POWER CLASS

PROFILE RAIL45/45

PERFORMANCE MAKES THE DIFFERENCE!

MEFA


OBEN SEIN

PERFORMANCE *MAKES THE DIFFERENCE!*

- **ADVANCEMENT** *OF PROVEN PROFILE RAIL 45/40*
- **INCREASED PERFORMANCE** *DUE TO OPTIMIZED GEOMETRY*
- *BEST* **RATIO OF WEIGHT PERFORMANCE**
- **FIRE SAFETY PROOF** *ACCORDING TO DIN EN 1993-1-2 (EC3)*
- **COMPATIBLE WITH STEX 45**
- **EXCELLENT RECOGNITION** *DUE TO MODERN DESIGN*

Profile rail 45/45

The crucial factor: **Performance!**

The new benchmark for profile rails. *Vast increace of performance due to new and unique design. Ideal solution for pipe fixing by combination of 45/45 with approved quick-fixing system Stex 45.*

Allrounder

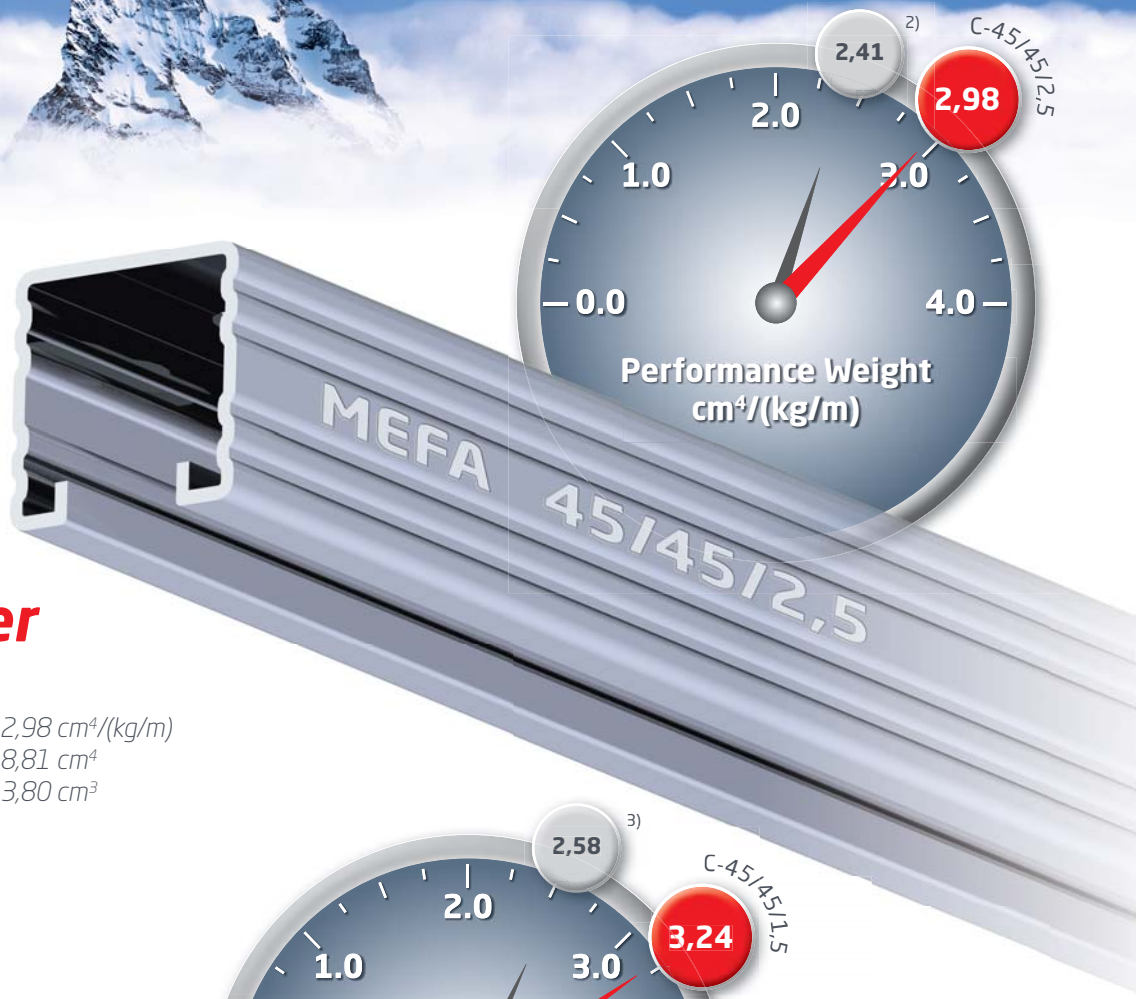
C-Profile 45/45/2,0

Performance weight I_y/m:	*3,18 cm⁴/(kg/m)*
Axial angular impulse I_y:	*7,80 cm⁴*
Section modulus W_y:	*3,48 cm³*

[1) 2)] comparison with C-profile MQ-41/3
[3)] comparison with C-profile MQ-41

$$\text{Performance weight} = \frac{\text{Axial angular impulse [cm}^4\text{]}}{\text{Weight [kg/m]}}$$

Based on source: Product catalogue Hilti Deutschland AG 2012/2013



Class winner

C-Profile 45/45/2,5

Performance weight I_y/m: *2,98 cm⁴/(kg/m)*
Axial angular impulse I_y: *8,81 cm⁴*
Section modulus W_y: *3,80 cm³*

Cost reducer

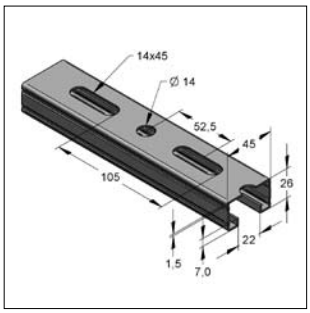
C-Profile 45/45/1,5

Performance weight I_y/m: *3,24 cm⁴/(kg/m)*
Axial angular impulse I_y: *6,13 cm⁴*
Section modulus W_y: *2,71 cm³*

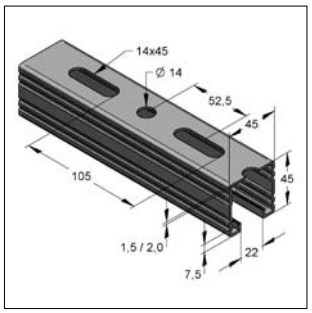
SYSTEM 45 PRODUCTS

PARTS AND SYSTEM SOLUTION
FOR SUCCESSFULL FIXING

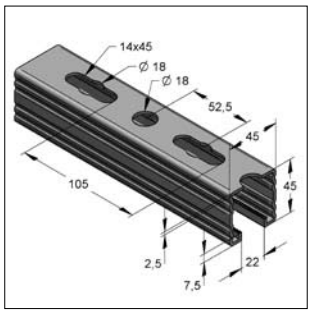
Profile rail 45, galvanized, C-profile rail, perforated, toothed



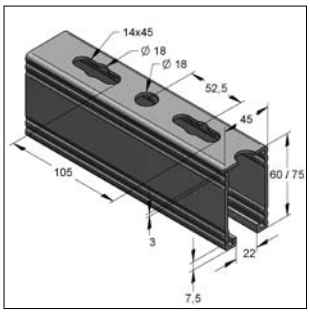
Type 45/26/1,5



Type 45/45/1,5
and Type 45/45/2,0



Type 45/45/2,5



Type 45/60/3,0
and Type 45/75/3,0

Specification:

Profile rail type:	C-profile rail, perforated, toothed
Mounting method:	form-locking connections and shear hole haunch connections
Remark:	double rails are perforated and welded

Technical data:

Material:	steel
Material type:	S250GD-Z275-N-A
Surface:	pre-galvanized
Material type:	S235JRG2
Surface:	hot-dip galvanized

RAL-GZ 655-C

3)

1) variations up to 1 mm at hot-dip galvanized elements possible

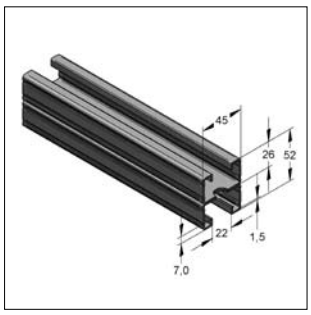
2) not certified acc. RAL

3) Load calculation acc. DIN EN 1993-1-2 (EC3)

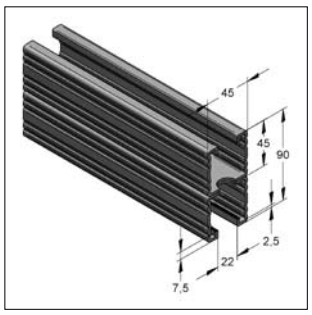
Identification	Surface	Weight [kg/m]	Length [m]	Bulk pack [m]	Part-No.
Type 45/26					
45/26/1,5 fbv	pre-galv.	1,34	2	120	08202622
45/26/1,5 fbv	pre-galv.	1,34	6	360	08202662
Type 45/45					
45/45/1,5 fbv	pre-galv.	1,89	2	80	082045215
45/45/1,5 fbv	pre-galv.	1,89	6	240	082045615
45/45/2,0 fbv[3)]	pre-galv.	2,45	2	80	082045220
45/45/2,0 fbv[3)]	pre-galv.	2,45	6	240	082045620
45/45/2,5 fbv[3)]	pre-galv.	2,96	3	120	0820453251
45/45/2,5 fbv[3)]	pre-galv.	2,96	6	240	0820456251
45/45/2,5 fsv[3)]	hot-dip galv.	3,21	3	120	0820453252
45/45/2,5 fsv[3)]	hot-dip galv.	3,21	6	240	0820456252
Type 45/60					
45/60/3,0 fbv[3)]	pre-galv.	4,06	6	180	0810762
45/60/3,0 fsv[1) 3)]	hot-dip galv.	4,35	6	180	0810770
Type 45/75					
45/75/3,0 fbv[3)]	pre-galv.	4,82	6	180	08207562
45/75/3,0 fsv[1) 2) 3)]	hot-dip galv.	5,15	6	180	08207561

technical overview of profile rails see on page 36

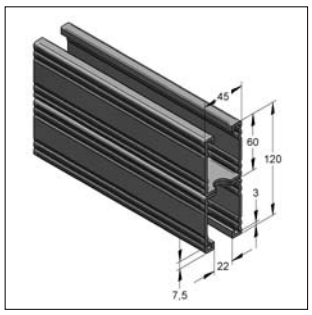
Profile rail 45, galvanized, C-profile rail, perforated, toothed



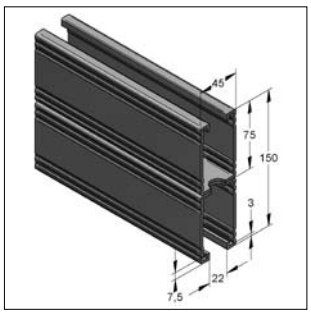
Type 45/52



Type 45/90



Type 45/120



Type 45/150

Specification:

Profile rail type:	C-profile rail, perforated, toothed
Mounting method:	form-locking connections and shear hole haunch connections
Remark:	double rails are perforated and welded

Technical data:

Material:	steel
Material type:	S250GD-Z275-N-A
Surface:	pre-galvanized
Material type:	S235JRG2
Surface:	hot-dip galvanized

RAL GÜTEZEICHEN RAL-GZ 655-C

[1] variations up to 1 mm at hot-dip galvanized elements possible

[2] not certified acc. RAL

[3] Load calculation acc. DIN EN 1993-1-2 (EC3)

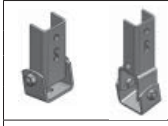
Identification	Surface	Weight [kg/m]	Length [m]	Bulk pack [m]	Part-No.
Type 45/52					
45/52/1,5 D fbv[3]	pre-galv	2,69	6	180	08215262
Type 45/90					
45/90/1,5 D fbv[3]	pre-galv	3,78	6	120	0821901615
45/90/2,0 D fbv[3]	pre-galv	4,90	6	120	0821901620
45/90/2,5 D fbv[3]	pre-galv	5,92	6	120	0821901625
45/90/2,5 D fsv[3]	hot-dip galv	6,35	6	120	0821902625
Type 45/120					
45/120/3,0 D fbv[3]	pre-galv	8,12	6	96	0810825
45/120/3,0 D fsv[1] [3]	hot-dip galv	8,63	6	96	0810833
Type 45/150					
45/150/3,0 D fbv[3]	pre-galv	9,64	6	96	08225062
45/150/3,0 D fsv[1] [2] [3]	hot-dip galv	10,24	6	96	08225061

Technical overview of profile rails see on page 36

System components

Identification - catalogue page	Part-No.	Profile type 45/45	45/60	45/75	45/90	45/120	45/150	Recommended connecting parts: Mounting plate M12 1280012	Mounting bolt 1280001	Tooth plate M12 0818103	Threaded square plate M12 0816138	2-hole tooth plate M12 0818110
 2-hole angle 40/5 **Page 19**	081402400	■	■	■	■	■	■	○ Quantity: 2 Accessory: 2 hex. screws 8.8 M12x25	● Quantity: 2 scope of delivery with nut	○ Quantity: 2 Accessory: 2 hex. screws 8.8 M12x25	□▲○ Quantity: 2 Accessory: 2 hex. screws 8.8 M12x25	
 3-hole angle 40/5 **Page 19**	L 08140300 K 08140400	■	■	■	■	■	■	○ Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	● Quantity: 3 scope of delivery with nut	○ Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	□▲○ Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	▲○ Quantity: 1 1 threaded square plate 3 hex. screws M12x25
 4-hole angle 40/5 **Page 19**	45° 08141000 90° 08140500 135° 08140600	■	■	■	■	■	■	○ Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	● Quantity: 4 scope of delivery with nut	○ Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	□▲○ Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	○ Quantity: 2 Accessory: 4 hex. screws 8.8 M12x25
 4-hole knot triangle **Page 18**	08140700	■	■	■	■	■	■	○ Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	● Quantity: 4 scope of delivery with nut	○ Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	□▲○ Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	○ Quantity: 2 Accessory: 4 hex. screws 8.8 M12x25
 5-hole knot triangle **Page 18**	08141700	■	■	■	■	■	■	○ Quantity: 5 Accessory: 5 hex. screws 8.8 M12x25	● Quantity: 5 scope of delivery with nut	○ Quantity: 5 Accessory: 5 hex. screws 8.8 M12x25	□▲○ Quantity: 5 Accessory: 5 hex. screws 8.8 M12x25	○ Quantity: 2 1 threaded plate Accessory: 5 hex. screws M12x25
 3-hole flat connector **Page 18**	0814331	■	■	■	■	■	■	○ Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	● Quantity: 3 scope of delivery with nut	○ Quantity: 3 Accessory: 3 hex. screws 8.8 M12x2	▲○ Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	
 4-hole flat connector **Page 18**	0814349	■	■	■	■	■	■	○ Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	● Quantity: 4 scope of delivery with nut	○ Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	▲○ Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	
 Flat connector 40/6 L-shape **Page 18**	0814307	■	■	■	■	■	■	○ Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	● Quantity: 3 scope of delivery with nut	○ Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	▲○ Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	
 Flat connector 40/6 T-shape **Page 18**	0814315	■	■	■	■	■	■	○ Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	● Quantity: 4 scope of delivery with nut	○ Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	▲○ Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	
 Universal knot K **Page 17**	08141601	■	■	■	■	■	■	○ Quantity: 2 Accessory: 2 6 hex. screws	● Quantity: 2 scope of delivery with nut *	○ Quantity: 2 Accessory: 2 6 hex. screws 8.8	○ Quantity: 2 Accessory: 2 6 hex. screws 8.8 M12x25*	
 4-hole corner angle **Page 20**	left 08147100 right 08147200	■	■	■	■	■	■	○ Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	● Quantity: 4 scope of delivery with nut	○ Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	▲○ Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	▲○ Quantity: 2 Accessory: 4 hex. screws 8.8 M12x25
 Cross strap **Page 20**	0816582	■	■	■	■	■	■	□○ Quantity: 5 Accessory: 5 hex. screws 8.8 M12x25	□○ Quantity: 5 scope of delivery with nut	● Quantity: 6 Accessory: 6 hex. screws 8.8 M12x25	▲○□ Quantity: 6 Accessory: 6 hex. screws 8.8 M12x25	▲● Quantity: 2 Accessory: 2 threaded plates 6 hex. screws M12x25

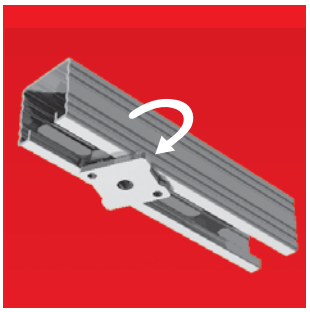
System components

Identification - KatalogPage	Part-No.	Profile type 45/45	45/60	45/75	45/90	45/120	45/150	Recommended connecting parts: Mounting plate M12 (1280012)	Mounting bolt (1280001)	Tooth plate M12 (0818103)	Threaded square plate M12 (0816138)	2-hole tooth plate M12 (0818110)
 T-lug		■	■	■	■	■	■	□ ○	□ ○	●	□▲○	▲●
not angled	0816574							Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	Quantity: 3 scope of delivery with nutt	Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 1 2 threaded plate 4 hex. screws M12x25
90° angled	0816870											
Page 20												
 4-hole corner plate	08165900	■	■	■	■	■	■	○	●	○	▲○	▲○
Page 20								Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 4 scope of delivery with nut	Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 2 4 hex. screws M12x25
 Angle connector	08123000	■	■	■	■	■	■	○	●	○	▲○	▲○
Angle connector 90°	08123200	■	■	■	■	■	■	Quantity: 2 Accessory: 2 hex. screws M12x25	Quantity: 2 scope of delivery with nut	Quantity: 2 Accessory: 2 hex. screws M12x25	Quantity: 2 Accessory: 2 hex. screws M12x25	Quantity: 1 Accessory: 2 hex. screws M12x25
Angle connector 180°	08123100	■	■	■	■	■	■					
Page 21												
 Head profile 45	08162445	■						○	●	○		
60	0816253		■					Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	Quantity: 3 scope of delivery with nut	Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25		
75	08162875			■								
90	08162690				■							
120	0816274					■						
Page 23												
 3-hole corresp. angle 45	08141245	■						○	●	○	▲○	▲○
3-hole corresp. angle 60	08141300		■					Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	Quantity: 3 scope of delivery with nut	Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	Quantity: 3 Accessory: 3 hex. screws 8.8 M12x25	Quantity: 1 1 threaded plate 3 hex. screws M12x25
Page 22												
 Profile holder combi								○		●	○	
13 mm - hole Ø	08162945	■	■	■	■	■	■	Quantity: 1 Accessory: 1 hex. screw 8.8 M12x30 + H		Quantity: 1 Accessory: 1 hex. screw M12x30 + H	Quantity: 1 Accessory: 1 hex. screw M12/16x30+H	
17 mm - hole Ø	08163365	■	■	■	■	■	■					
Page 23												
 Connector								○	●	○	□○▲	▲○
45	08162000	■	■	■	■	■	■	Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 4 scope of delivery with nut	Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 2 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 2 Accessory: 4 hex. screws 8.8 M12x25
Page 22												
 Holder								●	□○	○	▲○	●
45/26-52 vertical	08120102	■						Quantity: 2 Accessory: 2 hex. screws 8.8 M12x25	Quantity: 2 scope of delivery with nut	Quantity: 2 Accessory: 2 hex. screws 8.8 M12x25	Quantity: 2 Accessory: 2 hex. screws 8.8 M12x25	Quantity: 1 Accessory: 2 hex. screws 8.8 M12x25
45/26-75 horizontal	08120402	■	■	■	□	□	□					
45/60-75 vertical	08121802	□	■	■								
Page 24												
 Holder								●		○	○	○●
45/90	08120901				■			Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25		Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 4 Accessory: 4 hex. screws 8.8 M12x25	Quantity: 2 Accessory: 4 hex. screws 8.8 M12x25
45/120	08121001					■						
45/150	08121452						■					
Page 24												
 Joint holder								○	●	○	▲○	▲○
vertical	08120600	■	■	■	□	□	□	Quantity: 2 Accessory: 2 hex. screws 8.8 M12x25	Quantity: 2 scope of delivery with nut	Quantity: 2 Accessory: 2 hex. screws 8.8 M12x25	Quantity: 2 Accessory: 2 hex. screws 8.8 M12x25	Quantity:1 1 threaded plate 2 hex. screws M12x25
horizontal	08121100	■	■	■	□	□	□					
Page 29												
 Joint holder with		■	■	■	□	□	□	○	●		▲○	▲○
base plate	08122600							Quantity: 2 Accessory: 2 hex. screws 8.8 M12x25	Quantity: 2 scope of delivery with nut	Quantity: 2 Accessory: 2 hex. screws 8.8 M12x25	Quantity: 2 Accessory: 2 hex. screws 8.8 M12x25	Quantity: 1 Accessory:2 hex. screws 8.8 M12x25
vertical	08122500											
Page 28												
 Connector, l+r	Page 21											
Joint holder	Page 29											
Joint connector	Page 26											

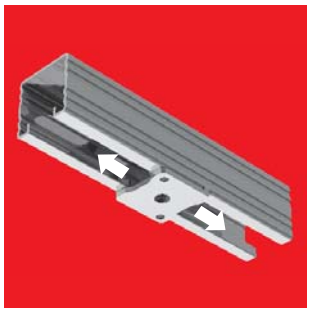
■ **Standard** □ conditional ● optimal ○ alternative ▲ suitable for bolting in profile

Quick-fixing system Stex 45

Insert Stex in

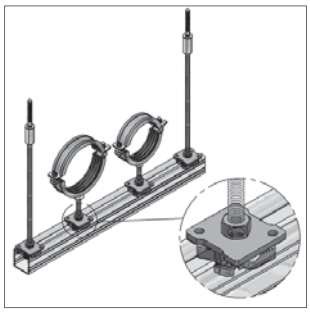


Turn Stex



Position Stex

Counter Stex with nut



Stex 45 threaded plate GP

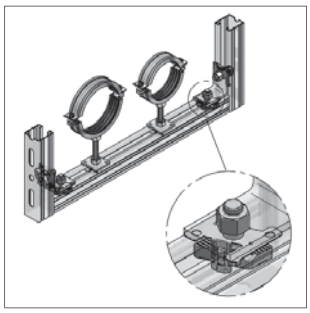
optional with connection M8, M10 or M12

Your advantages:
- tooth and counter plate can be replaced by one-part STEX 45 threaded plate
- insert STEX 45 threaded plate into profile rail,turn it about 45°, plug threaded pin and counter nut in and screw pipe clamp onto profile rail
- tooth plate guarantees a form-locking connection with profile rail
- after turning, STEX 45 threaded plate automatically locks in profile rail
- after turning, STEX 45 threaded plate can be positioned in profile rail by moving
- threaded pins or threaded rods can be turned in easily

Stex 45 threaded bolt GB

optional with threaded pin M8, M10 or M12

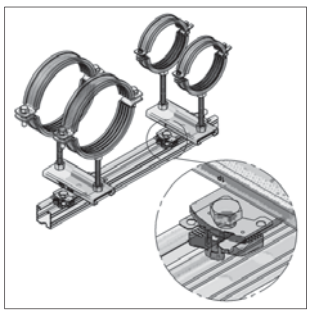
Your advantages:
- tooth and counter plate, as well as threaded pin can be replaced by one-part STEX 45 threaded bolt
- insert STEX 45 threaded bolt into profile rail,turn it about 45°, plug threaded pin and counter nut in and screw pipe clamp onto profile rail
- length- and height differences up to 30 mm can be balanced without any tools
- due to different bolt lengths, differences up to 130 mm can be realised



Stex 45 mounting bolt MTB

for mounting the rail constructions

Your advantages:
- insert mounting bolt into profile rail,turn it about 45°, position component and counter nut
- circumstantial insertion of tooth bolts and tooth plates is not necessary
- profile rail keeps components on its own
- simplyfies mounting of connection parts in rail constructions

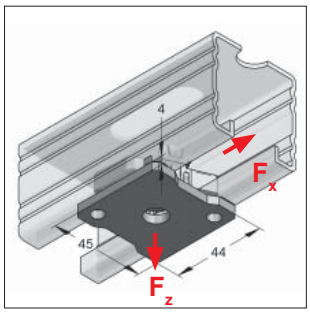


Stex 45 mounting plate MP

for mounting the rail constructions or add-on-part

Your advantages:
- insert mounting bolt into profile rail, turn it about 45°, position component and counter nut
- circumstantial insertion of tooth bolt and tooth plates is not necessary
- profile rail keeps on its own, no holder necessary
- simplyfies mounting of add-on-parts like sliding elements or connection parts in rail constructions

Stex 45 threaded plate GP



Stex 45 threaded plate GP

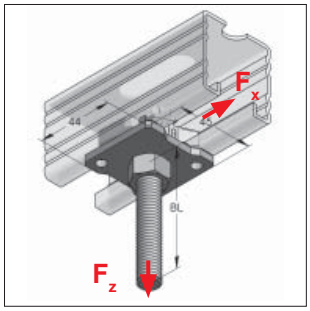
Specification:
Profile rail type: rail system 45, toothed
Mounting method: form-locking connections and shear hole haunch connections
Applications area: pipe clamp fixation

Technical data:
Material: steel
Material type: S235JR
Surface: galvanized

* not certified acc. to RAL

Identification	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Stex 45 threaded plate GP M8*	0,115	30	1280508
Stex 45 threaded plate GP M10	0,113	30	1280510
Stex 45 threaded plate GP M12	0,109	30	1280512

Stex 45 threaded bolt GB



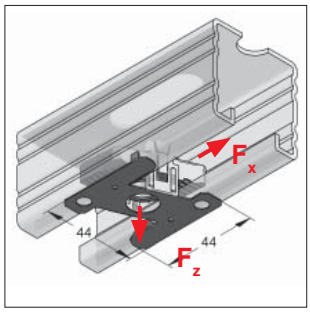
Stex 45 threaded bolt GB

Specification:
Profile rail type: rail system 45, toothed
Mounting method: form-locking connections and shear hole haunch connections
Applications area: pipe clamp fixation
Accessory: nut M8/M10/M12

Technical data:
Material: steel
Material type: S235JR
Surface: galvanized
Threaded bolt: property class 4.6

Identification	Construction length BL [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Stex 45 threaded bolt GB M8/50	23	0,132	30	1281050
Stex 45 threaded bolt GB M8/70	43	0,138	20	1281070
Stex 45 threaded bolt GB M8/90	63	0,144	20	1281090
Stex 45 threaded bolt GB M8/110	83	0,150	20	1281110
Stex 45 threaded bolt GB M8/130	103	0,156	20	1281130
Stex 45 threaded bolt GB M10/50	23	0,144	30	1282050
Stex 45 threaded bolt GB M10/70	43	0,153	20	1282070
Stex 45 threaded bolt GB M10/90	63	0,163	20	1282090
Stex 45 threaded bolt GB M10/110	83	0,173	20	1282110
Stex 45 threaded bolt GB M10/130	103	0,184	20	1282130
Stex 45 threaded bolt GB M12/50	23	0,156	30	1283050
Stex 45 threaded bolt GB M12/70	43	0,169	20	1283070
Stex 45 threaded bolt GB M12/90	63	0,174	20	1283090
Stex 45 threaded bolt GB M12/110	83	0,199	20	1283110
Stex 45 threaded bolt GB M12/130	103	0,214	20	1283130

Stex 45 mounting plate MP



Stex 45 mounting plate MP

Specification:

Profile rail type:	rail system 45, toothed
Mounting method:	form-lock connections and shear hole haunch connections
Applications area:	connecting parts
Required accessory:	hexagon screw FK 8.8

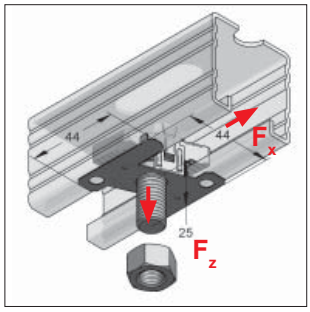
Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized

* not certified acc. to RAL

Identification	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Stex 45 mounting plate MP M6*	0,062	30	1280006
Stex 45 mounting plate MP M8*	0,059	30	1280008
Stex 45 mounting plate MP M10	0,056	30	1280010
Stex 45 mounting plate MP M12	0,053	30	1280012

Stex 45 mounting bolt MTB



Stex 45 mounting bolt MTB
incl. nut M12

Specification:

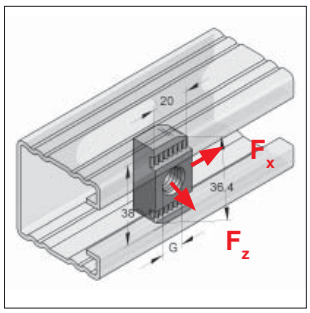
Profile rail type:	rail system 45, toothed
Mounting method:	form-lock connections and shear hole haunch connections
Applications area:	connecting parts

Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized
Threaded bolt:	property class 8.8

Identification	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Stex 45 mounting bolt MTB M12x40	0,106	30	1280001

Tooth plate S



Tooth plate S

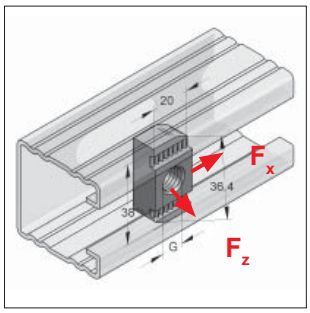
Specification:
Profile rail type: rail system 45, toothed
Mounting method: form-lock connections and shear hole haunch connections
Applications area: connecting parts, pipe clamp fixation
Required accessory: hexagon screw, threaded pin or -rod, washer and hexagon nut

Technical data:
Material: steel
Material type: S235JR
Surface: galvanized

* not certified acc. to RAL

Identification	Dimension L x W [mm]	Thread G	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Tooth plate S	34 x 21	M6*	0,051	100	0818000
Tooth plate S	36 x 20	M8*	0,050	100	0818101
Tooth plate S	36 x 20	M10	0,048	100	0818102
Tooth plate S	36 x 20	M12	0,045	100	0818103

Tooth plate S Zinc-Nickel



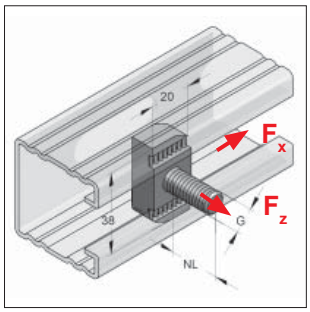
Tooth plate S Zinc-Nickel

Specification:
Profile rail type: rail system 45, toothed
Mounting method: form-lock connections and shear hole haunch connections
Applications area: connecting parts, pipe clamp fixation. hot-dip galvanized profile rail for outside application
Required accessory: hexagon screw, threaded bolt or -rod, washer and hexagon nut

Technical data:
Material: steel
Material type: S235JR
Surface: zinc-nickel

Identification	Dimension L x W [mm]	Thread G	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Tooth plate S Zinc-Nickel	36 x 20	M8	0,050	100	0818101/zn
Tooth plate S Zinc-Nickel	36 x 20	M10	0,048	100	0818102/zn
Tooth plate S Zinc-Nickel	36 x 20	M12	0,045	100	0818103/zn

Tooth bolt



Tooth bolt

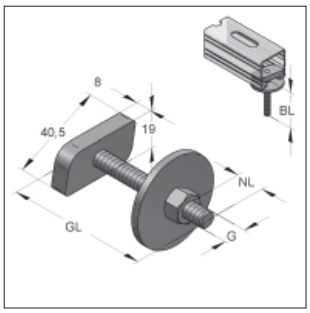
Specification:
Profile rail type: rail system 45, toothed
Mounting method: form-lock connections and shear hole haunch connections
Applications area: connecting parts, pipe clamp fixation
Required accessory: washer and hexagon nut

Technical data:
Material: steel
Material type: S235JR
Surface: galvanized
Tooth bolt: property class 8.8

* not certified acc. to RAL

Identification	Usable length NL [mm]	Thread G	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Tooth bolt	17,5	M8*	0,045	100	0816936
Tooth bolt	17,5	M10	0,049	100	0816944
Tooth bolt	22,5	M12	0,059	100	0816952

Hammer head screw



Hammer head screw

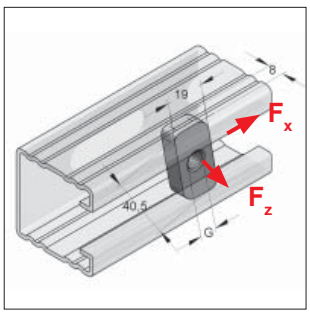
Specification:
Profile rail type: rail system 45
Mounting method: glide fast connections and shear hole haunch connections
Applications area: pipe clamp fixations

Technical data:
Material: steel
Material type: S235JR
Surface: galvanized

[1] not in combination with thread M8/10
[2] not in combination with thread M10/12

Identification	Thread GxGL [mm]	Construction length BL [mm]	Usable length NL [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Hammer head screw	M8x35 [1]	19,5	9,5	0,070	50	0698735
Hammer head screw	M8x40	24,5	14,5	0,072	50	0698740
Hammer head screw	M8x50	34,5	24,5	0,077	50	0698750
Hammer head screw	M8x70	54,5	44,5	0,084	50	0698770
Hammer head screw	M10x35 [2]	19,5	8,0	0,085	50	0699235
Hammer head screw	M10x50	34,5	23,0	0,088	50	0699250
Hammer head screw	M10x70	54,5	43,0	0,097	50	0699270
Hammer head screw	M12x40	25,0	11,0	0,092	50	0699740
Hammer head screw	M12x50	35,0	21,0	0,106	50	0699750
Hammer head screw	M12x70	55,0	41,0	0,120	50	0699770

Threaded plate



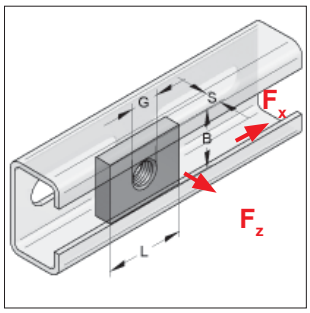
Threaded plate

Specification:
Profile rail type: rail system 45
Mounting method: glide fast connections and shear hole haunch connections
Applications area: pipe clamp fixation
Required accessory: hexagon screw, threaded bolt or -rod, washer and hexagon nut

Technical data:
Material: steel
Material type: S235JR
Surface: galvanized

Identification	Dimension L x W [mm]	Thread G	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Threaded plate	40 x 22	M8	0,040	100	0750107
Threaded plate	40 x 22	M10	0,039	100	0750115
Threaded plate	40 x 22	M12	0,038	100	0750123

Threaded square plate



Threaded square plate

Specification:

Profile rail type:	rail system 45
Mounting method:	glide fast connections and shear hole haunch connections
Applications area:	connecting parts, can be mounted on bottom of profile
Required accessory:	hexagon screw property class 8.8, threaded bolt or- rod, washer and hexagon nut

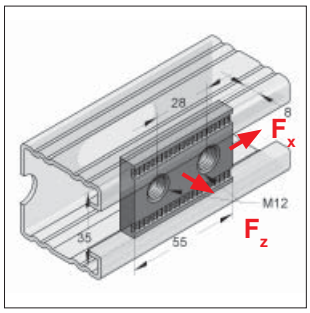
Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized

For profile rail width 45 mm

Identification	Dimension L x B x S [mm]	Thread G	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Threaded square plate	30x35x6	M8	0,070	50	0816112
Threaded square plate	30x35x8	M10	0,069	50	0816120
Threaded square plate	30x35x8	M12	0,069	50	0816138
Threaded square plate	30x35x8	M16	0,068	50	0816146

2-hole tooth plate



2-hole tooth plate

RAL-GZ 655-D

Specification:

Profile rail type:	rail system 45
Mounting method:	form-lock connections and shear hole haunch connections
Applications area:	connecting parts, threaded plate can be mounted on bottom of profile rail
Required accessory:	hexagon screw property class 8.8, washer and hexagon nut

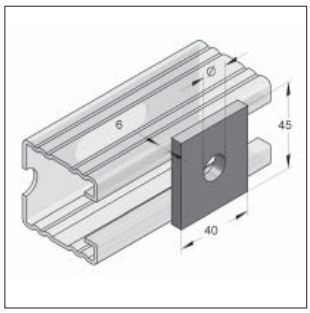
Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized[1)]

[1)] components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on demand!

Identification	Dimension L x W x T	Thread	Weight [kg/pc.]	Packing [pcs.]	Part-No.
2-hole tooth plate	55 x 35 x 8	M12	0,105	50	0818110

Perforated plate



Perforated plate

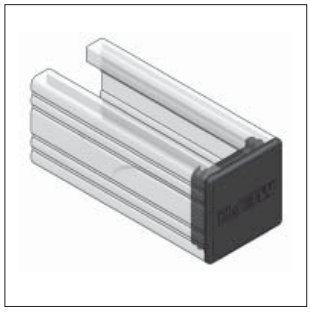
Specification:
Profile rail type: rail system 45

Technical data:
Material: steel
Material type: S235JR
Surface: galvanized[1)]

[1)] components for outdoor application areas also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on demand!

Identification	Hole-Ø [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Perforated plate	**13**	0,08	50	0814016
Perforated plate	**17**	0,08	50	0814017

Protecting cap



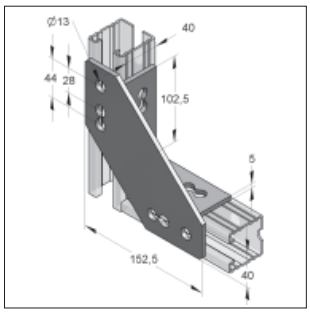
Protecting cap

Specification:
Profile rail type: rail system 45

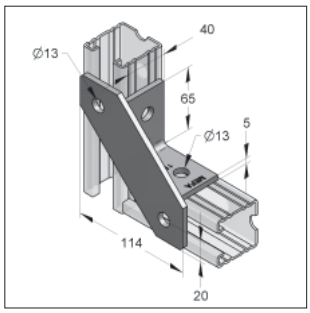
Technical data:
Material: plastic PE
Material colour: black

Identification	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Protecting cap 45 / 26	0,0061	50	0819005
Protecting cap 45 / 45	0,0070	50	0819036
Protecting cap 45 / 60	0,0130	50	0819042
Protecting cap 45 / 75	0,0150	50	0819046

Universal knot



Universal knot



Universal knot K

Specification:

Profile rail type:	rail system 45
Applications area:	corner joint of C-profile channels
	combination of knot triangle, corner lug and corner angle left and right

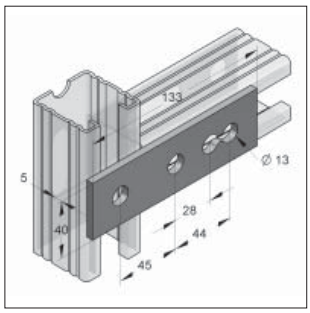
Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized

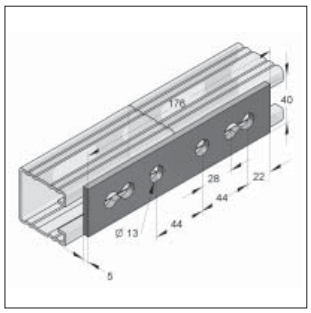
Remark: torque free rail connection. Loads refering to component, not to connection

Identification	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Universal knot	0,79	10	08141600
Universal knot K	0,43	25	08141601

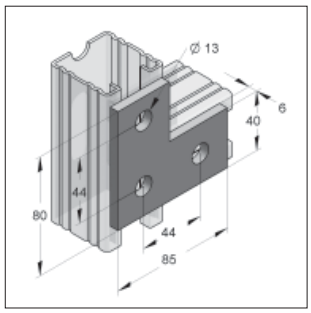
Flat connector



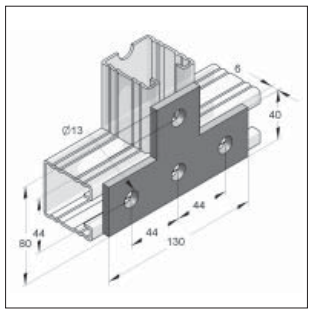
3-hole flat connector 40/5



4-hole flat connector 40/5



L-shaped flat connector 40/6



T-shaped flat connector 40/6

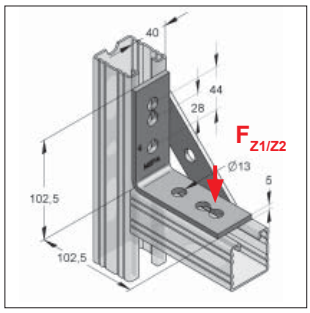
Specification:
Profile rail type: rail system 45

Technical data:
Material: steel
Material type: S235JR
Surface: galvanized

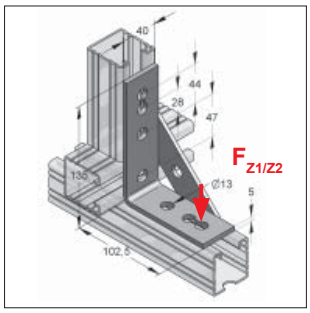
Remark: torque free rail connection

Identification	Dimension L x W x T	Weight [kg/pc.]	Packing [pcs.]	Part-No.
3-hole flat connector 40/5	133 x 40 x 5	0,23	25	0814331
4-hole flat connector 40/5	176 x 40 x 5	0,30	25	0814349
Flat connector 40/6 L-shape	85 x 80 x 6	0,21	25	0814307
Flat connector 40/6 T-shape	130 x 80 x 6	0,29	25	0814315

Knot triangle



4-hole knot triangle 40/5



5-hole knot triangle 40/5

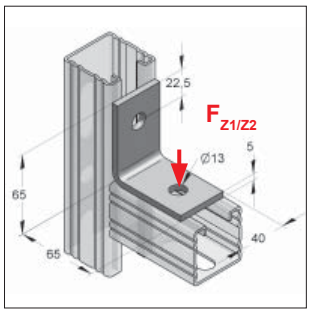
Specification:
Profile rail type: rail system 45

Technical data:
Material: steel
Material type: S235JR
Surface: galvanized[1)]

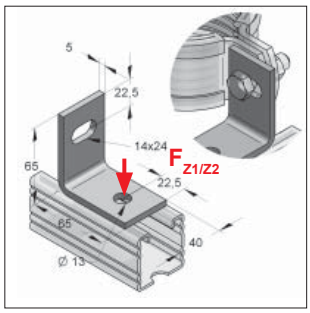
[1)] components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on demand!
[2)] loads refering to component, not to connection
[3)] loads refering to component, double-sided fixed on profile

Identification	Dimension L x W [mm]	Max. load F_{Z1} [2)] without profile rail [kN]	Max. load F_{Z2} [3)] with profile rail [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
4-hole knot triangle 40/5	102,5 x 102,5	2,0	6,0	0,37	25	08140700
5-hole knot triangle 40/5	135 x 102,5	2,0	6,0	0,41	25	08141700

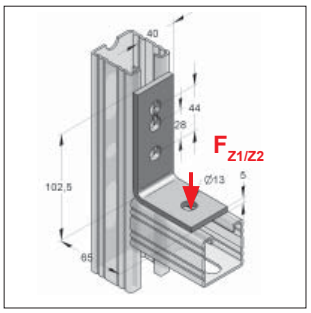
Angle



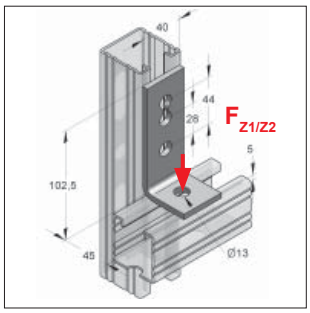
2-hole angle 40/5



2-hole angle 40/5,
with elongated hole, vertical



3-hole angle 40/5 L



3-hole angle 40/5 K

Specification:
Profile rail type: rail system 45

[1] components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on demand!

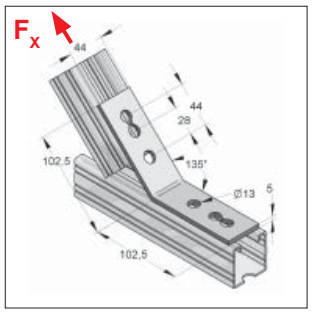
[2] loads refering to component, not to connectio

[3] loads refering to component, double-sided fixed on profile

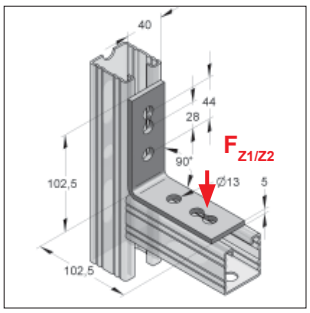
Technical data:
Material: steel
Material type: S235JR
Surface: galvanized[1]

Identification	Dimension L x W [mm]	Max. load F_{Z1}[2] without profile rail [kN]	Max. load F_{Z2}[3] with profile rail [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
2-hole angle 40/5	65 x 65	1,0	2,5	0,18	50	081402400
2-hole angle 40/5, elongated hole horizontal	65 x 65	1,0	2,5	0,17	50	08147300
3-hole angle 40/5 L	102,5 x 65	1,0	2,5	0,23	25	08140300
3-hole angle 40/5 K	102,5 x 45	1,0	2,5	0,20	50	08140400

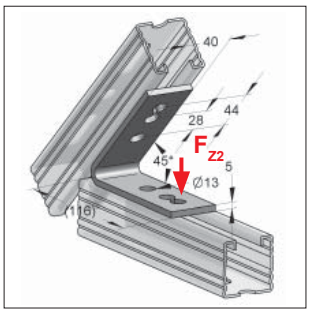
Angle



4-hole angle 40/5 135°



4-hole angle 40/5 90°



4-hole angle 40/5 45°

Specification:
Profile rail type: rail system 45

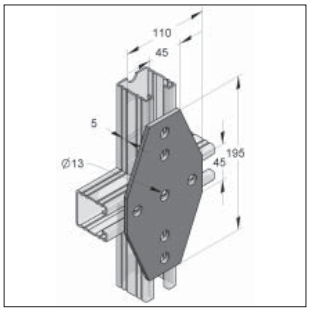
[1], [3] loads refering to component, not to connection

[2] loads refering to component, double-sided fixed on profile

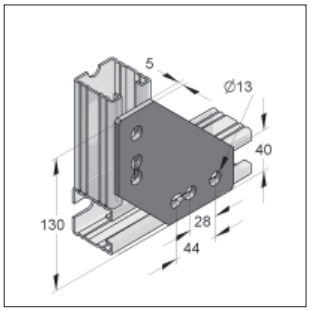
Technical data:
Material: steel
Material type: S235JR
Surface: galvanized

Identification	Dimension L x W [mm]	Max. load F_{Z1}[1] without profile rail [kN]	Max. load F_{Z2}[2] with profile rail [kN]	F_x[3] [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
4-hole angle 40/5 135°	102,5 x 102,5	-	-	6,6	0,29	50	08140600
4-hole angle 40/5 90°	102,5 x 102,5	1,0	2,5	-	0,28	50	08140500
4-hole angle 40/5 45°	116 x 116	-	2,5	-	0,28	25	08141000

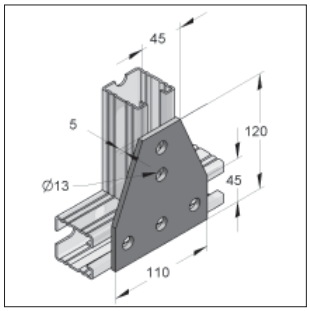
Cross strap / T-lug



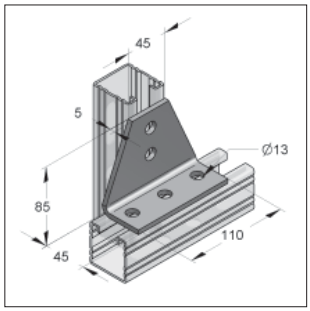
Cross strap



4-hole corner plate



T-lug, not angled



T-lug, angled

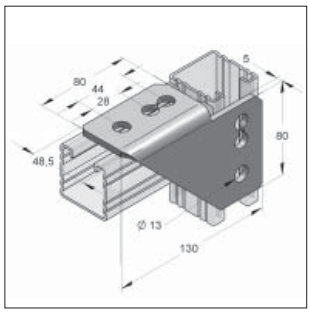
Specification:
Profile rail type: rail system 45

Technical data:
Material: steel
Material type: S235JR
Surface: galvanized[1)]

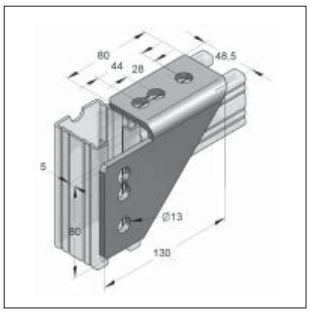
Remark: admissible loads are dependant on component
[1)] components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on demand!

Identification	Dimension L x W x T [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Cross strap	195 x 110 x 5	0,61	10	0816582
4-hole corner plate	130 x 40 x 5	0,42	10	08165900
T-lug, not angled	120 x 110 x 5	0,41	25	0816574
T-lug 90° angled	85 x 110 x 5	0,41	25	0816870

Corner angle



4-hole corner angle right



4-hole corner angle left

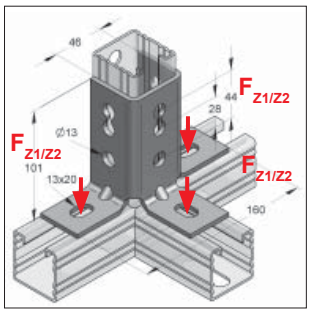
Specification:
Profile rail type: rail system 45

Technical data:
Material: steel
Material type: S235JR
Surface: galvanized

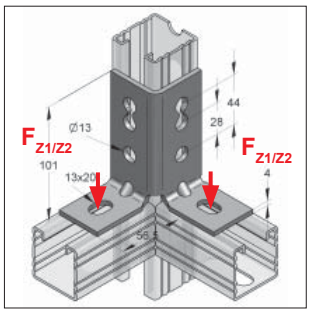
Remark: admissible loads are dependant of component

Identification	Weight [kg/pc.]	Packing [pcs.]	Part-No.
4-hole corner angle right	0,37	10	08147200
4-hole corner angle left	0,37	10	08147100

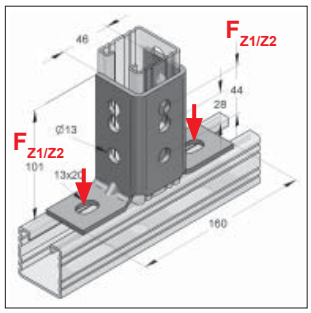
Angle connector



Angle connector C 45



Angle connector C 45 90°



Angle connector C 45 180°

Specification:

Profile rail type:	rail system 45
Applications area:	connection of profile rail and frames

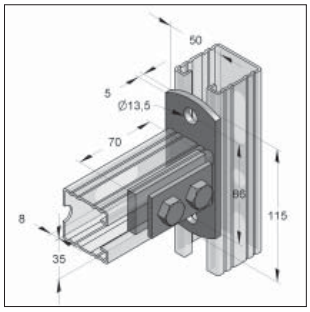
Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized[1)]

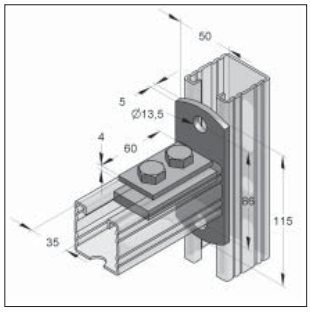
[1)] components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on demand!
[2)] loads refering to component, not to connection
[3)] loads refering to component, double-sided fixed on profile

Identification	Max. load F_{Z1} [2)] without profile rail [kN]	Max. load F_{Z2} [3)] with profile rail [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Angle connector C45	1,5	4,0	0,53	15	08123000
Angle connector C45 90°	1,5	4,0	0,34	15	08123200
Angle connector C45 180°	1,5	4,0	0,46	15	08123100

Connector 45/45



Connector 45/45



Connector 45/45 horizontal

Specification:

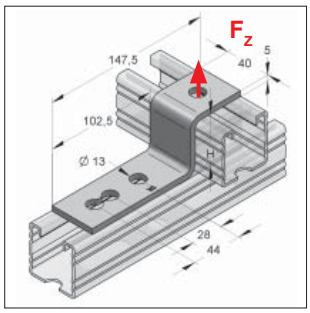
Profile rail type:	rail system 45
Applications area:	connection of profile rails, moment-free connections only
Scope of supply::	2-hole plate 13 mm hexagon screw M12

Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized

Identification	Screws	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Connector 45/45	M12	0,47	20	081656601
Connector 45/45 horizontal	M12	0,47	25	081646501

3-hole corresponding angle 40/5



Corresponding angle 40/5

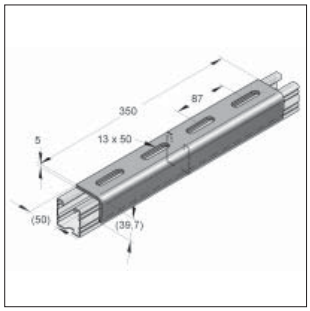
Specification:
Profile rail type: rail system 45

Technical data:
Material: steel
Material type: S235JR
Surface: galvanized

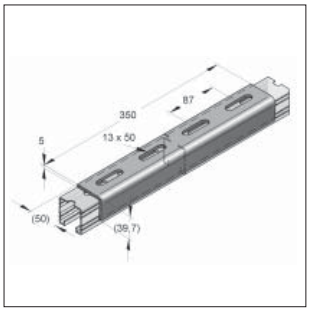
* loads refering to component, not to connection

Identification	Dimension H [mm]	Max. load * F_z [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Corresponding angle 45	45	1,0	0,27	25	08141245
Corresponding angle 60	60	1,0	0,38	25	08141300

Connector



Connector 45
rail slot at top



Connector 45
rail slot at bottom

Remark:
fixation on top of rail
(not double profile rails) to
reach equal load capacity as
unbroken rail

Specification:
Profile rail type: rail system 45
Applications area: for static load connection and extension of C-profile rails of the rail system 45

Recommended accessory: 4 x tooth plate S M12 or Stex 45 MP/MTB M12
4 x hexagon screw M12 x 25
4 x washer DIN 7089-12

Remark: connecting of double profile rails with two connectors 45

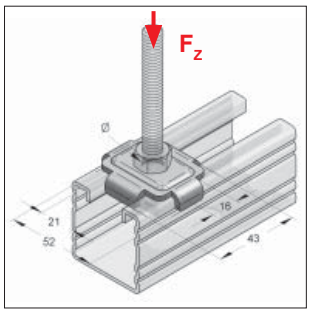
Technical data:
Material: steel
Material type: S235JR
Surface: galvanized[1)]

[1)] components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on demand!

For profile rail width 45

Identification	Height [mm]	Width [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Connector 45	39,7	50	1,05	10	08162001

Profile holder



Profile holder

Specification:
Profile rail type: rail system 35, 45, Stex 35
Applications area: suitable for connection of profile rails

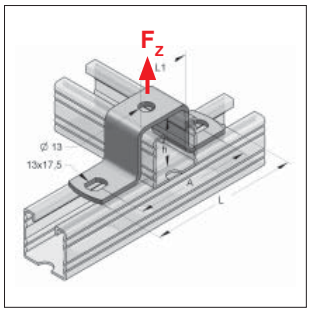
Technical data:
Material: steel
Material type: S235JR
Surface: galvanized[1)]

[1)] components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on demand!

For profile rail 35, 45 and Stex 35

Identification	Tightening torque [Nm]	Max. load F_z [kN]	Hole-Ø [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Profile holder combi 11	10	4,7	11,0	0,046	100	08095035
Profile holder combi 13	10	4,7	13,0	0,043	100	08162945
Profile holder combi 17	10	4,7	17,0	0,041	100	08163365

Head profile



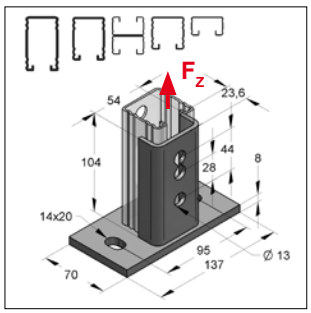
Head profile

Specification:
Profile rail type: rail system 45
Applications area: suitable for connection of profile rails

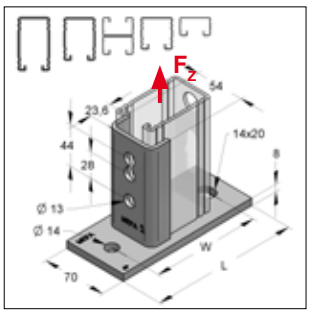
Technical data:
Material: steel
Material type: S235JR
Surface: galvanized

Identification	Suitable for profile rail	L [mm]	A [mm]	L1 [mm]	h [mm]	Max. load F_z [kN]	Material thickness [mm]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Head profile 26	45/26	136	107	46	26	3,5	4	0,19	25	08162326
Head profile 45	45/45	136	107	46	45	3,5	4	0,21	25	08162445
Head profile 52	45/52-D	136	107	46	52	3,5	4	0,25	25	08162452
Head profile 60	45/60	136	107	46	60	3,5	4	0,25	25	0816253
Haed profile 75	45/75	136	107	46	75	3,5	4	0,29	25	08162875
Head profile 90	45/90-D	136	107	46	90	3,5	4	0,31	25	08162690
Head profile 120	45/120-D	136	107	46	120	3,5	4	0,40	25	0816274

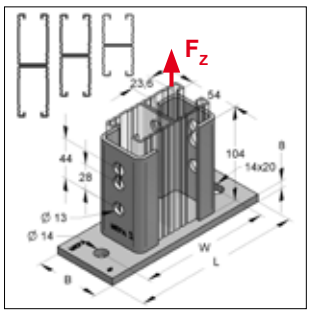
Holder



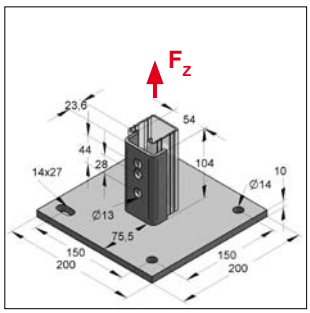
Holder horizontal
for C-profile rail



Holder vertical
for C-profile rail



Holder for double
C-profile rail



Holder square
for C-profile rail

Specification:

Profile rail type:	rail system 45
Applications area:	for fixation of profile rails on construction

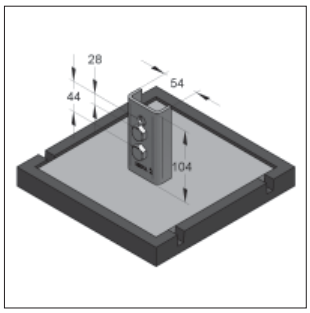
Technical data:

Material:	steel
Material type:	S235JR
Surface:	hot-dip galv[1]

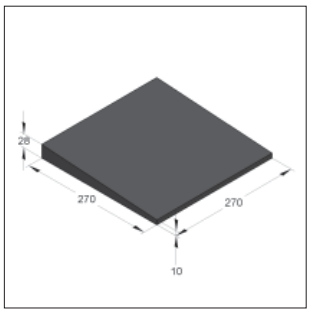
[1] variations in dimension up to 1 mm possible
[2] loads refering to component, not to connection

Identification	Plate L x W	Hole distance W	Max. profile height	Suitable for C-profile 45/..								Max. load F_z[2]	Weight	Packing	Part-No.
	[mm]	[mm]	[mm]	26	45	60	75	52D	90D	120D	150D	[kN]	[kg/pc.]	[pcs.]	
Holder horizontal	**137 x 70**	95	75	●	●	●	●	●				12,0	0,87	15	08120402
Holder vertical	**137 x 70**	95	52	●	●			●				9,3	0,87	15	08120102
Holder vertical	**160 x 70**	118	75			●	●					7,3	0,98	10	08121802
Holder for double rail	**186 x 70**	144	90						●			13,7	1,31	5	08120952
Holder for double rail	**216 x 70**	174	120							●		13,7	1,44	5	08121002
Holder for double rail	**246 x 70**	204	150								●	13,5	1,57	5	08121452
Holder square	**200 x 200**	150		●	●	●	●	●	●	●	●	10,0	3,53	5	08197000

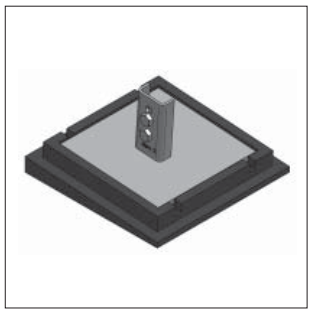
Rooftop holder for rooftop constructions



Rooftop holder complete



Rubber wedge 4°



Rooftop holder complete with rubber wedge underneath

Specification:

Profile rail type: 45/26, 45/45, 45/60, 45/52, 45/60, 45/75, 45/90, 45/120

Applications area: for profile channel constructions onto rooftop

Installation advise: position rooftop holder on rubber pad. For compensation of possible roof pitch place rubber wedge (4°) below rubber pad

Scope of delivery (Rooftop holder complete): 1 x rubber pad
1 x holder
2 x hexagon screws M12 x 25
1 x 2-hole tooth plate

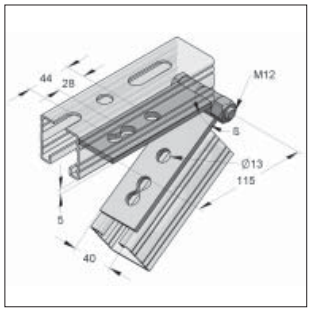
Technical data:

Material holder: steel
Material type: S235JR
Surface screw : zinc-nickel
Surface holder:: hot-dip galv.

according to building material class DIN 4102: B2

Identification	Dimension steel plate	Dimension rubber pad	Pressure load	Weight	Packing	Part-No.
	[mm]	[mm]	[kN]	[kg/pc.]	[pcs.]	
Rooftop holder complete	200x200x10	235x235x28	4,0	4,83	10	08197500
Rooftop holder rubber wedge	-	270x270x28/10	4,0	1,33	1	08197598

Joint connector for C-profile rails



Joint connector
for C-profile rails

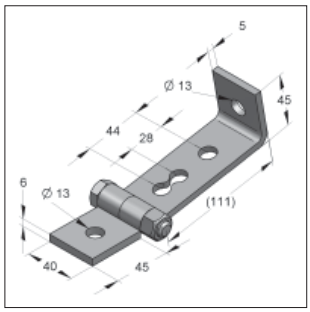
Specification:
Profile rail type: rail system 45
Applications area: mounting of two profile rails of various angularity

Technical data:
Material: steel
Material type: S235JR
Surface: galvanized[1)]

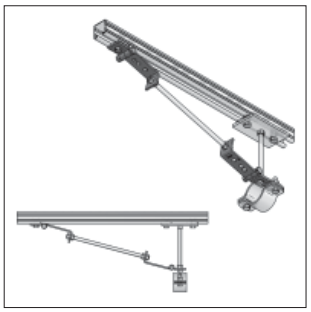
[1)] components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on demand!

Identification	Dimension L x W x T [mm]	Angle [ß]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Joint connector	115 x 40 x 5	+/-160°	0,46	20	08122200

Joint angle



Joint angle



Joint angle with bracing

Admissible load at angle β

Angle β	0°	30°	45°	60°	90°
Fzul.* [kN]	**4,5**	**5,2**	**4,0**	**3,2**	**2,8**

Specification:
Applications area: for bracing of threaded rod M12 with arbitrary angularity.
fixation onto profile channel or direct-mounting onto building structure.

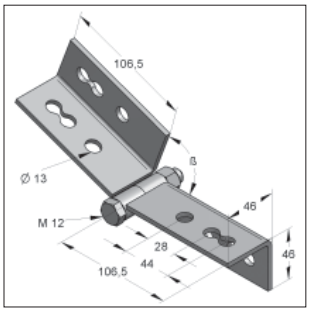
Remark: for upright mounting consider shear forces in radial tubular axle

Technical data:
Material: steel
Material type: S235JR
Surface: galvanized[1)]

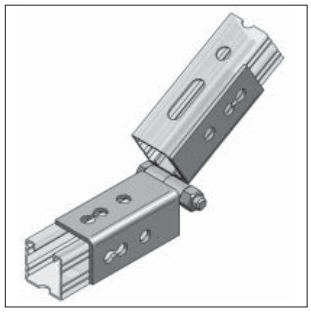
[1)] components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on demand!
* loads refering to component, not to connection

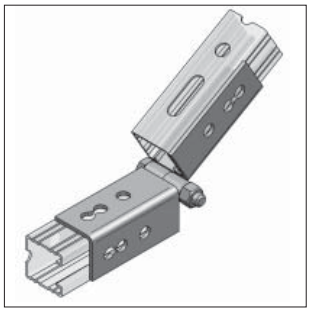
Identification	Hole-Ø [mm]	Angle [ß]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Joint angle 40/5	13	+/-90°	0,399	20	08122300

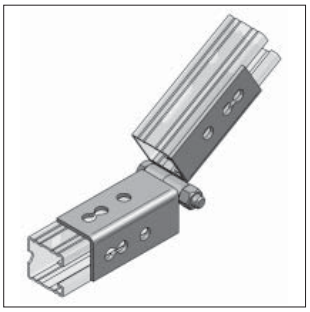
Profile joint connector



Profile joint connector


Position of channel arbitrary





Specification:

Profile rail type:	rail system 45
Applications area:	connection of C-profiles channels of system 45 with adjustable angle, position of channel arbitrary
Recommended accessory:	2 x 2-hole tooth plate 4 x hexagon screws M12 x 25

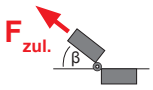
Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized

* loads refering to component, not to connection

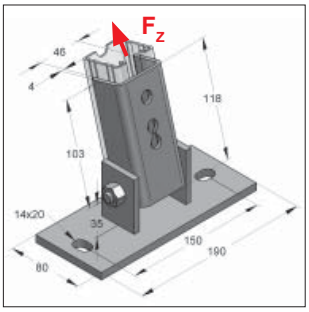
Identification	Hole-Ø [mm]	Angle [β]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Profile joint connector	13	+/-90°	0,662	10	08122700

Admissible load at angle β

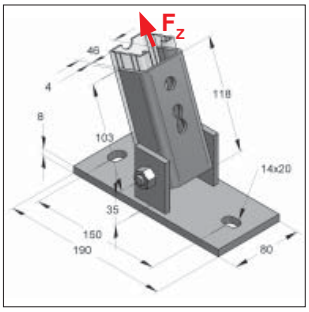


Angle β	30°	45°	60°	90°
Fzul.* [kN]	**6,0**	**4,24**	**3,45**	**3,0**

Joint holder with base plate



Joint holder with
base plate horizontal



Joint holder with
base plate vertical

Specification:

Profile rail type:	rail system 45
Mounting method:	on inclined roof- and bottom construction stepless fixable
Recommended accessory:	1 x 2-hole tooth plate 2 x hexagon screw M12 x 25 2 x washer DIN 7089-12
Applications area:	cross beam at various angle up to 90°

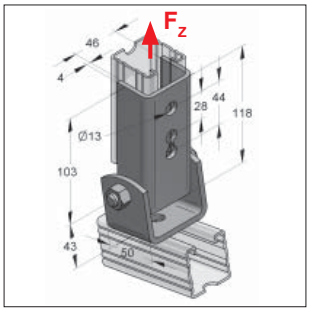
Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized[1)]

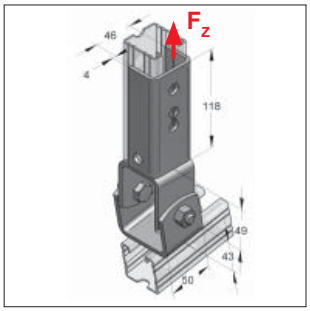
[1)] components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on demand!
[2)] loads refering to component, not to connection

Identification	Dimension plate [mm]	Tightening torque [Nm]	Max. load F_z [2)] [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Joint holder with base plate horizontal	190 x 80 x 8,0	50	7,0	1,91	10	08122500
Joint holder with base plate vertical	190 x 80 x 8,0	50	7,0	1,91	10	08122600

Joint holder



Joint holder
vertical



Joint holder
horizontal

Specification:

Profile rail type:	rail system 45
Mounting method:	on inclined roof- and bottom construction stepless fixable
Recommended accessory:	1 x 2-hole tooth plate 2 x hexagon screw M12 x 25 2 x washer DIN 7089-12
Applications area:	cross beam at various angle up to 90°

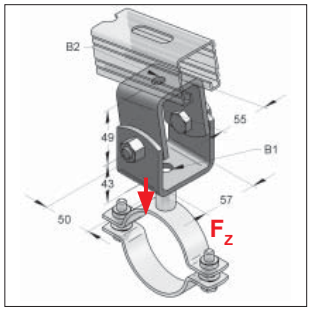
Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized[1)]

[1)] components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on demand!
[2)] loads refering to component, not to connection

Identification	For profile rail width [mm]	Hole-Ø [mm]	Tightening torque [Nm]	Max. load F_z [2)] [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Joint holder vertical	45	13	50	7,0	0,92	10	08120600
Joint holder horizontal	45	13	50	7,0	1,11	10	08121100

Joint holder with terminal hole



Joint holder with terminal hole

Specification:

Mounting method:	on inclined roof- and bottom construction stepless fixable
Applications area:	for connecting pipe clamps

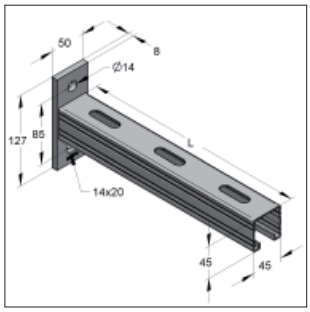
Technical data:

Material:	steel
Material type:	S235JR
Surface:	galvanized[1)]

[1)] components for outdoor application also available with Zinc-Nickel-coating (corrosion-protection class C3 acc. to ISO 9223). Delivery time on demand!
[2)] loads refer to component, not to connection

Identification	For threaded rods B1 / B2	B1 [mm]	B2 [mm]	Max. load F_z [2)] [kN]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Joint holder with terminal hole	M8-M12 / M8-M12	13	13	10,0	0,76	20	0812072
Joint holder with terminal hole	M8-M12 / M16	13	17	10,0	0,76	20	0812080
Joint holder with terminal hole	M16 / M16	17	17	10,0	0,76	20	0812177

Console C 45/45/2,0 mm



Console C 45/45/2,0 mm

Technical data: galvanized / hot-dip galv

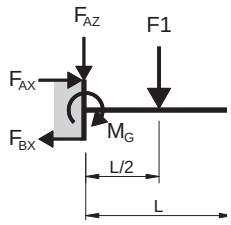
Material:	steel
Material type profile rail:	S235JR
Material type plate:	S355J2
Surface:	galvanized / hot-dip galvanized
Global safety coefficient γ:	1,54

Limitation torque	M_G:	522 Nm
Reaction force	F_{AX}:	6,15 kN
Reaction force	F_{BX}:	6,15 kN
M_G, F_{AX}, F_{BX} on	LC1:	up to = 1155 mm
	LC2:	up to = 525 mm
	LC3:	up to = 735 mm

[1] load limitation due to admissible bending L/150. Limitation torque M_G and bearing strengths F_{Ax}, F_{Bx} not valid anymore

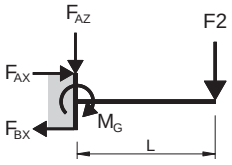
Console C-45/45 - profile rail 45/45/2,0 - plate 127 x 50 x 8,0 mm							galvanized
Identification	Length L [mm]	Loading condition 1 F1 [kN]	Max. load Loading condition 2 F2 [kN]	Loading condition 3 q0 [kN/m]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Console C-45/45	210,0	4,98	2,49	23,70	0,87	15	180450210
Console C-45/45	315,0	3,32	1,66	10,53	1,13	15	180450315
Console C-45/45	420,0	2,49	1,24	5,92	1,39	10	180450420
Console C-45/45	525,0	1,99	1,00	3,79	1,65	10	180450525
Console C-45/45	630,0	1,66	0,82[1]	2,63[1]	1,91	5	180450630
Console C-45/45	735,0	1,42	0,61[1]	1,93[1]	2,17	5	180450735
Console C-45/45	1050,0	1,00	0,30[1]	0,75[1]	2,95	5	180451050
Console C-45/45 - profile rail 45/45/2,0 - plate 127 x 50 x 8,0 mm							**hot-dip galv**
Console C-45/45	315,0	3,32	1,66	10,53	1,81	15	180450315/fvz
Console C-45/45	525,0	1,99	1,00	3,79	1,72	10	180450525/fvz

Loading condition 1 (LC1)



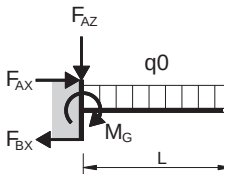
$F_{AZ} = F1$	$M_G = \frac{F1 * L}{2}$

Loading condition 2 (LC2)



$F_{AZ} = F2$	$M_G = F2 * L$

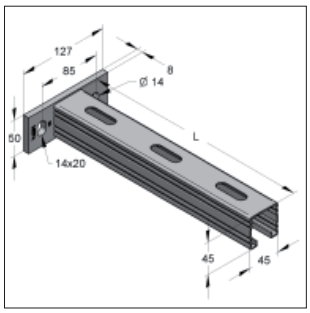
Loading condition 3 (LC3)



$F_{AZ} = q0 * L$	$M_G = \frac{q0 * L^2}{2}$

Remark:
all loads refer to static loads

Console C plate horizontal



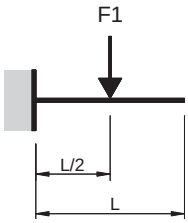
Console C 45/45/2,0 horizontal

Technical data: galvanized

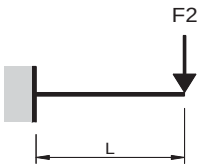
Material type profile rail:	S235JR	Dimension plate:	127 x 50 x 8,0 mm
Material type plate:	S355J2	Dimension profile rail:	45 x 45 x 2,0 mm
Material:	steel		
Surface:	galvanized		
Global safety coefficient γ:	1,35		

Identification	Length L [mm]	Loading condition 1 F1 [kN]	Max. load Loading condition 2 F2 [kN]	Loading condition 3 q0 [kN/m]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Console C-45/45	210,0	3,68	1,84	17,52	0,87	15	180460210
Console C-45/45	315,0	2,45	1,23	7,78	1,13	15	180460315
Console C-45/45	420,0	1,84	0,92	4,38	1,39	10	180460420
Console C-45/45	525,0	1,47	0,74	2,80	1,65	10	180460525

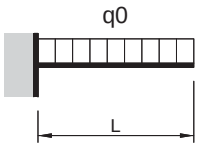
Loading condition 1 (LC1)



Loading condition 2 (LC2)

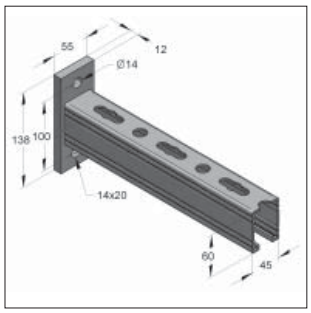


Loading condition 3 (LC3)



Remark:
all loads refer to static loads

Console C 45/60/3,0 mm



Console C 45/60/3,0 mm

Technical data:

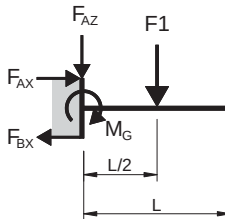
Material type plate:	S235JR, fy = 235 N/mm²	Dimension plate:	138 x 55 x 12,0 mm
Material type profile rail:	S235JR, fy = 235 N/mm²	Dimension profile rail:	45 x 60 x 3,0 mm
Surface:	galvanized		
Material:	steel		
Global safety coefficient γ:	1,35		

Limitation torquet	M_G:		1144,44 Nm
Reaction force	F_{AX}:		11,44 kN
Reaction force	F_{BX}:		11,44 kN
M_G, F_{AX}, F_{BX} on	LC1:	up to L =	1155 mm
	LC2:	up to L =	630 mm
	LC3:	up to L =	840 mm

[1)] load limitation due to admissible bending L/150. Limitation torque M_G and bearing strengths F_{Ax}, F_{Bx} not valid anymore

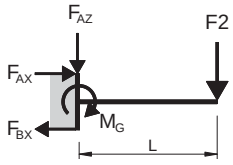
Identification	Length L [mm]	Loading condition 1 F1 [kN]	Max. load Loading condition 2 F2 [kN]	Loading condition 3 q0 [kN/m]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Console C-45/60	525,0	4,36	2,18	8,30	2,78	5	18050525
Console C-45/60	630,0	3,63	1,82	5,77	3,20	5	18050630
Console C-45/60	735,0	3,11	1,45[1)]	4,24	3,61	5	18050735
Console C-45/60	840,0	2,72	1,11[1)]	3,24	4,02	5	18050840

Loading condition 1 (LC1)



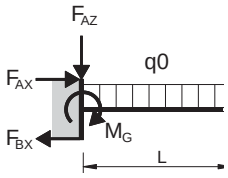
$F_{AZ} = F1$	$M_G = \frac{F1 * L}{2}$

Loading condition 2 (LC2)



$F_{AZ} = F2$	$M_G = F2 * L$

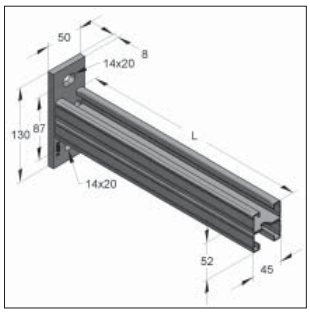
Loading condition 3 (LC3)



$F_{AZ} = q0 * L$	$M_G = \frac{q0 * L^2}{2}$

Remark:
all loads refer to static loads

Double console C 45/52/1,5 mm



Double console C 45/52/1,5

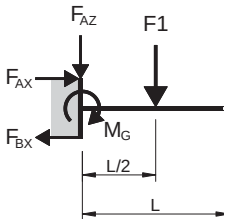
Technical data:

Material type plate:	S235JR, fy = 235 N/mm²	Dimension plate:	130 x 50 x 8,0 mm
Material type profile rail:	S235JR, fy = 235 N/mm²	Dimension profile rail:	45 x 52 x 1,5 mm
Surface:	galvanized		
Material:	steel		
Global safety coefficient γ:	1,35		

Limitation torquet	M_G:		461,54 Nm
Reaction force	F_{AX}:		5,31 kN
Reaction force	F_{BX}:		5,31 kN
M_G, F_{AX}, F_{BX} on	LC1:	up to L =	1155 mm
	LC2:	up to L =	735 mm
	LC3:	up to L =	945 mm

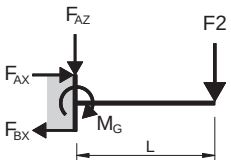
Identification	Length L [mm]	Loading condition 1 F1 [kN]	Max. load Loading condition 2 F2 [kN]	Loading condition 3 q0 [kN/m]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Console C-45/52 D	315,0	2,93	1,47	9,30	1,26	15	18070315
Console C-45/52 D	420,0	2,20	1,10	5,23	1,55	15	18070420
Console C-45/52 D	525,0	1,76	0,88	3,35	1,83	10	18070525
Console C-45/52 D	630,0	1,47	0,73	2,33	2,12	5	18070630

Loading condition 1 (LC1)



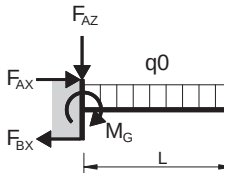
F_{AZ} = F1	$M_G = \frac{F1 * L}{2}$

Loading condition 2 (LC2)



F_{AZ} = F2	M_G = F2 * L

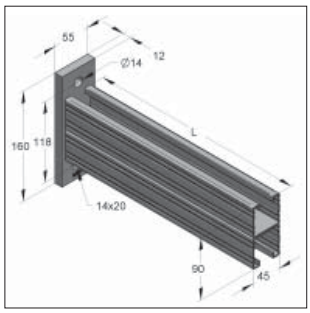
Loading condition 3 (LC3)



F_{AZ} = q0 *L	$M_G = \frac{q0 * L^2}{2}$

Remark:
all loads refer to static loads

Double console C 45/90/2,0 mm



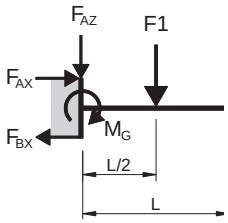
Double console C 45/90/2,0

Technical data: galvanized / hot-dip galv

Material:		steel
Material type plate:		S235JR
Material type plate:		S235JR
Surface:		galvanized / hot-dip galvanized
Global safety coefficient γ:		1,54
Limitation torquet	M_G:	1564,12 Nm
Reaction force	F_{AX}:	13,03 kN
Reaction force	F_{BX}:	13,03 kN
M_G, F_{AX}, F_{BX} on	LC1:	up to =1155 mm
	LC2:	up to =1155 mm
	LC3:	upt to =1155 mm

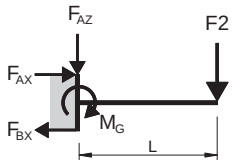
Console D-45/90 - profile rail 45/90/2,0 D - plate 160 x 55 x 12,0 mm							galvanized
Identification	Length L [mm]	Loading condition 1 F1 [kN]	Max. load Loading condition 2 F2 [kN]	Loading condition 3 q0 [kN/m]	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Console C-45/90 D	630,0	4,97	2,48	7,88	3,88	5	180900630
Console C-45/90 D	735,0	4,26	2,13	5,79	4,39	5	180900735
Console C-45/90 D	840,0	3,72	1,86	4,43	4,91	5	180900840
Console C-45/90 D	945,0	3,31	1,66	3,50	5,43	5	180900945
Console C-45/90 D	1050,0	2,98	1,49	2,84	5,95	5	180901050
Console D-45/90 - profile rail 45/90/2,0 D - plate 160 x 55 x 12,0 mm							**hot-dip galv**
Console C-45/90 D	630,0	4,97	2,48	7,88	4,03	5	180900630/fvz
Console C-45/90 D	840,0	3,72	1,86	4,43	5,11	5	180900840/fvz

Loading condition 1 (LC1)



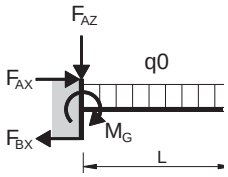
$F_{AZ} = F1$	$M_G = \frac{F1 * L}{2}$

Loading condition 2 (LC2)



$F_{AZ} = F2$	$M_G = F2 * L$

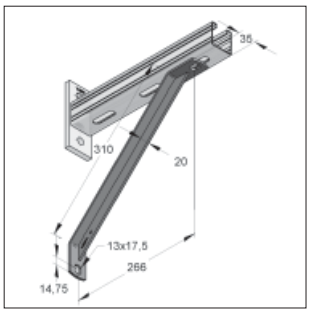
Loading condition 3 (LC3)



$F_{AZ} = q0 * L$	$M_G = \frac{q0 * L^2}{2}$

Remark:
all loads refer to static loads

Brace 45° T-profile



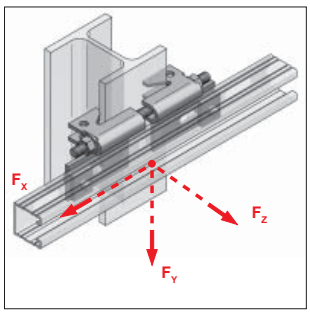
Brace 45° T-profile

Specification:
Applications area: to increase the loading capacity of consoles and wall brackets

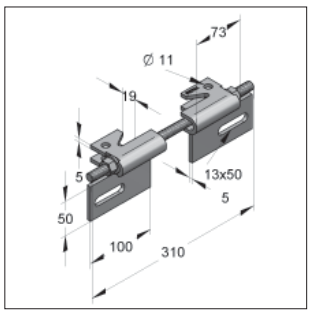
Technical data:
Material: steel
Material type: S235JR
Surface: galvanized

Identification	Weight [kg/pc.]	Packing [pcs.]	Part-No.
Brace 45° T-profile	0,70	25	0815101

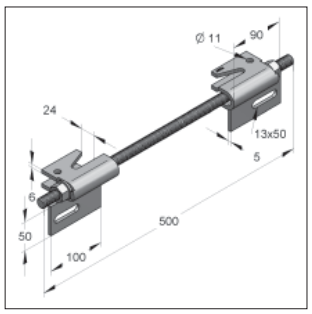
Beam cross-connector (vertical)



Beam cross-connector (vertical)



Typ D III



Typ D IV

Specification:
Applications area: vertical clamping connection of profile rails at steel girder

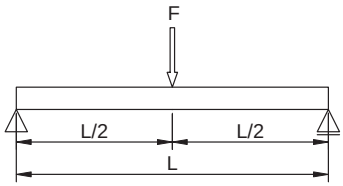
Recommended accessory: 2 x guide cleat
1 x hexagon screw FK 8.8
2 x nut
2 x washer

Mounting instruction: fix buttstraps on load anticipated side. Can be combined with rail system 45. Screwing of profile rail on buttstrap of guide cleat thru profile base with 2 screws M12 x 25, washers and threaded square plates or tooth plate

Technical data:
Material: steel
Material type: S235JR (clamps)

Surface
- Clamps: hot-dip galv.
- Screw connection: zinc-nickel

Identification	Clamping-range [mm]	Threaded rod [mm]	Tightening torque [Nm]	Max. load F_X [kN]	Max. load F_Y [kN]	Max. load F_Z [kN]	Weight [kg/Set]	Packing [pcs.]	Part-No.
Beam cross-connector Typ D III	8-15	M12 x 310	64	4,0	4,0	4,0	1,10	1	08146103
Beam cross-connector Typ D IV	13-20	M16 x 500	64	4,0	4,0	4,0	1,99	1	08146104



02

Loads of profile rails, galvanized: maximum loads for 1 x F

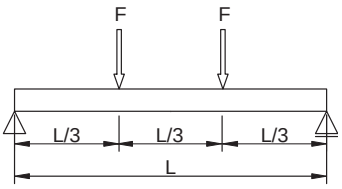
	System 45 (toothed)																	
	45/26/1,5	45/45/1,5	45/45/2,0	45/45/2,5	45/45/2,5	45/60/3,0	45/60/3,0	45/75/3,0	45/75/3,0	45/52/1,5 D	45/90/1,5 D	45/90/2,0 D	45/90/2,5 D	45/90/2,5 D	45/120/3,0 D	45/120/3,0 D	45/150/3,0 D	45/150/3,0 D
Surface	**fbv**	**fbv**	**fbv**	**fbv**	**fsv**	**fbv**	**fsv**	**fbv**	**fsv**	**fbv**	**fbv**	**fbv**	**fbv**	**fsv**	**fbv**	**fsv**	**fbv**	**fsv**
F / L	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
[mm]																		
250	2,76	7,04	9,05	9,88	9,28	16,06	15,10	24,26	22,80	7,94	10,05	12,97	16,47	16,47	20,10	20,10	16,22	16,22
500	1,38	3,52	4,53	4,94	4,64	8,03	7,55	12,13	11,40	4,09	10,05	12,97	16,05	16,05	20,10	20,10	16,22	16,22
750	0,92	2,35	3,02	3,30	3,10	5,35	5,03	8,09	7,60	2,73	6,91	8,88	10,70	10,70	17,28	16,24	16,22	16,22
1000	0,69	1,76	2,27	2,47	2,32	4,02	3,78	6,06	5,70	2,05	5,19	6,66	8,03	8,03	12,96	12,18	16,22	16,22
1250	0,46	1,41	1,81	1,98	1,86	3,21	3,02	4,85	4,56	1,64	4,15	5,33	6,42	6,42	10,37	9,75	16,16	15,19
1500	0,32	1,18	1,51	1,65	1,55	2,68	2,52	4,04	3,80	1,36	3,46	4,44	5,35	5,35	8,64	8,12	13,46	12,66
1750	0,23	1,01	1,29	1,42	1,33	2,29	2,16	3,47	3,26	1,17	2,97	3,81	4,59	4,59	7,41	6,96	11,54	10,85
2000	0,18	0,78	0,99	1,11	1,11	2,01	1,89	3,03	2,85	1,02	2,60	3,33	4,02	4,02	6,48	6,09	10,10	9,49
2250	0,14	0,62	0,78	0,88	0,88	1,78	1,68	2,70	2,53	0,82	2,31	2,96	3,57	3,57	5,76	5,41	8,98	8,44
2500	0,11	0,50	0,63	0,72	0,72	1,51	1,51	2,43	2,28	0,66	2,08	2,67	3,21	3,21	5,18	4,87	8,08	7,59
2750		0,41	0,52	0,59	0,59	1,24	1,24	2,21	2,07	0,55	1,89	2,43	2,92	2,92	4,71	4,43	7,34	6,90
3000		0,35	0,44	0,50	0,50	1,05	1,05	1,98	1,90	0,46	1,73	2,22	2,68	2,68	4,32	4,06	6,73	6,33
3250		0,30	0,38	0,43	0,43	0,89	0,89	1,69	1,69	0,39	1,60	2,05	2,47	2,47	3,99	3,75	6,21	5,84
3500		0,26	0,33	0,37	0,37	0,77	0,77	1,45	1,45	0,34	1,48	1,90	2,29	2,29	3,70	3,48	5,77	5,42
3750		0,22	0,28	0,32	0,32	0,67	0,67	1,27	1,27	0,29	1,29	1,66	2,00	2,00	3,46	3,25	5,39	5,06
4000		0,20	0,25	0,28	0,28	0,59	0,59	1,11	1,11	0,26	1,14	1,46	1,76	1,76	3,24	3,05	5,05	4,75
4250		0,18	0,22	0,25	0,25	0,52	0,52	0,99	0,99	0,23	1,01	1,29	1,56	1,56	3,05	2,87	4,75	4,47
4500		0,16	0,20	0,22	0,22	0,46	0,46	0,88	0,88	0,20	0,90	1,15	1,39	1,39	2,88	2,71	4,49	4,22
4750		0,14	0,18	0,20	0,20	0,42	0,42	0,79	0,79	0,18	0,81	1,04	1,25	1,25	2,68	2,56	4,25	4,00
5000		0,13	0,16	0,18	0,18	0,38	0,38	0,71	0,71	0,17	0,73	0,93	1,13	1,13	2,41	2,41	4,04	3,80
5250		0,12	0,15	0,17	0,17	0,34	0,34	0,65	0,65	0,15	0,66	0,85	1,02	1,02	2,19	2,19	3,85	3,62
5500		0,11	0,13	0,15	0,15	0,31	0,31	0,59	0,59	0,14	0,60	0,77	0,93	0,93	2,00	2,00	3,67	3,45
5750		0,10	0,12	0,14	0,14	0,28	0,28	0,54	0,54	0,12	0,55	0,71	0,85	0,85	1,83	1,83	3,51	3,30
6000			0,11	0,13	0,13	0,26	0,26	0,50	0,50	0,11	0,51	0,65	0,78	0,78	1,68	1,68	3,26	3,16

Calculation according to RAL-GZ 655-C

Safety	χ	= 1,54
Max. bending	δ_{zul}	= L/200
module of elasticity	E	= 210000 N/mm²

Surface property

fbv: pre-galv
fsv: hot-dip galv



Loads of profile rails, galvanized: maximum loads for 2 x F

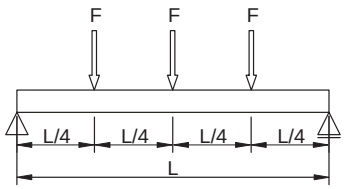
	System 45 (toothed)																	
	45/26/1,5	45/45/1,5	45/45/2,0	45/45/2,5	45/45/2,5	45/60/3,0	45/60/3,0	45/75/3,0	45/75/3,0	45/52/1,5 D	45/90/1,5 D	45/90/2,0 D	45/90/2,5 D	45/90/2,5 D	45/120/3,0 D	45/120/3,0 D	45/150/3,0 D	45/150/3,0 D
Surface	**fbv**	**fbv**	**fbv**	**fbv**	**fsv**	**fbv**	**fsv**	**fbv**	**fsv**	**fbv**	**fbv**	**fbv**	**fbv**	**fsv**	**fbv**	**fsv**	**fbv**	**fsv**
F / **L**	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
[mm]																		
250	2,07	5,28	6,79	7,41	6,96	12,05	11,33	18,19	17,10	3,97	10,05	12,97	16,47	16,47	10,05	10,05	8,11	8,11
500	1,03	2,64	3,40	3,71	3,48	6,02	5,66	9,10	8,55	3,07	7,78	9,99	12,04	12,04	10,05	10,05	8,11	8,11
750	0,69	1,76	2,27	2,47	2,32	4,02	3,78	6,06	5,70	2,05	5,19	6,66	8,03	8,03	10,05	10,05	8,11	8,11
1000	0,42	1,32	1,70	1,86	1,74	3,01	2,83	4,55	4,28	1,53	3,89	5,00	6,02	6,02	9,72	9,14	8,11	8,11
1250	0,27	1,06	1,36	1,49	1,40	2,41	2,27	3,64	3,42	1,23	3,11	4,00	4,82	4,82	7,78	7,31	8,11	8,11
1500	0,19	0,81	1,03	1,16	1,16	2,01	1,89	3,03	2,85	1,02	2,60	3,33	4,02	4,02	6,48	6,09	8,11	8,11
1750	0,14	0,60	0,76	0,86	0,86	1,72	1,62	2,60	2,44	0,79	2,23	2,86	3,44	3,44	5,55	5,22	8,11	8,11
2000	0,11	0,46	0,58	0,66	0,66	1,38	1,38	2,27	2,14	0,61	1,95	2,50	3,01	3,01	4,86	4,57	7,57	7,12
2250		0,36	0,46	0,52	0,52	1,09	1,09	2,02	1,90	0,48	1,73	2,22	2,68	2,68	4,32	4,06	6,73	6,33
2500		0,30	0,37	0,42	0,42	0,88	0,88	1,82	1,71	0,39	1,56	2,00	2,41	2,41	3,89	3,65	6,06	5,69
2750		0,24	0,31	0,35	0,35	0,73	0,73	1,65	1,55	0,32	1,41	1,81	2,18	2,18	3,53	3,32	5,51	5,18
3000		0,21	0,26	0,29	0,29	0,61	0,61	1,44	1,43	0,27	1,19	1,52	1,83	1,83	3,24	3,05	5,05	4,75
3250		0,18	0,22	0,25	0,25	0,52	0,52	1,23	1,23	0,23	1,01	1,30	1,56	1,56	2,99	2,81	4,66	4,38
3500		0,15	0,19	0,22	0,22	0,45	0,45	1,06	1,06	0,20	0,87	1,12	1,35	1,35	2,78	2,61	4,33	4,07
3750		0,13	0,17	0,19	0,19	0,39	0,39	0,92	0,92	0,17	0,76	0,98	1,17	1,17	2,52	2,44	4,04	3,80
4000		0,12	0,15	0,17	0,17	0,35	0,35	0,81	0,81	0,15	0,67	0,86	1,03	1,03	2,21	2,21	3,79	3,56
4250		0,11	0,13	0,15	0,15	0,31	0,31	0,72	0,72	0,13	0,59	0,76	0,92	0,92	1,96	1,96	3,56	3,35
4500			0,12	0,13	0,13	0,27	0,27	0,64	0,64	0,12	0,53	0,68	0,82	0,82	1,75	1,75	3,37	3,16
4750			0,11	0,12	0,12	0,24	0,24	0,58	0,58	0,11	0,48	0,61	0,73	0,73	1,57	1,57	3,19	3,00
5000			0,10	0,11	0,11	0,22	0,22	0,52	0,52	0,10	0,43	0,55	0,66	0,66	1,42	1,42	3,03	2,85
5250				0,10	0,10	0,20	0,20	0,47	0,47		0,39	0,50	0,60	0,60	1,29	1,29	2,88	2,71
5500						0,18	0,18	0,43	0,43		0,36	0,46	0,55	0,55	1,17	1,17	2,75	2,59
5750						0,17	0,17	0,39	0,39		0,33	0,42	0,50	0,50	1,07	1,07	2,59	2,48
6000						0,15	0,15	0,36	0,36		0,30	0,38	0,46	0,46	0,98	0,98	2,38	2,37

Calculation according to RAL-GZ 655-C

Safety	χ	= 1,54
Max. bending	δ_{zul}	= L/200
module of elasticity	E	= 210000 N/mm²

Surface property

fbv: pre-galv
fsv: hot-dip galv



02

Loads of profile rails, galvanized: maximum loads for 3 x F

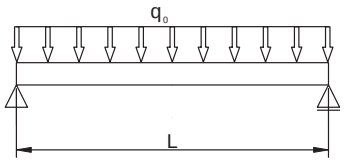
	System 45 (toothed)																	
	45/26/1,5	45/45/1,5	45/45/2,0	45/45/2,5	45/45/2,5	45/60/3,0	45/60/3,0	45/75/3,0	45/75/3,0	45/52/1,5 D	45/90/1,5 D	45/90/2,0 D	45/90/2,5 D	45/90/2,5 D	45/120/3,0 D	45/120/3,0 D	45/150/3,0 D	45/150/3,0 D
Surface	fbv	fbv	fbv	fbv	fsv	fbv	fsv	fbv	fsv	fbv	fbv	fbv	fbv	fsv	fbv	fsv	fbv	fsv
F / L	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
[mm]																		
250	1,38	3,52	4,52	4,94	4,64	8,03	7,55	12,13	11,40	4,09	3,35	4,32	5,49	5,49	13,40	13,40	5,41	5,41
500	0,69	1,76	2,26	2,47	2,32	4,02	3,78	6,06	5,70	2,05	3,35	4,32	5,49	5,49	12,96	12,18	5,41	5,41
750	0,46	1,17	1,51	1,65	1,55	2,68	2,52	4,04	3,80	1,36	3,35	4,32	5,35	5,35	8,64	8,12	5,41	5,41
1000	0,30	0,88	1,13	1,23	1,16	2,01	1,89	3,03	2,85	1,02	2,59	3,33	4,01	4,01	6,48	6,09	5,41	5,41
1250	0,19	0,70	0,90	0,99	0,93	1,61	1,51	2,43	2,28	0,82	2,07	2,66	3,21	3,21	5,18	4,87	5,41	5,41
1500	0,13	0,58	0,74	0,82	0,77	1,34	1,26	2,02	1,90	0,68	1,73	2,22	2,67	2,67	4,32	4,06	5,41	5,41
1750	0,10	0,42	0,54	0,61	0,61	1,15	1,08	1,73	1,63	0,57	1,48	1,90	2,29	2,29	3,70	3,48	5,41	5,41
2000	0,08	0,33	0,41	0,47	0,47	0,99	0,94	1,52	1,43	0,43	1,30	1,66	2,01	2,01	3,24	3,05	5,05	4,75
2250	0,06	0,26	0,33	0,37	0,37	0,78	0,78	1,35	1,27	0,34	1,15	1,48	1,78	1,78	2,88	2,71	4,49	4,22
2500	0,05	0,21	0,26	0,30	0,30	0,63	0,63	1,20	1,14	0,28	1,04	1,33	1,60	1,60	2,59	2,44	4,04	3,80
2750	0,04	0,17	0,22	0,25	0,25	0,52	0,52	0,99	0,99	0,23	0,94	1,21	1,46	1,46	2,36	2,22	3,67	3,45
3000	0,03	0,14	0,18	0,21	0,21	0,44	0,44	0,83	0,83	0,19	0,85	1,09	1,31	1,31	2,16	2,03	3,37	3,16
3250		0,12	0,16	0,18	0,18	0,38	0,38	0,71	0,71	0,16	0,72	0,93	1,12	1,12	1,99	1,87	3,11	2,92
3500		0,11	0,14	0,15	0,15	0,32	0,32	0,61	0,61	0,14	0,62	0,80	0,96	0,96	1,85	1,74	2,88	2,71
3750			0,12	0,13	0,13	0,28	0,28	0,53	0,53	0,12	0,54	0,70	0,84	0,84	1,73	1,62	2,69	2,53
4000			0,10	0,12	0,12	0,25	0,25	0,47	0,47	0,11	0,48	0,61	0,74	0,74	1,59	1,52	2,52	2,37
4250				0,10	0,10	0,22	0,22	0,42	0,42	0,10	0,42	0,54	0,65	0,65	1,41	1,41	2,38	2,23
4500						0,20	0,20	0,37	0,37		0,38	0,48	0,58	0,58	1,25	1,25	2,24	2,11
4750						0,18	0,18	0,33	0,33		0,34	0,43	0,52	0,52	1,13	1,13	2,13	2,00
5000						0,16	0,16	0,30	0,30		0,30	0,39	0,47	0,47	1,02	1,02	1,98	1,90
5250						0,14	0,14	0,27	0,27		0,28	0,36	0,43	0,43	0,92	0,92	1,79	1,79
5500						0,13	0,13	0,25	0,25		0,25	0,32	0,39	0,39	0,84	0,84	1,64	1,64
5750						0,12	0,12	0,23	0,23		0,23	0,30	0,36	0,36	0,77	0,77	1,50	1,50
6000						0,11	0,11	0,21	0,21		0,21	0,27	0,33	0,33	0,71	0,71	1,37	1,37

Calculation according to RAL-GZ 655-C

Safety	χ	= 1,54
Max. bending	δ_{zul}	= L/200
module of elasticity	E	= 210000 N/mm²

Surface property

fbv: pre-galv
fsv: hot-dip galv



Loads of profile rails, galvanized: maximum loads for distributed load

	System 45 (toothed)																	
	45/26/1,5	45/45/1,5	45/45/2,0	45/45/2,5	45/45/2,5	45/60/3,0	45/60/3,0	45/75/3,0	45/75/3,0	45/52/1,5 D	45/90/1,5 D	45/90/2,0 D	45/90/2,5 D	45/90/2,5 D	45/120/3,0 D	45/120/3,0 D	45/150/3,0 D	45/150/3,0 D
Surface	fbv	fbv	fbv	fbv	fsv	fbv	fsv	fbv	fsv	fbv	fbv	fbv	fbv	fsv	fbv	fsv	fbv	fsv
F / L	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kN/m]
[mm]																		
250	22,05	56,31	72,38	78,97	74,22	128,52	120,81	171,42	171,42	63,50	40,18	51,86	65,87	65,87	160,79	160,79	64,87	64,87
500	5,51	14,08	18,10	19,74	18,56	32,13	30,20	48,52	45,61	16,37	20,09	25,93	32,94	32,94	80,40	80,40	32,44	32,44
750	2,45	6,26	8,04	8,77	8,25	14,28	13,42	21,56	20,27	7,28	13,39	17,29	21,96	21,96	46,08	43,32	21,62	21,62
1000	1,15	3,52	4,52	4,94	4,64	8,03	7,55	12,13	11,40	4,09	10,05	12,96	16,05	16,05	25,92	24,37	16,22	16,22
1250	0,59	2,25	2,90	3,16	2,97	5,14	4,83	7,76	7,30	2,62	6,63	8,52	10,27	10,27	16,59	15,59	12,97	12,97
1500	0,34	1,46	1,86	2,10	2,06	3,57	3,36	5,39	5,07	1,82	4,61	5,92	7,13	7,13	11,52	10,83	10,81	10,81
1750	0,21	0,92	1,17	1,33	1,33	2,62	2,47	3,96	3,72	1,23	3,38	4,35	5,24	5,24	8,46	7,96	9,27	9,27
2000	0,14	0,62	0,79	0,89	0,89	1,88	1,88	3,03	2,85	0,83	2,59	3,33	4,01	4,01	6,48	6,09	8,11	8,11
2250	0,10	0,43	0,55	0,62	0,62	1,32	1,32	2,40	2,25	0,58	2,05	2,63	3,17	3,17	5,12	4,81	7,21	7,21
2500	0,07	0,32	0,40	0,45	0,45	0,96	0,96	1,82	1,82	0,42	1,66	2,13	2,57	2,57	4,15	3,90	6,46	6,07
2750	0,06	0,24	0,30	0,34	0,34	0,72	0,72	1,37	1,37	0,32	1,37	1,76	2,12	2,12	3,43	3,22	5,34	5,02
3000	0,04	0,18	0,23	0,26	0,26	0,56	0,56	1,06	1,06	0,24	1,07	1,38	1,66	1,66	2,88	2,71	4,49	4,22
3250	0,03	0,14	0,18	0,21	0,21	0,44	0,44	0,83	0,83	0,19	0,84	1,08	1,31	1,31	2,45	2,31	3,82	3,59
3500		0,12	0,15	0,17	0,17	0,35	0,35	0,67	0,67	0,15	0,68	0,87	1,05	1,05	2,12	1,99	3,30	3,10
3750		0,09	0,12	0,13	0,13	0,29	0,29	0,54	0,54	0,13	0,55	0,71	0,85	0,85	1,83	1,73	2,87	2,70
4000		0,08	0,10	0,11	0,11	0,24	0,24	0,45	0,45	0,10	0,45	0,58	0,70	0,70	1,51	1,51	2,52	2,37
4250		0,06	0,08	0,09	0,09	0,20	0,20	0,37	0,37	0,09	0,38	0,48	0,58	0,58	1,26	1,26	2,24	2,10
4500		0,05	0,07	0,08	0,08	0,17	0,17	0,31	0,31	0,07	0,32	0,41	0,49	0,49	1,06	1,06	1,99	1,87
4750		0,05	0,06	0,07	0,07	0,14	0,14	0,27	0,27	0,06	0,27	0,35	0,42	0,42	0,90	0,90	1,75	1,68
5000		0,04	0,05	0,06	0,06	0,12	0,12	0,23	0,23	0,05	0,23	0,30	0,36	0,36	0,77	0,77	1,50	1,50
5250		0,03	0,04	0,05	0,05	0,10	0,10	0,20	0,20	0,05	0,20	0,26	0,31	0,31	0,67	0,67	1,30	1,30
5500			0,04	0,04	0,04	0,09	0,09	0,17	0,17	0,04	0,17	0,22	0,27	0,27	0,58	0,58	1,13	1,13
5750			0,03	0,04	0,04	0,08	0,08	0,15	0,15	0,03	0,15	0,20	0,24	0,24	0,51	0,51	0,99	0,99
6000				0,03	0,03	0,07	0,07	0,13	0,13		0,13	0,17	0,21	0,21	0,45	0,45	0,87	0,87

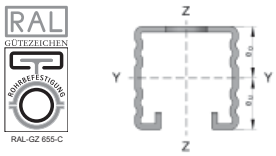
Calculation according to RAL-GZ 655-C

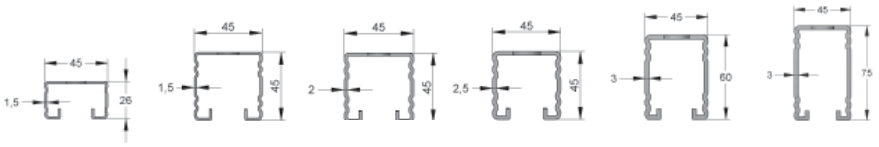
Safety	χ	= 1,54
Max. bending	δ_{zul}	= L/200
module of elasticity	E	= 210000 N/mm²

Surface property

fbv: pre-galv
fsv: hot-dip galv

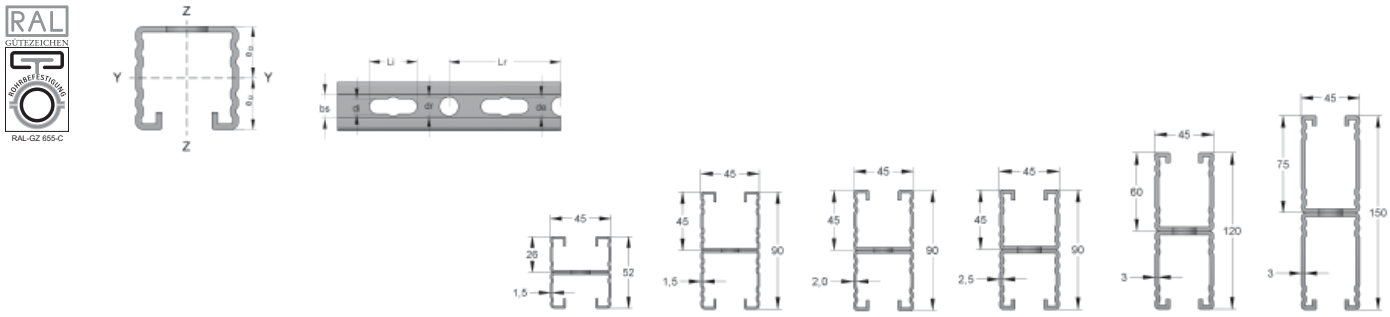
Profile rail overview, pre- and hot-dip galvanized





Profile rail			System 45 (toothed)					
			45/26/1,5	**45/45/1,5**	**45/45/2,0**	**45/45/2,5**	**45/60/3,0**	**45/75/3,0**
Surface pre-galv								
Material according to DIN EN 10346			S250GD-Z275-N-A	S250GD-Z275-N-A	S250GD-Z275-N-A	S250GD-Z275-N-A	S250GD-Z275-N-A	S250GD-Z275-N-A
Elastic limit	f_y	N/mm²	250	250	250	250	250	250
Weight/ meter	G/m	kg/m	1,34	1,89	2,45	2,96	4,06	4,82
Surface hot-dip galv according to DIN EN ISO 1461								
Material according to DIN EN 10025			-	-	-	S235JR	S235JR	S235JR
Elastic limit	f_y	N/mm²	-	-	-	235	235	235
Weight/meter	G/m	kg/m	-	-	-	3,21	4,35	5,15
Delivery length 1	l_1	m	2,00	2,00	2,00	3,00	6,00	6,00
Delivery length 2	l_2	m	6,00	6,00	6,00	6,00	-	-
Area (least cross section of the profile rail)	A_k	cm²	1,49	2,29	2,98	3,53	4,52	5,66
Slot width	b_s	mm	22,0	22,00	22,00	22,0	22,0	22,0
Grid dimension	l_r	mm	105,0	52,50	52,50	52,5	105,0	105,0
Diameter round hole	d_r	mm	14,0	14,00	14,00	18,0	18,0	18,0
Diameter elongated hole x length	d_l x l_l	mm	14x45	14x45	14x45	14x45	14x45	14x45
Extension diameter elongated hole	d_e	mm	-	-	-	18,0	18,0	18,0
Characteristic values YY-axis								
Axial angular impulse	I_y	cm⁴	1,42	6,13	7,80	8,81	18,67	35,36
Section modulus	W_y	cm³	1,06	2,71	3,48	3,80	6,18	9,34
Centroid distance	e_o	cm	1,34	2,23	2,24	2,19	3,02	3,71
Centroid distance	e_u	cm	1,26	2,27	2,26	2,31	2,98	3,79
Radius of inertia	i_y	cm	0,98	1,64	1,62	1,58	2,03	2,50
Characteristic values ZZ-axis								
Axial angular impulse	I_z	cm⁴	5,15	8,35	10,66	12,69	17,15	21,90
Section modulus z-axis	W_z	cm³	2,29	3,71	4,74	5,64	7,62	9,74
Centroid distance	e_z	cm	2,25	2,25	2,25	2,25	2,25	2,25
Radius of inertia	i_z	cm	1,86	1,91	1,89	1,90	1,95	1,96
Approvals/qualitiy marks								
RAL quality mark	RAL-GZ 655-C		x	x	x	x	x	x

Profile rail overview, pre- and hot-dip galvanized



Profile rail			System 45 (toothed)					
			45/52/1,5 D	45/90/1,5 D	45/90/2,0 D	45/90/2,5 D	45/120/3,0 D	45/150/3,0 D
Surface pre-galv								
Material according to DIN EN 10346			S250GD-Z275-N-A	S250GD-Z275-N-A	S250GD-Z275-N-A	S250GD-Z275-N-A	S250GD-Z275-N-A	S250GD-Z275-N-A
Elastic limit	f_y	N/mm²	250	250	250	250	250	250
Weight/ meter	G/m	kg/m	2,69	3,78	4,90	5,92	8,12	9,46
Surface hot-dip galv according to DIN EN ISO 1461								
Material according to DIN EN 10025			-	-	-	S235JR	S235JR	S235JR
Elastic limit	f_y	N/mm²	-	-	-	235	235	235
Weight/meter	G/m	kg/m	-	-	-	6,35	8,63	10,24
Delivery length 1	l_1	m	6,00	6,00	6,00	6,00	6,00	6,00
Delivery length 2	l_2	m	-	-	-	-	-	-
Area (least cross section of the profile rail)	A_k	cm²	2,99	4,59	5,96	7,05	9,04	11,33
Slot width	b_s	mm	22,0	22,00	22,00	22,0	22,0	22,0
Grid dimension	l_r	mm	105,0	52,50	52,50	52,5	105,0	105,0
Diameter round hole	d_r	mm	18,0	14,00	14,00	14,0	18,0	18,0
Diameter elongated hole x length	d_l x l_l	mm	14x45	14x45	14x45	14x45	14x45	14x45
Extension diameter elongated hole	d_e	mm	-	-	-	18,0	18,0	18,0
Characteristic values YY-axis								
Axial angular impulse	I_y	cm⁴	8,19	35,91	46,13	55,62	119,76	233,12
Section modulus	W_y	cm³	3,15	7,98	10,25	12,35	19,96	31,10
Centroid distance	e_o	cm	2,60	4,50	4,50	4,50	6,00	7,50
Centroid distance	e_u	cm	2,60	4,50	4,50	4,50	6,00	7,50
Radius of inertia	i_y	cm	1,66	2,80	2,78	2,81	3,64	4,53
Characteristic values ZZ-axis								
Axial angular impulse	I_z	cm⁴	10,30	16,74	21,32	25,38	34,31	43,81
Section modulus z-axis	W_z	cm³	4,58	7,44	9,47	11,28	15,25	19,47
Centroid distance	e_z	cm	2,25	2,25	2,25	2,25	2,25	2,25
Radius of inertia	i_z	cm	1,86	1,91	1,89	1,90	1,95	3,85
Approvals/qualitiy marks								
RAL quality mark	RAL-GZ 655-C		x	x	x	x	x	x

MEFA Befestigungs- und Montagesysteme GmbH
Schillerstraße 15 | D-74635 Kupferzell
Phone +49 7944 64-0 | Fax +49 7944 64-37
info@mefa.de | **www.mefa.de**