{max}	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
300	**0,27**	**0,25**	**0,38**	**0,36**	**0,46**	**0,45**	**0,53**	**0,51**	**0,58**	**0,56**
500	**0,18**	**0,17**	**0,27**	**0,26**	**0,35**	**0,33**	**0,41**	**0,39**	**0,46**	**0,44**
700	**0,14**	**0,13**	**0,21**	**0,20**	**0,28**	**0,26**	**0,33**	**0,32**	**0,38**	**0,36**
900	**0,11**	**0,11**	**0,17**	**0,17**	**0,23**	**0,22**	**0,28**	**0,27**	**0,32**	**0,31**
1100	**0,09**	**0,09**	**0,15**	**0,14**	**0,20**	**0,19**	**0,24**	**0,23**	**0,28**	**0,27**

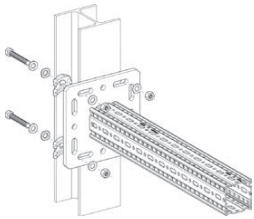
F_z [kN] as permanent loads at distance L, 2*L/3 and L/3; F_z [kN] as variable loads at distance L, 2*L/3 and L/3.

Friction coefficient μ_0 = 0,2 for friction in longitudinal direction. Max. deviation L/100.

Working loads in accordance with Eurocode 3

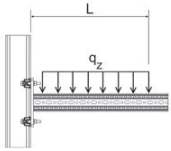
Beam Bracket F 80 - Variante a) clamped





Part List
1 x Beam Bracket TKO F 80
1 x Assembly Set MS 5P M12 S

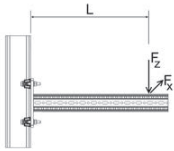
Distributed Load



L_{max}	$q_{z,\,perm}$	F_z ($q_{z,\,perm}$ * L)
[mm]	[kN/m]	[kN]
300	**54,99**	**16,50**
500	**28,59**	**14,30**
700	**14,59**	**10,21**

q_z [kN/m] as permanent load over L.

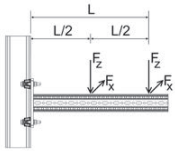
Point Load



	$F_{z,\,perm}$ for	
L_{max}	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]
300	**11,91**	**7,40**
500	**7,15**	**4,44**
700	**5,04**	**3,17**

F_z [kN] as a permanent load at distance L; F_x [kN] as a variable load at distance L.

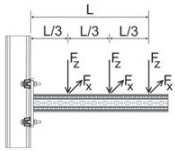
2 Point Loads



	$F_{z,\,perm}$ for	
L_{max}	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]
300	**7,94**	**4,93**
500	**4,77**	**2,96**
700	**3,40**	**2,11**

F_z [kN] as permanent loads at distance L and L/2; F_x [kN] as variable loads at distance L and L/2.

3 Point Loads



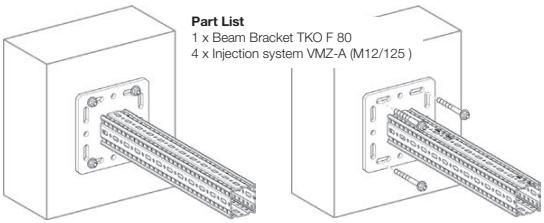
	$F_{z,\,perm}$ for	
L_{max}	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]
300	**5,96**	**3,70**
500	**3,57**	**2,22**
700	**2,55**	**1,58**

F_z [kN] as permanent loads at distance L, 2*L/3 and L/3;
F_x [kN] as variable loads at distance L, 2*L/3 and L/3.

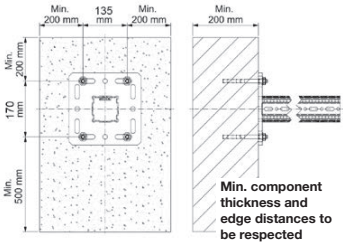
Friction coefficient μ_0 = 0,2 for friction in longitudinal direction. Max. deviation L/100.

Working loads in accordance with Eurocode 3

Beam Bracket F 80 - Variante b) anchored

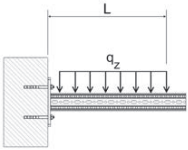


Part List
1 x Beam Bracket TKO F 80
4 x Injection system VMZ-A (M12/125)



Min. component thickness and edge distances to be respected

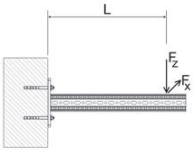
Distributed Load



L_{max}	$q_{z,perm}$	F_z ($q_{z,perm}$ * L)
[mm]	[kN/m]	[kN]
300	**42,31**	**12,69**
500	**21,76**	**10,88**
700	**13,61**	**9,52**

q_z [kN/m] as permanent load at distance L.

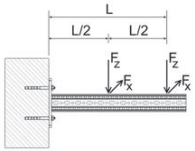
Point Load



	$F_{z,perm}$ for	
L_{max}	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]
300	**10,16**	**10,16**
500	**7,37**	**7,37**
700	**4,44**	**4,44**

F_z [kN] as a permanent load at distance L; F_x [kN] as a variable load at distance L.

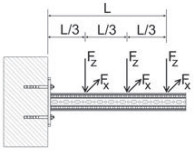
2 Point Loads



	$F_{z,perm}$ for	
L_{max}	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]
300	**5,64**	**5,64**
500	**4,62**	**4,62**
700	**3,18**	**3,18**

F_z [kN] as permanent loads at distance L and L/2; F_x [kN] as variable loads at distance L and L/2.

3 Point Loads

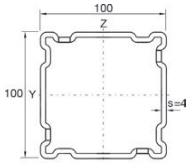


	$F_{z,perm}$ for	
L_{max}	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]
300	**3,91**	**3,91**
500	**3,24**	**3,24**
700	**2,44**	**2,44**

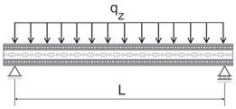
F_z [kN] as permanent loads at distance L, 2*L/3 and L/3;
F_x [kN] as variable loads at distance L, 2*L/3 and L/3.

Friction coefficient μ_0 = 0,2 for friction in longitudinal direction. Max. deviation L/100.

Beam Section TP F 100



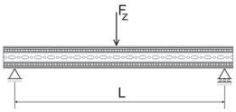
Distributed Load



L_{max}	$q_{z,\,perm}$	F_z ($q_{z,\,perm}$ * L)
[mm]	[kN/m]	[kN]
1000	**70,50**	**70,50**
2000	**17,53**	**35,06**
3000	**5,37**	**16,11**
4000	**2,27**	**9,06**
5000	**1,16**	**5,80**
6000	**0,67**	**4,03**

q_z [kN/m] as permanent load over L.

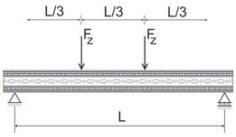
Point Load



L_{max}	$F_{z,\,perm}$
[mm]	[kN]
1000	**35,30**
2000	**17,50**
3000	**10,10**
4000	**5,70**
5000	**3,60**
6000	**2,50**

F_z [kN] as a permanent load at L/2.

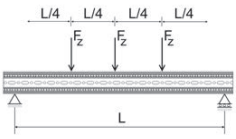
2 Point Loads



L_{max}	$F_{z,\,perm}$
[mm]	[kN]
1000	**26,40**
2000	**13,10**
3000	**5,90**
4000	**3,30**
5000	**2,10**
6000	**1,50**

F_z [kN] as permanent loads at L/3 and 2*L/3.

3 Point Loads



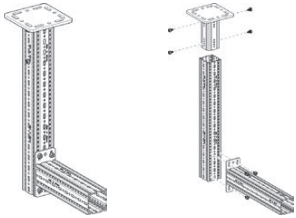
L_{max}	$F_{z,\,perm}$
[mm]	[kN]
1000	**17,60**
2000	**8,80**
3000	**4,20**
4000	**2,40**
5000	**1,50**
6000	**1,10**

F_z [kN] as permanent loads at L/4, L/2 and 3*L/4.

Max. bending L/200.

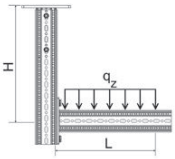
Working loads in accordance with Eurocode 3

L-Construction F 100



Part List
1 x End Support WBD F 100
1 x Beam Section TP F 100
1 x Cantilever Bracket AK F 100
8 x Self-Forming-Screw FLS F

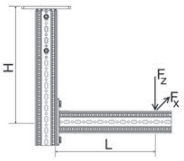
Distributed Load



H_{max} \ L_{max}	300		500		700		900		1100	
	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)
[mm]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]
1000	**18,91**	**5,67**	**7,70**	**3,85**	**4,08**	**2,86**	**2,48**	**2,24**	**1,65**	**1,81**
1500	**16,01**	**4,80**	**6,55**	**3,28**	**3,48**	**2,44**	**2,12**	**1,91**	**1,40**	**1,55**
2000	**13,88**	**4,16**	**5,70**	**2,85**	**3,03**	**2,12**	**1,85**	**1,66**	**1,22**	**1,34**
2500	**12,25**	**3,67**	**5,04**	**2,52**	**2,68**	**1,88**	**1,63**	**1,47**	**1,08**	**1,18**

q_z [kN/m] as permanent load over L.

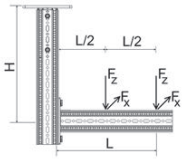
Point Load



H_{max} \ L_{max}	300		500		700		900		1100	
	$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for	
	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
1000	**3,20**	**3,20**	**2,05**	**2,05**	**1,48**	**1,48**	**1,14**	**1,14**	**0,91**	**0,91**
1500	**2,72**	**2,72**	**1,75**	**1,75**	**1,27**	**1,27**	**0,98**	**0,98**	**0,78**	**0,78**
2000	**2,37**	**2,37**	**1,53**	**1,53**	**1,11**	**1,11**	**0,85**	**0,85**	**0,68**	**0,68**
2500	**2,09**	**2,09**	**1,36**	**1,36**	**0,98**	**0,98**	**0,76**	**0,76**	**0,60**	**0,60**

F_z [kN] as a permanent load at distance L; F_x [kN] as a variable load at distance L.

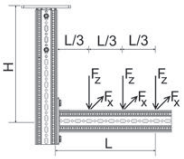
2 Point Loads



H_{max} \ L_{max}	300		500		700		900		1100	
	$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for	
	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
1000	**2,07**	**2,03**	**1,35**	**1,35**	**0,98**	**0,98**	**0,76**	**0,76**	**0,61**	**0,61**
1500	**1,75**	**1,75**	**1,15**	**1,15**	**0,84**	**0,84**	**0,65**	**0,65**	**0,52**	**0,52**
2000	**1,52**	**1,52**	**1,00**	**1,00**	**0,73**	**0,73**	**0,57**	**0,57**	**0,46**	**0,46**
2500	**1,35**	**1,35**	**0,89**	**0,89**	**0,65**	**0,65**	**0,50**	**0,50**	**0,40**	**0,40**

F_z [kN] as permanent loads at distance L and L/2; F_x [kN] as variable loads at distance L and L/2.

3 Point Loads



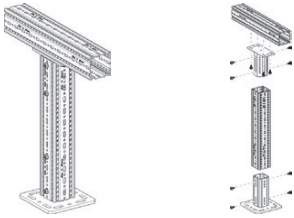
H_{max} \ L_{max}	300		500		700		900		1100	
	$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for	
	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
1000	**1,51**	**1,44**	**0,99**	**0,99**	**0,73**	**0,73**	**0,56**	**0,56**	**0,45**	**0,45**
1500	**1,28**	**1,27**	**0,85**	**0,85**	**0,62**	**0,62**	**0,48**	**0,48**	**0,39**	**0,39**
2000	**1,12**	**1,12**	**0,74**	**0,74**	**0,54**	**0,54**	**0,42**	**0,42**	**0,34**	**0,34**
2500	**0,99**	**0,99**	**0,65**	**0,65**	**0,48**	**0,48**	**0,37**	**0,37**	**0,30**	**0,30**

F_z [kN] as permanent loads at distance L, 2*L/3 and L/3; F_x [kN] as variable loads at distance L, 2*L/3 and L/3.

All illustrated structures are able to be installed standing as well.
Friction coefficient μ_0 = 0,2 for friction in longitudinal direction. Max. deviation H/100; L/100.

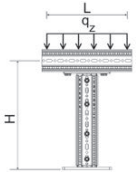
Working loads in accordance with Eurocode 3

T-Support F 100



Part List
1 x End Support WBD F 100
2 x Beam Section TP F 100
1 x End Support STA F 100
12 x Self-Forming-Screw FLS F

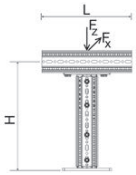
Distributed Load - symmetrical



H_{max}	$q_{z, perm}$	F_z ($q_{z, perm}$ * 1m)
[mm]	[kN/m]	[kN]
1000	**13,98**	**13,98**
1500	**13,92**	**13,92**
2000	**13,86**	**13,86**
2500	**13,80**	**13,80**

q_z [kN/m] as permanent load over L;
L_{max} = 1.100 mm.

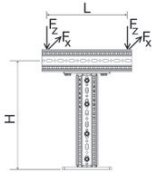
Point Load - centrical



H_{max}	$F_{z, perm}$ for $F_x = 0$	$F_{z, perm}$ for $F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]
1000	**12,85**	**7,68**
1500	**12,80**	**4,53**
2000	**12,74**	**3,07**
2500	**12,69**	**2,24**

F_z [kN] as a permanent load; F_x [kN] as a variable load;
Central load introduction for planned eccentricity ± 50 mm.

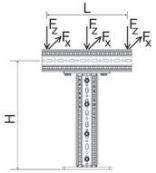
2 Point Loads - symmetrical



H_{max}	$F_{z, perm}$ for $F_x = 0$	$F_{z, perm}$ for $F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]
1000	**6,98**	**4,36**
1500	**6,95**	**2,53**
2000	**6,92**	**1,70**
2500	**6,89**	**1,24**

F_z [kN] as permanent loads; F_x [kN] as variable loads;
L_{max} = 1.100 mm.

3 Point Loads - symmetrical



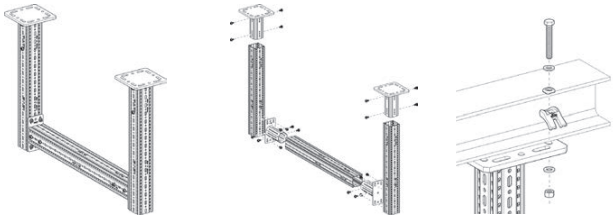
H_{max}	$F_{z, perm}$ for $F_x = 0$	$F_{z, perm}$ for $F_x = \mu_0 * F_z$
[mm]	[kN/m]	[kN]
1000	**4,65**	**2,91**
1500	**4,63**	**1,69**
2000	**4,61**	**1,13**
2500	**4,59**	**0,82**

F_z [kN] as permanent loads; F_x [kN] as variable loads;
L_{max} = 1.100 mm.

Friction coefficient μ_0 = 0,2 for friction in longitudinal direction. Max. deviation H/150.

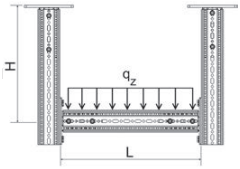
Working loads in accordance with Eurocode 3

Frame F 100



Part List
2 x End Support WBD F 100
3 x Beam Section TP F 100
2 x End Support STA F 100
24 x Self-Forming-Screw FLS F

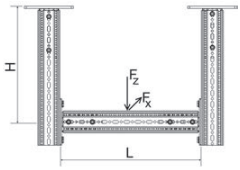
Distributed Load



L_{max} / H_{max}	1500		2000		2500		3000		3500		4000	
	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)
[mm]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]
1500	**16,48**	**24,72**	**12,29**	**24,57**	**9,75**	**24,38**	**6,23**	**18,70**	**4,18**	**14,63**	**2,94**	**11,78**
2000	**16,42**	**24,63**	**12,23**	**24,46**	**9,70**	**24,24**	**6,16**	**18,49**	**4,13**	**14,47**	**2,91**	**11,64**
2500	**16,38**	**24,57**	**12,18**	**24,37**	**9,65**	**24,12**	**6,10**	**18,29**	**4,09**	**14,31**	**2,88**	**11,51**
3000	**16,33**	**24,50**	**12,14**	**24,28**	**9,55**	**23,88**	**6,04**	**18,11**	**4,05**	**14,17**	**2,85**	**11,40**
3500	**16,31**	**24,46**	**12,13**	**24,25**	**9,46**	**23,65**	**5,98**	**17,94**	**4,01**	**14,04**	**2,82**	**11,29**

q_z [kN/m] as permanent load over L.

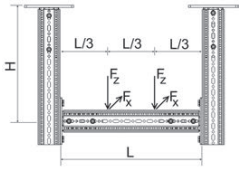
Point Load



L_{max} / H_{max}	1500		2000		2500		3000		3500		4000	
	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
1500	**24,61**	**8,39**	**19,50**	**8,39**	**15,77**	**8,23**	**11,76**	**8,23**	**9,11**	**8,09**	**7,28**	**6,94**
2000	**24,51**	**6,33**	**19,43**	**6,24**	**15,62**	**6,24**	**11,65**	**6,15**	**9,02**	**6,07**	**7,21**	**6,07**
2500	**24,39**	**5,21**	**19,34**	**5,15**	**15,48**	**5,09**	**11,54**	**5,09**	**8,94**	**5,03**	**7,14**	**4,98**
3000	**24,36**	**4,33**	**19,26**	**4,29**	**15,35**	**4,25**	**11,44**	**4,21**	**8,86**	**4,21**	**7,08**	**4,17**
3500	**24,33**	**3,75**	**19,20**	**3,75**	**15,23**	**3,72**	**11,35**	**3,68**	**8,79**	**3,66**	**7,02**	**3,63**

F_z [kN] as a permanent load at distance L/2; F_x [kN] as a variable load at distance L/2.

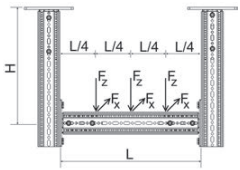
2 Point Loads



L_{max} / H_{max}	1500		2000		2500		3000		3500		4000	
	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
1500	**12,32**	**4,16**	**12,22**	**4,13**	**9,29**	**4,10**	**6,96**	**4,06**	**5,41**	**4,03**	**4,33**	**3,98**
2000	**12,27**	**3,18**	**12,15**	**3,16**	**9,19**	**3,14**	**6,89**	**3,12**	**5,35**	**3,09**	**4,28**	**3,06**
2500	**12,23**	**2,58**	**12,11**	**2,57**	**9,10**	**2,55**	**6,82**	**2,53**	**5,30**	**2,51**	**4,24**	**2,49**
3000	**12,21**	**2,17**	**12,05**	**2,16**	**9,02**	**2,15**	**6,76**	**2,13**	**5,25**	**2,12**	**4,20**	**2,10**
3500	**12,19**	**1,87**	**12,03**	**1,86**	**8,94**	**1,86**	**6,70**	**1,84**	**5,20**	**1,83**	**4,16**	**1,82**

F_z [kN] as permanent loads at distance 2*L/3 and L/3; F_x [kN] as variable loads at distance 2*L/3 and L/3.

3 Point Loads



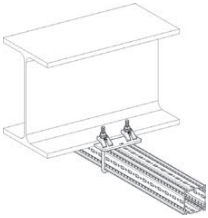
L_{max} / H_{max}	1500		2000		2500		3000		3500		4000	
	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
1500	**8,22**	**2,77**	**8,16**	**2,75**	**6,62**	**2,73**	**4,97**	**2,71**	**3,87**	**2,69**	**3,11**	**2,66**
2000	**8,19**	**2,12**	**8,11**	**2,11**	**6,55**	**2,10**	**4,92**	**2,08**	**3,83**	**2,06**	**3,07**	**2,05**
2500	**8,16**	**1,72**	**8,08**	**1,71**	**6,48**	**1,70**	**4,87**	**1,69**	**3,79**	**1,68**	**3,04**	**1,66**
3000	**8,14**	**1,45**	**8,05**	**1,44**	**6,42**	**1,43**	**4,83**	**1,42**	**3,76**	**1,41**	**3,01**	**1,40**
3500	**8,13**	**1,25**	**8,03**	**1,24**	**6,37**	**1,24**	**4,79**	**1,23**	**3,72**	**1,22**	**2,98**	**1,21**

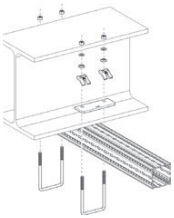
F_z [kN] as permanent loads at distance 3*L/4, L/2 and L/4; F_x [kN] as variable loads at distance 3*L/4, L/2 and L/4.

All illustrated structures are able to be installed standing as well.
Friction coefficient μ_0 = 0,2 for friction in longitudinal direction. Max. deviation H/100; L/200.

Working loads in accordance with Eurocode 3

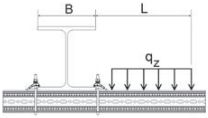
Beam Section TP F 100





Part List
1 x Beam Section TP F 100
2 x U-Holder SB F 100-40

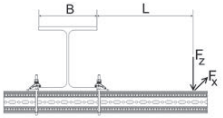
Distributed Load



L_{max}	B 100		150		200		250		300	
	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)
[mm]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]
300	**14,39**	**4,32**	**20,42**	**6,13**	**24,82**	**7,45**	**28,17**	**8,45**	**30,81**	**9,24**
500	**5,64**	**2,82**	**8,38**	**4,19**	**10,53**	**5,26**	**12,27**	**6,13**	**13,70**	**6,85**
700	**3,02**	**2,12**	**4,62**	**3,23**	**5,93**	**4,15**	**7,03**	**4,92**	**7,96**	**5,58**
900	**1,88**	**1,69**	**2,93**	**2,64**	**3,82**	**3,44**	**4,59**	**4,13**	**5,26**	**4,73**
1100	**1,28**	**1,41**	**2,02**	**2,22**	**2,67**	**2,94**	**3,24**	**3,56**	**3,74**	**4,12**

q_z [kN/m] as permanent load over L.

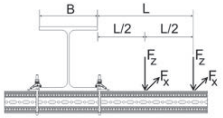
Point Load



L_{max}	B 100		150		200		250		300	
	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
300	**2,36**	**1,12**	**3,51**	**1,67**	**4,43**	**2,10**	**5,17**	**2,45**	**5,79**	**2,75**
500	**1,55**	**0,74**	**2,41**	**1,14**	**3,14**	**1,49**	**3,77**	**1,79**	**4,32**	**2,05**
700	**1,16**	**0,55**	**1,83**	**0,87**	**2,43**	**1,15**	**2,96**	**1,41**	**3,44**	**1,63**
900	**0,92**	**0,44**	**1,48**	**0,70**	**1,98**	**0,94**	**2,44**	**1,16**	**2,86**	**1,36**
1100	**0,77**	**0,36**	**1,24**	**0,59**	**1,67**	**0,79**	**2,08**	**0,99**	**2,45**	**1,16**

F_z [kN] as a permanent load at distance L; F_x [kN] as a variable load at distance L.

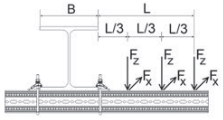
2 Point Loads



L_{max}	B 100		150		200		250		300	
	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
300	**1,46**	**0,69**	**2,12**	**1,01**	**2,62**	**1,24**	**3,01**	**1,43**	**3,32**	**1,57**
500	**0,98**	**0,47**	**1,50**	**0,71**	**1,92**	**0,91**	**2,27**	**1,08**	**2,57**	**1,22**
700	**0,74**	**0,35**	**1,16**	**0,55**	**1,51**	**0,72**	**1,82**	**0,86**	**2,09**	**0,99**
900	**0,60**	**0,28**	**0,94**	**0,45**	**1,25**	**0,59**	**1,52**	**0,72**	**1,76**	**0,84**
1100	**0,50**	**0,24**	**0,79**	**0,38**	**1,06**	**0,50**	**1,30**	**0,62**	**1,53**	**0,72**

F_z [kN] as permanent loads at distance L and L/2; F_x [kN] as variable loads at distance L and L/2.

3 Point Loads



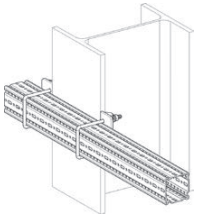
L_{max}	B 100		150		200		250		300	
	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$	$F_{z,perm}$ for $F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
300	**1,06**	**0,50**	**1,52**	**0,72**	**1,86**	**0,88**	**2,12**	**1,00**	**2,33**	**1,10**
500	**0,72**	**0,34**	**1,08**	**0,52**	**1,38**	**0,65**	**1,62**	**0,77**	**1,82**	**0,87**
700	**0,55**	**0,26**	**0,84**	**0,40**	**1,10**	**0,52**	**1,31**	**0,62**	**1,50**	**0,71**
900	**0,44**	**0,21**	**0,69**	**0,33**	**0,91**	**0,43**	**1,10**	**0,52**	**1,27**	**0,61**
1100	**0,37**	**0,18**	**0,58**	**0,28**	**0,78**	**0,37**	**0,95**	**0,45**	**1,11**	**0,53**

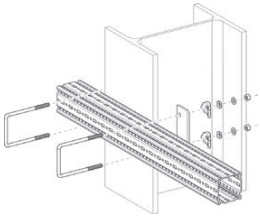
F_z [kN] as permanent loads at distance L, 2*L/3 and L/3; F_z [kN] as variable loads at distance L, 2*L/3 and L/3.

Friction coefficient μ_0 = 0,2 for friction in longitudinal direction. Max. deviation L/100.

Working loads in accordance with Eurocode 3

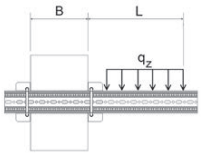
Joining Beam Bracket F 100 vertical





Part List
1 x Beam Section TP F 100
2 x U-Holder SB F 100-40

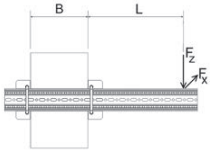
Distributed Load



L_{max} \ B	100		150		200		250		300	
	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)
[mm]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]
300	**3,21**	**0,96**	**4,46**	**1,34**	**5,34**	**1,60**	**5,99**	**1,80**	**6,49**	**1,95**
500	**1,36**	**0,68**	**1,98**	**0,99**	**2,47**	**1,23**	**2,86**	**1,43**	**3,17**	**1,58**
700	**0,75**	**0,52**	**1,13**	**0,79**	**1,44**	**1,00**	**1,69**	**1,18**	**1,91**	**1,34**
900	**0,47**	**0,43**	**0,73**	**0,65**	**0,94**	**0,85**	**1,12**	**1,01**	**1,28**	**1,15**
1100	**0,33**	**0,36**	**0,51**	**0,56**	**0,67**	**0,73**	**0,80**	**0,88**	**0,92**	**1,02**

q_z [kN/m] as permanent load over L.

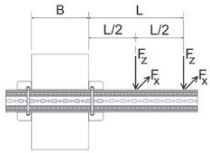
Point Load



L_{max} \ B	100		150		200		250		300	
	$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for	
	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
300	**0,59**	**0,56**	**0,88**	**0,84**	**1,11**	**1,06**	**1,29**	**1,24**	**1,45**	**1,39**
500	**0,39**	**0,37**	**0,60**	**0,58**	**0,79**	**0,75**	**0,94**	**0,90**	**1,08**	**1,03**
700	**0,29**	**0,28**	**0,46**	**0,44**	**0,61**	**0,58**	**0,74**	**0,71**	**0,86**	**0,83**
900	**0,23**	**0,22**	**0,37**	**0,35**	**0,50**	**0,48**	**0,61**	**0,59**	**0,72**	**0,69**
1100	**0,19**	**0,18**	**0,31**	**0,30**	**0,42**	**0,40**	**0,52**	**0,50**	**0,61**	**0,59**

F_z [kN] as a permanent load at distance L; F_x [kN] as a variable load at distance L.

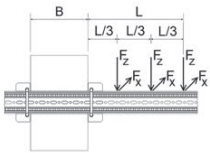
2 Point Loads



L_{max} \ B	100		150		200		250		300	
	$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for	
	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
300	**0,37**	**0,35**	**0,53**	**0,51**	**0,65**	**0,63**	**0,75**	**0,72**	**0,83**	**0,80**
500	**0,25**	**0,24**	**0,37**	**0,36**	**0,48**	**0,46**	**0,57**	**0,54**	**0,64**	**0,62**
700	**0,19**	**0,18**	**0,29**	**0,28**	**0,38**	**0,36**	**0,46**	**0,44**	**0,52**	**0,50**
900	**0,15**	**0,14**	**0,24**	**0,23**	**0,31**	**0,30**	**0,38**	**0,36**	**0,44**	**0,42**
1100	**0,13**	**0,12**	**0,20**	**0,19**	**0,27**	**0,26**	**0,33**	**0,31**	**0,38**	**0,37**

F_z [kN] as permanent loads at distance L and L/2; F_x [kN] as variable loads at distance L and L/2.

3 Point Loads



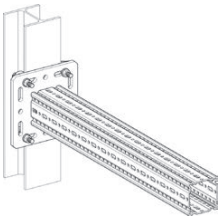
L_{max} \ B	100		150		200		250		300	
	$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for	
	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
300	**0,27**	**0,25**	**0,38**	**0,36**	**0,46**	**0,45**	**0,53**	**0,51**	**0,58**	**0,56**
500	**0,18**	**0,17**	**0,27**	**0,26**	**0,35**	**0,33**	**0,41**	**0,39**	**0,46**	**0,44**
700	**0,14**	**0,13**	**0,21**	**0,20**	**0,28**	**0,26**	**0,33**	**0,32**	**0,38**	**0,36**
900	**0,11**	**0,11**	**0,17**	**0,17**	**0,23**	**0,22**	**0,28**	**0,27**	**0,32**	**0,31**
1100	**0,09**	**0,09**	**0,15**	**0,14**	**0,20**	**0,19**	**0,24**	**0,23**	**0,28**	**0,27**

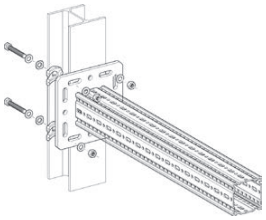
F_z [kN] as permanent loads at distance L, 2*L/3 and L/3; F_z [kN] as variable loads at distance L, 2*L/3 and L/3.

Friction coefficient μ_0 = 0,2 for friction in longitudinal direction. Max. deviation L/100.

Working loads in accordance with Eurocode 3

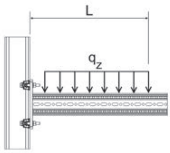
Beam Bracket F 100 - Variante a) clamped





Part List
1 x Beam Bracket TKO F 100
1 x Assembly Set MS 5P M12 S

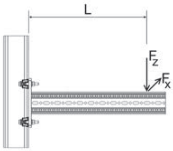
Distributed Load



L_{max}	$q_{z,\,perm}$ [2]	F_z ($q_{z,\,perm}$ * L)
[mm]	[kN/m]	[kN]
300	**54,99**	**16,50**
500	**28,59**	**14,30**
700	**14,59**	**10,21**
900	**8,83**	**7,94**
1100	**5,91**	**6,50**

q_z [kN/m] as permanent load over L.

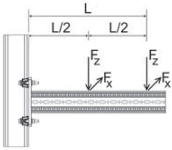
Point Load



L_{max}	$F_{z,\,perm}$ for $F_x = 0$	$F_{z,\,perm}$ for $F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]
300	**11,91**	**7,40**
500	**7,15**	**4,44**
700	**5,11**	**3,17**
900	**3,97**	**2,47**
1100	**3,25**	**2,02**

F_z [kN] as a permanent load at distance L; F_x [kN] as a variable load at distance L.

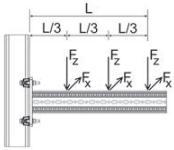
2 Point Loads



L_{max}	$F_{z,\,perm}$ for $F_x = 0$	$F_{z,\,perm}$ for $F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]
300	**7,94**	**4,93**
500	**4,77**	**2,96**
700	**3,40**	**2,11**
900	**2,65**	**1,64**
1100	**2,17**	**1,34**

F_z [kN] as permanent loads at distance L and L/2; F_x [kN] as variable loads at distance L and L/2.

3 Point Loads



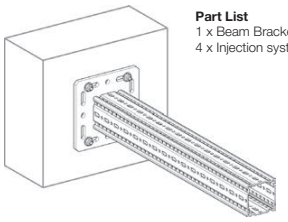
L_{max}	$F_{z,\,perm}$ for $F_x = 0$	$F_{z,\,perm}$ for $F_x = \mu_0 * F_z$
[mm]	[kN/m]	[kN]
300	**5,96**	**3,70**
500	**3,57**	**2,22**
700	**2,55**	**1,58**
900	**1,99**	**1,23**
1100	**1,62**	**1,01**

F_z [kN] as permanent loads at distance L, 2*L/3 and L/3; F_x [kN] as variable loads at distance L, 2*L/3 and L/3.

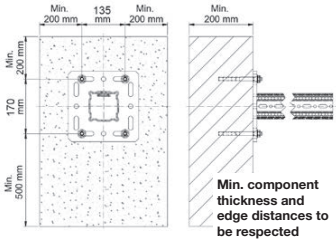
Friction coefficient μ_0 = 0,2 for friction in longitudinal direction. Max. deviation L/100.

Working loads in accordance with Eurocode 3

Beam Bracket F 100 - Variante b) anchored

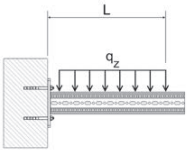


Part List
1 x Beam Bracket TP F 100
4 x Injection system VMZ-A (M12/125)



Min. component thickness and edge distances to be respected

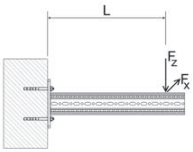
Distributed Load



L_{max}	$q_{z,perm}$	F_z ($q_{z,perm}$ * L)
[mm]	[kN/m]	[kN]
300	**42,31**	**12,69**
500	**21,76**	**10,88**
700	**13,61**	**9,52**
900	**9,41**	**8,47**
1100	**6,93**	**7,62**

q_z [kN/m] as permanent load over L.

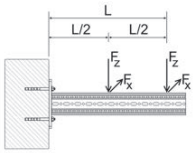
Point Load



L_{max}	$F_{z,perm}$ for $F_x = 0$	$F_{z,perm}$ for $F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]
300	**10,16**	**10,16**
500	**8,02**	**8,02**
700	**6,63**	**6,63**
900	**5,33**	**5,33**
1100	**4,35**	**4,35**

F_z [kN] as a permanent load at distance L; F_x [kN] as a variable load at distance L.

2 Point Loads

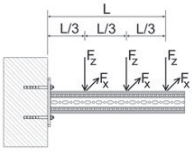


L_{max}	$F_{z,perm}$ for $F_x = 0$	$F_{z,perm}$ for $F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]
300	**5,64**	**5,64**
500	**4,62**	**4,62**
700	**3,91**	**3,91**
900	**3,39**	**3,39**
1100	**2,90**	**2,90**

F_z [kN] as permanent loads at distance L and L/2; F_x [kN] as variable loads at distance L and L/2.

12.09.2017 14:35:52

3 Point Loads



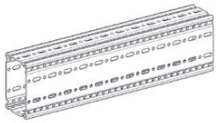
L_{max}	$F_{z,perm}$ for $F_x = 0$	$F_{z,perm}$ for $F_x = \mu_0 * F_z$
[mm]	[kN/m]	[kN]
300	**3,91**	**3,91**
500	**3,24**	**3,24**
700	**2,77**	**2,77**
900	**2,42**	**2,42**
1100	**2,15**	**2,15**

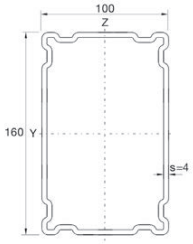
F_z [kN] as permanent loads at distance L, 2*L/3 and L/3; F_x [kN] as variable loads at distance L, 2*L/3 and L/3.

Friction coefficient μ_0 = 0,2 for friction in longitudinal direction. Max. deviation L/100.

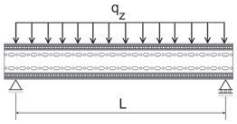
Working loads in accordance with Eurocode 3

Beam Section TP F 100/160





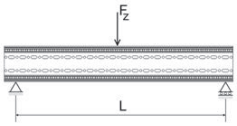
Distributed Load



L_{max}	$q_{z, perm}$	F_z (q_z * L)
[mm]	[kN/m]	[kN]
1000	**112,43**	**112,43**
2000	**35,94**	**71,89**
3000	**15,88**	**47,65**
4000	**7,05**	**28,19**
5000	**3,61**	**18,04**
6000	**2,09**	**12,53**

q_z [kN/m] as permanent load over L.

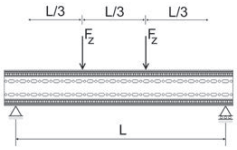
Point Load



L_{max}	$F_{z, perm}$
[mm]	[N]
1000	**72,13**
2000	**35,94**
3000	**23,82**
4000	**17,62**
5000	**11,28**
6000	**7,83**

F_z [kN] as a permanent load at L/2.

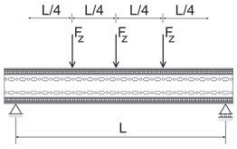
2 Point Loads



L_{max}	$F_{z, perm}$
[mm]	[N]
1000	**54,10**
2000	**26,96**
3000	**17,87**
4000	**10,34**
5000	**6,62**
6000	**4,60**

F_z [kN] as permanent loads at L/3 and 2*L/3.

3 Point Loads



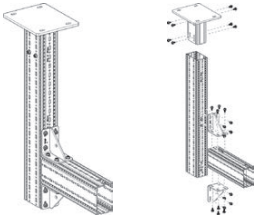
L_{max}	$F_{z, perm}$
[mm]	[N]
1000	**36,07**
2000	**17,97**
3000	**11,91**
4000	**7,42**
5000	**4,75**
6000	**3,30**

F_z [kN] as permanent loads at L/4, L/2 and 3*L/4.

Max. bending L/200.

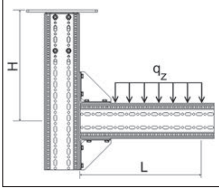
Working loads in accordance with Eurocode 3

L-Construction F 100/160



Part List
1 x End Support WBD F 100/160
2 x Beam Section TP F 100/160
2 x Corner Bracket WD F 100 140/140
24 x Self-Forming-Screw FLS F

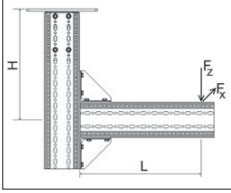
Distributed Load



H_{max} \ L_{max}	300		500		700		900		1100	
	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)
[mm]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]
2000	**23,30**	**6,99**	**9,91**	**4,96**	**5,40**	**3,78**	**3,36**	**3,02**	**2,27**	**2,49**
2500	**21,42**	**6,43**	**9,15**	**4,58**	**4,99**	**3,49**	**3,11**	**2,79**	**2,10**	**2,31**
3000	**19,82**	**5,94**	**8,50**	**4,25**	**4,64**	**3,25**	**2,89**	**2,60**	**1,95**	**2,14**
3500	**18,43**	**5,53**	**7,93**	**3,96**	**4,33**	**3,03**	**2,70**	**2,43**	**1,82**	**2,00**

q_z [kN/m] as permanent load over L.

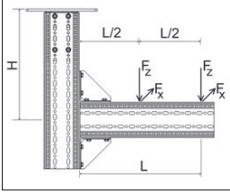
Point Load



H_{max} \ L_{max}	300		500		700		900		1100	
	$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for	
	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
2000	**4,04**	**3,10**	**2,71**	**2,71**	**2,01**	**2,01**	**1,58**	**1,58**	**1,29**	**1,29**
2500	**3,72**	**2,63**	**2,51**	**2,38**	**1,87**	**1,87**	**1,47**	**1,47**	**1,20**	**1,20**
3000	**3,46**	**2,28**	**2,34**	**2,09**	**1,74**	**1,74**	**1,37**	**1,37**	**1,12**	**1,12**
3500	**3,23**	**2,02**	**2,19**	**1,87**	**1,63**	**1,63**	**1,28**	**1,28**	**1,04**	**1,04**

F_z [kN] as a permanent load at distance L; F_x [kN] as a variable load at distance L.

2 Point Loads

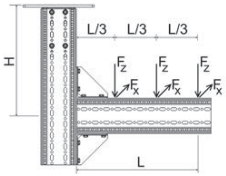


H_{max} \ L_{max}	300		500		700		900		1100	
	$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for	
	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
2000	**2,56**	**1,62**	**1,76**	**1,48**	**1,32**	**1,32**	**1,04**	**1,04**	**0,85**	**0,85**
2500	**2,36**	**1,37**	**1,62**	**1,26**	**1,22**	**1,170**	**0,96**	**0,96**	**0,79**	**0,79**
3000	**2,19**	**1,18**	**1,51**	**1,10**	**1,13**	**1,03**	**0,90**	**0,90**	**0,73**	**0,73**
3500	**2,04**	**1,04**	**1,41**	**0,98**	**1,06**	**0,92**	**0,84**	**0,84**	**0,69**	**0,69**

F_z [kN] as permanent loads at distance L and L/2; F_x [kN] as variable loads at distance L and L/2.

Working loads in accordance with Eurocode 3

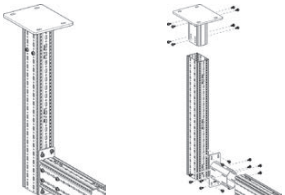
3 Point Loads



L_{max} / H_{max}	300		500		700		900		1100	
	$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for	
	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
2000	**1,86**	**1,10**	**1,28**	**1,01**	**0,96**	**0,93**	**0,76**	**0,76**	**0,63**	**0,63**
2500	**1,71**	**0,92**	**1,18**	**0,86**	**0,89**	**0,80**	**0,71**	**0,71**	**0,58**	**0,58**
3000	**1,59**	**0,80**	**1,10**	**0,75**	**0,83**	**0,70**	**0,66**	**0,66**	**0,54**	**0,54**
3500	**1,48**	**0,70**	**1,03**	**0,66**	**0,78**	**0,63**	**0,62**	**0,59**	**0,51**	**0,51**

F_z [kN] as permanent loads at distance L, 2*L/3 and L/3; F_x [kN] as variable loads at distance L, 2*L/3 and L/3.

For assembly with STA F 100 - 100/160 the loads have to be reduced by 10 % reduction ratio F_z.

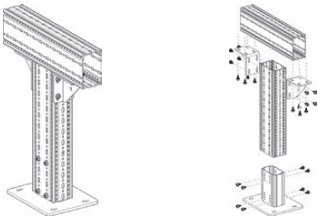


Part List
1 x End Support WBD F 100/160
2 x Beam Section TP F 100/160
1 x End Support STA F 100 - 100/160
20 x Self-Forming-Screw FLS F

All illustrated structures are able to be installed standing as well.
Friction coefficient $\mu_0 = 0,2$ for friction in longitudinal direction. Max. deviation H/100; L/100.

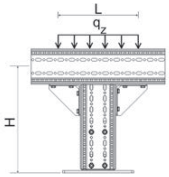
Working loads in accordance with Eurocode 3

T-Support F 100/160



Part List
1 x End Support WBD F 100/160
2 x Beam Section TP F 100/160
2 x Corner Bracket WD F 100
24 x Self-Forming-Screw FLS F

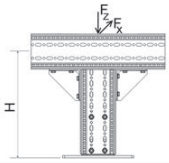
Distributed Load - symmetrical



H_{max}	$q_{z, perm}$	F_z ($q_{z, perm}$ * 1m)
[mm]	[kN/m]	[kN]
2000	**15,89**	**15,89**
2500	**15,81**	**15,81**
3000	**15,73**	**15,73**
3500	**15,65**	**15,65**

q_z [kN/m] as permanent load over L; L_{max} = 1.100 mm.

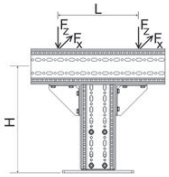
Point Load - centrical



H_{max}	$F_{z, perm}$ for $F_x = 0$	$F_{z, perm}$ for $F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]
2000	**15,27**	**3,35**
2500	**15,19**	**2,52**
3000	**15,11**	**1,98**
3500	**15,04**	**1,61**

F_z [kN] as a permanent load; F_x [kN] as a variable load;
Central load introduction for planned eccentricity ± 50 mm.

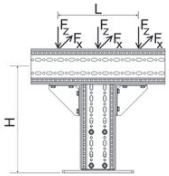
2 Point Loads - symmetrical



H_{max}	$F_{z, perm}$ for $F_x = 0$	$F_{z, perm}$ for $F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]
2000	**7,93**	**1,75**
2500	**7,89**	**1,30**
3000	**7,85**	**1,02**
3500	**7,81**	**0,82**

F_z [kN] as permanent loads; F_x [kN] as variable loads; L_{max} = 1.100 mm.

3 Point Loads - symmetrical



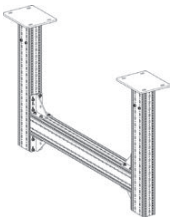
H_{max}	$F_{z, perm}$ for $F_x = 0$	$F_{z, perm}$ for $F_x = \mu_0 * F_z$
[mm]	[kN/m]	[kN]
2000	**5,29**	**1,17**
2500	**5,26**	**0,87**
3000	**5,23**	**0,68**
3500	**5,21**	**0,55**

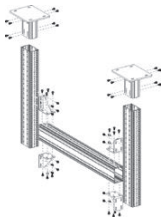
F_z [kN] as permanent loads; F_x [kN] as variable loads; L_{max} = 1.100 mm.

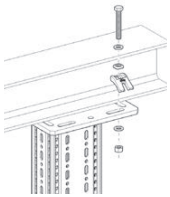
Friction coefficient μ_0 = 0,2 for friction in longitudinal direction. Max. deviation H/150.

Working loads in accordance with Eurocode 3

Frame F 100/160

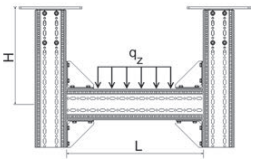






Part List
2 x End Support WBD F 100/160
3 x Beam Section TP F 100/160
4 x Corner Bracket WD F 100
48 x Self-Forming-Screw FLS F

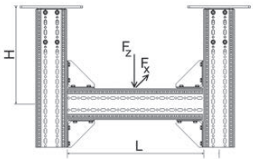
Distributed Load



L_{max} / H_{max}	1500		2000		2500		3000		3500		4000	
	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)
[mm]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]
2000	**26,71**	**32,58**	**18,80**	**32,34**	**14,45**	**32,07**	**11,69**	**31,79**	**9,78**	**31,50**	**8,26**	**30,72**
2500	**26,49**	**32,31**	**18,63**	**32,04**	**14,30**	**31,74**	**11,55**	**31,42**	**9,65**	**31,09**	**8,26**	**30,74**
3000	**26,29**	**32,07**	**18,48**	**31,78**	**14,17**	**31,45**	**11,43**	**31,10**	**9,55**	**30,74**	**8,16**	**30,36**
3500	**26,11**	**31,85**	**18,34**	**31,54**	**14,05**	**31,19**	**11,33**	**30,82**	**9,45**	**30,43**	**8,07**	**30,03**
4000	**25,94**	**31,64**	**18,21**	**31,32**	**13,95**	**30,96**	**11,24**	**30,58**	**9,37**	**30,18**	**7,93**	**29,51**

q_z [kN/m] as permanent load over L.

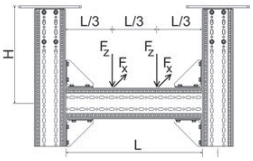
Point Load



L_{max} / H_{max}	1500		2000		2500		3000		3500		4000	
	$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for	
	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
2000	**32,52**	**7,96**	**32,21**	**7,93**	**31,76**	**7,88**	**27,97**	**7,83**	**24,47**	**7,78**	**21,81**	**7,57**
2500	**32,23**	**6,47**	**31,89**	**6,44**	**31,51**	**6,40**	**27,81**	**6,36**	**24,33**	**6,32**	**21,67**	**6,22**
3000	**31,97**	**5,44**	**31,61**	**5,42**	**31,17**	**5,39**	**27,65**	**5,37**	**24,18**	**5,30**	**21,54**	**5,17**
3500	**31,75**	**4,60**	**31,36**	**4,58**	**30,89**	**4,54**	**27,49**	**4,49**	**24,04**	**4,43**	**21,42**	**4,35**
4000	**31,52**	**3,87**	**31,11**	**3,85**	**30,64**	**3,83**	**27,33**	**3,80**	**23,90**	**3,76**	**21,29**	**3,69**

F_z [kN] as a permanent load at distance L/2; F_x [kN] as a variable load at distance L/2.

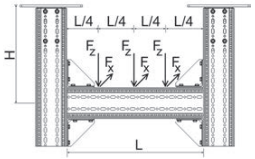
2 Point Loads



L_{max} / H_{max}	1500		2000		2500		3000		3500		4000	
	$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for	
	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
2000	**16,27**	**3,98**	**16,13**	**3,97**	**15,98**	**3,95**	**15,81**	**3,93**	**15,38**	**3,90**	**13,71**	**3,88**
2500	**16,14**	**3,23**	**15,98**	**3,22**	**15,80**	**3,21**	**15,61**	**3,19**	**15,41**	**3,17**	**13,49**	**3,15**
3000	**16,01**	**2,72**	**15,84**	**2,71**	**15,65**	**2,70**	**15,44**	**2,69**	**15,22**	**2,67**	**13,29**	**2,61**
3500	**15,90**	**2,30**	**15,72**	**2,29**	**15,51**	**2,28**	**15,29**	**2,26**	**15,06**	**2,23**	**13,10**	**2,19**
4000	**15,79**	**1,93**	**15,60**	**1,93**	**15,39**	**1,92**	**15,16**	**1,91**	**14,91**	**1,89**	**12,92**	**1,87**

F_z [kN] as permanent loads at distance 2*L/3 and L/3; F_x [kN] as variable loads at distance 2*L/3 and L/3.

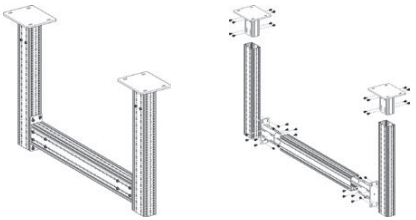
3 Point Loads



L_{max} / H_{max}	1500		2000		2500		3000		3500		4000	
	$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for	
	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
2000	**10,85**	**2,66**	**10,76**	**2,64**	**10,66**	**2,63**	**10,53**	**2,62**	**10,44**	**2,61**	**9,52**	**2,59**
2500	**10,76**	**2,16**	**10,66**	**2,15**	**10,55**	**2,14**	**10,43**	**2,13**	**10,30**	**2,12**	**9,64**	**2,10**
3000	**10,68**	**1,82**	**10,57**	**1,81**	**10,45**	**1,80**	**10,32**	**1,79**	**10,18**	**1,78**	**9,49**	**1,75**
3500	**10,61**	**1,53**	**10,49**	**1,53**	**10,36**	**1,52**	**10,22**	**1,51**	**10,07**	**1,49**	**9,35**	**1,47**
4000	**10,54**	**1,29**	**10,41**	**1,29**	**10,28**	**1,28**	**10,13**	**1,27**	**9,97**	**1,26**	**9,22**	**1,25**

F_z [kN] as permanent loads at distance 3*L/4, L/2 and L/4; F_x [kN] as variable loads at distance 3*L/4, L/2 and L/4.

For assembly with STA F 100 - 100/160 F_z has to be reduced by the reduction ratio F_a.



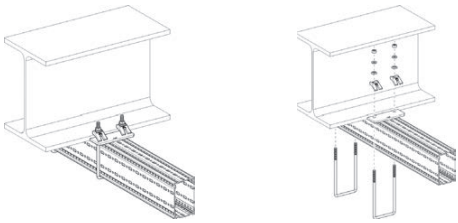
Part List
2 x End Support WBD F 100/160
3 x Beam Section TP F 100/160
2 x End Support STA F 100 - 100/160
24 x Self-Forming-Screw FLS F

	Reduction ratio F_a [%]	
	$F_{z,perm}$ for	
L (mm)	$F_x = 0$	$F_x = 0{,}2 * F_z$
2000	**-30%**	**0%**
2500	**-38%**	**0%**
3000	**-45%**	**0%**
3500	**-53%**	**0%**
4000	**-60%**	**0%**

All illustrated structures are able to be installed standing as well.
Friction coefficient $\mu_0 = 0{,}2$ for friction in longitudinal direction. Max. deviation H/100; L/200.

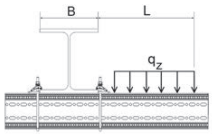
Working loads in accordance with Eurocode 3

Joining Beam Bracket F 100/160 horizontal



Part List
1 x Beam Section TP F 100/160
2 x U-Holder SB F 100/160-40

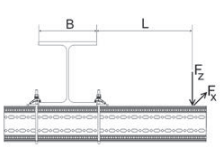
Distributed Load



B	100		150		200		250		300	
L_{max}	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)
[mm]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]
300	**14,39**	**4,32**	**20,42**	**6,13**	**24,82**	**7,45**	**28,17**	**8,45**	**30,81**	**9,24**
500	**5,64**	**2,82**	**8,38**	**4,19**	**10,53**	**5,26**	**12,27**	**6,13**	**13,70**	**6,85**
700	**3,02**	**2,12**	**4,62**	**3,23**	**5,93**	**4,15**	**7,03**	**4,92**	**7,96**	**5,58**
900	**1,88**	**1,69**	**2,93**	**2,64**	**3,82**	**3,44**	**4,59**	**4,13**	**5,26**	**4,73**
1100	**1,28**	**1,41**	**2,02**	**2,22**	**2,67**	**2,94**	**3,24**	**3,56**	**3,74**	**4,12**

q_z [kN/m] as permanent load over L.

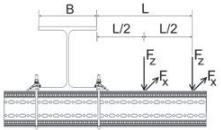
Point Load



B	100		150		200		250		300	
	$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for	
L_{max}	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
300	**2,36**	**1,12**	**3,51**	**1,67**	**4,43**	**2,10**	**5,17**	**2,45**	**5,79**	**2,75**
500	**1,55**	**0,74**	**2,41**	**1,14**	**3,14**	**1,49**	**3,77**	**1,79**	**4,32**	**2,05**
700	**1,16**	**0,55**	**1,83**	**0,87**	**2,43**	**1,15**	**2,96**	**1,41**	**3,44**	**1,63**
900	**0,92**	**0,44**	**1,48**	**0,70**	**1,98**	**0,94**	**2,44**	**1,16**	**2,86**	**1,36**
1100	**0,77**	**0,36**	**1,24**	**0,59**	**1,67**	**0,79**	**2,08**	**0,99**	**2,45**	**1,16**

F_z [kN] as a permanent load at distance L; F_x [kN] as a variable load at distance L.

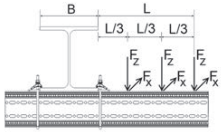
2 Point Loads



B	100		150		200		250		300	
	$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for	
L_{max}	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
300	**1,46**	**0,69**	**2,12**	**1,01**	**2,62**	**1,24**	**3,01**	**1,43**	**3,32**	**1,57**
500	**0,98**	**0,47**	**1,50**	**0,71**	**1,92**	**0,91**	**2,27**	**1,08**	**2,57**	**1,22**
700	**0,74**	**0,35**	**1,16**	**0,55**	**1,51**	**0,72**	**1,82**	**0,86**	**2,09**	**0,99**
900	**0,60**	**0,28**	**0,94**	**0,45**	**1,25**	**0,59**	**1,52**	**0,72**	**1,76**	**0,84**
1100	**0,50**	**0,24**	**0,79**	**0,38**	**1,06**	**0,50**	**1,30**	**0,62**	**1,53**	**0,72**

F_z [kN] as permanent loads at distance L and L/2; F_x [kN] as variable loads at distance L and L/2.

3 Point Loads



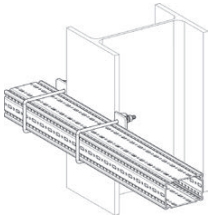
B	100		150		200		250		300	
	$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for	
L_{max}	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
300	**1,06**	**0,50**	**1,52**	**0,72**	**1,86**	**0,88**	**2,12**	**1,00**	**2,33**	**1,10**
500	**0,72**	**0,34**	**1,08**	**0,52**	**1,38**	**0,65**	**1,62**	**0,77**	**1,82**	**0,87**
700	**0,55**	**0,26**	**0,84**	**0,40**	**1,10**	**0,52**	**1,31**	**0,62**	**1,50**	**0,71**
900	**0,44**	**0,21**	**0,69**	**0,33**	**0,91**	**0,43**	**1,10**	**0,52**	**1,27**	**0,61**
1100	**0,37**	**0,18**	**0,58**	**0,28**	**0,78**	**0,37**	**0,95**	**0,45**	**1,11**	**0,53**

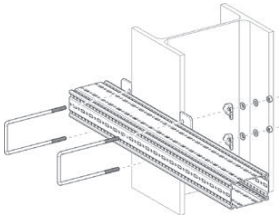
F_z [kN] as permanent loads at distance L, 2*L/3 and L/3; F_z [kN] as variable loads at distance L, 2*L/3 and L/3.

Friction coefficient $\mu_0 = 0,2$ for friction in longitudinal direction. Max. deviation L/100.

Working loads in accordance with Eurocode 3

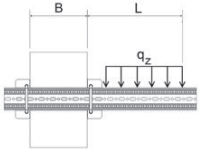
Joining Beam Bracket F 100/160 vertical





Part List
1 x Beam Section TP F 100/160
2 x U-Holder SB F 100/160-40

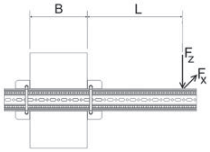
Distributed Load



B	100		150		200		250		300	
L_{max}	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)
[mm]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]
300	**3,21**	**0,96**	**4,46**	**1,34**	**5,34**	**1,60**	**5,99**	**1,80**	**6,49**	**1,95**
500	**1,36**	**0,68**	**1,98**	**0,99**	**2,47**	**1,23**	**2,86**	**1,43**	**3,17**	**1,58**
700	**0,75**	**0,52**	**1,13**	**0,79**	**1,44**	**1,00**	**1,69**	**1,18**	**1,91**	**1,34**
900	**0,47**	**0,43**	**0,73**	**0,65**	**0,94**	**0,85**	**1,12**	**1,01**	**1,28**	**1,15**
1100	**0,33**	**0,36**	**0,51**	**0,56**	**0,67**	**0,73**	**0,80**	**0,88**	**0,92**	**1,02**

q_z [kN/m] as permanent load over L.

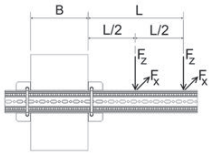
Point Load



B	100		150		200		250		300	
	$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for	
L_{max}	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
300	**0,59**	**0,56**	**0,88**	**0,84**	**1,11**	**1,06**	**1,29**	**1,24**	**1,45**	**1,39**
500	**0,39**	**0,37**	**0,60**	**0,58**	**0,79**	**0,75**	**0,94**	**0,90**	**1,08**	**1,03**
700	**0,29**	**0,28**	**0,46**	**0,44**	**0,61**	**0,58**	**0,74**	**0,71**	**0,86**	**0,83**
900	**0,23**	**0,22**	**0,37**	**0,35**	**0,50**	**0,48**	**0,61**	**0,59**	**0,72**	**0,69**
1100	**0,19**	**0,18**	**0,31**	**0,30**	**0,42**	**0,40**	**0,52**	**0,50**	**0,61**	**0,59**

F_z [kN] as a permanent load at distance L; F_x [kN] as a variable load at distance L.

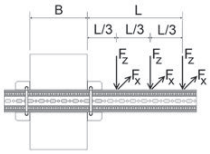
2 Point Loads



B	100		150		200		250		300	
	$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for	
L_{max}	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
300	**0,37**	**0,35**	**0,53**	**0,51**	**0,65**	**0,63**	**0,75**	**0,72**	**0,83**	**0,80**
500	**0,25**	**0,24**	**0,37**	**0,36**	**0,48**	**0,46**	**0,57**	**0,54**	**0,64**	**0,62**
700	**0,19**	**0,18**	**0,29**	**0,28**	**0,38**	**0,36**	**0,46**	**0,44**	**0,52**	**0,50**
900	**0,15**	**0,14**	**0,24**	**0,23**	**0,31**	**0,30**	**0,38**	**0,36**	**0,44**	**0,42**
1100	**0,13**	**0,12**	**0,20**	**0,19**	**0,27**	**0,26**	**0,33**	**0,31**	**0,38**	**0,37**

F_z [kN] as permanent loads at distance L and L/2; F_x [kN] as variable loads at distance L and L/2.

3 Point Loads



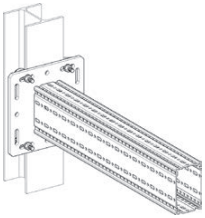
B	100		150		200		250		300	
	$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for	
L_{max}	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
300	**0,27**	**0,25**	**0,38**	**0,36**	**0,46**	**0,45**	**0,53**	**0,51**	**0,58**	**0,56**
500	**0,18**	**0,17**	**0,27**	**0,26**	**0,35**	**0,33**	**0,41**	**0,39**	**0,46**	**0,44**
700	**0,14**	**0,13**	**0,21**	**0,20**	**0,28**	**0,26**	**0,33**	**0,32**	**0,38**	**0,36**
900	**0,11**	**0,11**	**0,17**	**0,17**	**0,23**	**0,22**	**0,28**	**0,27**	**0,32**	**0,31**
1100	**0,09**	**0,09**	**0,15**	**0,14**	**0,20**	**0,19**	**0,24**	**0,23**	**0,28**	**0,27**

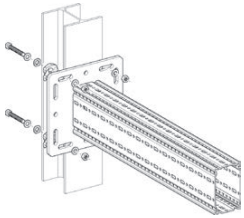
F_z [kN] as permanent loads at distance L, 2*L/3 and L/3; F_z [kN] as variable loads at distance L, 2*L/3 and L/3.

Friction coefficient $\mu_0 = 0,2$ for friction in longitudinal direction; Max. deviation L/100.

Working loads in accordance with Eurocode 3

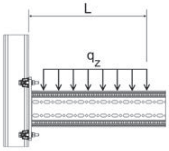
Beam Bracket F 100/160 - Variante a) clamped





Part List
1 x Beam Bracket TKO F 100/160
1 x Assembly Set MS 5P M12 S

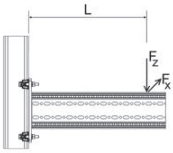
Distributed Load



L L_{max}	$q_{z,\,perm}$	F_z (q_z * L)
[mm]	[kN/m]	[kN]
300	**47,89**	**14,37**
500	**36,39**	**18,20**
700	**18,57**	**13,00**
900	**11,23**	**10,11**
1100	**7,52**	**8,27**

q_z [kN/m] as permanent load over L.

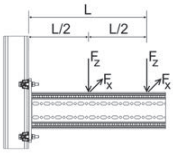
Point Load



	$F_{z,\,perm}$ for	
L_{max}	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]
300	**15,16**	**9,35**
500	**9,10**	**5,61**
700	**6,50**	**4,01**
900	**5,05**	**3,12**
1100	**4,14**	**2,55**

F_z [kN] as a permanent load at distance L; F_x [kN] as a variable load at distance L.

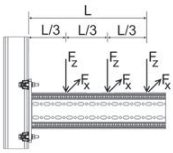
2 Point Loads



	$F_{z,\,perm}$ for	
L_{max}	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]
300	**9,41**	**6,23**
500	**6,07**	**3,74**
700	**4,33**	**2,67**
900	**3,37**	**2,08**
1100	**2,76**	**1,70**

F_z [kN] as permanent loads at distance L and L/2; F_x [kN] as variable loads at distance L and L/2.

3 Point Loads



	$F_{z,\,perm}$ for	
L_{max}	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]
300	**5,69**	**4,67**
500	**4,55**	**2,80**
700	**3,25**	**2,00**
900	**2,53**	**1,56**
1100	**2,07**	**1,27**

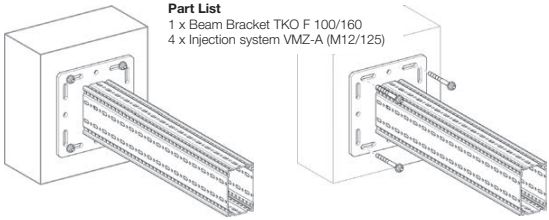
F_z [kN] as permanent loads at distance L, 2*L/3 and L/3; F_x [kN] as variable loads at distance L, 2*L/3 and L/3.

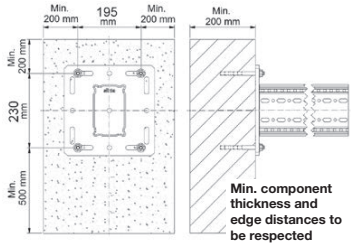
Friction coefficient $\mu_0 = 0{,}2$ for friction in longitudinal direction; Max. deviation L/100.

Working loads in accordance with Eurocode 3

Beam Bracket F 100/160 - Variante b) anchored

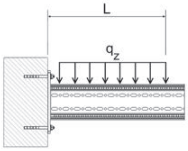
Part List
1 x Beam Bracket TKO F 100/160
4 x Injection system VMZ-A (M12/125)





Min. component thickness and edge distances to be respected

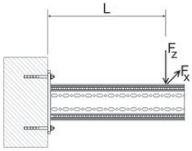
Distributed Load



L_{max}	$q_{z,perm}$	F_z (q_z * L)
[mm]	[kN/m]	[kN]
300	**49,07**	**14,72**
500	**26,18**	**13,09**
700	**16,83**	**11,78**
900	**11,90**	**10,71**
1100	**8,93**	**9,82**

q_z [kN/m] as permanent load over L.

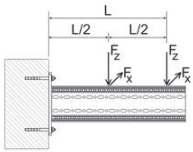
Point Load



L_{max}	$F_{z,perm}$ for $F_x = 0$	$F_{z,perm}$ for $F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]
300	**12,40**	**12,40**
500	**10,25**	**10,25**
700	**8,73**	**8,73**
900	**7,07**	**7,07**
1100	**5,78**	**5,78**

F_z [kN] as a permanent load at distance L; F_x [kN] as a variable load at distance L.

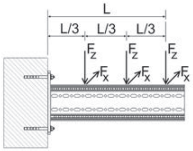
2 Point Loads



L_{max}	$F_{z,perm}$ for $F_x = 0$	$F_{z,perm}$ for $F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]
300	**6,73**	**6,73**
500	**5,75**	**5,75**
700	**5,01**	**5,01**
900	**4,45**	**4,45**
1100	**3,86**	**3,86**

F_z [kN] as permanent loads at distance L and L/2; F_x [kN] as variable loads at distance L and L/2.

3 Point Loads



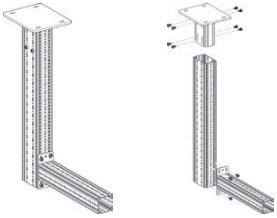
L_{max}	$F_{z,perm}$ for $F_x = 0$	$F_{z,perm}$ for $F_x = \mu_0 * F_z$
[mm]	[kN/m]	[kN]
300	**4,62**	**4,62**
500	**3,99**	**3,99**
700	**3,52**	**3,52**
900	**3,14**	**3,14**
1100	**2,84**	**2,84**

F_z [kN] as permanent loads at distance L, 2*L/3 and L/3; F_x [kN] as variable loads at distance L, 2*L/3 and L/3.

Friction coefficient μ_0 = 0,2 for friction in longitudinal direction; Max. deviation L/100.

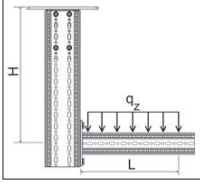
Working loads in accordance with Eurocode 3

L-Construction F 100/160 - 100



Part List
1 x End Support WBD F 100/160
1 x Beam Section TP F 100/160
1 x Cantilever Bracket AK F 100
12 x Self-Forming-Screw FLS F

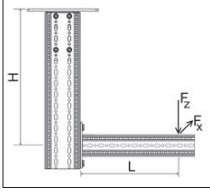
Distributed Load



H_{max} \ L_{max}	300		500		700		900		1100	
	$q_{z,perm}$	$F_z (q_z * L)$	$q_{z,perm}$	$F_z (q_z * L)$	$q_{z,perm}$	$F_z (q_z * L)$	$q_{z,perm}$	$F_z (q_z * L)$	$q_{z,perm}$	$F_z (q_z * L)$
[mm]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]
2000	**22,46**	**6,74**	**9,69**	**4,84**	**5,26**	**3,68**	**3,25**	**2,92**	**2,18**	**2,39**
2500	**20,64**	**6,19**	**8,95**	**4,48**	**4,87**	**3,41**	**3,02**	**2,71**	**2,02**	**2,23**
3000	**19,10**	**5,73**	**8,32**	**4,16**	**4,54**	**3,18**	**2,81**	**2,53**	**1,89**	**2,08**
3500	**17,76**	**5,33**	**7,77**	**3,88**	**4,25**	**2,98**	**2,64**	**2,37**	**1,77**	**1,95**

q_z [kN/m] as permanent load over L.

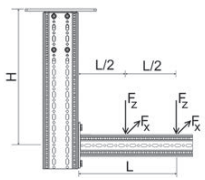
Point Load



H_{max} \ L_{max}	300		500		700		900		1100	
	$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for	
	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
2000	**4,00**	**3,39**	**2,65**	**2,49**	**1,94**	**1,94**	**1,50**	**1,50**	**1,21**	**1,21**
2500	**3,70**	**3,16**	**2,46**	**2,36**	**1,80**	**1,80**	**1,40**	**1,40**	**1,13**	**1,13**
3000	**3,44**	**2,88**	**2,30**	**2,25**	**1,69**	**1,69**	**1,31**	**1,31**	**1,06**	**1,06**
3500	**3,21**	**2,36**	**2,15**	**2,14**	**1,58**	**1,58**	**1,23**	**1,23**	**0,99**	**0,99**

F_z [kN] as a permanent load at distance L; F_x [kN] as a variable load at distance L.

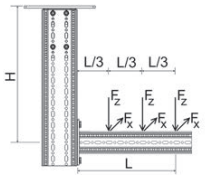
2 Point Loads



H_{max} \ L_{max}	300		500		700		900		1100	
	$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for	
	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
2000	**2,57**	**1,95**	**1,74**	**1,49**	**1,29**	**1,20**	**1,01**	**1,00**	**0,82**	**0,82**
2500	**2,37**	**1,80**	**1,61**	**1,40**	**1,20**	**1,14**	**0,94**	**0,94**	**0,76**	**0,76**
3000	**2,20**	**1,44**	**1,50**	**1,32**	**1,12**	**1,08**	**0,88**	**0,88**	**0,71**	**0,71**
3500	**2,05**	**1,18**	**1,40**	**1,18**	**1,05**	**1,03**	**0,82**	**0,82**	**0,67**	**0,67**

F_z [kN] as permanent loads at distance L and L/2; F_x [kN] as variable loads at distance L and L/2.

3 Point Loads



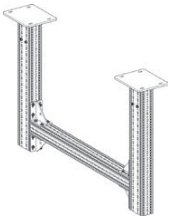
H_{max} \ L_{max}	300		500		700		900		1100	
	$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for	
	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
2000	**1,87**	**1,37**	**1,28**	**1,06**	**0,95**	**0,86**	**0,74**	**0,72**	**0,60**	**0,60**
2500	**1,72**	**1,20**	**1,18**	**0,99**	**0,88**	**0,81**	**0,69**	**0,69**	**0,56**	**0,56**
3000	**1,60**	**0,96**	**1,10**	**0,93**	**0,82**	**0,77**	**0,65**	**0,65**	**0,53**	**0,53**
3500	**1,49**	**0,79**	**1,03**	**0,79**	**0,77**	**0,73**	**0,61**	**0,61**	**0,49**	**0,49**

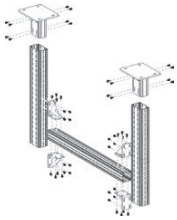
F_z [kN] as permanent loads at distance L, 2*L/3 and L/2; F_x [kN] as variable loads at distance L, 2*L/3 and L/2.

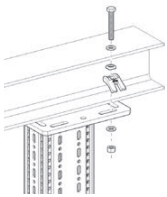
All illustrated structures are able to be installed standing as well.
Friction coefficient μ_0 = 0,2 for friction in longitudinal direction; Max. deviation H/100; L/100.

Working loads in accordance with Eurocode 3

Frame F 100/160 - 100

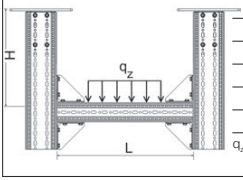






Part List
2 x End Support WBD F 100/160
2 x Beam Section TP F 100/160
1 x Beam Section TP F 100
4 x Corner Bracket WD F 100
48 x Self-Forming-Screw FLS F

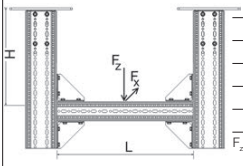
Distributed Load



H_{max} \ L_{max}	1500		2000		2500		3000		3500		4000	
	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)	$q_{z,perm}$	F_z (q_z * L)
[mm]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]	[kN/m]	[kN]
1500	**22,07**	**26,92**	**16,39**	**28,20**	**12,90**	**28,63**	**9,64**	**26,22**	**6,61**	**21,28**	**4,67**	**17,37**
2000	**22,07**	**26,92**	**16,39**	**28,20**	**12,90**	**28,63**	**9,60**	**26,12**	**6,48**	**20,87**	**4,58**	**17,04**
2500	**22,07**	**26,92**	**16,39**	**28,20**	**12,90**	**28,63**	**9,41**	**25,60**	**6,35**	**20,46**	**4,49**	**16,72**
3000	**21,95**	**26,78**	**16,27**	**27,98**	**12,89**	**28,62**	**9,23**	**25,11**	**6,24**	**20,08**	**4,41**	**16,42**
3500	**21,87**	**26,68**	**16,22**	**27,90**	**12,81**	**28,43**	**9,06**	**24,65**	**6,12**	**19,72**	**4,34**	**16,13**

q_z [kN/m] as permanent load over L.

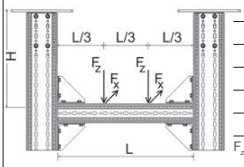
Point Load



H_{max} \ L_{max}	1500		2000		2500		3000		3500		4000	
	$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for	
	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
1500	**29,43**	**9,89**	**23,20**	**9,82**	**19,25**	**9,75**	**16,51**	**9,68**	**13,39**	**8,88**	**10,73**	**7,91**
2000	**29,20**	**7,57**	**23,03**	**7,51**	**19,12**	**7,45**	**16,41**	**7,39**	**13,15**	**7,29**	**10,55**	**6,76**
2500	**28,96**	**6,13**	**22,85**	**6,09**	**18,98**	**6,04**	**16,29**	**5,99**	**12,91**	**5,94**	**10,37**	**5,68**
3000	**28,72**	**5,16**	**22,67**	**5,12**	**18,83**	**5,09**	**16,17**	**5,04**	**12,69**	**4,95**	**10,19**	**4,77**
3500	**28,49**	**4,40**	**22,49**	**4,37**	**18,69**	**4,32**	**16,00**	**4,25**	**12,48**	**4,16**	**10,03**	**4,05**

F_z [kN] as a permanent load at distance L/2; F_x [kN] as a variable load at distance L/2.

2 Point Loads



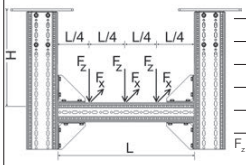
H_{max} \ L_{max}	1500		2000		2500		3000		3500		4000	
	$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for	
	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
1500	**16,45**	**4,95**	**16,24**	**4,92**	**13,53**	**4,89**	**10,17**	**4,86**	**7,95**	**4,57**	**6,39**	**4,11**
2000	**16,45**	**3,79**	**16,24**	**3,76**	**13,25**	**3,74**	**9,98**	**3,72**	**7,80**	**3,69**	**6,27**	**3,46**
2500	**16,45**	**3,07**	**16,24**	**3,05**	**12,99**	**3,03**	**9,79**	**3,01**	**7,65**	**2,99**	**6,16**	**2,88**
3000	**16,38**	**2,58**	**16,09**	**2,57**	**12,74**	**2,55**	**9,61**	**2,53**	**7,52**	**2,49**	**6,05**	**2,41**
3500	**16,31**	**2,20**	**16,02**	**2,18**	**12,51**	**2,16**	**9,44**	**2,13**	**7,39**	**2,09**	**5,95**	**2,04**

F_z [kN] as permanent loads at distance 2*L/3 and L/3; F_x [kN] as variable loads at distance 2*L/3 and L/3.

Working loads in accordance with Eurocode 3

Beam Section TP F 80/30

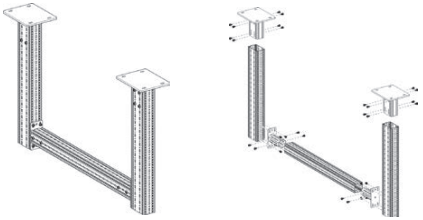
3 Point Loads



L_{max} / H_{max}	1500		2000		2500		3000		3500		4000	
	$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for		$F_{z,perm}$ for	
	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$	$F_x = 0$	$F_x = \mu_0 * F_z$
[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
1500	**10,99**	**3,30**	**10,86**	**3,28**	**9,80**	**3,26**	**7,58**	**3,25**	**5,93**	**3,08**	**4,77**	**2,79**
2000	**10,99**	**2,53**	**10,86**	**2,51**	**9,80**	**2,49**	**7,43**	**2,48**	**5,82**	**2,46**	**4,69**	**2,33**
2500	**10,99**	**2,05**	**10,85**	**2,03**	**9,64**	**2,02**	**7,29**	**2,01**	**5,71**	**1,99**	**4,60**	**1,93**
3000	**10,92**	**1,72**	**10,76**	**1,71**	**9,45**	**1,70**	**7,15**	**1,69**	**5,61**	**1,67**	**4,52**	**1,62**
3500	**10,87**	**1,47**	**10,71**	**1,46**	**9,28**	**1,44**	**7,02**	**1,42**	**5,51**	**1,40**	**4,44**	**1,36**

F_z [kN] as permanent loads at distance 3*L/4, L/2 and L/4; F_x [kN] as variable loads at distance 3*L/4, L/4 and L/4.

For assembly with STA F 100 - 100/160 F_z has to be reduced by the reduction ratio F_a.



Part List
2 x End Support WBD F 100/160
2 x Beam Section TP F 100/160
1 x Beam Section TP F 100
2 x End Support STA F 100
32 x Self-Forming-Screw FLS F

L (mm)	Reduction ratio F_a [%] $F_{z,perm}$ for $F_x = 0$	$F_x = 0{,}2 * F_z$
1500	**-15%**	**0%**
2000	**-25%**	**0%**
2500	**-30%**	**0%**
3000	**-30%**	**0%**
3500	**-35%**	**-5%**

All illustrated structures are able to be installed standing as well.
Friction coefficient $\mu_0 = 0{,}2$ for friction in longitudinal direction; Max. deviation H/100; Max. bending L/200.

Supports (Pipe Shoes)

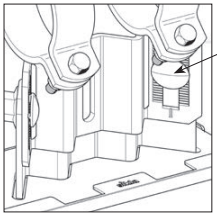
Application

The Sikla height- adjustable Supports (Pipe Shoes; HV 90, HV 150, HV 200) can be used as a Skid, a Guide or as a Fixed Point. The testing process of the individual Support types and the determination of the direction dependent permissible loads was carried out by the independent testing house TÜV Rheinland (Report No. 69617494/01).

Conformity

The Sikla Simotec Supports (Pipe Shoes) therefore fulfill DIN EN 13480-3 : 2012-11, where particularly in section 13.3.6.1 it is highlighted that the design of Pipe Support components is in accordance with DIN EN 1993.
For every Pipe Support type (incl. required connection kit) a declaration of conformity could be issued in accordance with ISO / IEC 17050.

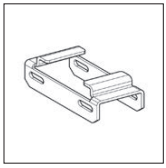
Installation

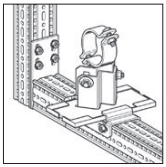


Special bolts for height- adjustable connection of lower and upper Pipe Shoe components.
Tightening torque: 80 Nm

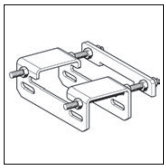
By combining ***Pipe Shoe LA or LC*** with the steel supporting structure and connecting parts below, it is possible to create a guided pipe shoe or a fixed point pipe shoe:

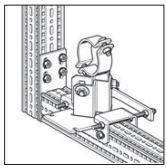
Guiding Support on siFramo
+ Guiding Bracket FW F ...



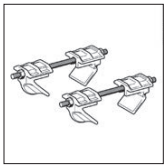


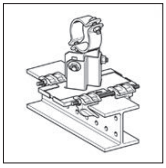
Fixed Point Support on siFramo
+ Fixed Point Bracket XW F ...



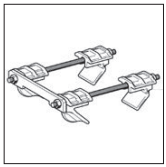


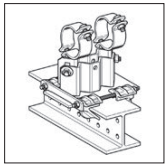
Guiding Support on steel beam section
+ Guiding Set FS ...





Fixed Point Support on steel beam section
+ Fixed Point Set XS ...





The dimension of the existing steel beam determines the required type of connection kit.
Can be installed on steel beams with flange width ≤ 300 mm and flange thickness ≤ 30 mm.

Design temperatures of pipe support components

The media temperature t_f has an influence on the system of the pipe support components. Acc. to DIN EN 13480-3 *„all components of the pipe support have to be designed based on a range of temperature from 0°C to 80°C. If the operational temperatures of the piping system are outside of this range, the corresponding values have to be specified.“*

During the design of pipe supports, components are basically assigned into 2 groups: inside and outside of insulation.

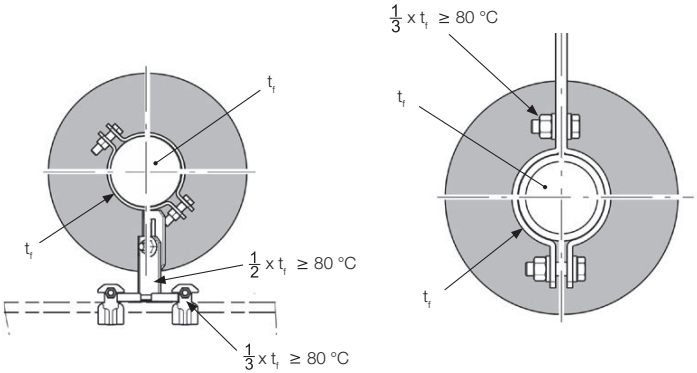
For all components beeing placed inside of an insulation the following values apply[2]:

Kind of component	Design temperature t of the pipe support (depending on the media temperature t_f)
Straps, pipe clamps and welded components with extensive contact to the piping system	$t = t_f$
Components not in contact with the piping system	$t = t_f$ - 20 °C
Bolts, nuts, etc.	$t = t_f$ - 30 °C

For all components beeing placed outside of the insulation the following values apply[3]:

Kind of component	Media temperature t_f	Design temperature t of the pipe support
Components in direct contact with the pipe	$t_f > 80$ °C	$t = \frac{1}{2} \times t_f$ (min. 80°C)
	$t_f \leq 80$ °C	t = 80 °C
Bolts, nuts, etc.	$t_f > 80$ °C	$t = \frac{1}{3} \times t_f$ (min. 80 °C)
	$t_f \leq 80$ °C	t = 80 °C

For clarification of the tables see the graphical illustration[4]:

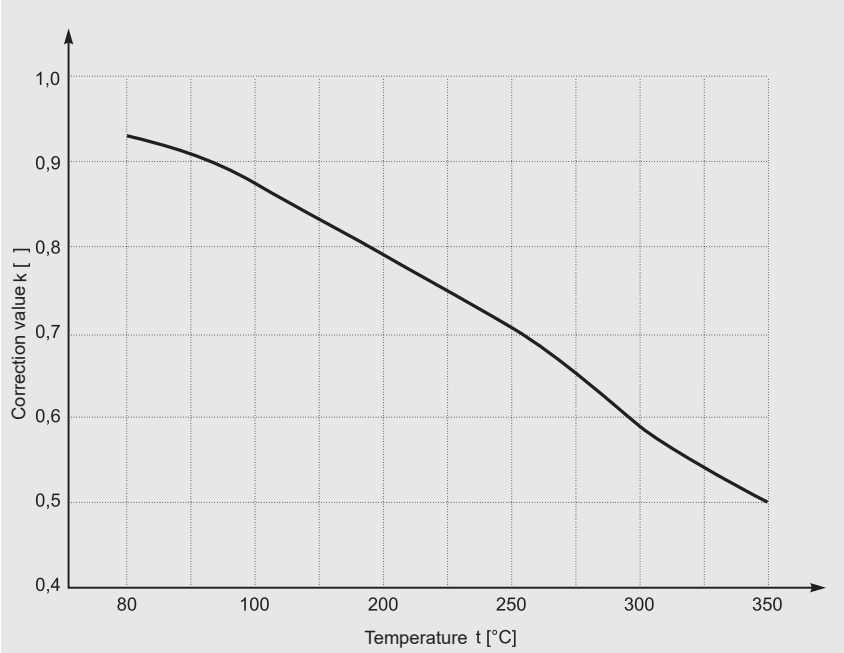


[1]Compare EN 13480-3:2014-12, Table 13.3.1
[2] Compare EN 13480-3:2014-12, Chapter 13.3.2.2-1
[3]Compare EN 13480-3:2014-12, Table 13.3.2-2
[4]Compare EN 13480-3:2014-12, Image 13.3.2-1

Correction values for pipe support components

The working loads of the SIKLA pipe shoes LA, LC and LD as well as for the rod hangers are valid for component temperatures up to 80°C. If components are getting warmer than 80°C in service, the stated working loads have to be added with the correction value k to reduce the working loads. Because SIKLA pipe support components are manufactured with steel grade S235JR (or higher), the appropriate correction value has to be applied.

Correction val k for S235JR depending on the temperature:



Correction values and practical application

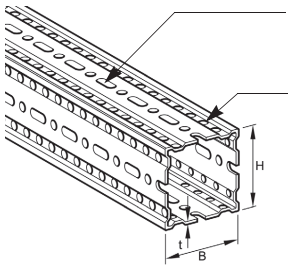
$F_{perm} \geq F_{exist}$

$(F_{perm} = F_{R,20°C} * k) \geq F_{exist}$

Temperature t [°C}	Correction value k [ ]
80	0.93
100	0.88
200	0.79
250	0.71
300	0.58
350	0.50

F_{perm}	permissible load of Sikla pipe shoe at temperature t_x [°C]
F_{exist}	pipe load according to structural analysis
$F_{R,20°C}$	permissible load of Sikla pipe shoe at 20°C
k	correction value

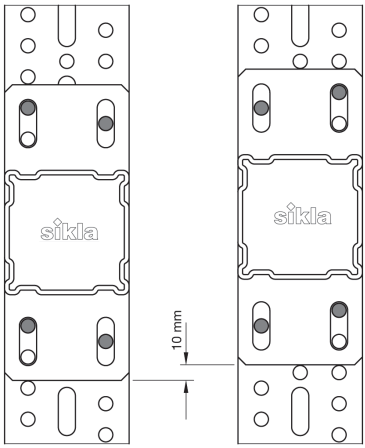
siFramo: Beam Section TP F and Self Forming Screw FLS



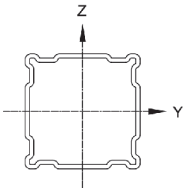
One Self Forming Screw FLS passes through the slot (11x30) to connect into the internal adapter elements within the box section e.g. square End Support to WBD F, octagonal End Support to STA F.

Self Forming Screws FLS screw directly into the 9.1mm holes (perforations) running along the outer edges of each face of the siFramo profile. All end plates of the connecting siFramo supports are fixed to the profile in this way. e.g. Cantilever Brackets AK F, End Supports STA F, Channel Adaptor SA F and Slide Sets GS F.

Fine and infinite adjustment of End Connectors
(e.g. Cantilever Brackets AK F 80):
The specially designed off-set hole pattern to the outer edges of each profile face ensures a continuous 4-bolt connection of the end plate along the complete surface (length) of the profile.



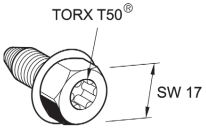
Technical Data



Description Beam Section [mm]	Description Axis	Thickn. s [mm]	Moment of Inertia I_y [cm⁴]	Moment of Inertia I_z [cm⁴]	Section Modulus W_y [cm³]	Section Modulus W_z [cm³]	Radius of Inertia i_y [cm]	Radius of Inertia i_z [cm]	Torsional Moment It [cm⁴]	Cross Section A [cm²]	Weight G [kg/m]
TP F 80/30		3.0	35.4*)	6.7*)	10.3*)	4.7*)	3.63	1.58	11.20	2.69*)	4.3
TP F 80/80		3.0	63.4*)		15.8*)		2.95		98.22*)	7.28	6.4
TP F 100/100		4.0	179.8*)		36.9*)		4.80		181.44	7.80*)	10.8
TP F 100/160		4.0	559.4*)	280.3*)	75.5*)	46.2*)	6.16	4.36	384.80	14.74*)	14.3

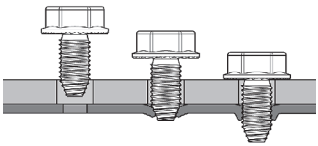
Beam Section TP F. Steel. Hot-dipped-galvanized according to DIN EN ISO 1461 tZn o.
All structural data takes perforation into account.
*) determination of effective values by tests.

Self Forming Screw FLS

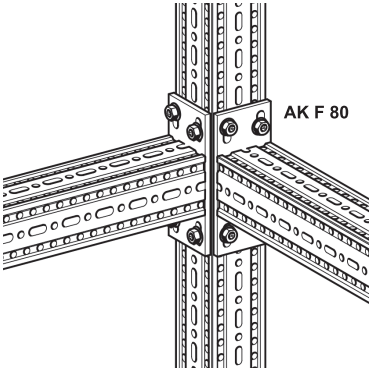


The non-cutting, cold formed threads of the screw form their own M10 threads to the perforated siFramo 80 profile. The low thread forming torque and resulting high clamping force, offers a superior process-reliable shake-proof fastening.
A special stop gearing provides additional safety against over-torquing.

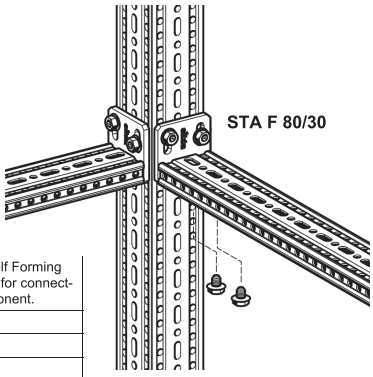
Caution!
- *Tightening Torque 50 Nm!*



siFramo: Cantilever Bracket AK F, End Support STA F and Bracket WD F



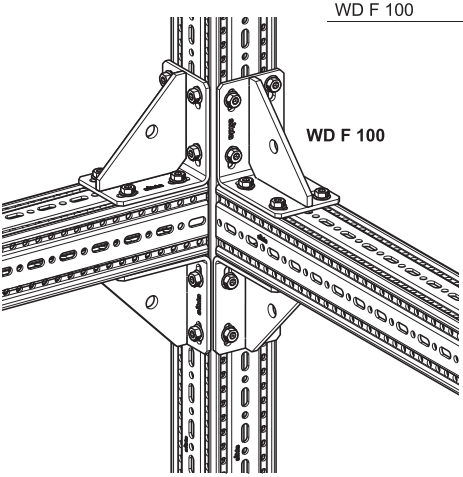
The self-forming screws cannot clash with each other inside the beam section when fastening end-connectors to adjacent faces of the beam section. The off-set pilot hole pattern means that multiple end-connectors may be fastened at the same datum position on one beam section.

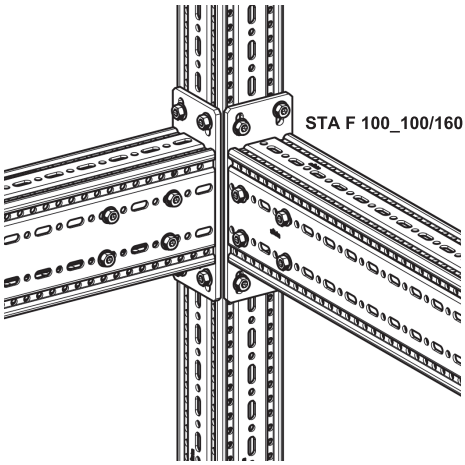


Note:

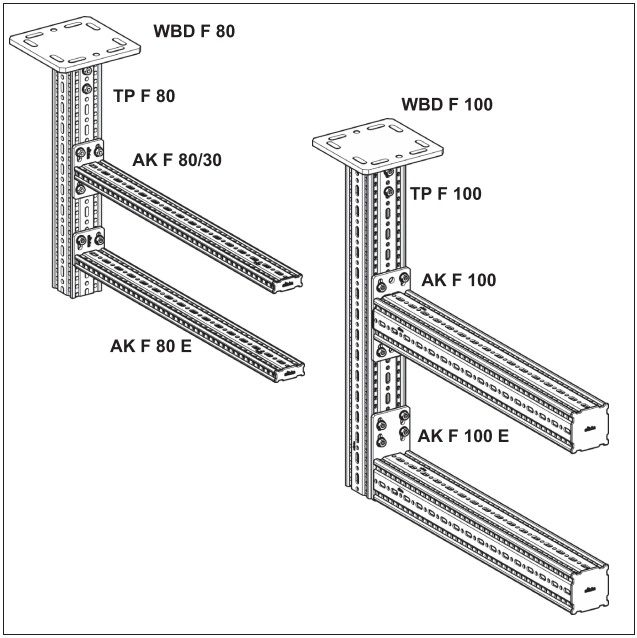
- *Each siFramo connector fastens to the beam sections by means of the Self Forming Screws, in accordance with the hole pattern of the slots (exception Corner Bracket WD F / End Support WBD F 100/160)*

Product name	Quantity of Self Forming Screws needed for connecting component.
AK F 80/30	4
AK F 80/30 E	2
AK F 80	4
AK F 100	4
AK F 100/160 E	4
STA F 80/30 E	2
STA F 80	4
STA F 100	4
STA F 100/160	4
WD F 100	8





siFramo: End Support WBD, Cantilever Bracket AK F and End Support STA F

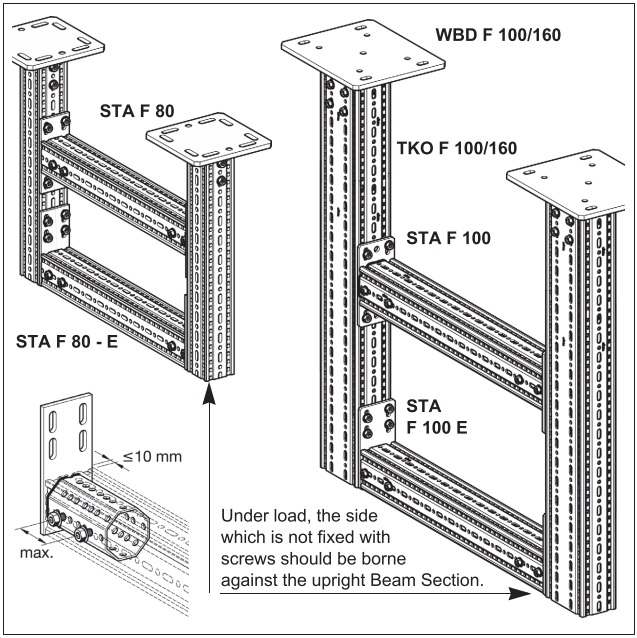


Cantilever Bracket AK F
(End Cap incl. in scope of delivery) for direct assembly to Beam Section F with 4 Self Forming Screws FLS F.

The hole pattern of the Mounting Plate allows a continuous height setting on Beam Section F.

Suitable for cantilevers up to 800mm

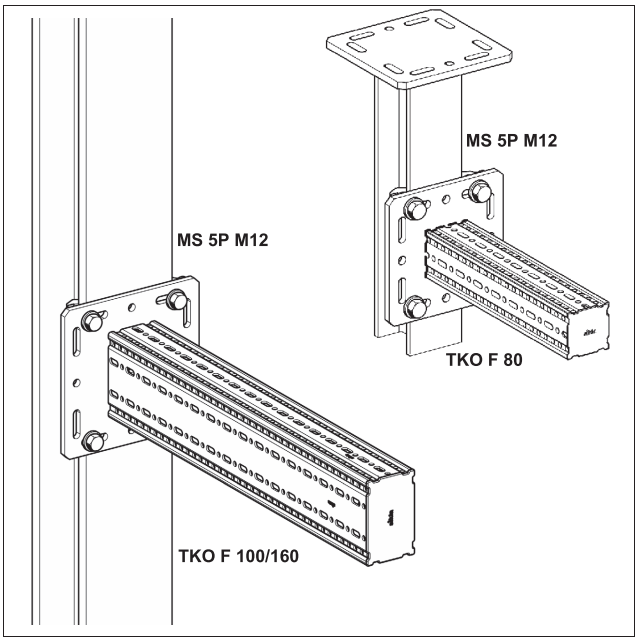
The Cantilever Bracket AK F E allows a flush corner to the underside of the profile.



End Support STA F
for construction of cross-bars, every cut length of the Beam Section will achieve the required number of FLS screw connections

Note:
- *End supports STA F are provided on both sides of the cross beam.*

siFramo: Beam Bracket and End Support WBD



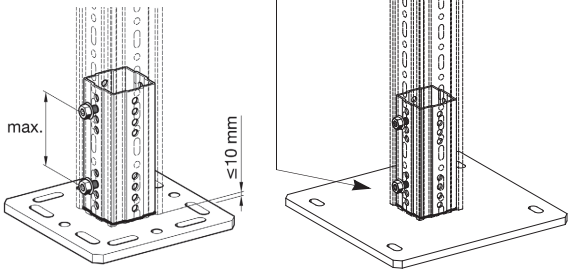
Beam Bracket TKO F
as a prefabricated cantilever support or beam bracket component

Variable assemblies for base plate (220 x 220)

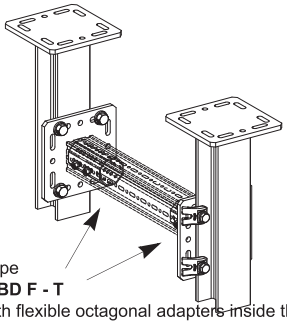
- to existing primary steel members with flange widths up to 120 mm by means of beam clamp Assembly Set MS 5P M12 (tightening torque 85 Nm)
- to Simotec Beam Sections 100/120 form locking with Joining Plates FV 100/120
- to concrete and masonry with Anchors M12
- to cast-in anchor channels with T-Head Bolts

Caution!

- *The screw connections at the end of the profile have to be positioned close to the foot plate to ensure secure performance of the construction in bending.*



Different sized foot plates type WBD are available for connection to primary steel flanges up to 300mm wide, or for heavy duty anchor loads where axial spacings between the anchors needs to be increased.

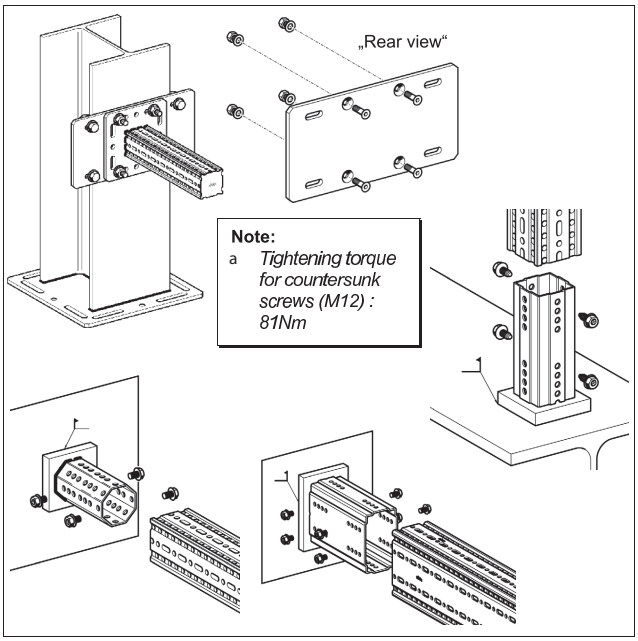


Type
WBD F - T
with flexible octagonal adapters inside the cross beam profile. This ensures that pipe supports can be added without clashes of FLS 80 screws even at the ends of the profile.

Note:

- *Each connecting adapter is fastened by means of 4 Self Forming Screws FLS F; each 2x2 pairing passing through the central-slots on opposing sides of the profile, and screwed to the internal adapter holes.*

siFramo: Welding Adapter ASA, Joining Plate AP and Angled Beam Bracket SKO



Joining Plate AP for connection of **Beam Brackets TKO F** to

- steel beam flange widths >120 mm (up to 310 mm) or
- concrete pad / wall by means of heavy-duty anchors where larger axial distances are required between the anchors

Countersunk screws, nuts and washers are included in the scope of delivery.

Welding Adapter ASA for connection of siFramo Beam Sections to weldable plates, steel girders...
The connection of siFramo Beam Sections to **Welding Adapter ASA** is carried out by means of **Self Forming Screws FLS F**.

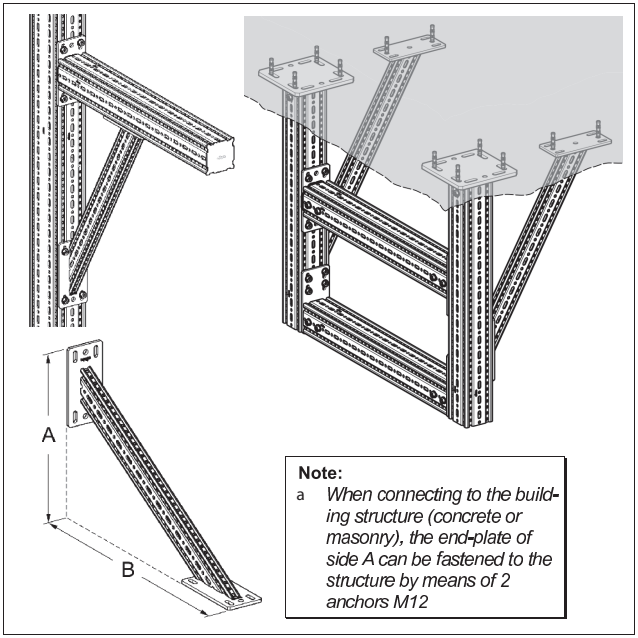
Product name	Quantity of Self Forming Screws for connection of TP to ASA
F 80	4
F 100	4
F 100/160	8

Note:

- *The preparation and calculation of the fillet weld is responsibility of the operator (local welding code). Recommendations concerning fillet weld geometry and calculation can be requested from Sikla.*

Note:

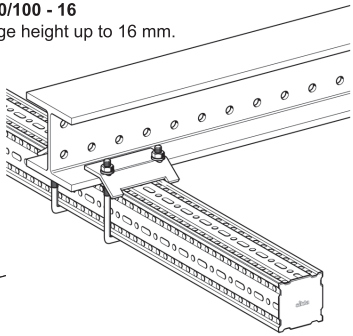
- *Tightening torque for Self Forming Screws FLS F: 60 Nm*



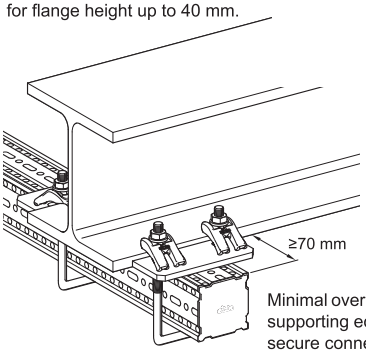
Angled Beam Bracket SKO F for bracing of heavy contructions and to limit deflections.
Connection of the **Angled Beam Section SKO F** by means of 4 **Self Forming Screws FLS** to **Beam Section TP F 100** or **100/160** (narrower side of the section)

siFramo: U-Holder SB, Channel Adapter SA and Beam Section Holder TPH

SB F 80/100 - 16
for flange height up to 16 mm.



SB F 80/100 - 40
for flange height up to 40 mm.



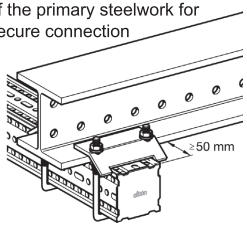
Minimal overhang of profile is 70mm from the supporting edge of the primary steelwork for secure connection

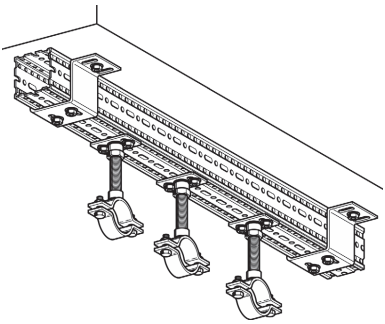
U-Holder SB F
for direct assembly to Beam Sections of various widths at a height up to 16 mm resp. 40 mm max.

All necessary connecting elements are part of the scope of delivery.

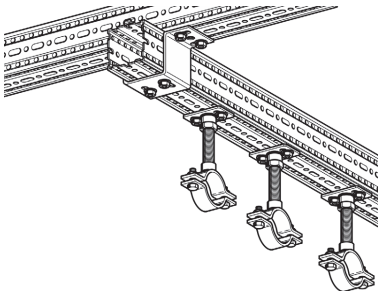
Note:
- Application of U-Holders always to be used in pairs.

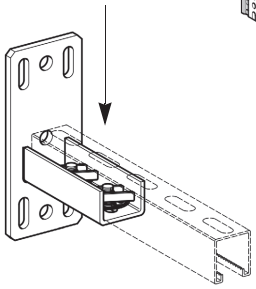
Minimal overhang of profile is 50 mm from the supporting edge of the primary steelwork for secure connection



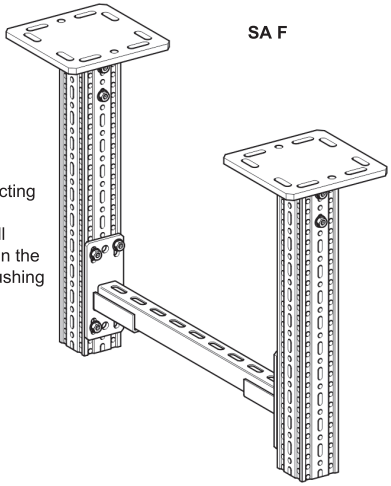


Channel Assembly:
All required CC-connecting components are pre-assembled and will automatically engage in the channel's slot when pushing on the bolt head.



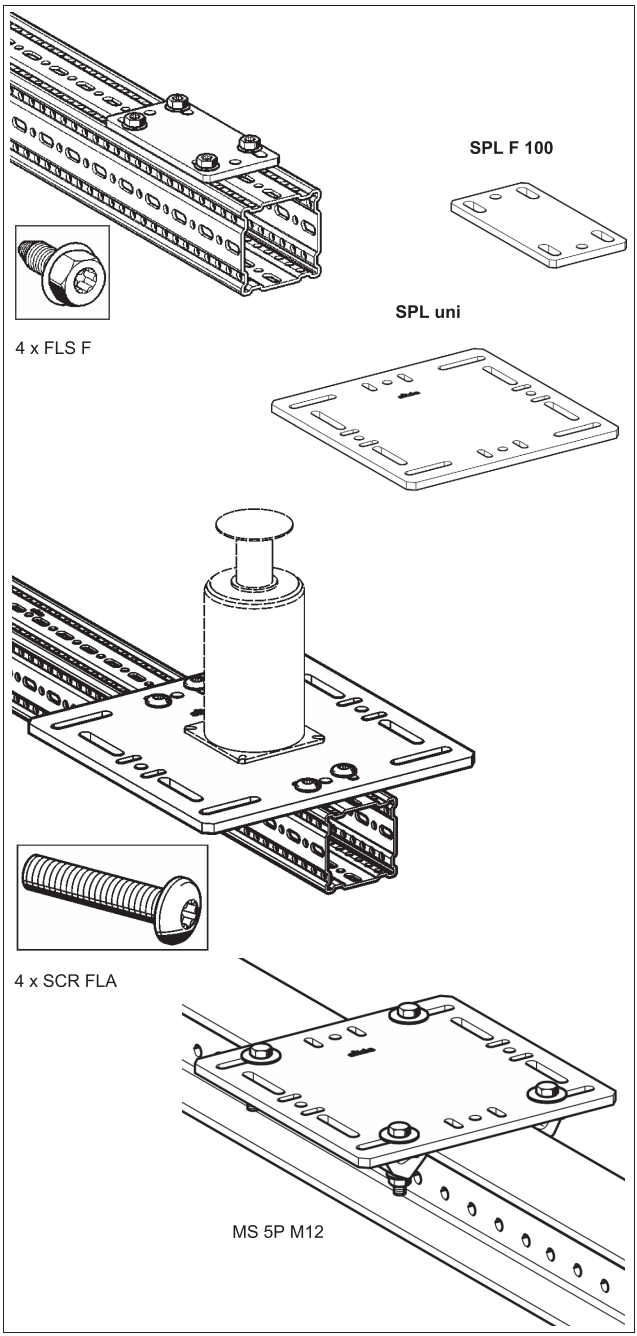


SA F



This makes for a simple adaptation of Channel Systems 41/41/2.5 or Double Channel 41/41/2.5D.
Further products of the Siconnect system are then easily accommodated too.

Special parts: assembly by means of Welding Plate SPL

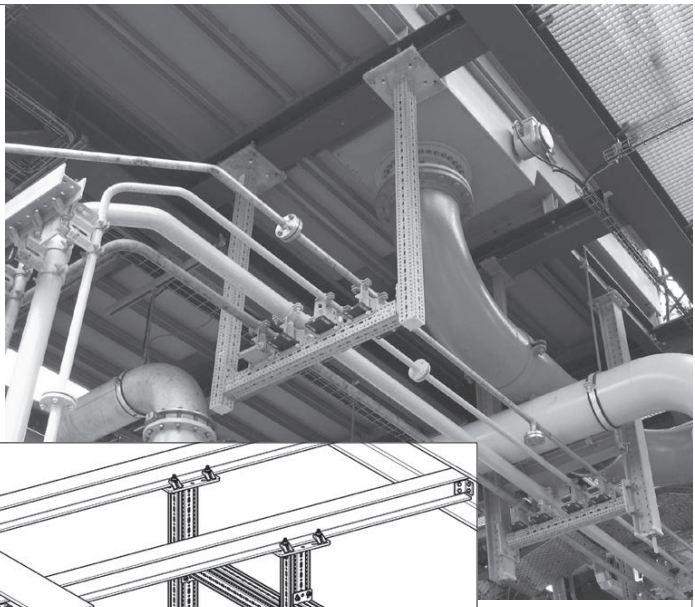


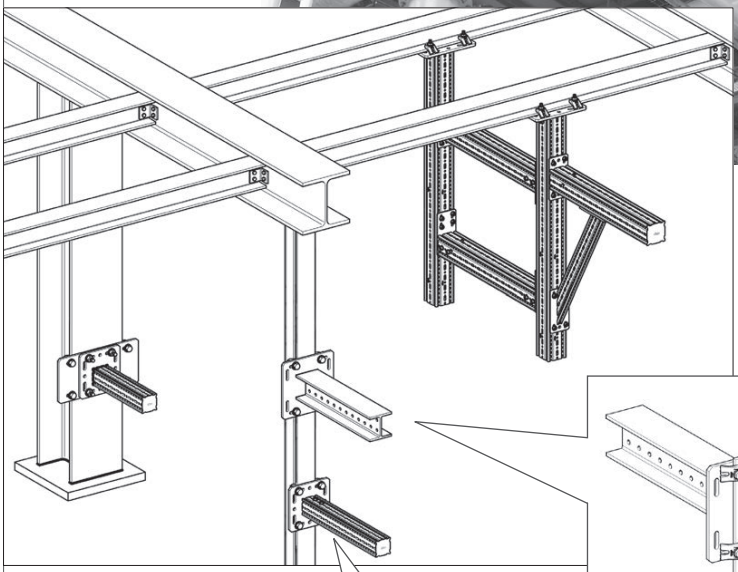
Welding plates SPL:

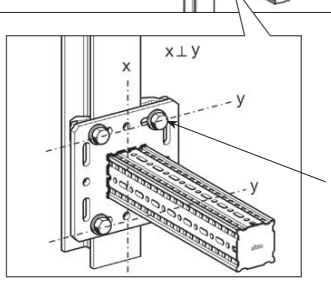
Where a pipe support assembly component (e.g. a spring hanger) must be welded to the supporting steelwork, Welding Plates **SPL F 100** and **SPL uni** can be used.

For assembly, the components are welded to the Welding Plates, which are in turn either fastened to siFramo beam sections or clamped to Simotec beam sections.
The Welding Plates' hole spacings are optimized for simple connection to siFramo and Simotec systems.

Connection to primary steel structure by Assembly Set MS 5P M12 and MS 5P M16 S







Description	Thread	Tightening torque [Nm]
Assembly Set MS 5P M12 S	M12	85
Assembly Set MS 5P M16 S	M16	150

Use Assembly Set always into slotted hole rows (y) in 90° direction to the main axis of the structural beam (x).

Are you interested in more details about the Sikla product range?
Check all the existing catalogues and guidelines: download it or request your hard copy.

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