

fischer 

Catalogue Installation Systems



Foreword

Dear business partners,

With pioneering innovations and top quality, we have been increasing efficiency and reliability in construction for decades. Day after day, we open ourselves up to new ideas and strive for perfection and pioneering fixing solutions. The roots of our innovations are inexhaustible inventiveness and 75 years of technological expertise.

We place the highest demands on your satisfaction, valued customers. Because our motivation is to meet your daily challenges with the most suitable solutions. System solutions perfectly tailored to your applications complement our wide range of plastic plugs, steel anchors, chemical fixing systems and much more. Our fixing and installation solutions for building services mechanical, electrical and plumbing (MEP) speed up the installation of cables, simplify installation, shorten construction times and reduce your project costs. The wide range of installation systems made of galvanised, hot-dip galvanised and stainless steel covers light to heavy loads and a variety of applications. Depending on the building situation and the scope of the pipe-work, the required components can be put together in modular form.

New additions are our fixed points and sliding elements, which absorb thermally induced expansion of pipes and thus prevent damage to the pipes. Various designs are suitable for different loads and structural conditions.

We support your integral planning perfectly with our services and data for Building Information Modelling (BIM). Our INSTALL-FIX software tool within our fischer FiXperience dimensioning software is also used specifically for dimensioning our channel system and determining the required quantities. Our digital offerings also extend to automated construction and networked fixing products in the Internet of Things (IoT). For example, our BauBot robot takes over the drilling and installation of fischer fixing solutions in floors, ceilings and walls on the construction site in a globally unique way. Our sensor innovation fischer Construction Monitoring also enables you for the first time to monitor the pre-tensioning forces present in fixings at any time.

We accompany you, dear customers, through all construction phases of your projects. And we do so worldwide. In our own fischer Construction Engineering GmbH, we bundle our expertise and increase efficiency, safety and precision on the construction site. We offer you numerous services right from the planning stage, including advice, dimensioning, support with approval procedures, BIM modelling and CAD as well as fire protection and much more. We also support you during implementation with installation planning, pre-assembly service, instruction or on-site support. We are a strong partner at your side right through to successful project completion.

We hope you enjoy reading our new catalogue and using our MEP installation solutions!



Andreas Voll
*Chairman of the management board
of the fischer group of companies*



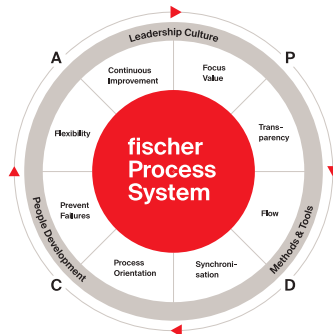
„Whoever chooses fischer receives more than a range of safe products. The aim is to always develop the best solutions for our customers across the globe.“

Besides the innovative products, this predominantly concerns support that is focused on the customer, and services designed to improve customer benefit.

A brand and its promise to perform.

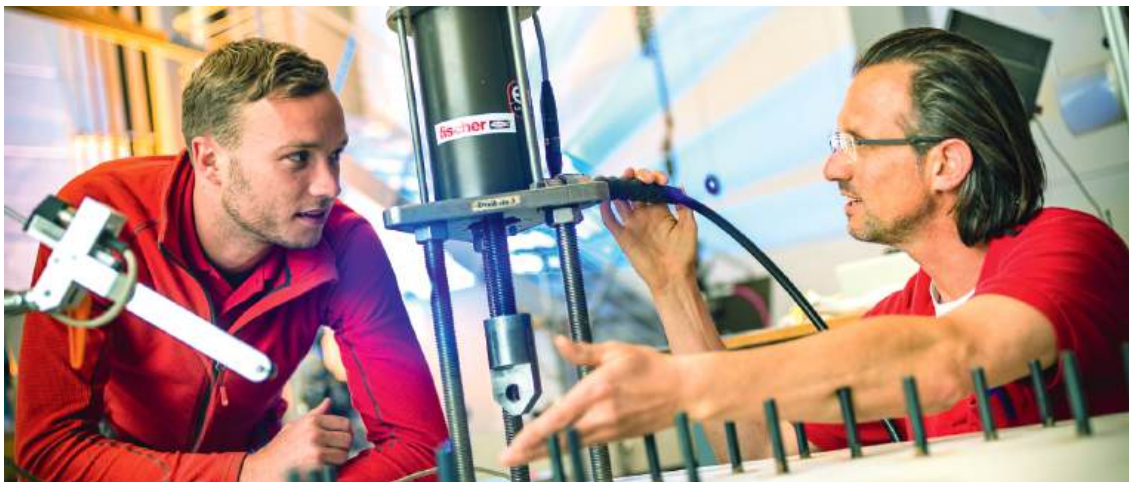
Continuous improvement

With the fischer ProzessSystem (fPS) we ensure that we are adapting and optimising our processes in line with customer requirements in a flexible manner and on a continuous basis.



Safety that connects. Decisive quality

We don't make any compromises when it comes to the safety of our products. A whole host of our products are distinguished by comprehensive, up-to-date and international approvals. The fischer product range is well-positioned in all sectors of fixing technology – Steel, Nylon and Chemical fixings. In award-winning quality which continues to impress both professional clients and private customers with equal measure.





Always on the pulse of time

At fischer, innovation is more than just the sum of the patents. We are open to new things and are prepared for change – always with the aim of offering our customers the greatest possible benefits. Over the years, our own development and production sites have been developing numerous fixing solutions for the most wide-ranging applications. Be it new production procedures or materials, such as renewable raw materials: We are carrying out the research for your safety and will continue to do so in the future. This gives us such great flexibility that we can even develop tailor-made customer solutions. This power to innovate has seen fischer become a market leader in anchor technology and the fixing industry.

Our service to you

We are a reliable partner, one that will stand at your side and address your individual requirements with advice and action:

- Our products range from chemical systems to steel anchors through to plastic anchors.
- Competence and innovation through own research, development and production.
- Global presence and active sales service in over 100 countries.
- Qualified technical consulting for economical and compliant fastening solutions. Also on-site at the construction site requested.
- Training sessions, some with accreditation, at your premises or at the fischer academy.
- Design and construction software for demanding applications.

We take responsibility

Our active environment management policy means that we are helping to maintain an intact environment for our generation and for those that follow. The environment management policy at the Tumlingen site has been certified in line with DIN EN ISO 14001. It fills us with particular pride that in 2020 we have received the most important and largest award in Europe in the field of sustainability: the German Sustainability Award - category large companies. This was in recognition of our holistic approach and the strategic anchoring of our sustainability management. With our greenline products we have launched the first range of fixings on the market that is based on renewable raw materials to more than 50%.



German Sustainability Award



Plus X Award – Sustainability



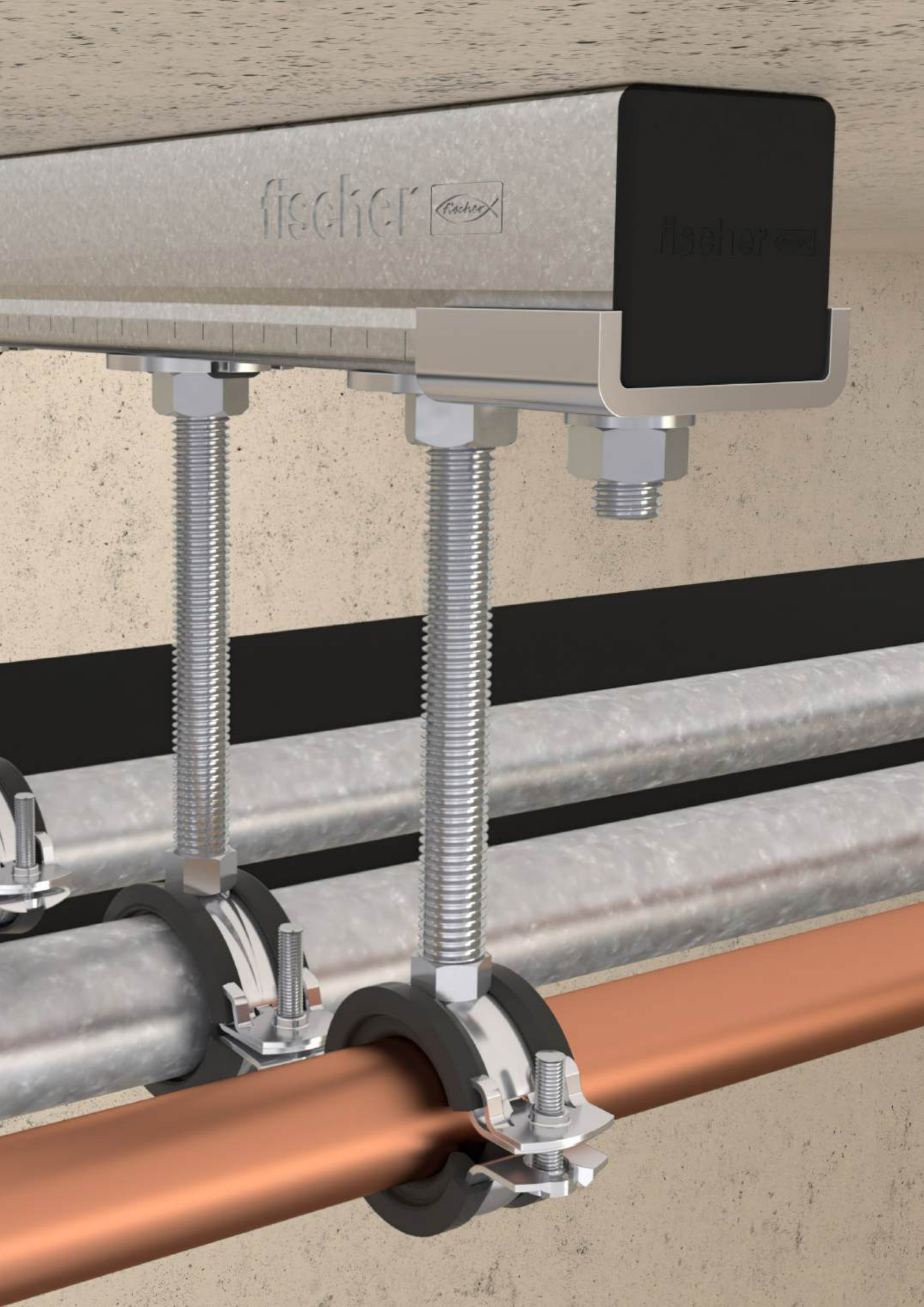
GreenLine assortment based on 50% regrowing raw materials

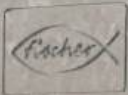


German Green Brand Award



Lean & Green Management Award
























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Innovations to inspire professionals

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Pipe clamps		Qualification					Type of pipes			Example of pipes	Page
Type	Image	Fire tested	ETA	VdS-approved	FM-approved	UL	light pipes	medium heavy pipes	heavy pipes		
Hinged pipe clamp FGRS Universal		-	-	-	-	-	●	○	-	heating pipes, drinking water and service water pipes, process pipes for gases and liquids	30
Hinged pipe clamp FGRS		-	-	-	-	-	●	○	-	heating pipes, drinking water and service water pipes, medical gas supply	33
Hinged pipe clamp FKS for plastic pipes		-	-	-	-	-	●	○	-	heating pipes, drinking water and service water pipes	36
Pipe clamp FRS-L Universal		●	-	-	-	-	○	●	-	heating pipes, drinking water and service water pipes, process pipes for gases and liquids	38
Sliding clamp FKS2		-	-	-	-	-	○	●	-	heating pipes, drinking water and service water pipes, wastewater and rainwater pipes	40
Pipe clamp FRS Triple		-	-	-	-	-	○	●	-	gas and compressed air pipes, process pipes for gases and liquids	42
Pipe clamp FRS		●	●	-	-	-	○	●	-	heating pipes, drinking water and service water pipes, process pipes for gases and liquids	44
Silicone pipe clamp FRSH		-	-	-	-	-	○	●	-	steam pipes	46
Pipe clamp FRSN Triple		-	-	-	-	-	○	●	-	gas and compressed air pipes, process pipes for gases and liquids	48
Pipe clamp FRSN		-	-	-	-	-	○	●	-	gas and compressed air pipes, process pipes for gases and liquids	50
Heavy duty pipe clamp FRSM – inch		-	-	-	-	-	-	●	○	heating pipes, process pipes for gases and liquids	52
Heavy duty pipe clamp FRSM – metric		-	-	-	-	-	-	○	●	heating pipes, process pipes for gases and liquids	54
Heavy duty pipe clamp FRSMN		-	-	●	●	-	○	●	●	heating pipes, drinking water and service water pipes, process pipes for gases and liquids, sprinkler pipes	56
Refrigeration pipe clamp FRSK		-	-	-	-	-	○	●	●	cooling pipes	59
Refrigeration pipe clamp KFT		-	-	-	-	-	-	●	○	cooling pipes	61
Refrigeration clamp KFS		-	-	-	-	-	○	●	○	cooling pipes	64
Sprinkler loop hanger FRSP		-	-	-	●	●	○	●	○	sprinkler pipes	66
Sprinkler loop hanger FRLH		-	-	●	●	-	○	●	○	sprinkler pipes	68
Sprinkler loop hanger FCHS		-	-	-	●	●	○	●	●	sprinkler pipes	70
Riser clamp RCWR		-	-	-	-	●	○	●	○	riser pipes	72
U-Clamp FUBD		-	-	-	-	-	●	○	-	gas and compressed air pipes, process pipes for gases and liquids	74


















○ possible ● recommended - not recommendable

Pipe clamps		Qualification					Type of pipes			Example of pipes	Page
Type	Image	Fire tested	ETA	VdS-approved	FM-approved	UL	light pipes	medium heavy pipes	heavy pipes		
U-bolt ETR		-	-	-	-	-	○	●	○	sprinkler pipes, gas and compressed air pipes	76
U-bolt connector FETR-C		-	-	-	-	-	○	●	○	sprinkler pipes, gas and compressed air pipes	78
Hose clamp SGS		-	-	-	-	-	●	○	-	rubber pipes	80

○ possible ● recommended - not recommendable

Light channel system FLS		Qualification Fire tested	Type of pipes			Example of pipes	Page
Type	Image		light pipes	medium heavy pipes	heavy pipes		
Channel FLS		●	●	○	–	heating pipes, air ventilation, drinking water and service water pipes, medical gas supply	84
FLS Cutting Tool		–	–	–	–	–	87
Cantilever arm ALK		●	●	○	–	process pipes for gases and liquids, cable trays	89
Cover cap AK		–	–	–	–	–	92
Angle brace WS 31- 45°		–	●	○	–	heating pipes, drinking water and service water pipes, cable trays	93
Channel connector SV 31		–	●	○	–	–	95
Sliding channel nut FSM Clix P		●	●	○	–	heating pipes, drinking water and service water pipes, medical gas supply	97
Sliding channel nut FSM Clix M		●	●	○	–	heating pipes, drinking water and service water pipes, medical gas supply	99
T-head bolt FHS Clix		●	●	○	–	heating pipes, drinking water and service water pipes, medical gas supply	101
Saddle flange SF Clix 31		–	●	○	–	–	104
Angle bracket MW Clix 90°		–	●	○	–	–	106
Angle bracket MW and MWU		–	●	○	–	–	108
Channel washer HK 31		●	●	○	–	–	110
Beam clamp TKR 31		–	●	○	–	–	111

















○ possible ● recommended – not recommendable

Channel system universal FUS		Qualification		Type of pipes			Example of pipes	Page
Type	Image	Fire tested	ETA	light pipes	medium heavy pipes	heavy pipes		
Channel FUS		●	●	○	●	○	heating pipes, drinking water and service water pipes, gas and compressed air, waste water, process water, cable trays	116
Channel connector FUF OC and PFUF OC		-	-	-	-	-	-	122
Socket wrench FSK		-	-	-	-	-	-	123
Channel connector FDCC		-	-	○	●	○	-	124
Cantilever arm FCA		●	●	-	●	○	heating pipes, drinking water and service water pipes, gas and compressed air, waste water, process water, cable trays	126
Large cantilever arm FCAM		-	-	-	●	●	heating pipes, cooling pipes, process pipes for gases and liquids	131
Cover cap FEC		-	-	-	-	-	-	133
Push-through connector PFCN		-	-	○	●	○	-	134
Saddle flange PSF		-	-	○	●	○	heating pipes, drinking water and service water pipes, gas and compressed air pipes	136
Universal bracket PUWS		-	-	○	●	○	heating pipes, drinking water and service water pipes, gas and compressed air pipes	138
Angle bracket PWK		-	-	○	●	○	heating pipes, drinking water and service water pipes, gas and compressed air pipes	140
Angle bracket fire-tested PUWF		●	-	○	●	○	heating pipes, drinking water and service water pipes, process pipes for gases and liquids	141
Variable bracket PVB		-	-	○	●	○	-	145
Bracing elements PSAE		-	-	○	●	○	-	146
Bracket PFFF		-	-	○	●	○	heating pipes, drinking water and service water pipes, gas and compressed air pipes	148
Bracket PFAF		-	-	○	●	○	heating pipes, drinking water and service water pipes, gas and compressed air pipes	149
Bracket PFUF		-	-	○	●	○	heating pipes, drinking water and service water pipes, gas and compressed air pipes	151
Bracket PFUF D		-	-	○	●	○	heating pipes, drinking water and service water pipes, gas and compressed air pipes	152




○ possible

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- not recommendable

Channel system universal FUS		Qualification		Type of pipes			Example of pipes	Page
Type	Image	Fire tested	ETA	light pipes	medium heavy pipes	heavy pipes		
Channel nut FCN Clix P		●	●	○	●	○	ventilation pipes, gas and compressed air pipes	154
Channel nut FCN Clix M		●	●	●	●	○	ventilation pipes, gas and compressed air pipes	156
Channel nut FCN		-	-	○	●	○	ventilation pipes, gas and compressed air pipes	158
T-head bolt FCN Clix S		-	-	●	●	○	heating pipes, drinking water and service water pipes, process pipes for gases and liquides	160
T-head bolt FCSN		-	-	○	●	○	heating pipes, drinking water and service water pipes, medical gas supply	162
Channel washer HK 41		●	●	○	●	○	-	164
Saddle flange SF		●	-	-	●	○	-	165
Mounting bracket UWS		●	-	-	●	○	-	167
Angle bracket WK		-	-	○	●	○	-	168
Bracket FFF		-	-	○	●	○	-	170
Bracket FAF		-	-	○	●	○	-	172
Flanges FZF		-	-	-	●	○	-	174
Flange FUF		-	-	-	-	-	-	176
Variable bracket VB		-	-	○	●	○	-	178
Bracing bracket FYJB		-	-	●	●	-	-	179
Universal hinge FUH		-	-	○	●	○	-	180






○ possible ● recommended - not recommendable

Channel system universal FUS		Qualification		Type of pipes			Example of pipes	Page
Type	Image	Fire tested	ETA	light pipes	me- dium heavy pipes	heavy pipes		
Threaded rod bracket FSB 45°		-	-	○	●	○	-	183
Beam clamp TKR		-	-	○	●	○	-	184
Beam clamp FHBC hdg		-	-	●	●	-	drinking water and service water pipes, gas and compressed air pipes, process pipes for gases and liquids, cable trays	186













○ possible ● recommended - not recommendable

Installation grid		Type of pipes			Example of pipes	Page
		light pipes	me- dium heavy pipes	heavy pipes		
Type	Image					
Cross connector FVS II		-	●	○	ventilation ducts and ventilation pipes, drinking water and service water pipes, gas and compressed air pipes, process pipes for gases and liquids, cable trays	190
Channel FUS		○	●	○	heating pipes, drinking water and service water pipes, gas and compressed air pipes	191
Channel connector FUF OC		-	-	-	-	192
Channel washer HK 41		-	●	○	-	192
Cover cap FEC		●	●	●	-	192
Channel nut FCN Clix P		○	●	○	heating pipes, drinking water and service water pipes, gas and compressed air pipes	193
Channel nut FCN		●	●	●	-	193
Universal hinge FUH		-	●	○	-	193
Turnbuckle SPS, Bolt left-hand/right-hand BLR		●	●	●	-	194
Beam clamp TKR		-	●	○	-	194
Threaded rod G		-	-	-	-	194








○ possible ● recommended - not recommendable

Installation grid		Type of pipes			Example of pipes	Page
Type	Image	light pipes	medium heavy pipes	heavy pipes		
Hexagonal screw SKS		●	●	●	–	195
Washer U		○	●	○	–	195
Hexagonal nut MU		●	●	–	ventilation ducts and ventilation pipes, sprinkler pipes, water and waste water treatment	195
Hexagonal connector VM		–	–	–	–	196
Bracing bracket FYJB		●	●	○	ventilation ducts and spiral ducts, drinking water and service water pipes, gas and compressed air pipes, process pipes for gases and liquids, cable trays	196








○ possible ● recommended – not recommendable

Fixed points and sliding elements		Qualification Fire tested	Type of pipes			Example of pipes	Page
Type	Image		light pipes	medium heavy pipes	heavy pipes		
Fixed point saddle FFS-M / FFS-M2		-	○	●	○	heating pipes, warm water and service water pipes, steam pipes, cooling pipes	200
Fixed point saddle FFS-H / FFS-H2		-	○	●	○	heating pipes, warm water and service water pipes, steam pipes, cooling pipes	201
Fixed point compact FFP-C		-	●	○	-	heating pipes, warm water and service water pipes, steam pipes, cooling pipes	202
Fixed point light FFP-L / FFP-L2		-	●	○	-	heating pipes, warm water and service water pipes, steam pipes, cooling pipes	203
Fixed point light FFP-L22 / FFP-L42		-	●	○	-	heating pipes, warm water and service water pipes, steam pipes, cooling pipes	204
Fixed point medium FFP-M / FFP-M2		-	○	●	○	heating pipes, warm water and service water pipes, steam pipes, cooling pipes	205
Fixed point medium FFP-M22 / -M42		-	○	●	○	heating pipes, warm water and service water pipes, steam pipes, cooling pipes	207
Fixed point medium FFP-MD2 / -MD4		-	○	●	○	heating pipes, warm water and service water pipes, steam pipes, cooling pipes	208
Fixed point heavy FFP-HD22 / FFP-HD42		-	○	○	●	heating pipes, warm water and service water pipes, steam pipes, cooling pipes	209
Fixed point solid clamp FFPC		-	○	●	●	heating pipes, warm water and service water pipes, steam pipes, cooling pipes	211
Refrigeration fixed point clamp FFRC		-	○	●	●	heating pipes, warm water and service water pipes, steam pipes, cooling pipes	213
Sound insulated fixed point FSFP		-	○	●	○	heating pipes, warm water and service water pipes, steam pipes, cooling pipes	215












○ possible ● recommended - not recommendable

Fixed points and sliding elements		Qualification Fire tested	Type of pipes			Example of pipes	Page
Type	Image		light pipes	medium heavy pipes	heavy pipes		
Axial slider compact FASC		-	●	○	-	heating pipes, warm water and service water pipes, steam pipes, cooling pipes	217
Axial slider light FASL		-	●	○	-	heating pipes, warm water and service water pipes, steam pipes, cooling pipes	219
Axial slider medium FASM		●	○	●	○	heating pipes, warm water and service water pipes, steam pipes, cooling pipes	221
Axial roller slider heavy FASH		●	○	○	●	heating pipes, warm water and service water pipes, steam pipes, cooling pipes	223
Cross slider FCSM		-	○	●	○	heating pipes, warm water and service water pipes, steam pipes, cooling pipes	225
Sliding hanger SB		●	●	○	-	heating pipes, warm water and service water pipes, steam pipes, cooling pipes	227
Pendulum hanger PDH / PDH K		●	●	●	○	heating pipes, warm water and service water pipes, steam pipes, cooling pipes	228



○ possible ● recommended - not recommendable

Seismic bracing assortment		Qualification FM-approved	Type of pipes			Example of pipes	Page
Type	Image		light pipes	medium heavy pipes	heavy pipes		
Shaped reinforcement strut SAE		-	○	●	-	water pipes plumbing, cooling pipes	232
Threaded rod brace connector S-VA		-	○	●	-	water pipes plumbing, cooling pipes	233
Channel brace connector S-VB		-	○	●	-	water pipes plumbing, cooling pipes	234
90° angle connector S-FAF		-	○	●	-	water pipes plumbing, cooling pipes	235
Threaded rod connector S-ROD		-	○	●	-	water pipes plumbing, cooling pipes	236
Rod stiffener FTFC M12 gvz		-	○	●	-	water pipes plumbing, cooling pipes	239
Seismic wire cable system FWI-S		-	●	●	○	ventilation ducts and spiral ducts, drinking water and service water pipes, gas and compressed air pipes, process pipes for gases and liquids, cable trays	240

○ possible ● recommended - not recommendable

Airduct and metal roof fixings		Qualification			Type of pipes			Example of pipes	Page
Type	Image	Fire tested	VdS-approved	FM-approved	light pipes	medium heavy pipes	heavy pipes		
Ventilation duct clamp LGS		-	-	-	●	○	-	ventilation pipes	244
Ventilation duct clamp LGSN		-	-	-	●	○	-	ventilation pipes, spiral ducts	246
Air duct hanger L- and Z-type		-	-	-	●	○	-	ventilation pipes	248
Spiral duct hanger LRBN / LRB		-	-	-	●	○	-	ventilation ducts	250
Ventilation duct connector VDC		-	-	-	●	○	-	ventilation ducts	251
Flat roof base FFRB		-	-	-	●	●	○	ventilation ducts and spiral ducts, heating and cooling pipes, water pipes	252
Profile hanger TZ / TZA / TZH / Tzb / TZR		-	●	●	○	●	-	ventilation ducts and spiral ducts, sprinkler pipes, water and waste water treatment	255
Toggle plug KDS		-	●	●	○	●	-	ventilation ducts and spiral ducts, drinking and service water pipes, gas and compressed air pipes, process pipes for gases and liquids, sprinkler pipes, cable trays	257
Hole punch LZ, hole stamp LST		-	-	-	-	-	-	-	259
Rubber inlay EMS		-	-	-	●	○	-	ventilation ducts and ventilation pipes	260
Profile connecting screw FPS-FPB		-	-	-	●	○	-	ventilation ducts and spiral ducts	261












○ possible ● recommended - not recommendable

Mounting accessories		Qualification					Type of pipes			Example of pipes	Page
		Fire tested	VdS-approved	ETA	FM-approved	UL-approved	light pipes	medium heavy pipes	heavy pipes		
Type	Image										
Beam clamp TKL		-	●	-	●	●	●	●	-	ventilation ducts and ventilation pipes, sprinkler pipes, water and waste water treatment	264
Beam clamp TKLS		-	●	-	●	-	●	●	-	ventilation ducts and ventilation pipes, sprinkler pipes, water and waste water treatment	266
Swivel beam clamp TKLG		-	●	-	●	-	●	●	●	ventilation ducts and spiral ducts, drinking water and service water pipes, gas and compressed air pipes, process pipes for gases and liquids, sprinkler pipes, cable trays	268
Threaded rod G		-	-	●	-	-	●	●	●	-	271
Threaded stud GS		-	-	-	-	-	●	●	●	-	273
Base plates GPL / GPS / GPSR / GPR		-	-	-	-	-	○	●	-	ventilation ducts and ventilation pipes, sprinkler pipes, water and waste water treatment	275
Stud screw STST with TX star recess		-	-	-	-	-	-	-	-	-	277
Support hanger AHB		-	-	-	-	-	●	●	●	-	279
Multi connector MW		-	-	-	-	-	●	-	-	-	280
Parallel connector PV		-	-	-	-	-	●	○	-	-	281
Double connector plate DPP, DPF		-	-	-	-	-	●	○	-	heating pipes, water treatment	283
Bolt connector SBB		-	-	-	-	-	●	○	-	-	284
Turnbuckle SPS, Bolt left-hand / right-hand BLR		-	-	-	-	-	-	●	○	installation grid	285
Hexagonal screw SKS		-	-	-	-	-	●	●	-	heating pipes, water and waste water treatment	286
Cylinder head screw ZKS		-	-	-	-	-	●	○	-	-	287
Washer U		-	-	-	-	-	●	●	-	-	288

○ possible






















● recommended

- not recommendable

Mounting accessories		Qualification					Type of pipes			Example of pipes	Page
		Fire tested	VdS-approved	ETA	FM-approved	UL-approved	light pipes	medium heavy pipes	heavy pipes		
Type	Image										
Hexagonal nut MU		-	-	-	-	-	-	-	-	-	289
Hexagonal connector VM		-	-	-	-	-	-	-	-	-	290
Eyebolt AG		-	-	-	-	-	●	●	-	-	291
Thread hanger RAH		-	-	-	-	-	●	○	-	-	292
Reduction piece RD		-	-	-	-	-	●	●	○	-	293
Reduction socket RDM and GRD		-	-	-	-	-	●	●	-	-	294
Flat eye screw LLS		-	-	-	-	-	●	○	-	heating pipes, water and waste water treatment, temporary pipes	295
Textile web strapping GWB		-	-	-	-	-	●	○	-	heating pipes, water and waste water treatment, temporary pipes	296
Perforated steel banding LBV / LBK		-	-	-	-	-	●	-	-	-	297
Impact nail ED		-	-	-	-	-	-	-	-	-	299
Setting tool		-	-	-	-	-	-	-	-	-	300

○ possible ● recommended - not recommendable










Channel system FUS hdg		Qualification				Type of pipes			Example of pipes	Page
		Fire tested	VdS	FM	UL	light pipes	me- dium heavy pipes	heavy pipes		
Type	Image									
Pipe clamp FRS zl		-	-	-	-	○	●	-	heating pipes, drinking water and service water pipes, gas and compressed air pipes	304
Heavy duty pipe clamp FRSM hdg - metric		-	-	-	-	○	●	○	heating pipes, process pipes for gases and liquids	306
Channel system FUS hdg		●	-	-	-	-	●	○	heating pipes, drinking water and service water pipes, gas and compressed air, waste water, process water, cable trays	308
Channel connector FUF OC hdg / PFUF OC zl		-	-	-	-	○	●	○	heating pipes, drinking water and service water pipes, gas and compressed air pipes	313
Socket wrench FSK		-	-	-	-	-	-	-	-	314
Channel connector FDCC zl		-	-	-	-	○	●	○	heating pipes, drinking water and service water pipes, gas and compressed air, waste water, process water, cable trays	315
Cantilever arm FCA hdg		●	-	-	-	○	●	○	-	317
Large cantilever arm FCAM hdg		-	-	-	-	-	●	●	-	320
Cover cap FEC 22		-	-	-	-	●	●	●	-	322
Push-through connector PFCN 41 zl		-	-	-	-	○	●	○	-	323
Saddle flange PSF zl		-	-	-	-	○	●	○	heating pipes, drinking water and service water pipes, gas and compressed air pipes	325
Universal bracket PUWS zl		-	-	-	-	○	●	○	heating pipes, drinking water and service water pipes, gas and compressed air pipes	327
Angle bracket PWK zl		-	-	-	-	○	●	○	heating pipes, drinking water and service water pipes, gas and compressed air pipes	329
Variable bracket PVB zl		-	-	-	-	○	●	○	-	330
Bracing elements PSAE zl		-	-	-	-	○	●	○	-	251
Bracket PFFF zl		-	-	-	-	○	●	○	heating pipes, drinking water and service water pipes, gas and compressed air pipes	331
Bracket PFAF zl		-	-	-	-	○	●	○	heating pipes, drinking water and service water pipes, gas and compressed air pipes	333
Bracket PFUF zl		-	-	-	-	○	●	○	heating pipes, drinking water and service water pipes, gas and compressed air pipes	334
Brackets PFUF D zl		-	-	-	-	○	●	○	heating pipes, drinking water and service water pipes, gas and compressed air pipes	336

Channel system FUS hdg		Qualification				Type of pipes			Example of pipes	Page
Type	Image	Fire tested	VdS	FM	UL	light pipes	medium heavy pipes	heavy pipes		
Channel nut FCN Clix P hdg		●	-	-	-	-	●	○	-	339
Channel nut FCN Clix M hdg		●	-	-	-	-	●	○	-	341
Channel nut FCN 16 hdg		●	-	-	-	-	●	○	-	343
Channel washer HK 41 hdg		●	-	-	-	○	●	○	-	345
Saddle flange SF hdg		●	-	-	-	-	●	○	-	346
Mounting bracket UWS hdg		●	-	-	-	-	●	○	-	348
Angle bracket WK hdg		-	-	-	-	○	●	○	heating pipes, drinking water and service water pipes, gas and compressed air pipes	349
Bracket FFF hdg		-	-	-	-	○	●	○	-	351
Bracket FAF hdg		-	-	-	-	○	●	○	-	353
Bracket FUF 21 / 41 / 62 hdg		-	-	-	-	○	●	○	-	355
Bracket FUF 180° hdg		-	-	-	-	○	●	○	-	356
Variable bracket VB hdg		-	-	-	-	-	●	○	-	358
Universal hinge FUH hdg 60		-	-	-	-	-	-	-	-	359
Threaded rod bracket FSB 45° hdg		-	-	-	-	○	●	○	-	361
Beam clamp TKR hdg		-	-	-	-	-	-	-	-	362
Beam clamp TKL hdg		-	●	●	●	●	●	-	ventilation ducts and ventilation pipes, sprinkler pipes, water and waste water treatment	364
Beam clamp FHBC hdg		-	-	-	-	-	-	-	-	366
Threaded rod G hdg		-	-	-	-	●	●	●	-	368
Hexagonal screw SKS hdg		-	-	-	-	●	●	○	-	368
Washer U hdg		-	-	-	-	●	●	-	-	369
Hexagonal nut MU hdg		-	-	-	-	●	●	-	-	370



○ possible ● recommended - not recommendable

Massive channel system FMS		Qualification Fire tested	Type of pipes			Example of pipes	Page
Type	Image		light pipes	medium heavy pipes	heavy pipes		
Massive profile FMP		-	-	-	●	heating, cooling, steam and process pipes, as well as cable trays	374
Channel connector FMPC		-	-	-	●	-	379
Cantilever FMC		-	-	-	●	different pipes and cable trays	381
Endcap FMEC		-	-	-	●	-	384
Hammer-head push connector FMHB		-	-	-	●	-	385
Internal thread connector FMHI		-	-	-	-	-	387
Transportation connector FMTC 90		-	-	-	-	-	389
Connecting element FMCE		-	-	-	●	all pipelines using standard two screwed pipe clamps	391
Connecting element FMCE-L		-	-	-	●	all pipes fixed without insulation by U-bolt	393
Saddle flange FMSF		-	-	-	●	-	395
Base plate FMSF BP		-	-	-	●	-	398
Angle bracket FMASF 90		-	-	-	-	-	399
Variable bracket FMVB		-	-	-	●	-	401
Beam clamp FMBC		-	-	-	●	-	403
Beam clamp FMBC M12 and M16		-	-	-	●	-	405
Flat fitting FMFF 90°		-	-	-	●	-	407
Mounting angle FMA 3 and FMA 4		-	-	-	●	-	409

○ possible ● recommended - not recommendable







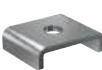










Massive channel system FMS		Qualification Fire tested	Type of pipes			Example of pipes	Page
Type	Image		light pipes	me- dium heavy pipes	heavy pipes		
Mounting angle FMA		-	-	-	●	-	411
System connector FMA-FUS		-	-	-	-	-	413
Connecting element FMUF		-	-	-	●	-	415
Fix point U-bolt FMFS UB		-	-	-	●	-	417
Pipe shoe sliding element FMFS		-	-	-	●	heating, cooling, steam pipes and all pipes which have elongation	419
Fix-point U-bolt FMFS S and M		-	-	-	●	heating, cooling, steam pipes and all pipes which have elongation	421
Pipe shoes FMPS		-	-	-	●	heating, cooling, steam pipes and all pipes which have elongation	423
Massive pipe clamp FMFSC		-	-	-	●	-	427
Massive U-bolt FMPSU		-	-	-	●	-	429

○ possible ● recommended - not recommendable

Air conditioner fixings oduct		Applications	Page
Type	Image		
Air conditioner fixing MCE		air conditioner on wall	486
Air conditioner fixing KSU		air conditioner on wall	488

Installation system stainless steel		Qualification				Type of pipes			Example of pipes	Page
Type	Image	Fire tested	ETA	VdS	FM	light pipes	me- dium heavy pipes	heavy pipes		
Pipe clamp FRS A2/A4		-	-	-	-	○	●	-	heating pipes, drinking water and service water pipes, medical gas supply	434
Heavy duty pipe clamp FRSM A4 - metric		-	-	-	-	-	●	○	heating pipes, process pipes for gases and liquids	436
Channel FUS A2/A4		●	-	-	-	○	●	○	heating pipes, drinking water and service water pipes, gas and compressed air, waste water, process water, cable trays	438
Cover cap FEC		-	-	-	-	-	-	-	-	441
Channel connector PFUF OC A4		-	-	-	-	○	●	○	heating pipes, drinking water and service water pipes, gas and compressed air, waste water, process water, cable trays	442
Socket wrench FSK		-	-	-	-	-	-	-	-	443
Cantilever arm FCA A4		●	-	-	-	○	●	○	heating pipes, drinking water and service water pipes, gas and compressed air, waste water, process water, cable trays	444
Channel connector FDCC A4		-	-	-	-	-	-	-	-	445
Push-through connector PFCN A4		-	-	-	-	○	●	○	-	447
Saddle flange PSF A4		-	-	-	-	○	●	○	heating pipes, drinking water and service water pipes, gas and compressed air, waste water, process water, cable trays	449
Universal bracket PUWS A4		-	-	-	-	○	●	○	heating pipes, drinking water and service water pipes, gas and compressed air, waste water, process water, cable trays	450
Angle bracket PWK A4		-	-	-	-	○	●	○	heating pipes, drinking water and service water pipes, gas and compressed air, waste water, process water, cable trays	452
Variable bracket PVB A4		-	-	-	-	○	●	○	heating pipes, drinking water and service water pipes, gas and compressed air, waste water, process water, cable trays	453
Bracing elements PSAE A4		-	-	-	-	○	●	○	-	454
Bracket PFFF A4		-	-	-	-	○	●	○	heating pipes, drinking water and service water pipes, gas and compressed air, waste water, process water, cable trays	456
Bracket PFAF A4		-	-	-	-	○	●	○	heating pipes, drinking water and service water pipes, gas and compressed air, waste water, process water, cable trays	457
Bracket PFUF A4		-	-	-	-	○	●	○	heating pipes, drinking water and service water pipes, gas and compressed air, waste water, process water, cable trays	459
Bracket PFUF D A4		-	-	-	-	○	●	○	heating pipes, drinking water and service water pipes, gas and compressed air, waste water, process water, cable trays	460

○ possible ● recommended - not recommendable

Installation system stainless steel		Qualification				Type of pipes			Example of pipes	Page
Type	Image	Fire tested	ETA	VdS	FM	light pipes	medium heavy pipes	heavy pipes		
Channel nut FCN Clix P A4		●	-	-	-	○	●	○	heating pipes, drinking water and service water pipes, gas and compressed air, waste water, process water, cable trays	462
Channel nut FCN Clix M A4		●	-	-	-	○	●	○	heating pipes, drinking water and service water pipes, gas and compressed air, waste water, process water, cable trays	464
Channel nut FCN A4		-	-	-	-	○	●	○	heating pipes, drinking water and service water pipes, gas and compressed air, waste water, process water, cable trays	466
Saddle flange SF L 41 A4		●	-	-	-	○	●	○	heating pipes, drinking water and service water pipes, gas and compressed air, waste water, process water, cable trays	468
Bracket FAF A4		-	-	-	-	○	●	○	heating pipes, drinking water and service water pipes, gas and compressed air, waste water, process water, cable trays	469
Variable bracket VB A4		-	-	-	-	○	●	○	heating pipes, drinking water and service water pipes, gas and compressed air, waste water, process water, cable trays	470
Channel washer HK 41 A4		●	-	-	-	○	●	○	-	471
Beam clamp TKR A4		-	-	-	-	○	●	○	-	472
Beam clamp TKL A4		-	-	-	-	○	●	○	-	474
Beam clamp TKLS A4		-	-	●	●	●	●	-	ventilation ducts and spiral ducts, sprinkler pipes, water and waste water pipes	475
Threaded rod G A2/A4		-	-	-	-	●	●	●	-	476
Threaded stud GS A4		-	-	-	-	●	●	●	-	477
Hexagonal screw SKS A4		-	-	-	-	●	●	-	-	478
Washer U A4		-	-	-	-	●	●	-	-	479
Hexagonal nut MU A4		-	-	-	-	●	●	●	-	480
Hexagonal connector VM A4		-	-	-	-	●	●	○	-	481
Stud screw STS A2/A4		-	-	-	-	●	●	○	-	482




○ possible ● recommended - not recommendable










2

Pipe clamps




SINGLE SCREW PIPE CLAMPS

Hinged pipe clamp FGRS Universal	30	
Hinged pipe clamp FGRS	33	
Hinged pipe clamp FKS for plastic pipes	36	

TWO SCREW PIPE CLAMPS

Pipe clamp FRS-L Universal	38	
Sliding clamp FKS2	40	
Pipe clamp FRS Triple	42	
Pipe clamp FRS	44	
Silicone pipe clamp FRSH	46	
Pipe clamp FRSN Triple	48	
Pipe clamp FRSN	50	





HEAVY DUTY PIPE CLAMPS

Heavy duty pipe clamp FRSM - inch	52	
Heavy duty pipe clamp FRSM - metric	54	
Heavy duty pipe clamp FRSMN	56	





INSULATED PIPE CLAMPS

Refrigeration pipe clamp FRSK	59	
Refrigeration pipe clamp KFT	61	
Refrigeration clamp KFS	64	

SPRINKLER CLAMPS

Sprinkler loop hanger FRSP	66	
Sprinkler loop hanger FRLH	68	
Sprinkler loop hanger FCHS	70	
Riser clamp RCWR	72	

OTHERS

U-Clamp FUBD	74	
U-Bolt ETR	76	
U-Bolt connector FETR-C	78	
Hose clamp SGS	80	

Hinged pipe clamp FGRS Universal

The hinged pipe clamp with the convenient and secure quick-release fastener

2



Pipelines on cantilevers



Light, suspended pipelines

Applications

- Time-saving fixing of pipelines up to 4" with threaded rods or hanger bolts
- For use in dry interior areas.

Certificates



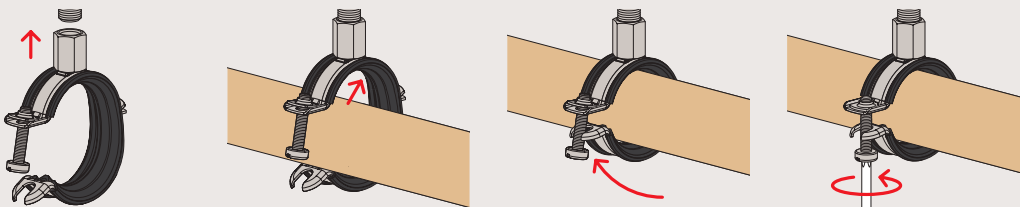
Advantages

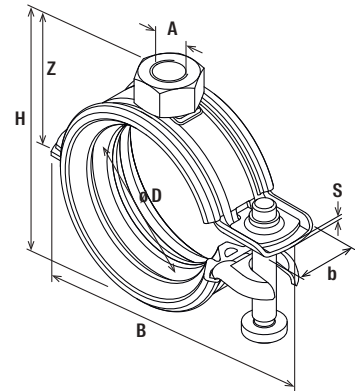
- The sound insulation test report guarantees objectively tested functional safety.
- The complete and gapless diameter clamping range allows the fastening of any pipe size.
- The unique rapid-locking mechanism with all-round edge enables safe and convenient installation.
- The clamp band with crimped edges gives the sound insulation insert a tight fit and simplifies the pipe adjustment.
- The compact design of the pipe clamp allows simple, subsequent insulation.
- The combination torx-slot thread of the screw increases flexibility during assembly.

Properties

- Material: steel DC01 (material no. 1.0330) in accordance with DIN EN 10130
- Zinc plating: electro zinc-plated
- Connecting nut: resistance welded, size 13
- Screw plug: panhead screw with slot/TX combination (M5=TX25, M6=TX30)
- Sound insulating insert material SBR/EPDM; chlorine-free, silicone-free
- Hardness: $55 \pm 5^\circ$ Shore A
- Temperature range: -40°C to $+100^\circ\text{C}$
- Fire behavior: DIN 4102: Class B2

Installation FGRS Universal

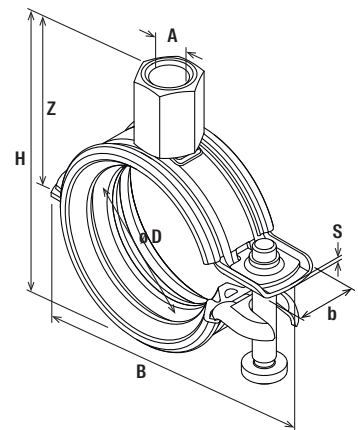




FGRS Universal

Technical data

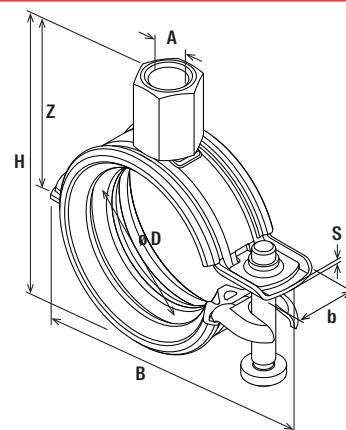
Item	Item no.	Thread	Size	Clamping range	Width	Height	Height	Width x thickness clamp band	Locking screw	Installation torque	Max. re-com. static load (centr. tension)	Sales unit
		A	[in]	D [mm]	B [mm]	H [mm]	Z [mm]	b x s [mm]	T_{inst} [Nm]	N_{rec} [kN]	[pcs]	
FGRS Universal M8 12 - 15	562340	M8	1/4	12 - 15	43.6	43.6	19.5	18 x 1.0	M5	2	0.65	25
FGRS Universal M8 15 - 19	562341	M8	3/8	15 - 19	48	48	21.5	18 x 1.0	M5	2	0.65	25
FGRS Universal M8 20 - 24	562342	M8	1/2	20 - 24	52.3	52.3	23.5	18 x 1.0	M5	2	0.65	25
FGRS Universal M8 25 - 30	562343	M8	3/4	25 - 30	57.5	57.5	26	18 x 1.0	M5	2	0.65	25
FGRS Universal M8 31 - 37	562344	M8	1	31 - 37	65.5	65.5	29.9	18 x 1.0	M5	2	0.65	25
FGRS Universal M8 38 - 45	562345	M8	1 1/4	38 - 45	73	73	33.4	18 x 1.2	M5	2	0.90	25
FGRS Universal M8 46 - 52	562346	M8	1 1/2	46 - 52	80.1	80.1	36.9	18 x 1.2	M5	2	0.90	25
FGRS Universal M8 53 - 59	562347	M8	-	53 - 59	87.3	87.3	40.4	18 x 1.2	M5	2	0.90	25
FGRS Universal M8 60 - 66	562348	M8	2	60 - 66	93.8	93.8	43.9	18 x 1.2	M5	2	0.90	10



FGRS Universal M8/M10

Technical data

Item	Item no.	Thread	Size	Clamping range	Width	Height	Height	Width x thickness clamp band	Locking screw	Installation torque	Max. re-com. static load (centr. tension)	Sales unit
		A	[in]	D [mm]	B [mm]	H [mm]	Z [mm]	b x s [mm]	T_{inst} [Nm]	N_{rec} [kN]	[pcs]	
FGRS Universal M8/10 12 - 15	562349	M8 / M10	1/4	12 - 15	43.6	43.3	30	18 x 1.0	M5	2	0.65	25
FGRS Universal M8/10 15 - 19	562350	M8 / M10	3/8	15 - 19	48	47.3	32	18 x 1.0	M5	2	0.65	25
FGRS Universal M8/10 20 - 24	562351	M8 / M10	1/2	20 - 24	52.3	51.3	34	18 x 1.0	M5	2	0.65	25
FGRS Universal M8/10 25 - 30	562352	M8 / M10	3/4	25 - 30	57.5	56.3	36.5	18 x 1.0	M5	2	0.65	25



FGRS Universal M8/M10

Technical data

Item	Item no.	Thread A	Size [in]	Clamping range D [mm]	Width B [mm]	Height H [mm]	Height Z [mm]	Width x thickness clamp band b x s [mm]	Locking screw	Installation torque T _{inst} [Nm]	Max. recom. static load (centr. tension) N _{rec} [kN]	Sales unit [pcs]
FGRS Universal M8/10 31 - 37	562353	M8 / M10	1	31 - 37	65.5	64	40.4	18 x 1.0	M5	2	0.65	25
FGRS Universal M8/10 38 - 45	562354	M8 / M10	1 1/4	38 - 45	73	71.2	43.9	18 x 1.2	M5	2	0.90	25
FGRS Universal M8/10 46 - 52	562355	M8 / M10	1 1/2	46 - 52	80.1	78.2	47.4	18 x 1.2	M5	2	0.90	25
FGRS Universal M8/10 53 - 59	562356	M8 / M10	-	53 - 59	87.3	85.2	50.9	18 x 1.2	M5	2	0.90	25
FGRS Universal M8/10 60 - 66	562357	M8 / M10	2	60 - 66	93.8	92.2	54.4	18 x 1.2	M5	2	0.90	10
FGRS Universal M8/10 73 - 80	562456	M8 / M10	-	73 - 80	111.9	107.8	62.4	20 x 1.8	M6	2	1.30	10
FGRS Universal M8/10 83 - 90	562457	M8 / M10	3	83 - 90	123.3	119.2	68.1	20 x 1.8	M6	2	1.30	10
FGRS Universal M8/10 95 - 103	562458	M8 / M10	-	95 - 103	134.2	130.2	73.6	20 x 1.8	M6	2	1.30	10
FGRS Universal M8/10 108 - 115	562459	M8 / M10	4	108 - 115	147.5	143.7	80.3	20 x 1.8	M6	2	1.30	10

Hinged pipe clamp FGRS

The one-piece hinged pipe clamp with floating single screw



Light, suspended pipelines



Pipelines on cantilevers

Applications

- For economical fixing of pipes up to Ø2" with threaded rods or stud screws.
- For use in dry interior areas.

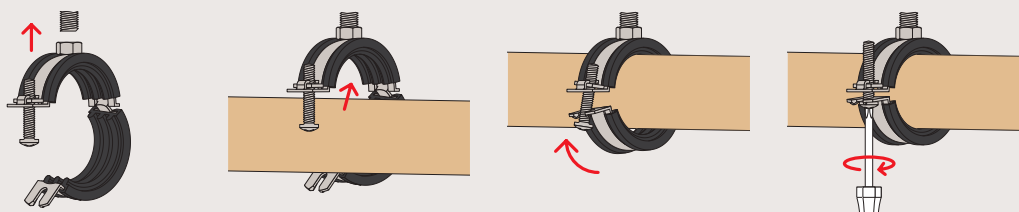
Advantages

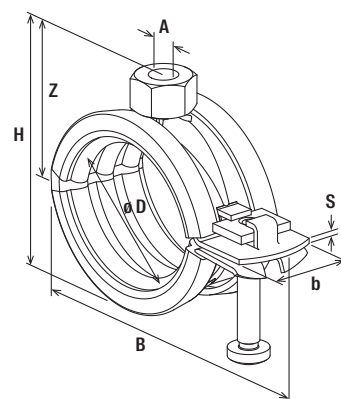
- The floating single screw allows a simple, one-handed installation.
- The compact construction of the pipe clamp enables a simple post-installation insulation.
- The screw's design stops it falling out during the installation.

Properties

- Material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Zinc plating: electro zinc-plated
- Connecting nut: resistance welded, M8, SW 13
- Locking screw: flat head screw with combination recessed head
- Material sound insulation insert: EPDM; chlorine-free; silicone-free
- Sound insulation: for DIN 4109
- Temperature range: -40 °C to +100 °C
- Hardness: 55 ± 5° Shore A
- Fire behaviour: DIN 4102: Class B2

Installation FGRS

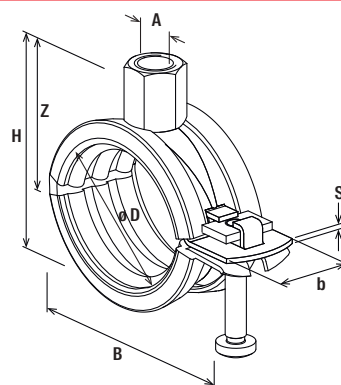




FGRS

Technical data

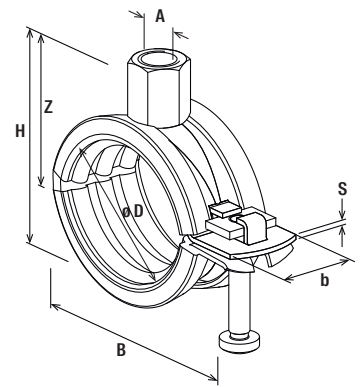
Item	Item no.	Thread	Size	Clamping range	Width	Height	Height	Width x thickness clamp band	Locking screw	Installation torque	Max. re-com. static load (centr. tension)	Sales unit
		A	[in]	D [mm]	B [mm]	H [mm]	Z [mm]	b x s [mm]	T_{inst} [Nm]	N_{rec} [kN]	[pcs]	
FGRS 8 - 11	537212	M8	–	8 - 11	45	29	17	20 x 1.25	M5	2	0.80	100
FGRS 12 - 14	079420	M8	1/4	12 - 14	48	31	21	20 x 1.25	M5	2	0.80	100
FGRS 15 - 19	079421	M8	3/8	15 - 19	52	36	24	20 x 1.25	M5	2	0.80	100
FGRS 20 - 24	079422	M8	1/2	20 - 24	58	41	26	20 x 1.25	M5	2	0.80	100
FGRS 25 - 30	079423	M8	3/4	25 - 30	63	47	28	20 x 1.25	M5	2	0.80	100
FGRS 32 - 37	079424	M8	1	32 - 37	72	54	32	20 x 1.25	M5	2	0.80	100
FGRS 40 - 44	079425	M8	1 1/4	40 - 44	79	61	37	20 x 1.5	M5	2	0.90	50
FGRS 45 - 50	079426	M8	1 1/2	45 - 50	88	67	42	20 x 1.5	M5	2	0.90	50
FGRS 50 - 55	079427	M8	–	50 - 55	94	72	45	20 x 1.5	M5	2	0.90	50
FGRS 56 - 63	079428	M8	2	56 - 63	99	80	46	20 x 1.5	M5	2	0.90	50



FGRS M8/M10

Technical data

Item	Item no.	Thread	Size	Clamping range	Width	Height	Height	Width x thickness clamp band	Locking screw	Installation torque	Max. re-com. static load (centr. tension)	Sales unit
		A	[in]	D [mm]	B [mm]	H [mm]	Z [mm]	b x s [mm]	T_{inst} [Nm]	N_{rec} [kN]	[pcs]	
FGRS 12-14 M8/M10	512645	M8 / M10	1/4	12 - 14	48	38	26	20 x 1.25	M5	2	0.80	100
FGRS 15-19 M8/M10	512646	M8 / M10	3/8	15 - 19	52	42	28	20 x 1.25	M5	2	0.80	100
FGRS 20-24 M8/M10	512647	M8 / M10	1/2	20 - 24	58	46	30	20 x 1.25	M5	2	0.80	100
FGRS 25-30 M8/M10	512648	M8 / M10	3/4	25 - 30	63	51	33	20 x 1.25	M5	2	0.80	100
FGRS 32-37 M8/M10	512649	M8 / M10	1	32 - 37	72	58	36	20 x 1.25	M5	2	0.80	100



FGRS M8/M10

2

Technical data

Item	Item no.	Thread	Size	Clamping range	Width	Height	Height	Width x thickness clamp band	Locking screw	Installation torque	Max. re-com. static load (centr. tension)	Sales unit
		A	[in]	D [mm]	B [mm]	H [mm]	Z [mm]	b x s [mm]	T_{inst} [Nm]	N_{rec} [kN]	[pcs]	
FGRS 40-44 M8/M10	512650	M8 / M10	1 1/4	40 - 44	79	66	40	20 x 1.5	M5	2	0.90	50
FGRS 45-50 M8/M10	512651	M8 / M10	1 1/2	45 - 50	88	71	43	20 x 1.5	M5	2	0.90	50
FGRS 50-55 M8/M10	568671	M8 / M10	-	50 - 55	94	79	45	20 x 1.5	M5	2	0.90	50
FGRS 56-63 M8/M10	512652	M8 / M10	2	56 - 63	99	82	48	20 x 1.5	M5	2	0.90	50

Hinged pipe clamp FKS for plastic pipes

The one-screw hinged pipe clamp with quick-release fastener for plastic and metal composite pipes

2



Pipelines

Applications

- Time-saving fixing for plastic and metal composite pipes using threaded rods or stud screws.
- Can be used as a slide bracket with spacers or as a fixed point clamp by removing the spacers.
- For use in dry interior areas.

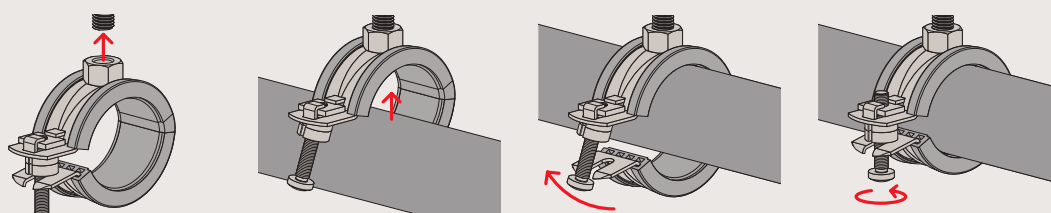
Advantages

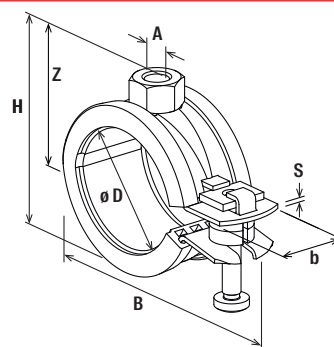
- The quick-release fastener allows a fast and time-saving installation.
- The spacing sleeves on the locking screw stops over tightening of the pipes.
- The tight fit of the sound insulation insert prevents it from falling out when inserting the pipe.
- The compact construction of the hinged pipe clamp enables a simple post-installation insulation.
- The screw's design stops it falling out during the installation.

Properties

- Material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Zinc plating: electro zinc-plated
- Connecting nut: resistance welded, M8, SW 13
- Locking screw: flat head screw with combination recessed head
- Material sound insulation insert: NR/SBR/EPDM; chlorine-free; silicone-free
- Sound insulation: for DIN 4109
- Temperature range: -40 °C to +110 °C
- Hardness: 60 ± 5° Shore A
- Fire behaviour: DIN 4102: Class B2

Installation FKS





FKS

2

Technical data

Item	Item no.	Thread A	Size [in]	Clamping range D [mm]	Width B [mm]	Height H [mm]	Height Z [mm]	Locking screw	Installation torque T_{inst} [Nm]	Max. recom. static load (centr. tension) N_{rec} [kN]	Sales unit [pcs]
FKS 15 - 19	562609	M8	3/8	15 - 19	51	35	21	M5	2	0.80	100
FKS 20 - 24	562610	M8	1/2	20 - 24	56	39	23	M5	2	0.80	100
FKS 25 - 30	562611	M8	3/4	25 - 30	63	44	26	M5	2	0.80	100
FKS 32 - 37	562612	M8	1	32 - 37	71	51	29	M5	2	0.80	100
FKS 40 - 44	562613	M8	1 1/4	40 - 44	78	59	33	M5	2	0.90	50
FKS 45 - 50	562614	M8	1 1/2	45 - 50	86	64	36	M5	2	0.90	50
FKS 50 - 55	562615	M8	-	50 - 55	91	67	37	M5	2	0.90	50
FKS 56 - 63	562616	M8	2	56 - 63	99	75	41	M5	2	0.90	50

Note on the clamping range: For the function as a sliding clamp, the lower clamping range specification is valid, e.g. for the FKS 50-55 this is 50mm!

Pipe clamp FRS-L Universal

The light two-screw pipe clamp with a rapid locking mechanism and combination connection nut



Cantilever construction with channel



Vertical installation

Applications

- For simple and easy fixing for pipes using threaded rods or stud screws.
- For use in dry interior areas.

Certificates



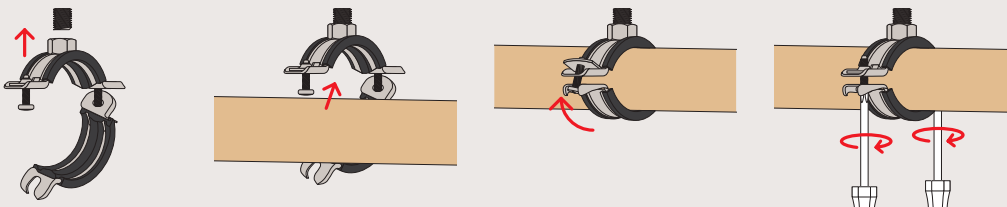
Advantages

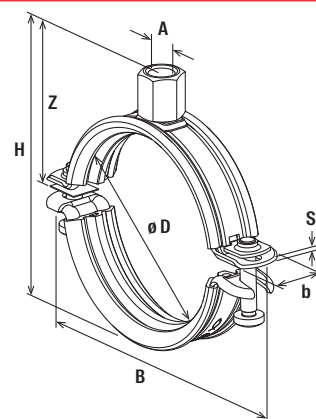
- The fire inspection report and the sound insulation report guarantee objectively tested functional safety.
- The unique rapid-locking mechanism with crimped edges allows a secure and time-saving installation.
- The clamp band with crimped edges gives a tight fit of the sound insulation insert and prevents it from slipping out when aligning the pipe.
- The two screws allow a perfect adaptation of the pipe clamp to suit every outer pipe diameter.
- The connecting nut with combination thread M8 / M10 enables an optimised warehousing.
- The screw's loss protection guarantees an easy installation.

Properties

- Material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Zinc plating: electro zinc-plated
- Connecting nut: resistance welded, M8 / M10 SW13
- Locking screw: flat head screw with TX drive (M5=TX25, M6=TX30)
- Material sound insulation insert: SBR/EPDM; chlorine-free; silicone-free
- Sound insulation: for DIN 4109
- Temperature range: -40 °C to +100 °C
- Hardness: 55 ± 5° Shore A
- Fire behaviour: DIN 4102: Class B2

Installation FRS-L Universal





FRS-L Universal

2

Technical data

Item	Item no.	Fire test report	Thread A	Size [in]	Clamping range D [mm]	Width B [mm]	Height H [mm]	Height Z [mm]	Width x thickness clamp band b x s [mm]	Locking screw	Installation torque T_{inst} [Nm]	Max. recom. static load (centr. tension) N_{rec} [kN]	Sales unit [pcs]
FRS-L 8 - 11 Universal	539443	Yes	M8 / M10	–	8 - 11	47	35	25	18 x 1.0	M5	2	0.98	25
FRS-L 12 - 15 Universal	539444	Yes	M8 / M10	1/4	12 - 15	52	39	27	18 x 1.0	M5	2	0.98	25
FRS-L 15 - 19 Universal	539445	Yes	M8 / M10	3/8	15 - 19	56	43	29	18 x 1.0	M5	2	0.98	25
FRS-L 20 - 24 Universal	539446	Yes	M8 / M10	1/2	20 - 24	61	48	31	18 x 1.0	M5	2	0.98	25
FRS-L 25 - 30 Universal	539447	Yes	M8 / M10	3/4	25 - 30	67	53	34	18 x 1.0	M5	2	0.98	25
FRS-L 31 - 37 Universal	539448	Yes	M8 / M10	1	31 - 37	74	61	38	18 x 1.0	M5	2	0.98	25
FRS-L 38 - 45 Universal	539449	Yes	M8 / M10	1 1/4	38 - 45	83	69	42	18 x 1.2	M5	2	1.14	25
FRS-L 46 - 52 Universal	539450	Yes	M8 / M10	1 1/2	46 - 52	90	76	45	18 x 1.2	M5	2	1.14	25
FRS-L 53 - 59 Universal	539451	Yes	M8 / M10	–	53 - 59	97	83	49	18 x 1.2	M5	2	1.14	25
FRS-L 60 - 66 Universal	539452	Yes	M8 / M10	2	60 - 66	104	90	52	18 x 1.2	M5	2	1.14	10
FRS-L 67 - 75 Universal	539453	Yes	M8 / M10	–	67 - 75	120	100	57	20 x 1.8	M6	2	1.69	10
FRS-L 76 - 84 Universal	539454	Yes	M8 / M10	2 1/2	76 - 84	130	109	62	20 x 1.8	M6	2	1.69	10
FRS-L 85 - 93 Universal	539455	Yes	M8 / M10	3	85 - 93	139	118	66	20 x 1.8	M6	2	1.69	10
FRS-L 94 - 100 Universal	539456	Yes	M8 / M10	–	94 - 100	146	125	70	20 x 1.8	M6	2	1.69	10
FRS-L 101 - 109 Universal	539457	Yes	M8 / M10	–	101 - 109	156	135	75	20 x 1.8	M6	2	1.69	10
FRS-L 110 - 119 Universal	539459	Yes	M8 / M10	4	110 - 119	165	144	79	20 x 1.8	M6	2	1.69	10
FRS-L 120 - 129 Universal	544905	Yes	M8 / M10	–	120 - 129	176	156	86	25 x 2.0	M6	2	2.39	5
FRS-L 130 - 137 Universal	544906	Yes	M8 / M10	–	130 - 137	184	164	90	25 x 2.0	M6	2	2.39	5
FRS-L 138 - 145 Universal	544907	Yes	M8 / M10	5	138 - 145	192	172	94	25 x 2.0	M6	2	2.39	5
FRS-L 146 - 155 Universal	544908	Yes	M8 / M10	–	146 - 155	202	182	99	25 x 2.0	M6	2	2.39	5
FRS-L 156 - 163 Universal	544909	Yes	M8 / M10	–	156 - 163	211	190	103	25 x 2.0	M6	2	2.39	5
FRS-L 164 - 172 Universal	544910	Yes	M8 / M10	6	164 - 172	219	199	106	25 x 2.0	M6	2	2.39	5
FRS-L 175 - 183 Universal	569822	–	M8 / M10	–	175 - 183	234	112	210	25 x 2.5	M6	2	2.58	15
FRS-L 193 - 201 Universal	569823	–	M8 / M10	–	193 - 201	251	123	228	25 x 2.5	M6	2	2.58	15
FRS-L 205 - 213 Universal	569824	–	M8 / M10	–	205 - 213	263	129	240	25 x 2.5	M6	2	2.58	15
FRS-L 219 - 225 Universal	569825	–	M8 / M10	8	219 - 225	278	134	253	25 x 2.5	M6	2	2.58	15

For load information under fire exposure, see chapter Basic knowledge.

Sliding clamp FKS2

The two-screw sliding clamp for plastic and metal composite pipes

2



Height-adjustable ceiling installation



Wall mounting on cantilever arm

Applications

- Fixing of plastic and metal composite pipes up to 160 mm.
- Can be used as a sliding clamp with spacer rings or as a clamp after removing the spacer rings.
- For use in dry indoor areas.

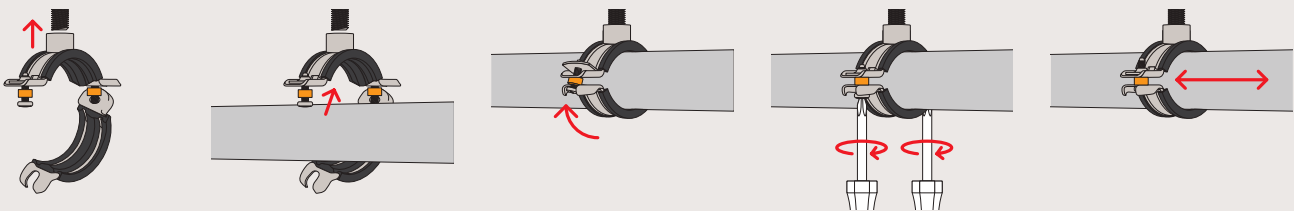
Advantages

- The spacer rings on the screw plug ensure that the pipes slide smoothly.
- The unique quick-release fastener with all-round edge enables secure and time-saving installation.
- The clamp band with pronounced beading on the edge gives the sound insulation insert a secure fit and prevents it from falling out during pipe adjustment.
- The connection nut with M8 / M10 / 1/2" combination thread enables optimised fixing to the substrate.
- The loss protection of the screw ensures problem-free installation.

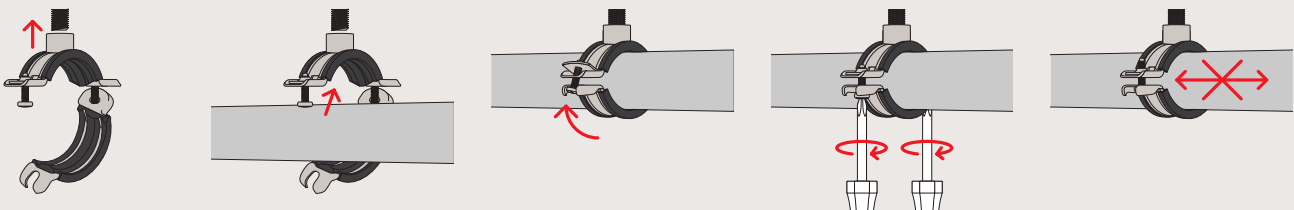
Properties

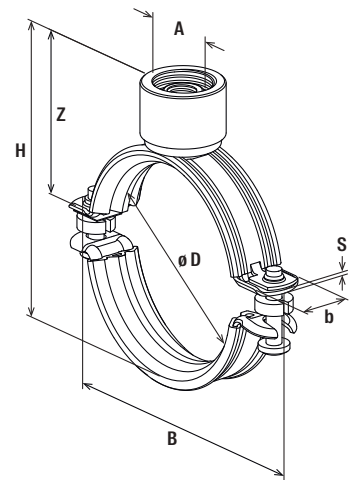
- Material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Zinc plating: electro zinc-plated
- Connection nut: resistance-welded, M8 / M10 / 1/2"
- Screw plug: Flat-head screw with TX drive (M5=TX25, M6=TX30)
- Material sound insulation insert: SBR/EPDM with flocking; chlorine-free; silicone-free
- Sound insulation: for DIN 4109
- Temperature range: -40 °C to +100 °C
- Hardness: 55 ± 5° Shore A
- Fire behaviour: DIN 4102: Class B2

FKS2 sliding function



FKS2 clamping function





FKS2

2

Technical data

Item	Item no.	Thread A	Clamping range D [mm]	Width B [mm]	Height H [mm]	Height Z [mm]	Width x thickness clamp band b x s [mm]	Locking screw	Drive	Installa- tion torque T_{inst} [Nm]	Max. re- com. static load (centr. tension) N_{rec} [kN]	Sales unit [pcs]
FKS2 50	572196	M8 / M10 / 1/2"	46 - 52	90	81	50	18 x 1.2	M5	TX25	2	1.14	25
FKS2 56	572197	M8 / M10 / 1/2"	53 - 59	97	88	54	18 x 1.2	M5	TX25	2	1.14	25
FKS2 63	572198	M8 / M10 / 1/2"	60 - 66	104	95	57	18 x 1.2	M5	TX25	2	1.14	10
FKS2 75	572199	M8 / M10 / 1/2"	67 - 75	120	105	62	20 x 1.8	M6	TX30	2	1.69	10
FKS2 90	572200	M8 / M10 / 1/2"	85 - 93	139	123	71	20 x 1.8	M6	TX30	2	1.69	10
FKS2 110	572201	M8 / M10 / 1/2"	110 - 119	165	149	84	20 x 1.8	M6	TX30	2	1.69	10
FKS2 125	572202	M8 / M10 / 1/2"	120 - 129	176	161	91	25 x 2.0	M6	TX30	2	2.39	5
FKS2 135	572203	M8 / M10 / 1/2"	130 - 137	184	169	95	25 x 2.0	M6	TX30	2	2.39	5
FKS2 140	572204	M8 / M10 / 1/2"	138 - 145	192	177	99	25 x 2.0	M6	TX30	2	2.39	5
FKS2 160	572205	M8 / M10 / 1/2"	156 - 163	211	195	108	25 x 2.0	M6	TX30	2	2.39	5

Pipe clamp FRS Triple

The two-screw pipe clamp with rapid-locking mechanism and triple connecting nut

2



Pipe assembly



Height adjustable pipe installation

Applications

- For simple and easy fixing of pipelines with threaded rods or hanger bolts.
- For use in dry interior areas.

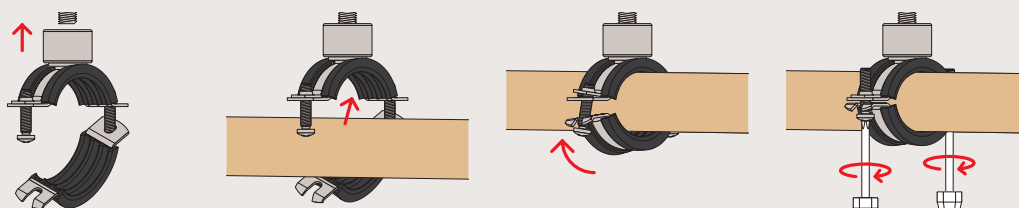
Advantages

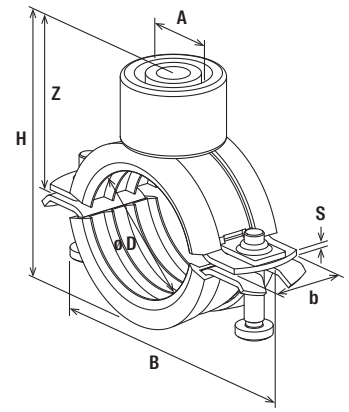
- The connecting nut with combination thread M8/M10/1/2" allows for optimised mounting positioning.
- The rapid-locking mechanism allows for fast and time-saving installation.
- The tight fit of the sound insulation insert prevents it from falling out when aligning the pipe.
- The two screws allow for ideal adaptation to suit the outer pipe diameter.

Properties

- Material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Zinc plating: electro zinc-plated
- Connecting nut: resistance welded, M8/M10/1/2"
- Locking screw: flat head screw with combination recessed head
- Material sound insulation insert: SBR/EPDM; chlorine-free; silicone-free
- Sound insulation: for DIN 4109
- Temperature range: -50 °C to +110 °C
- Hardness: 45 ± 5° Shore A
- Fire behaviour: DIN 4102: Class B2

Installation FRS Triple





FRS Triple

2

Technical data

Item	Item no.	Thread	Size	Clamping range	Width	Height	Height	Width x thickness clamp band	Locking screw	Installation torque	Max. re-com. static load (centr. tension)	Sales unit
		A	[in]	D [mm]	B [mm]	H [mm]	Z [mm]	b x s [mm]	T_{inst} [Nm]	N_{rec} [kN]	[pcs]	
FRS Triple 15 - 19	500698	M8 / M10 / 1/2"	3/8	15 - 19	61	53	36	20 x 1.5	M5	2	1.00	100
FRS Triple 21 - 23	500699	M8 / M10 / 1/2"	1/2	21 - 23	65	57	38	20 x 1.5	M5	2	1.00	100
FRS Triple 26 - 28	500700	M8 / M10 / 1/2"	3/4	26 - 28	70	62	40	20 x 1.5	M5	2	1.00	100
FRS Triple 32 - 35	500701	M8 / M10 / 1/2"	1	32 - 35	77	69	44	20 x 1.5	M5	2	1.00	100
FRS Triple 40 - 43	500702	M8 / M10 / 1/2"	1 1/4	40 - 43	85	77	48	20 x 1.5	M5	2	1.00	50
FRS Triple 48 - 56	500703	M8 / M10 / 1/2"	1 1/2	48 - 56	98	90	54	20 x 1.5	M5	2	1.00	50
FRS Triple 57 - 62	500704	M8 / M10 / 1/2"	2	57 - 63	104	96	57	20 x 1.5	M5	2	1.00	50
FRS Triple 63 - 70	500705	M8 / M10 / 1/2"	-	63 - 70	112	104	61	20 x 1.5	M5	2	1.00	25
FRS Triple 74 - 80	500706	M8 / M10 / 1/2"	2 1/2	74 - 80	122	114	66	20 x 1.5	M5	2	1.00	25
FRS Triple 83 - 91	500707	M8 / M10 / 1/2"	3	83 - 91	133	125	72	20 x 1.5	M5	2	1.00	25
FRS Triple 100 - 105	500708	M8 / M10 / 1/2"	-	100 - 105	155	139	79	23 x 2.0	M6	2	1.50	10
FRS Triple 108 - 114	500709	M8 / M10 / 1/2"	4	108 - 114	164	148	83	23 x 2.0	M6	2	1.50	10
FRS Triple 115 - 125	500710	M8 / M10 / 1/2"	-	115 - 125	175	159	89	23 x 2.0	M6	2	1.50	10
FRS Triple 127 - 135	500711	M8 / M10 / 1/2"	-	127 - 135	185	169	94	23 x 2.0	M6	2	1.50	10
FRS Triple 135 - 140	500712	M8 / M10 / 1/2"	5	135 - 140	190	174	96	23 x 2.0	M6	2	1.50	10
FRS Triple 159 - 169	500713	M8 / M10 / 1/2"	6	159 - 169	219	203	111	23 x 2.0	M6	2	1.50	10

Pipe clamp FRS

The two-screw pipe clamp with combination connecting thread



Pipe assembly



Height adjustable pipe installation

Applications

- Secure fixing for pipes with threaded rods or stud screws (also when there are fire protection requirements).
- For use in dry interior areas.

Certificates



ETA-21/0253



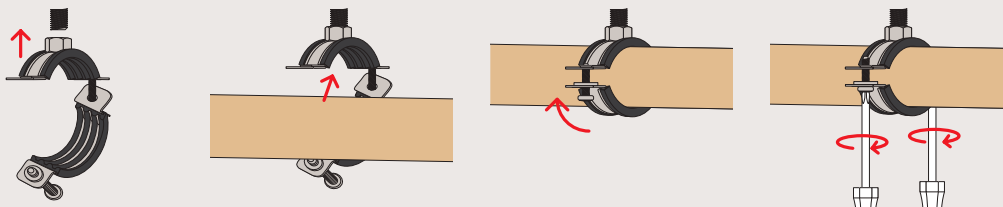
Advantages

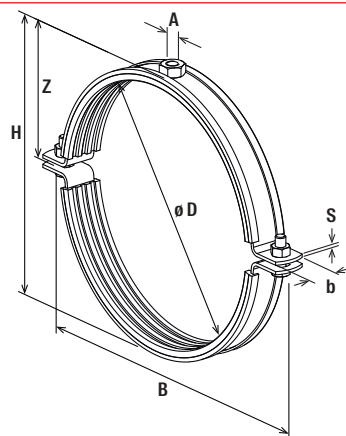
- The fire test report guarantees independently tested functional safety.
- The two screws allow an easy adjustment to suit the outer pipe diameter.
- The combination connecting nut with thread M8/M10 enables optimised mounting choices.
- The sound insulation insert offers noise protection and prevents contact corrosion.
- The screw's safety feature ensures trouble-free installation.

Properties

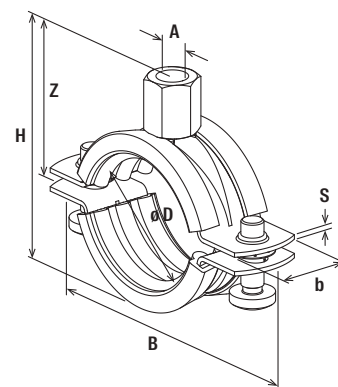
- Material: steel DC01 (material no. 1.0330) acc. to DIN EN 10130
- Zinc plating: electro zinc-plated
- Connecting nut: resistance welded, M8 / M10, SW 13
- Locking screw: flat head screw with combination recessed head
- Material sound insulation insert: EPDM; chlorine-free; silicone-free
- Sound insulation: for DIN 4109
- Temperature range: -40 °C to +100 °C
- Hardness: 55 ± 5° Shore A
- Fire behaviour: DIN 4102: Class B2

Installation FRS





FRS (>6" or 168 mm)



FRS

2

Technical data

Item	Item no.	Ap- pro- val ETA	Fire test report	Thread A	Size [in]	Clamping range D [mm]	Width B [mm]	Height H [mm]	Height Z [mm]	Width x thickness clamp band b x s [mm]	Locking screw	Instal- lation torque T_{inst} [Nm]	Max. recom. static load (centr. tension) N_{rec} [kN]	Sales unit [pcs]
FRS 12 - 15 M8/M10	510969	●	Yes	M8 / M10	1/4	12 - 15	55	39	31	20 x 1.25	M6	2	1.00	100
FRS 15 - 19 M8/M10	042535	●	Yes	M8 / M10	3/8	15 - 19	59	43	29	20 x 1.25	M6	2	1.00	100
FRS 20 - 24 M8/M10	042536	●	Yes	M8 / M10	1/2	20 - 24	65	48	32	20 x 1.25	M6	2	1.00	100
FRS 25 - 30 M8/M10	042537	●	Yes	M8 / M10	3/4	25 - 30	72	54	35	20 x 1.25	M6	2	1.00	100
FRS 32 - 37 M8/M10	042538	●	Yes	M8 / M10	1	32 - 37	77	61	38	20 x 1.25	M6	2	1.00	100
FRS 40 - 45 M8/M10	042554	●	Yes	M8 / M10	1 1/4	40 - 45	89	69	42	20 x 1.25	M6	2	1.00	50
FRS 48 - 54 M8/M10	510970	●	Yes	M8 / M10	1 1/2	48 - 54	99	78	46	20 x 1.25	M6	2	1.00	50
FRS 55 - 61 M8/M10	042555	●	Yes	M8 / M10	2	55 - 61	105	85	50	20 x 1.25	M6	2	1.00	50
FRS 60 - 64 M8/M10	091488	●	Yes	M8 / M10	2	63 - 67	111	91	53	20 x 1.25	M6	2	1.00	50
FRS 72 - 78 M8/M10	091489	●	Yes	M8 / M10	2 1/2	72 - 80	125	104	60	20 x 2.0	M6	2	1.50	25
FRS 87 - 92 M8/M10	091505	●	Yes	M8 / M10	3	87 - 92	137	116	66	20 x 2.0	M6	2	1.50	25
FRS 95 - 103 M8/M10	545649	●	Yes	M8 / M10	-	95 - 103	149	130	73	25 x 2.0	M6	2	2.00	25
FRS 102 - 116 M8/M10	091506	●	Yes	M8 / M10	4	108 - 116	164	140	78	25 x 2.0	M6	2	2.00	20
FRS 121 - 127 M8/M10	079456	●	Yes	M8 / M10	-	121 - 128	176	152	84	25 x 2.5	M6	2	2.50	10
FRS 133 - 141 M8/M10	079457	●	Yes	M8 / M10	5	133 - 141	187	165	90	25 x 2.5	M6	2	2.50	10
FRS 159 - 162 M8/M10	079458	●	Yes	M8 / M10	-	159 - 165	211	198	102	25 x 2.5	M6	2	2.50	8
FRS 165 - 168 M8/M10	079459	●	Yes	M8 / M10	6	165 - 168	225	192	104	25 x 2.5	M6	2	2.50	8
FRS 200 - 206 M10	539660	-	-	M10	-	200 - 206	256	227	118	25 x 2.5	M8	3	2.75	15
FRS 210 - 219 M10	558335	-	-	M10	8	210 - 219	262	240	124	25 x 2.5	M8	3	2.75	15

For load information under fire exposure, see chapter Basic knowledge.

Silicone pipe clamp FRSH

The two-screw pipe clamp with a sound insulation insert with resistance to high temperatures

2



Sliding element on cantilever

Applications

- Fixing of high-temperature pipelines with threaded rods or stud screws (e.g. steam pipes).
- For use in dry interior areas.

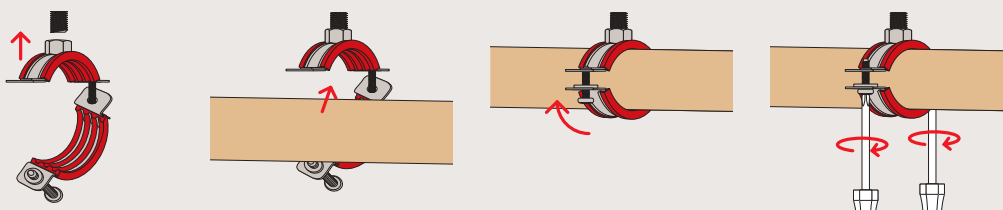
Advantages

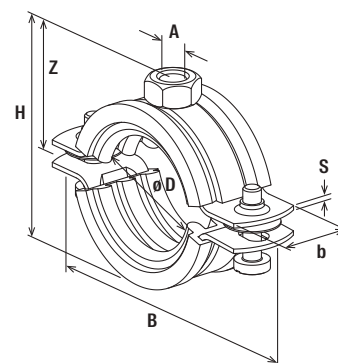
- The special silicone sound insulation insert allows a use with average temperatures of up to +220 °C.
- The two screws enable an easy adjustment to suit the outer pipe diameter.
- The screw's safety feature ensures trouble-free installation.

Properties

- Material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Zinc plating: electro zinc-plated
- Connecting nut: (up to FRSH 59 - 63) resistance welded, M8 and M8/M10 SW 13, M10 SW 17
- Locking screw: flat head screw with combination recessed head
- Material sound insulation insert: silicone
- Sound insulation: for DIN 4109
- Temperature range: -40 °C to +220 °C
- Hardness: 60 ± 5° Shore A
- Fire behaviour: DIN 4102: Class B2

Installation FRSH





FRSH

2

Technical data

Item	Item no.	Thread	Size	Clamping range	Width	Height	Height	Width x thickness clamp band	Locking screw	Installation torque	Max. re-com. static load (centr. tension)	Sales unit
		A	[in]	D [mm]	B [mm]	H [mm]	Z [mm]	b x s [mm]				
FRSH 15 - 19	063490	M8	3/8	15 - 19	62	41	24	20 x 1.25	M5	2	1.00	100
FRSH 20 - 24	063492	M8	1/2	20 - 24	68	46	26	20 x 1.25	M5	2	1.00	100
FRSH 25 - 30	063494	M8	3/4	25 - 30	75	52	29	20 x 1.25	M5	2	1.00	100
FRSH 32 - 37	063495	M8	1	32 - 37	80	59	33	20 x 1.25	M5	2	1.00	100
FRSH 40 - 45	063498	M8	1 1/4	40 - 45	90	67	37	20 x 1.25	M5	2	1.00	50
FRSH 48 - 53	063499	M8	1 1/2	48 - 53	97	75	41	20 x 1.25	M5	2	1.00	50
FRSH 54 - 59	063500	M8	-	54 - 59	104	81	44	20 x 1.25	M5	2	1.00	50
FRSH 60 - 64	063502	M8	2	60 - 64	110	86	46	20 x 1.25	M5	2	1.00	50
FRSH 68 - 73	063504	M10	-	68 - 73	122	95	51	25 x 1.5	M6	2	1.30	25
FRSH 74 - 78	063505	M10	2 1/2	74 - 78	130	100	55	25 x 1.5	M6	2	1.30	25
FRSH 80 - 86	063511	M10	-	80 - 86	130	108	58	25 x 1.5	M6	2	1.30	25
FRSH 87 - 92	063513	M10	3	87 - 92	141	114	61	25 x 1.5	M6	2	1.30	25
FRSH 95 - 103	063518	M10	-	95 - 103	156	125	67	25 x 1.5	M6	2	1.30	25
FRSH 102 - 116	063520	M10	4	102 - 116	172	140	74	25 x 2.0	M6	2	2.00	20
FRSH 133 - 141	063537	M8 / M10	5	133 - 141	198	174	95	25 x 2.5	M8	3	2.00	10
FRSH 159 - 168	091507	M8 / M10	-	159 - 168	226	201	109	25 x 2.5	M8	3	2.00	8

Pipe clamp FRSN Triple

The two-screw pipe clamp with rapid-locking mechanism and triple connecting nut

2



Waste water pipe

Applications

- For simple and easy fixing of pipelines with threaded rods or hanger bolts.
- For use in dry interior areas.

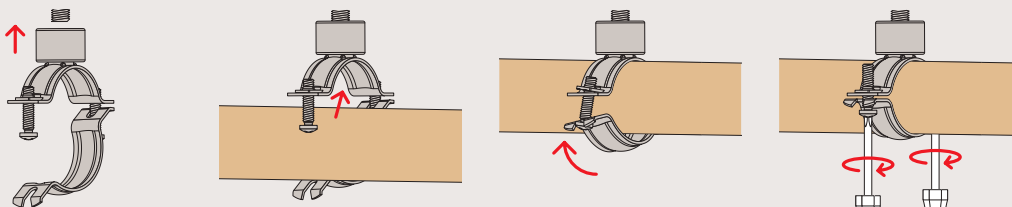
Advantages

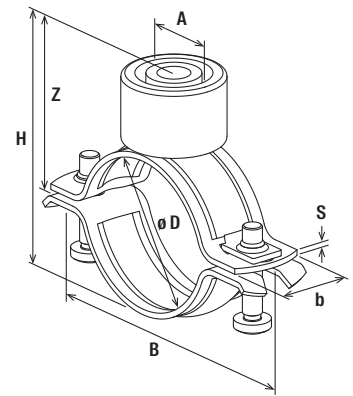
- The connecting nut with combination thread M8 / M10 / ½" allows for optimised mounting positioning.
- The rapid-locking mechanism allows for fast and time-saving installation.
- The two screws allow for ideal adaptation to suit the outer pipe diameter.

Properties

- Material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Zinc plating: electro zinc-plated
- Connecting nut: resistance welded, M8 / M10 / ½"
- Locking screw: flat head screw with combination recessed head

Installation FRSN Triple





FRSN Triple

2

Technical data

Item	Item no.	Thread	Size	Clamping range	Width	Height	Height	Width x thickness clamp band	Locking screw	Installation torque	Max. re-com. static load (centr. tension)	Sales unit
		A	[in]	D [mm]	B [mm]	H [mm]	Z [mm]	b x s [mm]	T_{inst} [Nm]	N_{rec} [kN]	[pcs]	
FRSN Triple 15 - 19	500714	M8 / M10 / 1/2"	3/8	15 - 19	54	44	32	20 x 1.5	M5	2	1.00	100
FRSN Triple 21 - 23	500715	M8 / M10 / 1/2"	1/2	21 - 23	58	48	34	20 x 1.5	M5	2	1.00	100
FRSN Triple 26 - 28	500716	M8 / M10 / 1/2"	3/4	26 - 28	63	53	36	20 x 1.5	M5	2	1.00	100
FRSN Triple 32 - 35	500717	M8 / M10 / 1/2"	1	32 - 35	70	60	40	20 x 1.5	M5	2	1.00	100
FRSN Triple 40 - 43	500718	M8 / M10 / 1/2"	1 1/4	40 - 43	78	68	44	20 x 1.5	M5	2	1.00	50
FRSN Triple 48 - 56	500719	M8 / M10 / 1/2"	1 1/2	48 - 56	91	81	50	20 x 1.5	M5	2	1.00	50
FRSN Triple 57 - 62	500720	M8 / M10 / 1/2"	2	57 - 63	97	87	53	20 x 1.5	M5	2	1.00	50
FRSN Triple 63 - 70	500721	M8 / M10 / 1/2"	-	63 - 70	105	95	57	20 x 1.5	M5	2	1.00	50
FRSN Triple 74 - 80	500722	M8 / M10 / 1/2"	2 1/2	74 - 80	115	105	62	20 x 1.5	M5	2	1.00	25
FRSN Triple 83 - 91	500723	M8 / M10 / 1/2"	3	83 - 91	126	116	68	20 x 1.5	M5	2	1.00	25
FRSN Triple 100 - 105	500724	M8 / M10 / 1/2"	-	100 - 105	148	130	74	23 x 2.0	M6	2	1.50	10
FRSN Triple 108 - 114	500725	M8 / M10 / 1/2"	4	108 - 114	157	139	78	23 x 2.0	M6	2	1.50	10

Pipe clamp FRSN

The two-screw pipe clamp without sound insulation insert

2



Waste water pipe

Applications

- Fixing of metal or plastic pipes without sound insulation requirements with threaded rods or stud screws (e.g. in industrial constructions).
- For use in dry interior areas.

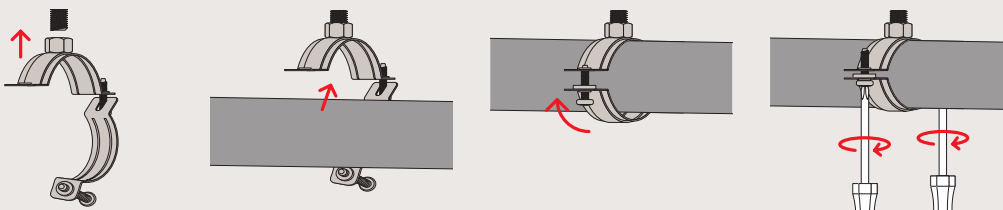
Advantages

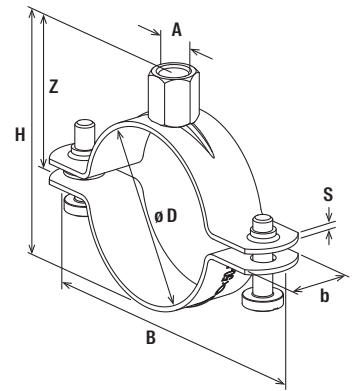
- The FRSN without the sound insulation insert is ideal for use in industrial applications and plastic pipes.
- The combination connecting nut with thread M8 / M10 allows for optimised mounting choices.
- The two screws enable ideal adaptation to suit the outer pipe diameter.
- The screw's safety feature ensures trouble-free installation.

Properties

- Material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Zinc plating: electro zinc-plated
- Connecting nut: resistance welded M8 / M10 SW 13, M10 / M12 SW 17
- Locking screw: flat head screw with combination recessed head

Installation FRSN





FRSN

2

Technical data

Item	Item no.	Thread	Size	Clamping range	Width	Height	Height	Width x thickness clamp band	Locking screw	Installation torque	Max. re-com. static load (centr. tension)	Sales unit
		A	[in]	D [mm]	B [mm]	H [mm]	Z [mm]	b x s [mm]	T _{inst} [Nm]	N _{rec} [kN]	[pcs]	
FRSN 15 - 19 M8/M10	049459	M8 / M10	3/8	15 - 19	56	37	27	20 x 1.5	M6	2	1.50	100
FRSN 21 - 23 M8/M10	049789	M8 / M10	1/2	21 - 23	60	41	28	20 x 1.5	M6	2	1.50	100
FRSN 25 - 28 M8/M10	049790	M8 / M10	3/4	25 - 28	67	46	30	20 x 1.5	M6	2	1.50	100
FRSN 32 - 36 M8/M10	049793	M8 / M10	1	32 - 36	74	54	34	20 x 1.5	M6	2	1.50	100
FRSN 38 - 43 M8/M10	049794	M8 / M10	1 1/4	38 - 43	78	61	38	20 x 1.5	M6	2	1.50	50
FRSN 50 - 56 M8/M10	049922	M8 / M10	-	50 - 56	92	74	43	20 x 1.5	M6	2	1.50	50
FRSN 57 - 61 M8/M10	049944	M8 / M10	2	57 - 61	98	79	47	20 x 1.5	M6	2	1.50	50
FRSN 63 - 70 M8/M10	049945	M8 / M10	-	63 - 70	105	88	54	20 x 1.5	M6	2	1.50	50
FRSN 70 - 77 M8/M10	049947	M8 / M10	2 1/2	70 - 77	112	95	55	20 x 1.5	M6	2	1.50	25
FRSN 80 - 83 M8/M10	049948	M8 / M10	-	80 - 83	116	101	58	20 x 1.5	M6	2	1.50	25
FRSN 83 - 91 M8/M10	049979	M8 / M10	3	83 - 91	128	111	63	20 x 2.0	M6	2	2.50	25
FRSN 93 - 99 M8/M10	050005	M8 / M10	-	93 - 99	123	118	67	20 x 2.0	M6	2	2.50	25
FRSN 100 - 106 M8/M10	050006	M8 / M10	-	100 - 106	143	126	70	20 x 2.0	M6	2	2.50	25
FRSN 108 - 114 M8/M10	050008	M8 / M10	4	108 - 114	156	134	75	20 x 2.0	M6	2	2.50	25
FRSN 118 - 122 M8/M10	500744	M8 / M10	-	118 - 122	160	142	78	20 x 2.0	M6	2	2.50	25
FRSN 123 - 128 M8/M10	050009	M8 / M10	-	123 - 128	173	149	82	25 x 2.5	M6	2	2.50	25
FRSN 131 - 136 M8/M10	050010	M8 / M10	-	131 - 136	176	157	86	25 x 2.5	M6	2	2.50	25
FRSN 137 - 146 M8/M10	050023	M8 / M10	5	137 - 146	180	167	91	25 x 2.5	M6	2	2.50	25
FRSN 146 - 156 M8/M10	500746	M8 / M10	-	146 - 156	195	177	96	25 x 2.5	M6	2	2.50	25
FRSN 159 - 165 M10/M12	500747	M10 / M12	-	159 - 165	203	191	106	25 x 2.5	M6	2	2.50	25
FRSN 166 - 175 M10/M12	500748	M10 / M12	-	166 - 175	211	201	110	25 x 2.5	M8	3	2.50	20
FRSN 200 - 206 M10/M12	500751	M10 / M12	-	200 - 206	248	232	126	25 x 2.5	M8	3	2.50	10
FRSN 210 - 219 M10/M12	500752	M10 / M12	8	210 - 219	261	245	133	25 x 2.5	M8	3	2.50	10

Heavy duty pipe clamp FRSM - inch

The large pipe clamp with sound insulation insert for medium to heavy loads

2



Pipe elongation with sliding element and suspended pipe



Upright pipe on cantilever arm

Applications

- Fixing of medium to heavy pipes with threaded rods (hanger bolts).
- For use in dry interior areas.

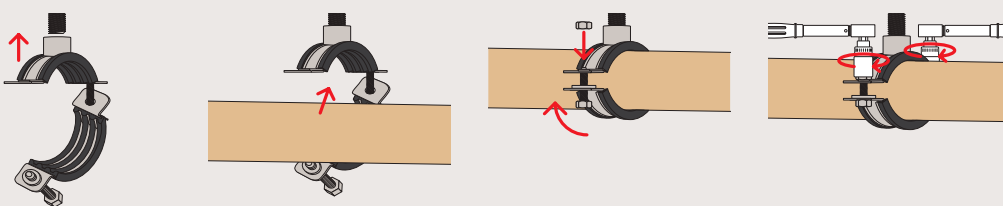
Advantages

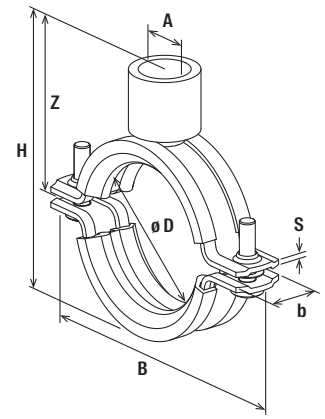
- The inch threaded connecting nut allows for a pipe fixing with increased bending stress.
- High tested loads ensures the secure functioning of the FRSM.
- The sound insulation insert offers noise protection and prevents contact corrosion.
- The two screws allow an easy adjustment to suit the outer pipe diameter.
- The screw's safety feature ensures trouble-free installation.

Properties

- Material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Zinc plating: electro zinc-plated
- Connecting nut: ½" resistance welded
- Locking screw: flat head screw with combination recessed head
- Material sound insulation insert: EPDM; chlorine-free; silicone-free
- Temperature range: -50 °C to +110 °C
- Hardness: 45 ± 5° Shore A
- Fire behaviour: DIN 4102: Class B2

Installation FRSM





FRSM - inch

Technical data

Item	Item no.	Thread	Size	Clamping range	Width	Height	Height	Width x thickness clamp band	Locking screw	Installation torque	Max. re-com. static load (centr. tension)	Sales unit
		A	[in]	D [mm]	B [mm]	H [mm]	Z [mm]	b x s [mm]	T _{inst} [Nm]	N _{rec} [kN]	[pcs]	
FRSM 14 - 20 1/2"	535494	1/2"	3/8	14 - 20	64.3	64	44.5	20 x 2.0	M6	2	1.50	25
FRSM 21 - 26 1/2"	535497	1/2"	1/2	21 - 26	70.6	70	47.5	20 x 2.0	M6	2	1.50	25
FRSM 26 - 30 1/2"	535498	1/2"	3/4	26 - 30	74.8	74	49.5	20 x 2.0	M6	2	1.50	25
FRSM 31 - 38 1/2"	535499	1/2"	1	31 - 38	81	80	52.5	20 x 2.0	M6	2	1.50	25
FRSM 40 - 47 1/2"	535500	1/2"	1 1/4	40 - 47	91.2	90	57.5	20 x 2.0	M6	2	1.50	25
FRSM 48 - 54 1/2"	535501	1/2"	1 1/2	48 - 54	100	98	61.5	20 x 2.0	M6	2	1.50	25
FRSM 60 - 66 1/2"	535502	1/2"	2	60 - 66	111.1	109	67	20 x 2.0	M6	2	1.50	25
FRSM 73 - 80 1/2"	535503	1/2"	2 1/2	73 - 80	131.4	123	74	25 x 2.5	M8	3	3.15	10
FRSM 87 - 94 1/2"	535504	1/2"	3	87 - 94	145.5	137	81	25 x 2.5	M8	3	3.15	10
FRSM 105 - 112 1/2"	535505	1/2"	-	105 - 112	165.6	157	91	25 x 2.5	M8	3	3.15	10
FRSM 112 - 118 1/2"	535506	1/2"	4	112 - 118	171.7	163	94	25 x 2.5	M8	3	3.15	10
FRSM 132 - 137 1/2"	535507	1/2"	-	132 - 137	190.8	182	103.5	25 x 2.5	M8	3	3.15	10
FRSM 137 - 142 1/2"	535508	1/2"	5	137 - 142	195.8	187	106	25 x 2.5	M8	3	3.15	10
FRSM 159 - 164 1/2"	535509	1/2"	-	159 - 164	217.9	209	117	25 x 2.5	M8	3	3.15	8
FRSM 164 - 169 1/2"	535511	1/2"	6	164 - 169	222.9	214	119.5	25 x 2.5	M8	3	3.15	8

Heavy duty pipe clamp FRSM - metric

The large pipe clamp with sound insulation insert for medium to heavy loads

2



Heavy pipe on cantilever



Heavy drainage pipe under angle bracket

Applications

- Fixing of medium to heavy pipes with threaded rods or hanger bolts.
- For use in dry interior areas.

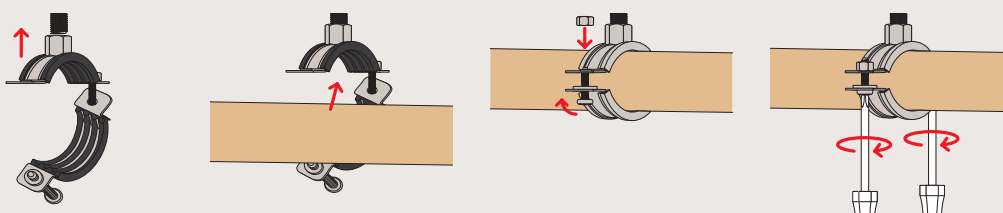
Advantages

- High tested loads guarantee safe functioning of the FRSM.
- The combination connecting nut with thread M10 / M12, M12 / M16 or M16 allows for optimised mounting choices.
- It is possible to install the FRSM with 2 threaded rods, e.g. for the fixing of cast iron roof drainage pipes.
- The two screws allow for easy adjustment to suit the outer pipe diameter.
- The screw's safety features ensures trouble-free installation.

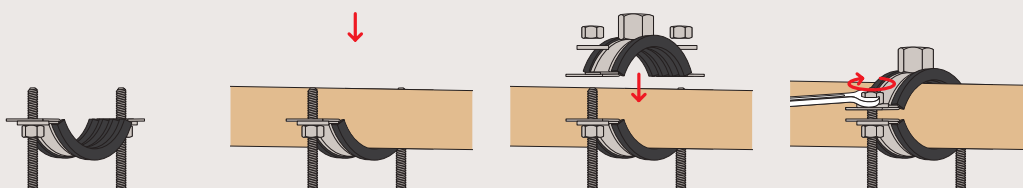
Properties

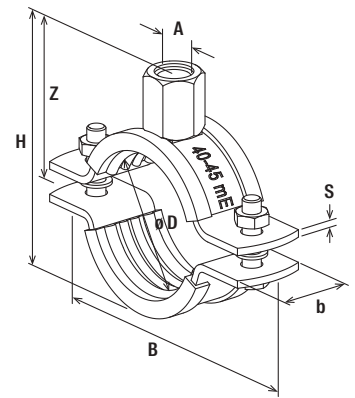
- Material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Zinc plating: electro zinc-plated
- Connecting nut: M10 / M12 SW 17, M12 / M16 SW 22, M16 SW 24
- Locking screw: hexagon screw with nut
- Material sound insulation insert: EPDM; chlorine-free; silicone-free
- Temperature range: -50 °C to +110 °C
- Hardness: 45 ± 5° Shore A
- Fire behaviour: DIN 4102: Class B2

Installation FRSM



Installation of FRSM with two threaded rods





FRSM - metric

Technical data

Item	Item no.	Thread	Size	Clamping range	Width	Height	Height	Width x thickness clamp band	Locking screw	Installation torque	Max. re-com. static load (centr. tension)	Sales unit
		A	[in]	D [mm]	B [mm]	H [mm]	Z [mm]	b x s [mm]	T _{inst} [Nm]	N _{rec} [kN]	[pcs]	
FRSM 19 - 23 M10/M12	554243	M10 / M12	1/2	19 - 23	77	56	38	25 x 2.5	M6	2	2.50	50
FRSM 24 - 29 M10/M12	554244	M10 / M12	3/4	24 - 29	83	62	41	25 x 2.5	M6	2	2.50	50
FRSM 33 - 36 M10/M12	554245	M10 / M12	1	33 - 36	91	69	45	25 x 2.5	M6	2	2.50	50
FRSM 40 - 45 M10/M12	554246	M10 / M12	1 1/4	40 - 45	100	78	49	25 x 2.5	M6	2	2.50	20
FRSM 47 - 52 M10/M12	554247	M10 / M12	1 1/2	47 - 52	107	85	53	25 x 2.5	M6	2	2.50	20
FRSM 53 - 58 M10/M12	554248	M10 / M12	-	53 - 58	113	91	56	25 x 2.5	M6	2	2.50	20
FRSM 60 - 65 M10/M12	554249	M10 / M12	2	60 - 65	120	98	59	25 x 2.5	M6	2	2.50	20
FRSM 73 - 78 M10/M12	554250	M10 / M12	2 1/2	73 - 78	138	115	68	30 x 3.0	M8	3	3.00	20
FRSM 79 - 85 M10/M12	554251	M10 / M12	-	79 - 85	145	122	71	30 x 3.0	M8	3	3.00	20
FRSM 88 - 93 M10/M12	554252	M10 / M12	3	88 - 93	153	130	75	30 x 3.0	M8	3	3.00	20
FRSM 100 - 106 M10/M12	554253	M10 / M12	-	100 - 106	166	143	82	30 x 3.0	M8	3	3.00	20
FRSM 108 - 116 M10/M12	554254	M10 / M12	4	108 - 116	176	153	87	30 x 3.0	M8	3	3.00	20
FRSM 124 - 129 M10/M12	093709	M10 / M12	-	124 - 129	190	164	92	30 x 3.0	M8	3	3.00	20
FRSM 131 - 137 M10/M12	093710	M10 / M12	-	131 - 137	198	172	96	30 x 3.0	M8	3	3.00	20
FRSM 138 - 145 M10/M12	093711	M10 / M12	5	138 - 145	205	180	100	30 x 3.0	M8	3	3.00	20
FRSM 156 - 162 M10/M12	093712	M10 / M12	-	156 - 162	223	197	108	30 x 3.0	M8	3	3.00	20
FRSM 165 - 171 M10/M12	093713	M10 / M12	6	165 - 171	232	206	113	30 x 3.0	M8	3	3.00	20
FRSM 177 - 183 M10/M12	558303	M10 / M12	-	177 - 183	245	222	121	30 x 3.0	M8	3	3.00	20
FRSM 188 - 194 M10/M12	093714	M10 / M12	7	188 - 194	255	229	125	30 x 3.0	M8	3	3.00	10
FRSM 196 - 203 M10/M12	093715	M10 / M12	-	196 - 203	263	238	129	30 x 3.0	M8	3	3.00	10
FRSM 205 - 214 M12/M16	505453	M12 / M16	-	205 - 214	297	264	147	40 x 4.0	M12	10	5.00	10
FRSM 219 - 225 M12/M16	505454	M12 / M16	8	219 - 225	308	275	153	40 x 4.0	M12	10	5.00	10
FRSM 244 - 250 M12/M16	505455	M12 / M16	-	244 - 250	333	300	165	40 x 4.0	M12	10	5.00	10
FRSM 267 - 273 M12/M16	505456	M12 / M16	10	267 - 273	356	323	177	40 x 4.0	M12	10	5.00	10
FRSM 277 - 283 M12/M16	558304	M12 / M16	-	277 - 283	367	334	180	40 x 4.0	M12	10	5.00	10
FRSM 297 - 304 M12/M16	505457	M12 / M16	-	297 - 304	387	354	192	40 x 4.0	M12	10	5.00	10
FRSM 305 - 316 M12/M16	552858	M12 / M16	-	305 - 316	397	366	198	40 x 4.0	M12	10	5.00	10
FRSM 320 - 328 M12/M16	505458	M12 / M16	12	320 - 328	411	378	204	40 x 4.0	M12	10	5.00	10
FRSM 348 - 356 M16	504594	M16	-	348 - 356	480	403	213	50 x 5.0	M16	20	8.00	1
FRSM 364 - 372 M16	504595	M16	-	364 - 372	496	419	221	50 x 5.0	M16	20	8.00	1
FRSM 400 - 409 M16	504596	M16	-	400 - 409	533	456	240	50 x 5.0	M16	20	8.00	1
FRSM 454 - 462 M16	504597	M16	-	454 - 462	586	509	266	50 x 5.0	M16	20	8.00	1
FRSM 500 - 508 M16	504598	M16	-	500 - 508	632	555	290	50 x 5.0	M16	20	8.00	1

Heavy duty pipe clamp FRSMN

The two-screw pipe clamp without sound insulation insert with FM and VdS approval

2



Fixing of pipes

Applications

- Fixing metal or plastic pipes without sound insulation requirements using threaded rods or stud screws, e.g. in industrial buildings.
- Fixing sprinkler pipes in accordance with FM and VdS guidelines.
- For use in dry interior areas.

Certificates



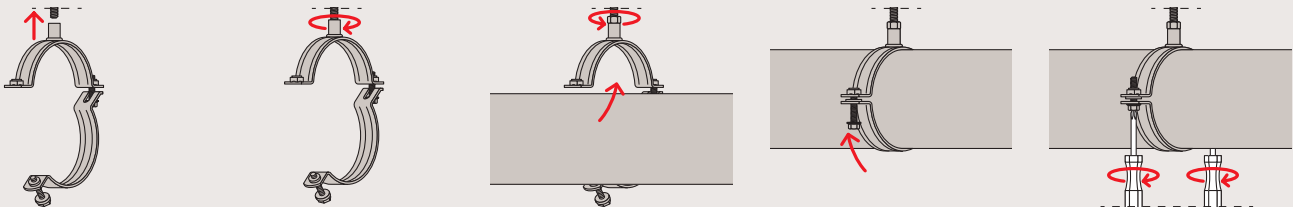
Advantages

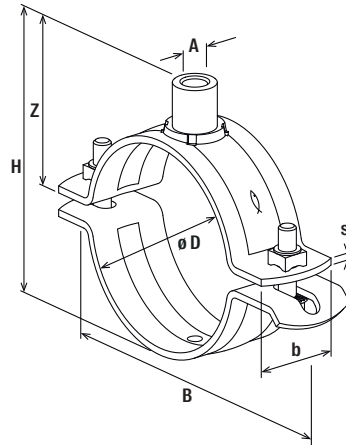
- FM and VdS approval guarantees objectively tested safety for the use of sprinkler systems.
- The FRSMN without sound insulation insert is ideal for industrial applications and plastic pipes.
- The connection nuts with combination thread ensure flexibility on the construction site.
- The two-screw design enables optimised adaptation to the outer pipe diameter.
- The loss protection of the screws ensures trouble-free installation.

Properties

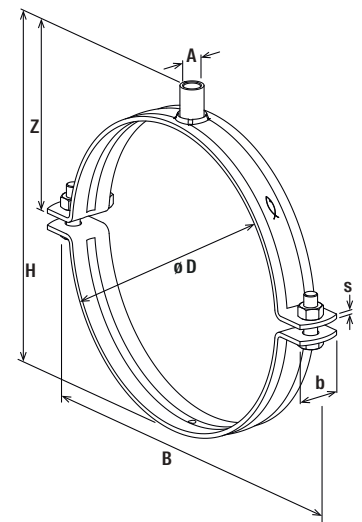
- Heavy duty pipe clamp:
- Material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Zinc plating: electro zinc-plated
- Connection nut:
- Push-through nut M8/M10, M10/M12, M12/M16 resistance spot-welded
- Hexagonal nuts M16 SW24 and M20 SW30 half-round welded
- Hexagonal nuts M16 SW30 from diameter 316-324 all-round welded
- Locking screw: hexagonal screw with flange M6 SW10/PH3, M8 SW13/PH3. From diameter 133-140 hexagonal screw 8.8 and nut M12 SW19, M16 SW24

Installation FRSMN





FRSMN M8-M10

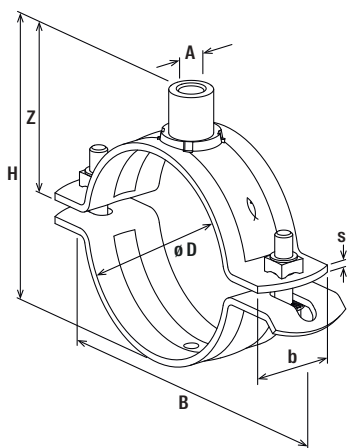


FRSMN M12-M16

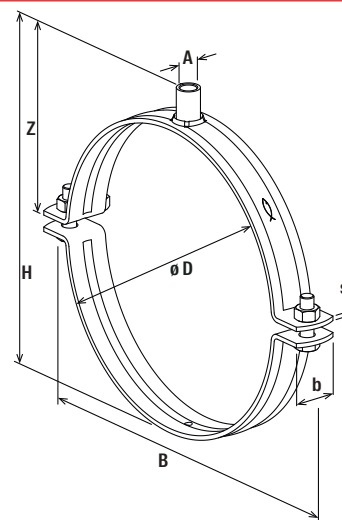
Technical data

Item	Item no.	FM approval	VdS approval	Thread	Size	Clamping range	Width x thickness clamp band	Width	Height	Height	Locking screw	Installation torque	Max. recom. static load (centr. tension)	Sales unit
				A	[in]	D [mm]	b x s [mm]	B [mm]	H [mm]	Z [mm]		T _{inst} [Nm]	N _{rec} [kN]	[pcs]
FRSMN 15-19 M8/M10	570152 ¹⁾	-	-	M8 / M10	3/8	15 - 19	30 x 2.5	62	45.5	33.5	M6	2	2.50	50
FRSMN 20-24 M8/M10	570153	-	Yes	M8 / M10	1/2	20 - 24	30 x 2.5	71	50.5	36	M6	2	2.50	50
FRSMN 25-30 M8/M10	570154	Yes	Yes	M8 / M10	3/4	25 - 30	30 x 2.5	78	56.5	39	M6	2	2.50	50
FRSMN 31-35 M8/M10	570155	Yes	Yes	M8 / M10	1	31 - 35	30 x 2.5	84	59	37.5	M6	2	4.00	50
FRSMN 36-41 M8/M10	570156	-	Yes	M8 / M10	-	36 - 41	30 x 2.5	89	65	40.5	M6	2	4.00	50
FRSMN 40-45 M8/M10	570157	Yes	Yes	M8 / M10	1 1/4	40 - 45	30 x 2.5	94	69	42.5	M6	2	4.00	50
FRSMN 48-53 M8/M10	570158	Yes	Yes	M8 / M10	1 1/2	48 - 53	30 x 2.5	103	77	46.5	M6	2	4.00	50
FRSMN 55-59 M8/M10	570159	-	Yes	M8 / M10	-	54 - 59	30 x 2.5	108	83	49.5	M6	2	4.00	50
FRSMN 60-65 M8/M10	570160	Yes	Yes	M8 / M10	2	60 - 65	30 x 2.5	116	89	52.5	M6	2	4.00	50
FRSMN 67-72 M8/M10	570161	-	Yes	M8 / M10	-	67 - 72	30 x 2.5	123	96	56	M6	2	4.00	50
FRSMN 76-81 M10/M12	570162	Yes	Yes	M10 / M12	2 1/2	76 - 81	30 x 3.0	145.5	110.5	65.5	M8	3	5.00	25
FRSMN 82-85 M10/M12	570163 ¹⁾	-	Yes	M10 / M12	-	82 - 85	30 x 3.0	153.5	114.5	67.5	M8	3	5.00	25
FRSMN 88-94 M10/M12	570164	Yes	Yes	M10 / M12	3	88 - 94	30 x 3.0	157	123.5	72	M8	3	5.00	25
FRSMN 95-102 M10/M12	570165	-	Yes	M10 / M12	-	95 - 102	30 x 3.0	168	131.5	76	M8	3	5.00	25
FRSMN 102-108 M10/M12	570166 ¹⁾	-	Yes	M10 / M12	-	102 - 108	30 x 3.0	179	137.5	79	M8	3	5.00	25
FRSMN 110-116 M10/M12	570167	Yes	Yes	M10 / M12	4	110 - 116	30 x 3.0	184	145.5	83	M8	3	5.00	25
FRSMN 124-129 M10/M12	570168 ¹⁾	-	Yes	M10 / M12	-	124 - 129	30 x 3.0	199.5	158.5	89.5	M8	3	5.00	25
FRSMN 133-140 M12/M16	570169	Yes	Yes	M12 / M16	5	133 - 140	40 x 4.0	216	175.5	100	M12	10	8.00	10
FRSMN 140-146 M12/M16	570170 ¹⁾	-	Yes	M12 / M16	-	140 - 146	40 x 4.0	222	181.5	103	M12	10	8.00	10
FRSMN 149-155 M12/M16	570171 ¹⁾	-	Yes	M12 / M16	-	149 - 155	40 x 4.0	232	190	107.5	M12	10	8.00	10
FRSMN 159-165 M12/M16	570173	-	Yes	M12 / M16	-	159 - 165	40 x 4.0	242	200.5	112.5	M12	10	8.00	10
FRSMN 167-173 M12/M16	570174	Yes	Yes	M12 / M16	6	167 - 173	40 x 4.0	249	208.5	116.5	M12	10	8.00	10
FRSMN 176-182 M12/M16	570128	-	-	M12 / M16	-	176 - 182	40 x 4.0	258	217.5	121	M12	10	8.00	10
FRSMN 188-194 M12/M16	570129 ¹⁾	-	-	M12 / M16	-	188 - 194	40 x 4.0	270	229.5	127	M12	10	8.00	10
FRSMN 199-205 M12/M16	570131	-	-	M12 / M16	-	199 - 205	40 x 4.0	281	240.5	135.5	M12	10	9.00	10
FRSMN 207-216 M12/M16	570133 ¹⁾	-	-	M12 / M16	-	207 - 216	40 x 4.0	292	251.5	138	M12	10	9.00	10
FRSMN 219-226 M12/M16	570134	-	-	M12 / M16	8	219 - 226	40 x 4.0	302	261.5	143	M12	10	9.00	10
FRSMN 219-226 M16 VdS	570135	-	Yes	M16	8	219 - 226	40 x 4.0	302	257.5	139	M12	10	9.00	10
FRSMN 227-236 M12/M16	570136 ¹⁾	-	-	M12 / M16	-	227 - 236	40 x 4.0	312	271.5	148	M12	10	9.00	10
FRSMN 244-250 M12/M16	570137	-	-	M12 / M16	-	244 - 250	40 x 4.0	326	285.5	155	M12	10	9.00	10
FRSMN 251-261 M12/M16	570138 ¹⁾	-	-	M12 / M16	-	251 - 261	40 x 4.0	337	296.5	160.5	M12	10	9.00	10
FRSMN 267-273 M12/M16	570139	-	-	M12 / M16	10	267 - 273	40 x 4.0	349	308.5	166.5	M12	10	9.00	10
FRSMN 267-273 M20 VdS	570140 ¹⁾	-	Yes	M20	10	267 - 273	40 x 4.0	349	311	169	M12	10	9.00	10
FRSMN 278-284 M12/M16	570141 ¹⁾	-	-	M12 / M16	-	278 - 284	40 x 4.0	360	319.5	172	M12	10	9.00	10

¹⁾ Delivery time on request.



FRSMN M8-M10



FRSMN M12-M16

Technical data

Item	Item no.	FM approval	VdS approval	Thread	Size	Clamping range	Width x thickness clamp band	Width	Height		Locking screw	Installation torque	Max. recom. static load (centr. tension)	Sales unit
									H	Z				
				A	[in]	D [mm]	b x s [mm]	B [mm]	H [mm]	Z [mm]		T _{inst} [Nm]	N _{rec} [kN]	[pcs]
FRSMN 297-304 M12/M16	570142 ¹⁾	-	-	M12 / M16	-	297 - 304	40 x 4.0	380	339.5	182	M12	10	9.00	10
FRSMN 305-316 M12/M16	570143	-	-	M12 / M16	-	305 - 316	40 x 4.0	392	351.5	188	M12	10	9.00	10
FRSMN 316-324 M16	570144	-	-	M16	12	316 - 324	50 x 5.0	431	358	191	M16	20	15.00	1
FRSMN 348-356 M16	570145 ¹⁾	-	-	M16	13	348 - 356	50 x 5.0	463	390	207	M16	20	15.00	1
FRSMN 360-368 M16	570147 ¹⁾	-	-	M16	-	360 - 368	50 x 5.0	475.5	402	213	M16	20	15.00	1
FRSMN 399-407 M16	570148 ¹⁾	-	-	M16	16	399 - 407	50 x 5.0	514.5	441	232.5	M16	20	15.00	1
FRSMN 411-419 M16	570149 ¹⁾	-	-	M16	-	411 - 419	60 x 8,0	531.5	459	241.5	M16	20	15.00	1
FRSMN 500-508 M16	570150 ¹⁾	-	-	M16	20	500 - 508	60 x 8,0	620.5	548	286	M16	20	15.00	1
FRSMN 513-521 M16	570151 ¹⁾	-	-	M16	-	513 - 521	60 x 8,0	633.5	561	292.5	M16	20	15.00	1

¹⁾ Delivery time on request.

Refrigeration pipe clamp FRSK

The variable refrigeration pipe clamp with flexible clamping range and rapid-locking-mechanism



Refrigeration pipes



Refrigerant pipe clamps

Applications

- Installation of pipes in refrigeration and air-conditioning applications.
- For use in dry interior areas.

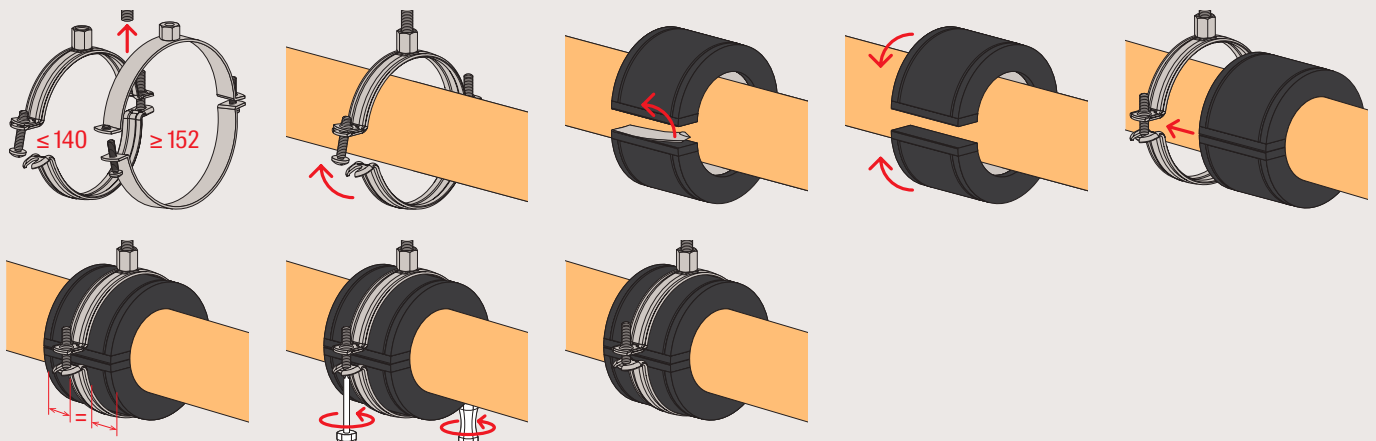
Advantages

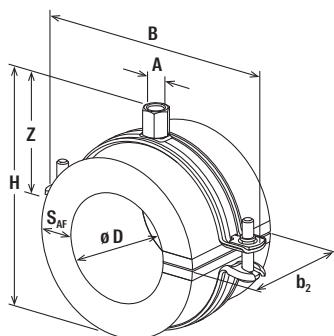
- The variable clamping range compensation and two screw design allow for simple adjustment to the exterior pipe diameter, reducing the number of items required.
- The self-adhesive fastening latch ensures the ideal functioning of the refrigeration pipe clamp.
- Materials resistant to ageing ensure the FRSK offers consistent performance.
- The double-threaded connecting nut offers flexibility on the construction site.
- The loss protection on the screws allows for easy installation.
- The integrated load distribution plate ensures load transfer and allows for higher loads.

Properties

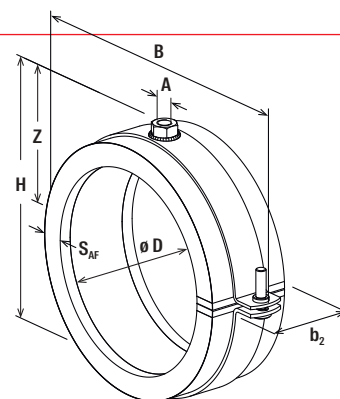
- Material: rigid polyurethane foam, silicone-free
- Density: 80 or 120 kg/m³
- Diffusion resistance: 7000 μ
- Compressive strength: 0.67-0.75 mPa
- Thermal conductivity (at 0 °C): 0.024-0.026 W/mK
- Temperature range: -45 °C to +105 °C
- Fire behaviour: DIN 4102: Class B2
- Steel clamp: material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Zinc plating: electro zinc-plated
- Screw plug: oval-head screw with slot / Phillip's head combination

Installation FRSK





FRSK 10 - 141



FRSK 152 - 221

Technical data

Item	Item no.	Thread	Size	Insulation thickness	Width	Height	Height	Locking screw	Length of insulation material	Installation torque	Max. re-com. static load (centr. tension)	Sales unit
		A	[in]	S_{AF} [mm]	B [mm]	H [mm]	Z [mm]					
FRSK 10-13 M8/M10	560906	M8 / M10	1/4	19	83	69	42	M5	72	2	0.05	25
FRSK 15-18 M8/M10	560907	M8 / M10	3/8	19	90	76	45	M5	72	2	0.05	25
FRSK 19-22 M8/M10	560908	M8 / M10	1/2	19	90	76	45	M5	72	2	0.05	25
FRSK 25-28 M8/M10	560909	M8 / M10	3/4	19	97	83	49	M5	72	2	0.08	25
FRSK 32-35 M8/M10	560970	M8 / M10	1	19	120	100	57	M6	72	2	0.10	20
FRSK 38-41 M8/M10	560971	M8 / M10	–	19	120	100	57	M6	72	2	0.12	20
FRSK 42-45 M8/M10	560972	M8 / M10	1 1/4	19	120	100	57	M6	72	2	0.20	20
FRSK 48-52 M8/M10	560973	M8 / M10	1 1/2	19	130	109	62	M6	42	2	0.24	20
FRSK 54-57 M8/M10	560974	M8 / M10	–	19	139	118	66	M6	42	2	0.27	20
FRSK 60-64 M8/M10	560975	M8 / M10	2	19	139	118	66	M6	52	2	0.37	20
FRSK 67-70 M8/M10	560976	M8 / M10	–	19	146	125	70	M6	52	2	0.51	20
FRSK 73-76 M8/M10	560977	M8 / M10	2 1/2	19	156	135	75	M6	52	2	0.61	10
FRSK 89-92 M8/M10	560978	M8 / M10	3	19	176	156	86	M6	52	2	0.79	10
FRSK 101-104 M8/M10	560979	M8 / M10	–	19	184	164	90	M6	62	2	0.98	10
FRSK 108-110 M8/M10	560980	M8 / M10	–	19	192	172	94	M6	62	2	1.15	10
FRSK 114-115 M8/M10	560981	M8 / M10	4	19	192	172	94	M6	62	2	1.17	10
FRSK 125-127 M8/M10	560982	M8 / M10	–	19	211	190	103	M6	62	2	1.39	10
FRSK 130-133 M8/M10	560983	M8 / M10	–	19	211	190	103	M6	62	2	1.48	5
FRSK 139-141 M8/M10	560984	M8 / M10	5	19	219	199	106	M6	62	2	1.56	5
FRSK 152-154 M12	560985	M12	–	19	246	208	109	M8	62	3	1.72	5
FRSK 159-160 M12	560986	M12	–	19	255	214	112	M8	62	3	1.77	5
FRSK 168-170 M12	560987	M12	6	19	262	224	117	M8	72	3	2.26	5
FRSK 190-194 M12	560988	M12	–	19	284	248	129	M8	82	3	3.04	4
FRSK 200-204 M12	560989	M12	–	19	292	258	134	M8	82	3	3.20	4
FRSK 219-221 M12	560990	M12	8	19	311	275	142.5	M8	82	3	3.44	4

Refrigeration pipe clamp KFT

The two-screw refrigeration pipe clamp made from closed PUR foam



Refrigerant pipe clamps



Refrigerant pipe clamp on sliding element

Applications

- Installation of pipes in refrigeration and air-conditioning applications with high loads.
- For use in dry interior areas.

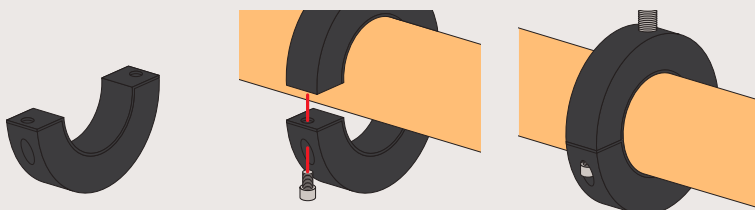
Advantages

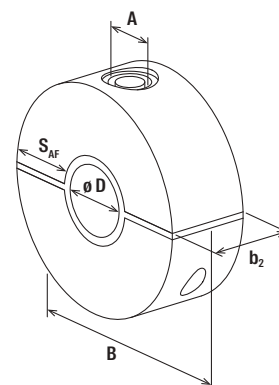
- The refrigeration pipe clamp KFT made from closed PUR foam can be used with all standard insulation materials.
- The glued rubber overlay makes the installation easier.
- The triple-threaded connection nut M8/M10/1/2" allows for flexibility during the installation.
- Age-resistant material ensures the long-term functionality of the KFT.
- The two screws allow an easy adjustment to suit the outer pipe diameter.

Properties

- Material: closed-cell polyurethane foam, silicone-free
- Diffusion resistance: 1000 μ
- Density: 250 kg/m³
- Compression strength: 3,96 mPa at 23 °C
- Heat conductivity (at 0 °C): 0,049 W/(m*K)
- Temperature range: -160 °C to +130 °C
- Fire behaviour: DIN 4102: Class B2

Installation KFT

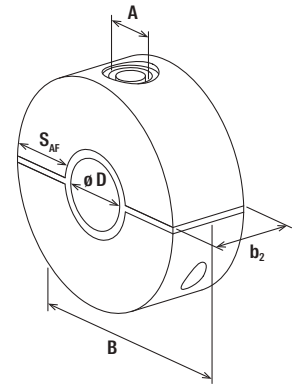




KFT

Technical data

Item	Item no.	Thread	Internal diameter	Width	Locking screw	Insulation thickness	Length of insulation material	Installation torque	Max. recom. static load (centr. tension)	Sales unit [pcs]
		A	D [mm]	B [mm]		S _{AF} [mm]	b ₂ [mm]	T _{inst} [Nm]	N _{rec} [kN]	
KFT 9,5	505576	M8 / M10 / 1/2"	9.5	88	M6	30	40	2	0.15	1
KFT 12,7	505577	M8 / M10 / 1/2"	12.7	88	M6	30	40	2	0.53	1
KFT 15,8	505578	M8 / M10 / 1/2"	15.8	88	M6	30	40	2	0.21	1
KFT 17,2	505579	M8 / M10 / 1/2"	17.2	88	M6	30	40	2	0.21	1
KFT 18,0	505580	M8 / M10 / 1/2"	18	88	M6	30	40	2	0.21	1
KFT 19,5	505581	M8 / M10 / 1/2"	19.5	88	M6	30	40	2	0.21	1
KFT 21,3	505582	M8 / M10 / 1/2"	21.3	88	M6	30	40	2	0.26	1
KFT 22,0	505583	M8 / M10 / 1/2"	22	88	M6	30	40	2	0.26	1
KFT 26,9	505584	M8 / M10 / 1/2"	26.9	88	M6	30	40	2	0.32	1
KFT 28,0	505585	M8 / M10 / 1/2"	28	88	M6	30	40	2	0.32	1
KFT 33,7	505587	M8 / M10 / 1/2"	33.7	96	M6	30	40	2	0.40	1
KFT 35,0	505588	M8 / M10 / 1/2"	35	96	M6	30	40	2	0.42	1
KFT 40,0	505589	M8 / M10 / 1/2"	40	100	M6	30	40	2	0.42	1
KFT 41,2	505591	M8 / M10 / 1/2"	41.2	100	M6	30	40	2	0.51	1
KFT 42,4	505592	M8 / M10 / 1/2"	42.4	103	M6	30	40	2	0.51	1
KFT 44,5	505593	M8 / M10 / 1/2"	44.5	103	M6	30	40	2	0.51	1
KFT 48,3	505594	M8 / M10 / 1/2"	48.3	102	M6	30	40	2	0.58	1
KFT 50,0	505595	M8 / M10 / 1/2"	50	112	M6	30	40	2	0.60	1
KFT 54,0	505596	M8 / M10 / 1/2"	54	116	M6	30	40	2	0.62	1
KFT 57,0	505597	M8 / M10 / 1/2"	57	116	M6	30	40	2	0.65	1
KFT 60,3	505598	M8 / M10 / 1/2"	60.3	123	M6	30	50	2	0.72	1
KFT 64,0	505599	M8 / M10 / 1/2"	64	123	M6	30	50	2	0.77	1
KFT 70,0	505901	M8 / M10 / 1/2"	70	132	M8	30	50	3	3.50	1
KFT 74,0	505902	M8 / M10 / 1/2"	74	132	M8	30	50	3	3.50	1
KFT 76,1	505903	M8 / M10 / 1/2"	76.1	132	M8	30	50	3	1.37	1
KFT 80,0	505904	M8 / M10 / 1/2"	80	132	M8	30	50	3	1.37	1
KFT 84,0	505905	M8 / M10 / 1/2"	84	150	M8	30	50	3	1.60	1
KFT 88,9	505906	M8 / M10 / 1/2"	88.9	150	M8	30	50	3	1.60	1
KFT 92,1	505907	M8 / M10 / 1/2"	92.1	150	M8	30	50	3	1.60	1
KFT 101,0	505908	M8 / M10 / 1/2"	101	188	M8	40	60	3	2.59	1
KFT 104,0	505909	M8 / M10 / 1/2"	104	188	M8	40	60	3	2.59	1
KFT 108,0	505910	M8 / M10 / 1/2"	108	188	M8	40	60	3	2.59	1
KFT 114,3	505911	M8 / M10 / 1/2"	114.3	195	M8	40	60	3	2.74	1
KFT 129,0	505914	M8 / M10 / 1/2"	129	220	M8	40	60	3	3.19	1
KFT 133,0	505915	M8 / M10 / 1/2"	133	220	M8	40	60	3	3.19	1
KFT 139,7	505916	M8 / M10 / 1/2"	139.7	220	M8	40	60	3	3.35	1
KFT 154,0	505917	M12 / 1/2"	154	239	M10	40	60	5	3.83	1
KFT 159,0	505918	M12 / 1/2"	159	239	M10	40	60	5	3.83	1
KFT 168,3	505919	M12 / 1/2"	168.3	250	M10	40	60	5	4.04	1
KFT 193,7	505920	M16 / 3/4"	193.7	340	M10	60	100	5	5.26	1



KFT

2

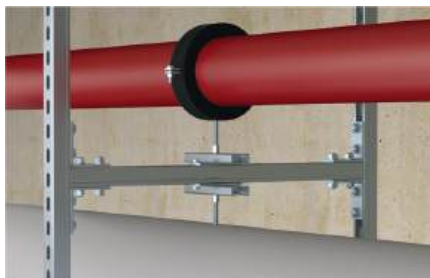
Technical data

Item	Item no.	Thread A	Internal diameter D [mm]	Width B [mm]	Locking screw	Insulation thickness S_{AF} [mm]	Length of insulation material b_2 [mm]	Installation torque T_{inst} [Nm]	Max. recom. static load (centr. tension) N_{rec} [kN]	Sales unit [pcs]
KFT 204,0	505921	M16 / 3/4"	204	340	M10	60	100	5	5.20	1
KFT 219,1	505922	M16 / 3/4"	219.1	340	M10	60	100	5	5.26	1

Refrigeration clamp KFS

The refrigeration pipe clamp made from closed PUR foam for big pipelines

2



Cold running media lines

Applications

- Cooling lines
- Refrigeration lines
- Cold running media lines
- For use in dry interior areas.

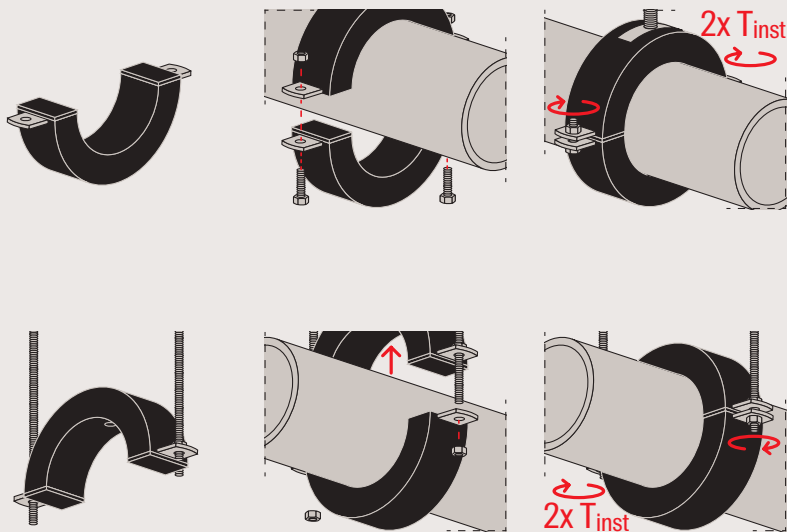
Advantages

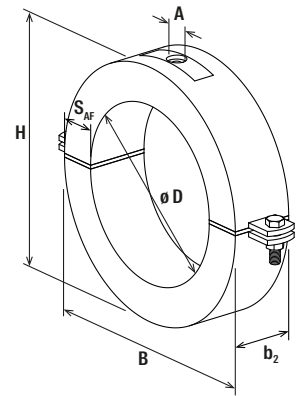
- The KFS Refrigeration clamp made of closed PUR foam can be used with all common insulation materials.
- The design of the KFS Refrigeration clamp with external screw holes enables it to support high loads.
- Age-resistant material ensures consistent function of the KFT.
- The glued-in rubber pad reduces the assembly effort due to optimal adjustment.

Properties

- Material: closed-cell polyurethane foam, silicone-free, halogen-free
- Density: 250 kg/m³
- Heat conductivity: 0.045 W/(m*K)
- Fire behaviour: DIN 4102: Class B2
- Diffusion resistance: >1000 μ
- Compressive strength: 3,96 mPa at 23 °C
- Temperature range: -50 °C to +105 °C
- Material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Zinc plating: electro zinc-plated

Installation KFS





KFS

2

Technical data

Item	Item no.	Thread	Size	Insulation thickness	Width	Height	Locking screw	Length of insulation material	Clamping range	Installation torque	Max. re-com. static load (centr. tension)	Sales unit
		A	[in]	S_{AF} [mm]	B [mm]	H [mm]		b_2 [mm]	D [mm]	T_{inst} [Nm]	N_{rec} [kN]	
KFS 273	567798	M16	10	60	493	393	M16	100	273	45	7.00	2
KFS 323	567799	M20	12	60	544	444	M16	100	324	45	11.00	2
KFS 355	567800 ¹⁾	M20	14	60	576	476	M16	100	356	45	12.00	1
KFS 368	567801 ¹⁾	M20	–	60	588	488	M16	120	368	45	13.00	1
KFS 406	567802 ¹⁾	M24	16	60	646	526	M16	120	406	45	16.50	1
KFS 457	567803 ¹⁾	M24	18	60	697	577	M16	120	457	45	19.00	1
KFS 508	567804 ¹⁾	M24	20	60	748	628	M16	120	508	45	21.00	1
KFS 609	567805 ¹⁾	M24	24	60	848	729	M16	140	609	45	28.50	1

¹⁾ delivery on request

Sprinkler loop hanger FRSP

The flexible sprinkler loop with FM and UL approval

2



Sprinkler pipe installation

Applications

- Installation of sprinkler pipes.
- Used for the suspension of stationary, non-insulated pipelines.
- For use in dry interior areas.

Advantages

- For easy installation of sprinkler pipes from ½" to 8" for a wide range of applications.
- Simple assembly by inserting, hanging and adjusting the pipes. Saves time during installation.
- Simple height adjustment by means of a height-adjustable connecting nut.
- The sprinkler loop hanger has FM and UL approval ensuring safe application.

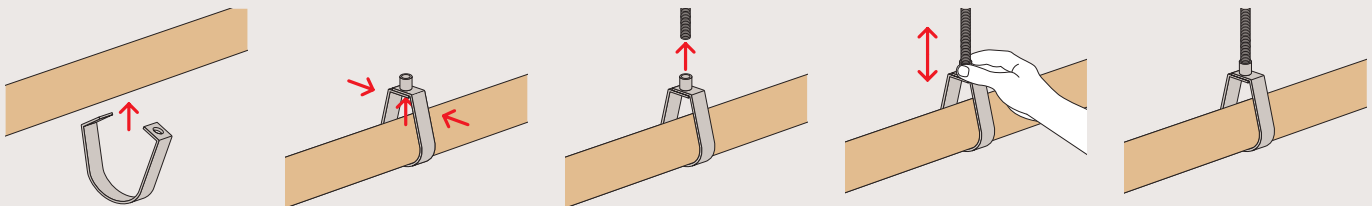
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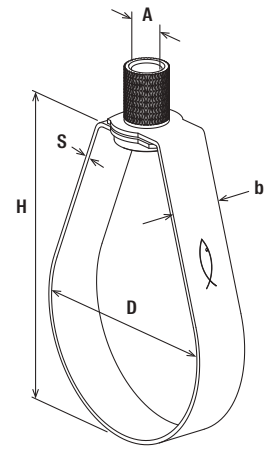
- Material: steel Q235B
- Zinc plating: electro zinc-plated

Certificates



Installation FRSP





FRSP

Technical data

Item	Item no.	FM approval	UL approval	Thread	Size	Height	Clamping range	Width x thickness clamp band	Max. recom. static load (centr. tension)	Sales unit
				A	[in]	H [mm]	D [mm]	b x s [mm]	N_{rec} [kN]	[pcs]
FRSP 1/2"	516662	–	Yes	M10	1/2	55	29.5	16 x 1.2	2.00	100
FRSP 3/4"	516663	Yes	Yes	M10	3/4	62	30.5	16 x 1.2	2.00	100
FRSP 1"	516664	Yes	Yes	M10	1	70	37	16 x 1.2	2.00	100
FRSP 1 1/4"	516665	Yes	Yes	M10	1 1/4	78	45.7	16 x 1.2	2.00	100
FRSP 1 1/2"	516666	Yes	Yes	M10	1 1/2	83	52	16 x 1.2	2.40	100
FRSP 2"	516667	Yes	Yes	M10	2	93	64	16 x 1.2	2.90	100
FRSP 2 1/2"	516668	Yes	Yes	M10	2 1/2	126	77	19 x 2.2	3.90	60
FRSP 3"	516669	Yes	Yes	M10	3	147	92.8	19 x 2.2	4.90	60
FRSP 4"	516670	Yes	Yes	M10	4	180	118.5	19 x 2.2	6.80	24
FRSP 5"	532356	Yes	Yes	M12	5	210	224.3	19 x 2.5	9.20	24
FRSP 6"	516671	Yes	Yes	M12	6	251	145.8	19 x 3.0	12.00	24
FRSP 8"	516672	Yes	Yes	M12	8	301	173	19 x 3.0	17.40	12

Sprinkler loop hanger FRLH

The premium sprinkler loop with divisible strap and height adjustment, VdS and FM approved

2



Sprinkler pipe installation to trapezoidal metal sheet

Applications

- Installation of sprinkler pipes according to VdS and FM guidelines.
- For use in dry interior areas.

Certificates



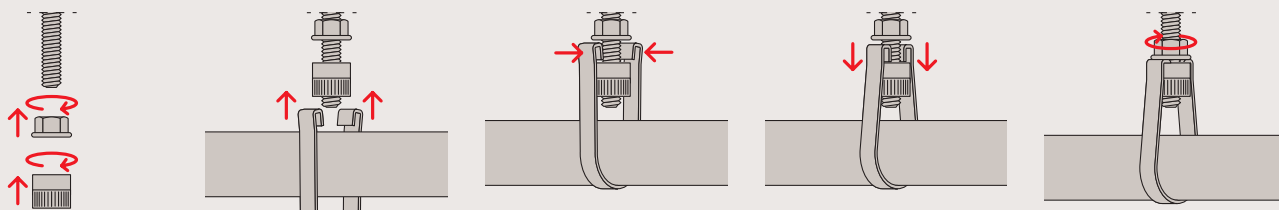
Advantages

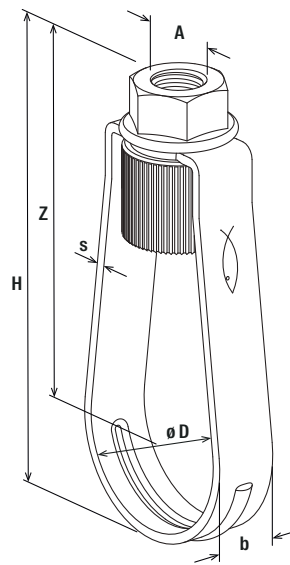
- The VdS and FM approval guarantees objectively tested safety for use in sprinkler systems.
- The regulating nut as a connection nut enables easy subsequent height adjustment of the cables.

Properties

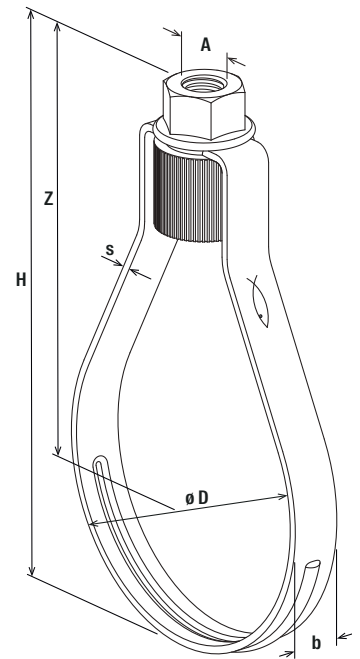
- Material sprinkler loop: steel DX51D+Z140MA acc. to DIN EN 10364/10143
- Zinc plating: sendzimir galvanised
- Material regulating nut: steel 11SMnPb37 (material no. 1.0737), acc. to DIN EN 10087
- Zinc plating: electro zinc-plated

Installation FRLH





FRLH to 1"



FRLH from 1 1/4"

2

Technical data

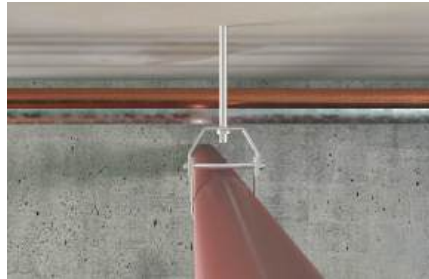
Item	Item no.	FM approval	VdS approval	Size [in]	Thread A	Clamping range D [mm]	Height	Height	Width x thickness clamp band b x s [mm]	Max. recom. static load (centr. tension) N_{rec} [kN]	Sales unit [pcs]
							H [mm]	Z [mm]			
FRLH 1/2" M8	570175	No	Yes	1/2	M8	21.3	76	64	12 x 1.5	4.00	50
FRLH 3/4" M8	570176	No	Yes	3/4	M8	26.9	80	65	12 x 1.5	4.00	50
FRLH 3/4" M10	570177 ¹⁾	Yes	Yes	3/4	M10	26.9	82	67	12 x 1.5	4.00	50
FRLH 1" M8	570178	No	Yes	1	M8	33.7	83	65	12 x 1.5	4.00	50
FRLH 1" M10	570179	Yes	Yes	1	M10	33.7	85	67	12 x 1.5	4.00	50
FRLH 1 1/4" M8	570180	No	Yes	1 1/4	M8	42.4	88	65	12 x 1.5	4.00	50
FRLH 1 1/4" M10	570181	Yes	Yes	1 1/4	M10	42.4	90	67	12 x 1.5	4.00	50
FRLH 1 1/2" M8	570182	No	Yes	1 1/2	M8	48.3	96	70	12 x 1.5	4.00	50
FRLH 1 1/2" M10	570183	Yes	Yes	1 1/2	M10	48.3	98	72	12 x 1.5	4.00	50
FRLH 2" M8	570184	No	Yes	2	M8	60.3	112	80	12 x 1.5	4.00	50
FRLH 2" M10	570186	Yes	Yes	2	M10	60.3	114	82	12 x 1.5	4.00	50
FRLH 2 1/2" M10	570187	Yes	Yes	2 1/2	M10	76.1	140	99	15 x 2,5	6.00	25
FRLH 3" M10	570188	Yes	Yes	3	M10	88.9	161	114	15 x 2,5	6.00	25
FRLH 4" M10	570189	Yes	Yes	4	M10	114.3	205	145	15 x 2,5	6.00	25
FRLH 5" M12	570240	Yes	Yes	5	M12	139.7	235	163	15 x 2,5	8.00	25
FRLH 6" M12	570241	Yes	Yes	6	M12	168.3	287	200	15 x 2,5	8.00	25
FRLH 8" M16	570242	Yes	Yes	8	M16	219.1	364	252	20 x 2,5	10.00	10
FRLH 10" M20	570243 ¹⁾	No	Yes	10	M20	273	470	330	20 x 3,0	11.00	1

¹⁾ Delivery time on request.

Sprinkler loop hanger FCHS

The universal sprinkler loop with FM and UL approval

2



Sprinkler pipe installation

Applications

- Installation of sprinkler pipes.
- Used for the suspension of stationary, non-insulated pipelines.
- For use in dry interior areas.

Advantages

- For easy installation of sprinkler lines from ½" to 12" for a wide range of applications.
- Swivel clamp band to absorb movements in the sprinkler system.
- The sprinkler loop hanger has FM and UL approval ensuring safe application.

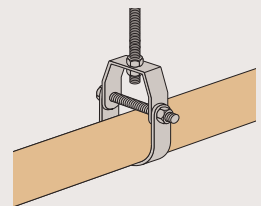
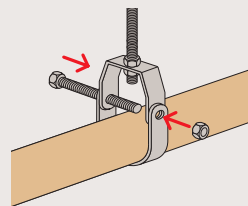
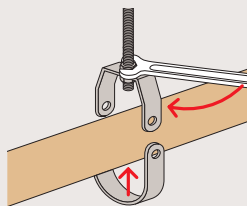
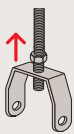
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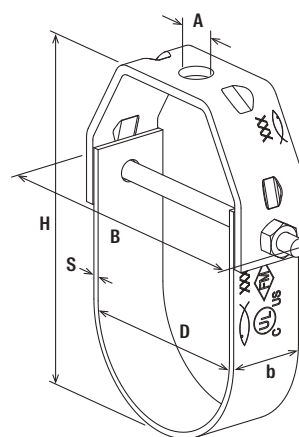
- Material: steel Q235B
- Zinc plating: electro zinc-plated

Certificates



Installation FCHS





FCHS

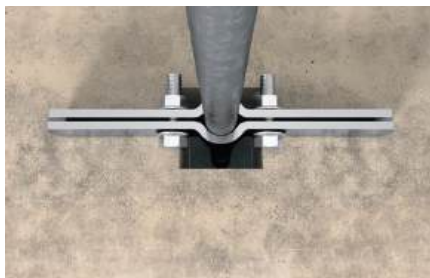
Technical data

Item	Item no.	FM approval	UL approval	Size [in]	Hole-Ø	Clamping range D [mm]	Height H [mm]	Width B [mm]	Width x thickness clamp band b x s [mm]	Max. recom. static load (centr. tension) N _{rec} [kN]	Sales unit [pcs]
					A [mm]						
FCHS 1/2"	532187	Yes	Yes	1/2"	10.5	19 - 23	51	49	19 x 2.0	3.00	150
FCHS 3/4"	532190	Yes	Yes	3/4"	10.5	24 - 29	58	55	19 x 2.0	3.00	120
FCHS 1"	532195	Yes	Yes	1"	10.5	33 - 37	70	61	19 x 2.0	3.00	120
FCHS 1 1/4"	532197	Yes	Yes	1 1/4"	10.5	40 - 45	84	74	25 x 2.0	3.00	56
FCHS 1 1/2"	532198	Yes	Yes	1 1/2"	10.5	47 - 52	100	80	25 x 2.0	3.00	56
FCHS 2"	516695	Yes	Yes	2"	10.5	60 - 65	114	93	25 x 2.0	3.00	56
FCHS 2 1/2"	516696	Yes	Yes	2 1/2"	13.5	73 - 78	133	107	22 x 1.5	5.00	60
FCHS 3"	516697	Yes	Yes	3"	13.5	88 - 93	153	126	22 x 1.5	5.00	48
FCHS 4"	516699	Yes	Yes	4"	16.8	108 - 116	192	158	30 x 3.0	5.00	24
FCHS 5"	516700	Yes	Yes	5"	16.8	138 - 145	238	213	30 x 4.0	6.00	24
FCHS 6"	516701	Yes	Yes	6"	20.5	165 - 172	272	248	38 x 5.0	9.00	12
FCHS 8"	516702	Yes	Yes	8"	20.5	219 - 225	333	305	38 x 5.0	9.00	6
FCHS 10"	516703	-	-	10"	24	267 - 273	400	372	50 x 6.0	16.00	2
FCHS 12"	516704	-	-	12"	24	320 - 328	479	426	50 x 6.0	16.00	2

Riser clamp RCWR

RCWR riser pipe clamps for secure fixing of vertical riser pipes with UL certification

2



Floorcrossing downpipe

Applications

- Secure fixing of vertical pipelines.
- For use in dry interior areas.

Advantages

- Usable for all kinds of pipes.
- Suitable sizes for pipe diameters of ½" to 8".
- Easy installation using hexagonal screws and nuts.
- Safe for use thanks to UL certification.

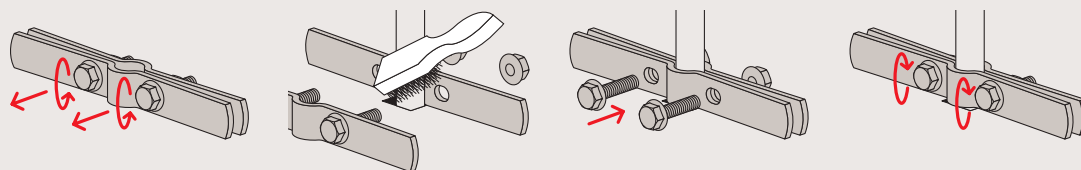
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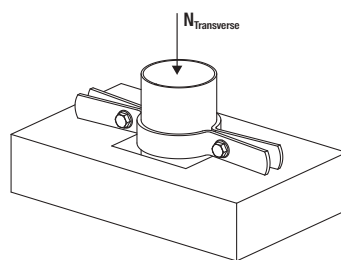
- Material: steel Q235B
- Zinc plating: electro zinc-plated

Certificates

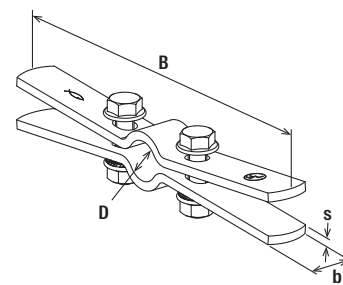


Installation RCWR





RCWR



RCWR

2

Technical data

Item	Item no.	UL approval	Clamping range		Width x thickness clamp band b x s [mm]	Max. recommended transverse tensile load $N_{\text{transverse}}$ [kN]	Sales unit [pcs]
			D [mm]	B [mm]			
RCWR 1/2"	516673	Yes	22	215	25 x 5.0	3.3	35
RCWR 3/4"	516674	Yes	28	229	25 x 5.0	3.3	30
RCWR 1"	516675	Yes	34	230	25 x 5.0	3.3	25
RCWR 1 1/4"	516676	Yes	43	241	25 x 5.0	3.3	25
RCWR 1 1/2"	516677	Yes	49	251	25 x 3.0	3.3	25
RCWR 2"	516678	Yes	62	262	30 x 5.0	3.3	25
RCWR 2 1/2"	532380	Yes	75	281	30 x 5.0	3.7	25
RCWR 3"	516679	Yes	91	299	30 x 5.0	4.6	20
RCWR 4"	516680	Yes	116	329	38 x 6.0	6.6	12
RCWR 5"	516681	Yes	144	362	38 x 6.0	8.9	12
RCWR 6"	516682	Yes	171	394	50 x 6.0	11.5	8
RCWR 8"	516683	Yes	223	464	50 x 9.5	18.0	4

U-Clamp FUBD

The easy handling pipe and cable clamp for direct attachment of lines to FUS mounting channels



Supply lines fixed to FUS channel

2

Applications

- Fast installation of metal and plastic pipes, flexible plastic pipes or cables without sound insulation requirements directly to FUS installation channels.
- Fits to FUS channels FUS 21, FUS 41, FUS 62, FUS 21D, FUS 41D, FUS 62D.
- For use in dry interior areas.

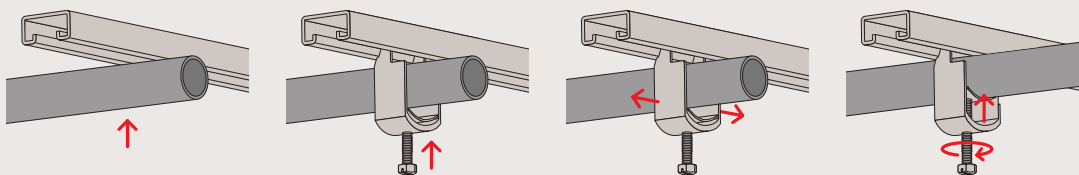
Advantages

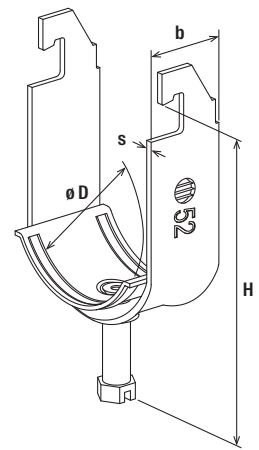
- The FUBD without soundproofing is ideal for use in industrial applications, for example, for fixing lightweight flexible supply lines in the immediate area of production machines.
- Locking screw with hexagonal and slot drive.
- Quick adaptation to the desired outside pipe diameter by fastening the pressure pan.
- No loss of parts due to preassembled parts.
- Time- and cost-saving installation without the need of accessories like threaded rods or sliding nuts.

Properties

- Material U-Strap: steel S235JRC (material no. 1.0122) acc. to EN 10025
- Zinc plating U-Strap: hot-dip galvanised
- Material pressure pan: steel DX51D acc. to DIN EN 10346
- Zinc plating pressure pan: electro zinc-plated
- Material locking screw: steel 4.6 acc. to EN 20898-1
- Locking screw: with hexagonal SW10 and slot head

Installation FUBD





FUBD

2

Technical data

Item	Item no.	Clamping range D [mm]	Height H [mm]	Width x thickness clamp band b x s [mm]	Locking screw	Sales unit [pcs]
FUBD 40	539564 ¹⁾	36 - 40	71	25 x 1.75	M6	100
FUBD 48	558148	44 - 48	85	25 x 2.0	M8	50
FUBD 52	539566	48 - 52	90	25 x 2.0	M8	50
FUBD 60	539567 ¹⁾	56 - 60	98	30 x 2.25	M8	50
FUBD 76	539568 ¹⁾	70 - 76	113	30 x 2.75	M8	25
FUBD 94	539569 ¹⁾	88 - 94	141	30 x 2.75	M8	20
FUBD 100	539570 ¹⁾	94 - 100	147	30 x 2.75	M8	10

¹⁾ Delivery time on request.

U-Bolt ETR

The U-Bolt with metric thread

2



Applications

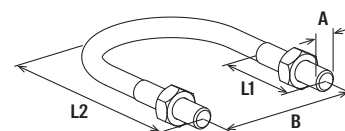
- Installation of standing or hanging pipes.
- Pipe routing on profiles and consoles.
- For use in dry interior areas.

Advantages

- The U-Bolt's two screws allow an ideal adaptation to suit the outer pipe diameter.

Properties

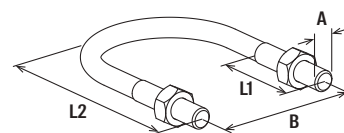
- Material: steel with min. tensile strength of 360 N/mm²
- Zinc plating: electro zinc-plated



ETR

Technical data

Item	Item no.	Thread	Length	Length	Size	Width	Sales unit
		A	L1 [mm]	L2 [mm]	[in]	B [mm]	
ETR 8 - 13	024415	M6	20	30	1/4	20	10
ETR 12 - 17	024416	M6	20	35	3/8	24	10
ETR 15 - 21	024417	M6	25	40	1/2	28	10
ETR 20 - 27	024418	M8	32	50	3/4	36	10
ETR 26 - 34	024419	M8	32	55	1	43	10
ETR 33 - 42	024420	M8	38	68	1 1/4	51	10
ETR 40 - 49	024421	M8	38	70	1 1/2	58	10
ETR 50 - 60	024422	M8	40	80	2	69	10
ETR 60 - 70	024423	M10	43	100	-	82	10
ETR 66 - 76	024424	M10	50	110	2 1/2	88	10
ETR 70 - 82	024425	M10	50	115	-	94	10
ETR 80 - 90	024426	M10	50	115	3	102	10
ETR 90 - 102	024427	M12	55	145	3 1/2	116	5
ETR 100 - 108	024428	M12	50	150	-	122	5
ETR 102 - 114	024429	M12	60	156	4	128	5
ETR 121 - 127	024430	M12	60	170	-	141	5



ETR

Technical data

2

Item	Item no.	Thread A	Length L1 [mm]	Length L2 [mm]	Size [in]	Width B [mm]	Sales unit [pcs]
ETR 126 - 133	024431	M12	70	180	–	147	5
ETR 131 - 140	024432	M14	70	185	5	156	5
ETR 143 - 153	024433	M14	70	193	–	169	5
ETR 150 - 159	024434	M14	70	200	–	175	5
ETR 168	024435	M14	70	210	6	184	5
ETR 193,7	024436	M14	70	232	–	209	5
ETR 219	024437	M14	70	270	8	236	5

U-Bolt connector FETR-C

U-Bolt connector FETR-C for connecting ETR U-Bolts to FUS channels

2



Pipe on cantilever arm with U-bolt ETR and channel connector FETR-C



Pipe on cantilever arm with U-bolt ETR and channel connector FETR-C

Applications

- U-Bolt connector for use with mounting channels FUS in combination with U-Bolt ETR.
- For indoor and outdoor application.

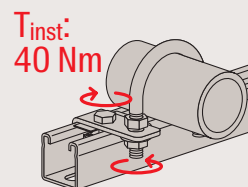
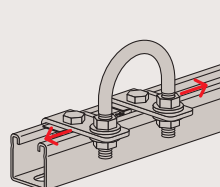
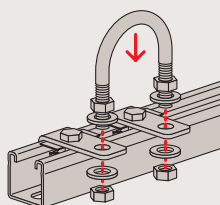
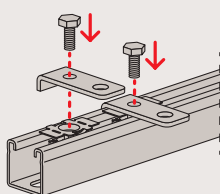
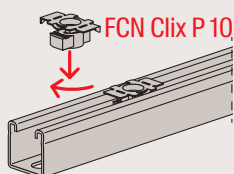
Advantages

- The FETR-C enables the connection of U-Bolts ETR to mounting channels FUS and allows free positioning of the ETR on the FUS channel profiles.
- Independent positioning of ETR without taking into account the hole pattern of the FUS channel profiles.

Properties

- Material: steel S235JR (material no. 1.0038) acc. to DIN EN 10025
- Zinc plating: hot-dip galvanised acc. to DIN EN ISO 1461

Installation FETR-C



See also:

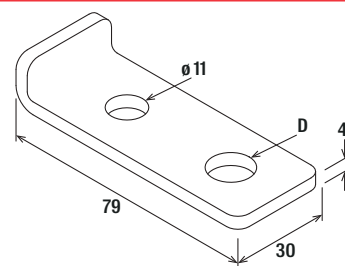
Product family hexagonal nut MU Page 289



See also:

Product family Washer U Page 288





FETR-C

2

Technical data

Item	Item no.	Hole-Ø D [mm]	Sales unit [pcs]
FETR-C 9 hdg	569182	9	20
FETR-C 13 hdg	569183	13	20
FETR-C 16.5 hdg	569184	16.5	20

Hose clamp SGS

The hose clamp for large hoses, pipe or ducting

2



Outlet valve with hose

Applications

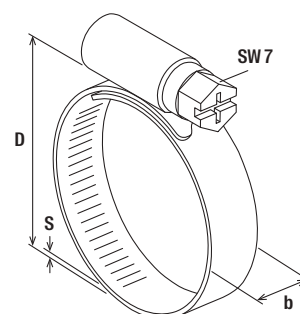
- Sealing of hoses.
- Fixing hoses to adapters.

Advantages

- The crimped band edges offer protection against damage to the hose.
- The short base of the hosing allows an ideal adjustment and high, radial forces on the hose diameter.
- The screw's combination cross-drive thread enables installation flexibility.

Properties

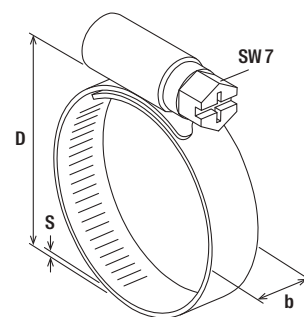
- Material class: W2
- Worm: CQ 15 (material no. 1.1132) acc. to DIN EN 10263
- Housing and band: chromium steel (material no. 1.4016) acc. to DIN EN 10088 or equivalent corrosion-resistant steel



SGS

Technical data

Item	Item no.	Clamping range	Width x thickness clamp band	Sales unit
		D [mm]	b x s [mm]	[pcs]
SGS 9 W2 8 - 12	045517	8 - 12	9.0 x 0.6	100
SGS 9 W2 10 - 16	045518	10 - 16	9.0 x 0.6	100
SGS 9 W2 12 - 20	045519	12 - 20	9.0 x 0.6	100
SGS 9 W2 16 - 27	045520	16 - 27	9.0 x 0.6	100
SGS 9 W2 20 - 32	045521	20 - 32	9.0 x 0.6	100
SGS 9 W2 25 - 40	045522	25 - 40	9.0 x 0.6	100
SGS 9 W2 32 - 50	045523	32 - 50	9.0 x 0.6	100
SGS 9 W2 40 - 60	045524	40 - 60	9.0 x 0.6	25
SGS 9 W2 50 - 70	045525	50 - 70	9.0 x 0.6	25
SGS 9 W2 60 - 80	045526	60 - 80	9.0 x 0.6	25



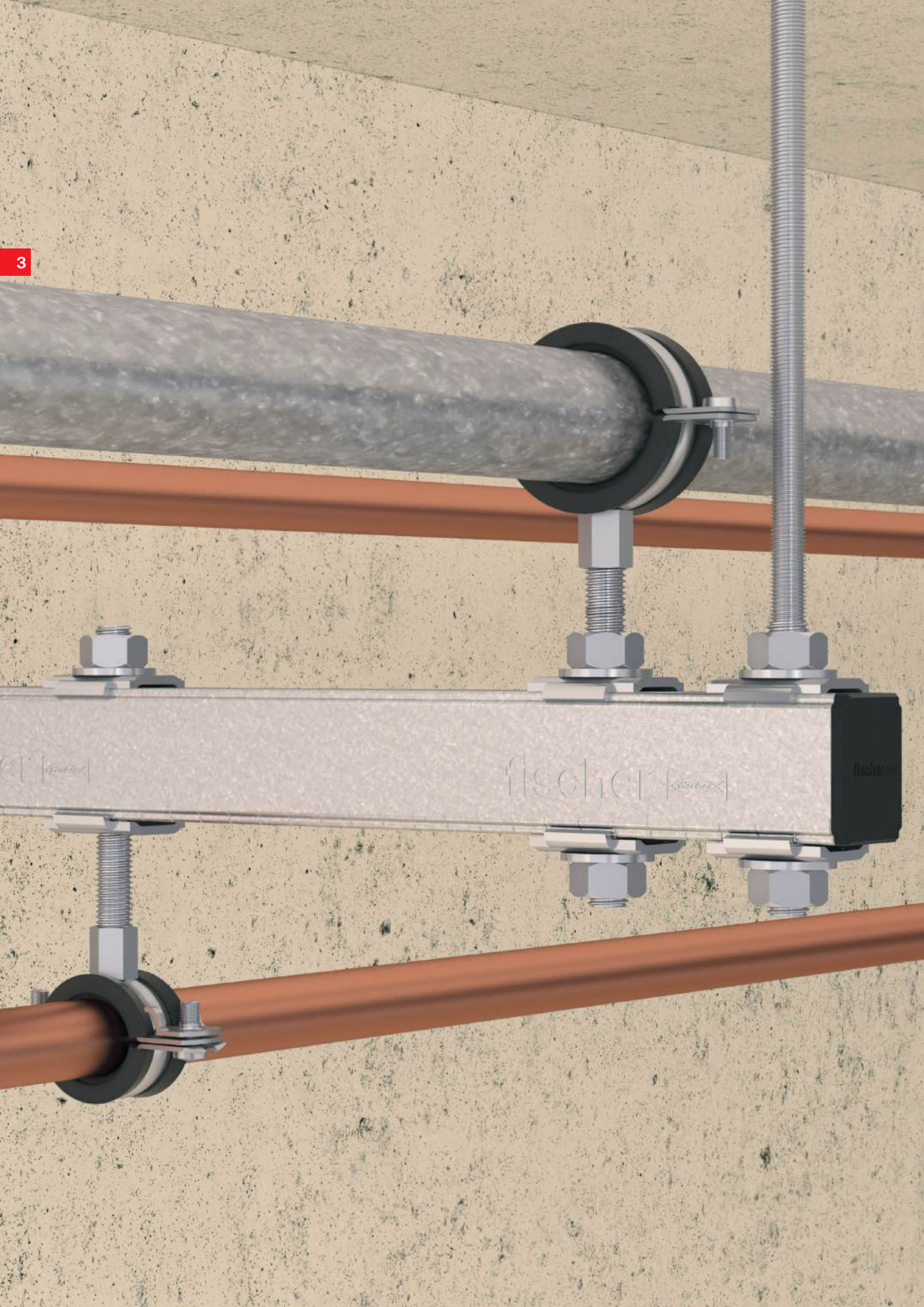
SGS

2

Technical data

Item	Item no.	Clamping range D [mm]	Width x thickness clamp band b x s [mm]	Sales unit [pcs]
SGS 9 W2 70 - 90	045527	70 - 90	9.0 x 0.6	25
SGS 9 W2 80 - 100	045528	80 - 100	9.0 x 0.6	25
SGS 9 W2 90 - 110	045529	90 - 110	9.0 x 0.6	25
SGS 9 W2 100 - 120	045530	100 - 120	9.0 x 0.6	25
SGS 9 W2 110 - 130	045531	110 - 130	9.0 x 0.6	25
SGS 9 W2 120 - 140	045532	120 - 140	9.0 x 0.6	25

3



3

Light channel system FLS

Channel FLS	84	
FLS Cutting Tool	87	
Cantilever arm ALK	89	
Cover cap AK	92	
Angle brace WS 31-45°	93	
Channel connector SV 31	95	
Sliding channel nut FSM Clix P	97	
Sliding channel nut FSM Clix M	99	
T-head bolt FHS Clix	101	
Saddle flange SF Clix 31	104	
Angle bracket MW Clix 90°	106	
Angle bracket MW and MWU	108	
Channel washer HK 31	110	
Beam clamp TKR 31	111	

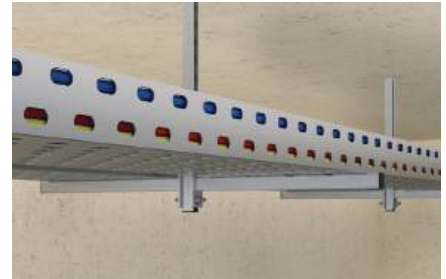
Channel FLS

The flexible channel system for light applications

3



Air duct fixing with channel



Cable duct

Applications

- The U-profile channels enable the creation of secure, horizontal and vertical installations.
- The channel system is suitable for fast and efficient fixings of pipelines and supporting structures.
- For use in dry interior areas.

Certificates



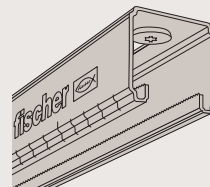
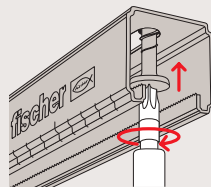
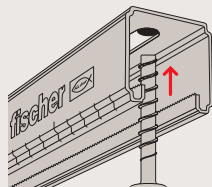
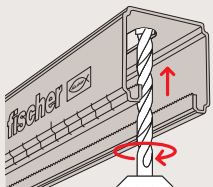
Advantages

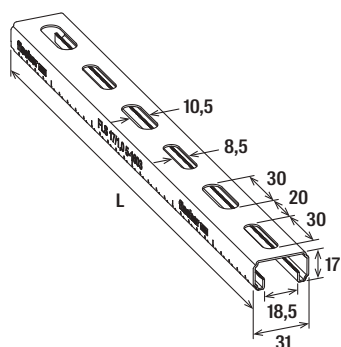
- The fire inspection report in line with MLAR/EN1363-1 of the FLS 37 guarantees independently tested functional safety.
- The channel shape with edge seams gives a perfect fit for the connector elements and leads to a safe and easy installation.
- The serration with stamped teeth in the mounting channel gives the sliding nuts a secure hold to bear high shear loads.
- The scale on the channels simplifies the cutting of the channels and the positioning of the connector elements during installation.
- The alternating long slots in the channel enable the optimised fixing to the substrate with the perfect fixtures.

Properties

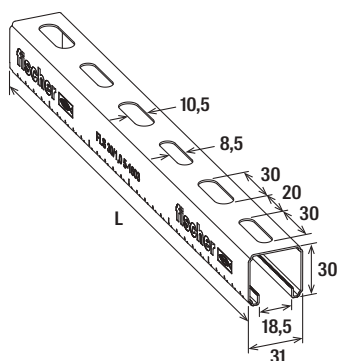
- Material: pre-galvanised steel S250GD+Z275 (material no. 1.0242) acc. to DIN EN 10346

Installation FLS

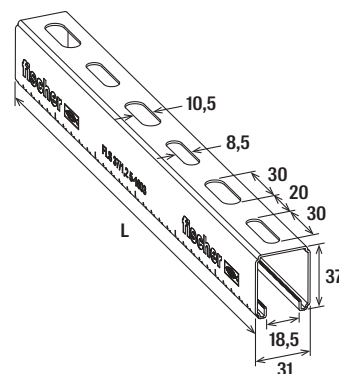




FLS 17/1.0



FLS 30/1.0



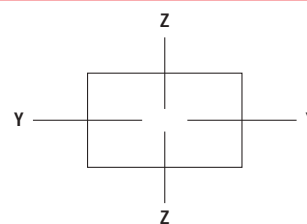
FLS 37/1.2

3

Technical data

Item	Item no.	Fire test report	Thickness S [mm]	Length L [mm]	Sales unit [pcs]
FLS 17/1.0 - 2 m	572539	-	1.0	2,000	8
FLS 17/1.0 - 3 m	572540	-	1.0	3,000	8
FLS 30/1.0 - 2 m	572541	-	1.0	2,000	8
FLS 30/1.0 - 3 m	572542	-	1.0	3,000	8
FLS 37/1.2 - 2 m	572543	Yes	1.2	2,000	8
FLS 37/1.2 - 3 m	572544	Yes	1.2	3,000	8
FLS 37/1.2 - 6 m	572545	Yes	1.2	6,000	1

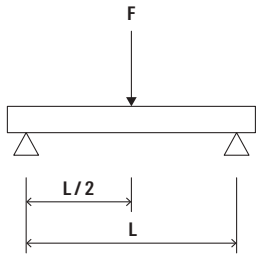
For load information under fire exposure, see chapter Basic knowledge.



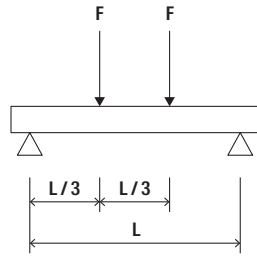
Loads

Item	Item no.	Profile weight [kg/m]	Channel cross section [cm ²]	Moment of inertia I _y [cm ⁴]	Moment of inertia I _z [cm ⁴]	Section modulus W _y [cm ³]	Section modulus W _z [cm ³]	Max. recommended static load for 1m length F _{rec} [kN]	Sales unit [pcs]
FLS 17/1.0 - 2 m	572539	0.58	0.72	0.25	0.91	0.26	0.59	0.13	8
FLS 17/1.0 - 3 m	572540	0.58	0.72	0.25	0.91	0.26	0.59	0.41	8
FLS 30/1.0 - 2 m	572541	0.78	0.98	1.02	1.46	0.64	0.94	0.48	8
FLS 30/1.0 - 3 m	572542	0.78	0.98	1.02	1.46	0.64	0.94	0.48	8
FLS 37/1.2 - 2 m	572543	1.06	1.33	2.03	2.01	1.04	1.29	0.78	8
FLS 37/1.2 - 3 m	572544	1.06	1.33	2.03	2.01	1.04	1.29	0.78	8
FLS 37/1.2 - 6 m	572545	1.06	1.33	2.03	2.01	1.04	1.29	0.78	1

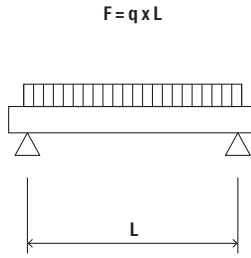
Load case 1



Load case 2

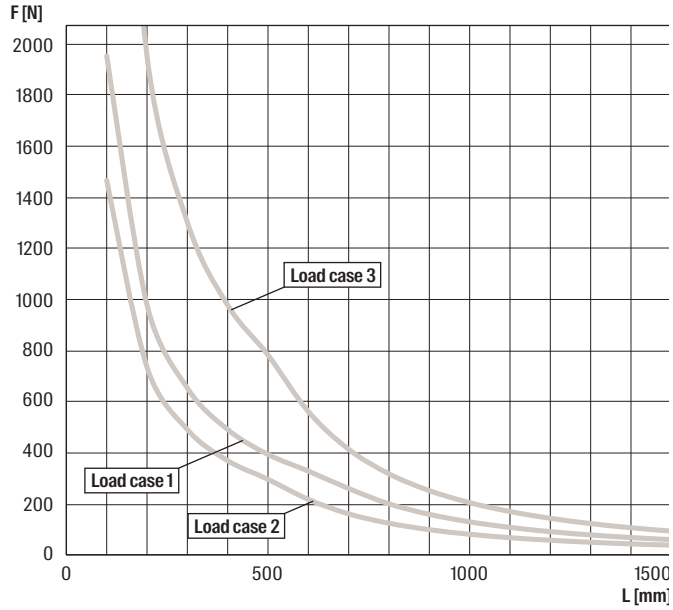


Load case 3

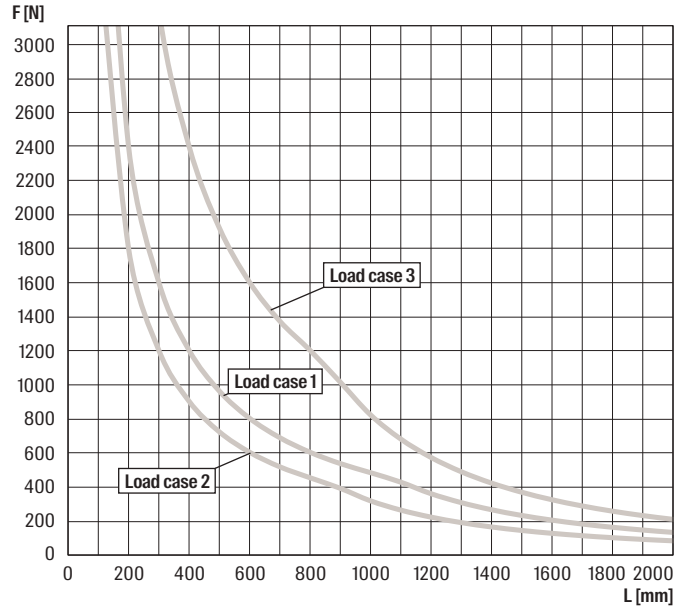


3

FLS 17/1,0

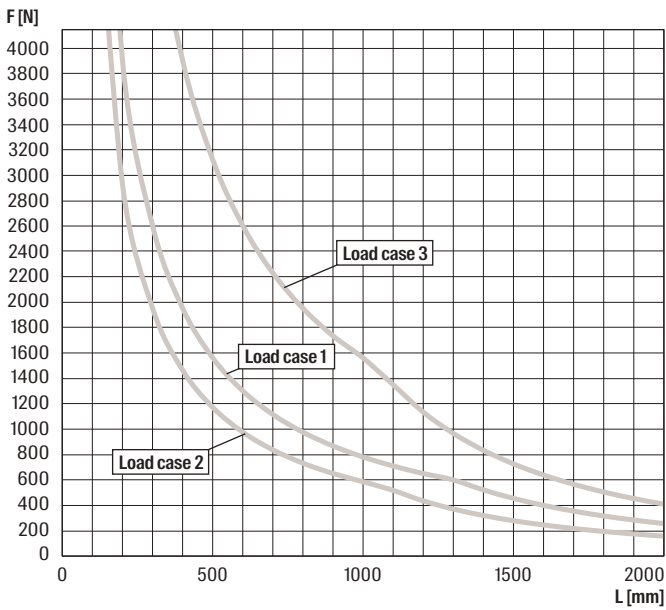


FLS 30/1,0



For the load curves, the permissible steel strain $\delta_{adm} = 188 \text{ N/mm}$ (increased steel strain due to bending) and the maximum deflection under load $L/200$ are not exceeded. Fixings and screw fastenings must be calculated accordingly. The higher yield strength is a result of the calculation according to DIN EN 1993-1-3:2010-12, para. 3.2.2.

FLS 37/1,2



For the load curves, the permissible steel strain $\delta_{adm} = 188 \text{ N/mm}$ (increased steel strain due to bending) and the maximum deflection under load $L/200$ are not exceeded. Fixings and screw fastenings must be calculated accordingly. The higher yield strength is a result of the calculation according to DIN EN 1993-1-3:2010-12, para. 3.2.2.

FLS Cutting Tool

The Cutting Tool for FLS channels



Air duct fixing with channel



Pipe fixing on frame construction

3

Applications

- Efficient cutting of the FLS channels to the required length for processing in the installation.

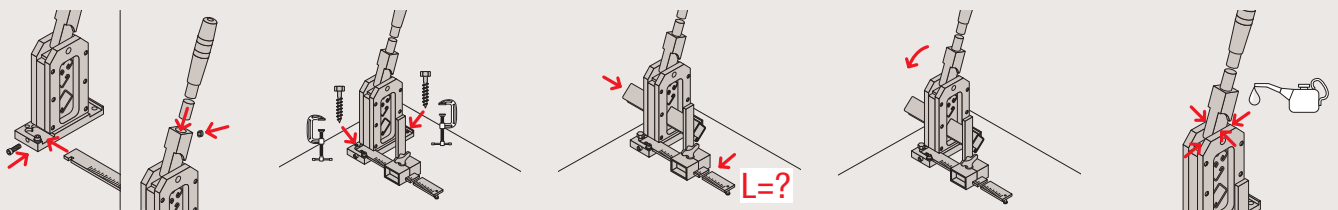
Advantages

- The FLS cutting tool for the three FLS channel sizes guarantees the most economical type of channel cutting, including length measurement by the integrated 1m-measuring unit.
- Simple burr-free cutting instead of sawing the channel profile to avoid the complex and time consuming reworking of the edges.
- The cutting process avoids falling metal chips as during the sawing process for a dirt free workplace.
- The manual cutting tool, which is always ready for use, allows an almost noiseless use.
- Due to the profile-shaped openings in the cutting tool, incorrect use is permanently avoided.

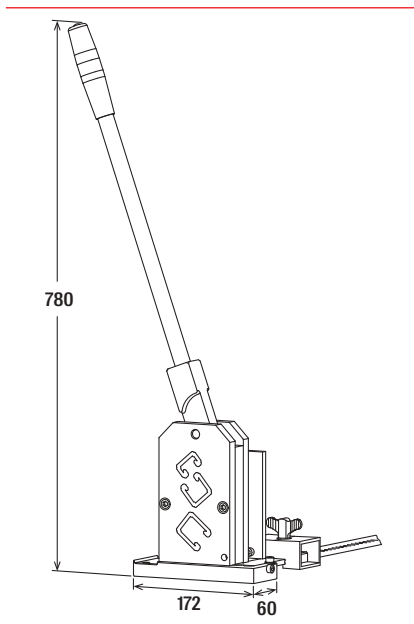
Properties

- Material: tempered tooling steel

Installation FLS cutting tool



3



FLS

Technical data

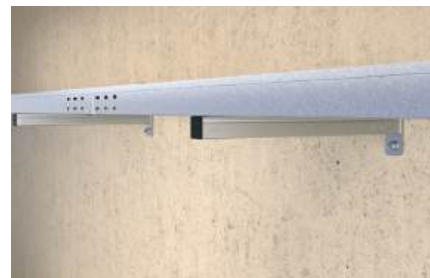
	Item no.	Performance data	Sales unit
Item			[pcs]
FLS cutting tool	543965	Incl. Operating lever and 1m measuring unit for length adjustment	1

Cantilever arm ALK

Cantilever arm made from FLS channel profile



Light pipe fixing



Cable tray on cantilever arm

3

Applications

- Economic installation of single pipes or pipelines along the wall.
- For use in dry interior areas.

Certificates



Advantages

- The fire inspection report in line with MLAR/EN1363-1 of the ALK 37 guarantees independently tested functional safety.
- The graduated range of lengths allows an ideal adaptation to the application.
- The console's stable base plate offers a secure hold for a load-bearing construction.
- The base plate's long slots, which are at 90° to one another, allow the console to be easily aligned.

Properties

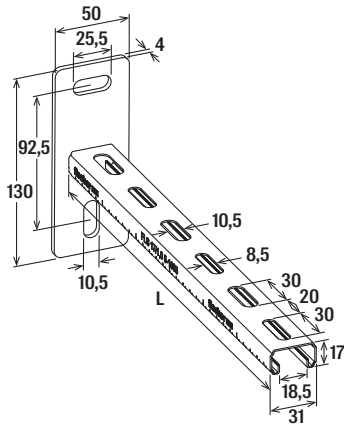
- Material base plate: steel E295 (material no. 1.0050) acc. to DIN EN 10025-2
- Material channel: steel S215G (material no. 1.0116G) acc. to DIN 1623
- Zinc plating: electro zinc-plated

See also:

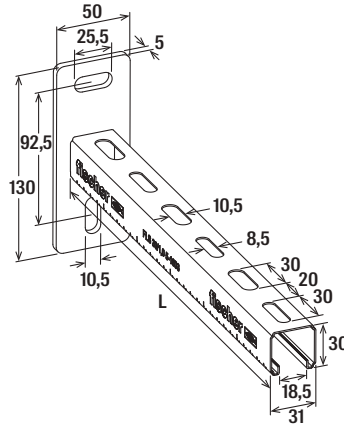
Product family Rubber inlay EMS Page 260



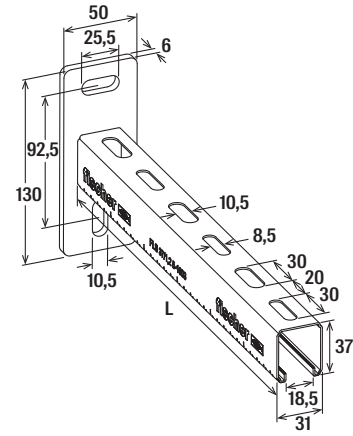
3



ALK 17



ALK 30



ALK 37

Technical data

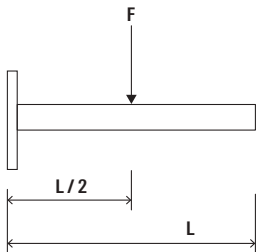
Item	Item no.	Fire test report	Profile	Length L [mm]	Sales unit [pcs]
ALK 17-200	538738	-	17 / 1.0	200	10
ALK 17-300	538739	-	17 / 1.0	300	10
ALK 30-200	538740	-	30 / 1.0	200	10
ALK 30-300	538741	-	30 / 1.0	300	10
ALK 30-450	538742	-	30 / 1.0	450	10
ALK 37-300	538743	Yes	37 / 1.2	300	10
ALK 37-450	538744	Yes	37 / 1.2	450	10
ALK 37-600	538745	Yes	37 / 1.2	600	5

For load information under fire exposure, see chapter Basic knowledge.

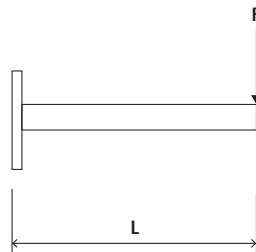
Loads

Item	Item no.	Max. recommended static load case 1 F_{rec} [kN]	Max. recommended static load case 2 F_{rec} [kN]	Max. recommended static load case 3 F_{rec} [kN]	Sales unit [pcs]
ALK 17-200	538738	0.49	0.24	0.49	10
ALK 17-300	538739	0.92	0.12	0.31	10
ALK 30-200	538740	1.18	0.59	1.18	10
ALK 30-300	538741	0.79	0.39	0.79	10
ALK 30-450	538742	0.53	0.22	0.53	10
ALK 37-300	538743	1.27	0.93	1.27	10
ALK 37-450	538744	0.86	0.41	0.86	10
ALK 37-600	538745	0.63	0.24	0.63	5

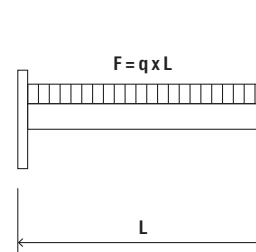
Load case 1



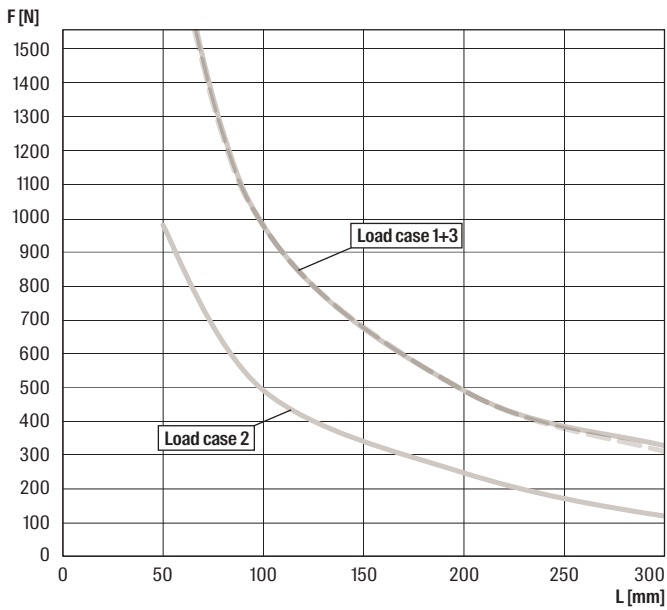
Load case 2



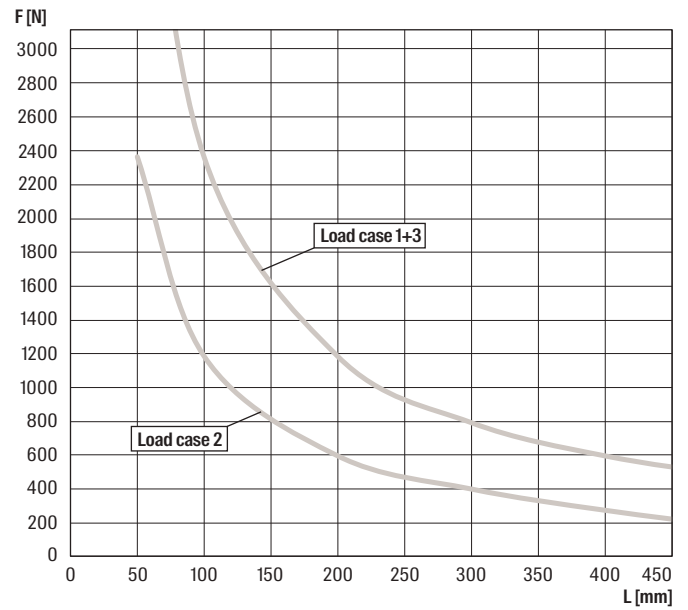
Load case 3



ALK 17/1,0

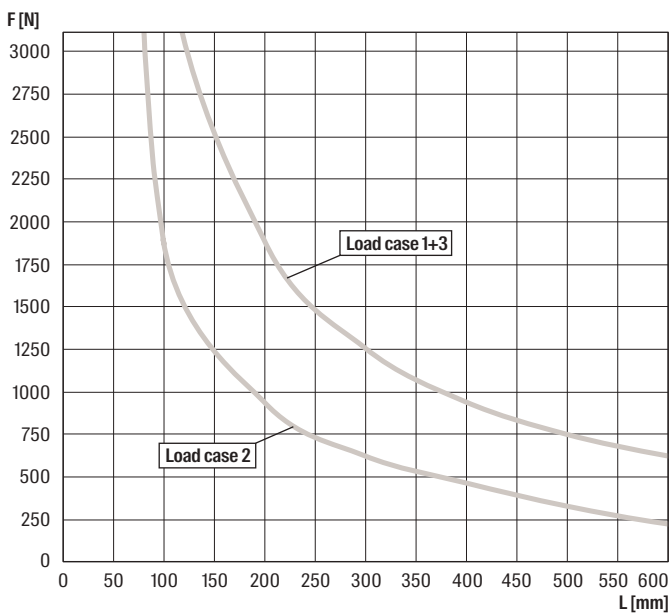


ALK 30/1,0



For the load curves, the permissible steel strain $\delta_{adm} = 188 \text{ N/mm}^2$ (increased steel strain due to bending) and the maximum deflection under load $L/150$ are not exceeded. Fixings and screw fastenings must be calculated accordingly.

FLS 37/1,2



For the load curves, the permissible steel strain $\delta_{adm} = 188 \text{ N/mm}^2$ (increased steel strain due to bending) and the maximum deflection under load $L/150$ are not exceeded. Fixings and screw fastenings must be calculated accordingly.

3

Cover cap AK

The cover cap for form-flush protection, tailored to the FLS profile sizes

3



Applications

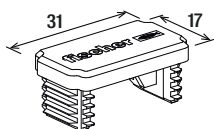
- Closing for channel FLS and cantilever arms ALK.

Advantages

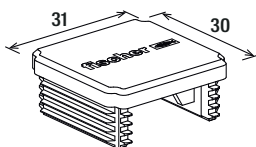
- Suitable for channel FLS 17, FLS 30 and FLS 37 and cantilever arms ALK

Properties

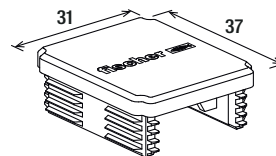
- Material: PP polypropylene, colour black



AK 17



AK 30



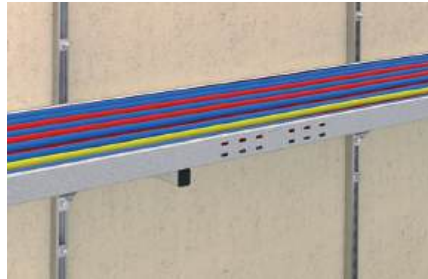
AK 37

Technical data

Item	Item no.	For profile	Material	Sales unit
				[pcs]
AK 17	538746	17/1.0	polypropylene	100
AK 30	538747	30/1.0	polypropylene	100
AK 37	538748	37/1.2	polypropylene	50

Angle brace WS 31-45°

Angle brace for stable constructions



Cable tray on cantilever construction



Ventilating pipe fixing at the wall

3

Applications

- Angle brace to construct self-supporting channel constructions with FLS channels or ALK cantilever arms.
- For use in dry interior areas.

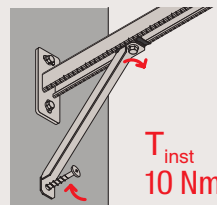
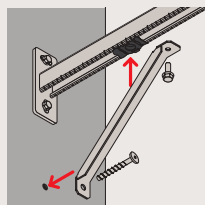
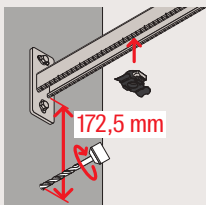
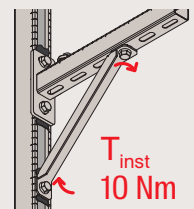
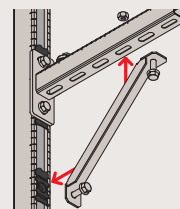
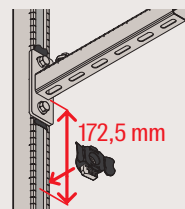
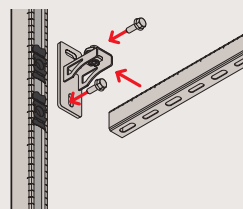
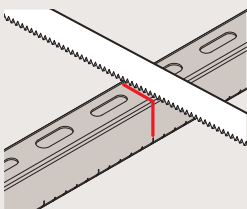
Advantages

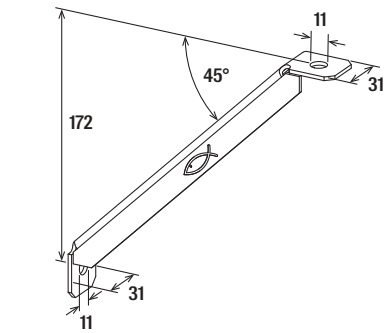
- The stable angle brace element WS 31-45° lends the supporting structure a great stability and safety.
- The size of the angle brace element guarantees a secure connection with ALK cantilever arms and FLS channels by its fitting accuracy.
- The standardised long slots in the angle brace enable an exact connection to ALK cantilever arms or FLS channels by using FSM Clix P and a screw.

Properties

- Material: steel S235JR (material no. 1.0037) acc. to DIN EN 10025
- Zinc plating: electro zinc-plated

Installation WS 31-45°





WS 31-45°

Technical data

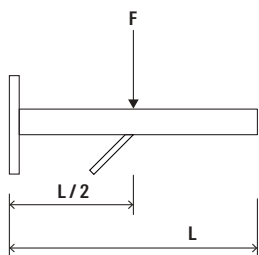
Item	Item no.	Hole-Ø D [mm]	Sales unit [pcs]
WS 31-45°	538749	11	10

Loads

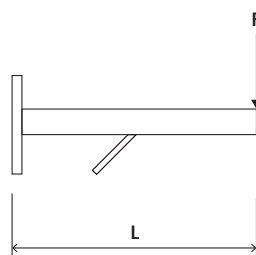
Item	Item no.	Max. recommended static load load case 1a [kN]	Max. recommended static load load case 2a [kN]	Max. recommended static load load case 3a [kN]	Sales unit [pcs]
ALK 17-200	538738	1.03	1.03	1.03	10
ALK 17-300	538739	1.52	0.45	1.52	10
ALK 30-200	538740	2.52	1.40	2.52	10
ALK 30-300	538741	1.78	0.89	1.78	10
ALK 30-450	538742	1.16	0.47	1.16	10
ALK 37-300	538743	1.78	0.89	1.78	10
ALK 37-450	538744	1.16	0.59	1.16	10
ALK 37-600	538745	0.89	0.45	0.89	5

Note: Loads are valid for fixing to wall with adequate carrying capacity. Fixing of the cantilever arm and the angle brace to the wall by anchor (e.g. FAZ II Plus, UltraCut FBS II 8). Fixing of the angle brace to the cantilever profile by FSM Clix P 10, tightening torque 12 Nm. Fixing of the angle brace to the long slot of the cantilever profile by screw and nut M10, tightening torque 20 Nm.

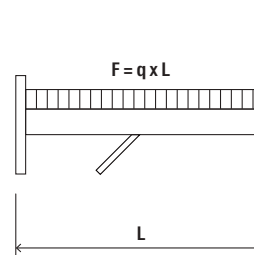
Load case 1



Load case 2

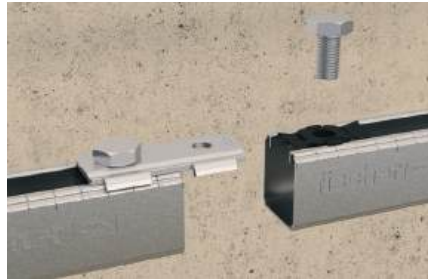


Load case 3

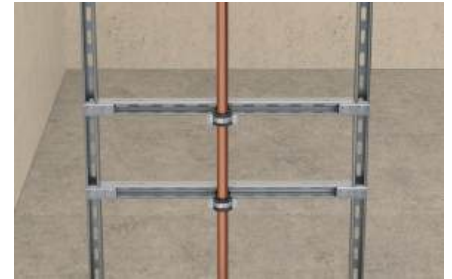


Channel connector SV 31

Construction element - Channel connector SV 31



Channel extension with channel connector



Vertical installation

3

Applications

- With the channel connector SV 31 FLS channels can be connected in different directions.
- For use in dry interior areas.

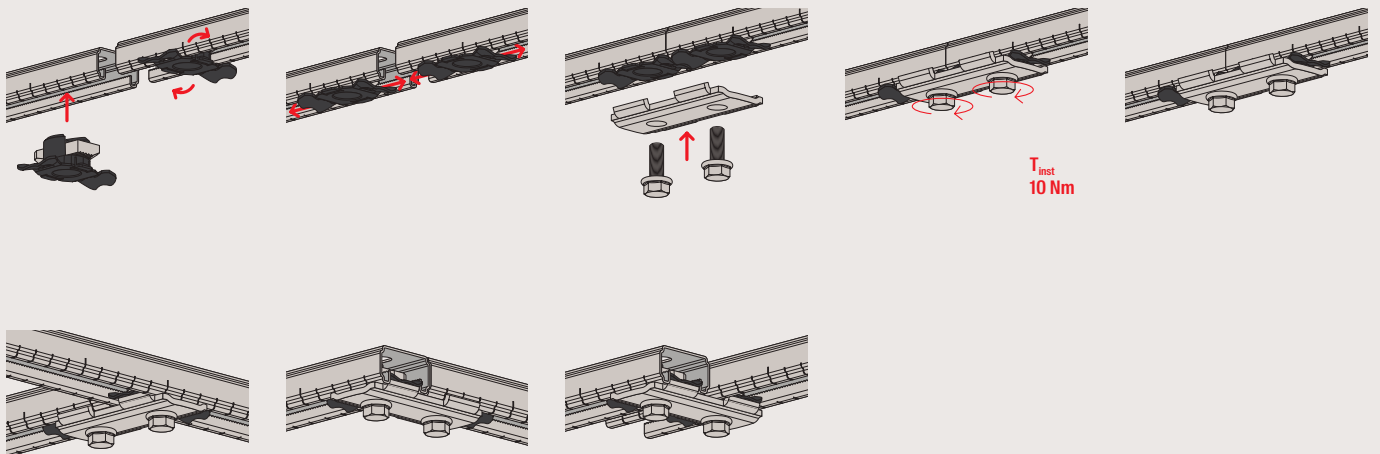
Advantages

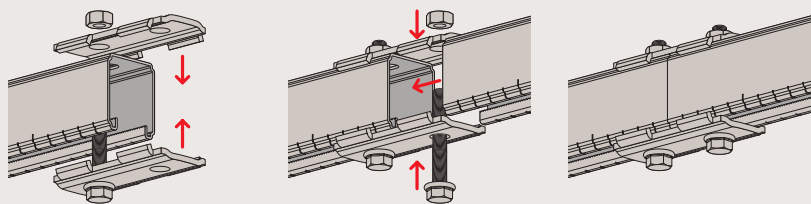
- The special retaining brackets at the SV construction elements enable a form-locking installation longitudinal and transverse to the channel direction to adapt the channel connection effectively
- The standardised long slots of the channel connector enable an exact connection to ALK cantilever arms or FLS channels by using FSM Clix P and a screw

Properties

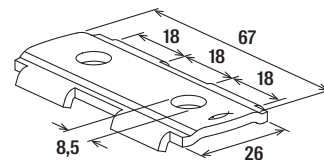
- Material: steel S235JR+CR (material no. 1.0037) acc. to DIN EN 1652
- Zinc plating: electro zinc-plated

Installation SV 31





3



SV 31

Technical data

Item	Item no.	Hole-Ø D [mm]	Sales unit [pcs]
SV 31	538641	8.5	25

Loads

Item	Item no.	Max. recommended shear load V_{rec} [kN]	Tightening torque T_{inst} [Nm]	Sales unit [pcs]
SV 31	538641	1.00	10	25

Sliding channel nut FSM Clix P

Channel nut for quick and easy connection of FLS channels



Floor penetration



Channel extension with channel connector

3

Applications

- FSM Clix P is suitable for interconnecting FLS channels by using connecting elements.
- For use in dry interior areas.

Certificates



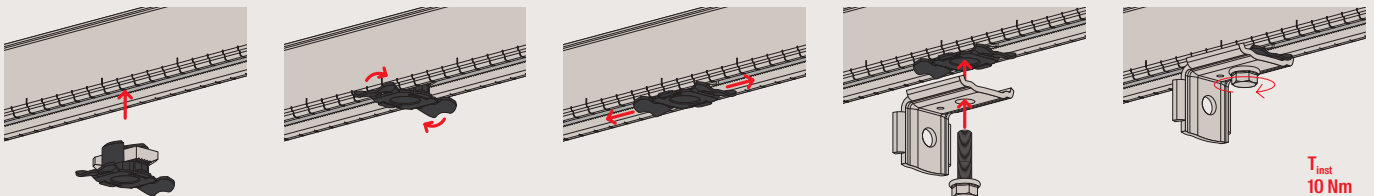
Advantages

- The special and disappearing thrust block of the sliding nut Clix P plastic holder enables a connection of connecting elements and channels without plastic interlayer to establish a safe longitudinal metallic connection.
- The especially developed spring leg on the FSM Clix P guarantees the necessary contact pressure of the connector to the channel to help for a secure adjustment during installation.
- The teeth on the sliding nut enable an exact and secure positioning in the FLS channel and ease the installation of connector elements.
- The unique stop element on the FSM Clix P connector guarantees the accurate 90°-turn of the connectors in the channel to ensure a save and precise installation.

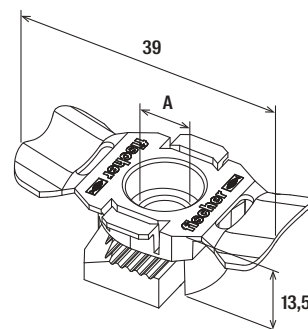
Properties

- Material channel nut: steel S420MC (material no. 1.0980) acc. to DIN EN 10149-2
- Material plastic cage: polypropylene PP, colour black
- Zinc plating: electro zinc-plated

Installation FSM Clix P



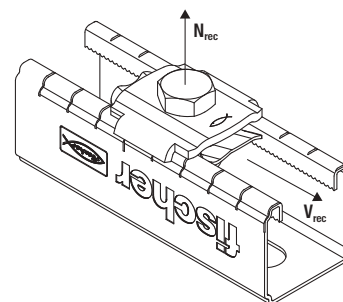
T_{inst}
10 Nm



FSM Clix P

Technical data

Item	Item no.	Thread A	Sales unit [pcs]
FSM Clix P 6	538643	M6	50
FSM Clix P 8	538647	M8	50
FSM Clix P 10	538649	M10	50



FSM Clix P

Loads

Item	Item no.	Max. recommended tension load for FLS 17/1.0 and FLS 30/1.0 N_{rec} [kN]	Max. recommended tension load for FLS 37/1.2 N_{rec} [kN]	Max. recommended shear load V_{rec} [kN]	Tightening torque T_{inst} [Nm]	Sales unit [pcs]
FSM Clix P 6	538643	1.5	2.0	1.00	10	50
FSM Clix P 8	538647	1.5	2.0	1.00	10	50
FSM Clix P 10	538649	1.5	2.0	1.00	10	50

Sliding channel nut FSM Clix M

Channel nut for quick and easy fixing in FLS channels



Pipe fixing at mounting channel



Pipe fixing on frame construction

3

Applications

- FSM Clix M is suitable for connecting pipe clamps with a threaded rod to FLS channels.
- For use in dry interior areas.

Certificates



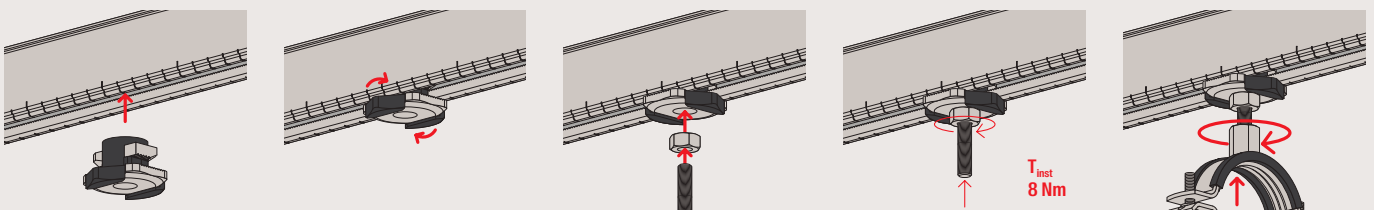
Advantages

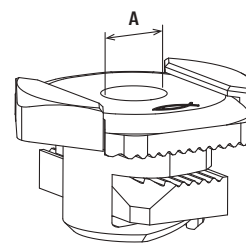
- The unique spring leg at the FSM Clix M guarantees the necessary contact pressure of the connector to the channel to help for a secure adjustment during installation.
- The teeth on the sliding nut enable an exact and secure positioning in the FLS channel and ease the installation of connector elements.
- The clix-connector element with 90°-turn for connecting enables an easy post-installation in set channels to save time and money.
- The especially developed stop element on the FSM Clix M connector guarantees the accurate 90°-turn of the connectors in the channel to ensure a safe and precise installation.

Properties

- Material channel nut: steel S420MC (material no. 1.0980) acc. to DIN EN 10149-2
- Material cover plate: steel S235JR+CR (material no. 1.0037) acc. to DIN 1652
- Material plastic cage: polypropylene PP, colour black
- Zinc plating: electro zinc-plated

Installation FSM Clix M

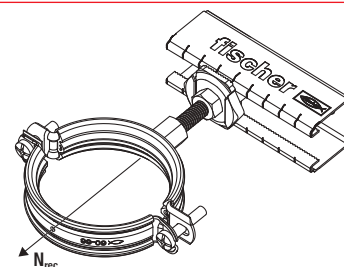




FSM Clix M

3 Technical data

Item	Item no.	Thread A	Width across nut SW [mm]	Sales unit [pcs]
FSM Clix M 6	538650	M6	10	50
FSM Clix M 8	538651	M8	13	50
FSM Clix M 10	538652	M10	17	50



FSM Clix M

Loads

Item	Item no.	Max. recommended tension load for FLS 17/1.0 and FLS 30/1.0 N_{rec} [kN]	Max. recommended tension load for FLS 37/1.2 N_{rec} [kN]	Tightening torque T_{inst} [Nm]	Sales unit [pcs]
FSM Clix M 6	538650	1.5	2.0	8	50
FSM Clix M 8	538651	1.5	2.0	8	50
FSM Clix M 10	538652	1.5	2.0	8	50

T-head bolt FHS Clix

Hammer-head bolt for quick and easy fixing in FLS channels



Light pipe fixing



Pipe fixing at mounting channel

3

Applications

- FHS Clix is suitable for connecting pipe clamps with the channel.
- For use in dry interior areas.

Certificates



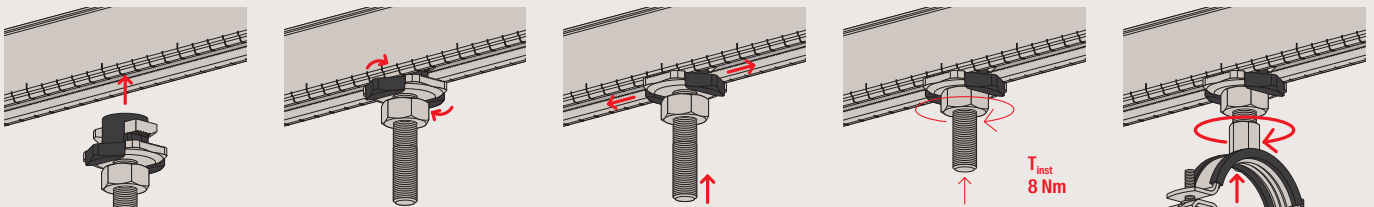
Advantages

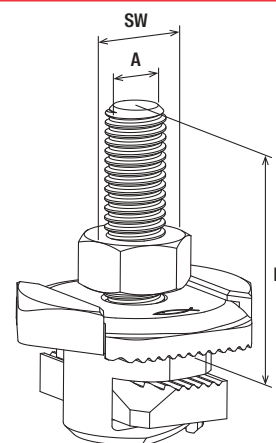
- The special spring leg at the FHS Clix guarantees the necessary contact pressure of the connector to the channel to help for a secure adjustment during installation.
- The teeth on the sliding nut enable an exact and secure positioning in the FLS channel and ease the installation of connector elements.
- The clix-connector element with 90°-turn for connecting enables an easy post-installation in set channels to save time and money.
- The especially developed stop element on the FHS Clix connector guarantees the accurate 90°-turn of the connectors in the channel to ensure a safe and precise installation.

Properties

- Material channel nut: steel S420MC (material no. 1.0980) acc. to DIN EN 10149-2
- Material cover plate: steel S235JR+CR (material no. 1.0037) acc. to DIN 1652
- Material threaded rod: steel acc. to DIN 976-2, min. 4.6 (DIN EN ISO 898-1)
- Material hexagonal nut: steel acc. to DIN 934-4, min. 4.8 (DIN EN ISO 898-2 table 4 stability)
- Material plastic cage: polypropylene PP, colour black
- Zinc plating: electro zinc-plated

Installation FHS Clix

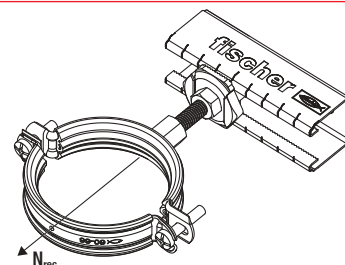




FHS Clix

Technical data

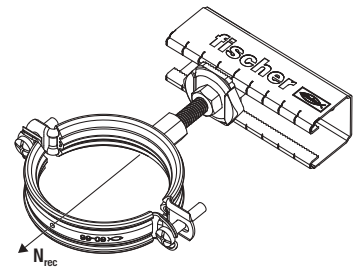
Item	Item no.	Thread A	Length L [mm]	Width across nut SW [mm]	Sales unit [pcs]
FHS Clix 8 x 30	538653	M8	30	13	100
FHS Clix 8 x 40	538654	M8	40	13	100
FHS Clix 8 x 60	538655	M8	60	13	100
FHS Clix 8 x 80	538656	M8	80	13	50
FHS Clix 8 x 100	538657	M8	100	13	50
FHS Clix 8 x 140	545834	M8	140	13	50
FHS Clix 8 x 190	545835	M8	190	13	50
FHS Clix 10 x 30	538658	M10	30	17	100
FHS Clix 10 x 40	538659	M10	40	17	100
FHS Clix 10 x 60	538660	M10	60	17	50
FHS Clix 10 x 80	545836	M10	80	17	50
FHS Clix 10 x 100	538661	M10	100	17	50



FHS Clix

Loads

Item	Item no.	Max. recommended tension load for FLS 17/1.0 and FLS 30/1.0		Max. recommended tension load for FLS 37/1.2	
		N_{rec} [kN]		N_{rec} [kN]	
FHS Clix 8 x 30	538653	1.5		2.0	100
FHS Clix 8 x 40	538654	1.5		2.0	100
FHS Clix 8 x 60	538655	1.5		2.0	100
FHS Clix 8 x 80	538656	1.5		2.0	50
FHS Clix 8 x 100	538657	1.5		2.0	50
FHS Clix 8 x 140	545834	1.5		2.0	50
FHS Clix 8 x 190	545835	1.5		2.0	50
FHS Clix 10 x 30	538658	1.5		2.0	100
FHS Clix 10 x 40	538659	1.5		2.0	100
FHS Clix 10 x 60	538660	1.5		2.0	50
FHS Clix 10 x 80	545836	1.5		2.0	50



FHS Clix

3

Loads

Item	Item no.	Max. recommended tension load for FLS 17/1.0 and FLS 30/1.0 N_{rec} [kN]	Max. recommended tension load for FLS 37/1.2 N_{rec} [kN]	Sales unit [pcs]
FHS Clix 10 x 100	538661	1.5	2.0	50

Saddle flange SF Clix 31

The pre-assembled saddle flange SF Clix 31

3



Channel installation at the wall



Cantilever construction with channel

Applications

- Element for the stable construction of connections between channels and building structures.
- For use in dry interior areas.

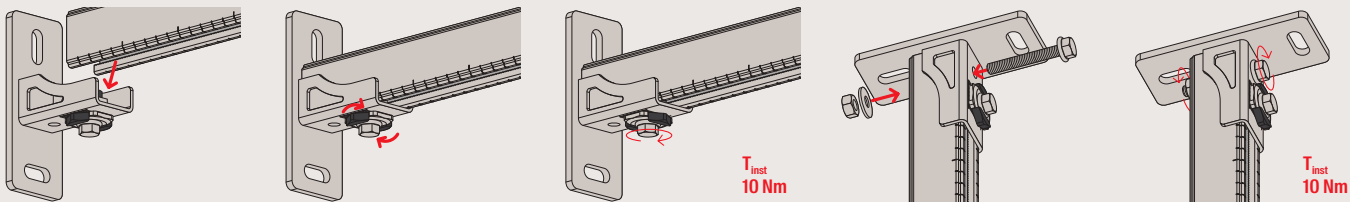
Advantages

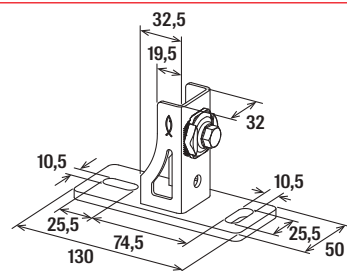
- Pre-assembled accessories like SF Clix bring the number of articles for a connection down and guarantee a time-saving installation.
- The pre-assembled connector of the SF Clix secures the installation position due to the unique thrust block and guarantees a safe and fast installation.
- The special spring leg at pre-assembled connector guarantees the necessary contact pressure of the connector to the channel to help for a secure adjustment during installation.
- The perfect-fit saddle of the SF allows an simple installation by inserting the channel.
- The saddle flange's stable design offers a secure hold for a load-bearing construction.

Properties

- Material saddle: steel E295 (material no. 1.0050) acc. to DIN EN 10025-2
- Material channel nut: steel S420MC (material no. 1.0980) acc. to DIN EN 10149-2
- Material cover plate: steel S235JR+CR (material no. 1.0037) acc. to DIN 1652
- Material hexagonal screw: steel min. 4.6 (DIN EN ISO 898-1)
- Material plastic cage: polypropylene PP, colour black
- Zinc plating: electro zinc-plated

Installation SF Clix 31



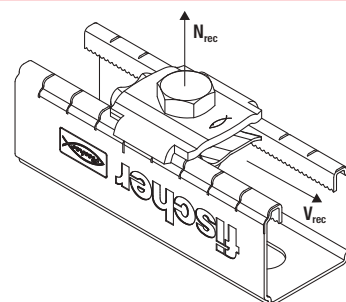


SF Clix 31

3

Technical data

Item	Item no.	Thread A	Width across nut SW [mm]	Sales unit [pcs]
SF Clix 31	538665	M8	13	10



SF Clix 31

Loads

Item	Item no.	Max. recommended tension load for FLS 17/1.0 and FLS 30/1.0 N_{rec} [kN]	Max. recommended tension load for FLS 37/1.2 N_{rec} [kN]	Max. recommended shear load V_{rec} [kN]	Sales unit [pcs]
SF Clix 31	538665	1.5	2.0	1.00	10

Angle bracket MW Clix 90°

The pre-assembled angle bracket MW Clix 90°

3



Cantilever construction with channel



Pipe fixing on frame construction

Applications

- Element for the stable construction of angle connections with FLS channels.
- For use in dry interior areas.

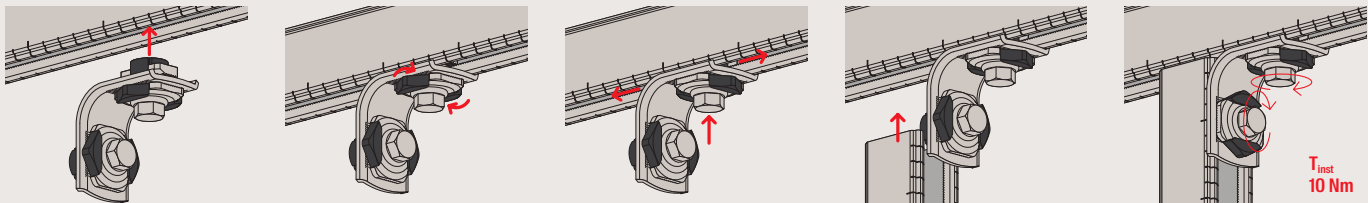
Advantages

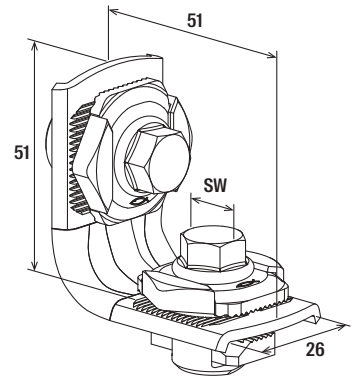
- Pre-assembled accessories like SF Clix bring the number of articles for a connection down and guarantee a time-saving installation.
- The pre-assembled connector of the MW Clix secures the installation position due to the unique thrust block and guarantees a safe and fast installation.
- The especially developed spring leg at the pre-assembled connector guarantees the necessary contact pressure of the connector to the channel to help for a secure adjustment during installation.
- The form-locking and accurately fitting angle bracket of the MW clix allows a simple installation of the FLS channel and saves valuable installation time.

Properties

- Material angle bracket: steel S235JR+CR (material no. 1.0037) acc. to DIN 1652
- Material channel nut: steel S420MC (material no. 1.0980) acc. to DIN EN 10149-2
- Material cover plate: steel S235JR+CR (material no. 1.0037) acc. to DIN 1652
- Material hexagonal screw: steel min. 4.6 (DIN EN ISO 898-1)
- Material plastic cage: polypropylene PP, colour black
- Zinc plating: electro zinc-plated

Installation MW Clix 90°

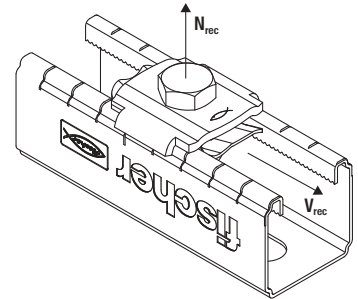




MW Clix 90°

Technical data

Item	Item no.	Thread A	Width across nut SW [mm]	Sales unit [pcs]
MW Clix 90°	538666	M8	13	10



MW Clix 90°

Loads

Item	Item no.	Max. recommended tension load for FLS 17/1.0 and FLS 30/1.0 N_{rec} [kN]	Max. recommended tension load for FLS 37/1.2 N_{rec} [kN]	Max. recommended shear load V_{rec} [kN]	Installation torque T_{inst} [Nm]	Sales unit [pcs]
MW Clix 90°	538666	1.5	2.0	1.00	10	10

Angle bracket MW and MWU

Construction element – Angle bracket MW 90° and MWU 90°

3



Floor penetration



Pipe fixing in a corridor

Applications

- Connecting elements for the arrangement of simple channel constructions with the sliding channel nut FSM Clix P.
- For use in dry interior areas.

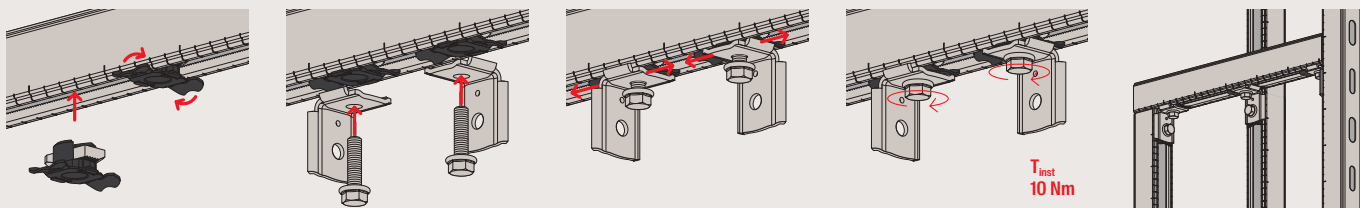
Advantages

- The individual developed retaining brackets at the MW 90° angle bracket enable a form-locking installation longitudinal and transverse to the channel direction to adapt the channel connection effectively.
- The long slot on flat wing of the MWU 90° angle bracket enables a direct connection to the substrate for space-saving fixation.
- The standardised holes in the angle brackets enable an exact connection to the FLS channels by using FSM Clix P and a screw.

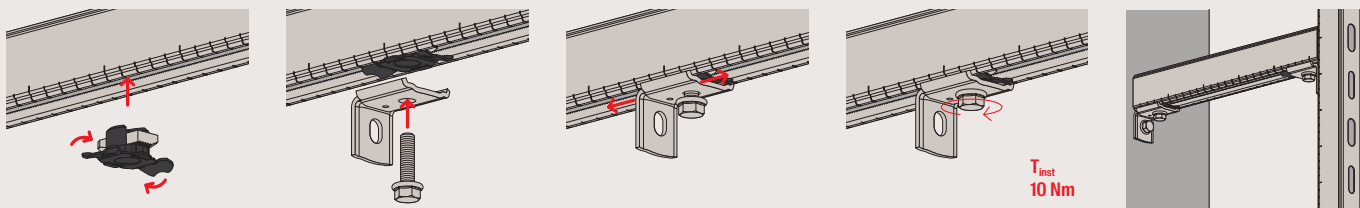
Properties

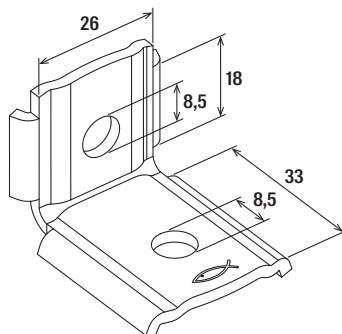
- Material: steel S235JR+CR (material no. 1.0037) acc. to DIN EN 1652
- Zinc plating: electro zinc-plated

Installation MW

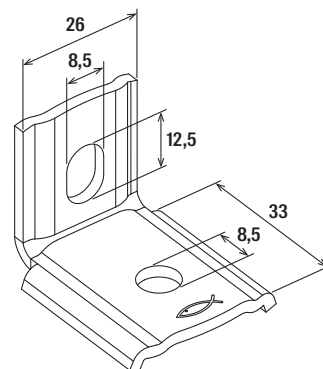


Installation MWU





MW 90°

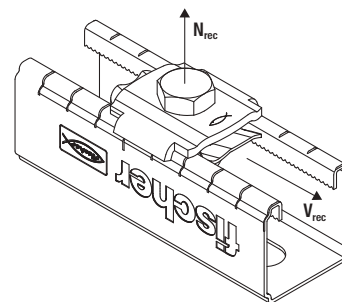


MWU 90°

3

Technical data

Item	Item no.	Sales unit
		[pcs]
MW 90°	538668	50
MWU 90°	538667	25



Loads

Item	Item no.	Max. recommended tension load for FLS 17/1.0 and FLS 30/1.0 N_{rec} [kN]	Max. recommended tension load for FLS 37/1.2 N_{rec} [kN]	Max. recommended shear load V_{rec} [kN]	Installation torque T_{inst} [Nm]	Sales unit
						[pcs]
MW 90°	538668	1.5	2.0	1.00	10	50
MWU 90°	538667	1.5	2.0	1.00	10	25

Channel washer HK 31

Connector - Channel washer HK 31

3



Pipe fixing at mounting channel



Horizontal pipe fixing

Applications

- The Channel washer HK 31 is used for stable connections and to strengthen the FLS profile for a fixing to the substrate.
- For use in dry interior areas.

Certificates



Advantages

- The special retaining brackets at the SV connecting elements enable a form-locking installation longitudinal and transverse to the channel direction to adapt the channel connection effectively.
- The standardised slots of the Channel washer enable an exact push-through connection of FLS mounting channels easy and fast.

Properties

- Material: steel S235JR+CR (material no. 1.0037) acc. to DIN EN 1652
- Zinc plating: electro zinc-plated



HK 31

Technical data

Item	Item no.	Hole-Ø D [mm]	Sales unit [pcs]
HK 31 8,5	538663	8.5	50
HK 31 10.5	538664	10.5	50

Beam clamp TKR 31

Clamping bracket for the fixing of channels to steel girders



Channel fixing to steel beam

3

Applications

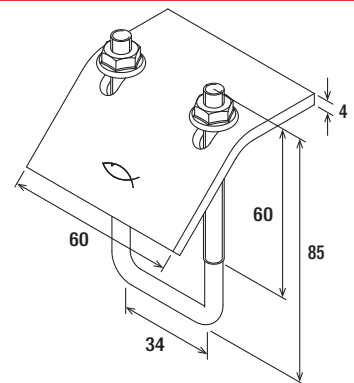
- Fixing of FLS channels to steel girders, required are two beam clamps per fixing.
- For use in dry interior areas.

Advantages

- The design of the beam clamp allows for fixing without drilling or welding.
- The various lengths of the beam clamp sides allows for fixing on all standard steel beams.
- The shape of the beam clamp guarantees the simple adjustment of the channel connection.

Properties

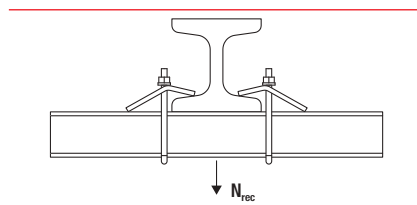
- Material U-bolt pipe hanger: steel S235JR (material no. 1.0037) acc. to DIN EN 10025-2
- Material plate: steel E295 (material no. 1.0050) acc. to DIN EN 10025-2
- Material hexagon nut: steel resistance class 8
- Zinc plating: electro zinc-plated



TKR 31

Technical data

Item	Item no.	Thread A	Width across nut SW [mm]	Sales unit [pcs]
TKR 31	538751	M6	10	25

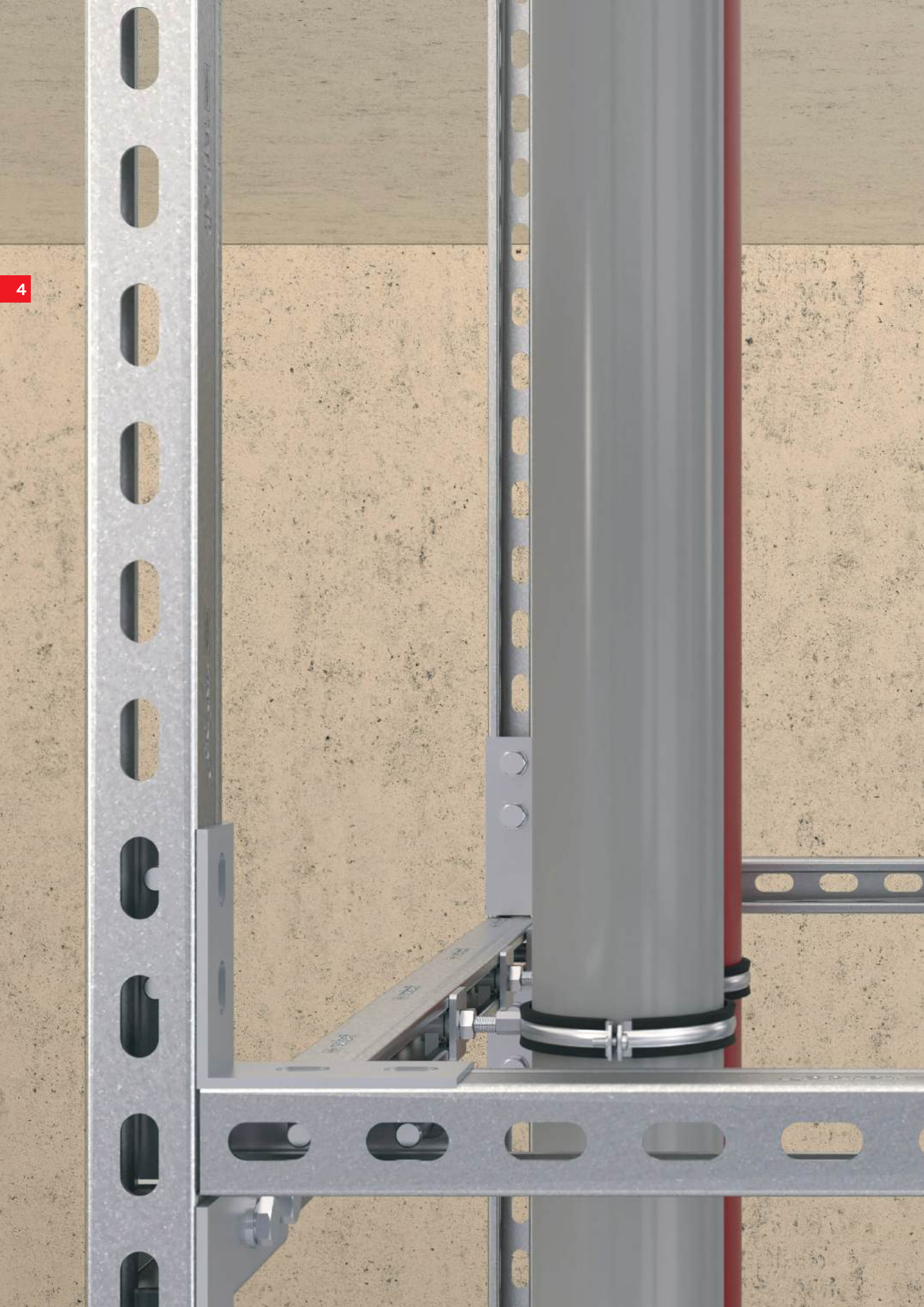


TKR

Loads






































3

Item	Item no.	Max. recom. static load (centr. tension) N_{rec} [kN]	Tightening torque T_{inst} [Nm]	Sales unit [pcs]
TKR 31	538751	2.80	5	25



4

Channel system Universal FUS

Channel FUS	116		Channel nut FCN Clix M	156	
Channel connector FUF OC and PFUF OC	122		Channel nut FCN	158	
Socket wrench FSK	123		T-head bolt FCN Clix S	160	
Channel connector FDCC	124		T-head bolt FCSN	162	
Cantilever arm FCA	126		Channel washer HK 41	164	
Large cantilever arm FCAM	131		Saddle flange SF	165	
Cover cap FEC	133		Mounting bracket UWS	167	
Push-through connector PFCN	134		Angle bracket WK	168	
Saddle flange PSF	136		Bracket FFF	170	
Universal bracket PUWS	138		Bracket FAF	172	
Angle bracket PWK	140		Flange FZF, FUF	174	
Angle bracket fire-tested PUWF	141		Flange FUF	176	
Variable bracket PVB	145		Variable bracket VB	178	
Bracing elements PSAE	146		Bracing bracket FYJB	179	
Bracket PFFF	148		Universal hinge FUH	181	
Bracket PFAF	149		Threaded rod bracket FSB 45°	183	
Bracket PFUF	151		Beam clamp TKR	184	
Brackets PFUF D	152		Beam clamp FHBC hdg	185	
Channel nut FCN Clix P	154				

Channel FUS

The universal and complete mounting channel system for a wide range of applications

4



3D-frame constructions



Solid frame construction

Applications

- Secure horizontal and vertical installations.
- Fast and efficient fixing of pipelines and supporting structures.
- For use in dry interior areas.

Certificates



ETA-21/0140



Advantages

- The fire inspection report in line with MLAR/EN13501 guarantees independently tested functional safety.
- The basic channel geometry allows the usage of the complete extensive range of accessories.
- The stamped serration in the channel gives the sliding nuts a secure hold for high shear loads, e.g. for vertical installation.
- Different channel wall thicknesses allow economical choices for installation.
- The scale on the mounting channels simplifies the cutting and positioning of the fixtures during the installation.

Properties

- Material: pre-galvanised steel S250GD+Z275 (material no. 1.0242) acc. to DIN EN 10346

See also:

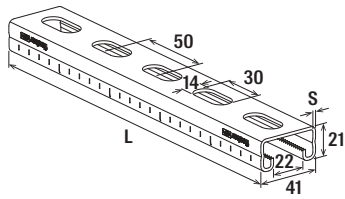
Product family Channel nut FCN Clix P
Page 154



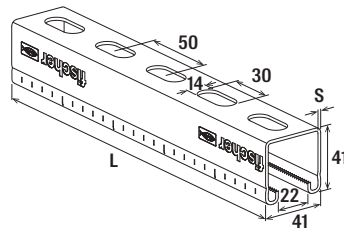
See also:

Product family Rubber inlay EMS Page
260

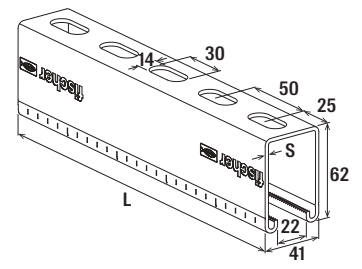




FUS 21



FUS 41



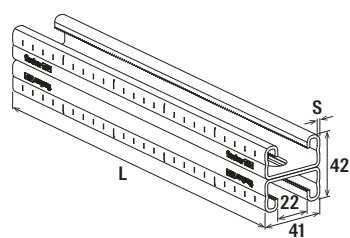
FUS 62

Technical data

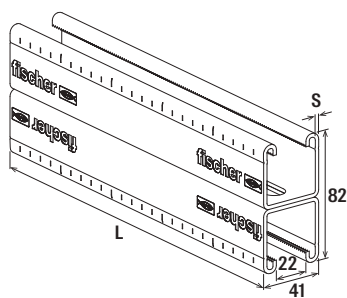
Item	Item no.	Ap- pro- val ETA	Fire test report	Length	Thickness	Sales unit
				L [mm]	S [mm]	[pcs]
FUS 21/1,5 - 2 m	545117	●	-	2,000	1.5	1
FUS 21/1,5 - 3 m	545118	●	-	3,000	1.5	1
FUS 21/1,5 - 6 m	545119 ¹⁾	●	-	6,000	1.5	1
FUS 21/2,0 - 2 m	040391	●	-	2,000	2.0	1
FUS 21/2,0 - 3 m	097660	●	-	3,000	2.0	1
FUS 21/2,0 - 6 m	097661	●	-	6,000	2.0	1
FUS 21/2,5 - 2 m	092867	●	-	2,000	2.5	1
FUS 21/2,5 - 3 m	077349	●	-	3,000	2.5	1
FUS 21/2,5 - 6 m	077541	●	-	6,000	2.5	1
FUS 41/1,5 - 2 m	545120	●	-	2,000	1.5	1
FUS 41/1,5 - 3 m	545126	●	-	3,000	1.5	1
FUS 41/1,5 - 6 m	545127	●	-	6,000	1.5	1
FUS 41/2,0 - 2 m	040390	●	-	2,000	2.0	1
FUS 41/2,0 - 3 m	097658	●	-	3,000	2.0	1
FUS 41/2,0 - 6 m	097659	●	-	6,000	2.0	1
FUS 41/2,5 - 2 m	092295	●	Yes	2,000	2.5	1
FUS 41/2,5 - 3 m	077347	●	Yes	3,000	2.5	1
FUS 41/2,5 - 6 m	077537	●	Yes	6,000	2.5	1
FUS 62/2,5 - 6 m	504457	●	Yes	6,000	2.5	1

¹⁾ Delivery time on request.

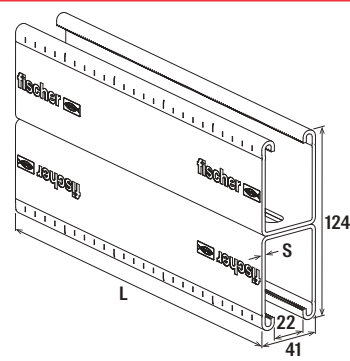
For load information under fire exposure, see chapter Basic knowledge.



FUS 21D



FUS 41D

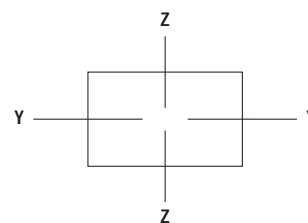


FUS 62D

4

Technical data

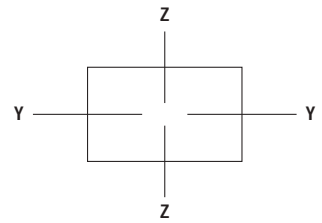
Item	Item no.	Ap- pro- val ETA	Length		Thickness		Sales unit
			L [mm]	S [mm]	S [mm]	[pcs]	
FUS 21D/2,0 - 3 m	504458	●	3,000		2.0		1
FUS 21D/2,0 - 6 m	535531	●	6,000		2.0		1
FUS 41D/2,5 - 6 m	504459	●	6,000		2.5		1
FUS 62D/2,5 - 6 m	504460	●	6,000		2.5		1



Loads

Item	Item no.	Ap- pro- val ETA	Profile weight [kg/m]	Channel cross section [cm ²]	Moment of inertia I _y [cm ⁴]	Moment of inertia I _z [cm ⁴]	Section modulus W _y [cm ³]	Section modulus W _z [cm ³]	Max. recom- mended static load for 1m length F _{rec} [kN]	Max. recom- mended static load for 2m length F _{rec} [kN]	Max. recom- mended static load for 3m length F _{rec} [kN]	Sales unit [pcs]
FUS 21/1,5 - 3 m	545118	●	1.20	1.35	0.80	3.69	0.75	1.80	0.41	0.10	–	1
FUS 21/1,5 - 6 m	545119 ¹⁾	●	1.20	1.35	0.80	3.69	0.75	1.80	0.41	0.10	–	1
FUS 21/2,0 - 2 m	040391	●	1.44	1.72	0.97	4.66	0.89	2.27	0.49	0.12	0.05	1
FUS 21/2,0 - 3 m	097660	●	1.44	1.72	0.97	4.66	0.89	2.27	0.49	0.12	0.05	1
FUS 21/2,0 - 6 m	097661	●	1.44	1.72	0.97	4.66	0.89	2.27	0.49	0.12	0.05	1
FUS 21/2,5 - 2 m	092867	●	1.67	1.99	1.03	5.28	0.93	2.58	0.52	0.13	–	1
FUS 21/2,5 - 3 m	077349	●	1.67	1.99	1.03	5.28	0.93	2.58	0.52	0.13	0.06	1
FUS 21/2,5 - 6 m	077541	●	1.67	1.99	1.03	5.28	0.93	2.58	0.52	0.13	0.06	1
FUS 41/1,5 - 2 m	545120	●	1.80	1.95	4.26	6.03	2.07	2.94	1.56	0.54	0.24	1
FUS 41/1,5 - 3 m	545126	●	1.80	1.95	4.26	6.03	2.07	2.94	1.56	0.54	0.24	1
FUS 41/1,5 - 6 m	545127	●	1.80	1.95	4.26	6.03	2.07	2.94	1.56	0.54	0.24	1
FUS 41/2,0 - 2 m	040390	●	2.06	2.52	5.33	7.69	2.58	3.75	1.94	0.67	0.30	1
FUS 41/2,0 - 3 m	097658	●	2.06	2.52	5.33	7.69	2.58	3.75	1.94	0.67	0.30	1
FUS 41/2,0 - 6 m	097659	●	2.06	2.52	5.33	7.69	2.58	3.75	1.94	0.67	0.30	1
FUS 41/2,5 - 2 m	092295	●	2.45	3.00	6.00	8.99	2.85	4.38	2.14	0.76	–	1
FUS 41/2,5 - 3 m	077347	●	2.45	3.00	6.00	8.99	2.85	4.38	2.14	0.76	0.34	1
FUS 41/2,5 - 6 m	077537	●	2.45	3.00	6.00	8.99	2.85	4.38	2.14	0.76	0.34	1

¹⁾ Delivery time on request.

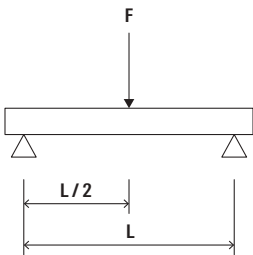


Loads

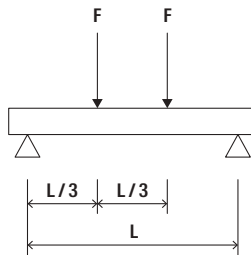
Item	Item no.	Ap- pro- val ETA	Profile weight [kg/m]	Channel cross section [cm ²]	Moment of inertia I_y [cm ⁴]	Moment of inertia I_z [cm ⁴]	Section modulus W_y [cm ³]	Section modulus W_z [cm ³]	Max. recom- mended static load for 1m length F_{rec} [kN]	Max. recom- mended static load for 2m length F_{rec} [kN]	Max. recom- mended static load for 3m length F_{rec} [kN]	Sales unit [pcs]
FUS 62/2,5 - 6 m	504457	●	3.27	4.05	1770	12.90	5.62	6.29	4.22	2.10	0.99	1
FUS 21D/2,0 - 3 m	504458	●	2.87	3.44	5.49	9.31	2.61	4.54	1.96	0.69	0.31	1
FUS 21D/2,0 - 6 m	535531	●	2.87	3.44	5.49	9.31	2.61	4.54	1.96	0.69	0.31	1
FUS 41D/2,5 - 6 m	504459	●	4.89	6.00	35.01	17.90	8.76	8.78	6.58	3.28	1.96	1
FUS 62D/2,5 - 6 m	504460	●	6.55	8.09	111.00	25.80	17.90	12.58	13.45	6.72	4.47	1

¹⁾ Delivery time on request.

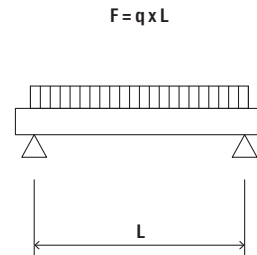
Load case 1



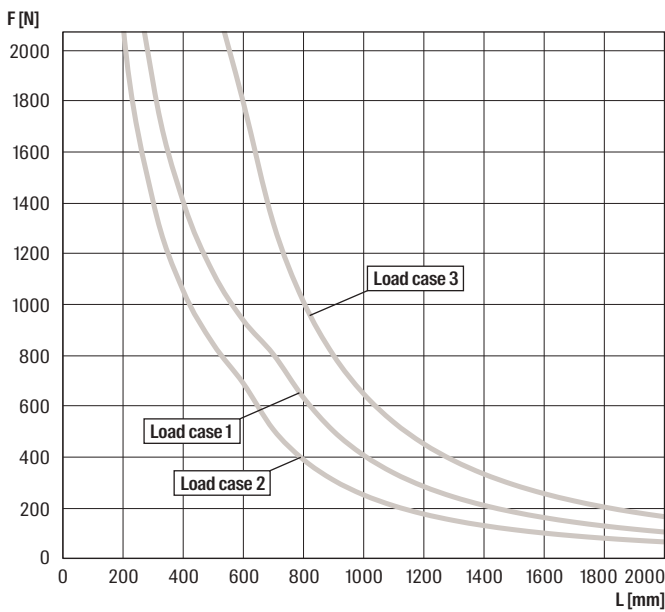
Load case 2



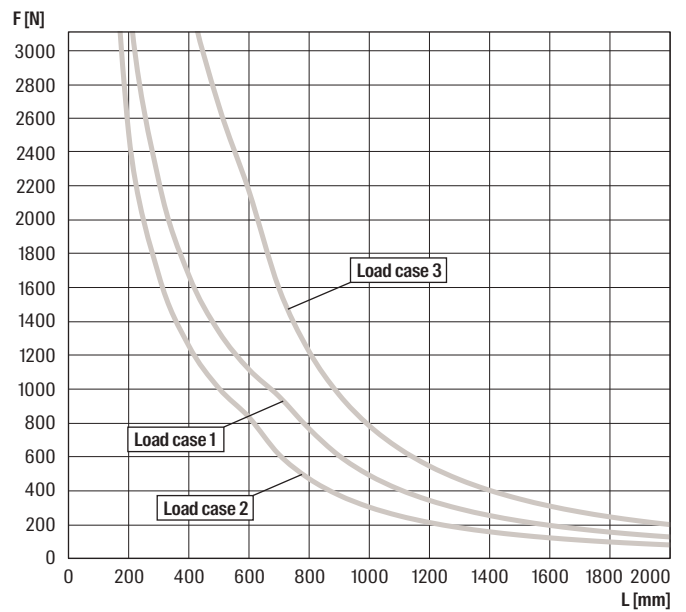
Load case 3



FUS 21/1,5

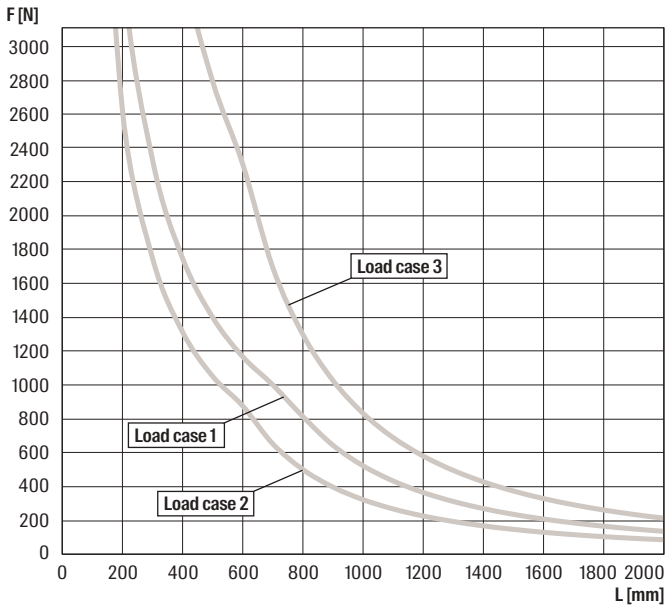


FUS 21/2,0

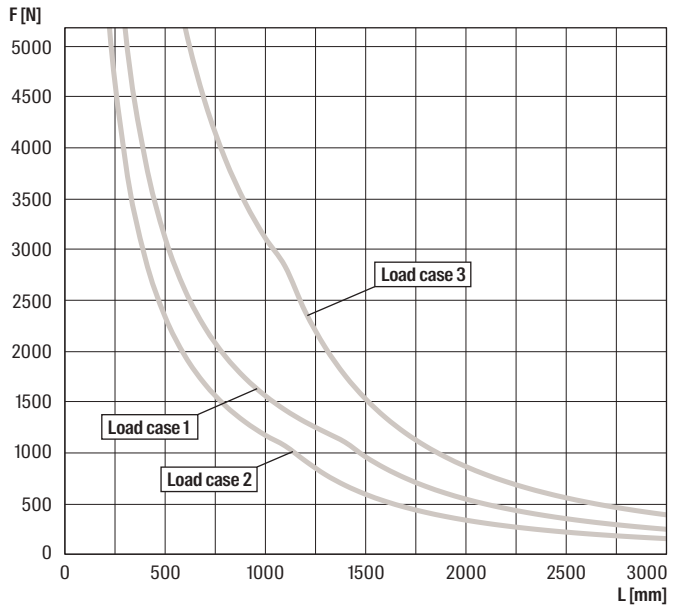


For the load curves, the permissible steel strain $\delta_{adm.} = 188$ N/mm and the maximum deflection under load $L/200$ are not exceeded. Fixings and screw fastenings must be calculated accordingly. The increased yield strength is calculated according DIN EN 1993-1-3:2010-12, sec. 3.2.2.

FUS 21/2,5

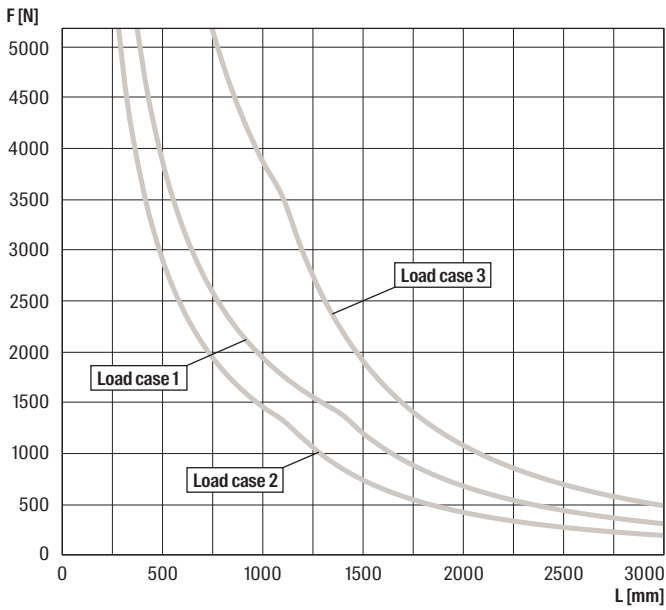


FUS 41/1,5

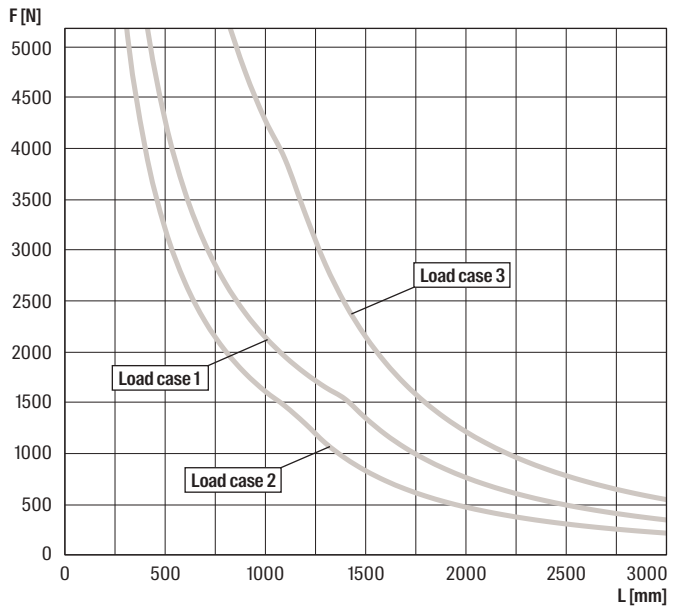


For the load curves, the permissible steel strain $\delta_{adm} = 188$ N/mm and the maximum deflection under load $L/200$ are not exceeded. Fixings and screw fastenings must be calculated accordingly. The increased yield strength is calculated according to DIN EN 1993-1-3:2010-12, sec. 3.2.2.

FUS 41/2,0

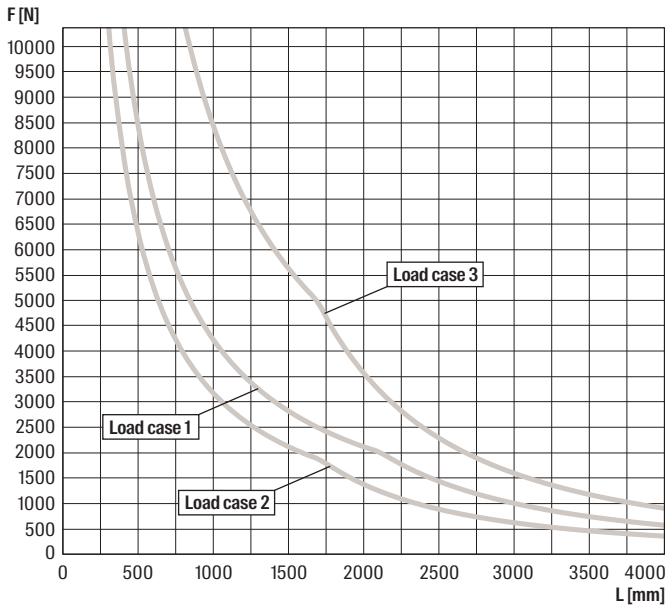


FUS 41/2,5

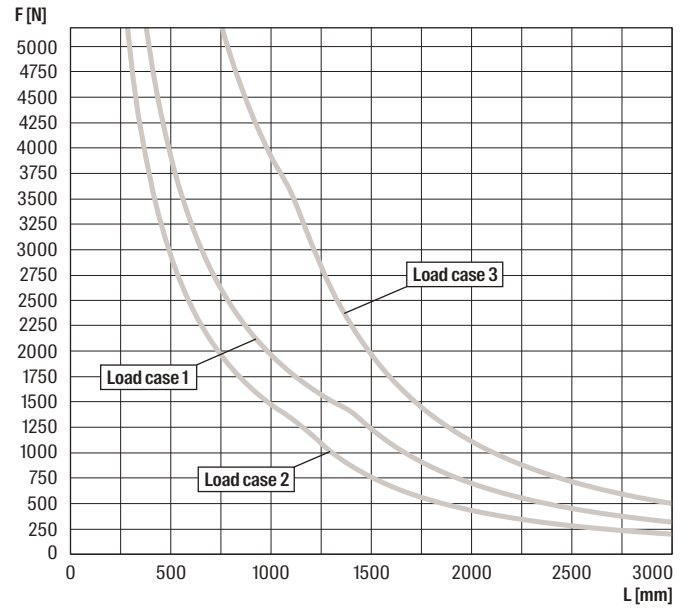


For the load curves, the permissible steel strain $\delta_{adm} = 188$ N/mm and the maximum deflection under load $L/200$ are not exceeded. Fixings and screw fastenings must be calculated accordingly. The increased yield strength is calculated according to DIN EN 1993-1-3:2010-12, sec. 3.2.2.

FUS 62/2,5

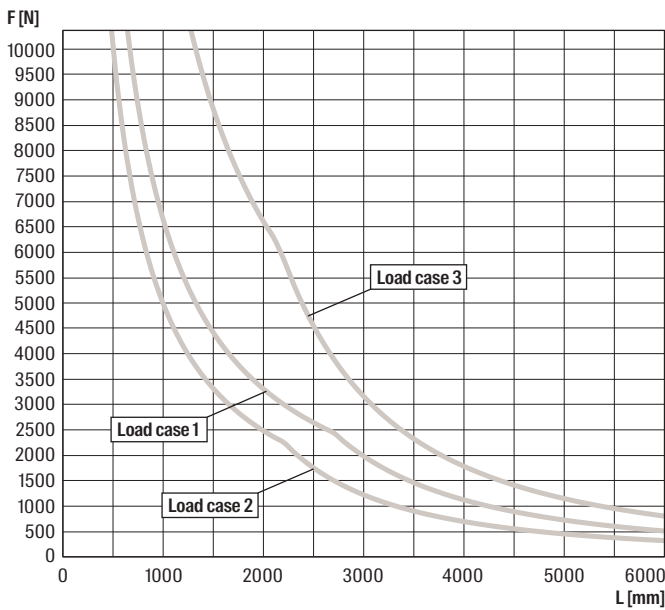


FUS 21D/2,0

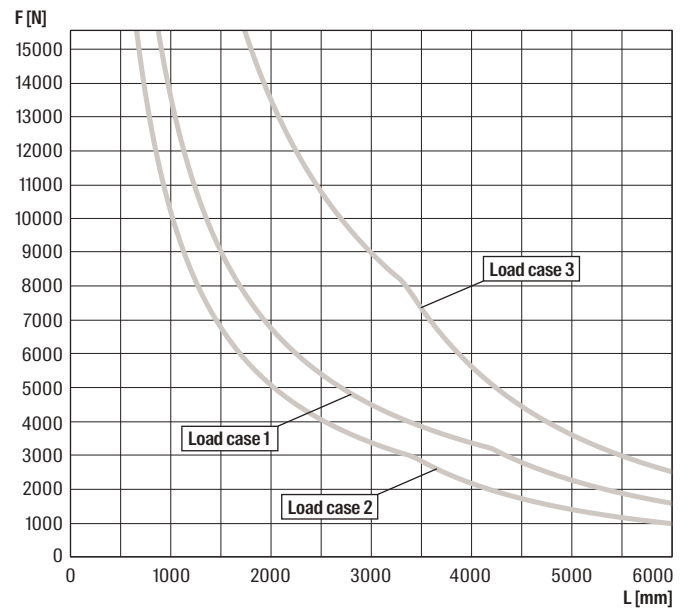


For the load curves, the permissible steel strain $\delta_{adm} = 188$ N/mm and the maximum deflection under load $L/200$ are not exceeded. Fixings and screw fastenings must be calculated accordingly. The increased yield strength is calculated according DIN EN 1993-1-3:2010-12, sec. 3.2.2.

FUS 41D/2,5



FUS 62D/2,5



For the load curves, the permissible steel strain $\delta_{adm} = 188$ N/mm and the maximum deflection under load $L/200$ are not exceeded. Fixings and screw fastenings must be calculated accordingly. The increased yield strength is calculated according DIN EN 1993-1-3:2010-12, sec. 3.2.2.

4

Channel connector FUF OC and PFUF OC

Construction element - Channel connector FUF OC and PFUF OC

4



Connector for installation grid



Longitudinal channel connection

Applications

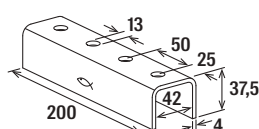
- Connection and precise alignment of channels.
- For use in dry interior areas.

Advantages

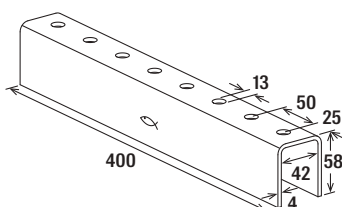
- The FUF OC connector in combination with FCN Clix P allows a simple and time-saving installation.
- The PFUF OC connector in combination with PFCN allows a simple and time-saving installation.

Properties

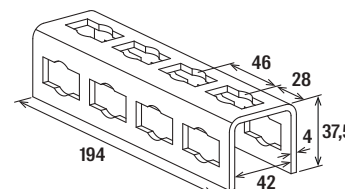
- Material FUF OC: steel S235JR (material no. 1.0037) acc. to DIN EN 10025
- Zinc plating FUF OC: electro zinc-plated
- Material PFUF OC: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Zinc plating PFUF OC: electro zinc-plated



FUF OC 41



FUF OC 62



PFUF OC

Technical data

Item	Item no.	Length L [mm]	Sales unit [pcs]
FUF OC 41	504517	200	20
FUF OC 62	504518	400	10
PFUF OC	533743	194	6

Socket wrench FSK

FSK socket wrench SW 17 long, the solution for tightening in the FUS mounting channels



4

Applications

- Installation of the fischer FUS channel system.
- Tightening anchor bolts and plugs.

Advantages

- The socket wrench FSK fits perfectly through the open side of the FUS mounting channel.
- The two snap-in holes between the impact wrench insert and ½" socket ensure increased connection accuracy.
- The long length of the socket wrench FSK allows it to be used for the FUS mounting channels 21, 41 and 62.

Properties

- Material: quenched and tempered steel 42CrMo4 according to EN 10083-3 (material no. 1.7225)
- Coating: black phosphatized

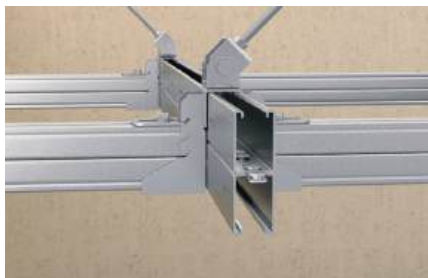
Technical data

Item	Item no.	Length L [mm]	Width across nut SW [mm]	Drive	For profile	Sales unit [pcs]
FSK Socket wrench SW17-1/2" long	563656	100	17	1/2" / SW17	FUS 21, 41, 62	1

Channel connector FDCC

Channel connector for easy preparation of FUS double channels

4



FUS double channel with channel connector

Applications

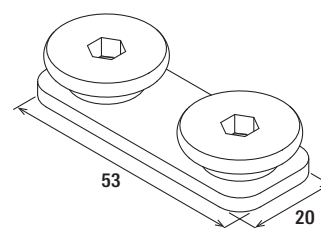
- Easy construction of double channels made from the FUS channel assortment.
- Suitable for FUS channels FUS 41 and FUS 62 with thickness 2,0 and 2,5 mm.
- The connection of two single channels is made with the channel connector inside the channel slots.
- Each double channel has to be equipped with an FDCC at both ends and additional FDCCs in the given installation distance as per load chart.
- For use in dry interior areas.

Advantages

- Easy connection of single channels back to back to build double channels.
- Simple solution to create individual double channels on job site.

Properties

- Material base plate: JIS G3131-SPHE (similar to DD13 acc. to DIN EN 10111, material no. 1.0335)
- Material screw: steel grade 8.8
- Zinc plating: electro zinc-plated

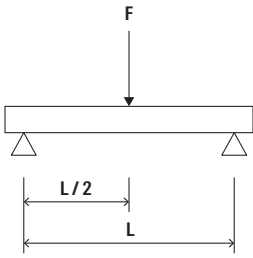


FDCC

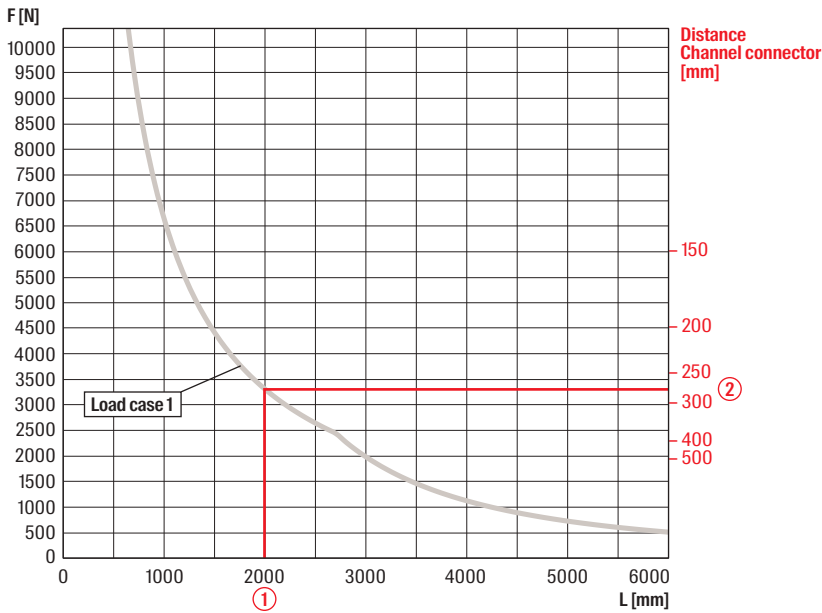
Technical data

Item	Item no.	Thread A	Drive	Tightening torque T_{inst} [Nm]	Sales unit [pcs]
FDCC	546148	M10	Hexagon socket 5 mm	25	100

Load case 1

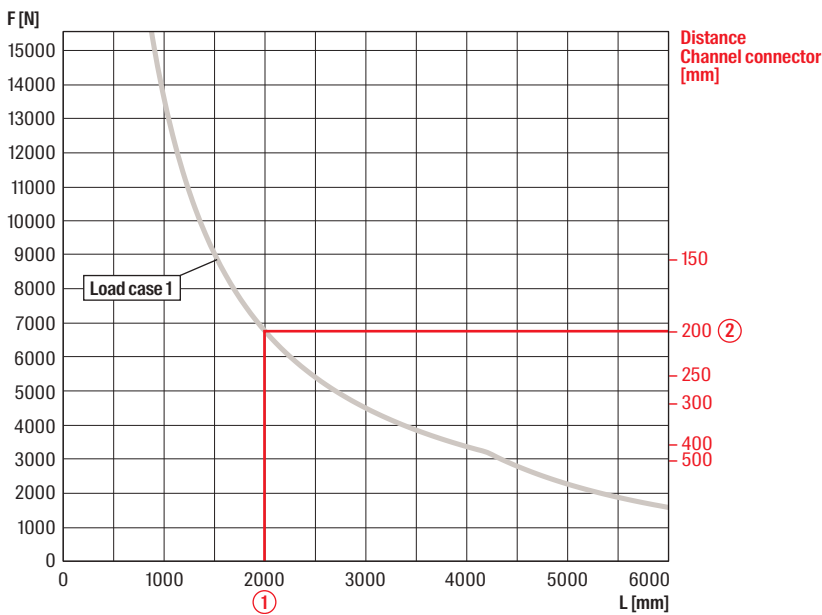


FUS 41D/2,0 - 2,5



- ① Length of channel, i.e. 2000 mm for loadcase 1 (single load centric)
- ② Distance of channel connector (for intermediate values use the lower value, i.e. 250 mm)

FUS 62D/2,5



- ① Length of channel, i.e. 2000 mm for loadcase 1 (single load centric)
- ② Distance of channel connector (for intermediate values use the lower value)

Cantilever arm FCA

FUS profiles with welded base plate for direct mounting on the base material

4



Refrigerant pipe clamp on sliding element



Heavy pipe on cantilever

Applications

- Quick and easy installation of pipelines (e.g. along the wall)
- For use in dry indoor areas.

Certificates

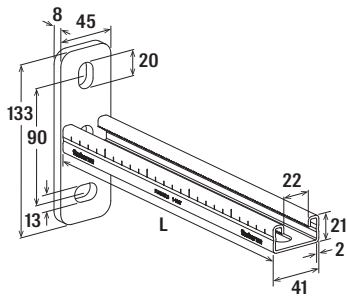


Advantages

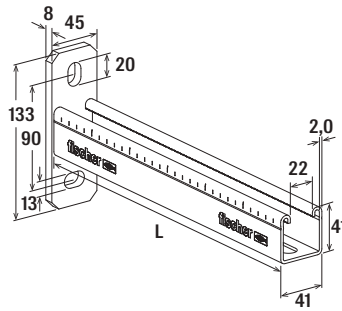
- The fire inspection report in line with MLAR/EN13501 guarantees independently tested functional safety.
- The graduated range of lengths allows for an ideal adaptation to the application.
- The arm's solid base plate offers a secure hold for load-bearing construction.
- The base plate's long slots, which are at 90° to one another, allow the arm to be easily aligned.
- The stamped serration in the channel gives the sliding nuts a secure hold for high shear loads, e.g. for vertical installation.

Properties

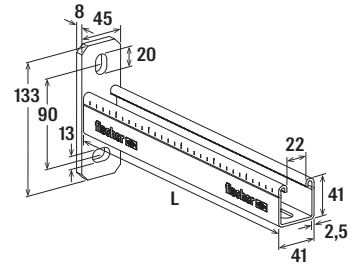
- Material: steel S235JR (material no. 1.0037) acc. to DIN EN 10025
- Zinc plating: electro zinc-plated



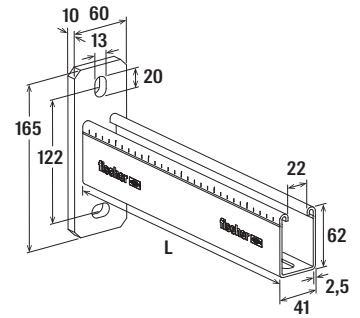
FCA 21/2.0



FCA 41/2.0



FCA 41/2.5



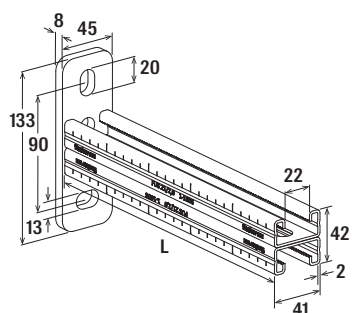
FCA 62/2.5

4

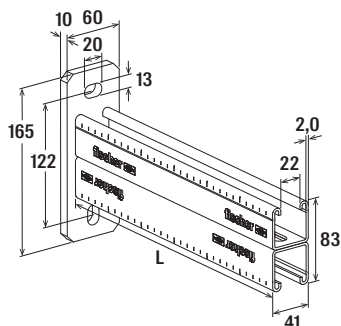
Technical data

Item	Item no.	Fire test report	Profile	Length L [mm]	Sales unit [pcs]
FCA 21/2.0 - 200	537207	-	21 / 2.0	200	1
FCA 21/2.0 - 300	537208	-	21 / 2.0	300	1
FCA 21/2.0 - 450	537209	-	21 / 2.0	450	1
FCA 41/2.0 - 300	559915	-	41 / 2,0	300	1
FCA 41/2.0 - 450	559916	-	41 / 2,0	450	1
FCA 41/2.0 - 600	559917	-	41 / 2,0	600	1
FCA 41/2.0 - 750	559918	-	41 / 2,0	750	1
FCA 41/2.0 - 1,000	559919	-	41 / 2,0	1,000	1
FCA 41/2.5 - 300	077359	Yes	41 / 2.5	300	1
FCA 41/2.5 - 450	077361	Yes	41 / 2.5	450	1
FCA 41/2.5 - 600	077363	Yes	41 / 2.5	600	1
FCA 41/2.5 - 750	077365	Yes	41 / 2.5	750	1
FCA 62/2.5 - 1,000	504315	Yes	62 / 2.5	1,000	1

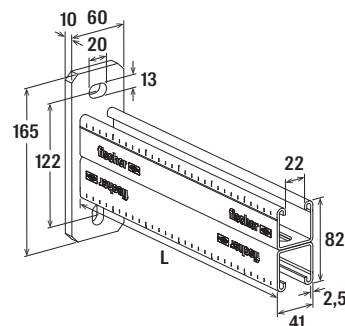
For load information under fire exposure, see chapter Basic knowledge.



FCA 21D/2.0



FCA 41D/2.0



FCA 41D/2.5

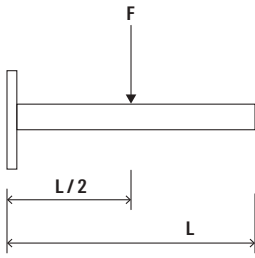
Technical data

Item	Item no.	Profile	Length L [mm]	Sales unit [pcs]
FCA 21D/2.0 - 300	536978	21D / 2.0	300	1
FCA 21D/2.0 - 450	536979	21D / 2.0	450	1
FCA 21D/2.0 - 600	536980	21D / 2.0	600	1
FCA 41D/2,0 - 750	559920	41D / 2,0	750	1
FCA 41D/2,0 - 1000	559921	41D / 2,0	1,000	1
FCA 41D/2.5 - 750	504317	41D / 2.5	750	1
FCA 41D/2.5 - 1,000	504319	41D / 2.5	1,000	1

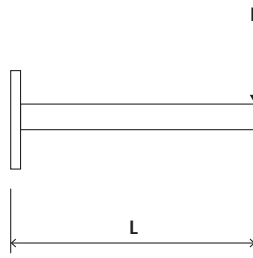
Loads

Item	Item no.	Max. recommended static load load case 1 F_{rec} [kN]	Max. recommended static load load case 2 F_{rec} [kN]	Max. recommended static load load case 3 F_{rec} [kN]	Sales unit [pcs]
FCA 21/2.0 - 200	537207	1.43	0.72	1.43	1
FCA 21/2.0-300	537208	0.95	0.45	0.95	1
FCA 21/2.0 - 450	537209	0.65	0.21	0.65	1
FCA 41/2.0 - 300	559915	1.80	0.90	1.80	1
FCA 41/2.0 - 450	559916	1.20	0.60	1.20	1
FCA 41/2.0 - 600	559917	0.90	0.45	0.90	1
FCA 41/2.0 - 750	559918	0.72	0.36	0.72	1
FCA 41/2.0 - 1,000	559919	0.54	0.23	0.54	1
FCA 41/2.5 - 300	077359	1.80	0.90	1.80	1
FCA 41/2.5 - 450	077361	1.20	0.60	1.20	1
FCA 41/2.5 - 600	077363	0.90	0.45	0.90	1
FCA 41/2.5 - 750	077365	0.72	0.36	0.72	1
FCA 62/2.5 - 1,000	504315	1.25	0.62	1.25	1
FCA 21D/2.0 - 300	536978	1.83	0.92	1.83	1
FCA 21D/2.0 - 450	536979	1.24	0.62	1.24	1
FCA 21D/2.0 - 600	536980	0.92	0.46	0.92	1
FCA 41D/2,0 - 750	559920	2.50	1.25	2.50	1
FCA 41D/2,0 - 1000	559921	1.90	0.93	1.90	1
FCA 41D/2.5 - 750	504317	2.50	1.25	2.50	1
FCA 41D/2.5 - 1,000	504319	1.90	0.93	1.90	1

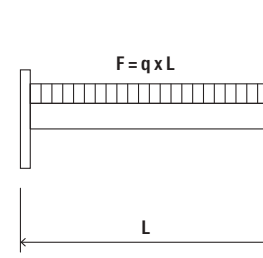
Load case 1



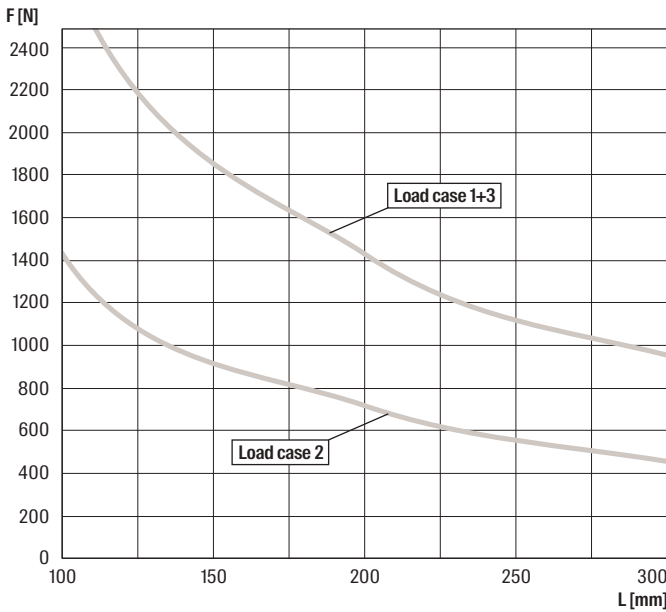
Load case 2



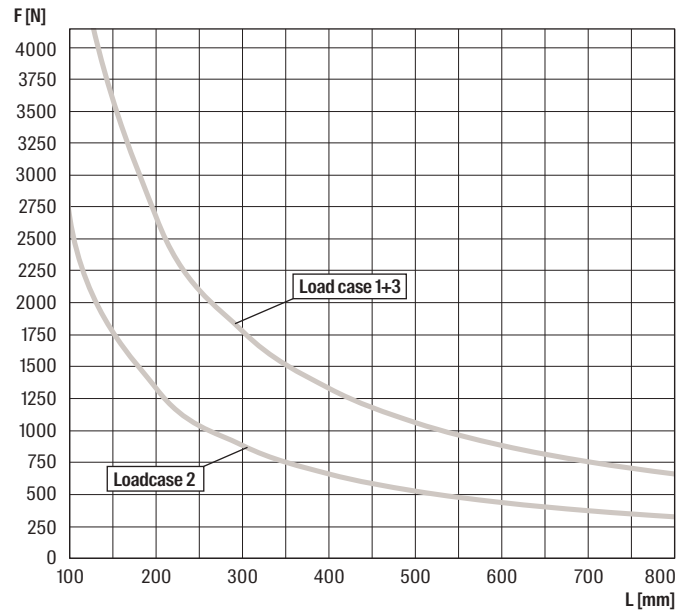
Load case 3



FCA 21

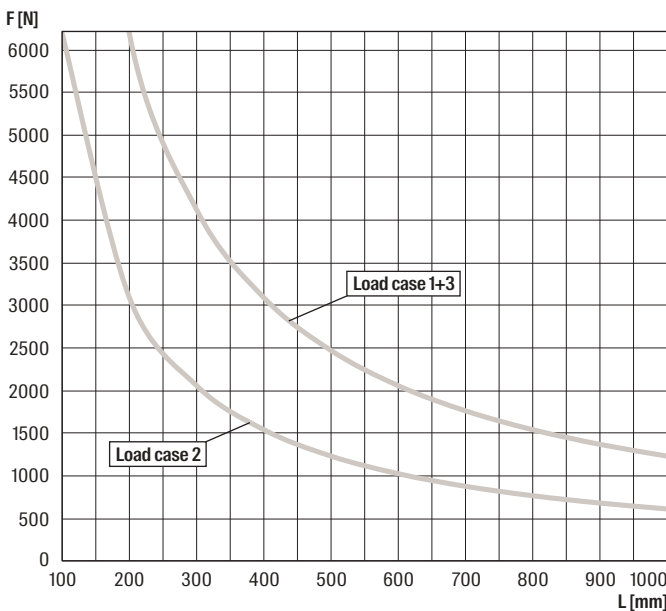


FCA 41



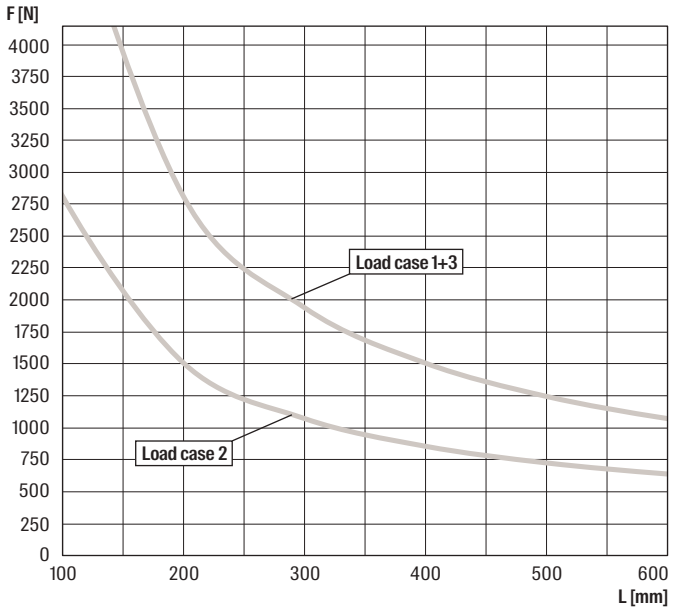
For the load curves, the permissible steel strain $\delta_{adm} = 160$ N/mm and the maximum deflection under load $L/150$ are not exceeded. Load values of the cantilever arms under consideration of the load capacity of the base plate. Fixings and screw fastenings must be calculated accordingly. The load curves are valid for all material thicknesses of the FCA brackets.

FCA 62

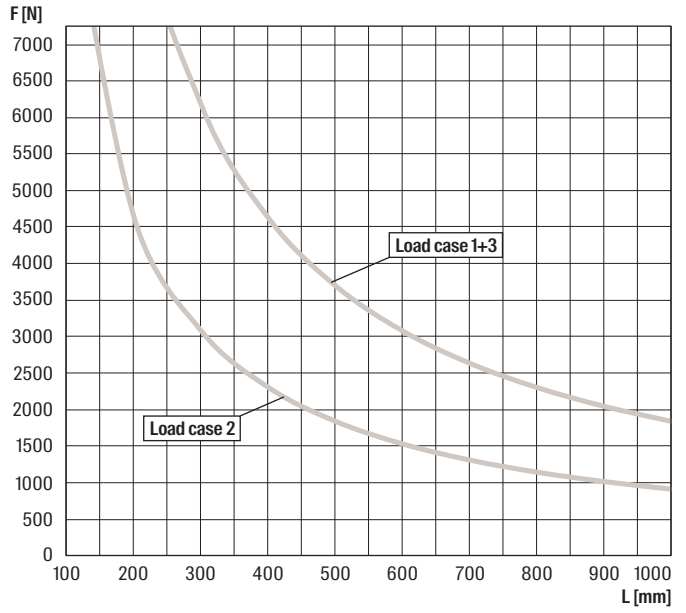


For the load curves, the permissible steel strain $\delta_{adm} = 160$ N/mm and the maximum deflection under load $L/150$ are not exceeded. Load values of the cantilever arms under consideration of the load capacity of the base plate. Fixings and screw fastenings must be calculated accordingly. The load curves are valid for all material thicknesses of the FCA brackets.

FCA 21D



FCA 41D



For the load curves, the permissible steel strain $\delta_{adm} = 160$ N/mm and the maximum deflection under load $L/150$ are not exceeded. Load values of the cantilever arms under consideration of the load capacity of the base plate. Fixings and screw fastenings must be calculated accordingly. The load curves are valid for all material thicknesses of the FCA brackets.

4

Large cantilever arm FCAM

The large cantilever arm for heavy loads



Stiff pipe connection with base plate on cantilever arm

Applications

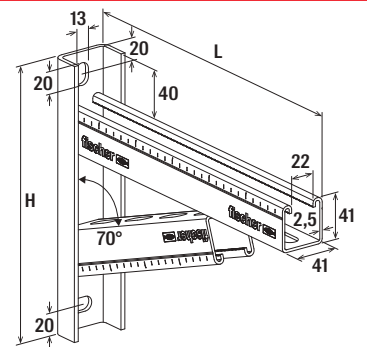
- Quick and easy installation of pipelines with heavy loads, (e.g. along the wall).
- For use in dry interior areas.

Advantages

- The robust construction, consisting of a basic and a support profile, allows for the bearing of heavy loads.
- The graduated range of lengths allows for an ideal adaptation to the application.
- The base plate's long slots, which are at 90° to one another, allow the arm to be easily aligned.
- The stamped serration in the channel gives the sliding nuts a secure hold for high shear loads, e.g. for vertical installation.

Properties

- Material: steel S235JR (material no. 1.0037) acc. to DIN EN 10025
- Zinc plating: electro zinc-plated



FCAM

Technical data

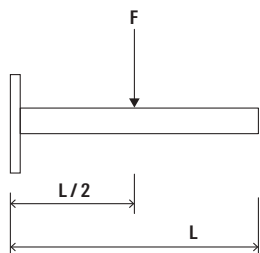
Item	Item no.	Length L [mm]	Height H [mm]	Sales unit [pcs]
FCAM 300	504477	300	246	1
FCAM 400	504479	400	270	1
FCAM 500	504480	500	284	1
FCAM 600	504482	600	319	1
FCAM 700	505460	700	343	1

Loads

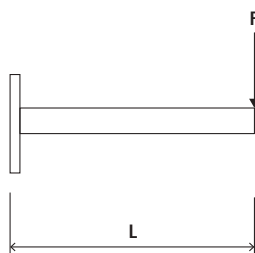
Item	Item no.	Max. recommended static load load case 1 F_{rec} [kN]	Max. recommended static load load case 2 F_{rec} [kN]	Max. recommended static load load case 3 F_{rec} [kN]	Sales unit [pcs]
FCAM 300	504477	7.00	3.70	7.00	1
FCAM 400	504479	7.50	2.80	7.50	1
FCAM 500	504480	6.50	2.30	6.50	1
FCAM 600	504482	6.00	1.90	6.00	1
FCAM 700	505460	5.50	1.30	5.50	1

4

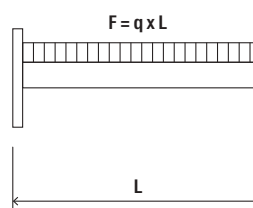
Load case 1



Load case 2



Load case 3



Cover cap FEC

The form-flush cover cap, tailored to the FUS channel profiles for a safe termination



Applications

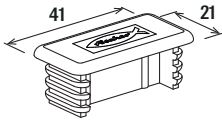
- Closing for channel FUS and cantilever arms FCA and large cantilever arms FCAM.

Advantages

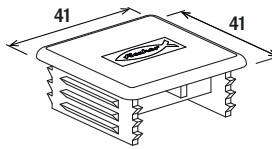
- Suitable for channels FUS 21, FUS 41, FUS 62 and cantilever arms FCA and FCAM.

Properties

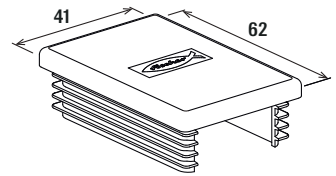
- Material: PE polyethylene, colour black



FEC 21 B



FEC 41 B



FEC 62 B

Technical data

Item	Item no.	For profile	Material	Sales unit [pcs]
FEC 21 B	077357	41/21	Polyethylene, black	100
FEC 41 B	077355	41/41	Polyethylene, black	100
FEC 62 B	505551	41/62	Polyethylene, black	100

Push-through connector PFCN

Push-through connector for the quickest and easiest connection of FUS profiles

4



Cross connection on channel



Cantilever with saddle flange

Applications

- Connection of FUS channels and construction elements by push-through principle.
- Universal fitting for all push-through connection elements and FUS profiles.
- For use in dry interior areas.

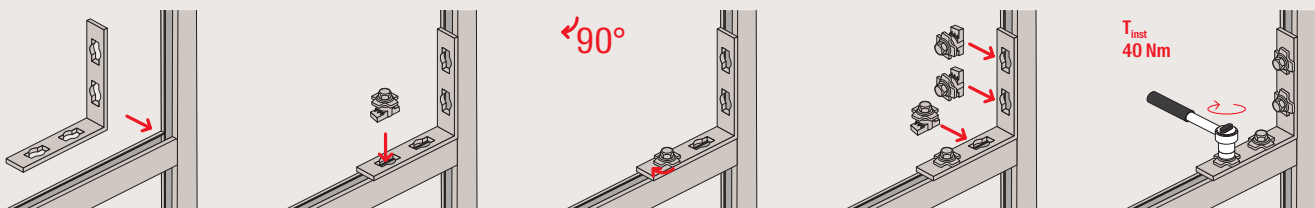
Advantages

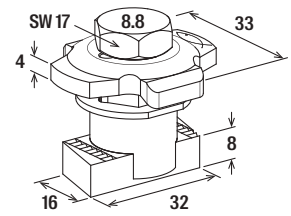
- The correct fit of the push-through connector and connection elements allows the quickest and easiest channel connection.
- The spring effect of the PFCN in set state guarantees a simple and precise positioning in the channel.
- The serration on the push-through connector provides a secure hold in the FUS channel.
- Installation by rotating 90° enables generally the post-installation in set channels.

Properties

- Material cap: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Material sliding nut: steel S420MC, EN 10149-2
- Material hexagon screw: 8.8 M10x28, DIN 933
- Material plastic parts: polypropylene
- Zinc plating: electro zinc-plated

Installation PFCN



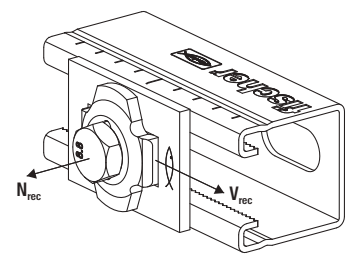


PFCN

Technical data

Item	Item no.	Thread	Sales unit
		A	[pcs]
PFCN 41	533739	M10	50

4



PFCN

Loads

Item	Item no.	Max. recommended tension load for FUS 1,5 mm N_{rec} [kN]	Max. recommended tension load for FUS 2,0 mm N_{rec} [kN]	Max. recommended tension load for FUS 2,5 mm N_{rec} [kN]	Max. recommended shear load for FUS 1,5 mm V_{rec} [kN]	Max. recommended shear load for FUS 2,0 mm V_{rec} [kN]	Max. recommended shear load for FUS 2,5 mm V_{rec} [kN]	Tightening torque for screw grade ≥ 8.8 T_{inst} [Nm]	Sales unit
PFCN 41	533739	4.0	5.0	7.0	4.0	4.5	5.0	40	50

Saddle flange PSF

Construction element - Saddle flange PSF

4



Pipe installation in escape route



Cantilever with saddle flange

Applications

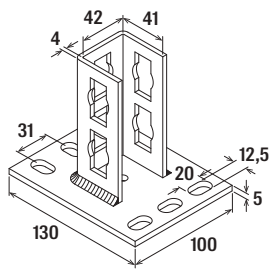
- Stable construction of connections between channels and building structures for the push-through system.
- For use in dry interior areas.

Advantages

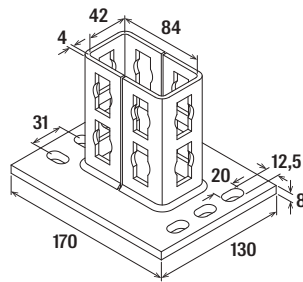
- The perfect-fit saddle allows a simple installation by inserting the mounting channels
- The saddle flange's stable design offers a secure hold for a load-bearing construction

Properties

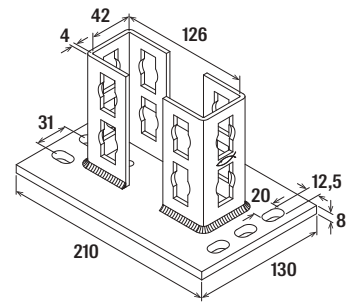
- Material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Zinc plating: electro zinc-plated



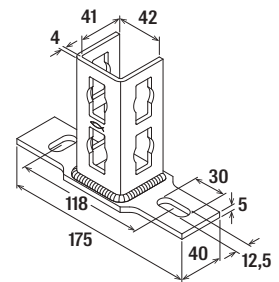
PSF 41



PSF 82



PSF 124



PSFQ 41

Technical data

Item	Item no.	For profile	Sales unit [pcs]
PSF 41	533740	21D, 41, 62	10
PSF 82	533741	41	5
PSF 124	533742	62	5
PSFQ 41	535266	41	10

See push-through connector PFCN for loads.

Universal bracket PUWS

Construction element - Universal bracket PUWS

4



3D-frame constructions

Applications

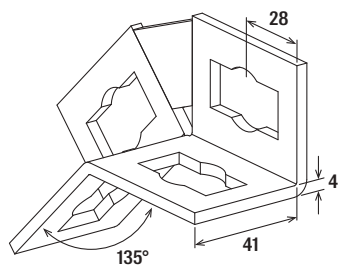
- Reinforcement of supporting structures for the push-through system.
- For use in dry interior areas.

Advantages

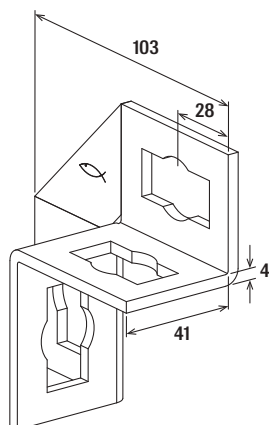
- The universal brackets for the connection of FUS channels gives a supporting structure, great stability and safety (we recommend using in pairs).
- Simple creation of channel constructions in connection with FUS channels and PFCN 41.
- Quick assembly by 90° rotation of the push-through connector PFCN 41 in the channel.

Properties

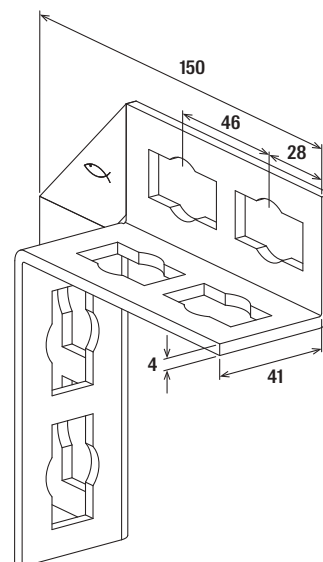
- Material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Zinc plating: electro zinc-plated



PUWS 2 x 2/135°



PUWS 2 x 2



PUWS 4 x 4

4

Technical data

Item	Item no.		Sales unit [pcs]
PUWS 2 x 2/135°	533731		10
PUWS 2 x 2	533733		10
PUWS 4 x 4	533734		8

See push-through connector PFCN for loads

Angle bracket PWK

Construction element - Angle bracket PWK

4



Solid frame construction



Solid frame construction

Applications

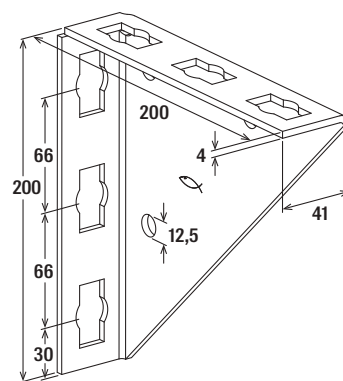
- Reinforcement in the push-through system and for lateral fixing to the substrate.
- For use in dry interior areas.

Advantages

- The stable angle bracket ensures a supporting structure with a very high level of stability and safety.
- Simple creation of channel constructions in connection with FUS channels and PFCN 41.
- Quick assembly by 90° rotation of the push-through connector PFCN 41 in the channel.

Properties

- Material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Zinc plating: electro zinc-plated



PWK 200

Technical data

Item	Item no.	Sales unit
PWK 200/200	533744	[pcs] 15

See push-through connector PFCN for loads.

Angle bracket fire-tested PUWF

Construction element - Angle bracket fire-tested PUWF



Frame construction for ceiling suspension with one level



Frame construction for ceiling suspension with two levels

4

Applications

- Unique construction element for use as a connection to the substrate and for 90° angle connections.
- Allows the construction of applications with or without fire resistance requirements.
- For use in dry interior areas.

Advantages

- The fire test report in accordance with MLAR/EN1366 guarantees objectively tested functional safety.
- The stable design of the angle bracket allows high loads and ensures a secure hold. (use in pairs is recommended).
- Quick installation thanks to 90° rotation of the PFCN 41 push-through connector in the channel.
- The hole geometry allows the angle bracket to be attached to the FUS mounting channel in 3 positions with identical load-bearing capacity.

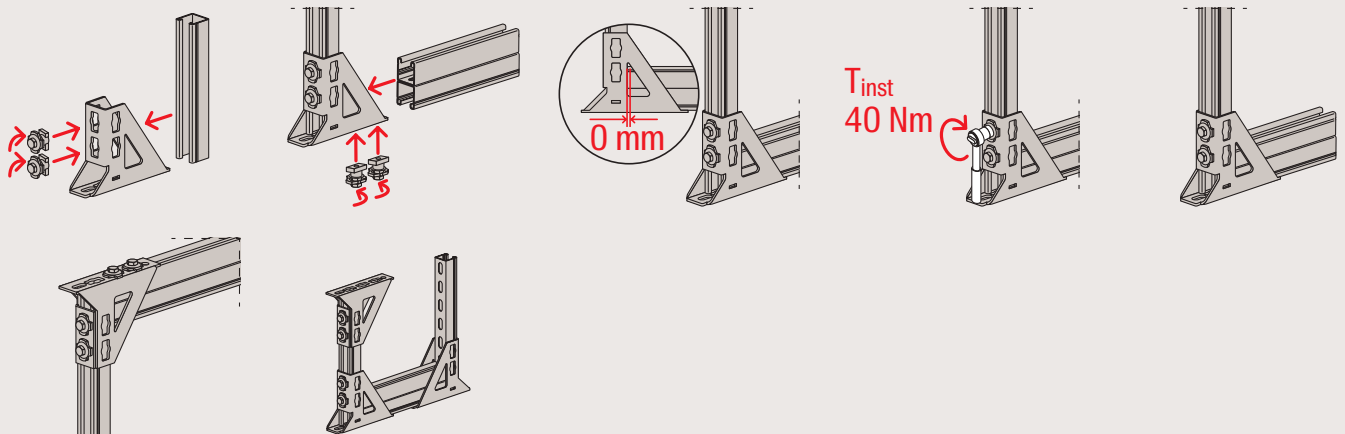
Properties

- Material: steel acc. to DIN EN 10025-2 (material no. 1.0038)
- Zinc plating: electro zinc-plated

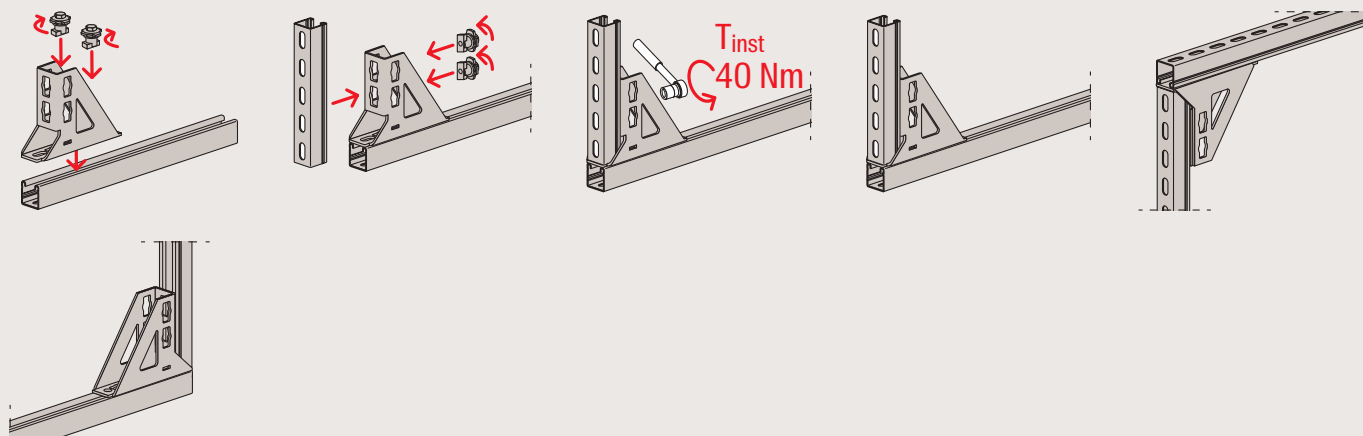
Certificates



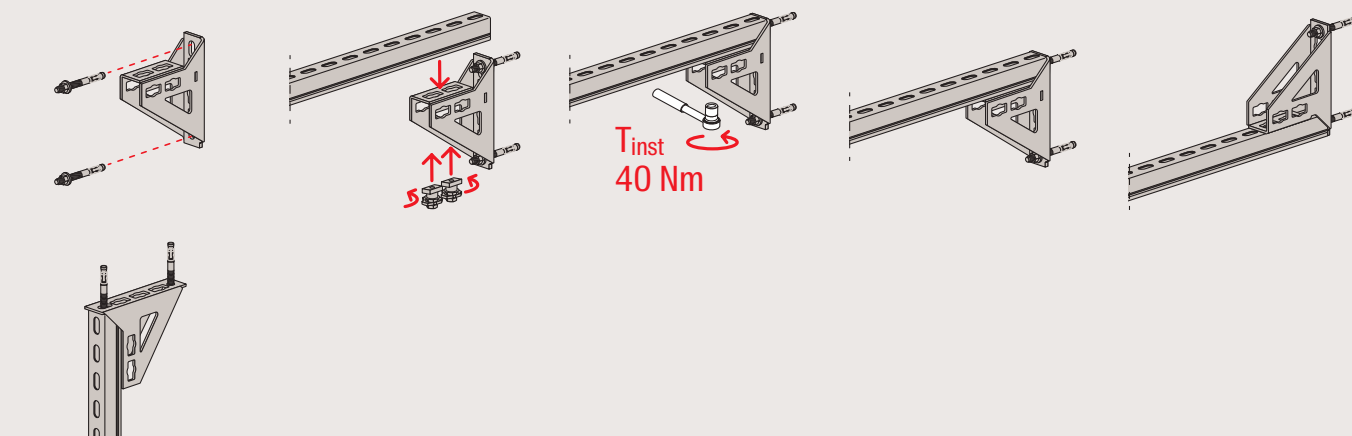
U-frame construction type 1



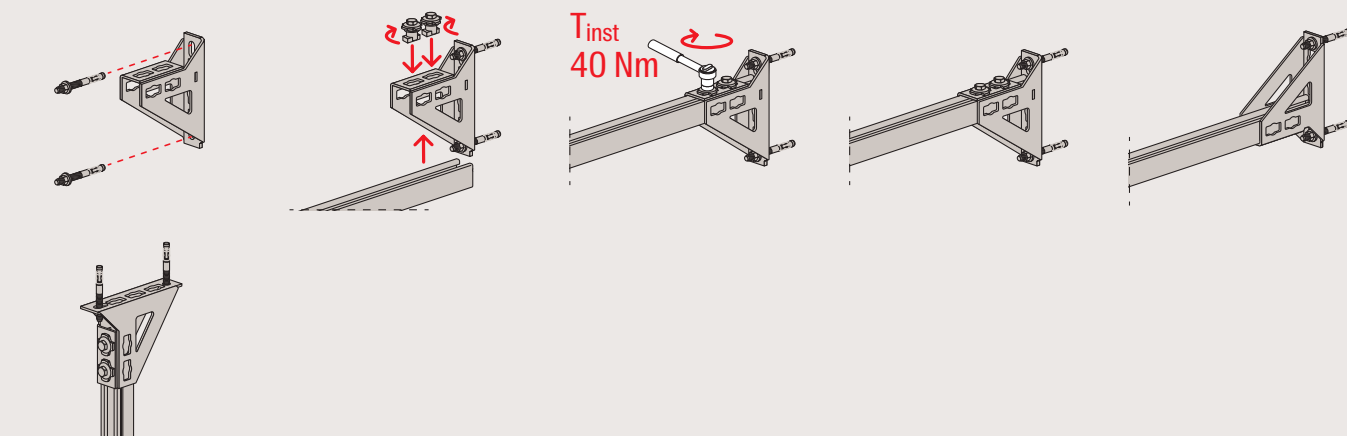
U-frame construction type 2



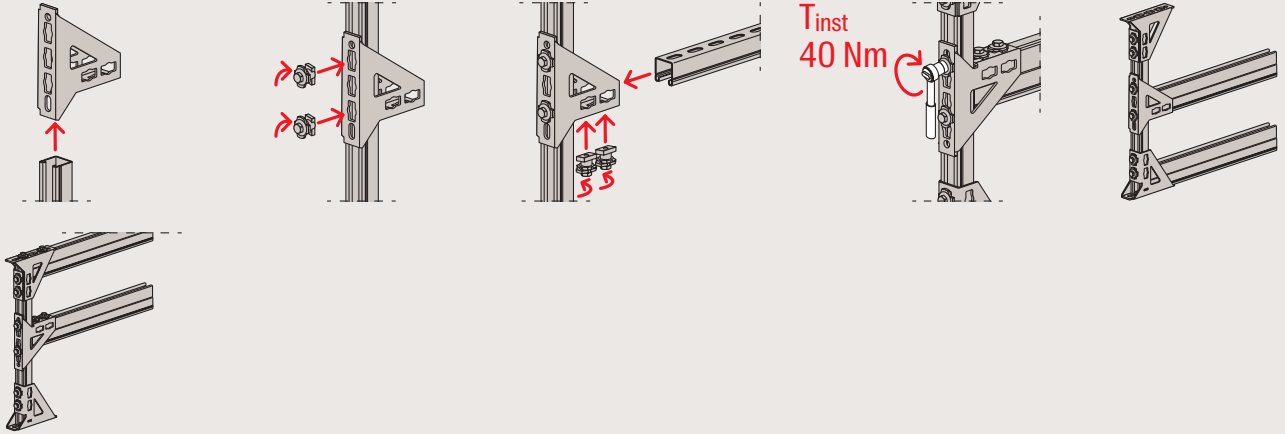
U-frame construction type 3



Substrate connection type 1

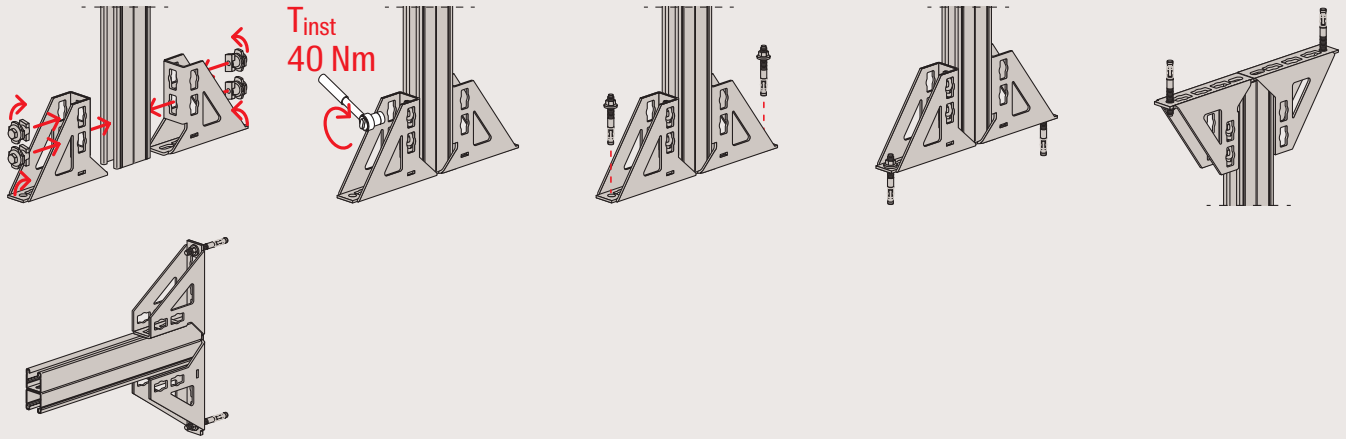


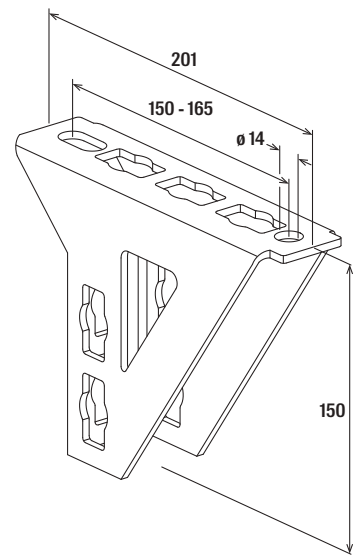
Substrate connection type 2



4

Substrate connection type 3



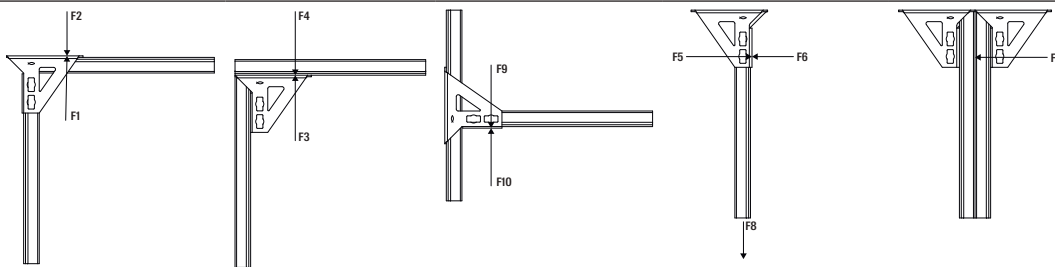


PUWF

Technical data

Item	Item no.	Fire test report	For profile	Sales unit [pcs]
Angle bracket fire-tested PUWF	571851	Yes	FUS 21D, 41, 62, 41D	10

Loads



Item	Item no.	Max. recommended load									
		F1 _{rec} [kN]	F2 _{rec} [kN]	F3 _{rec} [kN]	F4 _{rec} [kN]	F5 _{rec} [kN]	F6 _{rec} [kN]	F7 _{rec} [kN]	F8 _{rec} [kN]	F9 _{rec} [kN]	F10 _{rec} [kN]
PUWF	571851	7,04	4,89	6,18	5,23	8,65	15,18	16,51	8,29	6,1	4,81

Please note: Load tables for fire testing see chapter „Basics - good to know“.

Variable bracket PVB

Construction elements - Variable bracket PVB



Massive bracing of cantilever arm

Applications

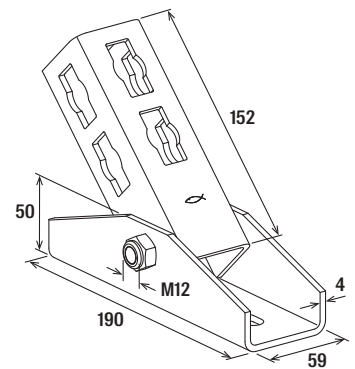
- Variable angular positioning of profile support in the push-through system.
- Bracket for installation with FUS channels from 0° to 180°.
- For use in dry interior areas.

Advantages

- The design of the variable bracket PVB enables the fixation of mounting channels at an angle of 0° to 180°.
- The holes in the connecting element make it compatible with the push-through connector PFCN.
- The punched holes in the base plate allow the direct fixing onto a wall, ceiling or onto a mounting channel by screw or anchor.

Properties

- Material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Zinc plating: electro zinc-plated



PVB

Technical data

Item	Item no.	Sales unit
PVB	534960	[pcs] 5

See push-through connector PFCN for loads.

Bracing elements PSAE

Construction elements – Bracing elements PSAE 300 and 500



Supported channel

4

Applications

- Elements for stable cantilever constructions made of FUS channels or FCA cantilever arms with push-through connector PFCN.
- For use in dry interior areas.

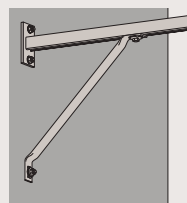
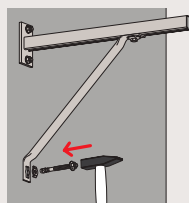
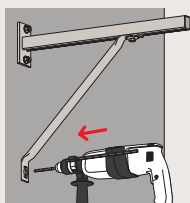
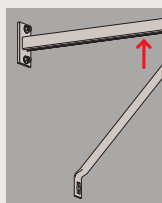
Advantages

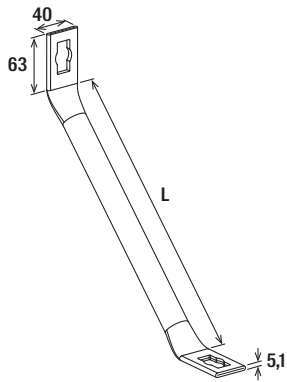
- The stable bracing element PSAE gives the supporting structure very high stability and safety.
- The holes in the base plate of the element make it compatible with the push-through connector PFCN.
- An additional PU-washer allows for fixing of elements with formholes directly onto a wall or ceiling by anchor or screw.
- Quick assembly by 90° rotation of the push-through connector PFCN 41 in the channel.

Properties

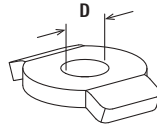
- Material: steel P235TR2 (material no. 1.0255) acc. to EN 10216-1
- Zinc plating: electro zinc-plated

Installation PSAE

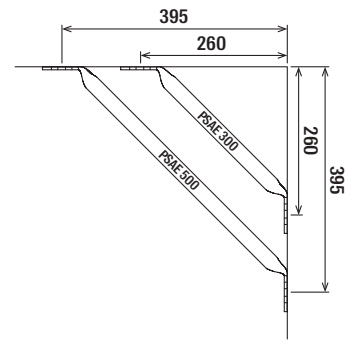




PSAE



PU



PSAE 300 and PSAE 500

4

Technical data

Item	Item no.	Length L [mm]	Hole-Ø D [mm]	Sales unit [pcs]
PSAE 300	535269	300	–	10
PSAE 500	535270	500	–	10
PU 10.5	535271	–	10.5	50
PU 12.5	535272	–	12.5	50

See push-through connector PFCN for loads.

Bracket PFFF

Construction elements - Brackets PFFF

4



Waste water pipe

Applications

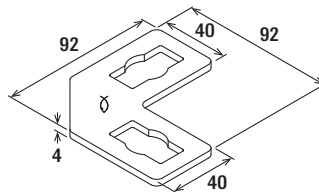
- Arrangement of simple channel constructions in the push-through system.
- For use in dry interior areas.

Advantages

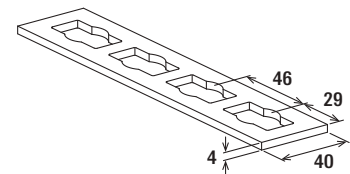
- The holes in the connecting elements make them compatible with the push-through connector PFCN.
- Simple creation of channel constructions in connection with FUS channels and PFCN 41.
- Quick assembly by 90° rotation of the push-through connector PFCN 41 in the channel.

Properties

- Material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Zinc plating: electro zinc-plated



PFFF 2L



PFFF 4L

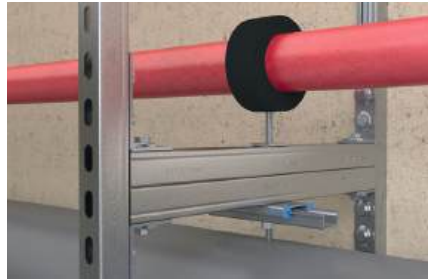
Technical data

Item	Item no.	Sales unit
PFFF 2L	533745	[pcs] 20
PFFF 4L	535268	25

See push-through connector PFCN for loads.

Bracket PFAF

Construction elements - angle brackets PFAF



Frame constructions



Lightweight installation on cantilever

4

Applications

- Arrangement of simple channel constructions in the push-through system.
- For use in dry interior areas.

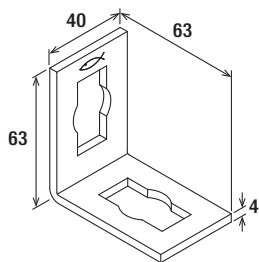
Advantages

- The holes in the connecting elements make them compatible with the push-through connector PFCN.
- Simple creation of channel constructions in connection with FUS channels and PFCN 41.
- Quick assembly by 90° rotation of the push-through connector PFCN 41 in the channel.

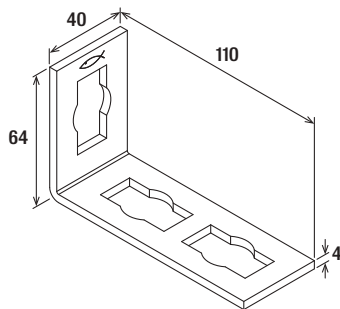
Properties

- Material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Zinc plating: electro zinc-plated

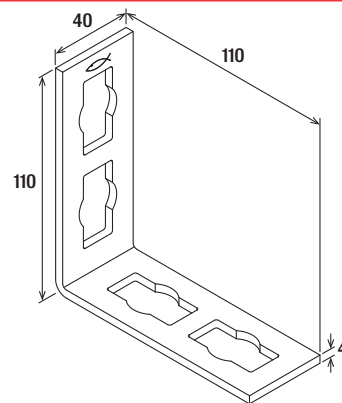
4



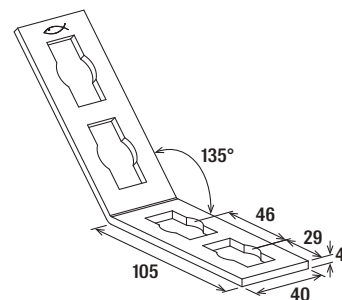
PFAF 2



PFAF 3



PFAF 4



PFAF 4/135°

Technical data

Item	Item no.	Sales unit
		[pcs]
PFAF 2	533735	25
PFAF 3	533736	25
PFAF 4	535267	25
PFAF 4/135°	533737	20

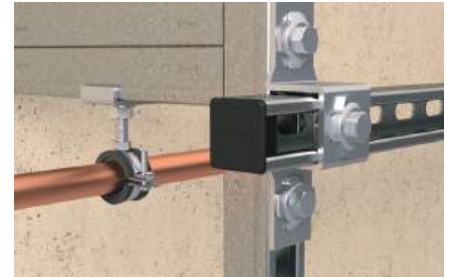
See push-through connector PFCN for loads.

Bracket PFUF

Construction elements - Bracket PFUF



Cross connection on channel



Cross connection on channel

4

Applications

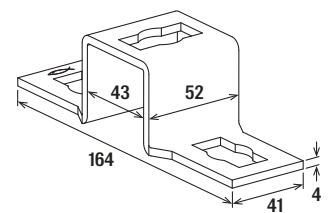
- Connecting element for the production of multi-dimensional constructions with FUS channels using push-through connector PFCN.
- For use in dry interior areas.

Advantages

- The various shapes of the connecting elements offer flexibility during the installation of channel constructions.
- The holes in the connecting elements make them compatible with the push-through channel nut PFCN.
- Simple creation of channel constructions in connection with FUS channels and PFCN 41.
- Quick assembly by 90° rotation of the push-through connector PFCN 41 in the channel.

Properties

- Material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Zinc plating: electro zinc-plated



PFUF 41

Technical data

Item	Item no.	Sales unit
PFUF 41	533738	[pcs] 25

See push-through connector PFCN for loads.

Brackets PFUF D

Connectors PFUF 2D, 3D and 4D for multi-sided constructions

4



Frame constructions



Frame constructions

Applications

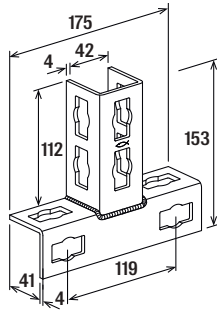
- Connecting elements for multidimensional constructions with FUS channels connected by the push-through connector PFCN.
- For use in dry interior areas.

Advantages

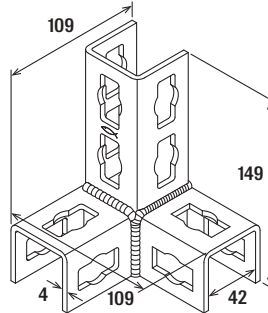
- The multidimensional PFUF construction elements enable multidimensional constructions in a very short time.
- The holes in the construction elements make them compatible with the push-through connector PFCN.
- The different shapes of the construction elements generate a high flexibility for channel constructions.
- Simple creation of channel constructions in connection with FUS channels and PFCN 41.
- Quick assembly by 90° rotation of the push-through connector PFCN 41 in the channel.

Properties

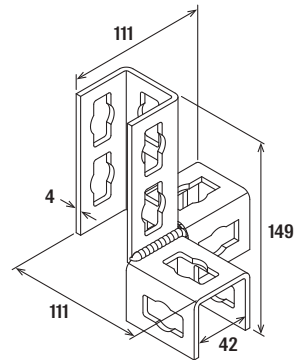
- Material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Zinc plating: electro zinc-plated



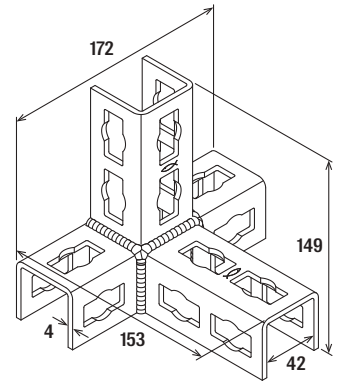
PFUF 2D



PFUF 3DL



PFUF 3DR



PFUF 4D

4

Technical data

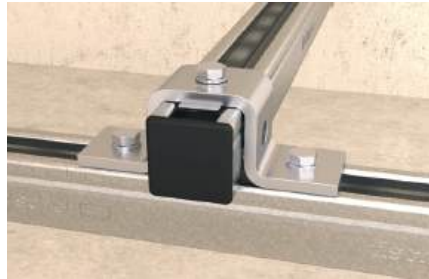
Item	Item no.	Sales unit
		[pcs]
PFUF 2D	563148	10
PFUF 3DL	535273	10
PFUF 3DR	535274	10
PFUF 4D	535275	10

See push-through connector PFCN for loads.

Channel nut FCN Clix P

Channel nut for quick and easy fixing in FUS profiles

4



Cross connection

Applications

- Connection of FUS channels and fixtures.
- For indoor and outdoor applications and environments with high stress to components due to corrosion.

Certificates



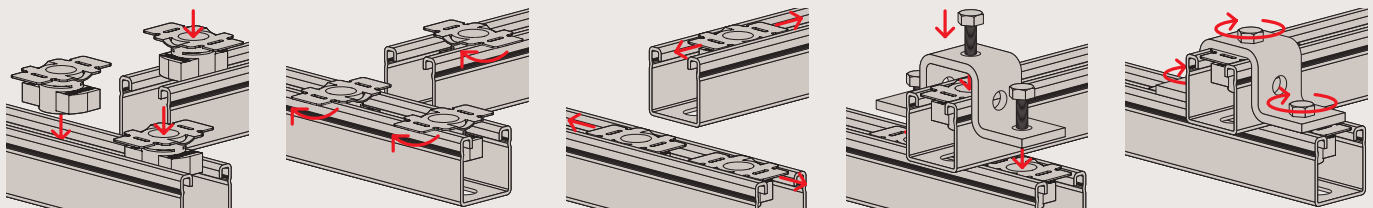
Advantages

- The sliding nut design enables a quick and easy setting in the channel.
- The spring effect of the plastic clasp guarantees simple and precise positioning in the channel.
- The FCN Clix P's flat plastic mounting with wings offers a good hold and a convenient mounting.
- The serration on the sliding nut provides a secure hold in the FUS channel.
- Installation by rotating 90° enables post-installation in installed channel.

Properties

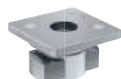
- Material: steel S235JR (material no. 1.0037) acc. to DIN EN 10025, plastic Nylon PA6
- Zinc plating: electro zinc-plated

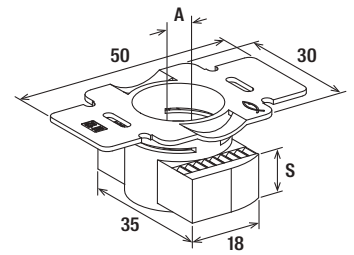
Installation FCN Clix P



See also:

Product family Channel nut FCN Clix M
Page 156



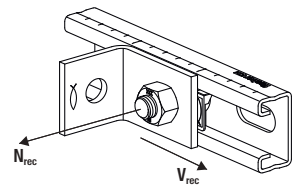


FCN Clix P

Technical data

4

Item	Item no.	Fire test report	Thread A	Thickness S [mm]	Sales unit [pcs]
FCN Clix P 12	559760	Yes	M12	9.5	50



FCN Clix P

Loads

Item	Item no.	Max. recommended tension load for FUS 1,5 mm N_{rec} [kN]	Max. recommended tension load for FUS 2,0 mm N_{rec} [kN]	Max. recommended tension load for FUS 2,5 mm N_{rec} [kN]	Max. recommended shear load for FUS 2,0 mm V_{rec} [kN]	Max. recommended shear load for FUS 2,5 mm V_{rec} [kN]	Tightening torque for screw grade ≥ 8.8 T_{inst} [Nm]	Sales unit [pcs]
FCN Clix P 12	559760	4.0	5.0	8.0	5.0	8.0	50	50

Channel nut FCN Clix M

Channel nut for quick and easy fixing in FUS profiles

4



Connection on channel

Applications

- Connection of pipe clamps to FUS channel under the use of threaded rods.
- For use in dry interior areas.

Advantages

- The sliding nut design enables a quick and easy setting in the channel.
- The serration on the sliding nut provides a secure hold in the FUS channel.
- Installation by rotating 90° enables post-installation in installed channel.

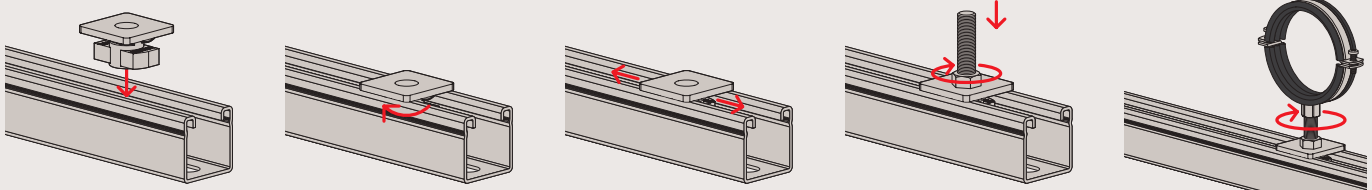
Properties

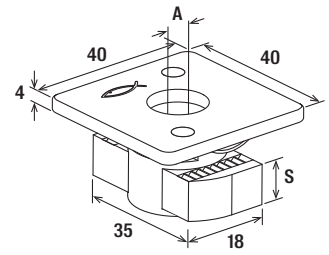
- Material: steel S235JR (material no. 1.0037) acc. to DIN EN 10025
- Material plastic: Nylon PA6
- Zinc plating: electro zinc-plated

Certificates



Installation FCN Clix M



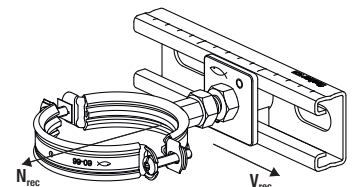


FCN Clix M

Technical data

4

Item	Item no.	Fire test report	Thread A	Thickness S [mm]	Sales unit [pcs]
FCN Clix M 6	559761	No	M6	6.0	50
FCN Clix M 8	559762	No	M8	6.0	50
FCN Clix M 10	559763	Yes	M10	8.0	50
FCN Clix M 12	559764	Yes	M12	9.5	50



FCN Clix M

Loads

Item	Item no.	Max. recommended tension load for FUS 1,5 mm	Max. recommended tension load for FUS 2,0 mm	Max. recommended tension load for FUS 2,5 mm	Tightening torque for screw grade ≥ 4.6	Sales unit [pcs]
		N_{rec} [kN]	N_{rec} [kN]	N_{rec} [kN]	T_{inst} [Nm]	
FCN Clix M 6	559761	2.5	3.0	3.0	5	50
FCN Clix M 8	559762	3.0	4.0	4.0	10	50
FCN Clix M 10	559763	4.0	5.0	8.0	15	50
FCN Clix M 12	559764	4.0	5.0	8.0	20	50

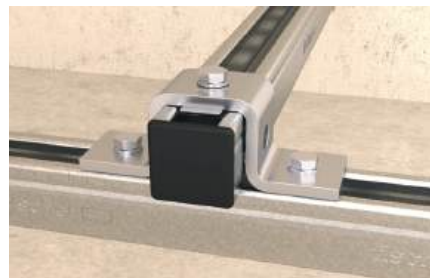
Channel nut FCN

Connector - Channel nut FCN

4



Lightweight installation on cantilever



Cross connection

Applications

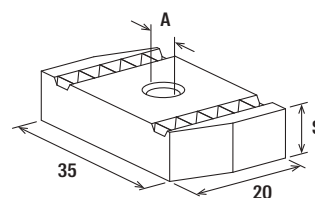
- Simple hammer-head nut for installation in FUS channels
- The FCN is suitable for the connection of different fixtures and pipe clamps with the channel.
- For use in dry interior areas.

Advantages

- The serration on the sliding nut provides a secure hold in the FUS channel.

Properties

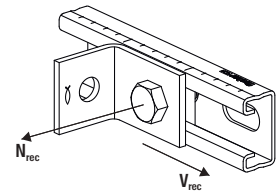
- Material: steel with min. tensile strength of 415 N/mm²
- Zinc plating: electro zinc-plated



FCN

Technical data

Item	Item no.	Thread A	Thickness S [mm]	Sales unit [pcs]
FCN 12	077411	M12	9.0	100



FCN

Loads

Item	Item no.	Max. recommended tension load for FUS 1,5 mm N_{rec} [kN]	Max. recommended tension load for FUS 2,0 mm N_{rec} [kN]	Max. recommended tension load for FUS 2,5 mm N_{rec} [kN]	Max. recommended shear load for FUS 1,5 mm V_{rec} [kN]	Max. recommended shear load for FUS 2,0/2,5 mm V_{rec} [kN]	Tightening torque for screw grade ≥ 8.8 T_{inst} [Nm]	Sales unit [pcs]
FCN 12	077411	4.0	5.0	8.0	2.0	2.5	50	100

4

T-head bolt FCN Clix S

Hammer-head bolt for quick and easy fixing of pipe clamps in FUS profiles

4



Lightweight installation on cantilever



Connection on channel

Applications

- For the quick connection of pipe clamps with FUS channels.
- For use in dry interior areas.

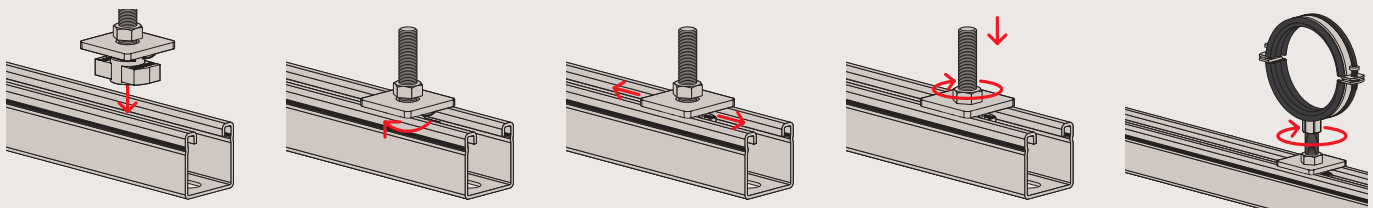
Advantages

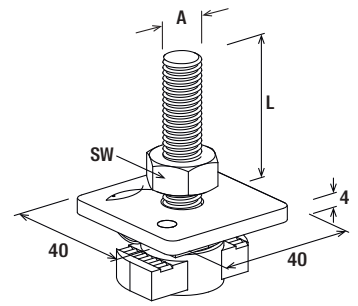
- The design of the FCN Clix S fits to the FUS channel profile and allows for a quick and easy installation.
- The spring effect of the FCN Clix S guarantees simple and precise positioning in the channel.
- Installation by rotating 90° enables post-installation to installed channel.
- The serration on the T-head bolt provides a secure hold in FUS channels.
- The pre-mounted threaded stud allows for direct mounting of the pipe clamps to the channel without additional material.

Properties

- Washer: S235JR (material no. 1.0038)
- Threaded stud: DIN 976 steel 4.8
- Hexagonal nut: resistance class 8
- Plastic cage: Polyamide PA 6
- Zinc plating: electro zinc-plated

Installation FCN Clix S



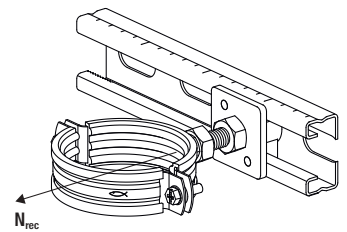


FCN Clix S

4

Technical data

Item	Item no.	Thread A	Length L [mm]	Width across nut SW [mm]	Sales unit [pcs]
FCN Clix S 8x30	567462	M8	30	13	50
FCN Clix S 8x40	567463	M8	40	13	50
FCN Clix S 8x60	567464	M8	60	13	50
FCN Clix S 8x80	567465	M8	80	13	50
FCN Clix S 8x100	567466	M8	100	13	50
FCN Clix S 10x30	567467	M10	30	17	50
FCN Clix S 10x40	567468	M10	40	17	50
FCN Clix S 10x60	567469	M10	60	17	50
FCN Clix S 10x100	567470	M10	100	17	50
FCN Clix S 12x40	567471	M12	40	19	50
FCN Clix S 12x60	567472	M12	60	19	50



FCN Clix S

Loads

Item	Item no.	Max. recommended tension load for FUS 1,5 mm N_{rec} [kN]	Max. recommended tension load for FUS 2,0 mm N_{rec} [kN]	Max. recommended tension load for FUS 2,5 mm N_{rec} [kN]	Installation torque T_{inst} [Nm]	Sales unit [pcs]
FCN Clix S 8x30	567462	3.0	4.0	4.0	10	50
FCN Clix S 8x40	567463	3.0	4.0	4.0	10	50
FCN Clix S 8x60	567464	3.0	4.0	4.0	10	50
FCN Clix S 8x80	567465	3.0	4.0	4.0	10	50
FCN Clix S 8x100	567466	3.0	4.0	4.0	10	50
FCN Clix S 10x30	567467	4.0	5.0	8.0	15	50
FCN Clix S 10x40	567468	4.0	5.0	8.0	15	50
FCN Clix S 10x60	567469	4.0	5.0	8.0	15	50
FCN Clix S 10x100	567470	4.0	5.0	8.0	15	50
FCN Clix S 12x40	567471	4.0	5.0	8.0	20	50
FCN Clix S 12x60	567472	4.0	5.0	8.0	20	50

T-head bolt FCSN

Hammer-head bolt for easy fixing in FUS profiles

4



Lightweight installation on cantilever



Connection on channel

Applications

- Connection of pipe clamps to the channel.
- For use in dry interior areas.

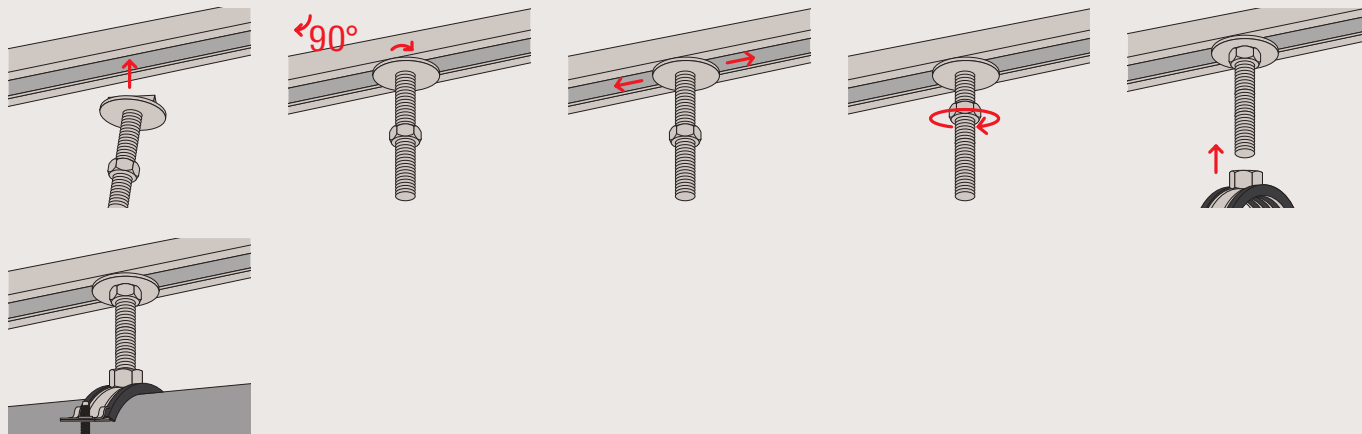
Advantages

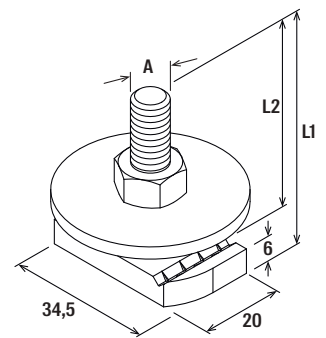
- The hammer-head nut design for an easy setting in the channel.
- Installation by rotating 90° enables post-installation in installed channel.

Properties

- Material washer: steel acc. to DIN EN 10139
- Hammer head bolt: steel with min. 400 N/mm²
- Material nut: strength category 4
- Zinc plating: electro zinc-plated

Installation FCSN

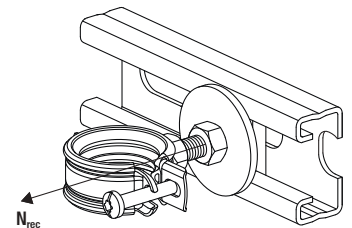




FCSN

Technical data

Item	Item no.	Thread A	Length L1 [mm]	Length L2 [mm]	Sales unit [pcs]
FCSN M 8 x 30	092960	M8	36	30	50
FCSN M 8 x 40	092961	M8	46	40	50
FCSN M 8 x 50	093354	M8	56	50	50
FCSN M 8 x 60	093355	M8	66	60	50
FCSN M 10 x 30	093360	M10	38	30	50
FCSN M 10 x 40	093361	M10	48	40	50
FCSN M 10 x 50	093362	M10	58	50	50
FCSN M 10 x 60	093363	M10	68	60	50
FCSN M 12 x 30	093366	M12	39	30	50
FCSN M 12 x 40	093367	M12	49	40	50



FCSN

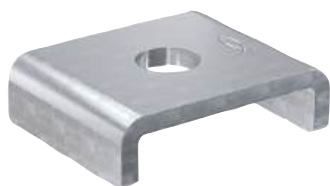
Loads

Item	Item no.	Max. recommended tension load for FUS 1,5 mm N_{rec} [kN]	Max. recommended tension load for FUS 2,0 mm N_{rec} [kN]	Max. recommended tension load for FUS 2,5 mm N_{rec} [kN]	Sales unit [pcs]
FCSN M 8 x 30	092960	3.0	4.0	4.0	50
FCSN M 8 x 40	092961	3.0	4.0	4.0	50
FCSN M 8 x 50	093354	3.0	4.0	4.0	50
FCSN M 8 x 60	093355	3.0	4.0	4.0	50
FCSN M 10 x 30	093360	4.0	4.0	5.0	50
FCSN M 10 x 40	093361	4.0	4.0	5.0	50
FCSN M 10 x 50	093362	4.0	4.0	5.0	50
FCSN M 10 x 60	093363	4.0	4.0	5.0	50
FCSN M 12 x 30	093366	4.0	4.0	5.0	50
FCSN M 12 x 40	093367	4.0	4.0	5.0	50

Channel washer HK 41

Connector - Channel washer HK

4



Lateral pipe mounting at channel



Channel installation at ceiling

Applications

- The channel washer HK is used for stable connections and to strengthen the FUS profile for a fixing to the substrate.
- For use in dry interior areas.

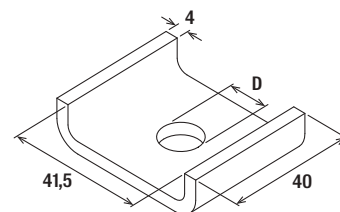
Advantages

- Perfect connection with the FUS channel thanks to laterally curved contours.
- The shape of the channel washer makes the push-through installations of channel profiles quick and easy.
- Fire resistance classification R120 & German model pipeline system guideline MLAR R30.

Properties

- Material: steel S235JR (material no. 1.0037) acc. to DIN EN 10025
- Zinc plating: electro zinc-plated

Certificates / Features



HK 41

Technical data

Item	Item no.	Ap- pro- val ETA	Fire test report	Hole-ø	Sales unit
				D [mm]	[pcs]
HK 41 8.5	547492	-	-	8.5	50
HK 41 10.5	547493	●	Yes	10.5	50
HK 41 12.5	547494	●	Yes	12.5	50
HK 41 17	561253	-	-	17	50

Saddle flange SF

Construction element - Saddle flange SF



Pipe installation in escape route



Cantilever with saddle flange

4

Applications

- For solid connections between the massive profile and building structures.
- For use in dry interior areas.

Certificates

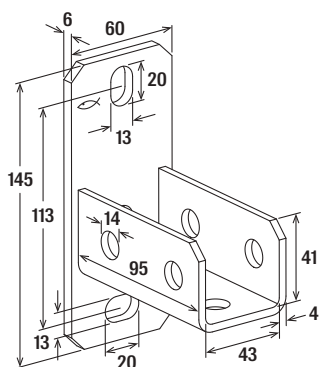


Advantages

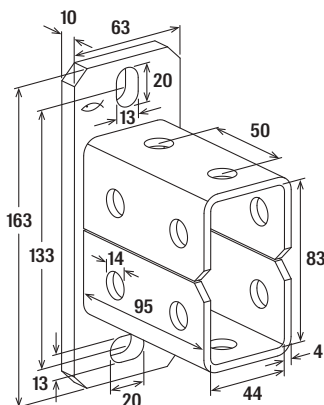
- The perfect-fit saddle of the SF enables a simple installation by inserting the channel.
- The saddle flange's stable design offers a secure hold for a load-bearing construction.
- Fire resistance classification R120 & German model pipeline system guideline MLAR R30.

Properties

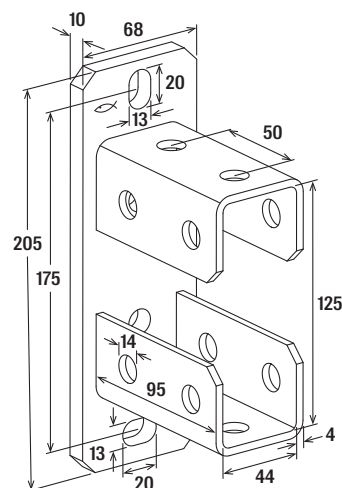
- Material base plate: steel DC01 (material no.1.0330) acc. to DIN EN 10139
- Zinc plating base plate: electro zinc-plated
- Material U-Profile: steel S235JR (material no. 1.0037) acc. to DIN EN 10025
- Zinc plating U-Profile: electro zinc-plated



SF L 41



SF L 82



SF L 124

Technical data

Item	Item no.	Fire test report	For profile	Sales unit [pcs]
SF L 41	504355	Yes	21, 41, 21D, 62	10
SF L 82	504357	-	41	5
SF L 124	504358	-	62	5

See channel nut FCN Clix P for loads.

Mounting bracket UWS

Construction element - Universal bracket UWS



3D-frame constructions

Applications

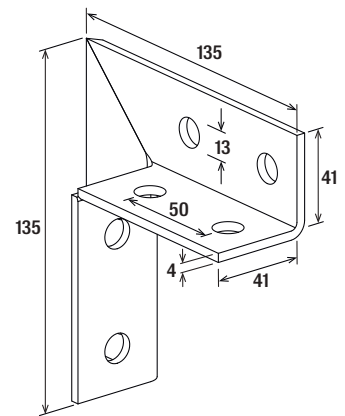
- Universal angle bracket for the reinforcement of supporting structures.
- For use in dry interior areas.

Advantages

- The universal bracket for the connection of fischer channels gives a supporting structure, great stability and safety (we recommend using in pairs).

Properties

- Material: steel S235JR (material no. 1.0037) acc. to DIN EN 10025
- Zinc plating: electro zinc-plated



UWS

Technical data

Item	Item no.	Sales unit
UWS	049479	[pcs] 10

See channel nut FCN Clix P for loads.

Angle bracket WK

Construction element - Angle bracket WK

4



Heavy drainage pipe under angle bracket



Solid frame construction

Applications

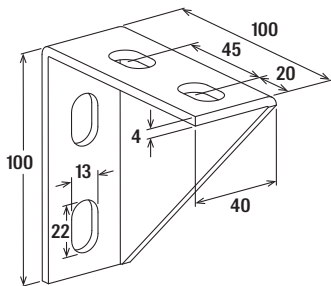
- Stable angle bracket for stiffening FUS channel constructions and for fixing pipelines.
- For use in dry interior areas.

Advantages

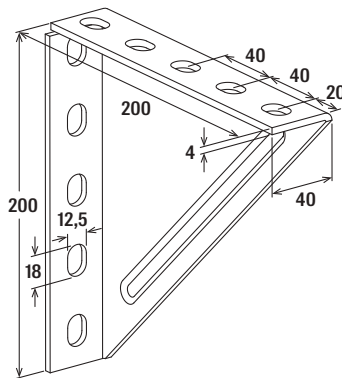
- The design of the angle bracket allows for the fixing of pipe clamps or channels.
- The stable angle ensures a very high level of stability and safety to the structure.

Properties

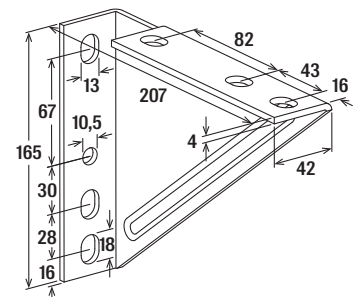
- Material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Zinc plating: electro zinc-plated



WK 100/100



WK 200/200

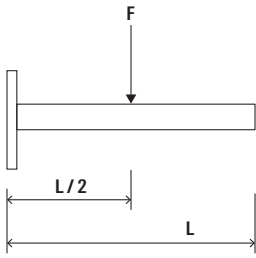


WK 207/165

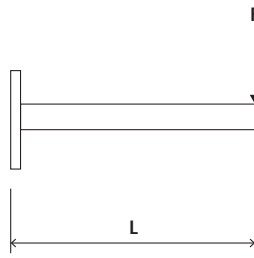
Technical data

Item	Item no.	Sales unit
		[pcs]
WK 100/100	063559	5
WK 200/200	079570	5
WK 207/165	079571	6

Load case 1



Load case 2



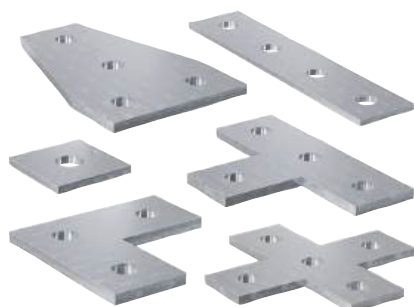
Loads

Item	Item no.	Max. recommended static load load case 1	Max. recommended static load load case 2	Sales unit
		F_{rec} [kN]	F_{rec} [kN]	[pcs]
WK 100/100	063559	-	4.00	5
WK 200/200	079570	4.00	1.80	5
WK 207/165	079571	-	1.80	6

Bracket FFF

Construction elements - Brackets FFF

4



Waste water pipe

Applications

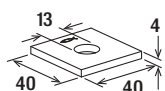
- Connecting elements for the joining or strengthening of simple channel constructions.
- For use in dry interior areas.

Advantages

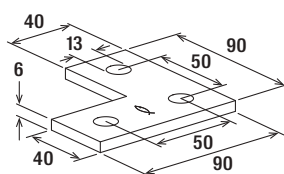
- The various shapes of the connectors offer flexibility when it comes to the installation of channel constructions.
- The holes in the connectors guarantee a system fit with the FCN Clix P.

Properties

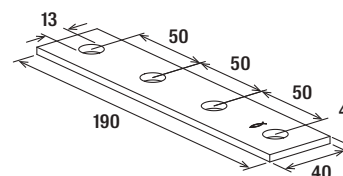
- Material: steel S235JR (material no. 1.0037) acc. to DIN EN 10025
- Zinc plating: electro zinc-plated



FFF 1



FFF 3L

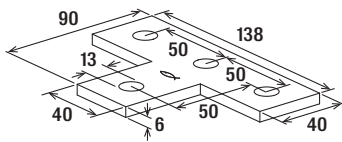


FFF 4

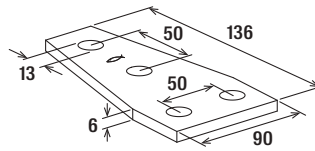
Technical data

Item	Item no.	Sales unit
		[pcs]
FFF 1	547500	25
FFF 3L	504498	25
FFF 4	547501	25

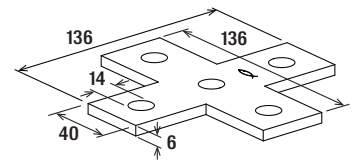
See channel nut FCN Clix P for loads.



FFF 4T



FFF 4D



FFF 5C

Technical data

Item	Item no.	Sales unit [pcs]
FFF 4T	504500	25
FFF 4D	504368	25
FFF 5C	553073	20

See channel nut FCN Clix P for loads.

Bracket FAF

Construction elements - Mounting brackets FAF

4



Frame constructions

Applications

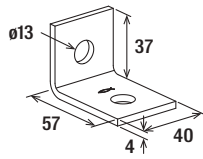
- Connecting elements for the joining or strengthening of simple channel constructions.
- For use in dry interior areas.

Advantages

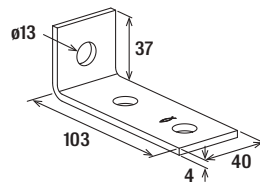
- The various shapes of the connectors offer flexibility when it comes to the installation of channel constructions.
- The holes in the connectors guarantee a system fit with the FCN Clix P.

Properties

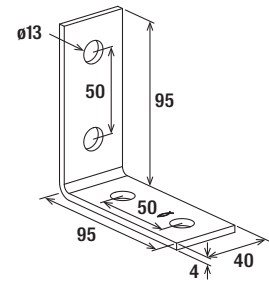
- Material: steel S235JR (material no. 1.0037) acc. to DIN EN 10025
- Zinc plating: electro zinc-plated



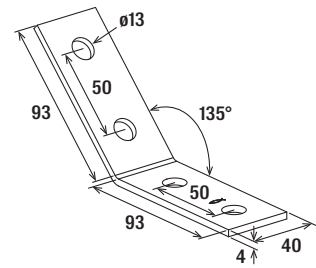
FAF 2



FAF 3



FAF 4



FAF 4/135°

4

Technical data

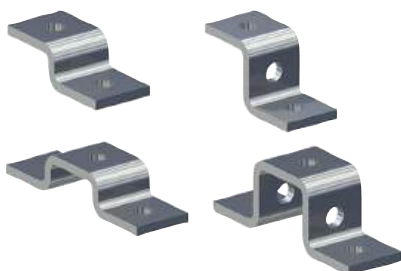
Item	Item no.	Sales unit
		[pcs]
FAF 2	547502	25
FAF 3	547503	25
FAF 4	547504	25
FAF 4/135°	547505	25

See channel nut FCN Clix P for loads.

Flange FZF, FUF

Construction elements - Mounting brackets FZF, FUF

4



Cross connection on channel

Applications

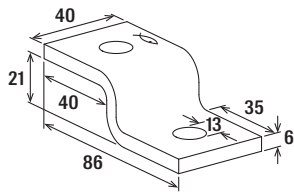
- Connecting elements for multi-dimensional channel constructions.
- For use in dry interior areas.

Advantages

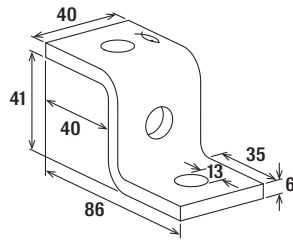
- The various shapes of the connecting elements offer flexibility during the installation of channel constructions.
- The holes in the connecting elements make them compatible with the FCN Clix P.

Properties

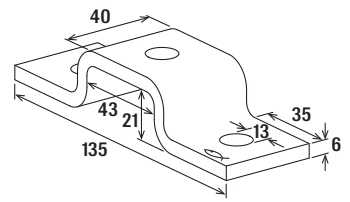
- Material: steel S235JR (material no. 1.0037) acc. to DIN EN 10025
- Zinc plating: electro zinc-plated



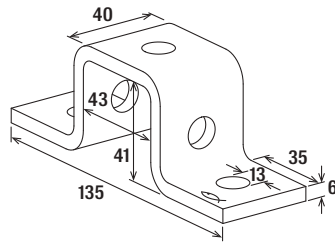
FZF 21



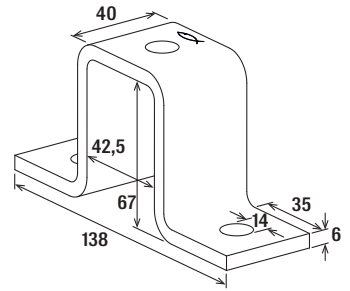
FZF 41



FUF 21



FUF 41



FUF 62

Technical data

Item	Item no.	Sales unit
		[pcs]
FZF 21	504375	25
FZF 41	504515	25
FUF 21	504376	25
FUF 41	504377	25
FUF 62	553076	15

See channel nut FCN Clix P for loads.

Flange FUF

Construction elements - Mounting brackets FUF

4



3D-frame constructions

Applications

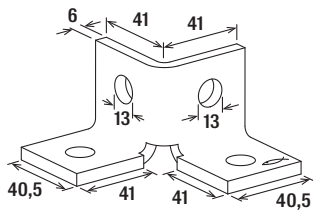
- Connecting elements for multi-dimensional channel constructions.
- For use in dry interior areas.

Advantages

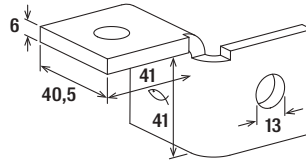
- The various shapes of the connecting elements offer flexibility during the installation of channel constructions.
- The holes in the connecting elements make them compatible with the FCN Clix P.

Properties

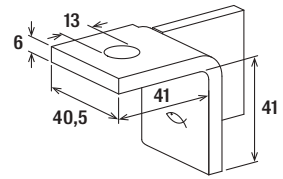
- Material: steel S235JR (material no. 1.0037) acc. to DIN EN 10025
- Zinc plating: electro zinc-plated



FUF 4Y

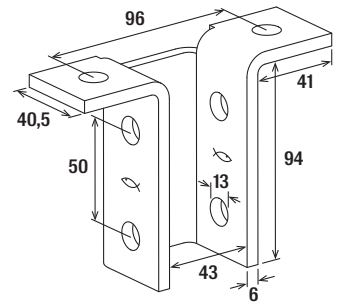


FUF 180°L



FUF 180°R

4



FUF 8T

Technical data

Item	Item no.	Sales unit
		[pcs]
FUF 4Y	504378	20
FUF 180°L	504379	20
FUF 180°R	504383	20
FUF 8T	504387	10

See channel nut FCN Clix P for loads.

Variable bracket VB

Construction element - Variable bracket VB

4



Massive bracing of cantilever arm

Applications

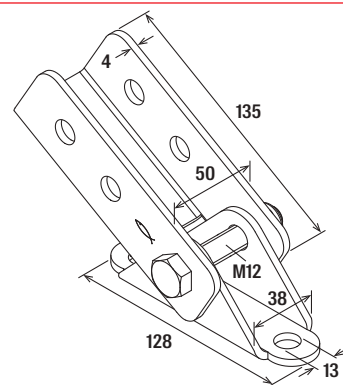
- Variable bracket to build up and strengthen supporting structures of FUS channel constructions with an angle from 0° to 180°.
- For use in dry interior areas.

Advantages

- The design of the variable bracket VB enables the fixation of mounting channels at an angle of 0° to 180°.
- Due to the holes on all three sides, the channels can be installed with the slot lateral.
- The punched holes in the base plate allow the direct fixing to the substructure or onto a mounting channel.

Properties

- Material: steel S235JR (material no. 1.0037) acc. to DIN EN 10025
- Zinc plating: electro zinc-plated



VB

Technical data

Item	Item no.	Sales unit
VB	545650	[pcs] 5

See channel nut FCN Clix P for loads.

Bracing element FYJB

Variable bracing element FYJB for bracing and suspending installation grids made of FUS channel profiles



Installation grid with FYJB



Connection to steel beam

4

Applications

- Variable bracing element for bracing installation grids made of FUS channel profiles to the steel structure.
- For use with M12 threaded rods.
- For use in dry interior areas.

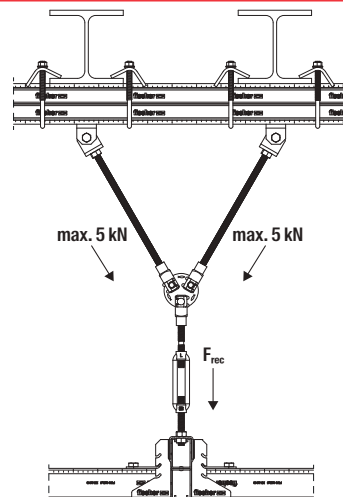
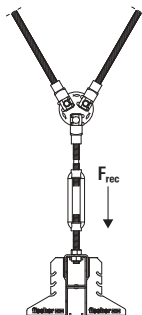
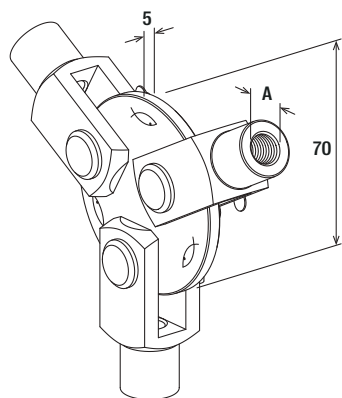
Advantages

- The design of the FYJB bracing element allows bracing at any angle using ordinary threaded rods.
- In conjunction with the SPS turnbuckle, the FYJB bracing element enables height adjustment and thus an easy way to align FUS channel systems, especially installation grids, horizontally.
- High stability thanks to robust construction to accommodate high loads.
- Optimal addition to our cross connectors FVS for setting up an installation grid in production halls, warehouses or comparable buildings.

Properties

- Material round plate and bolt: steel S235JR (material no. 1.0038)
- Material clevises: steel 11SMnPb30+C (material no. 1.0718)
- Material pin lock: spring steel
- Zinc plating: electro zinc-plated

4



FYJB

Technical data

Item	Item no.	Thread A	Max. recom. load FYJB F_{rec} [kN]	Max. recom. load FYJB with FUH13, TKR 82, and FUS 62 profile F_{rec} [kN]	Sales unit [pcs]
FYJB M12	569185	M12	13	10	10

Universal hinge FUH

Construction elements - Universal hinge FUH



Inclined bracing for installation grid

Applications

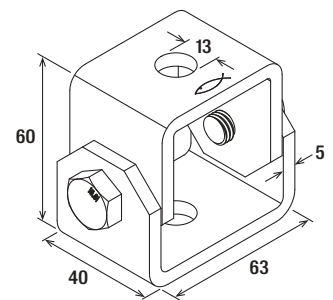
- Variable construction element for bracing with threaded rods or to fix pipelines to sloped substructures.
- Can be attached directly to the underground or to FUS channels.
- Flexible use especially for sloped substructures or undergrounds.
- For use in dry interior areas.

Advantages

- Flexible solution for many applications such as fixing of pipelines to sloped undergrounds or bracing with threaded rods.
- Free adjustable angle from 0° up to 180°.
- Easy to use.

Properties

- Material: steel S235JR (material no. 1.0037)
- Zinc plating: electro zinc-plated

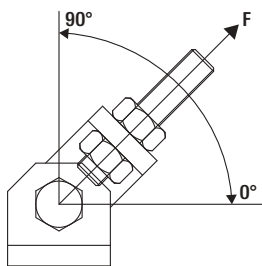


FUH

Technical data

Item	Item no.	Sales unit
FUH 13	543065	[pcs] 6

Loads



4

Angle	90°	75°	60°	45°	30°	0°
Maximum recommendet load [kN]	6	5,5	5	4	3	2,5

Intermediate values can be interpolated.

Threaded rod bracket FSB 45°

Construction element - Threaded rod bracket FSB 45°



Heavy pipe on cantilever



Bracing for fixed point

4

Applications

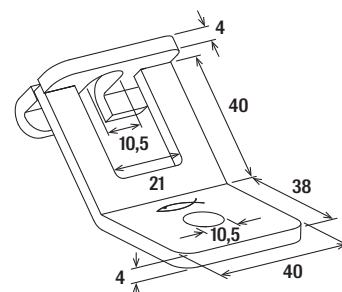
- For easy creation of bracing and stiffening using threaded rods and nuts.
- For use in dry interior areas.

Advantages

- The anchoring element's socket allows the fast insertion of a pre-mounted M10 threaded rod with nut.
- The hole in the base plate enables the direct fixing onto a wall or ceiling or onto a channel.

Properties

- Material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Zinc plating: electro zinc-plated

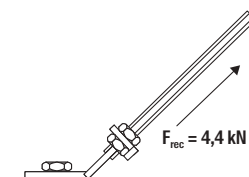


FSB 45°

Technical data

Item	Item no.	Sales unit
		[pcs]
FSB 45°	071269	20

Loads



Beam clamp TKR

Beam clamp for fixing of profiles to steel girders

4



Channel to steelbeam

Applications

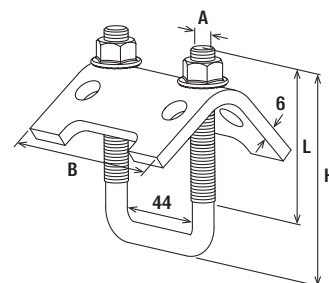
- Fixing to steel girders requires two clamps per connection.
- For use in dry interior areas.

Advantages

- The design of the beam clamp allows fixing without drilling or welding.
- The various lengths of the beam clamp enable the fixing on most standard beams.
- The shape of the beam clamp allows the simple adjustment of the channel connection.

Properties

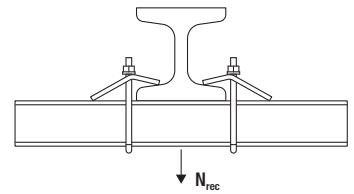
- Material plate/U-bolt pipe hanger: steel S235JR (material no. 1.0037) acc. to DIN EN 10025
- Material hexagon nut: steel resistance class 8
- Zinc plating: electro zinc-plated



TKR

Technical data

Item	Item no.	For profile	Thread A	Width B [mm]	Height H [mm]	Length L [mm]	Sales unit [pcs]
TKR 21 - 42	504363	21, 41	M8	79	97	50	20
TKR 82	504366	62, 41D	M10	79	137	80	20
TKR 124	504367	62	M10	79	179	80	10



TKR

Loads

Item	Item no.	Max. recom. static load (centr. tension) N_{rec} [kN]	Tightening torque T_{inst} [Nm]	Max. clamping range girders [mm]	Sales unit [pcs]
TKR 21 - 42	504363	5.00	15	25	20
TKR 82	504366	10.00	20	25	20
TKR 124	504367	10.00	20	25	10

Beam clamp FHBC hdg

Beam clamp FHBC - Beam clamp for the installation of FUS channels on steel girders

4



Pipe installation on steel girders

Applications

- For installing FUS profile channels between the flanges on steel girders and U-profiles.
- Suitable for FUS channels FUS 41.
- For indoor and outdoor application.

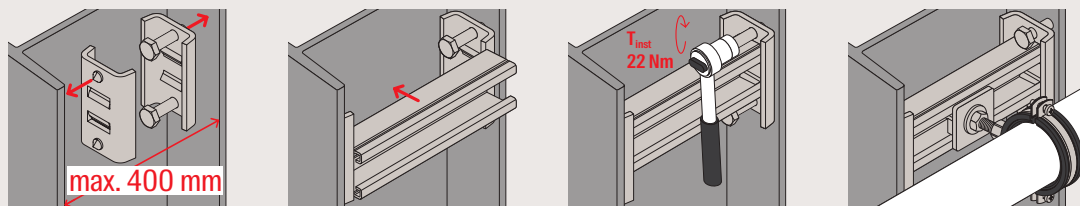
Advantages

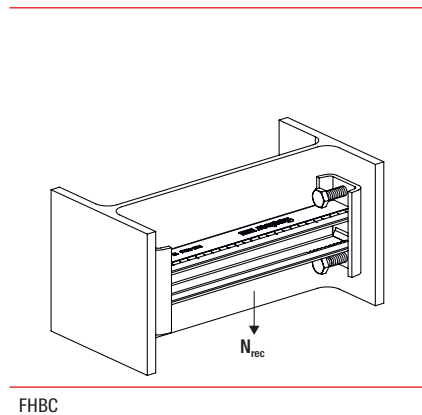
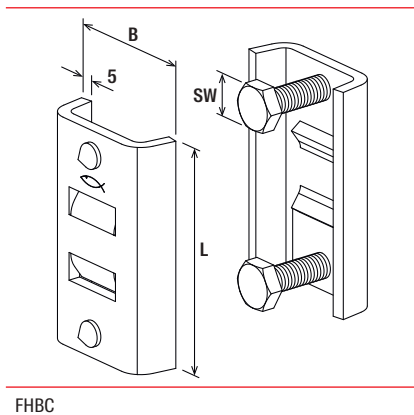
- Easy installation of FUS profile to the flanges of steel girders.
- The FHBC allows for the installation of FUS channels on steel girders without drilling.

Properties

- Material: steel S235JR (material no. 1.0037) acc. to DIN EN 10025 (74074882)
- Zinc plating: hot-dip galvanised

Installation FHBC





4

Technical data

Item	Item no.	Width	Length	Width across nut	Max. recom. static load (centr. tension)	Installation torque	Sales unit
		B [mm]	L [mm]	SW [mm]	N_{rec} [kN]	T_{inst} [Nm]	[pcs]
FHBC hdg	557375	55	90	17	3.60	22	10



5

Installation grid

Cross connector FVS II	190	
Channel FUS	191	
Channel connector FUF OC	192	
Channel washer HK 41	192	
Cover cap FEC	192	
Channel nut FCN Clix P	193	
Channel nut FCN	193	
Universal hinge FUH	193	
Turnbuckle SPS, Bolt BLR	194	
Beam clamp TKR	194	
Threaded rod G	194	
Hexagonal bolt SKS	195	
Washer U	195	
Hexagonal nut MU	195	
Hexagonal connector VM	196	
Bracing bracket FYJB	196	

Cross connector FVS II

Cross connector for creation of flexible installation grids made of FUS channels

5



Applications

- Cross connectors for creation of an installation grid by utilisation of FUS channels.
- For use in dry interior areas.

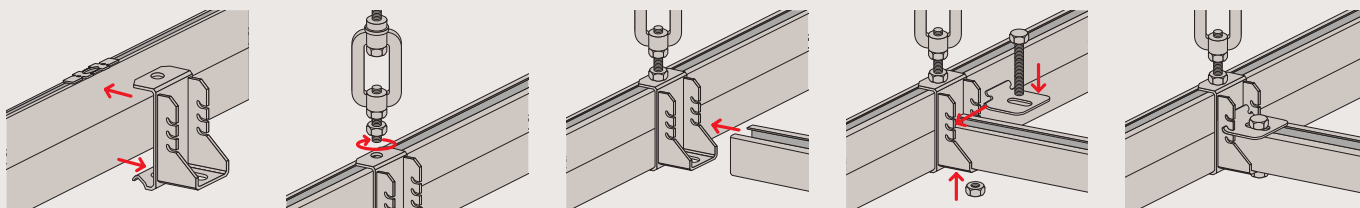
Advantages

- The design of the cross connector allows for a simple and time-saving creation of an installation grid.
- Ceiling suspension in combination with threaded rods
- Suitable for FUS channels (longitudinal): FUS 62D
- Suitable for FUS channels (transversal): FUS 41, FUS 21D, FUS 62, FUS 41D

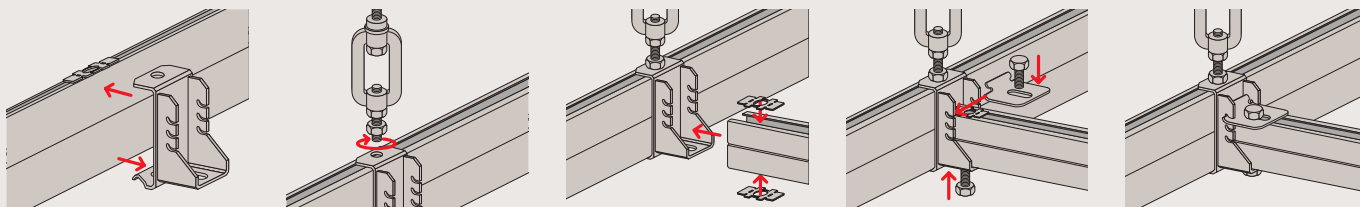
Properties

- Material: steel S235JR (material no. 1.0037) acc. to DIN EN 10025
- Zinc plating: electro zinc-plated

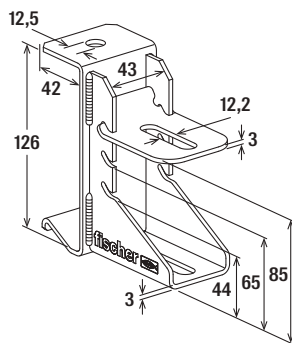
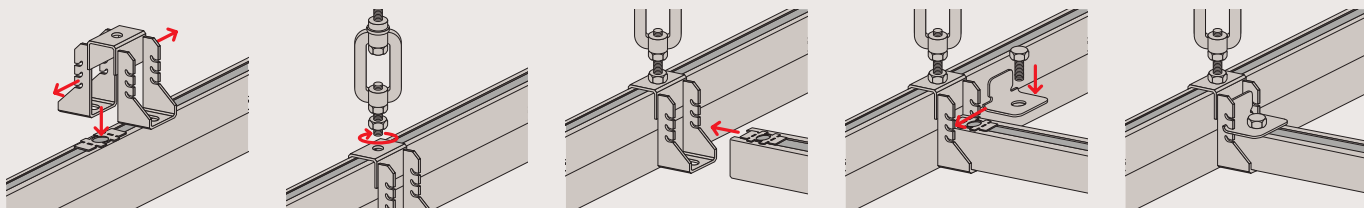
Installation FVS 3 with one channel



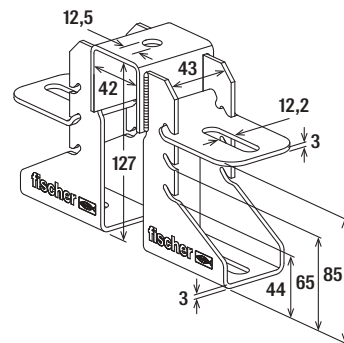
Installation FVS 3 with double channel



Installation FVS 4



FVS 3 II



FVS 4 II

5

Technical data

Item	Item no.	For profile	Sales unit [pcs]
FVS 3 II	543060	FUS channel crosswise: FUS 41, FUS 21D, FUS 62, FUS 41D, FUS channel lengthwise: FUS 62D	8
FVS 4 II	543063	FUS channel crosswise: FUS 41, FUS 21D, FUS 62, FUS 41D, FUS channel lengthwise: FUS 62D	5

Channel FUS



FUS 41

FUS 41 D

Item	Item no.	Ap- pro- val ETA	Length	Thickness	Profile weight	Sales unit
			L [mm]	S [mm]	[kg/m]	[pcs]
FUS 41/2,0 - 3 m	097658	●	3,000	2.0	2.06	1
FUS 41/2,0 - 6 m	097659	●	6,000	2.0	2.06	1
FUS 41/2,5 - 3 m	077347	●	3,000	2.5	2.45	1
FUS 41/2,5 - 6 m	077537	●	6,000	2.5	2.45	1
FUS 62/2,5 - 6 m	504457	●	6,000	2.5	3.27	1
FUS 21D/2,0 - 3 m	504458	●	3,000	2.0	2.87	1
FUS 21D/2,0 - 6 m	535531	●	6,000	2.0	2.87	1
FUS 41D/2,5 - 6 m	504459	●	6,000	2.5	4.89	1
FUS 62D/2,5 - 6 m	504460	●	6,000	2.5	6.55	1
FUS 41/2,0 - 2 m	040390	●	2,000	2.0	2.06	1
FUS 41/2,5 - 2 m	092295	●	2,000	2.5	2.45	1

See page 116 for article description

Channel connector FUF OC



FUF OC 62

Item	Item no.	Length L [mm]	Thickness S [mm]	Sales unit [pcs]
FUF OC 41	504517	200	4.0	20
FUF OC 62	504518	400	4.0	10

5

See page 122 for article description

Channel washer HK 41



HK

Item	Item no.	Ap- pro- val ETA	Sales unit [pcs]
HK 41 12.5	547494	●	50

See page 164 for article description

Cover cap FEC



FEC 21 B

FEC 41 B

FEC 62 B

Item	Item no.	Material	Sales unit [pcs]
FEC 21 B	077357	Polyethylene, black	100
FEC 41 B	077355	Polyethylene, black	100
FEC 62 B	505551	Polyethylene, black	100

See page 133 for article description

Channel nut FCN Clix P



FCN Clix P

Item	Item no.	Thread A	Sales unit [pcs]
FCN Clix P 12	559760	M12	50

See page 154 for article description

Channel nut FCN



FCN

Item	Item no.	Thread A	Sales unit [pcs]
FCN 12	077411	M12	100

See page 158 for article description

Universal hinge FUH



FUH

Item	Item no.	Sales unit [pcs]
FUH 13	543065	6

See page 181 for article description

Turnbuckle SPS, Bolt BLR



SPS		BLR	
Item	Item no.	Thread A	Sales unit [pcs]
SPS M 12	064090	M12	25
BLR 100 M12	064091	M12	25

5

See page 285 for article description

Beam clamp TKR



TKR			Sales unit
Item	Item no.	For profile	[pcs]
TKR 21 - 42	504363	21, 41	20
TKR 82	504366	62, 41D	20
TKR 124	504367	62	10

See page 184 for article description

Threaded rod G



G				
Item	Item no.	Thread A	Length l [mm]	Sales unit [pcs]
G M12 x 1000	020957	M12	1,000	20
G M12 x 2000	579746	M12	2,000	25
G M12 x 3000	064056	M12	3,000	5

See page 271 for article description

Hexagonal bolt SKS



SKS zp

Item	Item no.	Thread A	Length l [mm]	Width across nut SW [mm]	Sales unit [pcs]
SKS M12 x 20	570680	M12	20	19	100
SKS M12 x 25	535538	M12	25	19	100
SKS M12 x 30	570681	M12	30	19	100
SKS M12 x 35	570682	M12	35	19	100
SKS M12 x 55	077611	M12	55	19	100
SKS M12 x 65	535539	M12	65	19	50
SKS M12 x 85	505553	M12	85	19	100

See page 286 for article description

Washer U



U

Item	Item no.	Thickness S [mm]	Hole-Ø D [mm]	Sales unit [pcs]
U 12 x 24	557301	2.5	12.5	100
U 12 x 40	024649	3.0	12.5	100

See page 288 for article description

Hexagonal nut MU



MU

Item	Item no.	Thread A	Width across nut SW [mm]	Sales unit [pcs]
MU M12	024650	M12	19	100

See page 289 for article description

Hexagonal connector VM



VM

	Item no.	Thread A	Sales unit [pcs]
Item			
VM M 12	020971	M12	100

5

See page 290 for article description

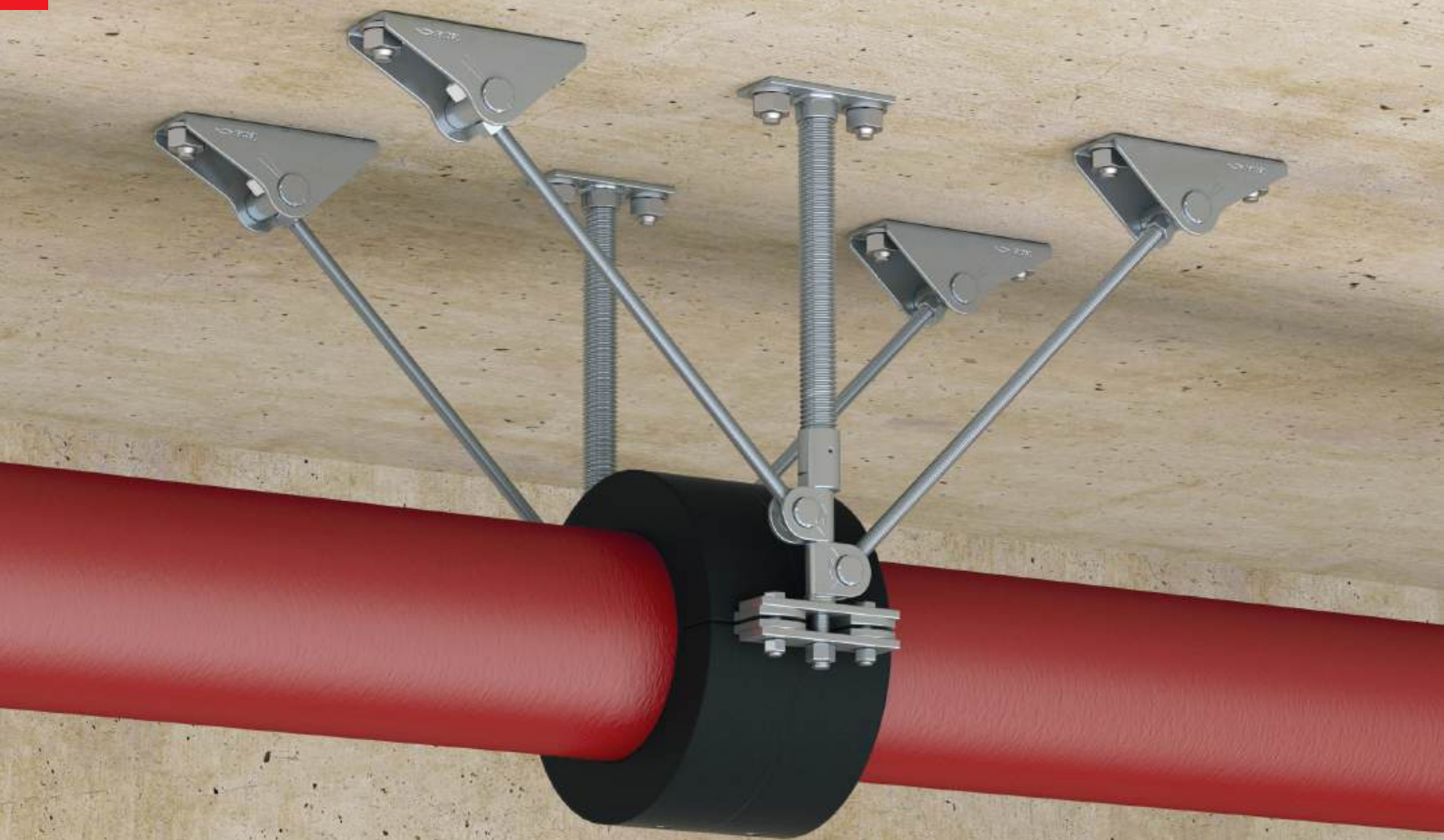
Bracing bracket FYJB



FYJB

	Item no.	Thread A	Sales unit [pcs]
Item			
FYJB M12	569185	M12	10

See page 179 for article description



6

Fixed point and sliding elements

FIXED POINTS

Fixed point saddle FFS-M / FFS-M2 200



Fixed point saddle FFS-H / FFS-H2 201



Fixed point compact FFP-C 202



Fixed point light FFP-L / FFP-L2 203



Fixed point light FFP-L22 / FFP-L42 204



Fixed point medium FFP-M / FFP-M2 205



Fixed point medium FFP-M22 / -M42 207



Fixed point medium FFP-MD2 / -MD4 208



Fixed point heavy FFP-HD22 / FFP-HD42 209



Fixed point solid clamp FFPC 211



Refrigeration fixed point clamp FFRC 213



Sound insulated fixed point FSFP 215



SLIDING ELEMENTS

Axial slider compact FASC 217



Axial slider light FASL 219



Axial slider medium FASM 221



Axial roller slider heavy FASH 223



Cross slider FCSM 225



Sliding hanger SB 227



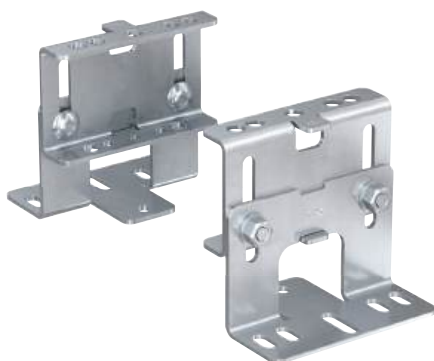
Pendulum hanger PDH / PDH K 228



Fixed point saddle FFS-H / FFS-H2

The fixed point solutions for medium loads

6



Hot water and circulation pipes



Media lines with thermal expansion

Applications

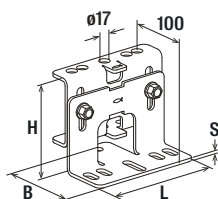
- Heating pipes
- Cooling lines
- Steam pipes
- Hot water and circulation pipes
- Media lines with thermal expansion
- For use in dry interior areas.

Advantages

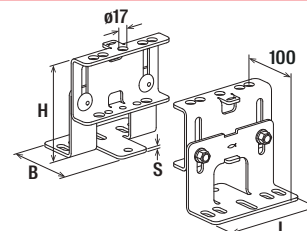
- The massive design of the fixed point and the massive subsoil connection allow the absorption of high loads for a stable and secure connection.
- The fixed points consist of components with matching thread sizes and plug holes, thus ensuring easy assembly with the same tools.
- The height adjustment of the fixed point allows for precise adjustment to match mounted pipelines and therefore ensures the safe function of the fixed point.
- The fixed point is suitable for mounting the FFPC fixed point solid clamp and FFRC refrigeration fixed point clamp for even more flexibility.

Properties

- Material: steel
- Bolts and nuts: strength class 8
- Zinc plating: electro zinc-plated
- Thermal capacity: -30 °C to +300 °C



FFS-M



FFS-M2

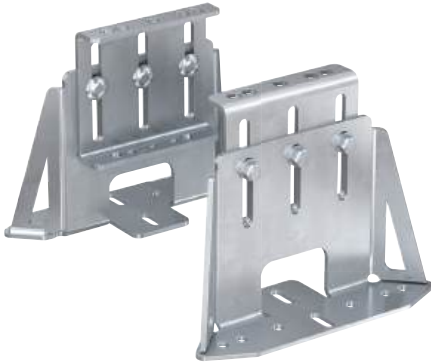
Technical data

Item	Item no.	Max. recom. pipe- \varnothing	Length	Width	Thickness	Min. construction height	Max. construction height	Max. recom. axial load	Installation torque	Sales unit
			L [mm]	B [mm]	S [mm]	H [mm]	H [mm]	$F_{x \text{ rec.}}$ [kN]	T_{inst} [Nm]	[pcs]
FFS-M	569306	168.3	180	130	5.0	120	180	9.0	80	2
FFS-M2	569307	168.3	180	130	5.0	120	180	23.0	80	1

Note: Maximum loads for orientation. Please contact fischer for the design of the fixed points. Load values for fixing with: 564586 Bolt anchor FAZ II Plus 12/10. For detailed information on assembly, see the assembly instructions for download or as an enclosure to the article.

Fixed point saddle FFS-H / FFS-H2

The fixed point solutions for heavy loads



Hot water and circulation pipes



Media lines with thermal expansion

6

Applications

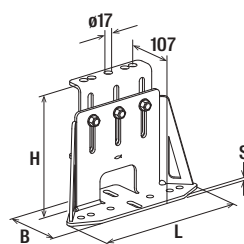
- Heating pipes
- Cooling lines
- Steam pipes
- Hot water and circulation pipes
- Media lines with thermal expansion
- For use in dry interior areas.

Advantages

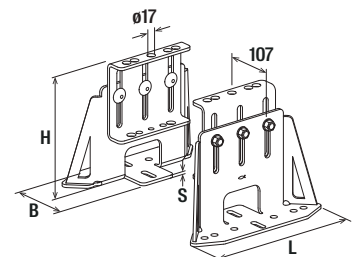
- The massive design of the fixed point and the massive subsoil connection allow the absorption of high loads for a stable and secure connection.
- The fixed points consist of components with matching thread sizes and plug holes, thus ensuring easy assembly with the same tools.
- The height adjustment allows for precise adjustment to match mounted pipelines and therefore ensures the safe function of the fixed point.
- The fixed point is suitable for mounting the FFPC and FFRC for even more flexibility.

Properties

- Material: steel
- Bolts and nuts: strength class 8
- Zinc plating: electro zinc-plated
- Thermal capacity: -30 °C to +300 °C



FFS-H



FFS-H2

Technical data

Item	Item no.	Max. recom. pipe- \varnothing	Length		Width		Thickness		Min. construction height		Max. construction height		Max. recom. axial load		Installation torque		Sales unit	
			L [mm]	B [mm]	S [mm]	H [mm]	H [mm]	$F_{x,rec.}$ [kN]	T_{inst} [Nm]	[pcs]								
FFS-H	569308	355.6	325	130	6.0	210	310	14.0	80	2								
FFS-H2	569309	355.6	325	130	6.0	210	310	36.0	80	1								

Note: Maximum loads for orientation. Please contact fischer for the design of the fixed points. Load values for fixing with: 564586 Bolt anchor FAZ II Plus 12/10. For detailed information on assembly, see the assembly instructions for download or as an enclosure to the article.

Fixed point compact FFP-C

The fixed point solutions for light loads



Media lines with thermal expansion

6

Applications

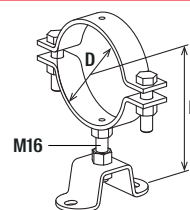
- Heating pipes
- Cooling lines
- Hot water and circulation pipes
- Media lines with thermal expansion
- For use in dry interior areas.

Advantages

- The compact design of the fixed point enables a small distance to the substrate and ensures safe transfer of the occurring forces into the substrate.
- The height adjustment on the base plate allows for precise adjustment to match mounted pipelines and therefore ensures the safe function of the fixed point.
- The fixed points consist of components with matching thread sizes and plug holes, thus ensuring easy assembly with the same tools.

Properties

- Material: steel
- Bolts and nuts: strength class 8
- Zinc plating: electro zinc-plated
- Thermal capacity: -30 °C to +300 °C
- Note: Fixed point solid clamp FFPC and the threaded rod G16 (chapter „Accessories“ Art. no. 568434) are not included in the set.



FFP-C

Technical data

Item	Item no.	Max. recom. pipe- ϕ D	Min. construction height H [mm]	Max. construction height H [mm]	Max. recom. axial load $F_{x \text{ rec.}}$ [kN]	Sales unit [pcs]
FFP-C	567696	60.3	100	150	5.0	1

Note: Maximum loads for orientation. Please contact fischer for the design of the fixed points. Load values for fixing with: 564586 Bolt anchor FAZ II Plus 12/10. For detailed information on assembly, see the assembly instructions for download or as an enclosure to the article.

Fixed point light FFP-L / FFP-L2

The fixed point solutions for light loads



Media lines with thermal expansion

Applications

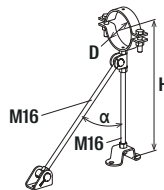
- Heating pipes
- Cooling lines
- Hot water and circulation pipes
- Media lines with thermal expansion
- For use in dry interior areas.

Advantages

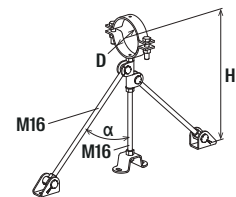
- The supports and braces on one or both sides of the variable fixed point allow adaptation to the distance of the pipeline to the subsoil.
- The fixed points consist of components with matching thread sizes and plug holes, thus ensuring easy assembly with the same tools.
- The height adjustment on the base plate allows for precise adjustment to match mounted pipelines and therefore ensures the safe function of the fixed point.

Properties

- Material: steel
- Bolts and nuts: strength class 8
- Zinc plating: electro zinc-plated
- Thermal capacity: -30 °C to +300 °C
- Note: Fixed point solid clamp FFPC and threaded rod G16 (chapter „Accessories“ Art. no. 568434) are not included in the set.



FFP-L



FFP-L2

Technical data

Item	Item no.	Max. recom. pipe- \varnothing D	Min. construction height H [mm]	Max. construction height H [mm]	Bracing angle α [°]	Max. recom. axial load $F_{x,rec.}$ [kN]	Sales unit [pcs]
FFP-L	567697	139.7	270	500	35 - 45	3.0	1
FFP-L2	567698	139.7	320	500	35 - 45	7.0	1

Note: Maximum loads for orientation. Please contact fischer for the design of the fixed points. Load values for fixing with: 564586 Bolt anchor FAZ II Plus 12/10. For detailed information on assembly, see the assembly instructions for download or as an enclosure to the article.

Fixed point light FFP-L22 / FFP-L42

The fixed point solutions for light loads

6



Media lines with thermal expansion

Applications

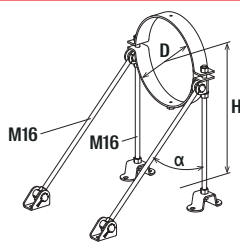
- Heating pipes
- Cooling lines
- Hot water and circulation pipes
- Media lines with thermal expansion
- For use in dry interior areas.

Advantages

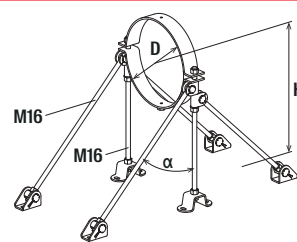
- The supports and braces on one or both sides of the variable fixed point allow adaptation to the distance of the pipeline to the subsoil.
- The fixed points consist of components with matching thread sizes and plug holes, thus ensuring easy assembly with the same tools.
- The height adjustment on the base plate allows for precise adjustment to match mounted pipelines and therefore ensures the safe function of the fixed point.

Properties

- Material: steel
- Bolts and nuts: strength class 8
- Zinc plating: electro zinc-plated
- Thermal capacity: -30 °C to +300 °C
- Note: Fixed point solid clamp FFPC and the threaded rod G16 (chapter „Accessories“ Art. no. 568434) are not included in the set.



FFP-L22



FFP-L42

Technical data

Item	Item no.	Max. recom. pipe- \varnothing	Min. construction height	Max. construction height	Bracing angle	Max. recom. axial load	Sales unit
		D	H [mm]	H [mm]	α [°]	$F_{x \text{ rec.}}$ [kN]	[pcs]
FFP-L22	567699	193.7	200	500	35 - 45	4.0	1
FFP-L42	567700	193.7	250	500	35 - 45	7.0	1

Note: Maximum loads for orientation. Please contact fischer for the design of the fixed points. Load values for fixing with: 564586 Bolt anchor FAZ II Plus 12/10. For detailed information on assembly, see the assembly instructions for download or as an enclosure to the article.

Fixed point medium FFP-M / FFP-M2

The fixed point solutions for medium loads



Media lines with thermal expansion

Applications

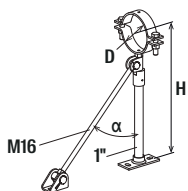
- Heating pipes
- Cooling lines
- Steam pipes
- Hot water and circulation pipes
- Media lines with thermal expansion
- For use in dry interior areas.

Advantages

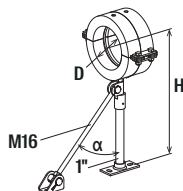
- The supports and braces on one or both sides of the variable fixed point allow adaptation to the distance of the pipeline to the subsoil.
- The fixed points consist of components with matching thread sizes and plug holes, thus ensuring easy assembly with the same tools.
- The height adjustment on the base plate allows for precise adjustment to match mounted pipelines and therefore ensures the safe function of the fixed point.
- The fixed point is suitable for mounting the FFPC fixed point solid clamp and FFRC refrigeration fixed point clamp for even more flexibility.

Properties

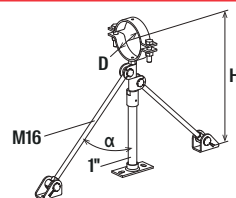
- Material: steel
- Bolts and nuts: strength class 8
- Zinc plating: electro zinc-plated
- Thermal capacity: -30 °C to +300 °C
- Note: Fixed point solid clamps FFPC and FFRC and the threaded rod G16 and G1" (chapter „Accessories“ Art. no. 568434 and 568435) are not included in the set.



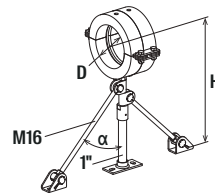
FFP-M with FFPC



FFP-M with FFRC



FFP-M2 with FFPC



FFP-M2 with FFRC

6

Technical data

Item	Item no.	Max. recom. pipe-ø	Min. construction height	Max. construction height	Bracing angle	Max. recom. axial load	Sales unit
		D	H [mm]	H [mm]	α [°]	$F_{x \text{ rec.}}$ [kN]	[pcs]
FFP-M	567701	193.7	310	1,000	35 - 45	4.0	1
FFP-M2	567702	193.7	360	1,000	35 - 45	8.0	1

Note: Maximum loads for orientation. Please contact fischer for the design of the fixed points. Load values for fixing with: 564586 Bolt anchor FAZ II Plus 12/10. For detailed information on assembly, see the assembly instructions for download or as an enclosure to the article.

Fixed point medium FFP-M22 / -M42

The fixed point solutions for medium loads



Media lines with thermal expansion

Applications

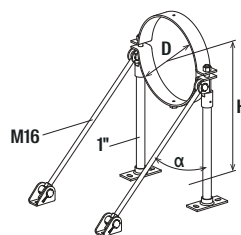
- Heating pipes
- Cooling lines
- Steam pipes
- Hot water and circulation pipes
- Media lines with thermal expansion
- For use in dry interior areas.

Advantages

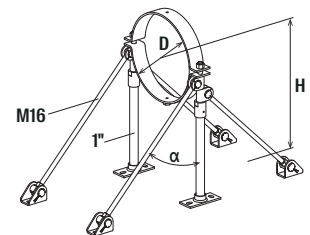
- The supports and braces on one or both sides of the variable fixed point allow adaptation to the distance of the pipeline to the subsoil.
- The fix points consist of components with matching thread sizes and plug holes, thus ensuring easy assembly with the same tools.
- The height adjustment on the base plate allows for precise adjustment to match mounted pipelines and therefore ensures the safe function of the fixed point.
- The axially and laterally adjustable bracing angles allow the subsoil connection to be adapted to the conditions on site and simplify the installation.

Properties

- Material: steel
- Bolts and nuts: strength class 8
- Zinc plating: electro zinc-plated
- Thermal capacity: -30 °C to +300 °C
- Note: Fixed point solid clamp FFPC and the threaded rod G16 and G1" (chapter „Accessories“ Art. no. 568434 and 568435) are not included in the set.



FFP-M22



FFP-M42

Technical data

Item	Item no.	Max. recom. pipe-ø	Min. construction height	Max. construction height	Bracing angle	Max. recom. axial load	Sales unit
		D	H [mm]	H [mm]	α [°]	F _{x,rec.} [kN]	[pcs]
FFP-M22	567703	193.7	210	1,500	35 - 45	7.0	1
FFP-M42	567704	193.7	260	1,500	35 - 45	14.0	1

Note: Maximum loads for orientation. Please contact fischer for the design of the fixed points. Load values for fixing with: 564586 Bolt anchor FAZ II Plus 12/10. For detailed information on assembly, see the assembly instructions for download or as an enclosure to the article.

Fixed point medium FFP-MD2 / -MD4

The fixed point solutions for medium loads

6



Media lines with thermal expansion

Applications

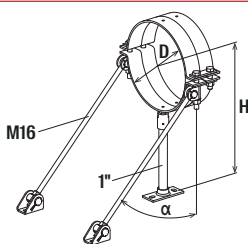
- Heating pipes
- Cooling lines
- Steam pipes
- Hot water and circulation pipes
- Media lines with thermal expansion
- For use in dry interior areas.

Advantages

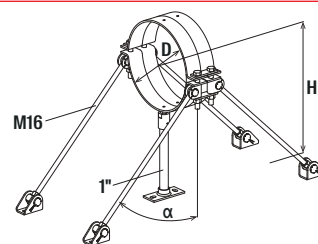
- The supports and braces on one or both sides allow adaptation to the distance of the pipeline to the subsoil.
- Easy assembly with the same tools can be ensured by components with the same thread sizes and plug holes.
- The height adjustment on the base plate allows for precise adjustment to match mounted pipelines and therefore ensures the safe function of the fixed point.
- The axially and laterally adjustable bracing angles allow the subsoil connection to be adapted to the conditions on site and simplify the installation.

Properties

- Material: steel
- Bolts and nuts: strength class 8
- Zinc plating: electro zinc-plated
- Thermal capacity: -30 °C to +300 °C
- Note: Fixed point solid clamp FFPC and the threaded rod G16 and G1" (chapter „Accessories“ Art. no. 568434 and 568435) are not included in the set.



FFP-MD2-V1 and FFP-MD2-V2



FFP-MD4-V1 and FFP-MD4-V2

Technical data

Item	Item no.	Max. recom. pipe- ϕ D	Min. construction height H [mm]	Max. construction height H [mm]	Bracing angle α [°]	Max. recom. axial load $F_{x\text{rec.}}$ [kN]	Sales unit [pcs]
FFP-MD2-V1	567706	193.7	250	1,500	35 - 45	12.0	1
FFP-MD2-V2	567707	355.6	330	1,500	35 - 45	12.0	1
FFP-MD4-V1	567709	193.7	250	1,500	35 - 45	18.0	1
FFP-MD4-V2	567710	355.6	330	1,500	35 - 45	18.0	1

Note: Maximum loads for orientation. Please contact fischer for the design of the fixed points. Load values for fixing with: 564586 Bolt anchor FAZ II Plus 12/10. For detailed information on assembly, see the assembly instructions for download or as an enclosure to the article.

Fixed point heavy FFP-HD22 / FFP-HD42

The fixed point solutions for heavy loads



Media lines with thermal expansion

6

Applications

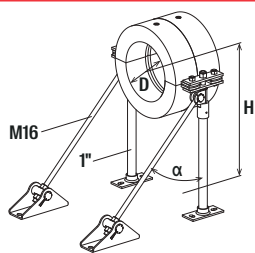
- Heating pipes
- Cooling lines
- Steam pipes
- Hot water and circulation pipes
- Media lines with thermal expansion
- For use in dry interior areas.

Advantages

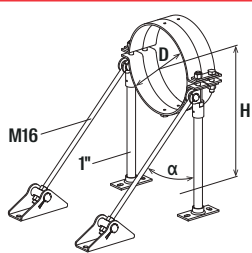
- The supports and braces on one or both sides of the variable fixed point allow adaptation to the distance of the pipeline to the subsoil.
- The fixed points consist of components with matching thread sizes and plug holes, thus ensuring easy assembly with the same tools.
- The height adjustment on the base plate allows for precise adjustment to match mounted pipelines and therefore ensures the safe function of the fixed point.
- The axially and laterally adjustable bracing angles allow the subsoil connection to be adapted to the conditions on site and simplify the installation.
- The fixed point is suitable for mounting the FFPC fixed point solid clamp and FFRC refrigeration fixed point clamp for even more flexibility.

Properties

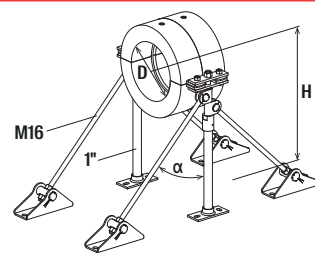
- Material: steel
- Bolts and nuts: strength class 8
- Zinc plating: electro zinc-plated
- Thermal capacity: -30 °C to +300 °C
- Note: Fixed point solid clamps FFPC and FFRC and the threaded rod G16 and G1" (chapter „Accessories“ Art. no. 568434 and 568435) are not included in the set.



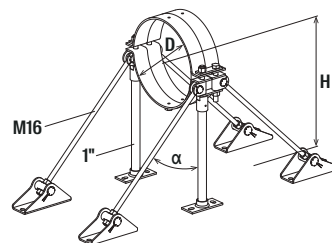
FFP-HD22



FFP-HD22-V1 and FFP-HD22-V2



FFP-HD42



FFP-HD42-V1 and FFP-HD42-V2

Technical data

Item	Item no.	Max. recom. pipe-ø	Min. construction height	Max. construction height	Bracing angle	Max. recom. axial load	Sales unit
		D	H [mm]	H [mm]	α [°]	$F_{x\text{ rec.}}$ [kN]	[pcs]
FFP-HD22	567711	355.6	300	2,000	35 - 45	18.0	1
FFP-HD22-V1	567712	193.7	300	2,000	35 - 45	18.0	1
FFP-HD22-V2	567713	355.6	300	2,000	35 - 45	18.0	1
FFP-HD42	567714	355.6	350	2,000	35 - 45	30.0	1
FFP-HD42-V1	567715	193.7	300	2,000	35 - 45	30.0	1
FFP-HD42-V2	567716	355.6	300	2,000	35 - 45	30.0	1

Note: Maximum loads for orientation. Please contact fischer for the design of the fixed points. Load values for fixing with: 564586 Bolt anchor FAZ II Plus 12/10; 564594 Bolt anchor FAZ II Plus 16/5

For detailed information on assembly, see the assembly instructions for download or as an enclosure to the article.

Fixed point solid clamp FFPC

The solid fixed point clamp with load-optimized clamp band



Media lines with thermal expansion

Applications

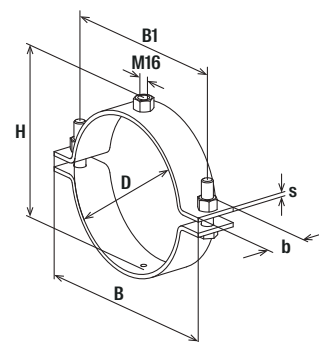
- Heating pipes
- Steam pipes
- Hot water and circulation pipes
- Media lines with thermal expansion
- For use in dry interior areas.

Advantages

- The FFRC Refrigeration clamp made of closed PUR foam can be used with all common insulation materials.
- The design of the FFRC Refrigeration clamp with external screw holes and internal welding ring enables the support of high loads.
- The age-resistant material ensures consistent function of the FFRC.
- The included connecting plates with matching connection holes and threads reduce the assembly effort by providing an optimal fit.
- The FFRC Refrigeration fixed point clamp can be mounted on the fixed point saddles FFS-M or FFS-H as well as on the braced fixed points FFP.

Properties

- Material: steel
- Bolts and nuts: strength class 8
- Zinc plating: electro zinc-plated
- Thermal capacity: -30 °C to +300 °C



FFPC

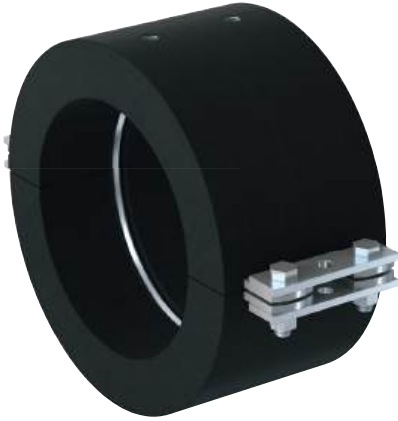
6 Technical data

Item	Item no.	Size	Clamping range	Width	Width B1	Height	Width x thickness clamp band	Locking screw	Max. recom. static load (centr. tension)	Sales unit [pcs]
		[in]	D [mm]	B [mm]	B1 [mm]	H [mm]	b x s [mm]		N_{rec} [kN]	
FFPC 21	567717	1/2	21	91.7	60.7	45.4	40 x 4.0	M16	10.15	2
FFPC 27	567718	3/4	27	97.7	66.7	51.4	40 x 4.0	M16	10.15	2
FFPC 28	567719 ¹⁾	–	28	98.7	67.7	52.4	40 x 4.0	M16	10.15	2
FFPC 31	567720 ¹⁾	–	31	101.7	70.7	55.4	40 x 4.0	M16	10.15	2
FFPC 34	567721	1	34	104.7	73.7	58.4	40 x 4.0	M16	10.15	2
FFPC 40	567722 ¹⁾	–	40	110.7	79.7	64.4	40 x 4.0	M16	10.15	2
FFPC 43	567723	1 1/4	43	113.7	82.7	67.4	40 x 4.0	M16	10.15	2
FFPC 49	567724	1 1/2	49	119.7	88.7	73.4	40 x 4.0	M16	10.15	2
FFPC 50	567725	–	50	120.7	89.7	74.4	40 x 4.0	M16	10.15	2
FFPC 61	567726	2	61	131.7	100.7	85.4	40 x 4.0	M16	10.15	2
FFPC 63	567727	–	63	145.1	110.1	91.4	40 x 6.0	M16	17.60	2
FFPC 70	567728	–	70	152.1	117.1	98.4	40 x 6.0	M16	17.60	2
FFPC 76.1	567729	2 1/2	76.1	158.2	123.2	104.5	40 x 6.0	M16	17.60	2
FFPC 88.9	567730	3	88.9	171	136	117.3	40 x 6.0	M16	17.60	2
FFPC 108	567731 ¹⁾	–	108	190.1	155.1	136.4	40 x 6.0	M16	17.60	2
FFPC 114.3	567732	4	114.3	196.4	161.4	142.7	40 x 6.0	M16	17.60	2
FFPC 133	567733 ¹⁾	–	133	215.1	180.1	161.4	40 x 6.0	M16	17.60	2
FFPC 139.7	567734	5	139.7	221.8	186.8	168.1	40 x 6.0	M16	17.60	2
FFPC 159	567735	–	159	241.1	206.1	187.4	40 x 6.0	M16	17.60	2
FFPC 168.3	567736	6	168.3	250.4	215.4	196.4	40 x 6.0	M16	17.60	2
FFPC 193.7	567737 ¹⁾	–	193.7	275.8	240.8	222.1	40 x 6.0	M16	17.60	2
FFPC 219.1	567738	8	219.1	305	269.8	247.5	60 x 6.0	M16	22.30	2
FFPC 267	567739 ¹⁾	–	267	352.9	317.7	295.4	60 x 6.0	M16	22.30	2
FFPC 273	567740	10	273	358.9	323.7	301.4	60 x 6.0	M16	22.30	2
FFPC 323.9	567741	12	323.9	409.8	374.6	352.3	60 x 6.0	M16	22.30	2
FFPC 355.6	567742 ¹⁾	14	355.6	441.5	406.3	384	60 x 6.0	M16	22.30	2

¹⁾ Delivery time on request

Refrigeration fixed point clamp FFRC

Fixed point pipe clamp with rigid foam insulation for absorbing pipe expansions in cold-running pipelines



Cold running media lines

Applications

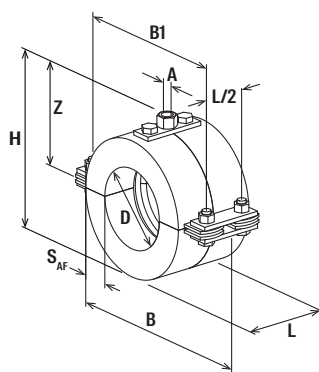
- Cooling lines
- Refrigeration lines
- Cold running media lines
- For use in dry interior areas.

Advantages

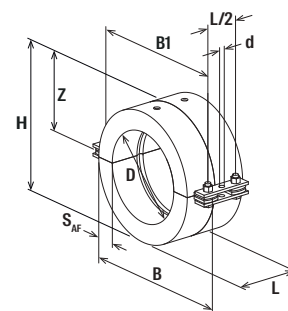
- The FFRC Refrigeration clamp made of closed PUR foam can be used with all common insulation materials.
- The design of the FFRC Refrigeration clamp with external screw holes and internal welding ring enables the support of high loads.
- The age-resistant material ensures consistent function of the FFRC.
- The included connecting plates with matching connection holes and threads reduce the assembly effort by providing an optimal fit.
- The FFRC Refrigeration fixed point clamp can be mounted on the fixed point saddles FFS-M or FFS-H as well as on the braced fixed points FFP.

Properties

- Material: closed-cell polyurethane foam, silicone-free, halogen-free
- Density: 250 kg/m³
- Heat conductivity: 0.045 W/(m*K)
- Fire behaviour: DIN 4102: Class B2
- Diffusion resistance: >1000 μ
- Compressive strength: 3,96 mPa at 23 °C
- Temperature range: -50 °C to +105 °C
- Material steel clamp: steel, electro zinc-plated
- Material welding ring: steel



FFRC with coupler (to 168,3)



FFRC without coupler (above 193,7)

6 Technical data

Item	Item no.	Size	Clamping range	Thread	Hole-Ø	Insulation thickness	Length of insulation material	Width	Width B1	Height	Height	Max. recom. static load (centr. tension)	Max. recom. axial load	Installation torque (Bolt Connector Screws)	Installation torque (Coupler)	Sales unit
		[in]	D [mm]	A	d [mm]	S _{AF} [mm]	L [mm]	B [mm]	B1 [mm]	H [mm]	Z [mm]	Z _{z rec.} [kN]	F _{x rec.} [kN]	T _{inst.LBC} [Nm]	T _{inst.Co} [Nm]	[pcs]
FFRC 76.1	567747	2 1/2	76.1	M16	–	30	100	203	173	156	88	3.60	2.5	12	12	1
FFRC 88.9	567748	3	88.9	M16	–	30	100	211	181	169	94	4.30	3.0	12	12	1
FFRC 108	567749	–	108	M16	–	30	120	230	200	187	103	6.50	4.0	20	12	1
FFRC 114.3	567750	4	114.3	M16	–	40	120	274	238	212	116	6.90	4.0	20	20	1
FFRC 133	567751	–	133	M16	–	40	120	300	264	233	126	7.70	4.5	20	20	1
FFRC 139.7	567752	5	139.7	M16	–	40	120	264	300	236	128	8.10	4.5	20	20	1
FFRC 159	567753	–	159	M16	–	40	120	319	283	258	139	9.20	6.0	20	20	1
FFRC 168.3	567754	6	168.3	M16	–	40	120	328	292	272	146	9.70	6.0	20	20	1
FFRC 193.7	567755 ¹⁾	–	193.7	–	17	60	200	439	399	340	170	23.00	9.0	45	45	1
FFRC 219.1	567756	8	219.1	–	17	60	200	439	399	340	170	23.00	9.0	45	–	1
FFRC 273	567757	10	273	–	17	60	200	493	453	393	197	28.00	12.0	45	–	1
FFRC 323.9	567758	12	323.9	–	17	60	200	544	504	448	224	32.80	15.0	45	–	1
FFRC 355.6	567759 ¹⁾	14	355.6	–	17	60	200	576	536	477	239	36.00	17.0	45	–	1
FFRC 368	567760 ¹⁾	–	368	–	17	60	240	588	548	492	246	46.30	17.0	45	–	1
FFRC 406.4	567761 ¹⁾	16	406.4	–	17	60	240	646	596	530	265	50.40	19.0	45	–	1
FFRC 457	567762 ¹⁾	18	457	–	17	60	240	697	647	578	289	57.10	19.0	45	–	1
FFRC 508	567763 ¹⁾	20	508	–	17	60	240	748	698	635	318	62.40	20.0	45	–	1
FFRC 609	567764 ¹⁾	24	609	–	17	60	280	848	798	731	366	89.20	25.0	45	–	1

¹⁾ Delivery time on request

Note on the required adhesive: 59389 fischer construction adhesive Multi MS white 290 ml; 503318 fischer construction adhesive Multi MS grey 290 ml

Note on loads: The loads apply to the FFRC without considering whether the associated fix point design is a braced fix point or fix point saddle. The component with the lower load specification determines the loads.

Sound insulated fixed point FSFP

The compact fixed point with a sound insulation insert



Sound insulated fixpoint at ceiling

6

Applications

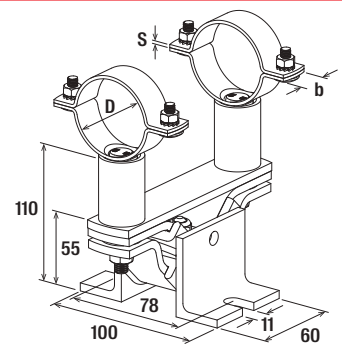
- Prevention of unwanted displacement between the pipes and the structures.
- Ensuring of the expansion into the desired direction.
- For use in dry interior areas.

Advantages

- The supports and braces on one or both sides of the variable fixed point allow adaptation to the distance of the pipeline to the subsoil
- The fixed points consist of components with matching thread sizes and plug holes, thus ensuring easy assembly with the same tools.
- The height adjustment on the base plate allows for precise adjustment to match mounted pipelines and therefore ensures the safe function of the fixed point.

Properties

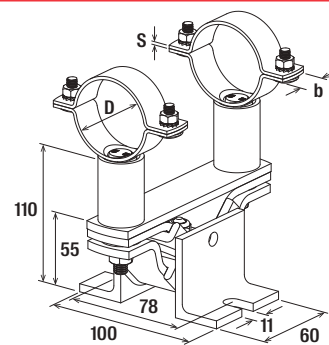
- Clamp strap: StW22 (material no. 1.0032)
- Base plate: S235JR (material no. 1.0038)
- Zinc plating: electro zinc-plated
- Elastomer: ISO 1629 SBR/EPDM chlorine-free and silicone-free
- Temperature range: -40 °C to +100 °C



FSFP

Technical data

Item	Item no.	Size [in]	Clamping range D [mm]	Locking screw	Width x thickness clamp band b x s [mm]	Sales unit [pcs]
FSFP 1"	512716	1	33.7	M6	20 x 1.5	1
FSFP 1 1/4"	512717	1 1/4	42.4	M6	20 x 2	1
FSFP 1 1/2"	512718	1 1/2	48.3	M6	20 x 2	1
FSFP 2"	512719	2	60.3	M8	22 x 1.5	1
FSFP 2 1/2"	512720	2 1/2	76.1	M8	22 x 1.5	1



FSFP

Technical data

6

Item	Item no.	Size [in]	Clamping range D [mm]	Locking screw	Width x thickness clamp band b x s [mm]	Sales unit [pcs]
FSFP 3"	512721	3	88.9	M8	22 x 1.5	1
FSFP 4"	512722	4	114.3	M8	22 x 1.5	1

Axial slider compact FASC

The compact axial slider with combination connecting thread



Media lines with thermal expansion

Applications

- Heating pipes
- Cooling lines
- Hot water and circulation pipes
- Media lines with thermal expansion
- For use in dry interior areas.

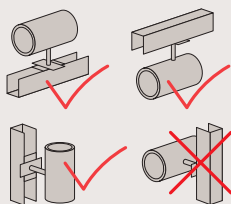
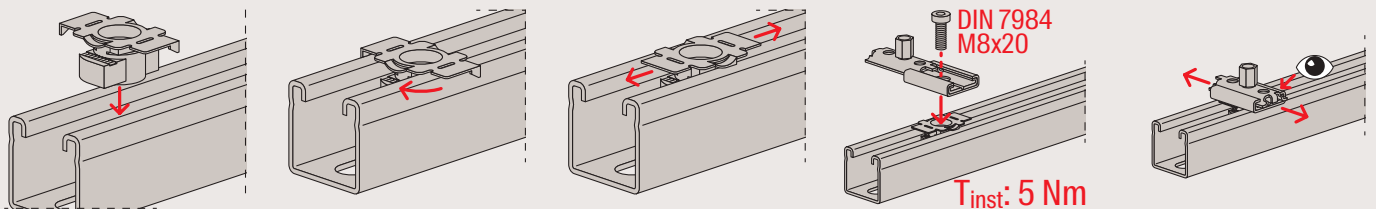
Advantages

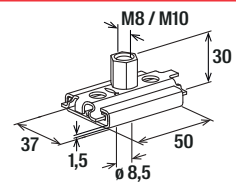
- The FASC can be used flexibly, thanks to the application options as a standing or hanging slider.
- The low sliding friction of the plastic sliding pad enables optimum force application at the fixed point.
- The base plate of the FASC is compatible with the FLS and FUS channel systems and allows fixing with only one screw.
- The flexible combination thread allows the use of pipe clamps of various sizes.

Properties

- Material: steel
- Zinc plating: electro zinc-plated
- Sliding strip material: glass fiber reinforced polyamide
- Thermal capacity: -30 °C to +130 °C

Installation FASC on FUS channel





FASC M8/M10

Technical data

6

Item	Item no.	Thread A	Length L [mm]	Width B [mm]	Height H [mm]	Thickness S [mm]	Max. recommended static load (suspended) N_{rec} [kN]	Max. recommended static load (upright) N_{rec} [kN]	Static friction factor μ_h	Sliding friction factor μ_g	Max. sliding distance [mm]	Sales unit [pcs]
FASC M8/10	567948	M8 / M10	50	37	30	1.5	0.7	0.7	0.18	0.14	42	50

Axial slider light FASL

The light axial slider with single or double mount and single or combination connection thread



Media lines with thermal expansion



Media lines with thermal expansion

6

Applications

- Heating pipes
- Cooling lines
- Hot water and circulation pipes
- Media lines with thermal expansion
- For use in dry interior areas.

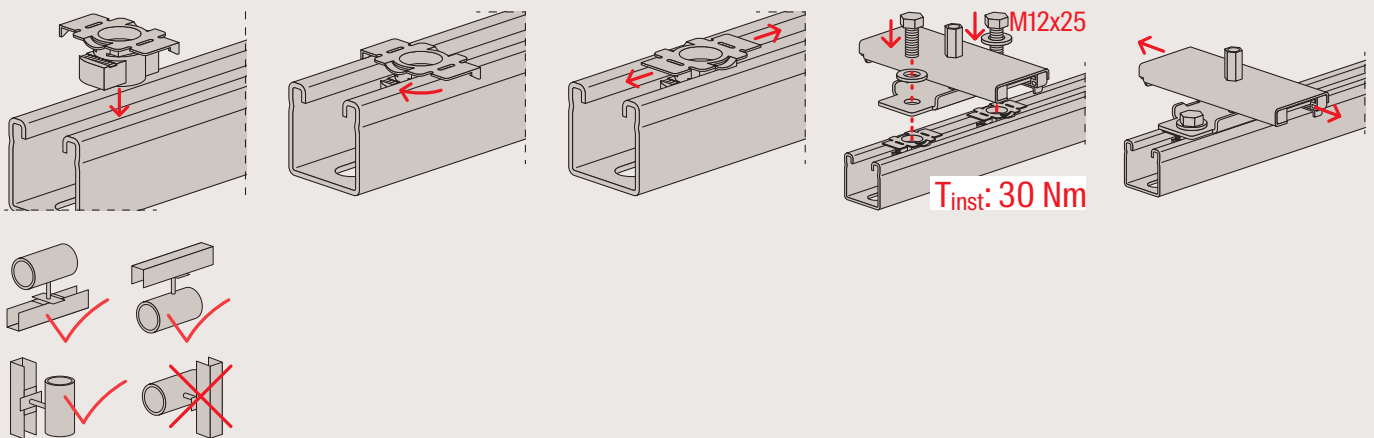
Advantages

- The FASL can be used flexibly, thanks to the application options as a standing or hanging slider and as a guide bearing on vertical pipelines.
- The low sliding friction of the plastic sliding rails enables optimum force application at the fixed point.
- The large sliding path and the long slide rails allow large expansions to be accommodated without any problems.
- The base plate of the FASL is compatible with the FLS and FUS channel systems and allows fixing with one or two screws.
- The flexible combination thread allows the use of pipe clamps of various sizes.

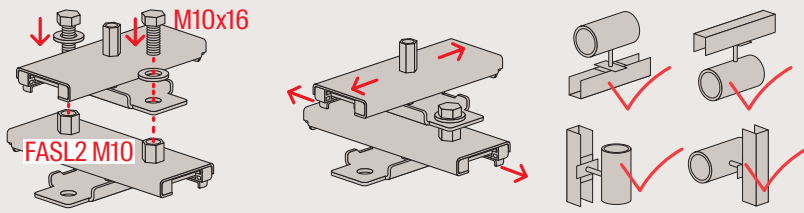
Properties

- Material: steel
- Zinc plating: electro zinc-plated
- Sliding strip material: glass fiber reinforced polyamide
- Thermal capacity: -30 °C to +130 °C

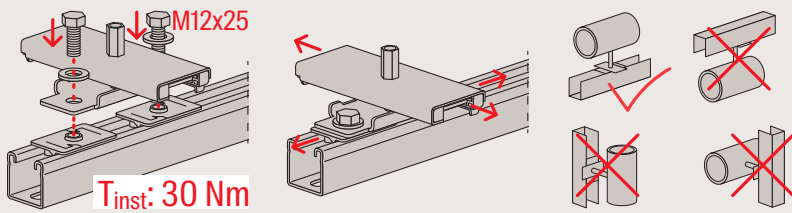
Installation FASL on FUS channel



Cross-slide function through double mounting with FASL2 M10

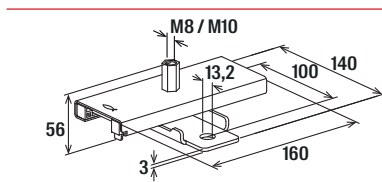
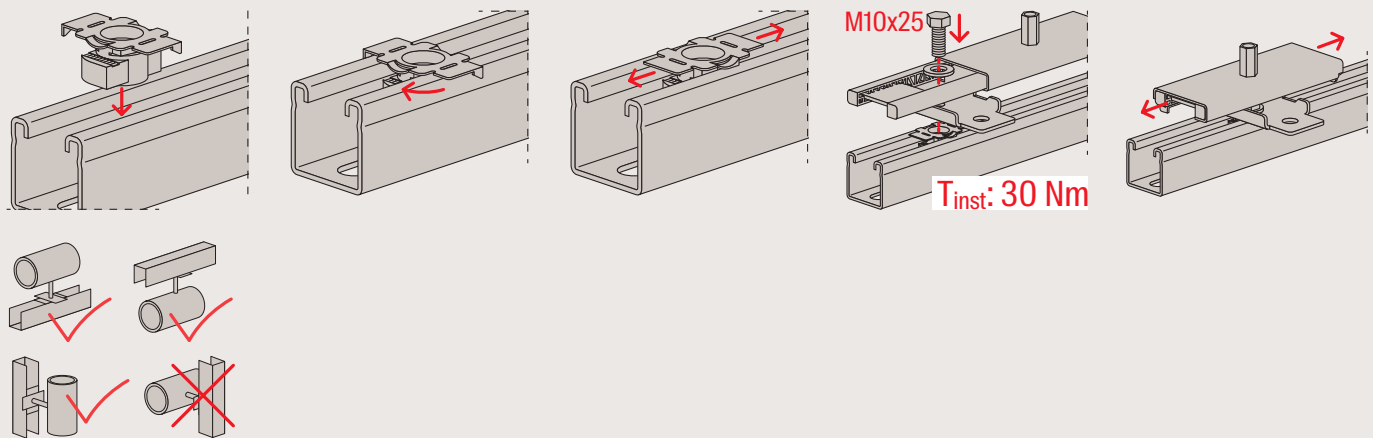


Cross-slide function with FCSM

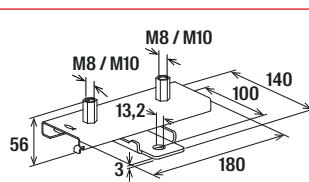


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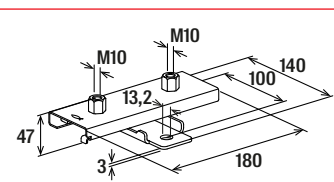
Installation FASL with central fixing on FUS channel



FASL1 M8/M10



FASL2 M8/M10



FASL2 M10

Technical data

Item	Item no.	Thread	Length L [mm]	Width B [mm]	Height H [mm]	Max. recommended static load (suspended) N _{rec} [kN]	Max. recommended static load (upright) N _{rec} [kN]	Static friction factor μ _h	Sliding friction factor μ _g	Max. recommended lever arm [mm]	Max. sliding distance [mm]	Sales unit [pcs]
FASL1 M8/10	567949	M8 / M10	160	140	56	1.2	1.2	0.18	0.14	200	100	10
FASL2 M8/10	568670	M8 / M10	180	140	56	1.5	1.5	0.18	0.14	200	120	10
FASL2 M10	567950	M10	180	140	47	1.5	1.5	0.18	0.14	200	120	10

Axial slider medium FASM

The medium axial slider with single or double mount and combination connection thread



Media lines with thermal expansion



Media lines with thermal expansion

6

Applications

- Heating pipes
- Cooling lines
- Steam pipes
- Hot water and circulation pipes
- Media lines with thermal expansion
- For use in dry interior areas.

Certificates



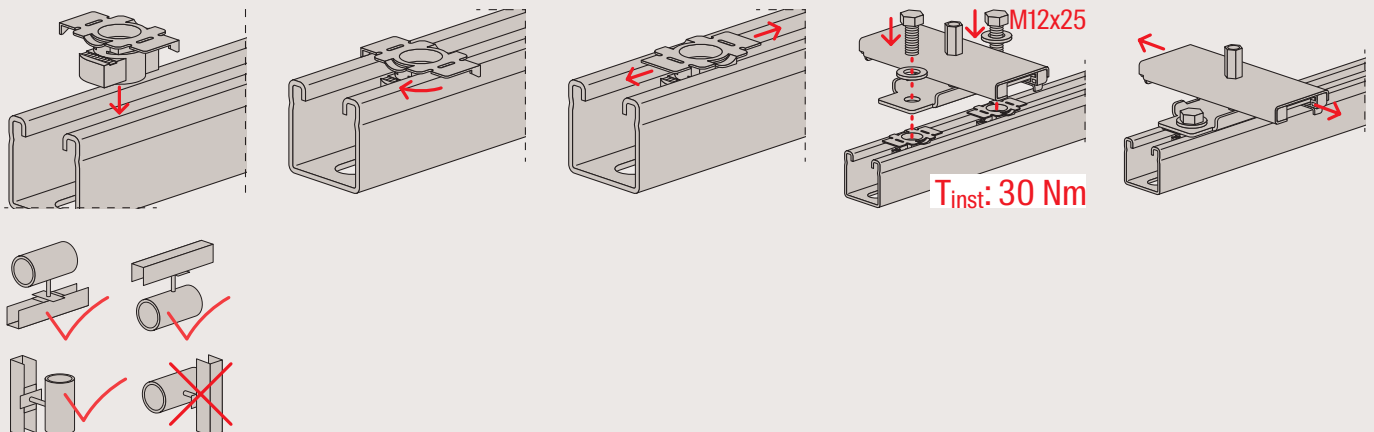
Advantages

- The fire test report according to MLAR R30 up to a maximum of R120 guarantees objectively tested safety of function.
- The FASM can be used flexibly, thanks to the application options as a standing or hanging slider and as a guide bearing on vertical pipelines.
- The low sliding friction of the plastic sliding rails enables optimum force application at the fixed point.
- The large sliding path and the long slide rails allow large expansions to be accommodated without any problems.
- The base plate of the FASM is compatible with the FUS and FMS channel systems and allows fixing with one or two screws.
- A cross-slide function of the FASM is possible with the FCSM cross slider as well as with the FASL2 M10.

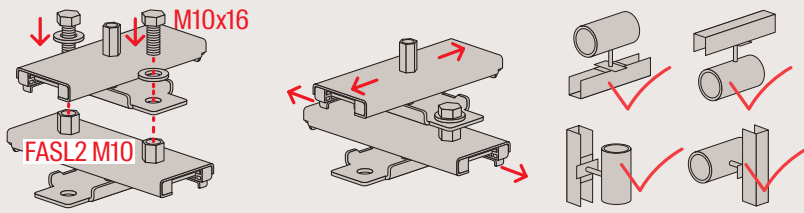
Properties

- Material: steel
- Zinc plating: electro zinc-plated
- Sliding strip material: glass fiber reinforced polyamide
- Thermal capacity: -30 °C to +130 °C

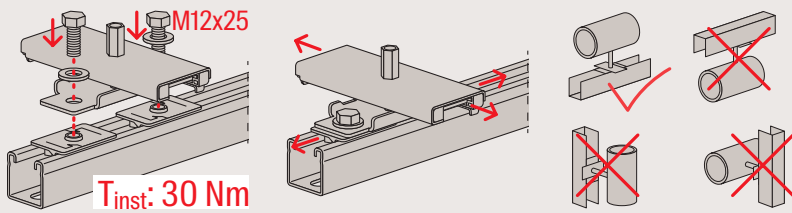
Installation FASM on FUS channel



Cross-slide function through double mounting with FASL2 M10

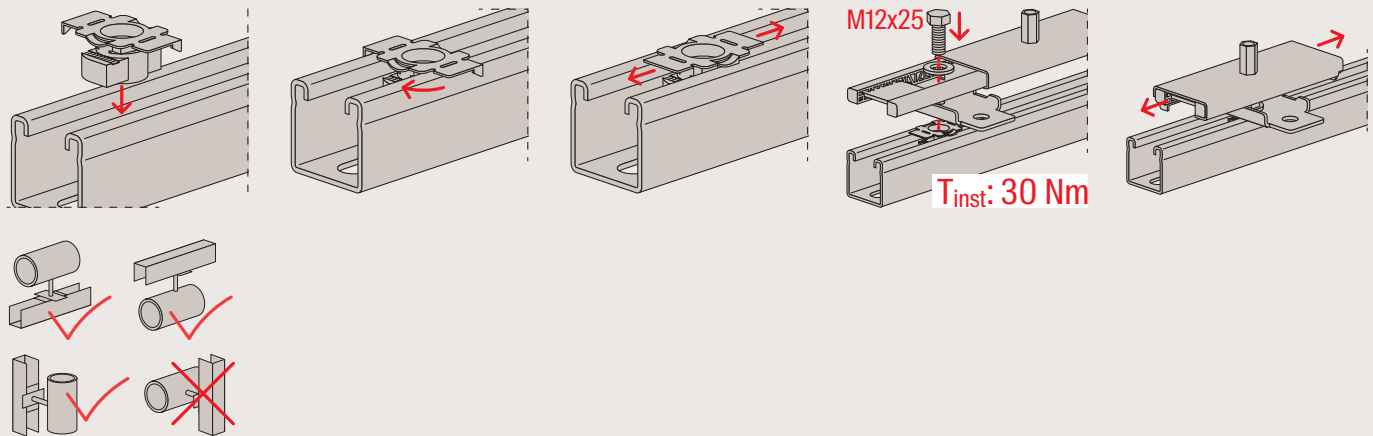


Cross-slide function with FCSM

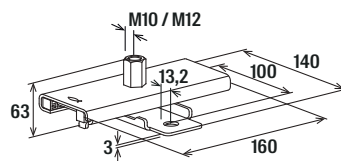


T_{inst}: 30 Nm

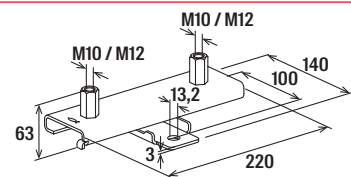
Installation FASM with central fixing on FUS channel



T_{inst}: 30 Nm



FASM1 M10/M12



FASM2 M10/M12

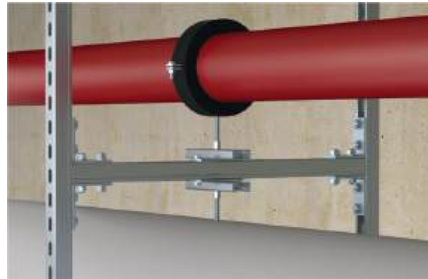
Technical data

Item	Item no.	Fire test report	Thread	Length L [mm]	Width B [mm]	Thickness S [mm]	Max. recommended static load (suspended) N _{rec} [kN]	Max. recommended static load (upright) N _{rec} [kN]	Static friction factor μ _h	Sliding friction factor μ _g	Max. recommended lever arm [mm]	Max. sliding distance [mm]	Sales unit [pcs]
FASM1 M10/12	567951	-	M10 / M12	160	140	3.0	2.5	2.5	0.18	0.14	200	100	10
FASM2 M10/12	567952	Yes	M10 / M12	220	140	3.0	3.0	3.0	0.18	0.14	200	150	10

For load information under fire exposure, see chapter Basic knowledge.

Axial roller slider heavy FASH

The heavy axial roller slider with single or double mount and combination connection thread



Media lines with thermal expansion



Media lines with thermal expansion

6

Applications

- Heating pipes
- Cooling lines
- Steam pipes
- Hot water and circulation pipes
- Media lines with thermal expansion
- For use in dry interior areas.

Certificates



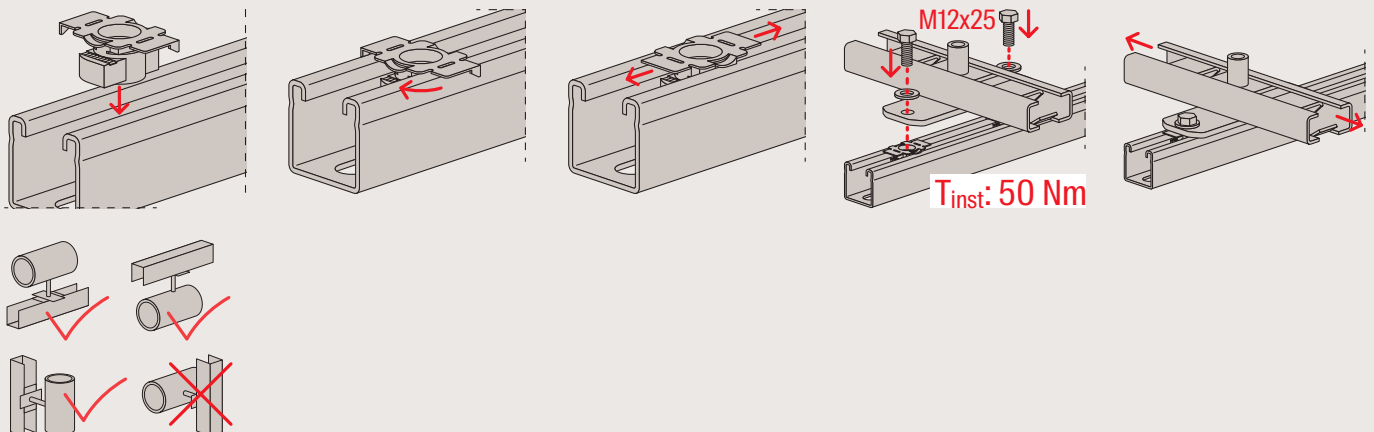
Advantages

- The fire test report according to MLAR R30 up to a maximum of R120 guarantees objectively tested safety of function.
- The FASH can be used flexibly, thanks to the application options as a standing or hanging slider and as a guide bearing on vertical pipelines.
- The low sliding friction of the two sliding rollers enables optimum force application at the fixed point.
- The large sliding path and the two sliding rollers allow large expansions to be accommodated without any problems.
- The base plate of the FASH is compatible with the FUS and FMS channel systems and allows fixing with one or two screws.
- A cross-slide function of the FASH1 or FASH2 is possible with the FCSM cross slider as well as with the FASH2.

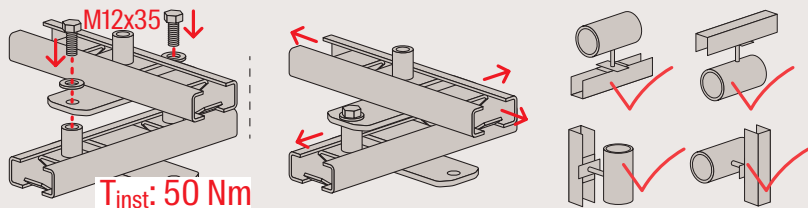
Properties

- Material: steel
- Zinc plating: electro zinc-plated
- Thermal capacity: -30 °C to +300 °C

Installation FASH on FUS channel

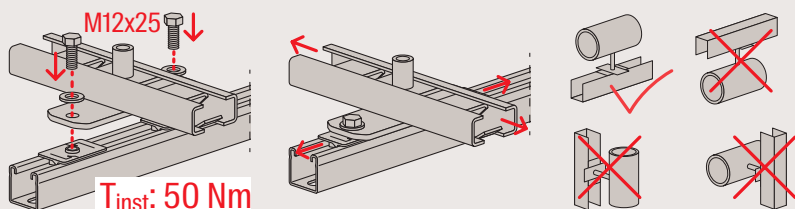


Cross-slide function through double mounting with FASH2 M12/16

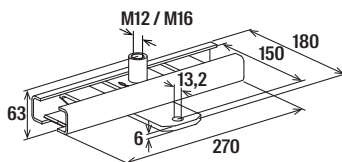
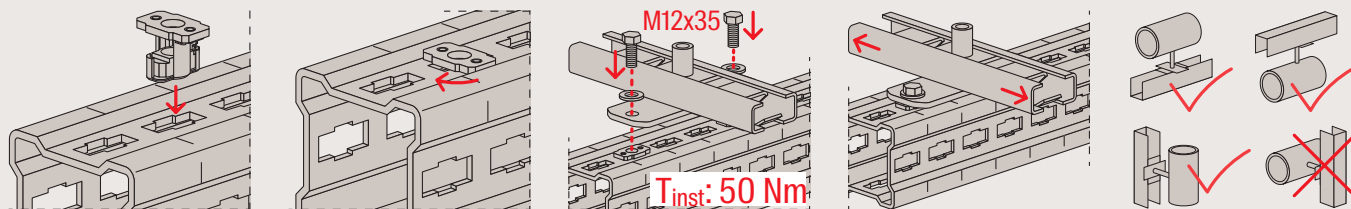


Cross-slide function with FCSM

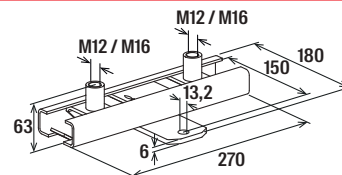
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Installation FASH on FMP channel



FASH1 M12/M16



FASH2 M12/M16

Technical data

Item	Item no.	Fire test report	Thread	Length	Width	Height	Thickness	Max. recommended static load (suspended)	Max. recommended static load (upright)	Static friction factor	Sliding friction factor	Max. recommended lever arm	Max. sliding distance	Sales unit
			A	L [mm]	B [mm]	H [mm]	S [mm]	N _{rec} [kN]	N _{rec} [kN]	μ _h	μ _g	[mm]	[mm]	[pcs]
FASH1 M12/16	567953	-	M12 / M16	270	180	63	6.0	6.5	6.5	0.06	0.06	400	140	5
FASH2 M12/16	567954	Yes	M12 / M16	270	180	63	6.0	10.0	10.0	0.06	0.06	400	140	5

For load information under fire exposure, see chapter Basic knowledge.

Cross slider FCSM

The channel slider for all load levels



Media lines with thermal expansion

6

Applications

- Heating pipes
- Cooling lines
- Steam pipes
- Hot water and circulation pipes
- Media lines with thermal expansion
- For indoor and outdoor application.

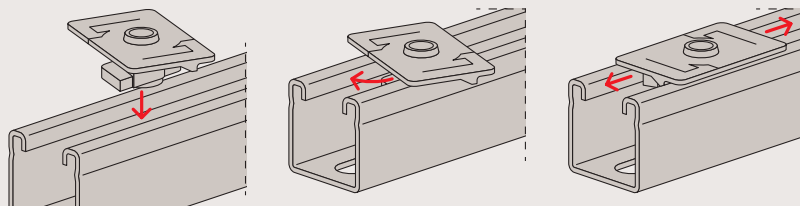
Advantages

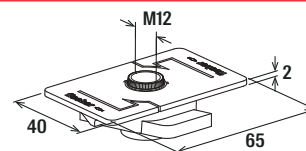
- The simple connection of the FCSM Cross Slider with the FUS mounting channels by simply inserting and rotating by 45° also allows subsequent installation at any position.
- Due to the application as a upright slider in the FUS mounting channels, the FCSM is the universal cross slider substructure for all axial and roller sliders.
- The unique design and the use as a single glider or double glider enable a high load capacity.
- The low sliding friction of the plastic sliding surface minimizes resistance during lateral expansion.

Properties

- Material: steel
- Zinc plating: hot-dip galvanised
- Material plastic components: glass fiber reinforced polyamide
- Thermal capacity: -30 °C to +130 °C

Installation FCSM





FCSM

Technical data

Item	Item no.	Thread	Length	Width	Height	Thickness	Max. recommended static load (upright)	Static friction factor	Sliding friction factor	Sales unit
		A	L [mm]	B [mm]	H [mm]	S [mm]	N_{rec} [kN]	μ_h	μ_g	[pcs]
FCSM M12	567955 ¹⁾	M12	65	40	21	2.0	5.0	0.2	0.16	50

6

¹⁾ Max. recommended lever arm: with FASL and FASM: 200 mm; with FASH: 300 mm. Sliding and static friction values apply to galvanised and hot-dip galvanised FUS mounting channels.

Sliding hanger SB

Sliding hanger SB - the lightweight sliding element with fire test report



Channel with sliding element



Channel to steelbeam

6

Applications

- Adjustments of axial length to pipelines.
- Installation of sliding elements in line with the expected length expansions (Ensuring that no sliding distance is lost and sliding isn't inhibited).
- For use in dry interior areas.

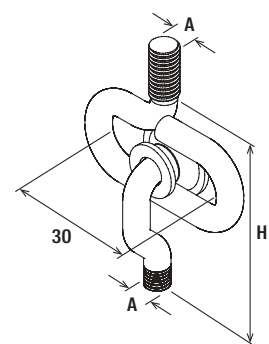
Advantages

- The design of the sliding hanger allows pipes to be mounted securely and easily.
- The sliding hanger is ideally suited to adjust the axial length of pipelines.

Properties

- Material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Zinc plating: electro zinc-plated

Certificates



SB

Technical data

Item	Item no.	Fire test report	Height H [mm]	Max. recom. static load (centr. tension) [kN]	Sales unit [pcs]
SB M 8	079680	-	75	0.40	25
SB M 10	079681	Yes	90	0.65	25

For load information under fire exposure, see chapter Basic knowledge.

Pendulum hanger PDH / PDH K

Pendulum hanger PDH / PDH K - the single fixing element for length expansion



Double pendulum hanger

6

Applications

- Single fixing for the absorption of pipeline length adjustments in any direction.
- Installation of the pendulum in pairs for pipe movement without tipping.
- Secure threaded rod with lock nut to prevent loosening.
- For use in dry interior areas.

Advantages

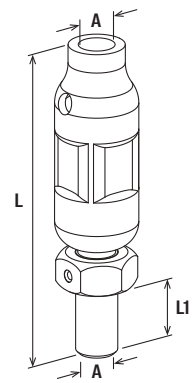
- The design of the pendulum hanger allows a rotation of 360°.
- The pendulum hanger's screw-in sleeve allows for large height adjustments.
- The max. pendulum angle of 12° enables the absorption of large expansions.
- The screw-in depth of the threaded bolts guarantees a high tension load.

Properties

- Material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Zinc plating: electro zinc-plated

Certificates



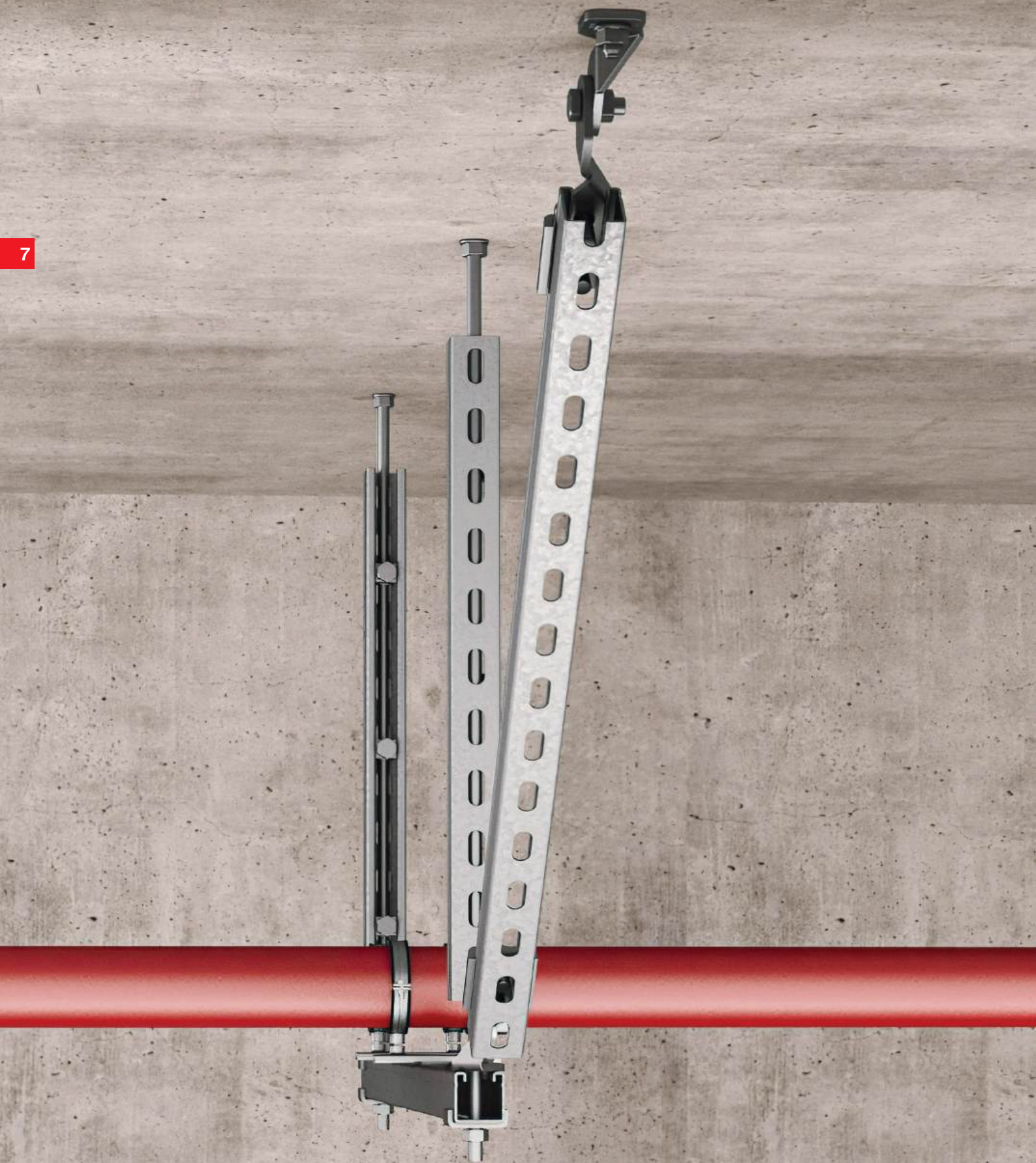


PDH

Technical data

Item	Item no.	Fire test report	Thread A	Length L [mm]	Length L1 [mm]	Max. recom. static load (centr. tension) [kN]	Sales unit [pcs]
PDH K M 8	068267	–	M8	50	18	2.40	50
PDH K M 10	068269	Yes	M10	54	18	3.00	50
PDH M 8	079676	–	M8	76	18	2.40	50
PDH M 10	079677	Yes	M10	80	18	3.00	50
PDH M 12	064037	Yes	M12	90	20	3.50	25

For load information under fire exposure, see chapter Basic knowledge.








7



Seismic bracing assortment

7

CHANNEL BRACING ELEMENTS

Shaped reinforcement strut SAE	232	
Threaded rod brace connector S-VA	233	
Channel brace connector S-VB	234	
90° angle connector S-FAF	235	
Seismic wire cable system FWI-S	236	

ACCESSORIES

Threaded rod connector S-ROD	239	
Rod stiffener FTRC M12	240	

Shaped reinforcement strut SAE

Shaped reinforcement strut for bracing FUS channel profiles and FCA cantilevers



Bracing of cantilever construction

7

Applications

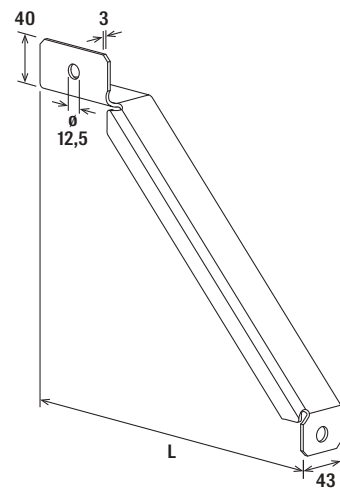
- Seismic bracing of framework constructions with FUS channels and FCA cantilevers.
- For use in dry interior areas.

Advantages

- The shaped L enables the fixing of the bracing not only in the horizontal but also at the vertical level.
- The stable shaped reinforcement strut provides very high stability and safety to a supporting structure.

Properties

- Material: Steel S235JR (material no. 1.0038) acc. to DIN EN 10025-2
- Zinc plating: electro zinc-plated



SAE

Technical data

Item	Item no.	Length L [mm]	Sales unit [pcs]
SAE 300	512114	300	10
SAE 500	512115	500	10

Threaded rod brace connector S-VA

Threaded rod brace connector S-VA with maximum installation flexibility for seismic bracing with threaded rods



Bracing of frame construction with threaded rods

Applications

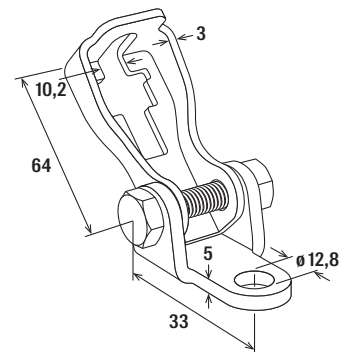
- For bracing of new as well as already installed frame constructions with threaded rods M10.
- For use in dry interior areas.

Advantages

- The design of the threaded rod brace connector S-VA allows a variable fixation at angles between 30° and 60° for a flexible adaptation to new and already existing construction.
- The design of the bracing element allows easy and quick insertion of a pre-mounted threaded rod with nut.
- The possibility to mount two bracing elements on top of each other offers the option to clamp the same point in different directions.

Properties

- Material bracket: steel S275JR (material no. 1.0044) acc. to DIN EN 10025-2
- Material supporting plate: steel S355MC (material no. 1.0976) acc. to DIN EN 10149-2
- Screw: M10x45, strength class 8.8, electro zinc-plated
- Nut: M10, strength class 8, electro zinc-plated



S-VA

Technical data

Item	Item no.	For profile	Sales unit [pcs]
S-VA	552360	FUS, FLS	10

Channel brace connector S-VB

Channel brace connector for seismic bracing of framework constructions with FUS channel profiles



Bracing of frame construction with channel profiles

7

Applications

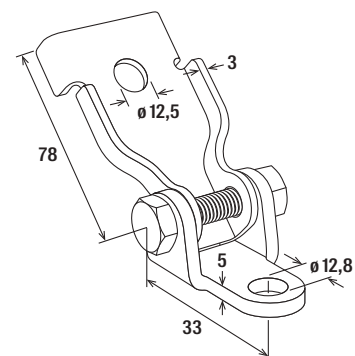
- For seismic bracing of new as well as already installed framework constructions with FUS channel profiles.
- For use in dry interior areas.

Advantages

- The design of the channel brace connector S-VB allows a variable fixation at angles between 30° and 60° for a flexible adaptation to new and already existing construction.
- The lamellae bent upwards and downwards allow the easy installation of the channel profile to the channel brace connector.
- The possibility to mount two channel brace connectors on top of each other offers the option to clamp the same point in different directions.

Properties

- Material bracket: steel S275JR (material no. 1.0044) acc. to DIN EN 10025-2
- Material supporting plate: steel S355MC (material no. 1.0976) acc. to DIN EN 10149-2
- Screw: M10x45, strength class 8.8, electro zinc-plated
- Nut: M10, strength class 8, electro zinc-plated



S-VB

Technical data

Item	Item no.	For profile	Sales unit [pcs]
S-VB	552362	FUS	10

90° angle connector S-FAF

90° angle connector to connect two FUS channel profiles and install seismic bracing elements S-VA and S-VB



Connection of channel profiles and bracing elements

7

Applications

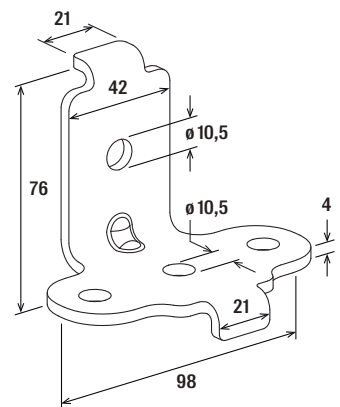
- For the connection of channel profiles and the installation of bracing elements.
- For use in dry interior areas.

Advantages

- Perforated wings allow an easy and quick installation of the brace connectors S-VA and S-VB on the angle connector S-FAF.
- The seismic angle connector allows an easy and flexible installation of the brace connectors S-VA and S-VB at different angles.

Properties

- Material: steel S275JR (material no. 1.0044) acc. to DIN EN 10025-2
- Zinc plating: electro zinc-plated



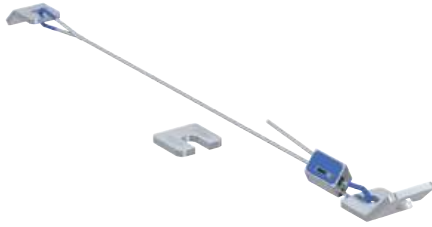
S-FAF

Technical data

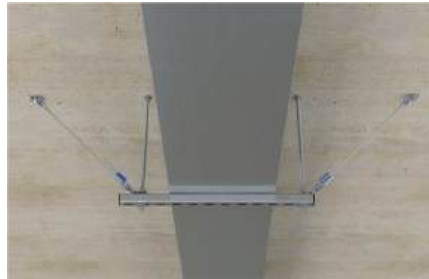
Item	Item no.	For profile	Sales unit [pcs]
S-FAF	552363	FUS	10

Seismic wire cable system FWI-S

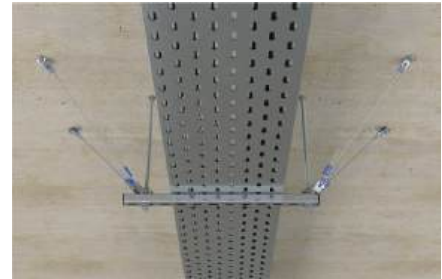
The wire cable system for securing installations from horizontal forces



7



Lateral bracing of ventilation ducts



Four-way bracing of cable trays

Applications

- Securing installations in buildings in the event of an earthquake, such as electrical cable routes, mechanical systems, ventilation ducts, hydraulic pipes.
- The FWI-S wire cable system ensures a safe transmission of the longitudinal and transversal forces into the subsurface and thus effectively prevents damage to installations.
- Also ideal for retrofitting existing installations.
- For use in dry interior areas.

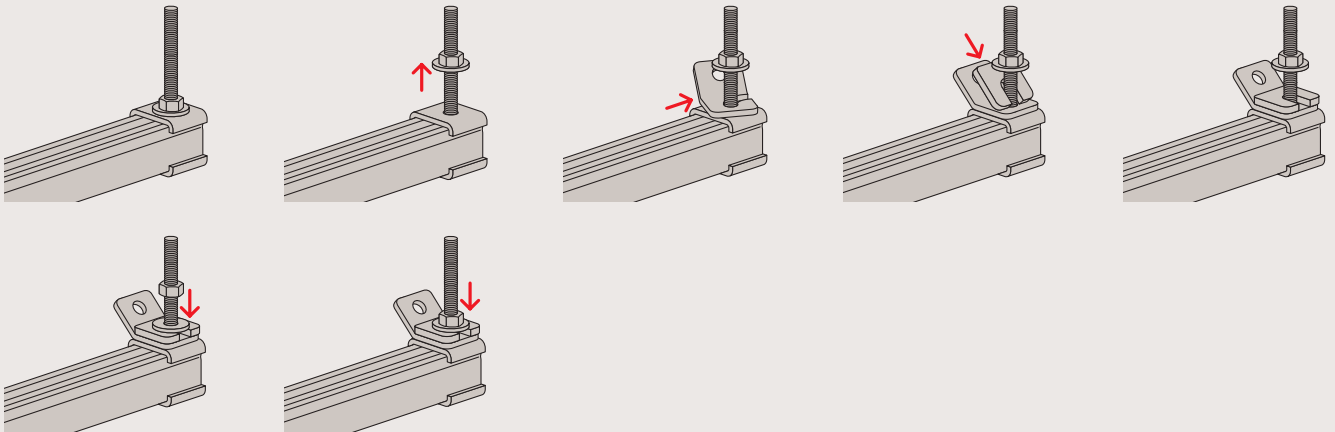
Advantages

- The system protects installations from damage caused by horizontal forces.
- The FWI-S wire cable system offers a safe and reliable method of bracing MEP installations to ensure their integrity during an earthquake.
- The FWI-S wire cable system can minimise damage to installations, resulting in lower repair costs and downtime.
- Easy installation thanks to pre-assembled sets in lengths of 2, 3 and 5 m.
- The available wire cable diameters of 2, 3 or 5 mm provides the right kit for your load case.
- Suitable for new buildings or for retrofitting. Each set has a retrofit plate that allows particularly easy installation into existing installations.
- Each set has a type-specific color marking for identification on the construction site.

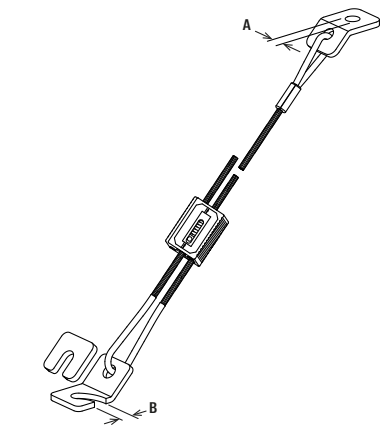
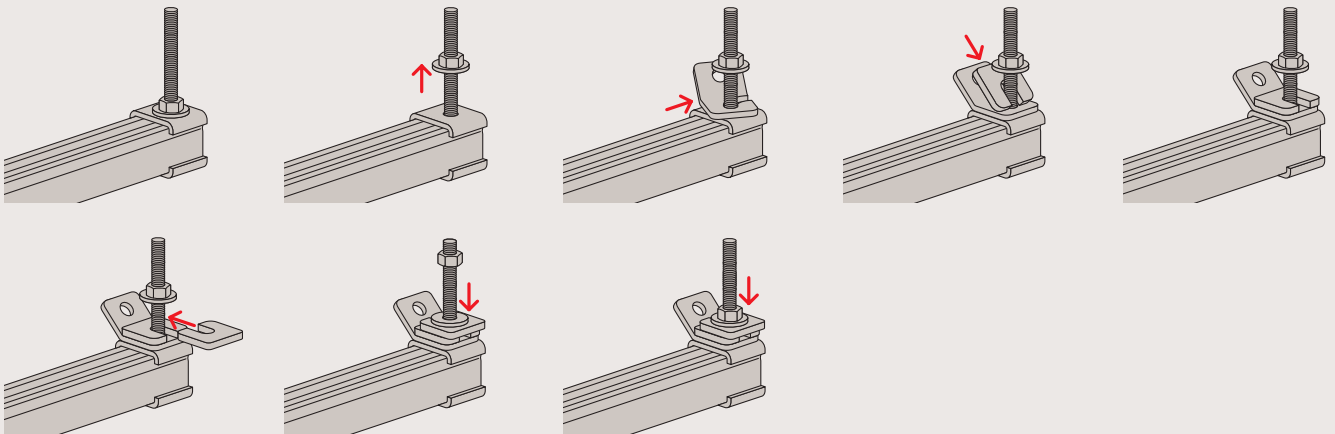
Properties

- Material wire cable lock: zinc-diecasting (material no. 2.2140.05)
- Material stamped and bent parts: steel (material no. 1.0038)
- Material wire cable: steel (material no. 1.5122)
- Material protective sleeve: PVC
- Corrosion protection: zinc lamella coating

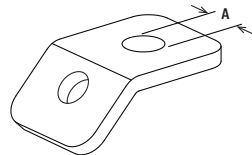
Installation FWI-SR / FWI-SB



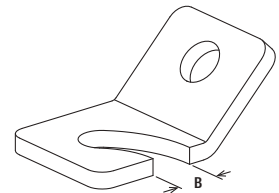
Installation FWI-SGY



FWI-S



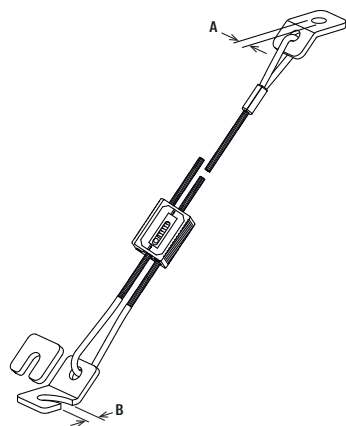
FWI-S anchor bracket



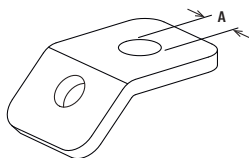
FWI-S retrofit bracket

Technical data

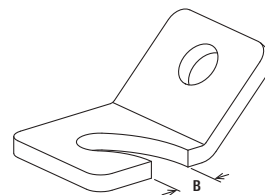
Item	Item no.	Cable length [m]	Wire- ϕ [mm]	Diameter anchor bracket A [mm]	Diameter retrofit bracket B [mm]	Max. recommended load N_{rec} [kN]	Colour	Sales unit [pcs]
FWI-SR-Kit 2.0 2m	569504	2	2.0	11.0	13.0	1.4	red	2
FWI-SR-Kit 2.0 3m	569505	3	2.0	11.0	13.0	1.4	red	2
FWI-SR-Kit 2.0 5m	569506	5	2.0	11.0	13.0	1.4	red	2



FWI-S



FWI-S anchor bracket



FWI-S retrofit bracket

7 Technical data

Item	Item no.	Cable length [m]	Wire- \varnothing [mm]	Diameter anchor bracket A [mm]	Diameter retrofit bracket B [mm]	Max. recommended load N_{rec} [kN]	Colour	Sales unit [pcs]
FWI-SB-Kit 3.0 2m	569507	2	3.0	11.0	13.0	3.7	blue	2
FWI-SB-Kit 3.0 3m	569508	3	3.0	11.0	13.0	3.7	blue	2
FWI-SB-Kit 3.0 5m	569509	5	3.0	11.0	13.0	3.7	blue	2
FWI-SGY-Kit 5.0 2m	569510	2	5.0	13.0	13.0	8.5	green / yellow	2
FWI-SGY-Kit 5.0 3m	569511	3	5.0	13.0	13.0	8.5	green / yellow	2
FWI-SGY-Kit 5.0 5m	569512	5	5.0	13.0	13.0	8.5	green / yellow	2

Accessories

Seismic wire cable system FWI-S spare-kit



FWI-S spare kit

Item	Item no.	Contents	Sales unit [pcs]
FWI-S spare kit	569513	1 x PVC hose red 1 x PVC hose blue 1 x PVC hose green/yellow 1 x Restraint washer 1 x Retrofit bracket	1

Threaded rod connector S-ROD

Threaded rod brace connector with increased angle adjustability to install threaded rods for seismic bracing



Bracing of pipeline with threaded rods

7

Applications

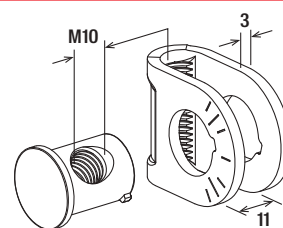
- For the seismic bracing of suspended threaded rods as well as new and existing frame constructions with threaded rods M10.
- Suitable to attach to M8 and M10 rods.
- For use in dry interior areas.

Advantages

- The design of the threaded rod brace connector allows a variable installation at angles between 30° and 60°.
- The threaded rod connector can be installed quickly and easily without having to dismantle already existing installations.
- By tilting the side rod by 90°, the threaded rod connector slides very easily, allowing easy and quick adjustment of the assembly height on the vertical threaded rod.
- The threaded rod connectors can be mounted on top of each other to brace the same point in different directions.

Properties

- Material U-shaped brackets: steel S275JR (material no. 1.0044) acc. to DIN EN 10025-2
- Material threaded rod: steel 11SMnPb37 (material no. 1.0737) acc. to DIN EN 10277-3
- Zinc plating: electro zinc-plated



S-ROD

Technical data

Item	Item no.	Sales unit
S-ROD	552361	[pcs] 10

Rod stiffener FTRC M12

Rod stiffener FTRC M12 for attaching strut channel to a threaded rod to accommodate compression loads



Rod stiffening for vertical seismic support

7

Applications

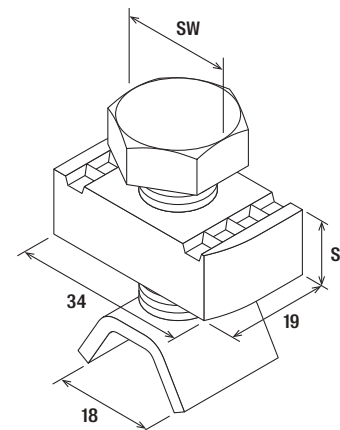
- For the reinforcement of existing suspended constructions due to bracing of threaded rods M10 or M12 to FUS channel profiles.
- For attaching strut channel to a threaded rod to accommodate compression loads.
- For use in dry interior areas.

Advantages

- The pronounced interlocking of the rod stiffeners gives a secure hold in the channel profile and holds the threaded rod in the desired position.
- The exact fit of the rod stiffeners enables quick and easy assembly.
- The assembly enables subsequent insertion in already installed channel profiles by 90° rotation.

Properties

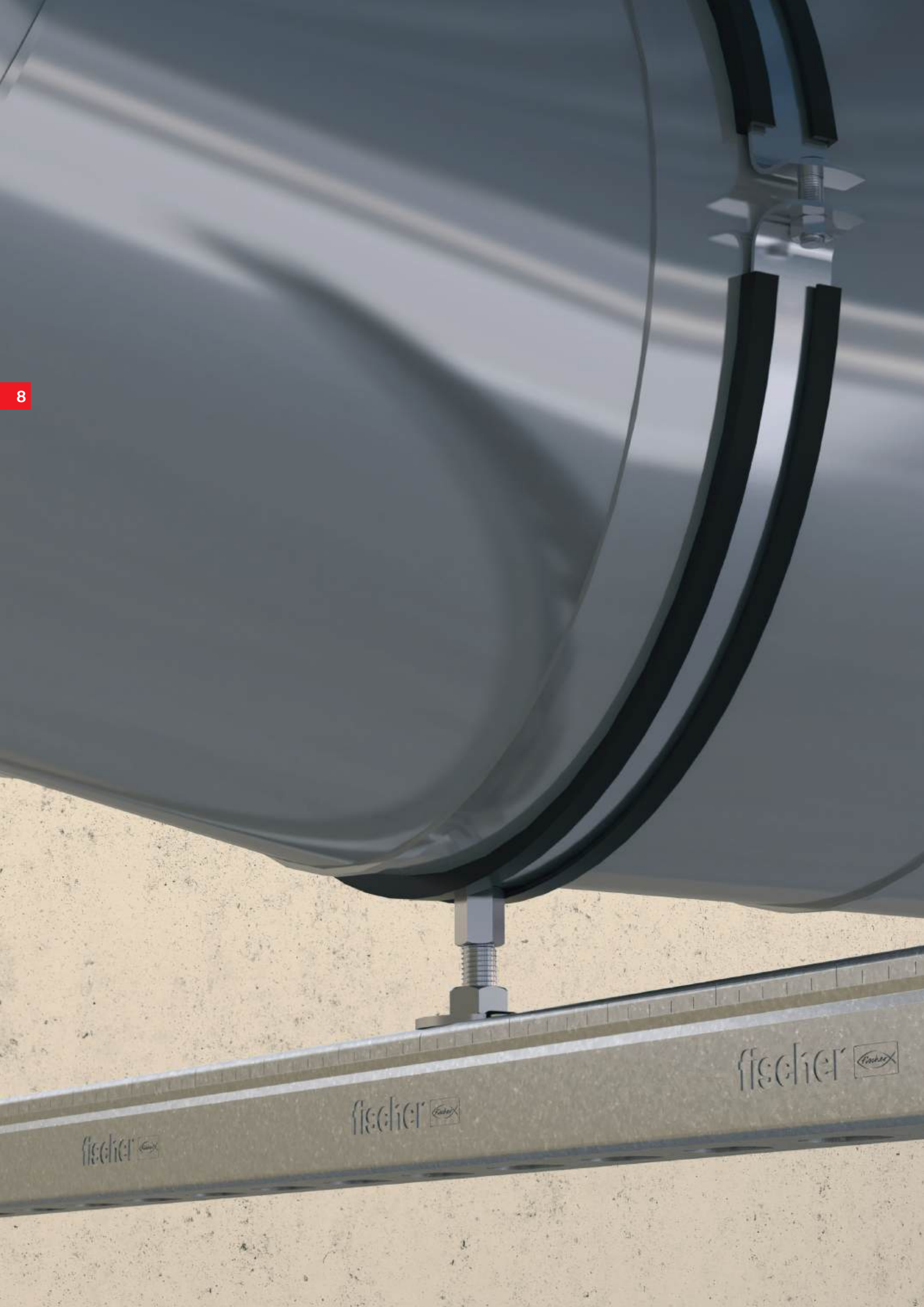
- Material: steel S235JR (material no. 1.0038) acc. to DIN EN 10025-2
- Zinc plating: electro zinc-plated





FTRC


Technical data

Item	Item no.	Thread M	Width across nut SW [mm]	Thickness S [mm]	Installation torque T_{inst} [Nm]	Sales unit [pcs]
FTRC M12	547791	M12	19	12.0	20	50



fischer 

fischer 

fischer 

8

Air duct and metal roof fixings

Ventilation duct clamp LGS	244	
Ventilation duct clamp LGSN	246	
Air duct hanger L- and Z-type	248	
Spiral duct hanger LRB / LRBN	250	
Ventilation duct connector VDC	251	
Flat roof base FFRB	252	
Profile hanger TZ / TZA / TZH / TZB / TZR	255	
Toggle plug KDS	257	
Hole punch LZ, hole stamp LST	259	
Rubber inlay EMS	260	
Profile connecting screw FPS-FPB	261	

Ventilation duct clamp LGS

Clamps - Ventilation duct clamp LGS

8



Support systems for ventilation



Spiral airduct on cantilever

Applications

- 2-screw-pipe clamp with sound insulation for fixing of spiral ducts.
- For use in dry interior areas.

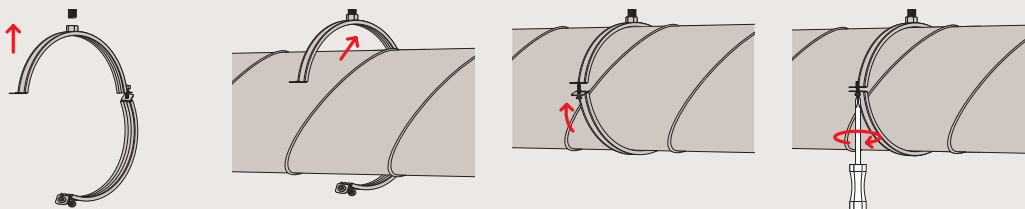
Advantages

- The large opening angle of the LGS enables a quick and easy installation.
- The LGS's two screws allow the adjustment to suit the outer pipe diameter.
- The sound insulation insert offers noise protection and prevents contact corrosion.
- The screw's loss protection prevents loss of the locking screws during installation.
- Connection nut with combination thread M8/M10
- The LGS is drilled on both sides of the clamp from 450 mm diameter on. This allows for connection with two threaded rods with nuts. Thereby the recommended load of the clamp can be doubled.

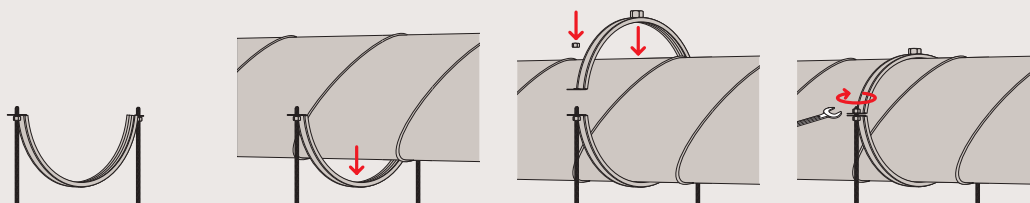
Properties

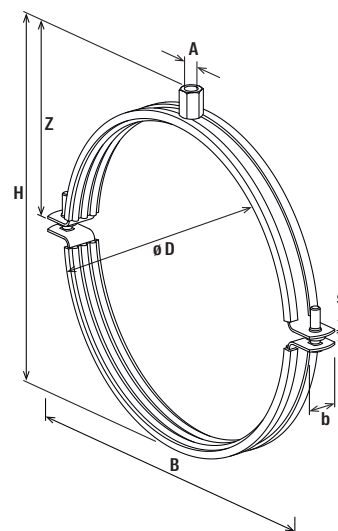
- Material: steel DC01 (material no. 1.330) acc. to DIN EN 10130
- Zinc plating: electro zinc-plated
- Connecting nut: resistance welded domed nut, M8 / M10, SW13
- Locking screw: oval head screw with combination recessed head
- Material sound insulation insert: SBR/EPDM; chlorine-free; silicone-free
- Sound insulation: for DIN 4109
- Temperature range: -50 °C to +110 °C
- Hardness: 45 ± 5° Shore A
- Fire behaviour: DIN 4102: Class B2

Installation LGS with connection nut



Installation LGS with two threaded rods (for LGS ≥ 450mm)





LGS

Technical data

Item	Item no.	Thread	Clamping range	Height	Height	Width	Width x thickness clamp band	Locking screw	Max. recom. static load (centr. tension) [kN]	Installation torque T_{inst} [Nm]	Sales unit [pcs]
		A	D [mm]	H [mm]	Z [mm]	B [mm]	b x s [mm]				
LGS 80	079491	M8 / M10	80	108	62	133	25 x 1.5	M6	0.60	2	25
LGS 90	079492	M8 / M10	90	118	67	143	25 x 1.5	M6	0.60	2	25
LGS 100	079493	M8 / M10	100	128	72	153	25 x 1.5	M6	0.60	2	20
LGS 112	079494	M8 / M10	112	140	78	165	25 x 1.5	M6	0.60	2	20
LGS 125	079495	M8 / M10	125	153	85	178	25 x 1.5	M6	0.60	2	10
LGS 140	079496	M8 / M10	140	168	92	193	25 x 1.5	M6	0.60	2	10
LGS 150	079497	M8 / M10	150	178	97	203	25 x 1.5	M6	0.60	2	10
LGS 160	079498	M8 / M10	160	188	102	213	25 x 1.5	M6	0.60	2	10
LGS 180	079499	M8 / M10	180	208	112	233	25 x 1.5	M6	0.60	2	10
LGS 200	079500	M8 / M10	200	228	122	253	25 x 1.5	M6	0.60	2	15
LGS 224	079501	M8 / M10	224	252	134	280	25 x 1.5	M6	0.60	2	15
LGS 250	079502	M8 / M10	250	278	147	306	25 x 1.5	M6	0.60	2	10
LGS 280	079503	M8 / M10	280	308	162	336	25 x 1.5	M6	0.60	2	10
LGS 300	079504	M8 / M10	300	328	172	356	25 x 1.5	M6	0.60	2	10
LGS 315	079505	M8 / M10	315	343	180	371	25 x 1.5	M6	0.60	2	10
LGS 355	079506	M8 / M10	355	383	200	410	25 x 1.5	M6	0.60	2	10
LGS 400	079507	M8 / M10	400	428	222	455	25 x 1.5	M6	0.60	2	10
LGS 450	024637 ¹⁾	M8 / M10	450	480	248	510	25 x 2.5	M10	0.80	5	1
LGS 500	024638 ¹⁾	M8 / M10	500	530	273	560	25 x 2.5	M10	0.80	5	1
LGS 560	024639 ¹⁾	M8 / M10	560	590	303	620	25 x 2.5	M10	0.80	5	1
LGS 600	024640 ¹⁾	M8 / M10	600	630	323	661	25 x 2.5	M10	0.80	5	1
LGS 630	542960 ¹⁾	M8 / M10	630	660	338	691	25 x 2.5	M10	0.80	5	1
LGS 710	542962 ¹⁾	M8 / M10	710	740	378	771	25 x 2.5	M10	0.80	5	1
LGS 800	024643 ¹⁾	M8 / M10	800	831	424	861	25 x 3.0	M10	0.80	5	1
LGS 900	024644 ¹⁾	M8 / M10	900	931	474	960	25 x 3.0	M10	0.80	5	1
LGS 1000	024645 ¹⁾	M8 / M10	1,000	1.031	527	1.06	25 x 3.0	M10	0.80	5	1
LGS 1.120	024646 ¹⁾	M8 / M10	1,120	1.151	584	1.183	25 x 3.0	M10	0.80	5	1
LGS 1.250	024647 ¹⁾	M8 / M10	1,250	1.281	649	1.313	25 x 3.0	M10	0.80	5	1

¹⁾ The installation with two threaded rods allows to double the given recommended loads.

Ventilation duct clamp LGSN

LGSN without sound insulation insert

8



Support systems for ventilation



Spiral airduct on cantilever

Applications

- 2-screw-pipe clamp without sound insulation for fixing of spiral ducts.
- For use in dry interior areas.

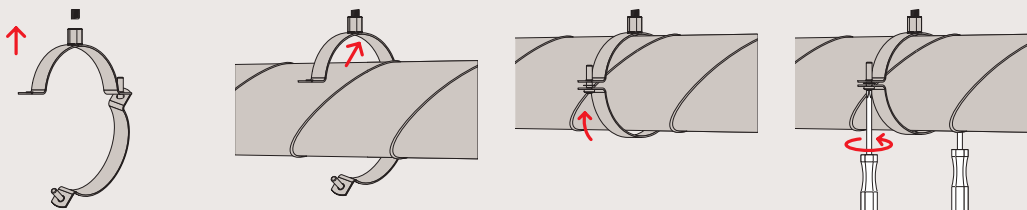
Advantages

- The large opening angle of the LGSN enables a quick and easy installation.
- The LGSN's two screws allow the adjustment to suit the outer pipe diameter.
- The screw's loss protection prevents loss of the locking screws during installation.
- Connection nut with combination thread M8/M10.
- The LGS is drilled on both sides of the clamp from 450 mm diameter on. This allows for connection with two threaded rods with nuts. Thereby the recommended load of the clamp can be doubled.

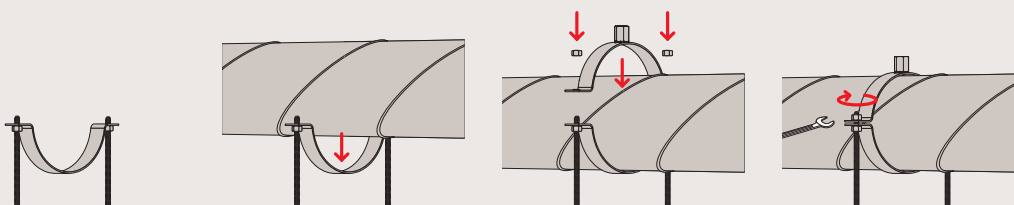
Properties

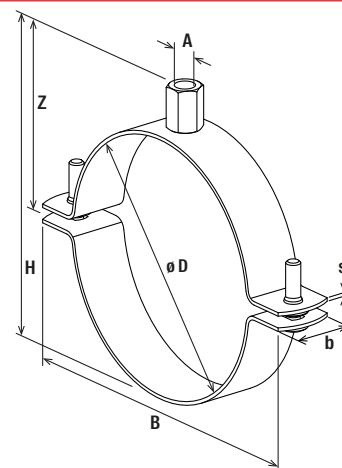
- Material: steel DC01 (material no. 1.330) according to DIN EN 10130
- Zinc plating: electro zinc-plated
- Connecting nut: resistance welded domed nut, M8 / M10, SW13
- Locking screw: cross recessed pan-head screw M6 (up to size 400), hexagon screw with nut M10 (size 450 to 1250)
- Fire behaviour: DIN 4102: Class A1

Installation LGSN with connection nut



Installation LGSN with two threaded rods (for LGSN ≥ 450mm)





LGSN

Technical data

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Item	Item no.	Thread A	Clamping range D [mm]	Height H [mm]	Height Z [mm]	Width B [mm]	Width x thickness clamp band b x s [mm]	Locking screw	Max. recom. static load (centr. tension) [kN]	Installation torque T_{inst} [Nm]	Sales unit [pcs]
LGSN 80	564518	M8 / M10	80	100	59	125	25 x 1.5	M6	0.60	2	25
LGSN 90	564519	M8 / M10	90	110	64	135	25 x 1.5	M6	0.60	2	25
LGSN 100	564520	M8 / M10	100	120	69	145	25 x 1.5	M6	0.60	2	20
LGSN 112	564521	M8 / M10	112	132	75	157	25 x 1.5	M6	0.60	2	20
LGSN 125	564522	M8 / M10	125	145	81	170	25 x 1.5	M6	0.60	2	10
LGSN 140	564523	M8 / M10	140	160	89	185	25 x 1.5	M6	0.60	2	10
LGSN 150	564524	M8 / M10	150	170	94	195	25 x 1.5	M6	0.60	2	10
LGSN 160	564525	M8 / M10	160	180	99	205	25 x 1.5	M6	0.60	2	10
LGSN 180	564526	M8 / M10	180	200	109	225	25 x 1.5	M6	0.60	2	10
LGSN 200	564527	M8 / M10	200	220	119	245	25 x 1.5	M6	0.60	2	15
LGSN 224	564528	M8 / M10	224	244	131	272	25 x 1.5	M6	0.60	2	15
LGSN 250	564529	M8 / M10	250	270	144	298	25 x 1.5	M6	0.60	2	10
LGSN 280	564530	M8 / M10	280	300	159	328	25 x 1.5	M6	0.60	2	10
LGSN 300	564531	M8 / M10	300	320	169	348	25 x 1.5	M6	0.60	2	10
LGSN 315	564532	M8 / M10	315	335	176	362	25 x 1.5	M6	0.60	2	10
LGSN 355	564533	M8 / M10	355	375	196	402	25 x 1.5	M6	0.60	2	10
LGSN 400	564534	M8 / M10	400	420	219	447	25 x 1.5	M6	0.60	2	10
LGSN 450	564535 ¹⁾	M8 / M10	450	472	245	502	25 x 2.5	M10	0.80	5	1
LGSN 500	564536 ¹⁾	M8 / M10	500	522	270	552	25 x 2.5	M10	0.80	5	1
LGSN 560	564537 ¹⁾	M8 / M10	560	582	300	612	25 x 2.5	M10	0.80	5	1
LGSN 600	564538 ¹⁾	M8 / M10	600	622	320	653	25 x 2.5	M10	0.80	5	1
LGSN 630	564539 ¹⁾	M8 / M10	630	652	335	683	25 x 2.5	M10	0.80	5	1
LGSN 710	564540 ¹⁾	M8 / M10	710	732	375	763	25 x 2.5	M10	0.80	5	1
LGSN 800	564541 ¹⁾	M8 / M10	800	823	420	853	25 x 3.0	M10	0.80	5	1
LGSN 900	564542 ¹⁾	M8 / M10	900	923	470	952	25 x 3.0	M10	0.80	5	1
LGSN 1000	564543 ¹⁾	M8 / M10	1,000	1.023	520	1.052	25 x 3.0	M10	0.80	5	1
LGSN 1120	564544 ¹⁾	M8 / M10	1,120	1.143	580	1.175	25 x 3.0	M10	0.80	5	1
LGSN 1250	564545 ¹⁾	M8 / M10	1,250	1.273	645	1.305	25 x 3.0	M10	0.80	5	1

¹⁾ The installation with two threaded rods allows to double the given recommended loads.

Air duct hanger L- and Z-type

Fastening components - Air duct hanger L- and Z-type



Air duct installation on steel beam with clamp hanger and ZKH



Air duct vertical installation utilising LKHS

8

Applications

- Fastening component with sound-insulation for air ducts.
- For use in dry interior areas.

Advantages

- The air duct hanger's sound-insulation element reduces the transfer of vibration and noise to the building.
- The multiple holes allow a quick and easy fastening with self-drilling screws or rivets.
- The center hole allows a simple alignment and height adjustment of the threaded rod.
- The LKHS enables stable vertical installation of ventilation ducts in conjunction with fischer cantilever arms FCA in riser shafts.

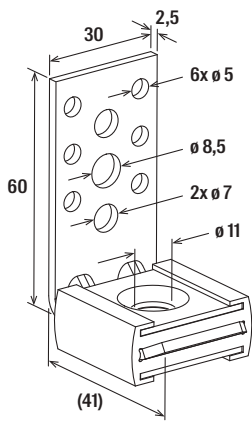
Properties

- Material LKH/ZKH: steel DD11 (material no. 1.0332)
- Material LKHN/ZKHN: steel DC01 (material no. 1.0330)
- Material LKHS: steel S235JR (material no. 1.0038)
- Zinc plating: electro zinc-plated
- Sound insulation: EPDM/SBR

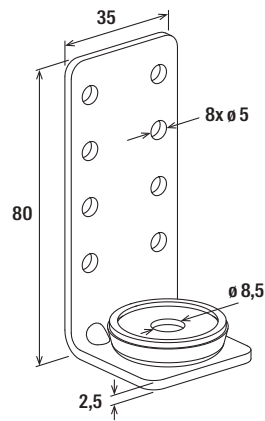
See also:



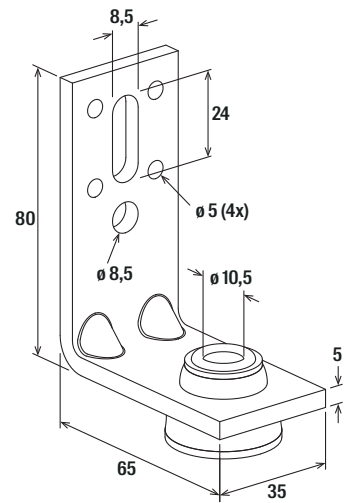
Product family Profile connecting screw
FPS-FPB Page 261



LKHN



LKH

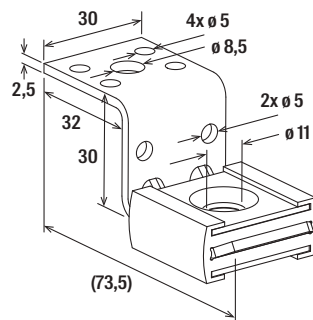


LKHS

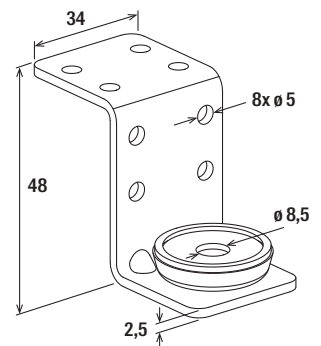
Technical data

Item	Item no.	For thread	Max. recom. static load (centr. tension)		Sales unit
			N_{rec} [kN]		[pcs]
LKHN	516537	M8, M10	0.90		50
LKH	024671	M8	0.50		50
LKHS	568672	M8, M10	0.80		25

Note on LKHS: the maximum recommended load when using 4 LKHS reaches 3.20 kN.



ZKHN



ZKH

Technical data

Item	Item no.	For thread	Max. recom. static load (centr. tension)		Sales unit
			N_{rec} [kN]		[pcs]
ZKHN	516540	M8, M10	0.90		50
ZKH	024674	M8	0.50		50

Spiral duct hanger LRB / LRBN

Fastening components - Spiral duct hanger LRB and LRBN



Spiral duct pipe with sound insulated hanger

8

Applications

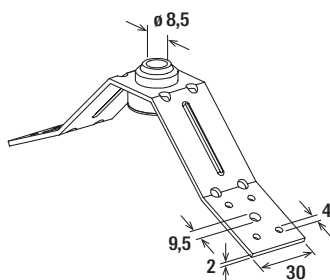
- Fastening component with sound-insulation for spiral ducts.
- For use in dry interior areas.

Advantages

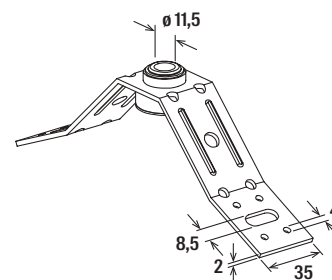
- The multiple holes on the duct hangers allow a quick and easy fastening with self-drilling screws or rivets.
- The duct hangers sound-insulation element reduces the transfer of vibration and noise.
- The center hole in the duct hangers allows the simple alignment and height adjustment of the threaded rod.
- The riveted version gives the ceiling hanger increased stability.

Properties

- Material LRB: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Material LRBN: steel S235JR (material no. 1.0038) acc. to DIN EN 10025
- Zinc plating: electro zinc-plated
- Sound insulation: for DIN 4109
- Temperature range: -50 °C to +110 °C
- Hardness: 45 ± 5° Shore A
- Fire behaviour: DIN 4102: Class B2



LRB



LRBN

Technical data

Item	Item no.	For thread	Max. recom. static load (centr. tension) [kN]	Sales unit [pcs]
LRB	024675	M8	0.50	50
LRBN	077613	M8, M10	0.90	50

See also:



Product family Profile connecting screw
FPS-FPB Page 261

Ventilation duct connector VDC

Connecting elements - Ventilation duct connector VDC



Flange connection of two rectangular ducts

8

Applications

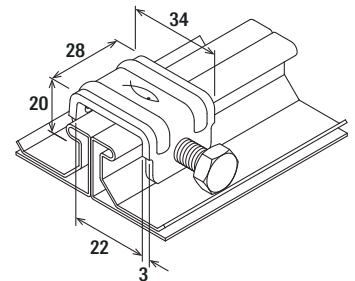
- Ventilation duct connector VDC for simple flange connection of large duct cross-sections and/or high pressure conditions.
- For use in dry interior areas.

Advantages

- Easy to use.
- No drilling.
- High clamping effect.
- Ensures a firm connection of ducts.
- Reduces pressure losses in the ventilation duct systems.
- Reduces noise in the ventilation duct system.

Properties

- Material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Zinc plating: electro zinc-plated



VDC

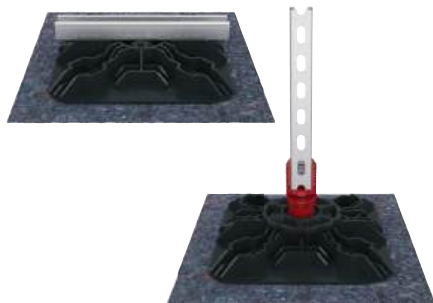
Technical data

Item	Item no.	Bolt ø x length	Rec. installation distance [mm]	Sales unit [pcs]
VDC	568675	M8 x 20	200 - 300	50

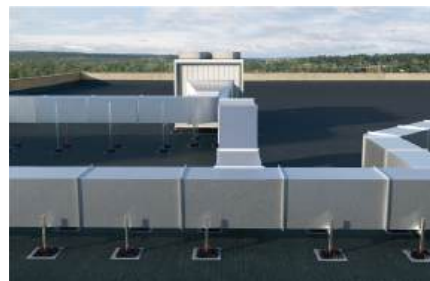
For ventilation ducts with a side length of less than 800 mm, place a connector in the middle of each side.

Flat roof base FFRB

Flat roof base - Secure and variable thanks to tolerance compensation



Pipelines and pipeline routes



Ventilation systems and ventilation ducts

8

Applications

- Pipelines and cable trays on flat roofs
- Ventilation ducts and pipes on flat roofs
- Air conditioning systems, heat exchangers and cooling towers, etc. on flat roofs
- Maintenance platforms, walkways and bridges
- Solar thermal or photovoltaic systems
- Protecting membrane roofs
- Wind safety attachments
- Durability test for the application, tested according to EOTA TR 024: 2019-08. Test report No. 904 1349 000/STÄ

Advantages

- The fischer flat roof base ensures optimal weight distribution and reduces point loads on flat roofs, protecting against defect and recourse claims.
- The system fit with the proven FUS channel system in hot-dip galvanised steel ensures economical installation.
- The material of the base plate enables weather-resistant, durable and secure fixing of supports on flat roofs.
- The protective fibre fleece FFRP protects synthetic roofs or bitumen waterproofing membranes, and effectively prevents damage or penetration of the membrane.
- The handwheel of the flat roof base FFRBH allows for continuous adjustment of the tilt angle up to 12° and reduces the installation effort in the long term, as no further accessories are required.
- The swivel-mounted base of the flat roof base FFRBH enables a 360° rotation of the FUS channel. This allows the flat roof base to be placed in any position.

Properties

Material FFRB / FFRBH:

- PP HD GF30%
- nut stainless steel A2, DIN 6330
- nut stainless steel A2, DIN 934
- disc spring: stainless steel A2, DIN 2093

Material LKS:

- stainless steel A2, DIN 933

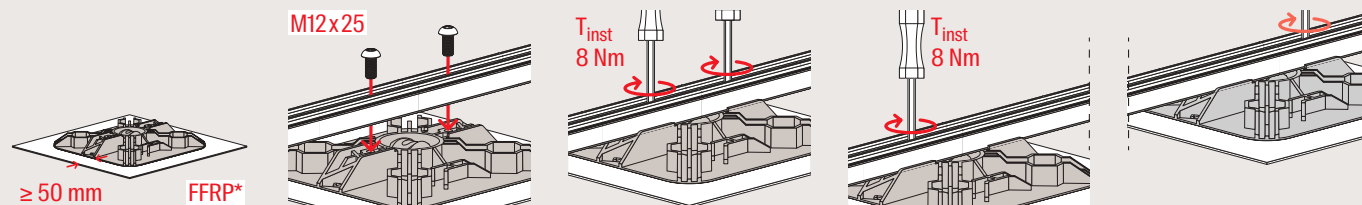
Material FFRP:

- polyester fibre fleece 300 g/m²

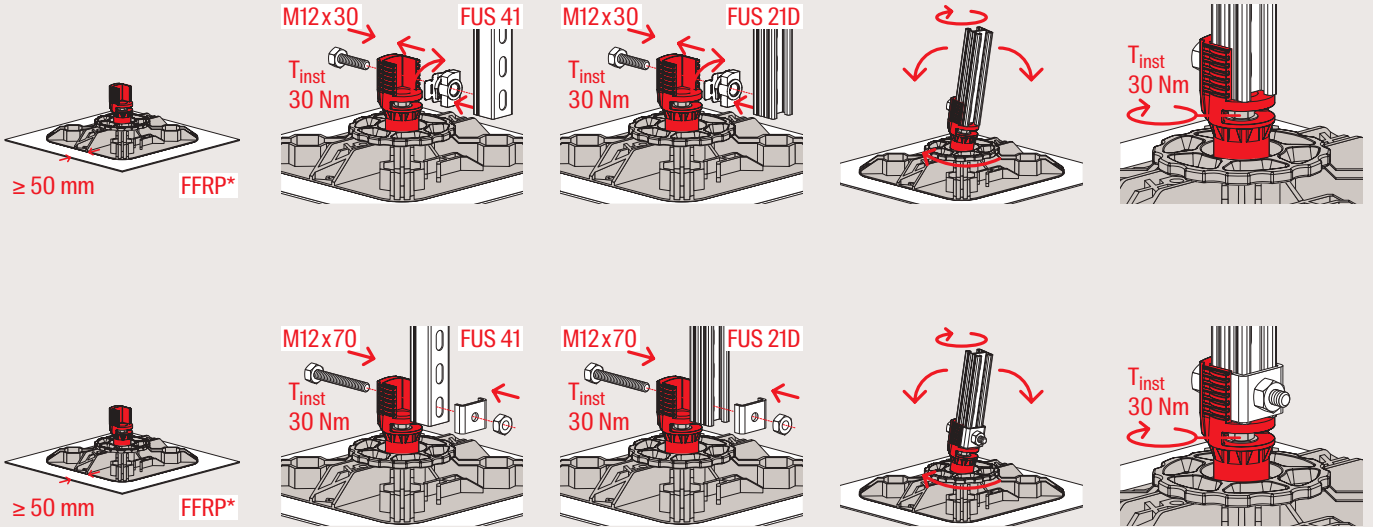
Material FFRBB:

- concrete

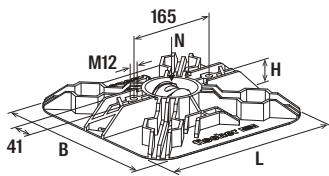
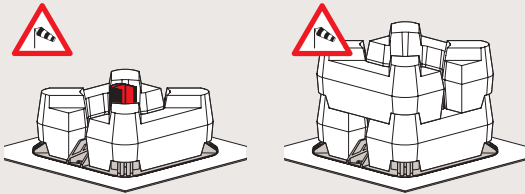
Installation FFRB



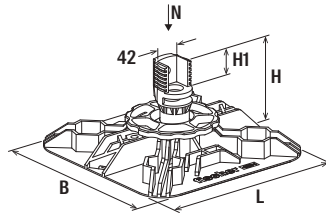
Installation FFRBH



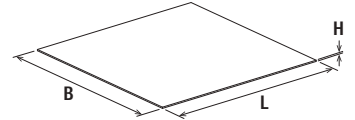
Installation FFRBB



FFRB



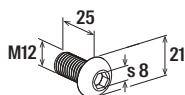
FFRBH



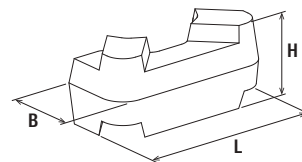
FFRP

Technical data

Item	Item no.	Length	Width	Height	Height 1	Installation torque	Max. recommended static load (upright)	Weight packaging unit	Sales unit
		L [mm]	B [mm]	H [mm]	H1 [mm]	T_{inst} [Nm]	N_{rec} [kN]	[kg]	[pcs]
FFRB Flat roof base standard	559127	340	340	52	–	40	20.0	3.285	2
FFRBH Flat roof base hinged	559128	340	340	168	50	40	20.0	4.255	2
FFRP Flat roof base protector	559129	450	450	3	–	–	–	0.870	10



LKS



FFRBB

Technical data

Item	Item no.	Length l [mm]	Width B [mm]	Height H [mm]	Weight packaging unit [kg]	Sales unit [pcs]
LKS M12x25 A2	559972	25	-	-	1.460	50
FFRBB flat roof base ballast	559130	330	135	150	8.000	1

Profile hanger TZ / TZA / TZH / TZB / TZR

Metal ceiling hanger - Profile hanger TZ / TZA / TZH / TZB / TZR



Sprinkler pipe installation to trapezoidal metal sheet



Ventilation duct on trapezoidal sheet

8

Applications

- Fixing element for trapezoidal sheets (available in five versions).
- For application in sprinkler systems TZ, TZH and TZA need to be fastened with a hex bolt through the punched hole.
- For non sprinkler applications the hangers can be fixed to the metal sheet using self drilling screws or blind rivets
- For use in dry interior areas.

Advantages

- The VdS approval for TZ/TZH and the FM approval for the TZA guarantee independently tested safety.
- The TZH's adjustable nut allows a simple, post-installation height adjustment.
- The predetermined bending point of the TZ/TZH/TZA enables ideal adaptation to the trapezoidal sheet shape.
- The TZR reduces the noise emission in the building by using a sound insulation element.
- The TZB is a cost-effective alternative for standard non-approved applications for use with threaded rods and nuts.

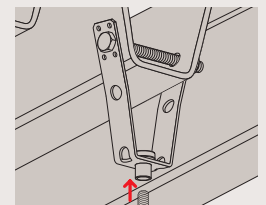
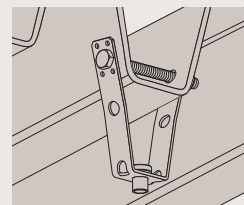
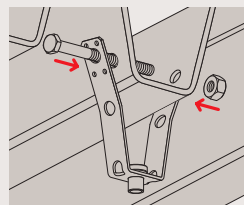
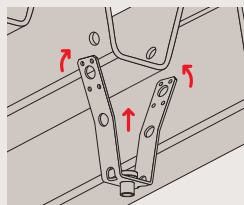
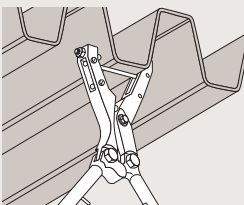
Properties

- Material TZ/TZA: steel DD11
- Material TZH: steel DX51D+Z140-275
- Material TZB/TZR: Q235B
- Zinc plating: electro zinc-plated

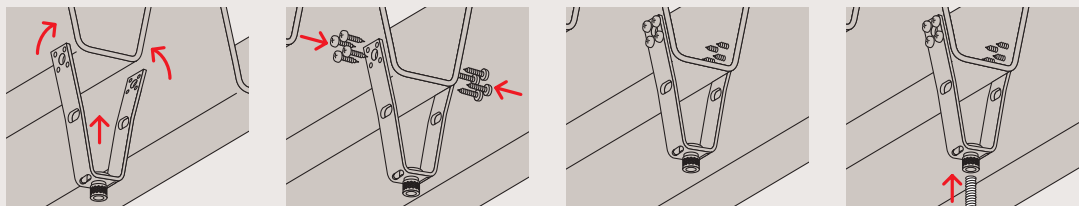
Certificates



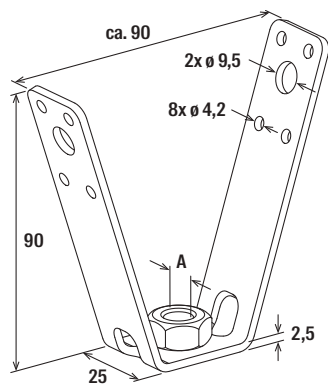
Installation for use in sprinkler systems TZ/TZH/TZA



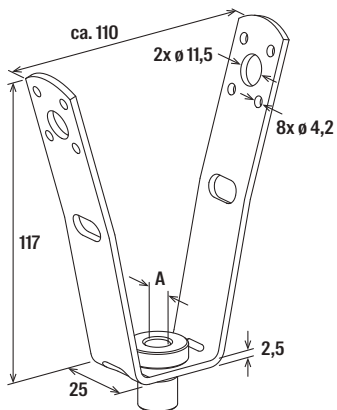
Other installations



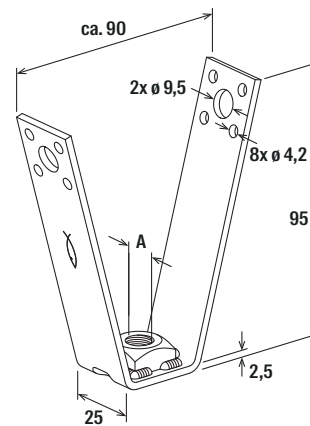
8



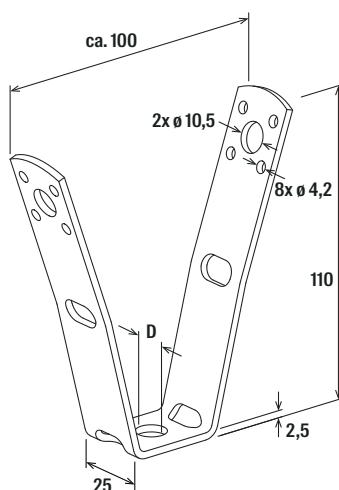
TZ



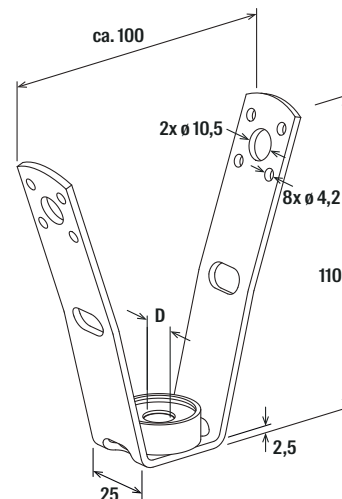
TZH



TZA



TZB



TZR

Technical data

Item	Item no.	VdS approval	FM approval	Thread	Hole-Ø		Max. recom. static load (centr. tension) N _{rec} [kN]	Sales unit [pcs]
					A	D [mm]		
TZ M8	064094	Yes	-	M8	-	-	3.00	25
TZ M10	064095	Yes	-	M10	-	-	3.00	25
TZA M10	524047	-	Yes	M10	-	-	3.00	50
TZH M8	079825	Yes	-	M8	-	-	4.00	25
TZH M10	079826	Yes	-	M10	-	-	4.00	25
TZB Ø10.5	568674	-	-	-	-	10.5	3.00	50
TZR Ø10.5	568673	-	-	-	-	10.5	3.00	50

The load values do not consider the maximum allowable load of the trapezoidal metal sheet.

Toggle plug KDS

Toggle plug KDS for secure fixing of pipes to trapezoidal metal sheet ceilings in stationary sprinkler systems



Sprinkler pipe on trapezoidal sheet metal ceiling

8

Applications

- The completely pre-assembled toggle plug KDS is used as a fixing element on trapezoidal metal ceilings.
- Suitable e.g. for fixing pipelines, mounting channels, ventilation ducts, power lines and lighting systems.
- Attachment of sprinkler pipelines to trapezoidal metal sheets: from 3/4 to 1 1/2" inch according to FM, max DN 50 (2") according to VdS.
- The permissible tensile load per fastening point for sprinkler lines on trapezoidal sheets is 0.8 kN, for other fastenings it is 1.0 kN.
- For use in dry interior areas.

Advantages

- The entire KDS range has VdS approval. The KDS 10 also has FM approval. This means that the KDS toggle plug guarantees objectively tested functional safety for use in sprinkler systems.
- Available in lengths from 100 to 500 mm (KDS 8) and 100 to 200 mm (KDS 10).
- The rotatable threaded rod allows easy height adjustment within the trapezoidal sheet. The threaded rod is secured against unintentional unscrewing.
- Complete with threaded rod, nut, washer, sealing washer and load distribution block. The sealing washer ensures a reliable seal on the trapezoidal metal sheet.

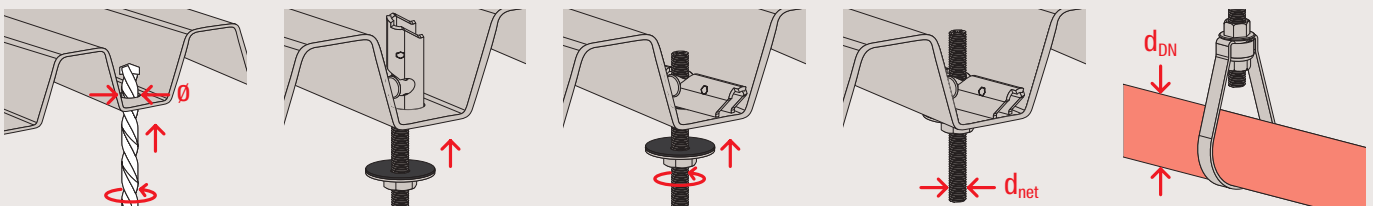
Properties

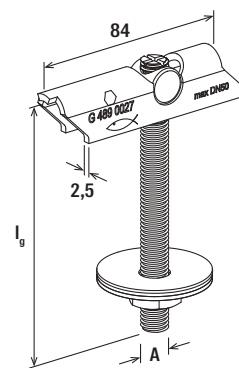
- Material: galvanised steel
- Material sealing washer: polyolefin-elastomere TPE-O
- Zinc plating: electro zinc-plated

Certificates



Installation KDS





KDS

Technical data

8

Item	Item no.	Thread A	Thread length l_g [mm]	For sprinkler pipes acc. to VdS	dnet VdS	For sprinkler pipes acc. to FM	dnet FM	Drill hole \emptyset [mm]	Permissible tension load acc. to VdS/FM on trapezoidal metal sheet \geq 0.63mm [kN]	Permissible tension load for non-VdS/ FM rel. applications on trap. metal sheet* [kN]	Max. recom. static load (centr. tension) N_{rec} [kN]	Sales unit [pcs]
KDS 8x100	563859	M8	100	\leq DN 50 (2")	M8	–	–	22	0.8	1	8.00	50
KDS 8x200	563860	M8	200	\leq DN 50 (2")	M8	–	–	22	0.8	1	8.00	25
KDS 8x300	563861	M8	300	\leq DN 50 (2")	M8	–	–	22	0.8	1	8.00	25
KDS 8x500	563862	M8	500	\leq DN 50 (2")	M8	–	–	22	0.8	1	8.00	25
KDS 10x100	563863	M10	100	\leq DN 50 (2")	M10	DN 20 to DN 40 (3/4" to 1 1/2")	M10	25	0.8	1	8.50	25
KDS 10x200	563864	M10	200	\leq DN 50 (2")	M10	DN 20 to DN 40 (3/4" to 1 1/2")	M10	25	0.8	1	8.50	25

* Note on the maximal recommended static load (centric tension): Please consider the permissible load capacity of the trapezoidal metal sheet.

Hole punch LZ, hole stamp LST

Hole punch for punching trapezoidal sheet roofs



Applications

- Tool for punching holes in trapezoidal metal sheets.

Advantages

- The hole punch LZ enables easy handling during use.
- Thanks to the long lever, only a little force is required to use it.
- The hole stamp LST can be replaced if it shows signs of wear.

Properties

- Usable for trapezoidal metal sheets with max. width of 100 mm.
- Max. sheet thickness 1,25 mm.
- Hole punch diameter 10 mm.
- Adjustable depth stop for accurate adjustment.
- Stamp with ejector springs for easy ejection of stamps from metal sheet.
- Rubber handles for better grip.
- Long lever and hinges for better power transmission.

Technical data

Item	Item no.	Max. sheet thickness [mm]	Hole punch diameter [mm]	Opening width [mm]	Sales unit [pcs]
LZ	079830	1.25	10	100	1

Hole stamp LST

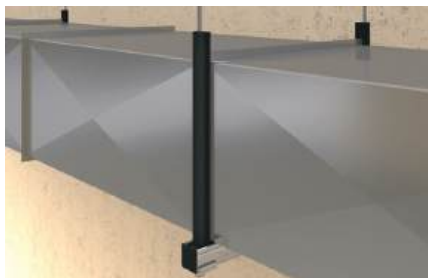


LST

Item	Item no.	Hole punch diameter [mm]	Sales unit [pcs]
LST 10	079829	10	2

Rubber inlay EMS

Fastening components - Rubber inlay EMS



Airduct with sound insulation on installation channel

8

Applications

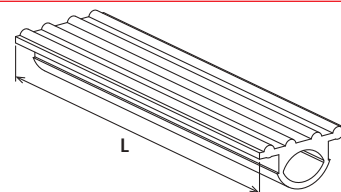
- Profile rubber to insert in channels.
- Sound insulation of large ducting.
- EMS 31 suitable for FLS channels, EMS 41 suitable for FUS channels.

Advantages

- The channel rubber EMS provides sound insulation between components.
- The design of the rubber EMS allows it to be used in channels and threaded rods.

Properties

- Material sound insulation: SBR/EPDM chlorine-free and silicone-free
- Sound insulation: special noise-absorbing lining
- Temperature range: -50 °C to +110 °C
- Hardness: 45 ± 5° Shore A
- Fire behaviour: DIN 4102: Class B2



EMS

Technical data

Item	Item no.	For profile	Length [m]	Sales unit [pcs]
EMS 31	538752	all FLS channels	25	1
EMS 41	550806	all FUS channels	6	1

Profile connecting screw FPS-FPB

The profile connection screw with mushroom head, drill point and PH cross drive



Suspended pipes on trapezoid roof

8

Applications

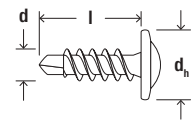
- Suitable for fastening duct hangers and spiral duct hangers to air ducts and spiral air ducts.
- For use in dry interior areas.

Advantages

- The screw is self drilling and does not require a drilling machine.

Properties

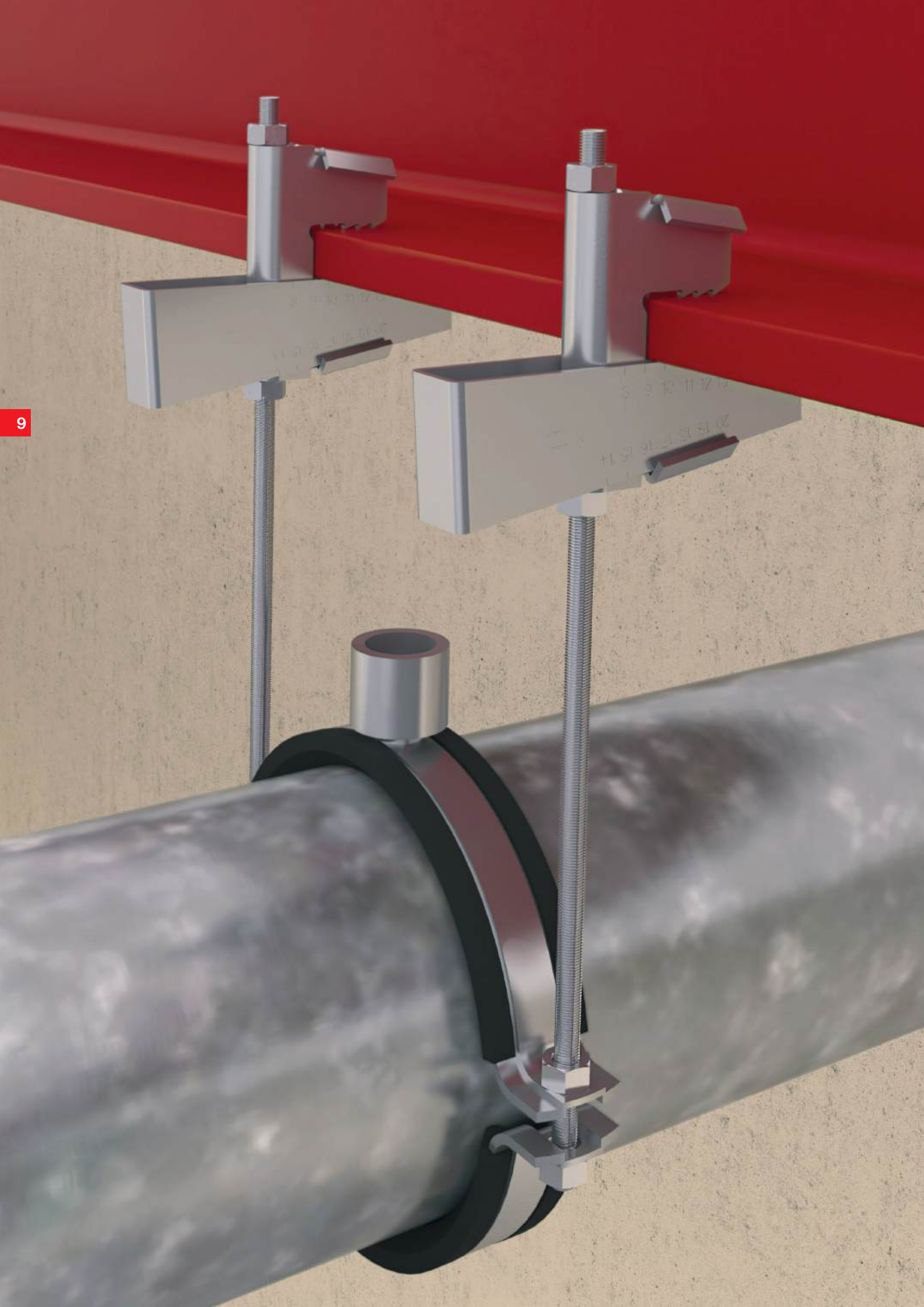
- Material: steel
- Zinc plating: electro zinc-plated






























FPS-FPB

Technical data

Item	Item no.	Diameter d [mm]	Head-ø d _h [mm]	Length l [mm]	Drive	Sales unit [pcs]
FPS-FPB 4.2 x 13 ZPF 1000	040457	4.2	9.6	13	PH2	1000



9 Accessories

Beam clamp TKL	264		Eyebolt AG	291	
Beam clamp TKLS	266		Thread hanger RAH	292	
Swivel beam clamp TKLG	268		Reduction piece RD	293	
Threaded rod G	271		Reduction socket RDM and GRD	294	
Threaded stud GS	273		Flat eye screw LLS	295	
Base plates GPL / GPS / GPSR / GPR	275		Textile web strapping GWB	296	
Stud screw STST with TX star recess	277		Perforated steel banding LBV/LBK	297	
Support hanger AHB	279		Impact nail ED	299	
Multi connector MW	280		Setting tool SZE	300	
Parallel connector PV	281				
Double connector plate DPP, DPF	283				
Bolt connector SBB	284				
Turnbuckle SPS, Bolt left-hand/right-hand BLR	285				
Hexagonal screw SKS	286				
Cylindrical head screw ZKS	287				
Washer U	288				
Hexagonal nut MU	289				
Hexagonal connector VM	290				

Beam clamp TKL

Clamp hanger TKL - the easy fixing solution without welding and drilling



Heavy drainage pipe on beam clamp

9

Applications

- Clamp hangers allow for simple fixing by clamping direct to steel girders.
- Retaining straps SS-TKL are required for VdS equipment over Ø 65 mm.
- For use in dry interior areas.

Certificates



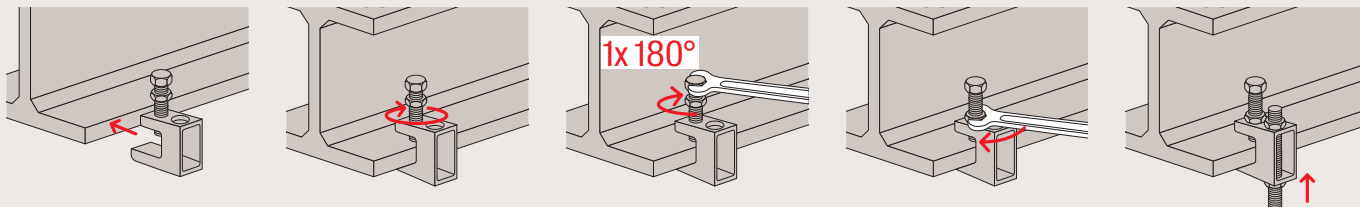
Advantages

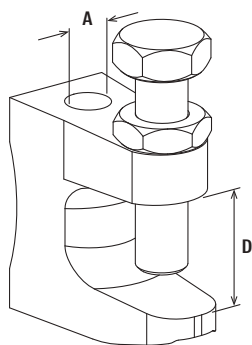
- The TKL design with its clamping screw allows for fixing to steel girders without the need for welding and drilling.
- The design of the clamping screw prevents it from slipping from the steel girder.
- VdS/FM/UL certificates guarantee independently tested safety.
- The solid TKL design guarantees a high load-bearing capacity.
- The TKL with thread mount guarantees quick and easy installation.
- The TKL with through-hole allows for height adjustment after installation.

Properties

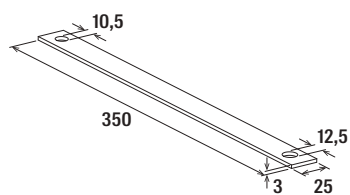
- Material TKL: malleable cast iron EN-GJMB-350-10 acc. to DIN 1562
- Material bolt: steel 8.8 acc. to ISO 4017
- Material nut: steel acc. to ISO 4035, strength category 4
- Material SS-TKL: steel DX51D (material no. 1.0226) acc. to EN 10214
- Zinc plating: electro zinc-plated

Installation TKL

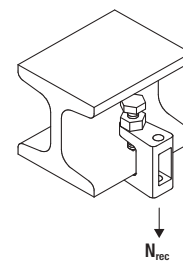




TKL



SS-TKL



Technical data

Item	Item no.	VdS approval	FM approval	UL approval	Clamping range	Thread	Max. recom. static load (centr. tension)	Sales unit
					D [mm]	A	N_{rec} [kN]	[pcs]
TKL L M 8	064055	Yes	-	-	0 - 18	M8	1.20	50
TKL M 8	079687	Yes	-	-	0 - 23	M8	2.50	50
TKL L Ø 9	077605	Yes	-	-	0 - 18	Ø 9	1.20	50
TKL M10	079688	Yes	Yes	Yes	0 - 20	M10	2.50	50
TKL Ø 11	079689	Yes	Yes	Yes	0 - 20	Ø 11	2.50	50
TKL M12	020949	Yes	Yes	Yes	0 - 26	M12	3.50	50
TKL Ø 13	043275	Yes	Yes	Yes	0 - 26	Ø 13	3.50	50
SS-TKL M10/M12	048154	Yes	-	-	-	Ø 10 / Ø 12	-	25

Beam clamp TKLS

Clamp hangers for easy fixing to steel girders with just one tool



Heavy steel pipe suspended on steel beam

9

Applications

- All kind of fixings by threaded rods to steel beams with sloping flange plate up to 14%.
- Retaining straps SS-TKLS are required for VdS equipment over \varnothing 65 mm.
- For use in dry interior areas.

Advantages

- The TKLS design with hammering wedge allows fixing to steel beams without the need of welding and drilling.
- The teeth of the TKLS effectively prevent from slipping off the steel beam.
- VdS and FM approval guarantees objectively tested functional safety.
- The TKLS made of steel guarantees highest load-bearing capacity.
- The TKLS allows pre-assembling of threaded rods and for retrospective height adjustment.

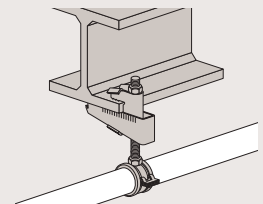
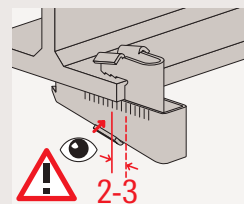
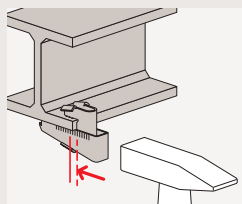
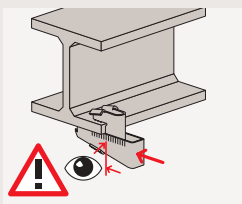
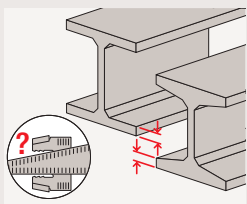
Properties

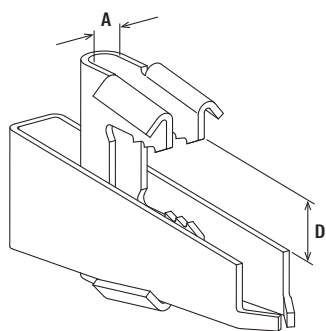
- Material TKLS: steel HX420LAD+ZAD (material no. 1.0935) acc. to DIN EN 10346
- Material SS-TKLS: steel DX51D (material no.1.0226) acc. to EN 10214
- Zinc plating: electro zinc-plated

Certificates / Features

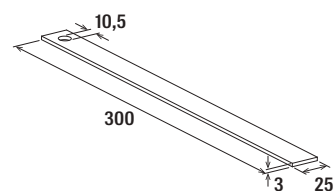


Installation TKLS





TKLS



SS-TKLS

Technical data

Item	Item no.	VdS approval	FM approval	Hole-Ø	Clamping range	Max. recom. static load (centr. tension)	Max. recom. pipe-Ø acc. VDS CEA 4001	Sales unit
				A [mm]	D [mm]	N_{rec} [kN]		[pcs]
TKLS Ø 9	531134	Yes	-	9	8 - 20	2.00	≤ DN 50	25
TKLS Ø 11	531136	Yes	Yes	11	8 - 20	3.50	> DN 50 ≤ DN 100	25
TKLS Ø 13	531137	Yes	Yes	13	8 - 20	5.00	> DN 100 ≤ DN 200	25
TKLS Ø 17	531138	Yes	Yes	17	11 - 26	10.00	> DN 200 ≤ DN 250	16
SS-TKLS M10	566855	Yes	-	-	-	-	-	50
SS-TKLS M12	566856	Yes	-	-	-	-	-	50
SS-TKLS M16	566857	Yes	-	-	-	-	-	50

Swivel beam clamp TKLG

Swivel beam clamp TKLG - The articulated beam clamp for fastening to inclined steel beams



Pipe fixing to inclined steel beam



Steel beam fixing with retaining strap

9

Applications

- The swivel beam clamp TKLG enables pipe and channel suspensions to be easily attached by clamping them to inclined steel supports.
- For suspending sprinkler pipes from sloped or tilted steel supports up to a deflection angle of max. 25° in accordance with FM and VdS.
- For pipes \geq DN 65 and when installed to tilted or sloped steel beams, the TKLG support clamp must be secured to the steel support with the SS-TKLG retaining strap for VdS-compliant installation.
- Suitable for pipelines up to DN 100 according to VdS.
- Suitable for steel beams with flange thicknesses of max. 17 mm.
- For use in dry interior areas.

Advantages

- The hinged design allows installation to inclined or tilted steel beams without welding or drilling.
- The joint connection can be rotated 360° and allows angle mounting from 0-180°.
- FM and VdS approval guarantee objectively tested functional reliability.
- Suitable for use in stationary sprinkler systems.
- The solid design of the TKLG allows a high load capacity.
- The M8 or M10 threaded mount allows threaded rods to be installed quickly and easily on the TKLG.
- Suitable for steel beams with flange thicknesses up to max. 17 mm

Properties

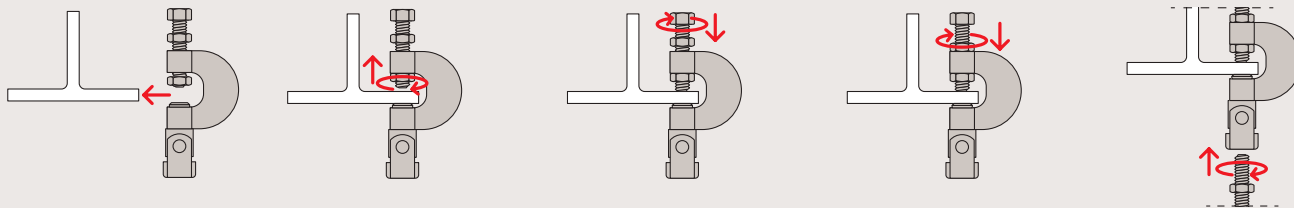
- Material TKLG: high alloy steel S420NC
- Material screw: steel grade 8.8
- Material nut: steel acc. to DIN 267-4, grade min. 8
- Material SS-TKLG: steel DX51D+Z275
- Zinc plating: electro zinc-plated

Certificates



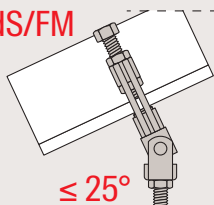
G 423024

Installation TKLG



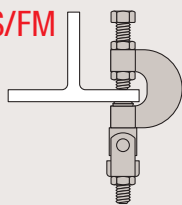
FM/VdS-approved installation

VdS/FM

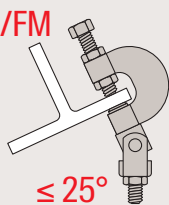


≤ 25°

VdS/FM

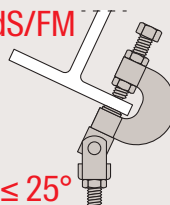


VdS/FM



≤ 25°

VdS/FM

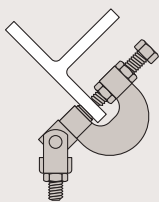


≤ 25°

9

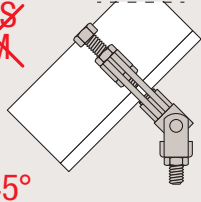
Other installations

~~VdS~~
~~FM~~



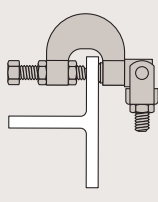
≤ 45°

~~VdS~~
~~FM~~

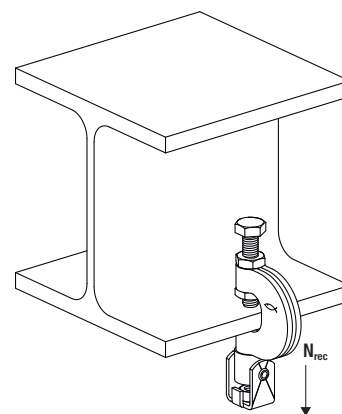
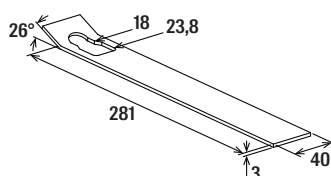
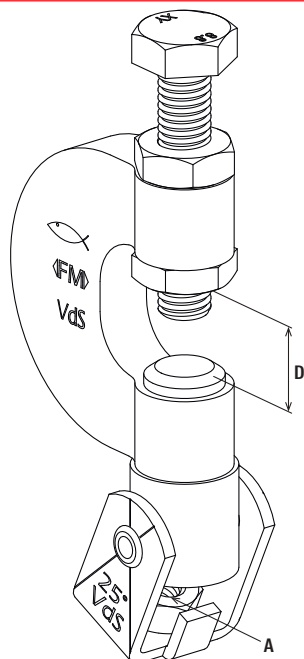


≤ 45°

~~VdS~~
~~FM~~



90°



TKLG

SS-TKLG

Technical data

Item	Item no.	VdS approval	FM approval	Clamping range D [mm]	Thread A	Max. recom. static load at 0-25°	Max. recom. static load at 25-45°	Tightening torque T_{inst} [Nm]	Sales unit [pcs]
						N_{rec} [kN]	N_{rec} [kN]		
TKLG M8	570846	Yes	-	3 - 17	M8	2.50	1.50	18	25
TKLG M10	570847	Yes	Yes	3 - 17	M10	2.50	1.50	18	25
SS-TKLG	573820	Yes	-	-	-	-	-	-	10

Threaded rod G

Universal threaded rod for fixing pipes and channels

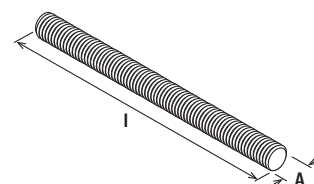


Applications

- For use in dry interior areas.

Properties

- Material threaded rod G (G6 - G24): DIN 976 steel 4.8, acc. to DIN EN ISO 898-1
- Material threaded pipe G (G½" - G¾"): steel S235JR (material no. 1.0037), acc. to DIN EN 10025
- Zinc plating: electro zinc-plated

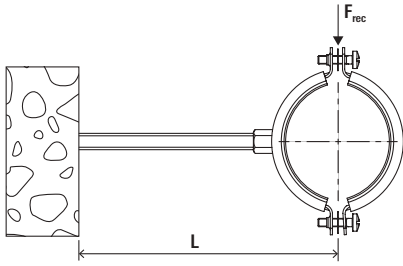


G

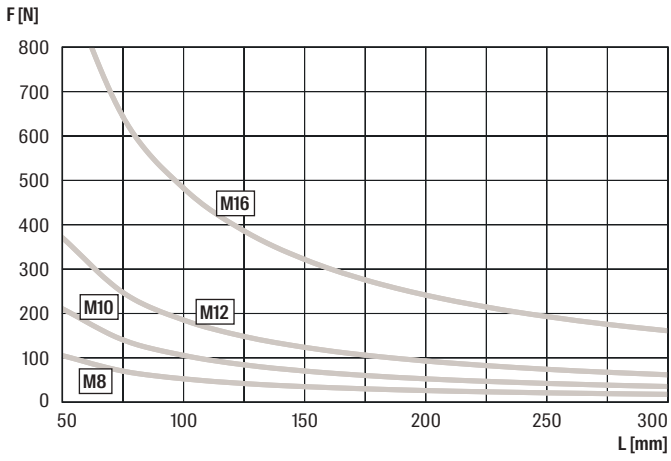
Technical data

Item	Item no.	Length l [mm]	Thread A	Sales unit [pcs]
G M6 x 1000	020956	1,000	M6	50
G M8 x 1000	079740	1,000	M8	25
G M8 x 2000	079741	2,000	M8	25
G M10 x 1000	079744	1,000	M10	25
G M10 x 2000	079745	2,000	M10	25
G M10 x 3000	557092	3,000	M10	5
G M12 x 1000	020957	1,000	M12	20
G M12 x 2000	579746	2,000	M12	25
G M12 x 3000	064056	3,000	M12	5
G M16 x 1000	020958	1,000	M16	10
G M16 x 3000	568434	3,000	M16	5
G M20 x 1000	557295	1,000	M20	5
G M24 x 1000	557270	1,000	M24	5
G 1/2" x 2000	064093	2,000	1/2"	10
G 3/4" x 2000	077580	2,000	3/4"	5
G 1" x 2000	568435	2,000	1"	5

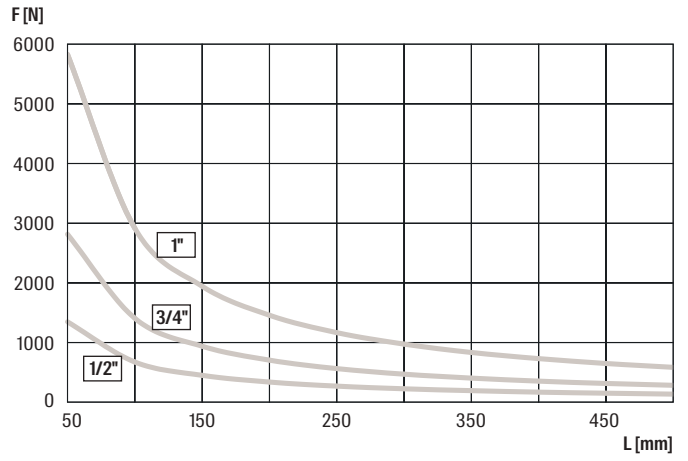
Loads



Threaded rods (4.8)



Threaded pipes



9

Threaded stud GS

Universal threaded stud for mounting pipes



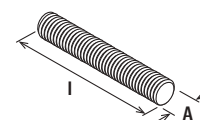
9

Applications

- For use in dry interior areas.

Properties

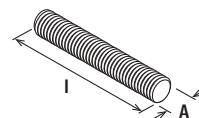
- Material: DIN 976 Steel 4.6 acc. to DIN EN ISO 898-1
- Zinc plating: electro zinc-plated



GS

Technical data

Item	Item no.	Length l [mm]	Thread A	Sales unit [pcs]
GS M6 x 25	544589	25	M6	100
GS M6 x 40	544590	40	M6	100
GS M6 x 50	544591	50	M6	100
GS M6 x 70	544592	70	M6	100
GS M6 x 80	544593	80	M6	100
GS M6 x 100	544594	100	M6	100
GS M8 x 25	079750	25	M8	100
GS M8 x 40	079751	40	M8	100
GS M8 x 50	079752	50	M8	100
GS M8 x 60	079753	60	M8	100
GS M8 x 70	079754	70	M8	100
GS M8 x 80	079755	80	M8	100
GS M8 x 100	079757	100	M8	100
GS M8 x 120	535535	120	M8	50
GS M8 x 150	079758	150	M8	50
GS M8 x 180	535536	180	M8	50
GS M8 x 200	079759	200	M8	50



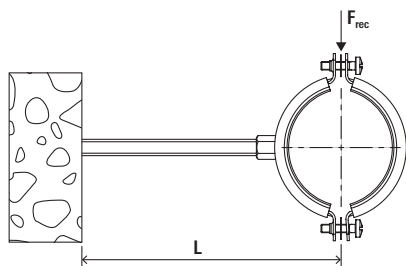
GS

Technical data

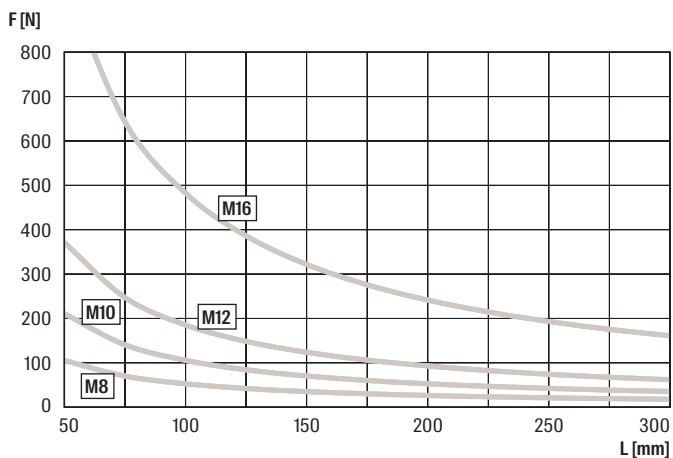
Item	Item no.	Length l [mm]	Thread A	Sales unit [pcs]
GS M10 x 25	079765	25	M10	100
GS M10 x 40	079766	40	M10	100
GS M10 x 60	079767	60	M10	100
GS M10 x 80	079768	80	M10	100
GS M10 x 100	079769	100	M10	100
GS M10 x 120	079770	120	M10	50
GS M10 x 150	079771	150	M10	50
GS M10 x 200	079772	200	M10	50
GS M12 x 40	091442	40	M12	100
GS M12 x 60	091443	60	M12	100
GS M12 x 80	091444	80	M12	100
GS M12 x 100	091461	100	M12	100
GS M12 x 120	091462	120	M12	50
GS M12 x 150	091463	150	M12	50
GS M12 x 200	091464	200	M12	50
GS M16 x 40	570691	40	M16	50

9

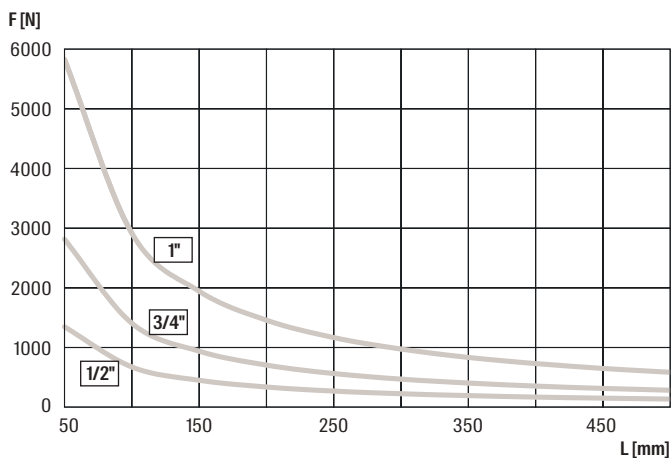
Loads



Threaded rods (4.8)



Threaded pipes



Base plates GPL / GPS / GPSR / GPR

Base plates GPL / GPS / GPSR / GPR for dimensionally stable connections between the substrate and pipeline



Plastic pipe with double clamp installation



Baseplate on installation channel

9

Applications

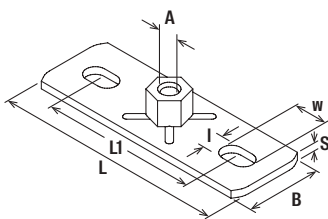
- Creation of dimensionally stable connections between the substrate and pipeline.
- For use in dry interior areas.

Advantages

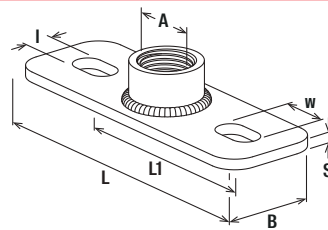
- The base plate's slots allow easy alignment.
- GPSR with round welded nut for rigid connection of threaded rods to the substrate.

Properties

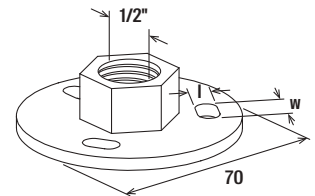
- Material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Zinc plating: electro zinc-plated



GPL/GPS



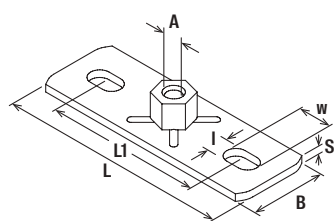
GPSR



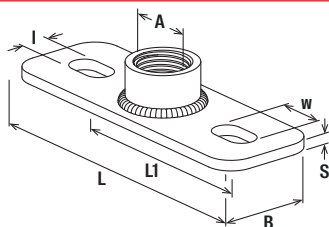
GPR

Technical data

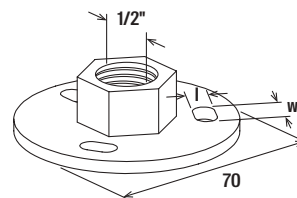
Item	Item no.	Welding type	Thread A	Length L [mm]	Width B [mm]	Hole spacing L1 [mm]	Slot l x w [mm]	Thickness S [mm]	Max. recom. static load (centr. tension) N _{bc} [kN]	Sales unit [pcs]
GPL M8	079665	spot welded	M8	80	30	54	9 x 16	3.0	2.40	25
GPL M10	079666	spot welded	M10	80	30	54	9 x 16	3.0	2.40	25
GPL M8/M10	553637	spot welded	M8 / M10	80	30	54	9 x 18	3.0	2.40	25
GPL 1/2"	079667	spot welded	1/2"	80	30	54	9 x 16	3.0	2.40	25
GPS M10	079671	spot welded	M10	120	40	79	11 x 19	4.0	6.00	25
GPS M12	040398	spot welded	M12	120	40	79	11 x 19	4.0	6.00	25
GPS 1/2"	079672	spot welded	1/2"	120	40	79	11 x 19	4.0	8.00	25
GPSR M10	570927	round welded	M10	120	40	79	11 x 19	4.0	6.00	25
GPSR M12	570928	round welded	M12	120	40	79	11 x 19	4.0	7.50	25
GPSR M16	504408	round welded	M16	120	40	79	11 x 19	4.0	8.00	25
GPSR 1/2"	570929	round welded	1/2"	120	40	79	11 x 19	4.0	8.00	25
GPSR 3/4"	020968	round welded	3/4"	120	40	79	11 x 19	4.0	8.00	25
GPSR 1"	570930	round welded	1"	120	40	79	13 x 19	4.0	10.00	25



GPL/GPS



GPSR



GPR

Technical data

Item	Item no.	Welding type	Thread	Length	Width	Hole spacing	Slot	Thickness	Max. recom. static load (centr. tension)	Sales unit
			A	L [mm]	B [mm]	L1 [mm]	l x w [mm]	S [mm]	N _{rec} [kN]	[pcs]
GPR 1/2"	037289	spot welded	1/2"	-	-	-	11 x 7	4.0	4.00	25

Stud screw STST with TX star recess

Stud screw STST for the direct mounting of pipe clamps to the substrate



9

Applications

- Stud screw for easy attachment of pipe clamps directly to the substrate using plugs with TX drive.
- Direct connection to wooden surfaces without plugs using a wooden thread.
- For use in dry indoor areas.

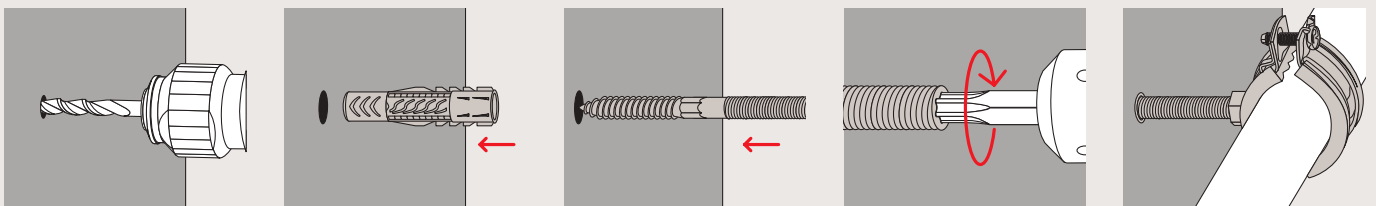
Advantages

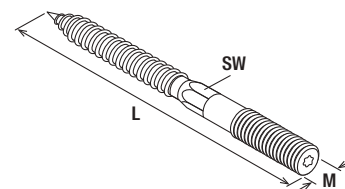
- Fixing with a nylon plug to brick or direct into timber construction is simple with the torx drive or the integrated hexagon.
- Different thread lengths and diameters allow a wide range of applications.

Properties

- Material: steel 4.6 acc. to DIN EN ISO 898-1
- Zinc plating: electro zinc-plated

Installation STST





STST

Technical data

Item	Item no.	Length L [mm]	Thread M	Drive	Width across nut SW [mm]	Sales unit [pcs]
STST 6 x 60	504400 ¹⁾	60	M6	TX15	-	100
STST 6 x 80	077714 ¹⁾	80	M6	TX15	-	100
STST 8 x 50	079780 ¹⁾	50	M8	TX25	-	100
STST 8 x 60	079781	60	M8	TX25	6	100
STST 8 x 80	079782	80	M8	TX25	6	100
STST 8 x 100	079783	100	M8	TX25	6	100
STST 8 x 120	079784	120	M8	TX25	6	100
STST 8 x 140	079785	140	M8	TX25	6	50
STST 8 x 180	079786	180	M8	TX25	6	50
STST 10 x 60	077689	60	M10	TX25	8	100
STST 10 x 80	077707	80	M10	TX25	8	100
STST 10 x 100	077708	100	M10	TX25	8	100
STST 10 x 120	077709	120	M10	TX25	8	100
STST 10 x 140	077711	140	M10	TX25	8	50
STST 10 x 180	077712	180	M10	TX25	8	50
STST 12 x 100	535541	100	M12	TX30	10	100
STST 12 x 160	535542	160	M12	TX30	10	50

¹⁾ without hex drive

Support hanger AHB

Support hanger AHB for the fixing and height regulation of pipe clamps



Height adjustable pipe installation

9

Applications

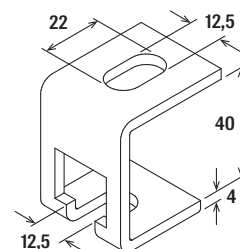
- Component for height adjustment.
- A washer should be used when using size M8 threaded rods.
- For use in dry interior areas.

Advantages

- The seat of the support hanger allows subsequent height regulation at any time.
- The base plate's long slot allows the support hanger to be easily aligned.
- The perforated opening means that a component can be simply hung and adjusted using a threaded rod and nut.
- Suitable for threaded rods M8, M10 and M12.

Properties

- Material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Zinc plating: electro zinc-plated



AHB

Technical data

Item	Item no.	For thread	Max. recom. static load (centr. tension) N_{rec} [kN]	Sales unit [pcs]
AHB	079675	M8, M10, M12	1.20	25

Multi connector MW

Multi connector MW for the flexible connection of up to three pipe clamps



Fixation with multi-connector

9

Applications

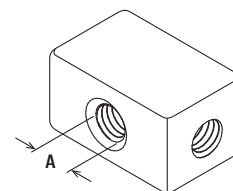
- Cube with four threaded drill holes for simple connection.
- Ideal for connecting threaded rods and bolts at 90°.
- For use in dry interior areas.

Advantages

- Flexible connection of pipe clamps.
- Fixing of up to three pipes.
- Made of high-strength die-cast.
- Suitable for M8 threaded studs.

Properties

- Material: zinc die-casting



MW

Technical data

Item	Item no.	Thread A	Max. recom. static load (centr. tension) N_{rec} [kN]	Sales unit [pcs]
MW M 8	079717	M8	2.50	50

Parallel connector PV

Parallel connector PV for the easy extension and connection of threaded rods



Longitudinal channel connection

9

Applications

- Simple, quick-mount connector for extending and connecting threaded rods.
- Parallel connector for extending threaded rods.
- Secure using locking nut.
- For use in dry interior areas.

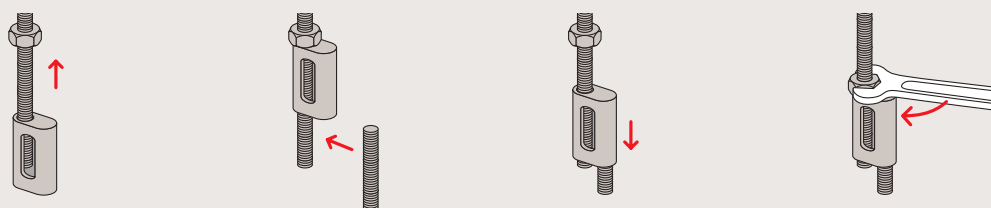
Advantages

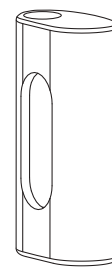
- The parallel connector's design allows the threaded rods to be installed quickly.
- Designed for simple and fast height adjustment.
- The PV allows the height to be adjusted during installation.

Properties

- Material: zinc die-casting

Installation PV





PV

Technical data

Item	Item no.	For thread	Max. recom. static load (centr. tension) N_{rec} [kN]	Sales unit [pcs]
PV M 6	020947	M6	0.30	100
PV M 8	079678	M8	2.00	100

Double connector plate DPP, DPF

Base plate - double connector plate for the fixing of two parallel pipelines



9

Applications

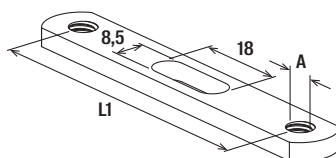
- Fixing element for the installation of two parallel pipelines with just one fixing point.
- For use in dry interior areas.

Advantages

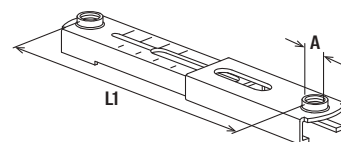
- The double connector plate design saves a fixing point for the fixing of two pipelines.
- The two-part double connector plate DPF is suitable for variable pipe spacing.
- The base plate's long slots allow the double connector plate to be easily aligned.
- The rounded design of the connector plate is ideal for a visual installation.

Properties

- Material DPP: DC04 (material no. 1.0338) acc. to DIN EN 10130
- Material DPF: DC01 (material no. 1.0330) acc. to DIN EN 10130
- Zinc plating: electro zinc-plated



DPP



DPF

Technical data

Item	Item no.	Length L1 [mm]	Thread A	Max. recom. static load (centr. tension) N _{rec} [kN]	Sales unit [pcs]
DPP 65	079702	65	M8	1.50	50
DPP 85	079703	85	M8	1.00	50
DPP 105	079704	105	M8	0.75	50
DPF 60 - 105	024648	-	M8	-	50

Bolt connector SBB

The threaded pin with shaft and double thread



9

Applications

- For use in dry interior areas.

Properties

- Material: steel S235JR (material no. 1.0037) acc. to DIN EN 10025
- Zinc plating: electro zinc-plated

Bolt connector SBB

Item	Item no.	Length l [mm]	Thread A	Sales unit [pcs]
SBB 35	079705	35	M8	100
SBB 45	079706	45	M8	100
SBB 55	079707	55	M8	100

Turnbuckle SPS, Bolt left-/right-hand BLR

Turnbuckle SPS and bolt BLR with left/right thread for anchoring, height regulation and fixing



9

Applications

- For use in dry interior areas.

Properties

- Material SPS: steel $\geq 330 \text{ N/mm}^2$ acc. to DIN 1480
- Material BLR: steel 4.6 acc. to DIN 976
- Zinc plating: electro zinc-plated

Turnbuckle SPS, Bolt BLR

Item	Item no.	Length L [mm]	Thread A	Max. recom. static load (centr. tension) N_{rec} [kN]	Sales unit [pcs]
SPS M10	537211	125	M10	10.00	25
BLR 100 M10	537210	100	M10	10.00	25
SPS M12	064090	125	M12	15.00	25
BLR 100 M12	064091	100	M12	15.00	25

Hexagonal screw SKS

The universal hexagonal screw

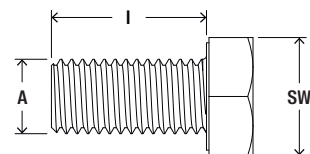


Applications

- For use in dry interior areas.

Properties

- Material: steel acc. to DIN EN ISO 4017, steel 8.8
- Zinc plating: electro zinc-plated



SKS

Hexagonal screw SKS

Item	Item no.	Thread A	Length l [mm]	Width across nut SW [mm]	Sales unit [pcs]
SKS M6 x 20	079711	M6	20	10	100
SKS M8 x 16	079415	M8	16	13	100
SKS M8 x 20	570677	M8	20	13	200
SKS M8 x 30	079713	M8	30	13	100
SKS M8 x 45	079714	M8	45	13	100
SKS M8 x 55	079715	M8	55	13	100
SKS M8 x 100	079827	M8	100	13	100
SKS M10 x 16	570678	M10	16	17	200
SKS M10 x 20	079416	M10	20	17	100
SKS M10 x 25	570679	M10	25	17	200
SKS M10 x 30	079417	M10	30	17	100
SKS M10 x 55	079721	M10	55	17	100
SKS M10 x 65	535537	M10	65	17	50
SKS M10 x 85	505552	M10	85	17	100
SKS M12 x 20	570680	M12	20	19	100
SKS M12 x 25	535538	M12	25	19	100
SKS M12 x 30	570681	M12	30	19	100
SKS M12 x 35	570682	M12	35	19	100
SKS M12 x 55	077611	M12	55	19	100
SKS M12 x 65	535539	M12	65	19	50
SKS M12 x 85	505553	M12	85	19	100

Cylindrical head screw ZKS

The universal cylindrical head screw



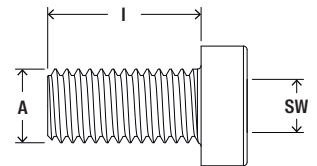
Applications

- For use in dry interior areas.

Properties

- Material: steel 8.8
- Zinc plating: electro zinc-plated

9



ZKS

Technical data

Item	Item no.	Thread A	Length I [mm]	Width across nut (hexagon socket) SW [mm]	Sales unit [pcs]
ZKS M8 x 20	570690	M8	20	5	200

Washer U

Washer for fischer installation system



9

Applications

- For use in dry interior areas.

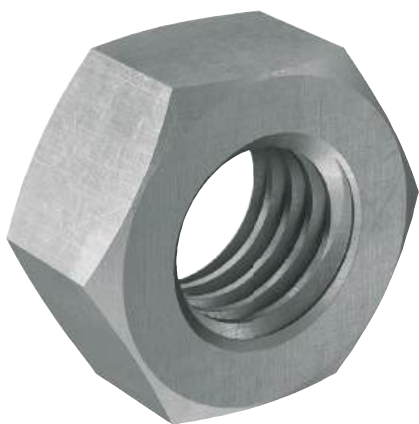
Properties

- Material: steel acc. to DIN 10139
- Zinc plating: electro zinc-plated

Washer U

Item	Item no.	Thickness S [mm]	Hole- ϕ D [mm]	External- ϕ d [mm]	Sales unit [pcs]
U 6 x 12	544595	1.6	6.4	12	100
U 8 x 17	091477	1.6	8.4	17	100
U 8 x 28	079725	2.0	8.4	28	100
U 8 x 40	079729	3.0	8.4	40	100
U 10 x 21	091478	2.0	10.5	21	100
U 10 x 28	079726	2.0	10.5	28	100
U 10 x 40	079730	3.0	10.5	40	100
U 12 x 24	557301	2.5	12.5	24	100
U 12 x 40	024649	3.0	12.5	40	100
U 16 x 30	557303	3.0	16.5	30	50
U 16 x 40	535540	3.0	17	40	50

Hexagonal nut MU



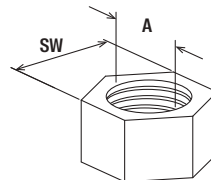
9

Applications

- For use in dry interior areas.

Properties

- Material: steel acc. to DIN 934, resistance class 8
- Zinc plating: electro zinc-plated



MU

Hexagonal nut MU

Item	Item no.	Thread A	Width across nut SW [mm]	Sales unit [pcs]
MU M6	079733	M6	10	100
MU M8	079734	M8	13	100
MU M10	079735	M10	17	100
MU M12	024650	M12	19	100
MU M16	557297	M16	24	50
MU M20	535532	M20	30	15
MU M24	535534	M24	36	15

Hexagonal connector VM

Extension connector for connecting threaded rods



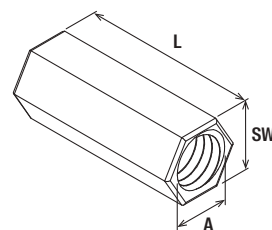
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Applications

- For use in dry interior areas.

Properties

- Material: C8C (material no. 1.0213) acc. to DIN EN 10263-2
- Zinc plating: electro zinc-plated



VM

Hexagonal connector VM

Item	Item no.	Length L [mm]	Thread A	Width across nut SW [mm]	Sales unit [pcs]
VM M6	014319	25	M6	10	100
VM M8	079690	30	M8	11	100
VM M10	079691	30	M10	13	100
VM M12	020971	40	M12	17	100
VM M16	508833	40	M16	24	50

Eyebolt AG

The eyebolt with M8/M10 thread



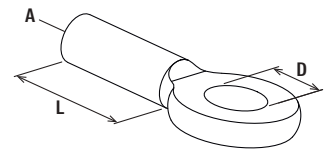
9

Applications

- For use in dry interior areas.

Properties

- Material: steel S235JR (material no. 1.0037) acc. to DIN EN 10025
- Zinc plating: electro zinc-plated



AG

Eyebolt AG

Item	Item no.	Length L [mm]	Thread A	Hole-Ø D [mm]	Max. recom. static load (centr. tension) N_{rec} [kN]	Sales unit [pcs]
AG 8 x 25	079696	25	M8	8.5	5.00	100
AG 10 x 25	079697	25	M10	12	8.00	100

Thread hanger RAH

Universal thread hanger with internal thread connection



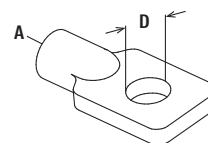
9

Applications

- For use in dry interior areas.

Properties

- Material: 11SMnPb30 (material no. 1.0718) acc. to DIN EN 10087
- Zinc plating: electro zinc-plated



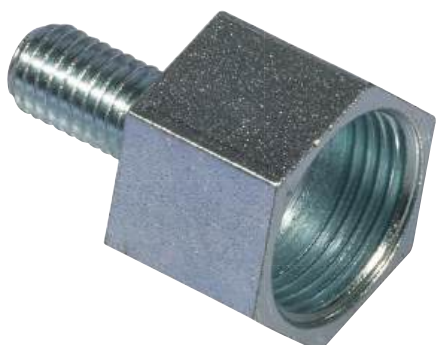
RAH

Thread hanger RAH

Item	Item no.	Thread A	Hole-Ø D [mm]	Max. recom. static load (centr. tension) N_{rec} [kN]	Sales unit [pcs]
RAH M8	079698	M8	12	4.00	50
RAH M10	079699	M10	12	4.00	50

Reduction piece RD

Universal reduction piece for metric thread.



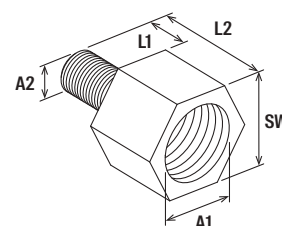
9

Applications

- For use in dry interior areas.

Properties

- Material: 11SMnPb30 (material no. 1.0718) acc. to DIN EN 10087
- Zinc plating: electro zinc-plated



RD

Reduction piece RD

Item	Item no.	Internal thread		External thread		Length L_1 [mm]	Length L_2 [mm]	Width across nut SW [mm]	Sales unit [pcs]
		A1	A2	A1	A2				
RD M6/M8	079694	M6	M8	M8	M6	8.5	20	13	100
RD M8/M6	020936	M8	M6	M6	M8	7	19	13	100
RD M10/M8	079692	M10	M8	M8	M10	8	23	13	50
RD M12/M10	079693	M12	M10	M10	M12	10	25	17	100
RD M12/M16	504397	M12	M16	M16	M12	14	32	19	50
RD M16/M12	504399	M16	M12	M12	M16	10	32	24	50
RD 1/2"/M10	079695	1/2"	M10	M10	1/2"	10	29	24	10
RD M16/M12 long	538080	M16	M12	M12	M16	25	46.5	24	10
RD 1/2"/M10 long	537215	1/2"	M10	M10	1/2"	20	39	24	10
RD 3/4"/M12 long	537213	3/4"	M12	M12	3/4"	25	46.5	30	10
RD 3/4"/M16 long	537214	3/4"	M16	M16	3/4"	25	46.5	30	10

Reduction socket RDM and GRD

Universal reduction socket



9

Applications

- For use in dry interior areas.

Properties

- Material RDM: SAE 1008
- Material GRD: 11SMnPb30 (material no. 1.0718) acc. to DIN EN 10277
- Zinc plating: electro zinc-plated

Reduction socket RDM and GRD

Item	Item no.	Thread	Thread	Sales unit [pcs]
		A	A2	
RDM M10/M8	079413	M8	M10	50
RDM M12/M10	079414	M10	M12	100
GRD 1/2" / M10	077609	1/2"	M10	100
GRD 1/2" / M12	077608	1/2"	M12	100
GRD 3/4" / M10	077607	3/4"	M10	100
GRD 3/4" / M12	077606	3/4"	M12	100

Flat eye screw LLS

The flat eye screw with wood type thread



9

Applications

- For use in dry interior areas.

Properties

- Material: steel S235JR (material no. 1.0037) acc. to DIN EN 10025
- Zinc plating: electro zinc-plated

Flat eye screw LLS

Item	Item no.	Length l [mm]	Hole-Ø D [mm]	Sales unit [pcs]
LLS 6 x 50	079700	50	8.5	100
LLS 8 x 50	079701	50	10.5	100

Textile web strapping GWB

Textile web strapping GWB for cost-effective, easy pipe fixings



Flexible and rigid plastic insulation pipes

9

Applications

- Pipe fixing to the substrate e.g. to the raw floor.

Advantages

- Pipe fixing using textile tape allows cheap and simple installation.
- The textile tape roll allows the correct tape length to be chosen to suit the diameter in question.
- Hangings with textile tape are a fast solution for temporary fixings.

Properties

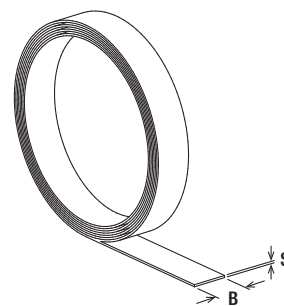
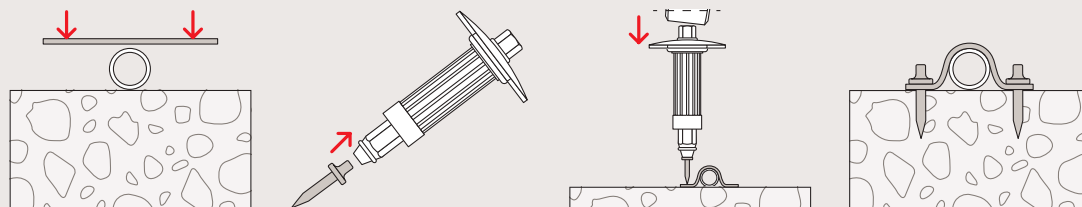
- Material: polypropylene
- Length: 10 m

Building materials

When using impact nail ED:

- Concrete

Installation GWB



Technical data

Item	Item no.	Width B [mm]	Thickness S [mm]	Sales unit [pcs]
GWB	020959	15	1.1	10

Perforated steel banding LBV/LBK

Perforated steel banding LBV/LBK for the fast fixing of pipelines



Plastic pipes

9

Applications

- Steel tape with stamped holes for simple installation of pipes on the substrate, e. g. on unfinished floor.
- Available as zinc-plated LBV or plastic-covered LBK.
- The fischer nail anchor FNA II is suitable for ceiling fixing in concrete.
- Use fischer thread hanger RAH for fastening to threaded rods.
- For use in dry interior areas.

Advantages

- The perforated tape's material thicknesses and plastic covering allow the tapes to be easily cut to size using metal shears.
- The perforated tape's hole geometry enables concrete fixing using the fischer impact nail ED.

Properties

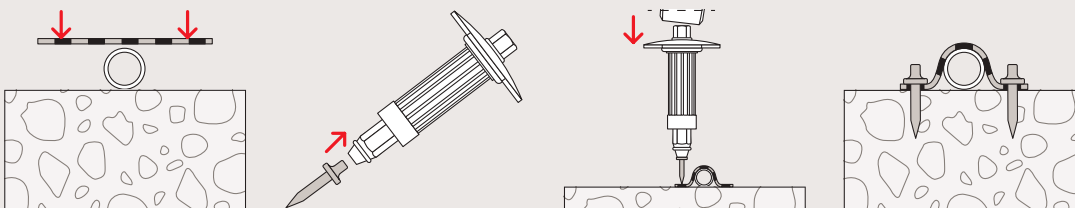
- Material: DX51D+Z100 (material no. 1.0917) acc. to DIN EN 10.346 / For type LBW 17: Q235
- Zinc plating: electro zinc-plated
- Protective coating LBK: PE

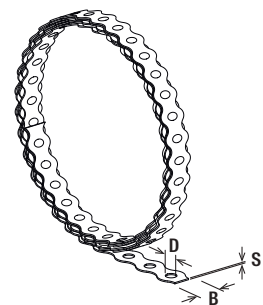
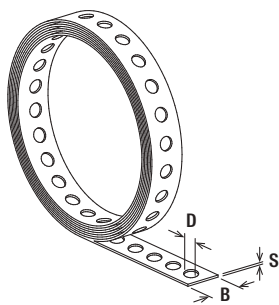
Building materials

When using impact nail ED:

- Concrete

Installation LBV, LBK





Technical data

Item	Item no.	Total length [mm]	Width B [mm]	Thickness S [mm]	Hole-Ø D [mm]	Sales unit [pcs]
LBV 12	079549	10,000	12	0.8	5.0	10
LBV 17	079550	10,000	17	0.8	6.5	10
LBV 25	079551	10,000	25	0.9	8.5	8
LBK 14	079553	10,000	14	2.6	5.0	10
LBK 19	079554	10,000	19	2.4	6.5	8
LBK 27	079555	10,000	27	2.4	8.5	5
LBW 17	507435	10,000	17	0.8	6.5	10

Impact nail ED

Fixing in concrete without pre-drilling.



Fixing armoured conduits



Fixing perforated tapes

9

Applications

- Conduit clips such as BSM, BSMD, BSMZ
- Perforated band such as LBK, LBV

Advantages

- The stable impact nail ED can be set in concrete with the impact nail setting tool SZE without pre-drilling. This allows for a fast installation.
- The setting tool SZE impact protection provides the best protection for your hand, thus ensuring a safe installation.

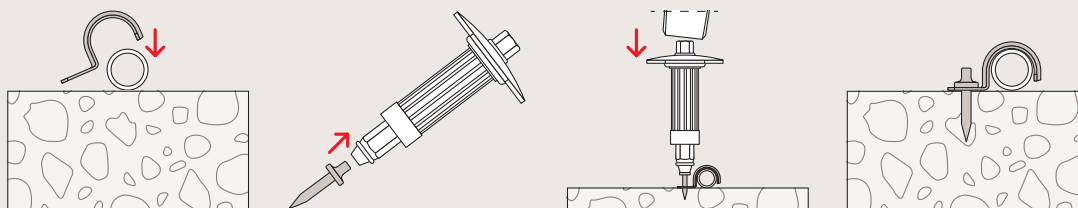
Functioning

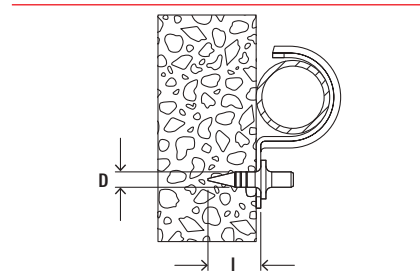
- The impact nail ED is set in the setting tool SZE.
- The bracket in the setting tool holds the nail securely in place during the installation procedure.
- Pre-positioning of the element to be fixed.
- The nail can be hammered through the fixing element directly into the concrete.

Building materials

- Concrete

Installation ED





Technical data



ED 15

Item	Item no.	Length l [mm]	Diameter d [mm]	Sales unit [pcs]
ED 15	048212	15	4.0	200
ED 18	079815	18	4.0	200
ED 22	014570	22	4.0	200

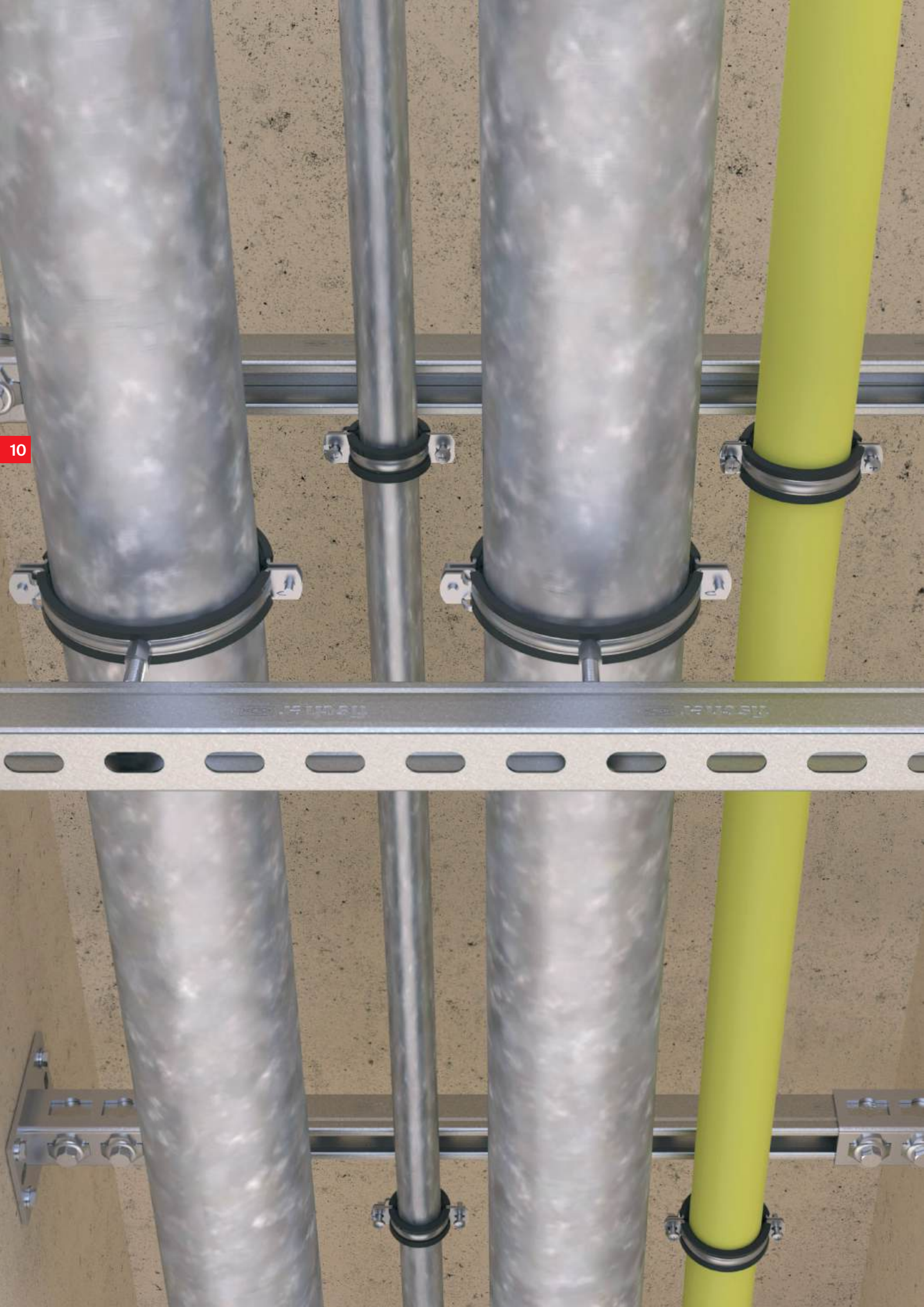
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Setting tool SZE



SZE Toolset for SZE









































Item	Item no.	Sales unit [pcs]
SZE	552149	1
Toolset for SZE	552150	3



10

10

Channel system FUS hdg.

Pipe clamp FRS zl	304		Channel nut FCN Clix M hdg	341	
Heavy duty pipe clamp FRSM hdg - metric	306		Channel nut FCN 16 hdg	343	
Channel system FUS hdg	308		Channel washer HK 41 hdg	345	
Channel connector FUF OC hdg / PFUF OC zl	313		Saddle flange SF hdg	346	
Socket wrench FSK	314		Mounting bracket UWS hdg	348	
Channel connector FDCC zl	315		Angle bracket WK hdg	349	
Cantilever arm FCA hdg	317		Bracket FFF hdg	351	
Large cantilever arm FCAM hdg	320		Bracket FAF hdg	353	
Cover cap FEC	322		Bracket FUF 21 / 41 / 62 hdg	355	
Push-through connector PFCN 41 zl	323		Bracket FUF hdg	356	
Saddle flange PSF zl	325		Variable bracket VB hdg	358	
Universal bracket PUWS zl	327		Universal hinge FUH hdg	359	
Angle bracket PWK zl	329		Threaded rod bracket FSB 45° hdg	361	
Variable bracket PVB zl	330		Beam clamp TKR hdg	362	
Bracing elements PSAE zl	331		Beam clamp TKL hdg	364	
Bracket PFFF zl	333		Beam clamp FHBC hdg	366	
Bracket PFAF zl	334		Threaded rod G hdg	368	
Bracket PFUF zl	336		Hexagonal screw SKS hdg	368	
Bracket PFUF D zl	337		Washer U hdg	369	
Channel nut FCN Clix P hdg	339		Hexagonal nut MU hdg	370	

Pipe clamp FRS zl

FRS zl pipe clamp with high corrosion protection



Pipe assembly



Heavy pipe on cantilever

10

Applications

- Secure fixing for pipes with threaded rods or stud screws (also when there are fire protection requirements)
- For indoor and outdoor application.

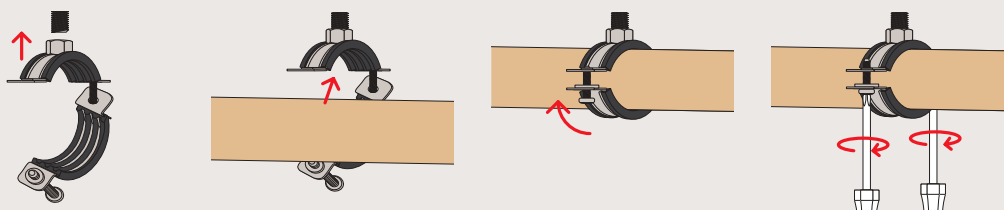
Advantages

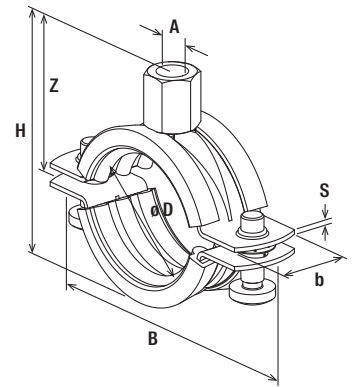
- The two screws allow an easy adjustment to suit the outer pipe diameter.
- The combination connecting nut with thread M8 / M10 enables optimised mounting choices.
- The sound insulation insert offers noise protection and prevents contact corrosion.
- The screw's safety feature ensures trouble-free installation.

Properties

- Material: steel DC01 (material no. 1.0330) acc. to DIN EN 10130
- Coating: zinclamella
- Connecting nut: resistance welded, M8 / M10 SW13
- Locking screw: flat head screw with combination recessed head
- Material sound insulation insert: EPDM; chlorine-free; silicone-free
- Sound insulation: for DIN 4109
- Temperature range: -40 °C to +100 °C
- Hardness: 55 ± 5° Shore A
- Fire behaviour: DIN 4102: Class B2

Installation FRS





FRS

Technical data

Item	Item no.	Thread	Size	Clamping range	Height	Height	Width x thickness clamp band	Locking screw	Max. recom. static load (centr. tension)	Installation torque	Sales unit
		A	[in]	D [mm]	H [mm]	Z [mm]	b x s [mm]		N_{rec} [kN]	T_{inst} [Nm]	
FRS 12 - 15 M8/M10 zl	537981	M8 / M10	1/4	12 - 15	39	31	20 x 1.25	M6	1.00	2	100
FRS 15 - 19 M8/M10 zl	537982	M8 / M10	3/8	15 - 19	43	29	20 x 1.25	M6	1.00	2	100
FRS 20 - 24 M8/M10 zl	537983	M8 / M10	1/2	20 - 24	48	32	20 x 1.25	M6	1.00	2	100
FRS 25 - 30 M8/M10 zl	537984	M8 / M10	3/4	25 - 30	54	35	20 x 1.25	M6	1.00	2	100
FRS 32 - 37 M8/M10 zl	537985	M8 / M10	1	32 - 37	61	38	20 x 1.25	M6	1.00	2	100
FRS 40 - 45 M8/M10 zl	537986	M8 / M10	1 1/4	40 - 45	69	42	20 x 1.25	M6	1.00	2	50
FRS 48 - 54 M8/M10 zl	537987	M8 / M10	1 1/2	48 - 54	78	46	20 x 1.25	M6	1.00	2	50
FRS 55 - 61 M8/M10 zl	537988	M8 / M10	2	55 - 61	85	50	20 x 1.25	M6	1.00	2	50
FRS 60 - 64 M8/M10 zl	537989	M8 / M10	2	63 - 67	91	53	20 x 1.25	M6	1.00	2	50
FRS 72 - 78 M8/M10 zl	537990	M8 / M10	2 1/2	72 - 80	104	60	20 x 2.0	M6	1.50	2	25
FRS 87 - 92 M8/M10 zl	537991	M8 / M10	3	87 - 92	116	66	20 x 2.0	M6	1.50	2	25
FRS 95 - 103 M8/M10 zl	557374	M8 / M10	-	95 - 103	130	73	25 x 2.0	M6	2.00	2	25
FRS 102 - 116 M8/M10 zl	537992	M8 / M10	4	108 - 116	140	78	25 x 2.0	M6	2.00	2	20
FRS 121 - 127 M8/M10 zl	537993	M8 / M10	-	121 - 128	152	84	25 x 2.5	M6	2.50	2	10
FRS 133 - 141 M8/M10 zl	537994	M8 / M10	5	133 - 141	165	90	25 x 2.5	M6	2.50	2	10
FRS 159 - 162 M8/M10 zl	537995	M8 / M10	-	159 - 165	198	102	25 x 2.5	M6	2.50	2	8
FRS 165 - 168 M8/M10 zl	537996	M8 / M10	6	165 - 168	192	104	25 x 2.5	M6	2.50	2	8

Heavy duty pipe clamp FRSM hdg - metric

The large pipe clamp with sound insulation insert for medium to heavy loads



Heavy pipe on cantilever



Heavy drainage pipe under angle bracket

10

Applications

- Fixing of medium to heavy pipes with threaded rods (hanger bolts)
- For indoor and outdoor application.

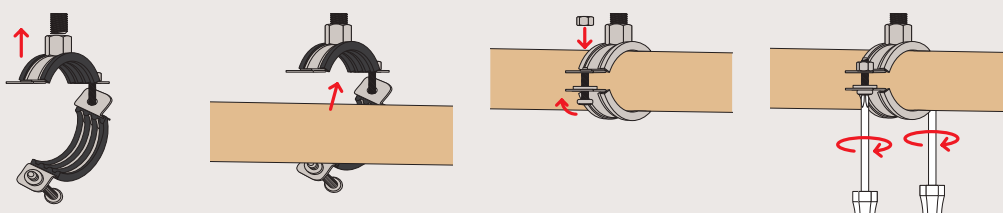
Advantages

- High tested loads guarantee safe functioning of the FRSM.
- The combination connecting nut with thread M10 / M12, M12 / M16 or M16 allows for optimised mounting choices.
- From Ø 124 mm it is possible to install with 2 threaded rods, e.g. for the fixing of cast iron roof drainage pipes.
- The two screws allow for easy adjustment to suit the outer pipe diameter.
- The screw's safety features ensures trouble-free installation.

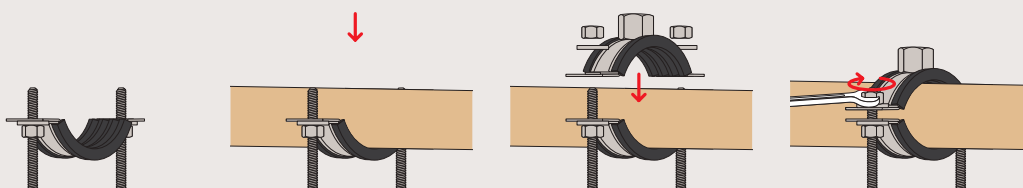
Properties

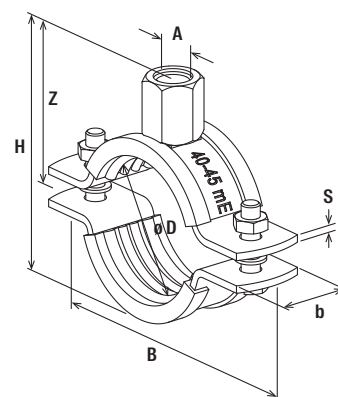
- Material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Zinc plating: hot-dip galvanised
- Connecting nut: M10 / M12 SW17, M12 / M16 SW22, M16 SW24
- Locking screw: hexagon screw with nut
- Material locking screw: stainless steel A2
- Material sound insulation insert: EPDM; chlorine-free; silicone-free
- Temperature range: -50 °C to +110 °C
- Hardness: 45 ± 5° Shore A
- Fire behaviour: DIN 4102: Class B2

Installation FRSM



Installation of FRSM with two threaded rods





FRSM hdg - metric

Technical data

Item	Item no.	Thread	Size	Clamping range	Width	Height	Height	Width x thickness clamp band	Locking screw	Max. re-com. static load (centr. tension)	Installation torque	Sales unit
		A	[in]	D [mm]	B [mm]	H [mm]	Z [mm]	b x s [mm]	N _{rec} [kN]	T _{inst} [Nm]	[pcs]	
FRSM 19 - 23 M10/M12 hdg	558524	M10 / M12	1/2	19 - 23	77	56	38	25 x 2.5	M6	2.50	2	50
FRSM 24 - 29 M10/M12 hdg	558525	M10 / M12	3/4	24 - 29	83	62	41	25 x 2.5	M6	2.50	2	50
FRSM 33 - 36 M10/M12 hdg	558526	M10 / M12	1	33 - 36	91	69	45	25 x 2.5	M6	2.50	2	50
FRSM 40 - 45 M10/M12 hdg	558527	M10 / M12	1 1/4	40 - 45	100	78	49	25 x 2.5	M6	2.50	2	20
FRSM 45 - 52 M10/M12 hdg	558528	M10 / M12	1 1/2	48 - 52	107	85	53	25 x 2.5	M6	2.50	2	20
FRSM 53 - 58 M10/M12 hdg	558529	M10 / M12	–	53 - 58	113	91	56	25 x 2.5	M6	2.50	2	20
FRSM 60 - 65 M10/M12 hdg	558530	M10 / M12	2	60 - 65	120	98	59	25 x 2.5	M6	2.50	2	20
FRSM 73 - 78 M10/M12 hdg	558531	M10 / M12	2 1/2	73 - 78	138	115	68	30 x 3.0	M8	3.00	3	20
FRSM 79 - 85 M10/M12 hdg	558532	M10 / M12	–	79 - 85	145	122	71	30 x 3.0	M8	3.00	3	20
FRSM 88 - 93 M10/M12 hdg	558533	M10 / M12	3	88 - 93	153	130	75	30 x 3.0	M8	3.00	3	20
FRSM 100 - 106 M10/M12 hdg	558534	M10 / M12	–	100 - 106	166	143	82	30 x 3.0	M8	3.00	3	20
FRSM 108 - 116 M10/M12 hdg	558606	M10 / M12	4	108 - 116	176	153	87	30 x 3.0	M8	3.00	3	20
FRSM 124 - 129 M10/M12 hdg	558535	M10 / M12	–	124 - 129	194	165	97	30 x 3.0	M8	3.00	3	20
FRSM 131 - 137 M10/M12 hdg	558536	M10 / M12	–	131 - 137	202	173	100	30 x 3.0	M8	3.00	3	20
FRSM 138-145 M10/M12 hdg	558537	M10 / M12	5	138 - 145	210	180	109	30 x 3.0	M8	3.00	3	20
FRSM 156 - 162 M10/M12 hdg	558538	M10 / M12	–	156 - 162	227	198	114	30 x 3.0	M8	3.00	3	20
FRSM 165 - 171 M10/M12 hdg	558539	M10 / M12	6	165 - 171	255	207	125	30 x 3.0	M8	3.00	3	20
FRSM 188 - 194 M10/M12 hdg	558540	M10 / M12	7	188 - 194	278	230	125	30 x 3.0	M8	3.00	3	10
FRSM 196 - 203 M10/M12 hdg	558541	M10 / M12	–	196 - 203	287	239	130	30 x 3.0	M8	3.00	3	10
FRSM 205 - 214 M12/M16 hdg	558542	M12 / M16	–	205 - 214	289	264	147	40 x 4.0	M12	12.00	10	10
FRSM 219 - 225 M12/M16 hdg	558543	M12 / M16	8	219 - 225	300	272	152	40 x 4.0	M12	12.00	10	10
FRSM 244 - 250 M12/M16 hdg	558544	M12 / M16	–	244 - 250	325	300	165	40 x 4.0	M12	12.00	10	10
FRSM 267 - 273 M12/M16 hdg	558545	M12 / M16	10	267 - 273	348	323	177	40 x 4.0	M12	12.00	10	10
FRSM 297 - 304 M12/M16 hdg	558546	M12 / M16	–	297 - 304	379	354	192	40 x 4.0	M12	12.00	10	10
FRSM 305 - 316 M12/M16 hdg	558547	M12 / M16	–	305 - 316	397	314	157	40 x 4.0	M12	12.00	10	10
FRSM 320 - 328 M12/M16 hdg	558548	M12 / M16	12	320 - 328	403	378	204	40 x 4.0	M12	12.00	10	10
FRSM 348 - 356 M16 hdg	558549	M16	–	348 - 356	480	403	213	50 x 5.0	M16	8.00	20	1
FRSM 364 - 372 M16 hdg	558596	M16	–	364 - 372	496	419	221	50 x 5.0	M16	8.00	20	1
FRSM 400 - 409 M16 hdg	558597	M16	–	400 - 409	533	456	240	50 x 5.0	M16	8.00	20	1
FRSM 454 - 462 M16 hdg	558598	M16	–	454 - 462	586	509	266	50 x 5.0	M16	8.00	20	1
FRSM 500 - 508 M16 hdg	558599	M16	–	500 - 508	632	555	290	50 x 5.0	M16	8.00	20	1

Channel system FUS hdg

The universal and complete mounting channel system for a wide range of applications



3D-frame constructions



Solid frame construction

10

Applications

- Creation of secure, horizontal and vertical installations
- Fast and efficient fixing of pipelines and supporting structures
- For indoor and outdoor application.

Certificates

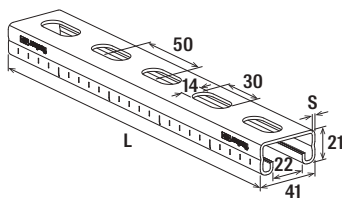


Advantages

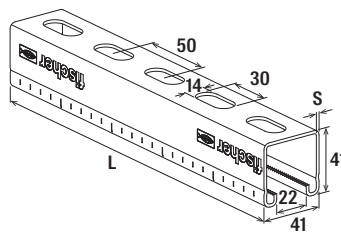
- The fire inspection report in line with MLAR/EN13501 guarantees independently tested functional safety.
- The basic channel geometry allows for the usage of the complete extensive range of accessories.
- The stamped teeth in the channel gives the sliding nuts a secure hold for high shear loads, e.g. for vertical installation.
- Different channel wall thicknesses allow for economical choices for installation.
- The scale on the mounting channels simplifies the cutting and positioning of the fixtures during installation.

Properties

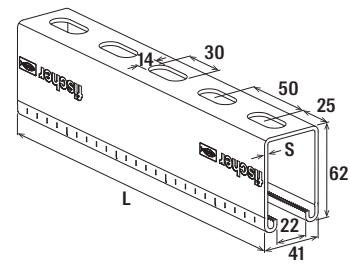
- Material: steel S235JR (material no. 1.0037) acc. to DIN EN 10025
- Zinc plating: hot-dip galvanised



FUS 21



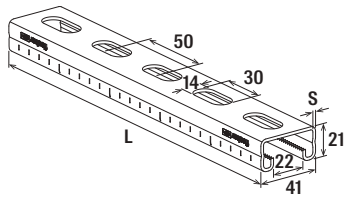
FUS 41



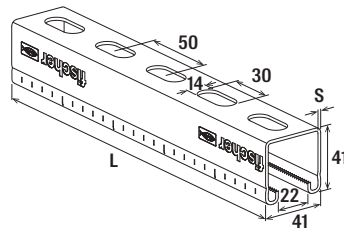
FUS 62

Technical data

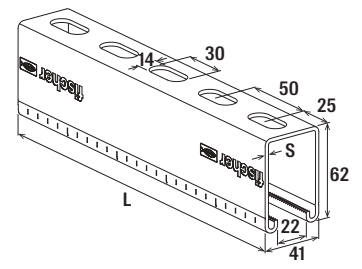
Item	Item no.	Fire test report	Length L [mm]	Thickness S [mm]	Sales unit [pcs]
FUS 21/2.0 - 3 m hdg	537653	-	3,000	2.0	1
FUS 41/2.0 - 3 m hdg	517426	-	3,000	2.0	1
FUS 41/2.0 - 6 m hdg	537656	-	6,000	2.0	1



FUS 21



FUS 41

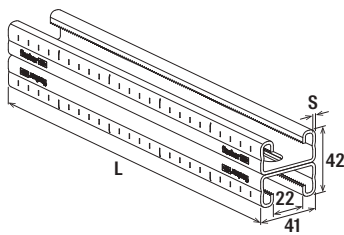


FUS 62

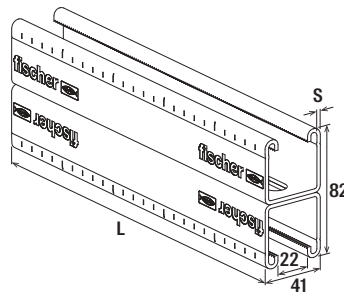
Technical data

Item	Item no.	Fire test report	Length L [mm]	Thickness S [mm]	Sales unit [pcs]
FUS 41/2.5 - 6 m hdg	537658	Yes	6,000	2.5	1
FUS 62/2.5 - 3 m hdg	517427	Yes	3,000	2.5	1
FUS 62/2.5 - 6 m hdg	517428	Yes	6,000	2.5	1

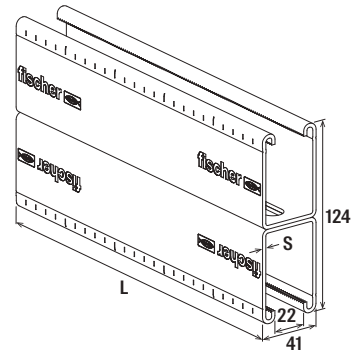
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FUS 21D



FUS 41D

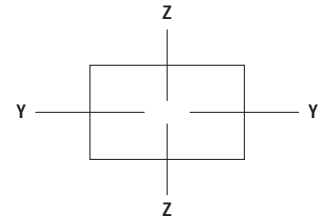


FUS 62D

Technical data

Item	Item no.	Length L [mm]	Thickness S [mm]	Sales unit [pcs]
FUS 21D/2.0 - 3 m hdg	537659	3,000	2.0	1
FUS 21D/2.0 - 6 m hdg	537661	6,000	2.0	1
FUS 41D/2.5 - 6 m hdg	537662	6,000	2.5	1
FUS 62D/2.5 - 6 m hdg	537663	6,000	2.5	1

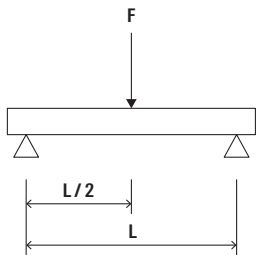
For load information under fire exposure, see chapter Basic knowledge.



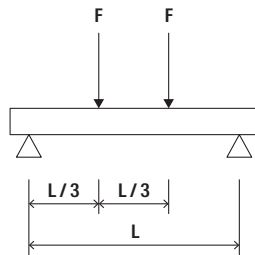
Loads

Item	Item no.	Profile weight [kg/m]	Channel cross section [cm ²]	Moment of inertia I_y [cm ⁴]	Moment of inertia I_z [cm ⁴]	Section modulus W_y [cm ³]	Section modulus W_z [cm ³]	Max. recommended static load for 1m length F_{rec} [kN]	Max. recommended static load for 2m length F_{rec} [kN]	Max. recommended static load for 3m length F_{rec} [kN]	Sales unit [pcs]
FUS 21/2.0 - 3 m hdg	537653	1.44	1.72	0.97	4.66	0.89	2.27	0.49	0.12	0.05	1
FUS 41/2.0 - 3 m hdg	517426	2.06	2.52	5.33	7.69	2.58	3.75	1.94	0.67	0.30	1
FUS 41/2.0 - 6 m hdg	537656	2.06	2.52	5.33	7.69	2.58	3.75	1.94	0.67	0.30	1
FUS 41/2.5 - 6 m hdg	537658	2.45	3.00	6.00	8.99	2.85	4.38	2.14	0.76	0.34	1
FUS 62/2.5 - 3 m hdg	517427	3.27	4.05	17.70	12.90	5.62	6.29	4.22	2.10	0.99	1
FUS 62/2.5 - 6 m hdg	517428	3.27	4.05	17.70	12.90	5.62	6.29	4.22	2.10	0.99	1
FUS 21D/2.0 - 3 m hdg	537659	2.87	3.44	5.49	9.31	2.61	4.54	1.96	0.69	0.31	1
FUS 21D/2.0 - 6 m hdg	537661	2.87	3.44	5.49	9.31	2.61	4.54	1.96	0.69	0.31	1
FUS 41D/2.5 - 6 m hdg	537662	4.89	6.00	35.01	17.90	8.76	8.78	6.58	3.28	1.96	1
FUS 62D/2.5 - 6 m hdg	537663	6.55	8.09	111.00	25.80	17.90	12.58	13.45	6.72	4.47	1

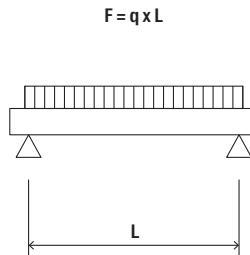
Load case 1



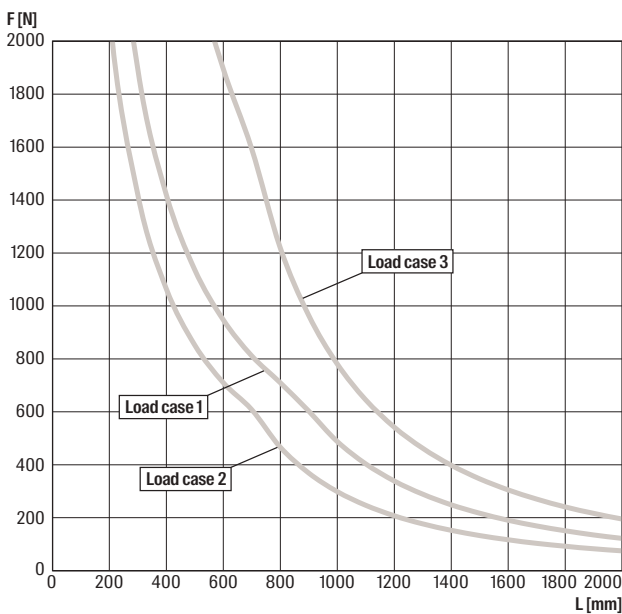
Load case 2



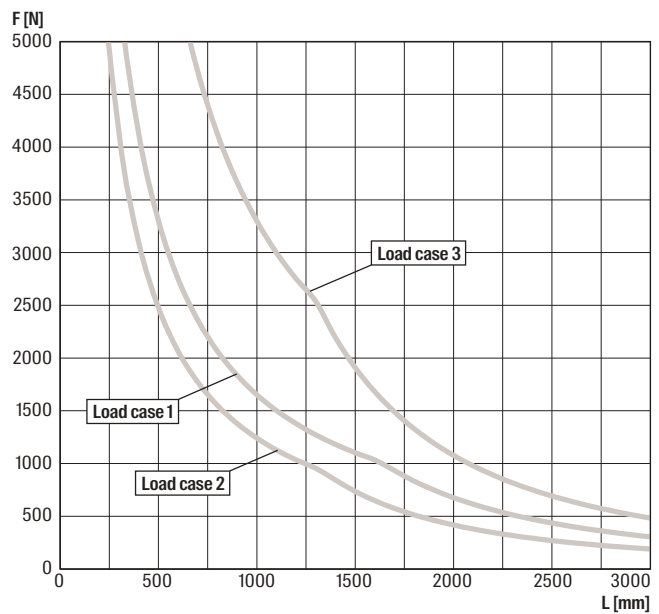
Load case 3



FUS fvz 21/2,0

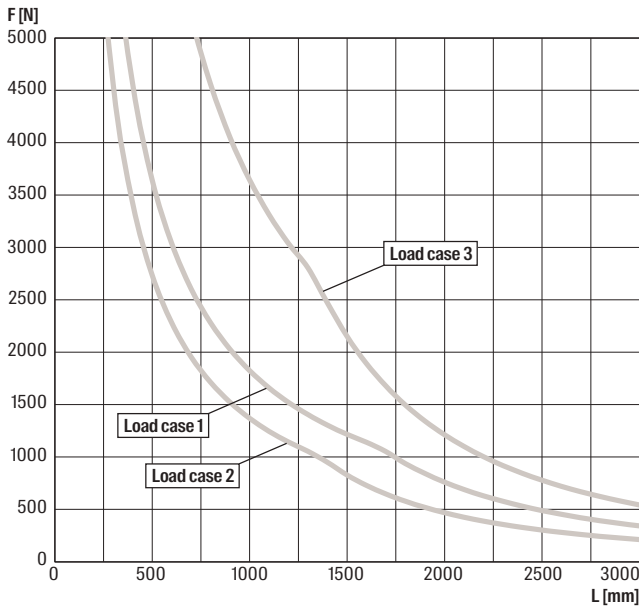


FUS fvz 41/2,0

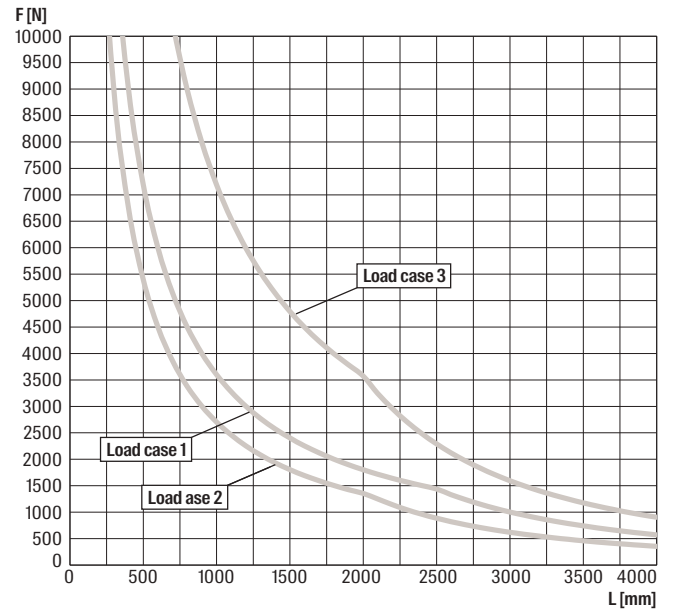


For the load curves, the permissible steel strain $\delta_{adm} = 160$ N/mm and the maximum deflection under load $L/200$ are not exceeded. Fixings and screw fastenings must be calculated accordingly.

FUS fvz 41/2,5



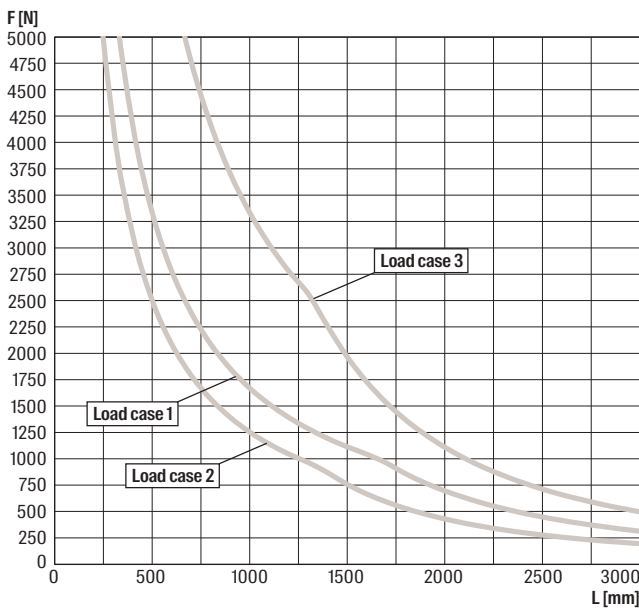
FUS fvz 62/2,5



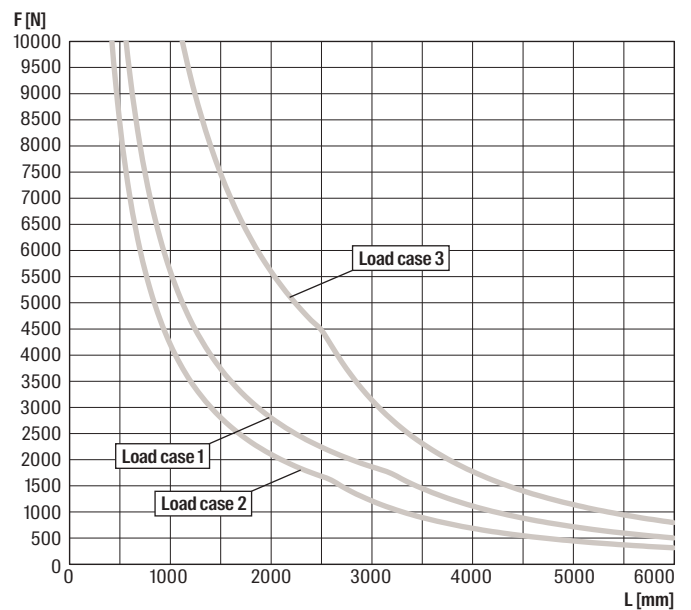
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For the load curves, the permissible steel strain $\delta_{adm.} = 160$ N/mm and the maximum deflection under load $L/200$ are not exceeded. Fixings and screw fastenings must be calculated accordingly.

FUS fvz 21D/2,0

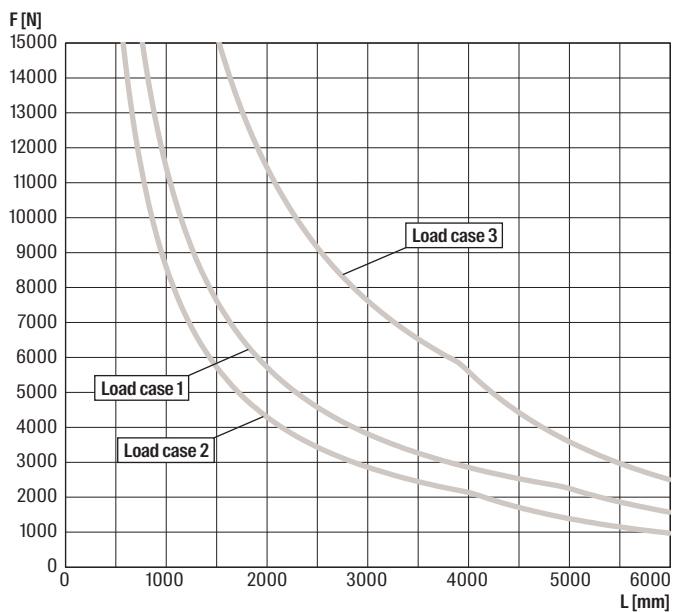


FUS fvz 41D/2,5



For the load curves, the permissible steel strain $\delta_{adm.} = 160$ N/mm and the maximum deflection under load $L/200$ are not exceeded. Fixings and screw fastenings must be calculated accordingly.

FUS fvz 62D/2,5



Bei den Belastungskurven wird die zulässige Stahlspannung $\delta_{zul} = 160 \text{ N/mm}$ sowie die maximale Durchbiegung $L/200$ nicht überschritten. Die Befestigungen Dübel, Schrauben müssen den Belastungen entsprechend ausgelegt werden.

Channel connector FUF OC and PFUF OC

Construction element - Channel connector FUF OC hdg and PFUF OC zl



10

Applications

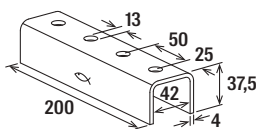
- Connection and alignment of the channels.
- For indoor and outdoor application.

Advantages

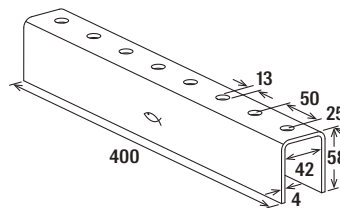
- The FUF OC connector in combination with FCN Clix P allows a simple and time-saving installation.
- The PFUF OC connector in combination with PFCN allows a simple and time-saving installation.

Properties

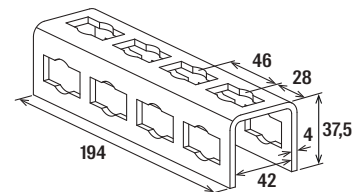
- Material FUF OC: steel S235JR (material no. 1.0037) acc. to DIN EN 10025
- Zinc plating FUF OC: hot-dip galvanised
- Material PFUF OC: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Zinc plating PFUF OC zl: zinclamella



FUF OC 41



FUF OC 62



PFUF OC

Technical data

Item	Item no.	Length L [mm]	Sales unit [pcs]
FUF OC 41 hdg	517415	200	20
FUF OC 62 hdg	537591	400	10
PFUF OC zl	542719	194	6

Socket wrench FSK

FSK socket wrench SW 17 long, the solution for tightening in the FUS mounting channels



10

Applications

- Installation of the fischer FUS channel system.
- Tightening anchor bolts and plugs.

Advantages

- The socket wrench FSK fits perfectly through the open side of the FUS mounting channel.
- The two snap-in holes between the impact wrench insert and 1/2" socket ensure increased connection accuracy.
- The long length of the socket wrench FSK allows it to be used for the FUS mounting channels 21, 41 and 62.

Properties

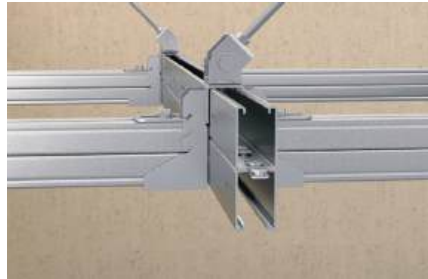
- Material: quenched and tempered steel 42CrMo4 according to EN 10083-3 (material no. 1.7225)
- Coating: black phosphatized

Technical data

Item	Item no.	Length L [mm]	Width across nut SW [mm]	Drive	For profile	Sales unit [pcs]
FSK Socket wrench SW17-1/2" long	563656	100	17	1/2" / SW17	FUS 21, 41, 62	1

Channel connector FDCC z1

Channel connector FDCC z1 - For easy preparation of FUS double channels



FUS double channel with channel connector

10

Applications

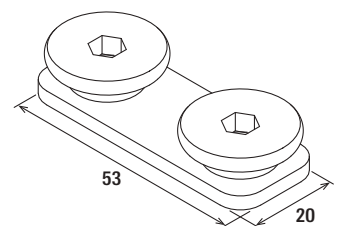
- Easy construction of double channels made from the FUS channel assortment.
- Suitable for FUS channels FUS 41 and FUS 62 with thickness 2,0 and 2,5 mm.
- The connection of two single channels is made with the channel connector inside the channel slots.
- Each double channel has to be equipped with an FDCC at both ends and additional FDCCs in the given installation distance as per load chart.
- For indoor and outdoor application.

Advantages

- Easy connection of single channels backside to backside to build double channels.
- Simple solution to create individual double channels on job site.

Properties

- Material base plate: JIS G3131-SPHE (similar to DD13 acc. to DIN EN 10111, material no. 1.0335)
- Material screw: steel grade 8.8
- Surface coating: zinclamella

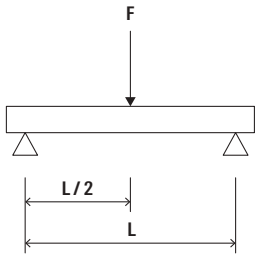


FDCC

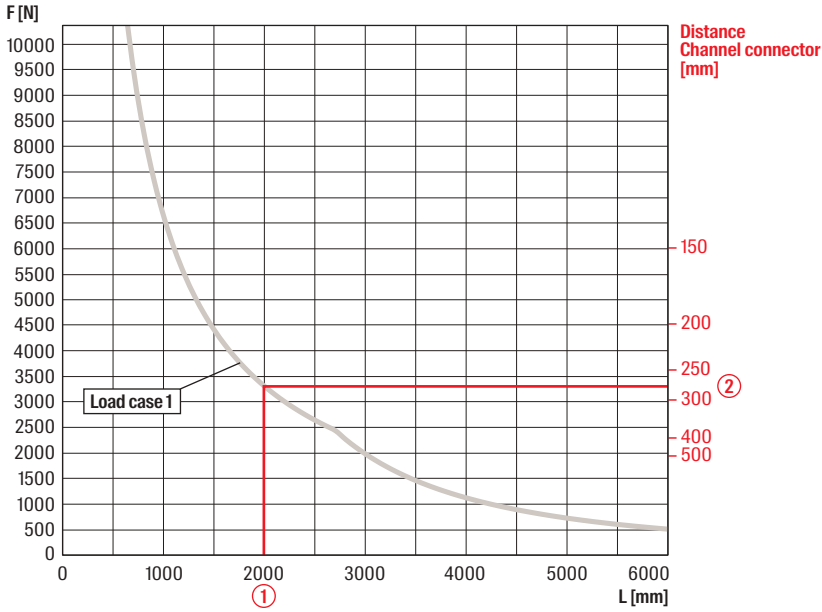
Technical data

Item	Item no.	Thread A	Drive	Tightening torque T_{inst} [Nm]	Sales unit [pcs]
FDCC z1	557278	M10	Hexagon socket 5 mm	25	100

Load case 1

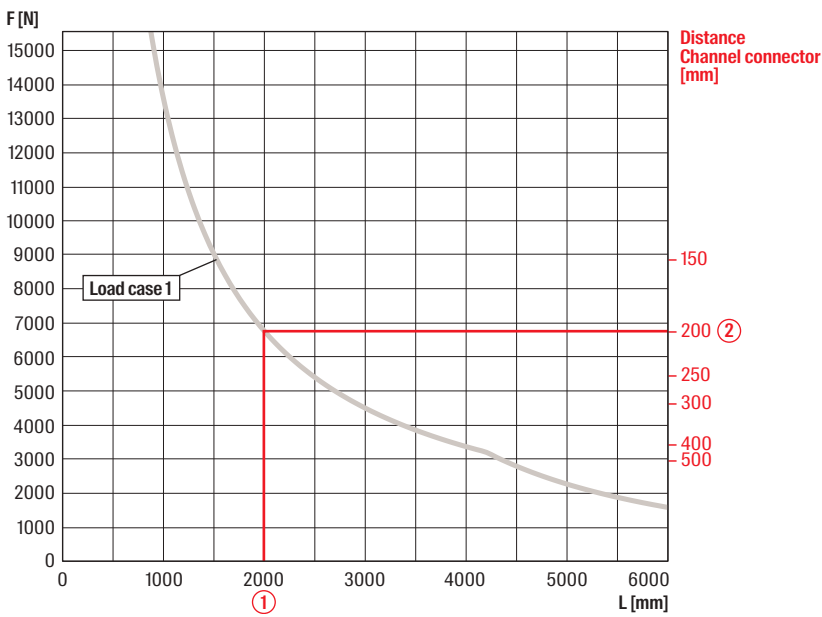


FUS 41D/2,0 - 2,5



- ① Length of channel, i.e. 2000 mm for loadcase 1 (single load centric)
- ② Distance of channel connector (for intermediate values use the lower value, i.e. 250 mm)

FUS 62D/2,5



- ① Length of channel, i.e. 2000 mm for loadcase 1 (single load centric)
- ② Distance of channel connector (for intermediate values use the lower value)

Cantilever arm FCA hdg

Hot-dip galvanised FUS profiles with welded base plate for direct mounting on the base material



Refrigerant pipe clamp on sliding element



Heavy pipe on cantilever

Applications

- Quick and easy installation of pipelines, for example, along the wall.
- For indoor and outdoor application.

Certificates

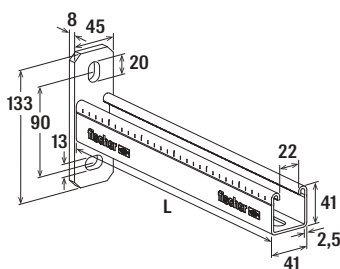


Advantages

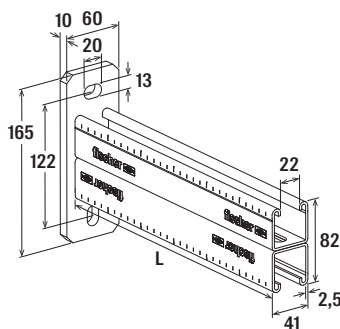
- The fire inspection report in line with MLAR/EN13501 guarantees independently tested functional safety.
- The graduated range of lengths allows for an ideal adaptation to the application.
- The arms solid base plate offers a secure hold for load-bearing construction.
- The base plate's long slots, which are at 90° to one another, allow the arm to be easily aligned.
- The stamped teeth in the channel give the sliding nuts a secure hold for high shear loads, e.g. for vertical installation.

Properties

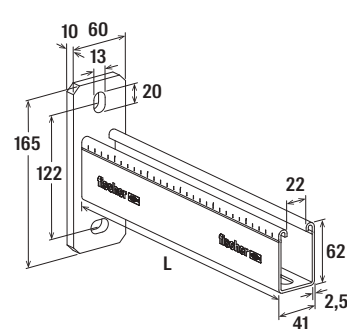
- Material: steel S235JR (material no.1.0037) acc. to DIN EN 10025
- Zinc plating: hot-dip galvanised



FCA 41/2.5



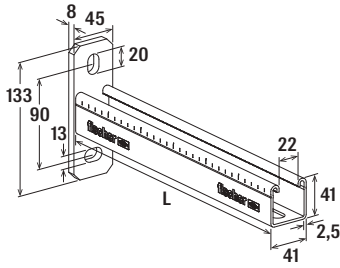
FCA 41D/2.5



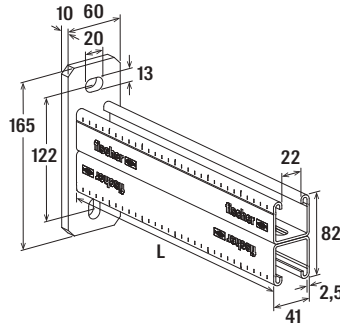
FCA 62/2.5

Technical data

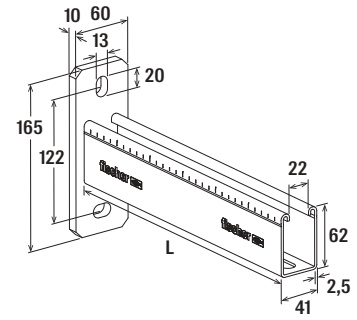
Item	Item no.	Fire test report	Profile	Length L [mm]	Sales unit [pcs]
FCA 41/2.5 - 300 hdg	517411	Yes	41 / 2.5	300	1
FCA 41/2.5 - 450 hdg	517412	Yes	41 / 2.5	450	1
FCA 41/2.5 - 600 hdg	517413	Yes	41 / 2.5	600	1
FCA 41/2.5 - 750 hdg	517414	Yes	41 / 2.5	750	1



FCA 41/2.5



FCA 41D/2.5



FCA 62/2.5

Technical data

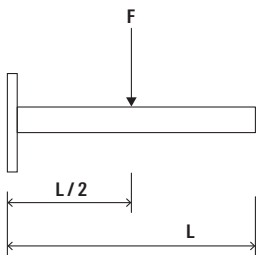
Item	Item no.	Fire test report	Profile	Length L [mm]	Sales unit [pcs]
FCA 62/2.5 - 1000 hdg	538015	Yes	62 / 2.5	1,000	1
FCA 41D/2.5 - 750 hdg	538016	-	41D / 2.5	750	1
FCA 41D/2.5 - 1.000 hdg	538017	-	41D / 2.5	1,000	1

For load information under fire exposure, see chapter Basic knowledge.

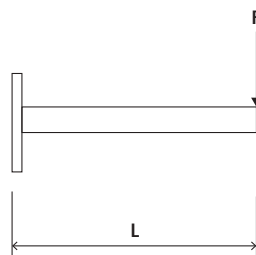
Loads

Item	Item no.	Max. recommended static load load case 1 F_{rec} [kN]	Max. recommended static load load case 2 F_{rec} [kN]	Max. recommended static load load case 3 F_{rec} [kN]	Sales unit [pcs]
FCA 41/2.5 - 300 hdg	517411	1.80	0.90	1.80	1
FCA 41/2.5 - 450 hdg	517412	1.20	0.60	1.20	1
FCA 41/2.5 - 600 hdg	517413	0.90	0.45	0.90	1
FCA 41/2.5 - 750 hdg	517414	0.72	0.36	0.72	1
FCA 62/2.5 - 1000 hdg	538015	1.25	0.62	1.25	1
FCA 41D/2.5 - 750 hdg	538016	2.50	1.25	2.50	1
FCA 41D/2.5 - 1.000 hdg	538017	1.90	0.64	1.90	1

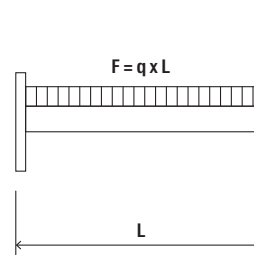
Load case 1



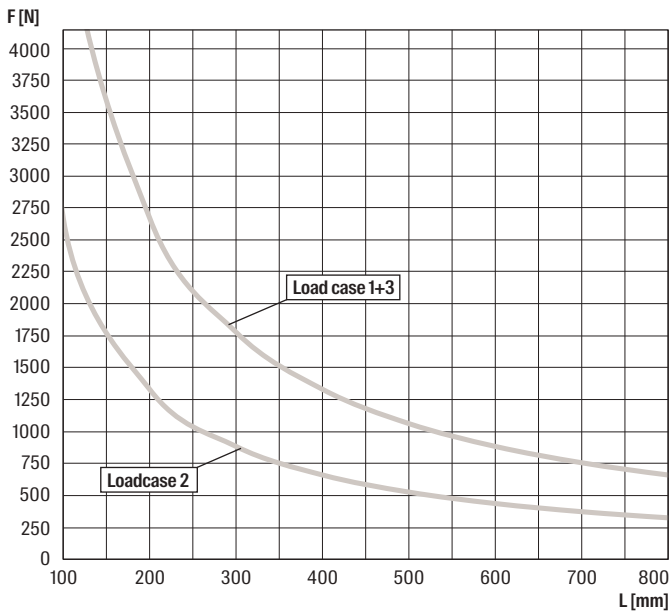
Load case 2



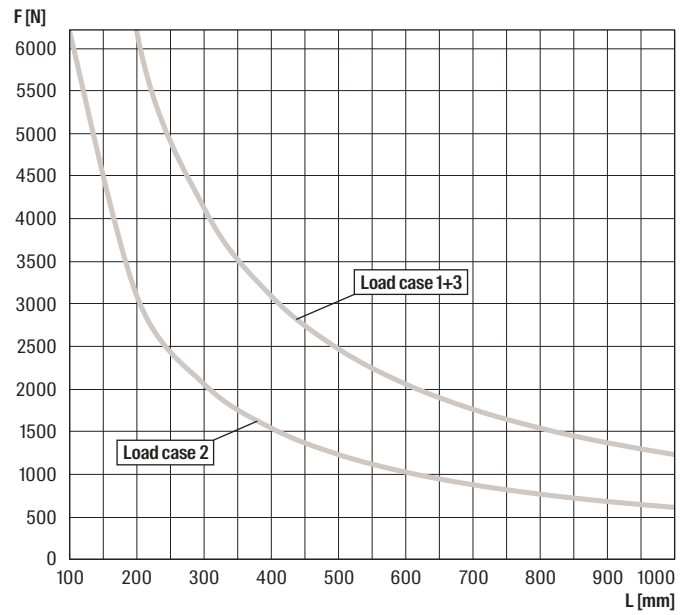
Load case 3



FCA 41



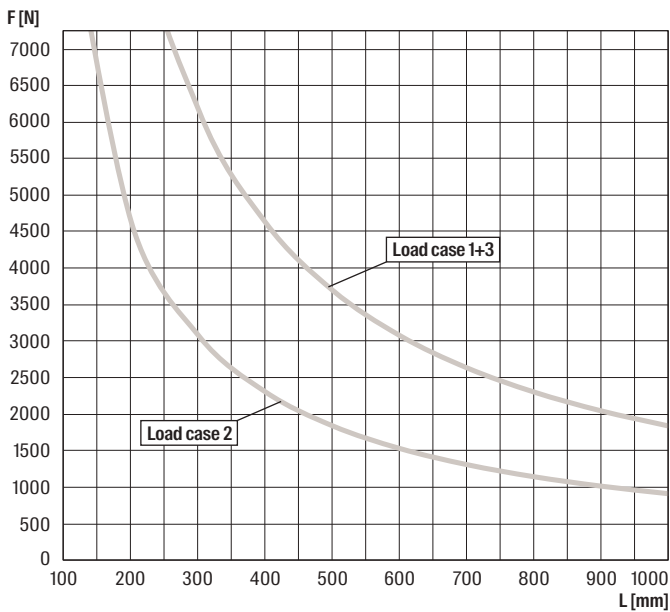
FCA 62



10

For the load curves, the permissible steel strain $\delta_{adm.} = 160$ N/mm and the maximum deflection under load $L/150$ are not exceeded. Load values of the cantilever arms under consideration of the load capacity of the base plate. Fixings and screw fastenings must be calculated accordingly. The load curves are valid for all material thicknesses of the FCA brackets.

FCA 41D



For the load curves, the permissible steel strain $\delta_{adm.} = 160$ N/mm and the maximum deflection under load $L/150$ are not exceeded. Load values of the cantilever arms under consideration of the load capacity of the base plate. Fixings and screw fastenings must be calculated accordingly. The load curves are valid for all material thicknesses of the FCA brackets.

Large cantilever arm FCAM hdg

The large cantilever arm for heavy loads



Stiff pipe connection with base plate on cantilever arm

10

Applications

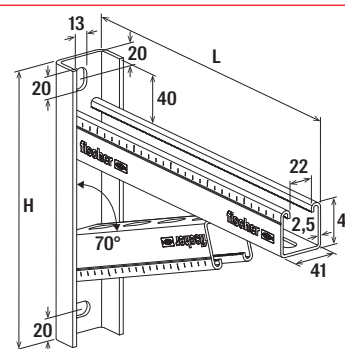
- Quick and easy installation of pipelines with heavy loads.
- For indoor and outdoor application.

Advantages

- The robust construction, consisting of a basic and a support profile, allows the bearing of heavy loads.
- The graduated range of lengths allows an ideal adaptation to the application.
- The base plate's long slots, which are at 90° to one another, allow the arm to be easily aligned.
- The stamped teeth in the channel give the sliding nuts a secure hold for high shear loads, e.g. for vertical installation.

Properties

- Material: steel S235JR (material no. 1.0037) acc. to DIN EN 10025
- Zinc plating: hot-dip galvanised



FCAM

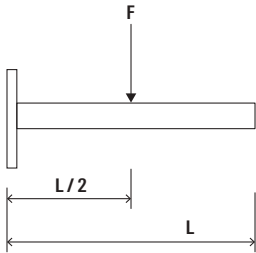
Technical data

Item	Item no.	Length L [mm]	Height H [mm]	Sales unit [pcs]
FCAM 300 hdg	538018	300	246	1
FCAM 400 hdg	538019	400	270	1
FCAM 500 hdg	538020	500	284	1
FCAM 600 hdg	538021	600	319	1
FCAM 700 hdg	538022	700	343	1

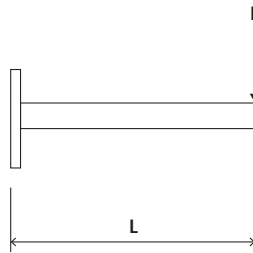
Loads

Item	Item no.	Max. recommended static load load case 1	Max. recommended static load load case 2	Max. recommended static load load case 3	Sales unit
		F_{rec} [kN]	F_{rec} [kN]	F_{rec} [kN]	[pcs]
FCAM 300 hdg	538018	7.00	3.70	7.00	1
FCAM 400 hdg	538019	7.50	2.80	7.50	1
FCAM 500 hdg	538020	6.50	2.30	6.50	1
FCAM 600 hdg	538021	6.00	1.90	6.00	1
FCAM 700 hdg	538022	5.50	1.30	5.50	1

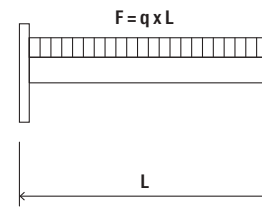
Load case 1



Load case 2



Load case 3



Cover cap FEC

The form-flush cover cap, tailored to the FUS channel profiles for a safe termination



10

Applications

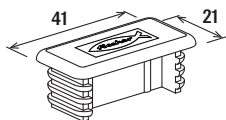
- Closing for channel FUS and cantilever arms FCA and large cantilever arms FCAM.

Advantages

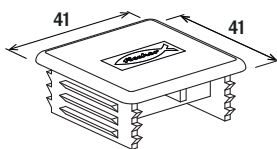
- Suitable for channels FUS 21, FUS 41, FUS 62 and cantilever arms FCA and FCAM.

Properties

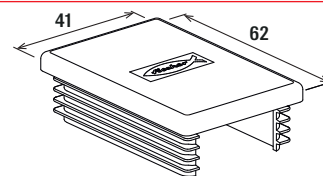
- Material: PE polyethylene, colour black



FEC 21 B



FEC 41 B



FEC 62 B

Technical data

Item	Item no.	For profile	Material	Sales unit [pcs]
FEC 21 B	077357	41/21	Polyethylene, black	100
FEC 41 B	077355	41/41	Polyethylene, black	100
FEC 62 B	505551	41/62	Polyethylene, black	100

Push-through connector PFCN 41 zl

Push-through connector for the quickest and easiest connection of FUS profiles



Cross connection on channel



Cantilever with saddle flange

10

Applications

- Connection of FUS channels and construction elements by push-through principle.
- Universal fitting for all push-through connection elements and FUS profiles.
- For indoor and outdoor application.

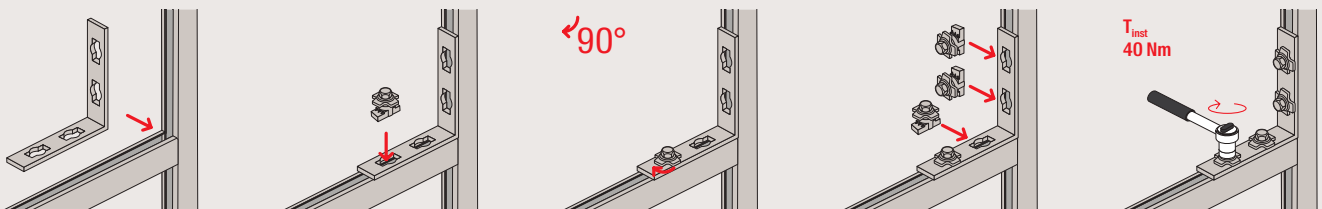
Advantages

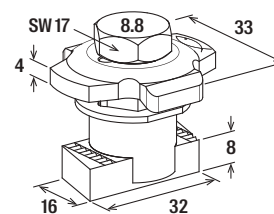
- The correct fit of the push-through connector and connection elements allows the quickest and easiest channel connection.
- The spring effect of the PFCN in set state guarantees a simple and precise positioning in the channel.
- The teeth on the push through connector provide a secure hold in the FUS channel.
- Installation by rotating 90° enables generally the post-installation in set channels.

Properties

- Material cap: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Material sliding nut: steel S420MC, EN 10149-2
- Material hexagon screw: 8.8 M10-28, DIN 933
- Material plastic parts: polypropylene
- Coating: zinclamella

Installation PFCN

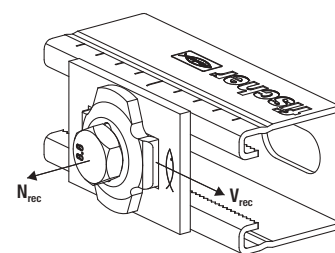




PFCN

Technical data

Item	Item no.	Thread A	Sales unit [pcs]
PFCN 41 zl	542733	M10	50



PFCN

Loads

Item	Item no.	Max. recommended tension load for FUS 2,0 mm N_{rec} [kN]	Max. recommended tension load for FUS 2,5 mm N_{rec} [kN]	Max. recommended shear load for FUS 2,0 mm V_{rec} [kN]	Max. recommended shear load for FUS 2,5 mm V_{rec} [kN]	Tightening torque for screw grade ≥ 8.8 T_{inst} [Nm]	Sales unit [pcs]
PFCN 41 zl	542733	5.0	7.0	4.0	4.0	40	50

Saddle flange PSF zI

Construction element - Saddle flange PSF zI



Pipe installation in escape route



Cantilever with saddle flange

Applications

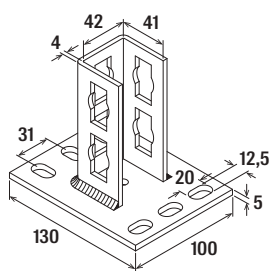
- Stable construction of connections between channels and building structures for the push-through system.
- For indoor and outdoor application.

Advantages

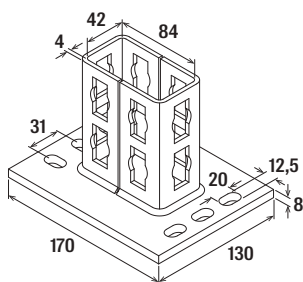
- The perfect-fit saddle allows a simple installation by inserting the mounting channels.
- The saddle flange's stable design offers a secure hold for a load-bearing construction.

Properties

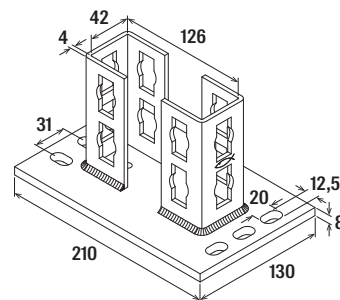
- Material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Coating: zinclamella



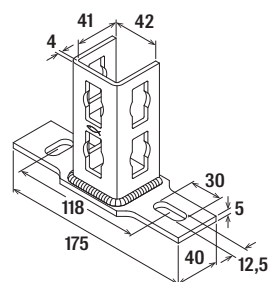
PSF 41



PSF 82



PSF 124



PSFQ 41

10

Technical data

Item	Item no.	For profile	Sales unit
			[pcs]
PSF 41 zl	542715	21D, 41, 62	10
PSF 82 zl	542716	41	5
PSF 124 zl	542718	62	5
PSFQ 41 zl	542723	41	10

See push-through connector PFCN 41 zl for loads

Universal bracket PUWS zI

Construction element - Universal bracket PUWS zI



3D-frame constructions

10

Applications

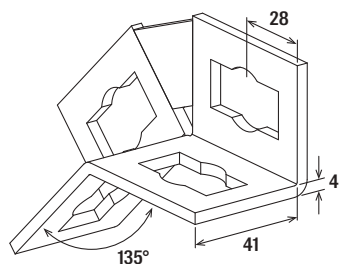
- Reinforcement of supporting structures for the push-through system.
- For indoor and outdoor application.

Advantages

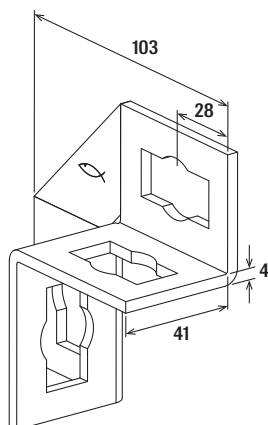
- The universal brackets for the connection of FUS channels gives a supporting structure, great stability and safety (we recommend using in pairs).

Properties

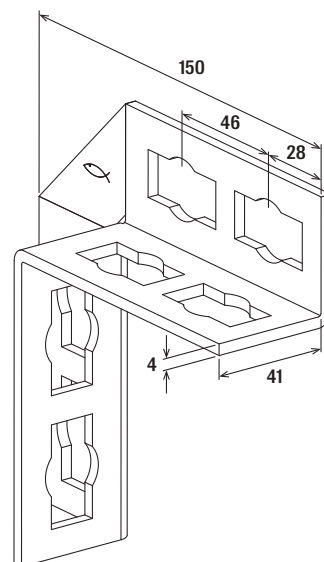
- Material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Coating: zinclamella



PUWS 2 x 2/135°



PUWS 2 x 2



PUWS 4 x 4

10

Technical data

Item	Item no.		Sales unit [pcs]
PUWS 2 x 2/135° zl	542708		10
PUWS 2 x 2 zl	542709		10
PUWS 4 x 4 zl	542710		8

See push-through connector PFCN 41 zl for loads

Angle bracket PWK zl

Construction element - Angle bracket PWK zl



Solid frame construction



Solid frame construction

10

Applications

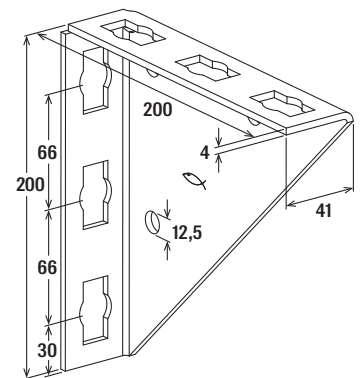
- Reinforcement in the push-through system and for lateral fixing to the substrate.
- For indoor and outdoor application.

Advantages

- The stable angle bracket ensures a supporting structure with a very high level of stability and safety.

Properties

- Material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Coating: zinclamella



PWK 200

Technical data

Item	Item no.	Sales unit
PWK 200/200 zl	542720	[pcs] 15

See push-through connector PFCN 41 zl for loads

Variable bracket PVB zl

Construction element – Variable bracket PVB zl



Massive bracing of cantilever arm

10

Applications

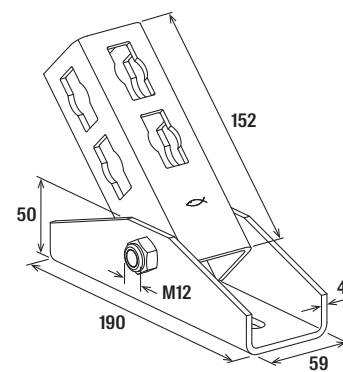
- Variable angular positioning of profile support in the push-through system.
- Bracket for installation with FUS channels from 0° to 180°.
- For indoor and outdoor application.

Advantages

- The design of the variable bracket PVB zl enables the fixation of mounting channels at an angle of 0° to 180°.
- The holes in the connecting element make it compatible with the push-through connector PFCN zl.
- The punched holes in the base plate allow the direct fixing onto a wall, ceiling or onto a mounting channel by screw or anchor.

Properties

- Material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Coating: zinclamella



PVB

Technical data

Item	Item no.	Sales unit
PVB zl	542722	[pcs] 5

See push-through connector PFCN 41 zl for loads

Bracing elements PSAE zl

Construction elements – Bracing elements PSAE zl 300 and 500



Supported channel

10

Applications

- Elements for stable cantilever constructions made of FUS channels or FCA cantilever arms with push-through connector PFCN zl.
- For indoor and outdoor application.

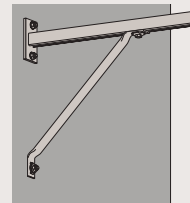
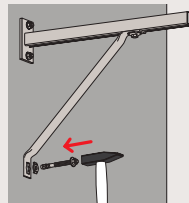
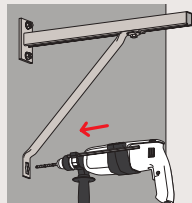
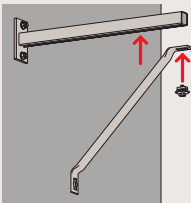
Advantages

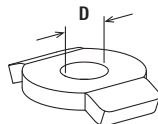
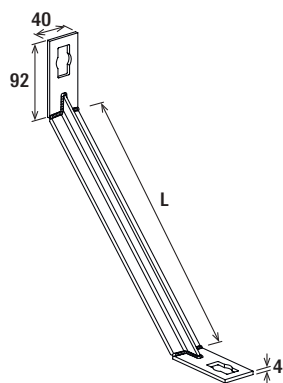
- The stable bracing element PSAE zl gives the supporting structure very high stability and safety.
- The holes in the base plate of the element make it compatible with the push-through connector PFCN zl.
- An additional PU-washer allows for fixing of elements with formholes directly onto a wall or ceiling by anchor or screw.

Properties

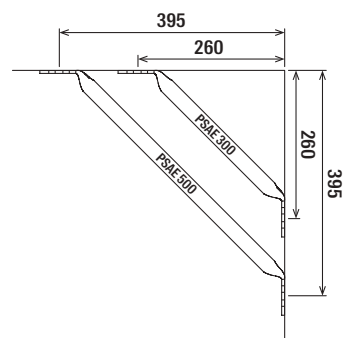
- Material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Coating: zinclamella

Installation PSAE





PU



PSAE 300 and PSAE 500

Technical data

Item	Item no.	Length L [mm]	Hole-Ø D [mm]	Sales unit [pcs]
PSAE 300 zI	542726	300	-	10
PSAE 500 zI	542727	500	-	10
PU 10.5 zI	542728	-	10.5	50
PU 12.5 zI	542729	-	12.5	50

See push-through connector PFCN 41 zI for loads

Bracket PFFF zl

Construction elements - Brackets PFFF zl



Waste water pipe

10

Applications

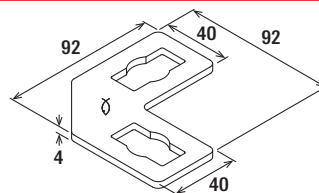
- Arrangement of simple channel constructions in the push-through system.
- For indoor and outdoor application.

Advantages

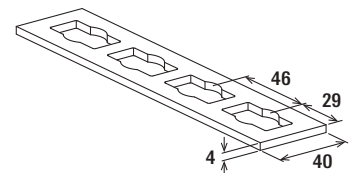
- The holes in the connecting elements make them compatible with the push-through connector PFCN 41 zl.
- Simple creation of channel structures in conjunction with FUS channels and PFCN 41 zl.
- Quick installation by rotating the PFCN 41 zl in the channel by 90° clockwise.

Properties

- Material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Coating: zinclamella



PFFF 2L



PFFF 4L

Technical data

Item	Item no.	Sales unit
		[pcs]
PFFF 2L zl	542721	20
PFFF 4L zl	542725	10

See push-through connector PFCN 41 zl for loads

Bracket PFAF zl

Construction elements - Brackets PFAF zl



Frame constructions



Lightweight installation on cantilever

10

Applications

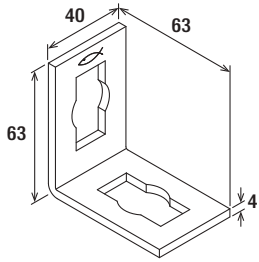
- Arrangement of simple channel constructions in the push-through system.
- For indoor and outdoor application.

Advantages

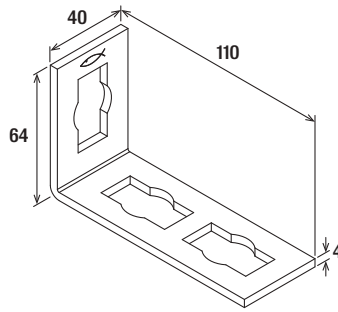
- The holes in the connecting elements make them compatible with the push-through connector PFCN 41 zl.
- Simple creation of channel structures in conjunction with FUS channels and PFCN 41 zl.
- Quick installation by rotating the PFCN 41 zl in the channel by 90° clockwise.

Properties

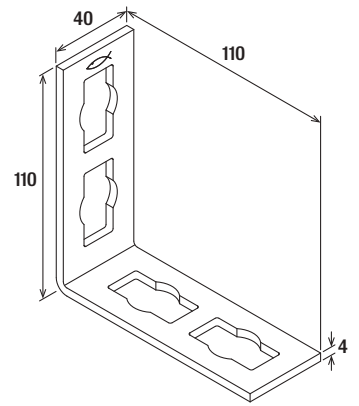
- Material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Coating: zinclamella



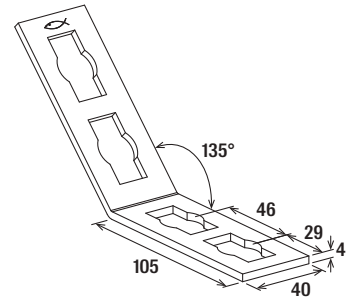
PFAF 2



PFAF 3



PFAF 4



PFAF 4/135°

10

Technical data

Item	Item no.	Sales unit
		[pcs]
PFAF 2 zl	542711	25
PFAF 3 zl	542712	25
PFAF 4/135° zl	542713	20
PFAF 4 zl	542724	25

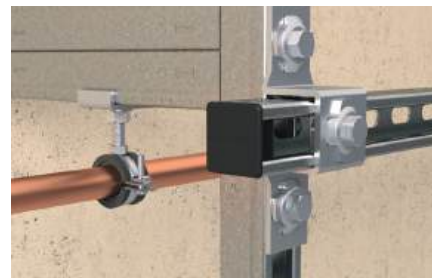
See push-through connector PFCN 41 zl for loads

Bracket PFUF zl

Construction elements - Brackets PFUF zl



Cross connection on channel



Cross connection on channel

10

Applications

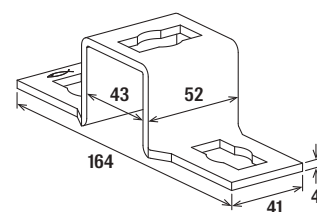
- Connecting element for the production of multi-dimensional constructions with FUS channels using push-through connector PFCN zl.
- For indoor and outdoor application.

Advantages

- The various shapes of the construction elements offer flexibility during the installation of channel constructions.
- The perforation of the construction elements ensures the system fit with the push-through channel nut PFCN 41 zl.
- Simple creation of channel structures in conjunction with FUS channels and PFCN 41 zl.
- Quick installation by rotating the PFCN 41 zl in the channel by 90° clockwise.

Properties

- Material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Coating: zinc lamella coating



PFUF 41

Technical data

Item	Item no.	Sales unit
PFUF 41 zl	542714	[pcs] 25

See push-through connector PFCN 41 zl for loads

Bracket PFUF D zI

Construction elements - Bracket PFUF 2D, 3D and 4D



Frame constructions



Frame constructions

Applications

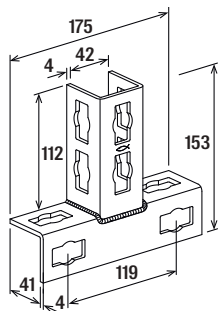
- Connecting elements for multidimensional constructions with FUS channels connected by the push-through connector PFCN zI.
- For indoor and outdoor application.

Advantages

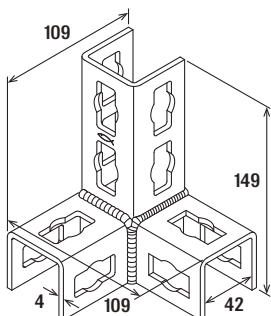
- The multidimensional PFUF zI construction elements enable multidimensional constructions in a very short time.
- The holes in the construction elements make them compatible with the push-through connector PFCN zI.
- Simple creation of channel structures in conjunction with FUS channels and PFCN 41 zI.
- Quick installation by rotating the PFCN 41 zI in the channel by 90° clockwise.
- The different shapes of the construction elements generate a high flexibility for channel constructions.

Properties

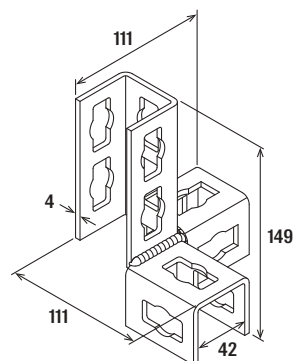
- Material: steel DD11 (material no. 1.0332) acc. to DIN EN 10111
- Coating: zinclamella



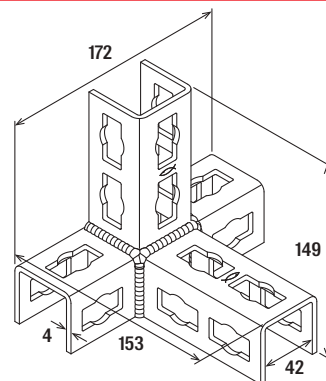
PFUF 2D



PFUF 3DL



PFUF 3DR



PFUF 4D

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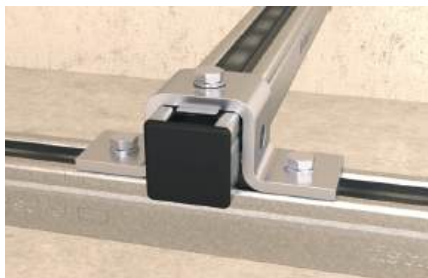
Technical data

Item	Item no.	Sales unit
		[pcs]
PFUF 2D zl	563149	10
PFUF 3DL zl	542730	10
PFUF 3DR zl	542731	10
PFUF 4D zl	542732	10

See push-through connector PFCN 41 zl for loads

Channel nut FCN Clix P hdg

Channel nut for quick and easy fixing in FUS profiles



Cross connection

Applications

- Connection of FUS channels and fixtures.
- For indoor and outdoor application.

Certificates



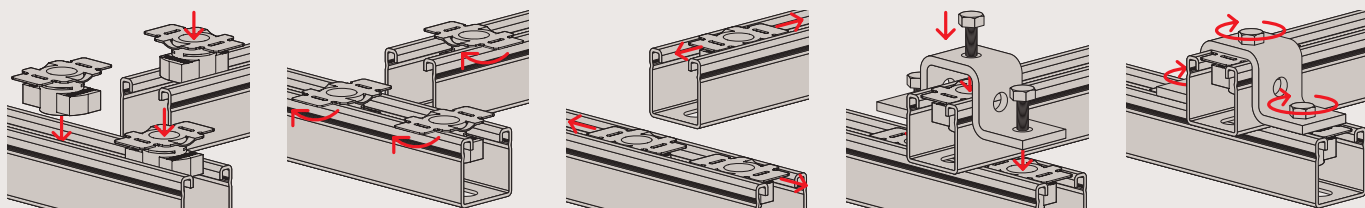
Advantages

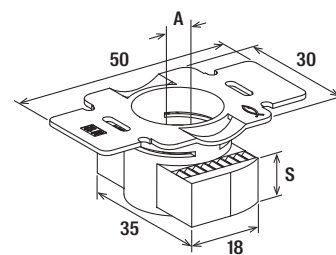
- The sliding nut design allows for quick and easy setting in the channel.
- The spring effect of the plastic clasp guarantees simple and precise positioning in the channel.
- The FCN Clix P's flat plastic mounting with wings offers a good hold and allows the fixtures to be conveniently mounted.
- The serration on the sliding nut provides a secure hold in the FUS channel.
- Installation by rotating 90° enables post-installation in installed channel.

Properties

- Material: steel S235JR (material no. 1.0037) acc. to DIN EN 10025, plastic Nylon PA6
- Zinc plating: hot-dip galvanised

Installation FCN Clix P

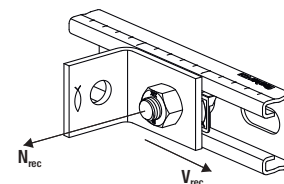




FCN Clix P

Technical data

Item	Item no.	Fire test report	Thread A	Thickness S [mm]	Sales unit [pcs]
FCN Clix P 8 hdg.	559765	No	M8	6.0	50
FCN Clix P 10 hdg	559766	Yes	M10	8.0	50
FCN Clix P 12 hdg	559767	Yes	M12	9.5	50



FCN Clix P

Loads

Item	Item no.	Max. recommended tension load for FUS 2,0 mm	Max. recommended tension load for FUS 2,5 mm	Max. recommended shear load for FUS 2,0 mm	Max. recommended shear load for FUS 2,5 mm	Tightening torque for screw grade \geq 8.8	Sales unit [pcs]
		N_{rec} [kN]	N_{rec} [kN]	V_{rec} [kN]	V_{rec} [kN]		
FCN Clix P 8 hdg.	559765	4.0	4.0	1.0	1.0	20	50
FCN Clix P 10 hdg	559766	5.0	8.0	1.5	1.5	40	50
FCN Clix P 12 hdg	559767	5.0	8.0	2.0	2.0	50	50

Channel nut FCN Clix M hdg

Channel nut for quick and easy fixing in FUS profiles



Connection on channel

Applications

- Connection of pipe clamps to FUS channel under the use of threaded rods.
- For indoor and outdoor application.

Advantages

- The sliding nut design enables a quick and easy setting in the channel.
- The serration on the sliding nut provides a secure hold in the FUS channel.
- Installation by rotating 90° enables post-installation in installed channel.

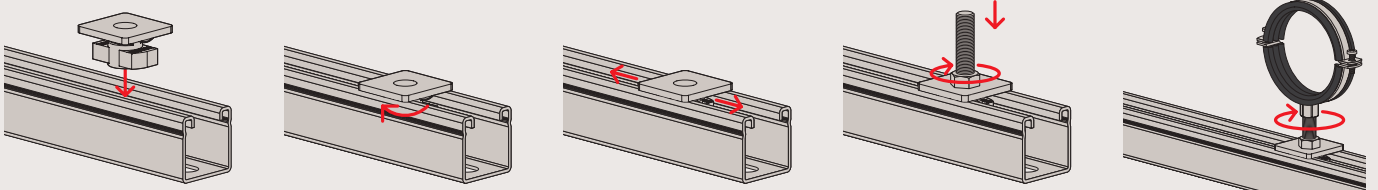
Properties

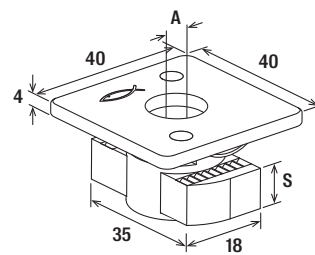
- Material: steel S235JR (material no. 1.0037) acc. to DIN EN 10025
- Material plastic: Nylon PA6
- Zinc plating: hot-dip galvanised

Certificates



Installation FCN Clix M

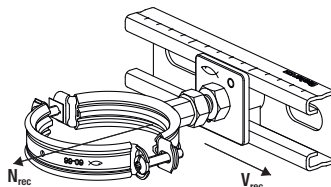




FCN Clix M

Technical data

Item	Item no.	Fire test report	Thread A	Thickness S [mm]	Sales unit [pcs]
FCN Clix M 8 hdg	559768	No	M8	6.0	50
FCN Clix M 10 hdg	559769	Yes	M10	8.0	50
FCN Clix M 12 hdg	559770	Yes	M12	9.5	50



FCN Clix M

Loads

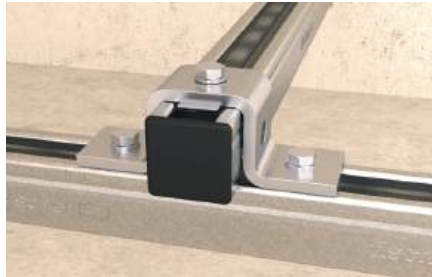
Item	Item no.	Max. recommended tension load for FUS 2,0 mm N_{rec} [kN]	Max. recommended tension load for FUS 2,5 mm N_{rec} [kN]	Tightening torque for screw grade ≥ 4.6 T_{inst} [Nm]	Sales unit [pcs]
FCN Clix M 8 hdg	559768	4.0	4.0	10	50
FCN Clix M 10 hdg	559769	5.0	8.0	15	50
FCN Clix M 12 hdg	559770	5.0	8.0	20	50

Channel nut FCN 16 hdg

Connector - Channel nut FCN 16 hdg



Lightweight installation on cantilever



Cross connection

Applications

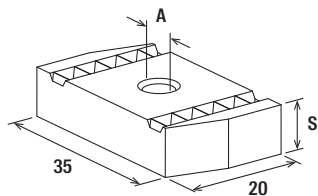
- Simple hammer-head nut for installation in FUS channels
- The FCN is suitable for the connection of different fixtures and pipe clamps with the channel
- For indoor and outdoor application.

Advantages

- The serration on the sliding nut provides a secure hold in the FUS channel.

Properties

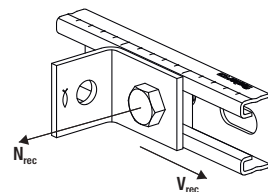
- Material: steel with min. tensile strength of 415 N/mm²
- Zinc plating: hot-dip galvanised



FCN

Technical data

Item	Item no.	Thread A	Thickness S [mm]	Sales unit [pcs]
FCN 16 hdg	561774	M16	12.0	100



FCN

Loads

Item	Item no.	Max. recommended tension load for FUS 1,5 mm N_{rec} [kN]	Max. recommended tension load for FUS 2,0 mm N_{rec} [kN]	Max. recommended tension load for FUS 2,5 mm N_{rec} [kN]	Max. recommended shear load for FUS 1,5 mm V_{rec} [kN]	Max. recommended shear load for FUS 2,0/2,5 mm V_{rec} [kN]	Tightening torque for screw grade ≥ 8.8 T_{inst} [Nm]	Sales unit [pcs]
FCN 16 hdg	561774	4.0	5.0	8.0	2.0	3.0	50	100

Channel washer HK 41 hdg

Connector - Channel washer HK 41 hdg



Lateral pipe mounting at channel



Channel installation at ceiling

10

Applications

- The channel washer HK is used for stable connections and to strengthen the FUS profile for a fixing to the substrate.
- For indoor and outdoor application.

Certificates

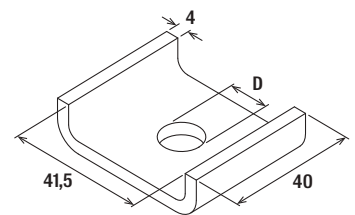


Advantages

- Perfect connection with the FUS channel thanks to laterally curved contours.
- The shape of the channel washer makes the push-through installations of channel profiles quick and easy.
- Fire resistance classification R120 & German model pipeline system guideline MLAR R30.

Properties

- Material: steel S235JR (material no. 1.0037) acc. to DIN EN 10025
- Zinc plating: hot-dip galvanised



HK 41

Technical data

Item	Item no.	Fire test report	Hole-Ø D [mm]	Sales unit [pcs]
HK 41 10.5 hdg	547495	Yes	10.5	50
HK 41 12.5 hdg	547496	Yes	12.5	50
HK 41 17 hdg	561254	No	17	50

Saddle flange SF hdg

Construction element - Saddle flange SF hdg



Pipe installation in escape route



Cantilever with saddle flange

10

Applications

- For solid connections between the channel and building structures
- For indoor and outdoor application.

Certificates

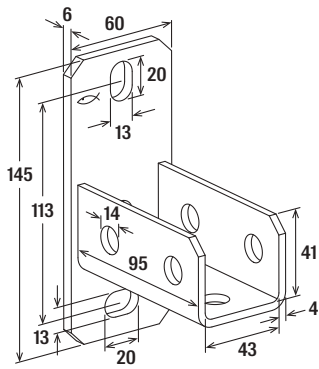


Advantages

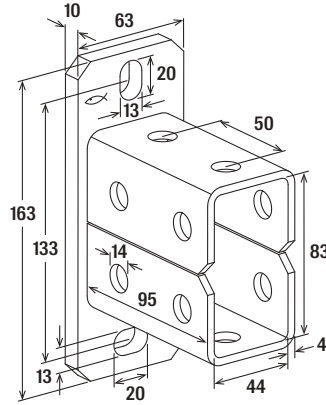
- The perfect-fit saddle of the SF allows simple installation by inserting the mounting channel.
- The saddle flange's stable design offers a secure hold for load-bearing construction.
- Fire protection test R120.
- Sample cable system directive test MLAR R30.

Properties

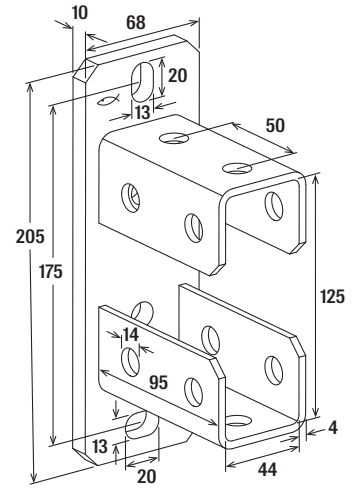
- Material base plate: steel DC01 (material no. 1.0330) acc. to DIN EN 10139
- Zinc plating base plate: hot-dip galvanised
- Material U-Profile: steel S235JR (material no. 1.0037) acc. to DIN EN 10025
- Zinc-plating U-Profile: hot-dip galvanised



SF L 41



SF L 82



SF L 124

Technical data

Item	Item no.	Fire test report	For profile	Sales unit [pcs]
SF L 41 hdg	517421	Yes	21, 41, 21D, 62	10
SF L 82 hdg	538125	-	41	5
SF L 124 hdg	538126	-	62	5

See channel nut FCN Clix P hdg. for loads

Mounting bracket UWS hdg

Construction element - Universal bracket UWS hdg



3D-frame constructions

10

Applications

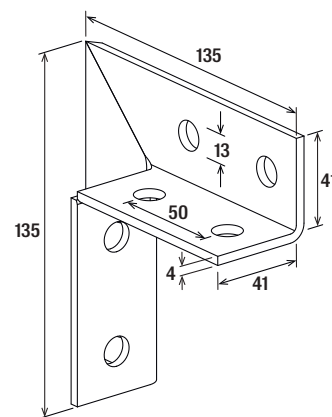
- Universal angle bracket for the reinforcement of supporting structures
- For indoor and outdoor application.

Advantages

- The universal bracket for connecting fischer mounting channels gives a supporting structure great stability and safety (we recommend using in pairs).

Properties

- Material: steel S235JR (material no. 1.0037) acc. to DIN EN 10025
- Zinc plating: hot-dip galvanised



UWS

Technical data

Item	Item no.	Sales unit
UWS hdg	538115	[pcs] 10

See channel nut FCN Clix P hdg. for loads

Angle bracket WK hdg

Construction element - Angle bracket WK hdg



Heavy drainage pipe under angle bracket



Solid frame construction

10

Applications

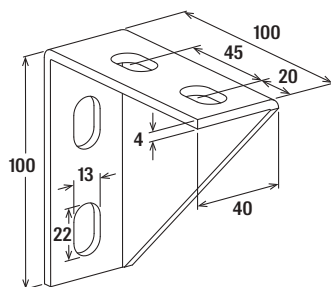
- Stable angle bracket for stiffening FUS channel constructions and for fixing pipelines.
- For indoor and outdoor application.

Advantages

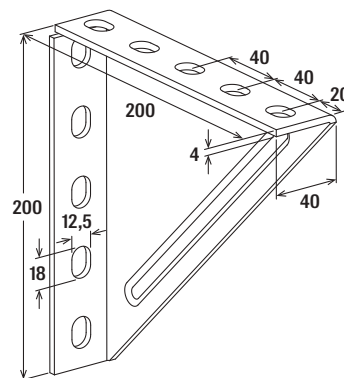
- The design of the angle bracket allows the fixing of pipe clamps or mounting channels.
- The stable angle ensures a very high level of stability and safety to the structure.

Properties

- Material: steel S235JR (material no. 1.0037) acc. to DIN EN 10025
- Zinc plating: hot-dip galvanised



WK 100/100

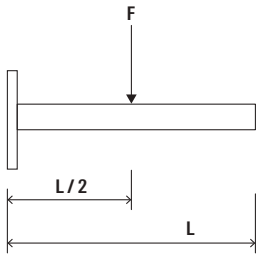


WK 200/200

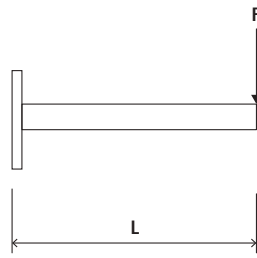
Technical data

Item	Item no.	Max. recommended static load load case 1	Max. recommended static load load case 2	Sales unit
		F_{rec} [kN]	F_{rec} [kN]	[pcs]
WK 100/100 hdg	538117	-	4.00	5
WK 200/200 hdg	538118	4.00	1.80	5

Load case 1



Load case 2

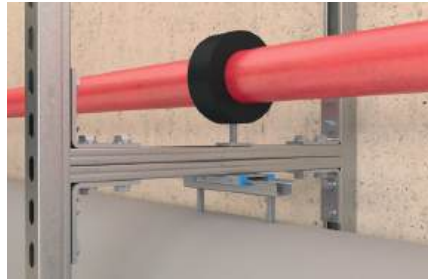
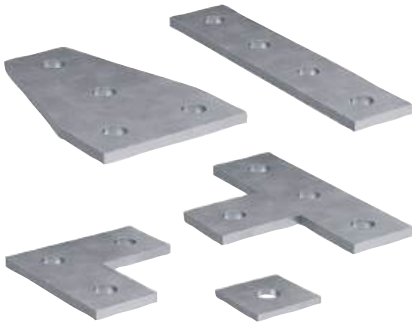


Loads

Item	Item no.		Sales unit [pcs]
WK 100/100 hdg	538117		5
WK 200/200 hdg	538118		5

Bracket FFF hdg

Construction elements - Brackets FFF hdg



Frame constructions



Connection on channel

10

Applications

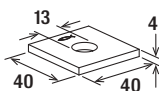
- Connecting elements for the joining or strengthening of simple channel constructions.
- For indoor and outdoor application.

Advantages

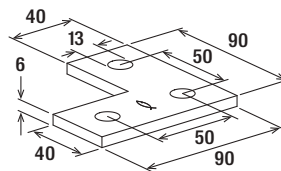
- The various shapes of the connectors offer flexibility when it comes to the installation of channel constructions.
- The holes in the connectors guarantee a system fit with the FCN Clix P.

Properties

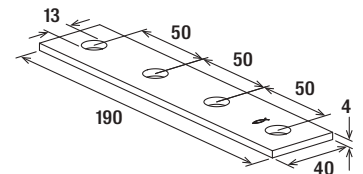
- Material: steel S235JR (material no. 1.0037) acc. to DIN EN 10025, FFF 5C uses Q235B (equivalent to S235JR)
- Zinc plating: hot-dip galvanised



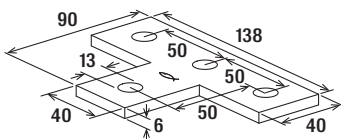
FFF 1



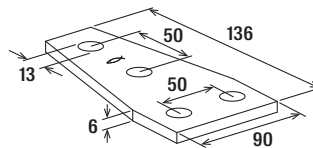
FFF 3L



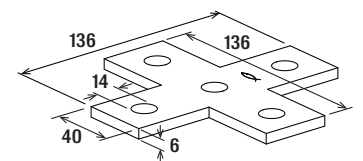
FFF 4



FFF 4T



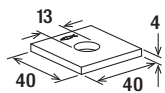
FFF 4D



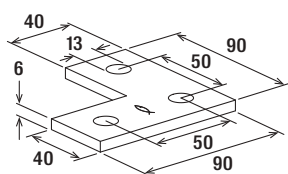
FFF 5C

Technical data

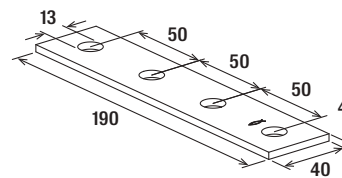
Item	Item no.	Sales unit
		[pcs]
FFF 1 hdg	547506	25
FFF 3L hdg	537581	25
FFF 4 hdg	547507	25
FFF 4T hdg	537583	25
FFF 4D hdg	537584	25



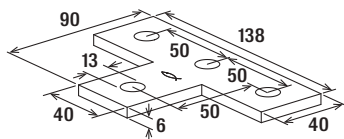
FFF 1



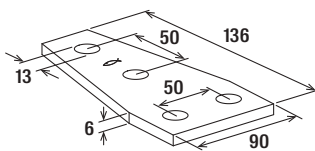
FFF 3L



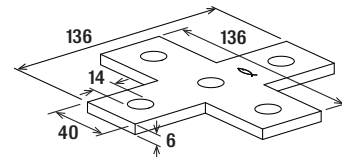
FFF 4



FFF 4T



FFF 4D



FFF 5C

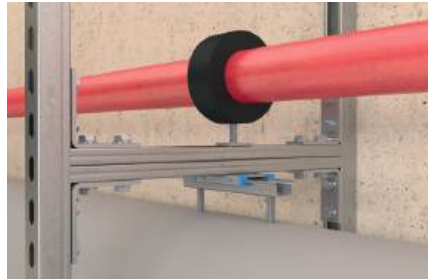
Technical data

Item	Item no.	Sales unit
		[pcs]
FFF 5C hdg	553075	20

See channel nut FCN Clix P hdg. for loads

Bracket FAF hdg

Construction elements - Mounting bracket FAF hdg



Frame constructions

Applications

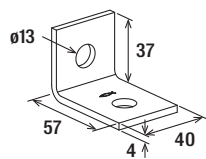
- Connecting elements for the joining or strengthening of simple channel constructions.
- For indoor and outdoor application.

Advantages

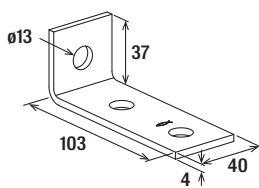
- The various shapes of the connectors offer flexibility when it comes to the installation of channel constructions.
- The holes in the connectors guarantee a system fit with the FCN Clix P.

Properties

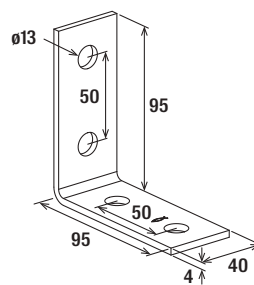
- Material: steel S235JR (material no. 1.0037) acc. to DIN EN 10025
- Zinc plating: hot-dip galvanised



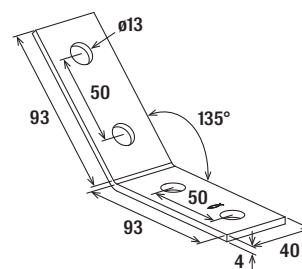
FAF 2



FAF 3



FAF 4



FAF 4/135°

10

Technical data

Item	Item no.	Sales unit
		[pcs]
FAF 2 hdg	547508	25
FAF 3 hdg	547509	25
FAF 4 hdg	547510	25
FAF 4/135° hdg	547511	25

See channel nut FCN Clix P hdg. for loads

Bracket FUF 21 / 41 / 62 hdg

Construction elements - Mounting brackets FUF hdg



Cross connection on channel

10

Applications

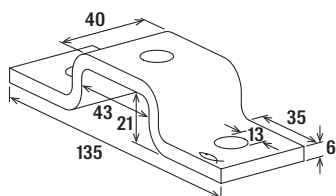
- Connecting elements for multi-dimensional channel constructions.
- For indoor and outdoor application.

Advantages

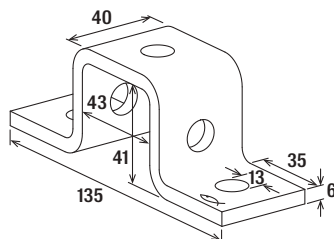
- The various shapes of the connecting elements offer flexibility when it comes to the installation of channel constructions.
- The holes in the connecting elements make them compatible with the FCN Clix P.

Properties

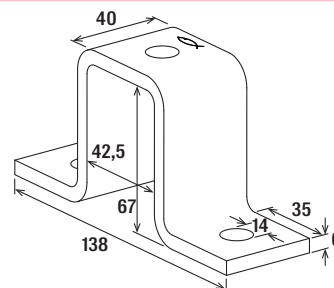
- Material: steel S235JR (material no. 1.0037) acc. to DIN EN 10025, FUF 62 uses Q235B (equivalent to S235JR)
- Zinc plating: hot-dip galvanised



FUF 21



FUF 41



FUF 62

Technical data

Item	Item no.	Sales unit
FUF 21 hdg	537588	[pcs]
FUF 41 hdg.	537589	25
FUF 62 hdg	553083	25
		15

See channel nut FCN Clix P hdg. for loads

Bracket FUF 180° hdg

Construction elements - mounting brackets FUF hdg



3D-frame constructions

10

Applications

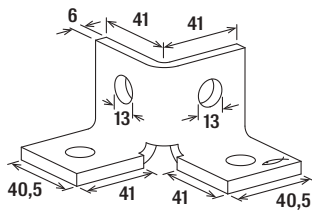
- Connecting elements for multi-dimensional channel constructions.
- For indoor and outdoor application.

Advantages

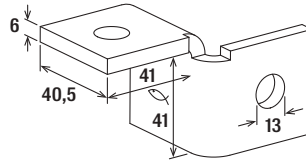
- The various shapes of the connecting elements offer flexibility when it comes to the installation of channel constructions.
- The holes in the connecting elements make them compatible with the FCN Clix P.

Properties

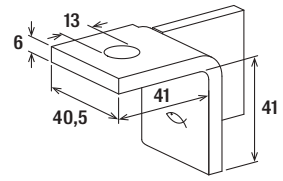
- Material: steel S235JR (material no. 1.0037) acc. to DIN EN 10025
- Zinc plating: hot-dip galvanised



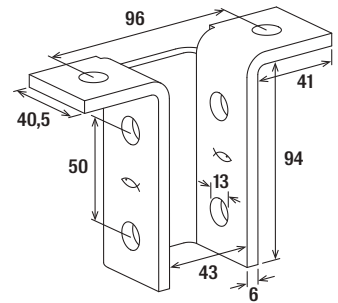
FUF 4Y



FUF 180°L



FUF 180°R



FUF 8T

Technical data

Item	Item no.	Sales unit
		[pcs]
FUF 4Y hdg	537585	20
FUF 180°L hdg	537586	20
FUF 180°R hdg	537587	20
FUF 8T hdg	537590	10

See channel nut FCN Clix P hdg. for loads

Variable bracket VB hdg

Construction element – Variable bracket VB hdg



Massive bracing of cantilever arm

10

Applications

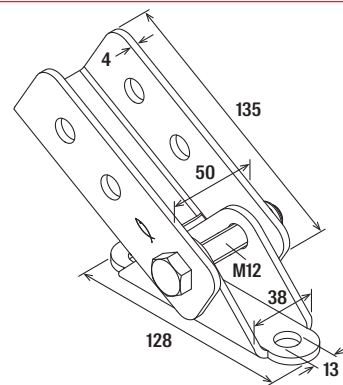
- Variable bracket to build up and strengthen supporting structures of FUS channel constructions with an angle from 0° to 180°.
- For indoor and outdoor application.

Advantages

- The design of the variable bracket VB enables the fixation of mounting channels at an angle of 0° to 180°.
- Due to the perforations on all sides of the VB, channels can be mounted with the channel opening facing downwards or laterally.
- The punched holes in the base plate allow the direct fixing onto a wall, ceiling or onto a mounting channel.

Properties

- Material: steel S235JR (material no. 1.0037) acc. to DIN EN 10025
- Zinc plating: hot-dip galvanised



VB

Technical data

Item	Item no.	Sales unit
VB hdg	545771	[pcs] 5

See channel nut FCN Clix P hdg. for loads

Universal hinge FUH hdg

Construction elements - Universal hinge FUH hdg



Inclined bracing for installation grid

10

Applications

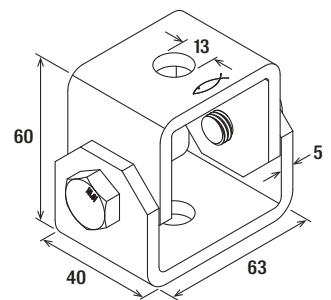
- Variable construction element for bracing with threaded rods or to fix pipelines to sloped substructures.
- Can be attached directly to the underground or to FUS channels.
- Flexible use especially for sloped substructures or undergrounds.
- For indoor and outdoor application.

Advantages

- Flexible solution for many applications such as fixing of pipelines to sloped undergrounds or bracing with threaded rods.
- Free adjustable angle from 0° up to 180°.
- Easy to use.

Properties

- Material: steel S235JR (material no. 1.0037)
- Zinc plating: hot dip-galvanised acc. to DIN EN ISO 1461

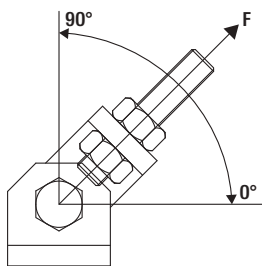


FUH

Technical data

Item	Item no.	Sales unit
FUH 13 hdg	573141	[pcs] 6

Loads



Angle	90°	75°	60°	45°	30°	0°
Maximum recommendet load [kN]	6	5,5	5	4	3	2,5

Intermediate values can be interpolated.

Threaded rod bracket FSB 45° hdg

Construction element - Threaded rod bracket FSB 45° hdg



Heavy pipe on cantilever



Bracing for fixed point

10

Applications

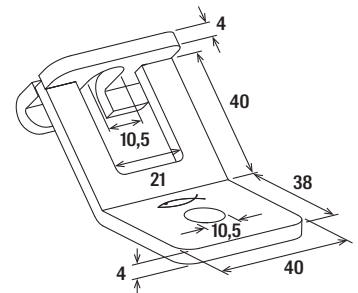
- For easy creation of bracing and stiffening using threaded rods and nuts.
- For indoor and outdoor application.

Advantages

- The anchoring element's socket allows the fast insertion of a pre-mounted M10 threaded rod with nut.
- The hole in the base plate allows the direct fixing onto a wall or ceiling, or onto a mounting channel.

Properties

- Material: steel S235JR (material no. 1.0037) acc. to DIN EN 10025
- Zinc plating: hot-dip galvanised

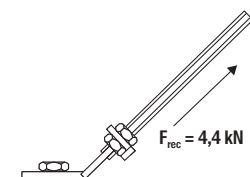


FSB 45°

Technical data

Item	Item no.	Sales unit
		[pcs]
FSB 45° hdg	538120	20

Loads



Beam clamp TKR hdg

Beam clamp TKR hdg - Clamp for fixing of profiles to steel girders



Channel to steelbeam

10

Applications

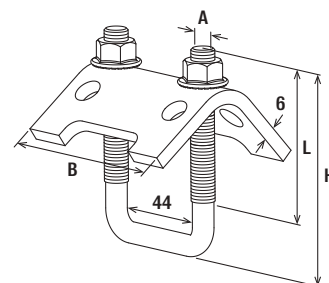
- Fixing to steel girders.
- For indoor and outdoor application.

Advantages

- The design of the beam clamp allows fixing without drilling or welding.
- The various lengths of the beam clamp allow the fixing on most standard beams.
- The shape of the beam clamp allows a simple adjustment of the channel connection.

Properties

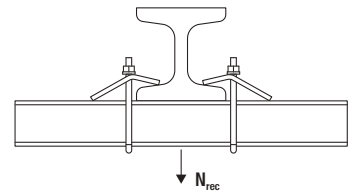
- Material plate / U-bolt pipe hanger: steel S235JR (material no. 1.0037) acc. to DIN EN 10025
- Material hexagon nut: steel resistance class 8
- Zinc plating: hot-dip galvanised



TKR

Technical data

Item	Item no.	For profile	Thread A	Width B [mm]	Height H [mm]	Length L [mm]	Sales unit [pcs]
TKR 21- 42 hdg	538122	21, 41	M10	79	97	48	20
TKR 82 hdg	538123	62, 41D	M10	79	137	80	20
TKR 124 hdg	538124	62	M10	79	179	80	10



TKR

Loads

Item	Item no.	Max. recom. static load (centr. tension) N_{rec} [kN]	Tightening torque T_{inst} [Nm]	Max. clamping range girders [mm]	Sales unit [pcs]
TKR 21- 42 hdg	538122	10.00	20	25	20
TKR 82 hdg	538123	10.00	20	25	20
TKR 124 hdg	538124	10.00	20	25	10

Beam clamp TKL hdg

Clamp hanger TKL hdg - the easy fixing solution without welding and drilling



Heavy drainage pipe on beam clamp

10

Applications

- Clamp hangers allow for simple fixing by clamping direct to steel girders.
- Retaining straps SS-TKL are required for VdS equipment over \varnothing 65 mm.
- hdg: for indoor and outdoor application.

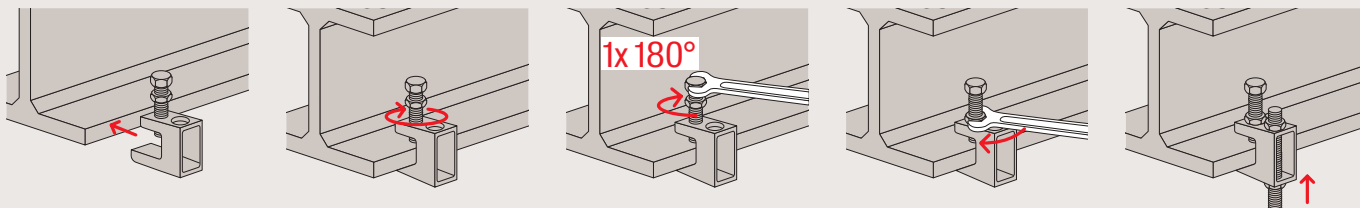
Advantages

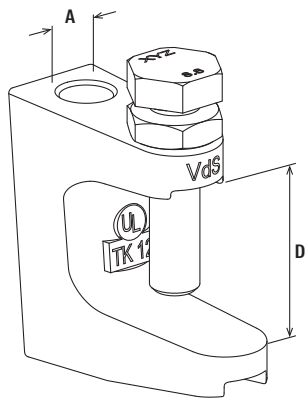
- The TKL design with its clamping screw allows for fixing to steel girders without the need for welding and drilling.
- The design of the clamping screw prevents it from slipping from the steel girder.
- VdS/FM/UL certificates guarantee independently tested safety.
- The solid TKL design guarantees a high load-bearing capacity.
- The TKL with thread mount guarantees quick and easy installation.

Properties

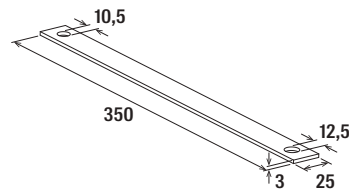
- Material TKL hdg: malleable cast iron GJMB-350-10 (M12: 460-6) acc. to DIN 1562
- Material bolt: steel 8.8 acc. to ISO 4017
- Material nut: steel acc. to ISO 4035, strength category 4
- Zinc plating: hot-dip galvanised
- Material SS-TKL: steel DX51D (material no. 1.0226) acc. to EN 10214
- Zinc plating SS-TKL: electro zinc-plated

Installation TKL

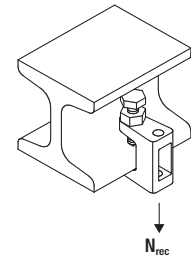




TKL



SS-TKL



Technical data

Item	Item no.	Clamping range D [mm]	Thread A	Max. recom. static load (centr. tension) N_{rec} [kN]	Sales unit [pcs]
TKL L M8 hdg	564392	0 - 18	M8	1.20	50
TKL M10 hdg	564393	0 - 20	M10	2.50	50
TKL M12 hdg	564394	0 - 26	M12	3.50	50
SS-TKL M10/M12	048154	-	Ø 10 / Ø 12	-	25

10

- The galvanised retaining strap SS-TKL (item no. 48154) can be used for the hot-dip galvanised beam clamps.

Beam clamp FHBC hdg

Beam clamp FHBC - Beam clamp for the installation of FUS channels on steel girders



Pipe installation on steel girders

10

Applications

- For installing FUS profile channels between the flanges on steel girders and U-profiles.
- Suitable for FUS channels FUS 41.
- For indoor and outdoor application.

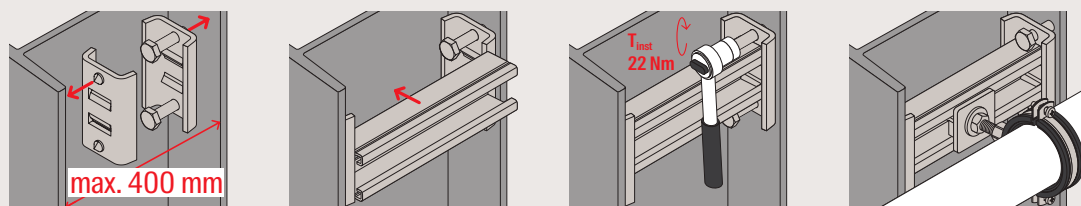
Advantages

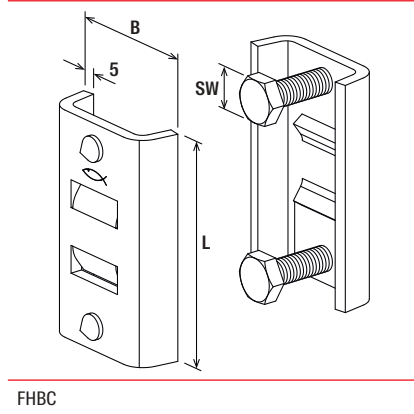
- Easy installation of FUS profile to the flanges of steel girders.
- The FHBC allows for the installation of FUS channels on steel girders without drilling.

Properties

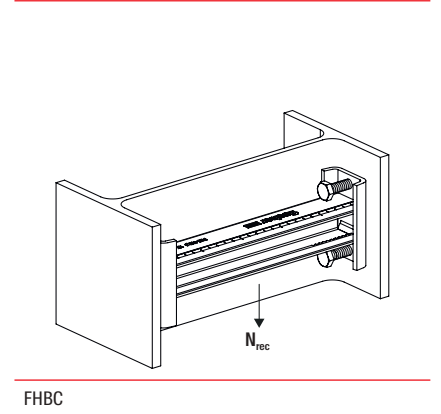
- Material: steel S235JR (material no. 1.0037) acc. to DIN EN 10025 (74074882)
- Zinc plating: hot-dip galvanised

Installation FHBC





FHBC



FHBC

Technical data

Item	Item no.	Width	Length	Width across nut	Max. recom. static load (centr. tension)	Installation torque	Sales unit
		B [mm]	L [mm]	SW [mm]	N_{rec} [kN]	T_{inst} [Nm]	[pcs]
FHBC hdg	557375	55	90	17	3.60	22	10

Threaded rod G hdg

Universal threaded rod for fixing pipes and channels



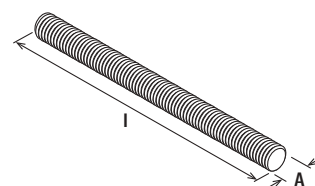
10

Applications

- For indoor and outdoor application.

Properties

- Material DIN 976 steel 4.8 acc. to DIN EN ISO 898-1
- Coating M8: zinclamella
- Coating M10-M16: hot-dip galvanised



G

Technical data

Item	Item no.	Thread A	Length l [mm]	Sales unit [pcs]
G M8 x 1000 zl	537691	M8	1,000	25
G M10 x 1000 hdg	537694	M10	1,000	25
G M12 x 1000 hdg	537695	M12	1,000	20
G M16 x 1000 hdg	537696	M16	1,000	10

Hexagonal screw SKS hdg



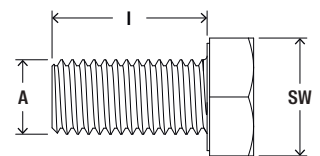
10

Applications

- For indoor and outdoor application.

Properties

- Material: steel acc. to DIN EN ISO 4017, steel 8.8
- Zinc plating: hot-dip galvanised



SKS

Technical data

Item	Item no.	Thread A	Length I [mm]	Width across nut SW [mm]	Sales unit [pcs]
SKS M10 x 16 hdg	571694	M10	16	17	200
SKS M10 x 25 hdg	537681	M10	25	17	100
SKS M12 x 20 hdg	570683	M12	20	19	100
SKS M12 x 25 hdg	537680	M12	25	19	100
SKS M12 x 30 hdg	570684	M12	30	19	100
SKS M12 x 70 hdg	570685	M12	70	19	50

Washer U

Washer for fischer installation system



10

Applications

- For indoor and outdoor application.

Properties

- Material: steel acc. to DIN 10139
- Zinc plating: hot-dip galvanised

Technical data

Item	Item no.	Thickness S [mm]	External- ϕ d [mm]	Hole- ϕ D [mm]	Sales unit [pcs]
U 8 x 28 hdg	537682	2.0	28	8.4	100
U 10 x 21 hdg	537683	2.0	21	10.5	100
U 10 x 40 hdg	537684	3.0	40	10.5	100
U 12 x 24 hdg	537685	2.5	24	13	100
U 12 x 40 hdg	537686	3.0	40	13	100

Hexagonal nut MU hdg



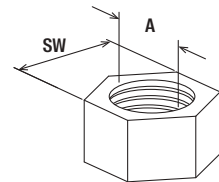
10

Applications

- For indoor and outdoor application.

Properties

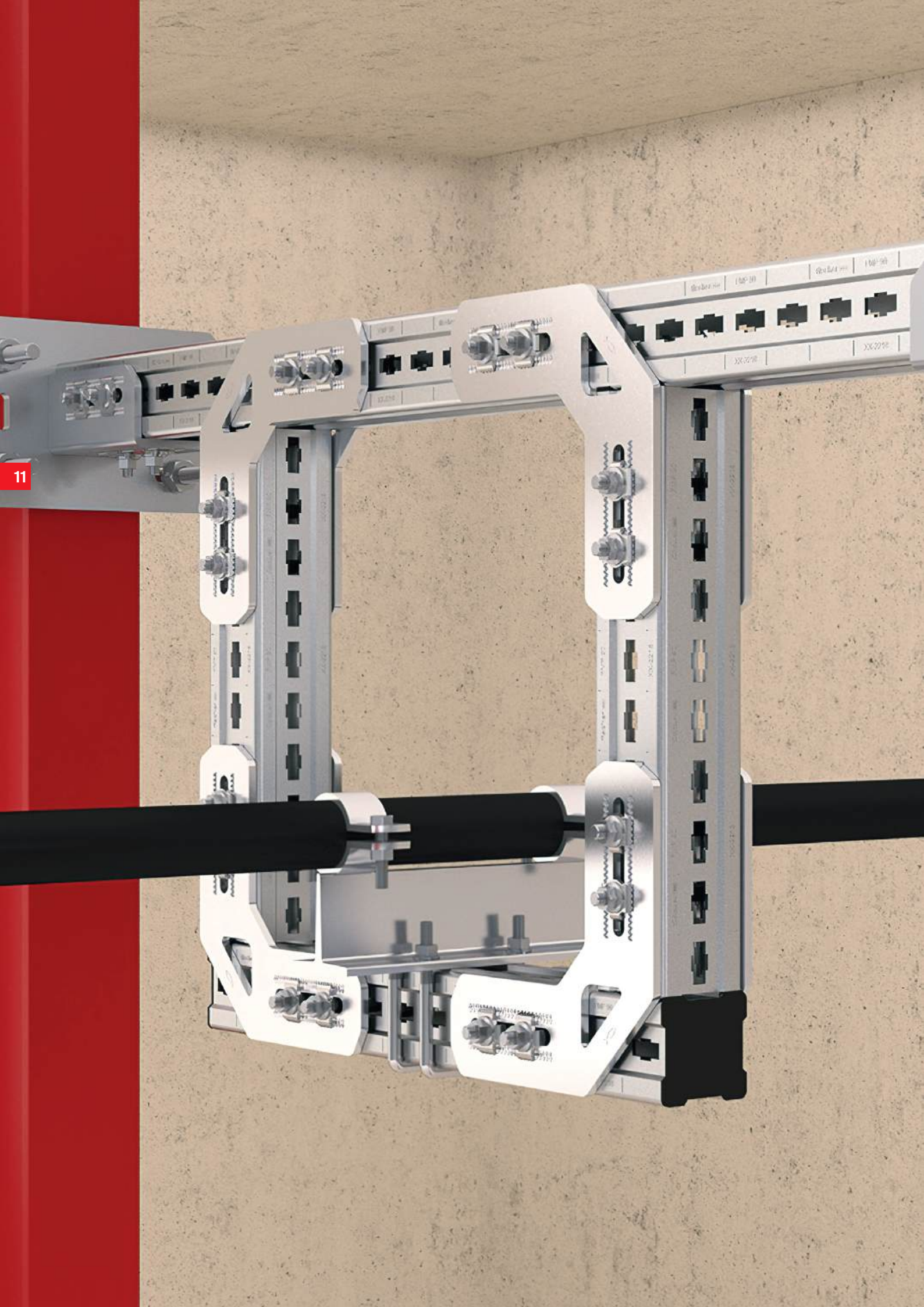
- Material: steel acc. to DIN 934, resistance class 8
- Zinc plating: hot-dip galvanised



MU







Technical data

Item	Item no.	Thread A	Width across nut SW [mm]	Sales unit [pcs]
MU M8	537687	M8	13	100
MU M10	537688	M10	17	100
MU M12	537689	M12	19	100
MU M16	537690	M16	24	50



11

Massive channel system FMS

Massive profile FMP	374		System connector FMA-FUS	413	
Channel connector FMPC	379		Connecting element FMUF	415	
Cantilever FMC	381		Fixed point U-bolt FMFS UB	417	
End cap FMEC	384		Pipe shoe sliding element FMFS	419	
Hammer-head push connector FMHB	385		Fixed point FMFS S and M	421	
Internal thread connector FMHI	387		Pipe shoes FMPS	423	
Transportation connector FMTC 90	389		Massive pipe clamp FMFSC	427	
Connecting element FMCE	391		Massive U-bolt FMPSU	429	
Connecting element FMCE-L	393				
Saddle flange FMSF	395				
Base plate FMSF BP	398				
Angle bracket FMA SF 90	399				
Variable bracket FMVB	401				
Beam clamp FMBC	403				
Beam clamp FMBC M12 and M16	405				
Flat fitting FMFF 90°	407				
Mounting angle FMA 3 and FMA 4	409				
Mounting angle FMA	411				

Massive profile FMP

The efficient fixing solution for heavy-duty installations



Frame construction

11

Applications

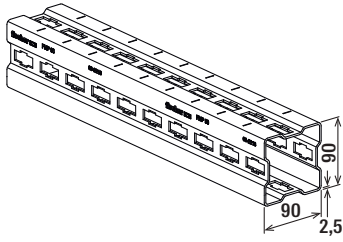
- Secure fastening of heavy duty pipelines.
- Safe construction of solid supporting structures.
- For indoor and outdoor application.

Advantages

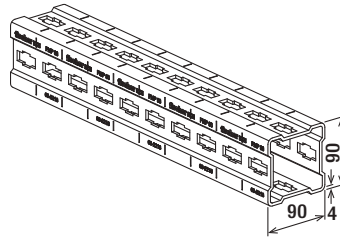
- The clearly arranged product range of profiles and construction elements enables on-site assembly without prefabrication and thus considerably reduces costs and time.
- The fischer massive profiles can be processed exclusively by cutting at right angles, thus reducing waste and material costs.
- The construction with the fischer massive channel system FMS also generates a fixing basis for dynamic loads and makes the system universally applicable.
- The hot-dip galvanised product range guarantees on-site processing without subsequent coating speeding the assembly process sustainably.
- The thick coating of the hot-dip galvanised version is suitable for outdoor installations and in corrosive environments.
- The stamped scaling simplifies the cutting to length of the massive profile FMP and ensures the correct installation of the construction elements.

Properties

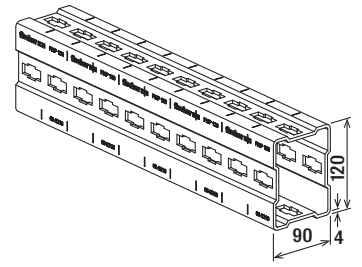
- Material FMP 90 and 120: steel S235JR (material no. 1.0038) acc. to DIN EN 10025-2
- Material FMP 160: steel S355MC (material no. 1.0976) acc. to DIN EN 10149-2
- Zinc plating: hot-dip galvanised



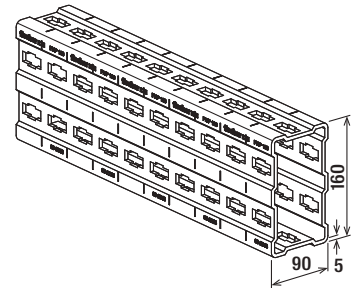
FMP 90/2.5



FMP 90



FMP 120

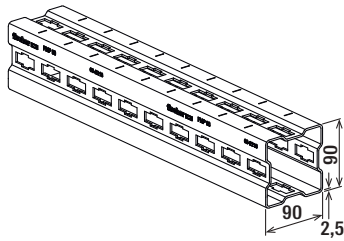


FMP 160

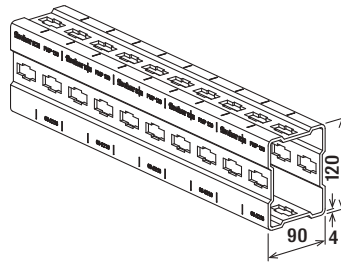
Technical data

Item	Item no.	Length	Width	Height	Profile weight	Channel cross section	Thickness	Sales unit
		L [mm]	B [mm]	H [mm]	[kg/m]	[cm ²]	S [mm]	[pcs]
FMP 90/2,5 - 3 m	560562	3,000	90	90	6.33	7.18	2.5	1
FMP 90/2,5 - 6 m	560563	6,000	90	90	6.33	7.18	2.5	1
FMP 90 - 3 m	547795	3,000	90	90	9.68	10.97	4.0	1
FMP 90 - 6 m	547796	6,000	90	90	9.68	10.97	4.0	1
FMP 120 - 3 m	547797	3,000	90	120	11.85	13.37	4.0	1
FMP 120 - 6 m	547798	6,000	90	120	11.85	13.37	4.0	1
FMP 160 - 6 m	547799	6,000	90	160	16.86	18.91	5.0	1
FMP 160 - 8 m	547800 ¹⁾	8,000	90	160	16.86	18.91	5.0	1

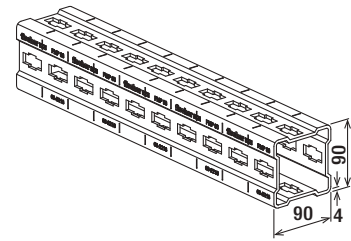
¹⁾ Delivery time on request.



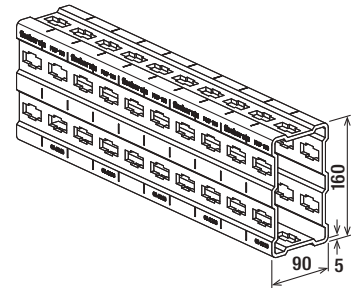
FMP 90/2.5



FMP 120



FMP 90



FMP 160

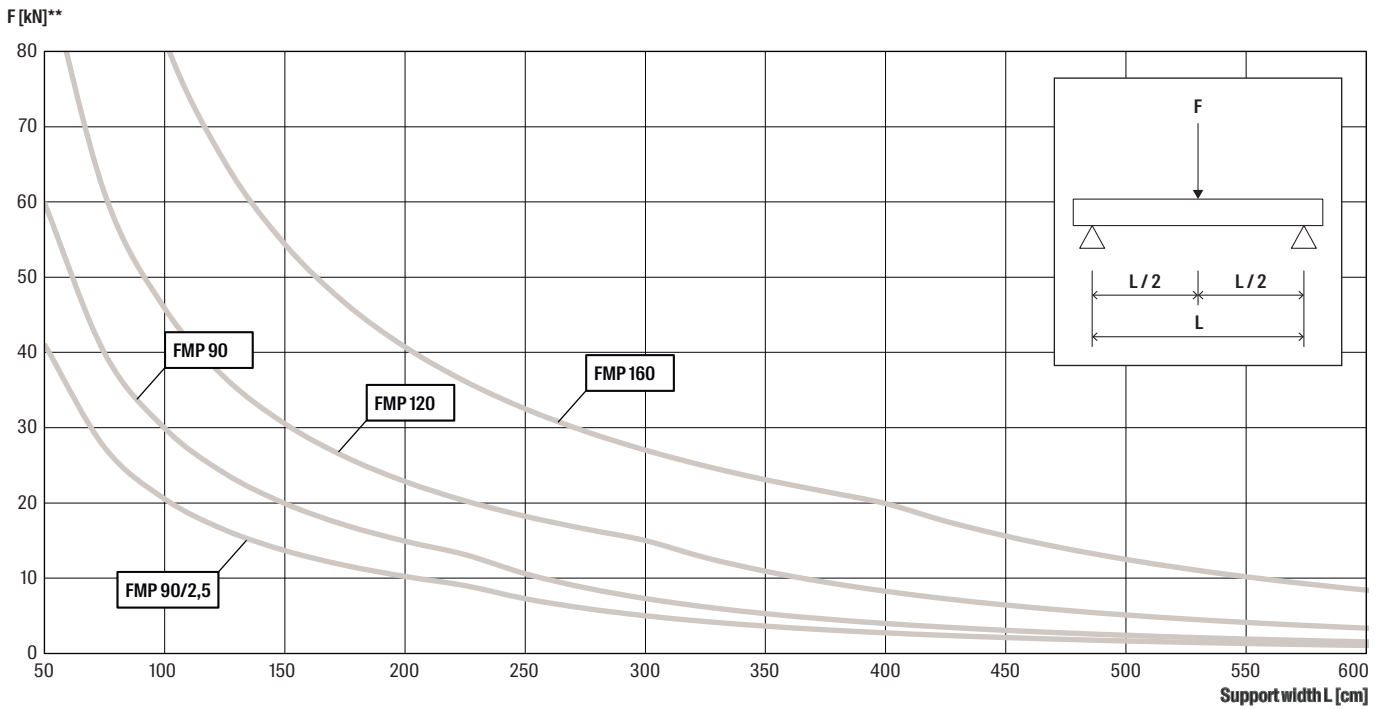
Loads

Item	Item no.	Yield strength f_{yk} [kN/cm ²]	Rec. tensile stress σ_{rec}^* [kN/cm ²]	Rec. shear stress τ_{rec}^* [kN/cm ²]	Moment of inertia I_y [cm ⁴]	Moment of inertia I_z [cm ⁴]	Section modulus W_y [cm ³]	Section modulus W_z [cm ³]	Radius of gyration i_y [cm]	Radius of gyration i_z [cm]	Torsional moment of inertia I_t [cm ⁴]	Torsional moment of resistance W_t [cm ³]	Sales unit [pcs]
FMP 90/2,5 - 3 m	560562	35.5	25.36	14.64	91.28	91.28	20.28	20.28	3.57	3.57	131.71	34.45	1
FMP 90/2,5 - 6 m	560563	35.5	25.36	14.64	91.28	91.28	20.28	20.28	3.57	3.57	131.71	34.45	1
FMP 90 - 3 m	547795	35.5	25.36	14.64	133.07	133.07	29.57	29.57	3.48	3.48	198.86	52.55	1
FMP 90 - 6 m	547796	35.5	25.36	14.64	133.07	133.07	29.57	29.57	3.48	3.48	198.86	52.55	1
FMP 120 - 3 m	547797	35.5	25.36	14.64	271.97	177.46	45.33	39.44	4.51	3.64	328.80	73.19	1
FMP 120 - 6 m	547798	35.5	25.36	14.64	271.97	177.46	45.33	39.44	4.51	3.64	328.80	73.19	1
FMP 160 - 6 m	547799	35.5	25.36	14.64	645.39	247.28	80.67	54.94	5.84	3.62	583.59	119.31	1
FMP 160 - 8 m	547800 ¹⁾	35.5	25.36	14.64	645.39	247.28	80.67	54.94	5.84	3.62	583.59	119.31	1

¹⁾ Delivery time on request.

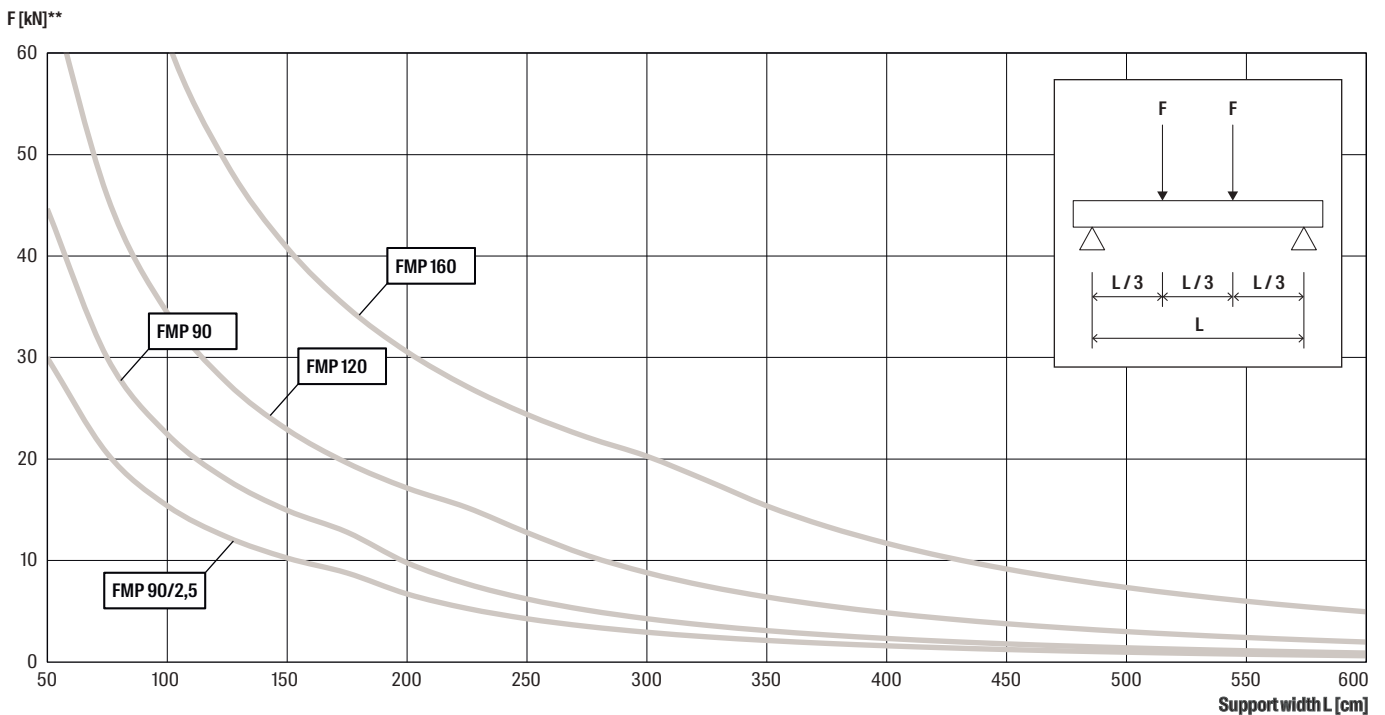
The recommended stress is calculated acc. EN 1993; $\sigma_{rec} = f_{yk} / (\gamma_L \cdot \gamma_{MO})$ with $\gamma_L = 1.4$ and $\gamma_{MO} = 1.0$.

Simply supported beam with single load at L/2



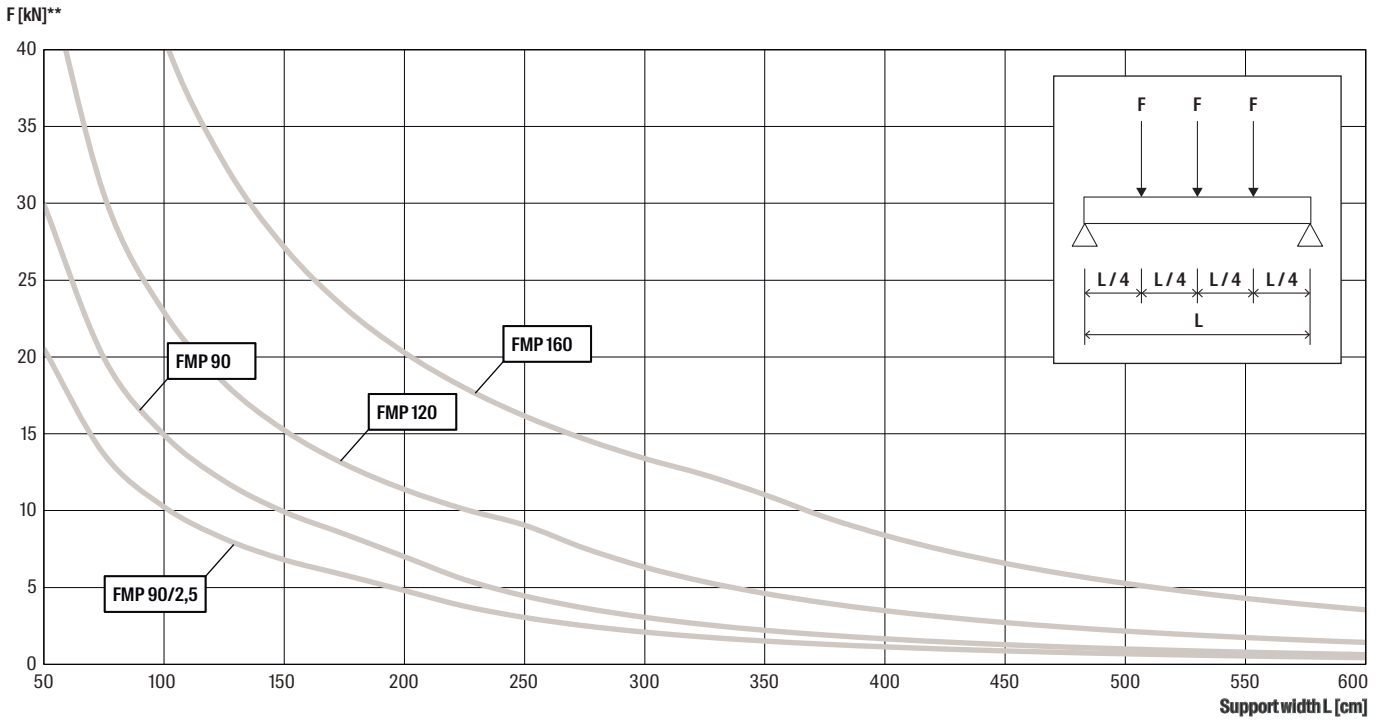
** The permissible stress is calculated acc. EN 1993; $\sigma_{rec} = f_{yk} / (\gamma_L \cdot \gamma_{MO})$ with $\gamma_L = 1.4$ and $\gamma_{MO} = 1.0$. Lower value of permissible stress (shear, bending or combined) or max. deflection ($L/200$) is decisive

Simply supported beam with two single loads at L/3



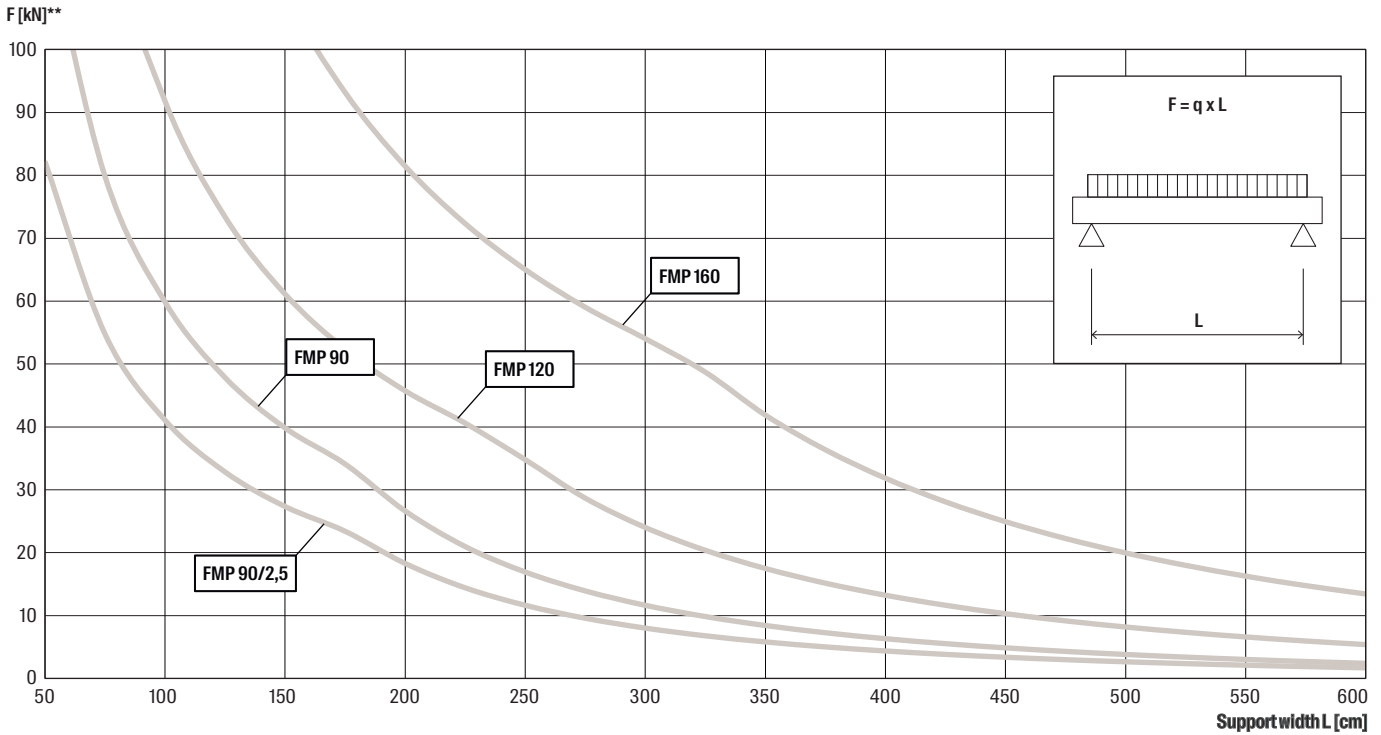
** The permissible stress is calculated acc. EN 1993; $\sigma_{rec} = f_{yk} / (\gamma_L \cdot \gamma_{MO})$ with $\gamma_L = 1.4$ and $\gamma_{MO} = 1.0$. Lower value of permissible stress (shear, bending or combined) or max. deflection ($L/200$) is decisive

Simply supported beam with three single loads at L/4



** The permissible stress is calculated acc. EN 1993; $\sigma_{rec} = f_{yk} / (\gamma_L \cdot \gamma_{M0})$ with $\gamma_L = 1,4$ and $\gamma_{M0} = 1,0$. Lower value of permissible stress (shear, bending or combined) or max. deflection ($L/200$) is decisive

Uniformly distributed load over the span $F_{rec} = q_{rec} \times L$



** The permissible stress is calculated acc. EN 1993; $\sigma_{rec} = f_{yk} / (\gamma_L \cdot \gamma_{M0})$ with $\gamma_L = 1,4$ and $\gamma_{M0} = 1,0$. Lower value of permissible stress (shear, bending or combined) or max. deflection ($L/200$) is decisive

Channel connector FMPC

Optimum connection and fastening of FMP massive profiles



Profil connection to steel structure

Applications

- Connecting and aligning massive profiles.
- FMPC usable for FMP 90/2,5.
- FMPC 90, 120 and 160 usable for FMP 90, FMP 120 and FMP 160.
- For indoor and outdoor application.

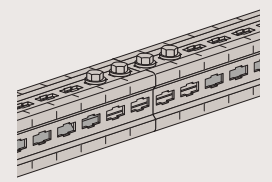
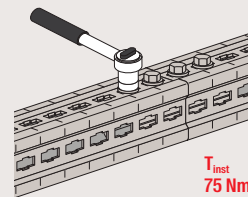
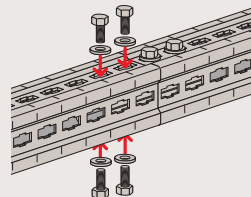
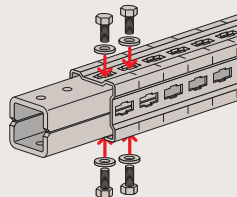
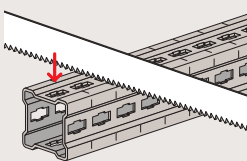
Advantages

- The FMPC channel connector enables the connection of the FMP massive profiles for the perfect alignment of profile.
- All FMPC profile connectors enable the connection by means of simple screwing through for a fast and clean mounting.
- FMPC profile connectors allow a stiff connection of profiles and high load possibilities.

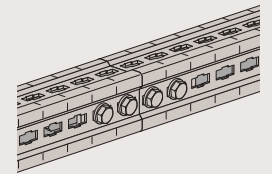
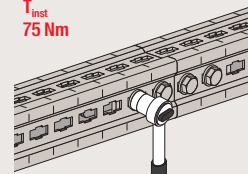
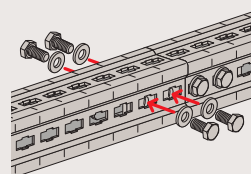
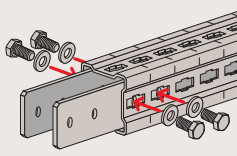
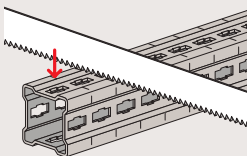
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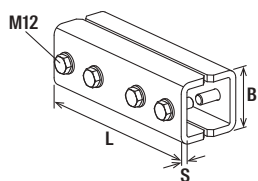
- Material FMPC: steel S420MC (material no. 1.0980) acc. to DIN EN 10149-2
- Material FMPC 90, 120, 160: steel S355JR (material no. 1.0045) acc. to EN 10025-2
- Zinc plating: hot-dip galvanised acc. to DIN EN ISO 1461
- Material screw: steel grade 8.8

Installation FMPC

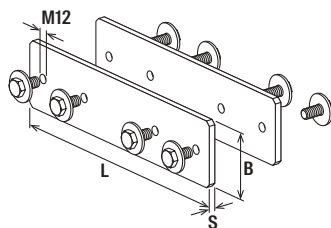


Installation FMPC 90/120/160

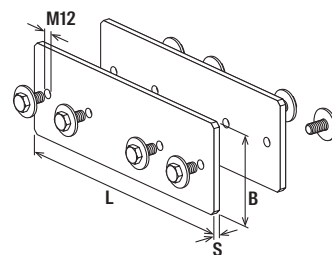




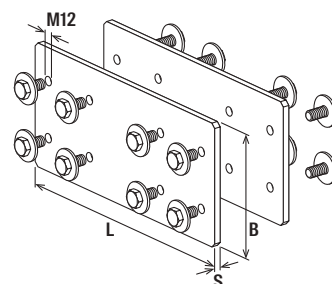
FMPC



FMPC 90



FMPC 120



FMPC 160

Technical data

Item	Item no.	Length L [mm]	Width B [mm]	Thickness S [mm]	Sales unit [pcs]
FMPC	547801	220	72	8.0	2
FMPC 90	554236	320	81	8.0	5
FMPC 120	554237	320	111	8.0	2
FMPC 160	554238	320	150	8.0	2

Cantilever FMC

Mounting profiles with welded base plate for fastening heavy duty pipelines



Profile traverse to steel structure



Supported cantilever

Applications

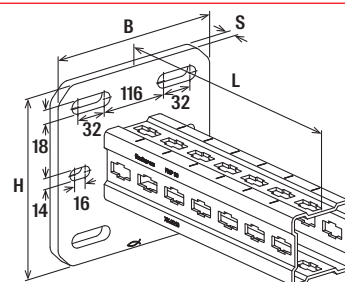
- Simple and safe fixing of heavy duty pipelines along the wall.
- For indoor and outdoor application.

Advantages

- The graduated length assortment of the FMC cantilever arms allows an optimal adaptation to the respective application.
- The stable base plate of the cantilever provides a secure hold for a load-bearing construction.
- The completely hot-dip galvanised product range guarantees on-site processing without subsequent coating and simplifies and accelerates the assembly process sustainably.

Properties

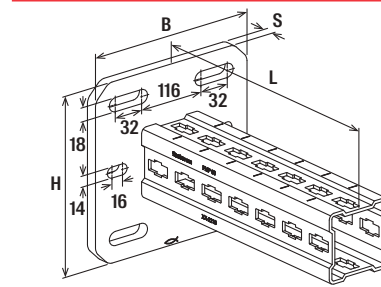
- Material base plate: steel S235JR (material no. 1.0038) acc. to DIN EN 10025-2
- Material profile: steel S355MC (material no. 1.0976) acc. to DIN EN 10149-2
- Zinc plating: hot-dip galvanised



FMC

Technical data

Item	Item no.	Length L [mm]	Width B [mm]	Height H [mm]	Thickness S [mm]	Sales unit [pcs]
FMC 90-500	547802	500	230	230	15.0	1
FMC 90-750	547803	750	230	230	15.0	1
FMC 90-1000	547804	1,000	230	230	15.0	1
FMC 90-1.500	547805	1,500	230	230	15.0	1



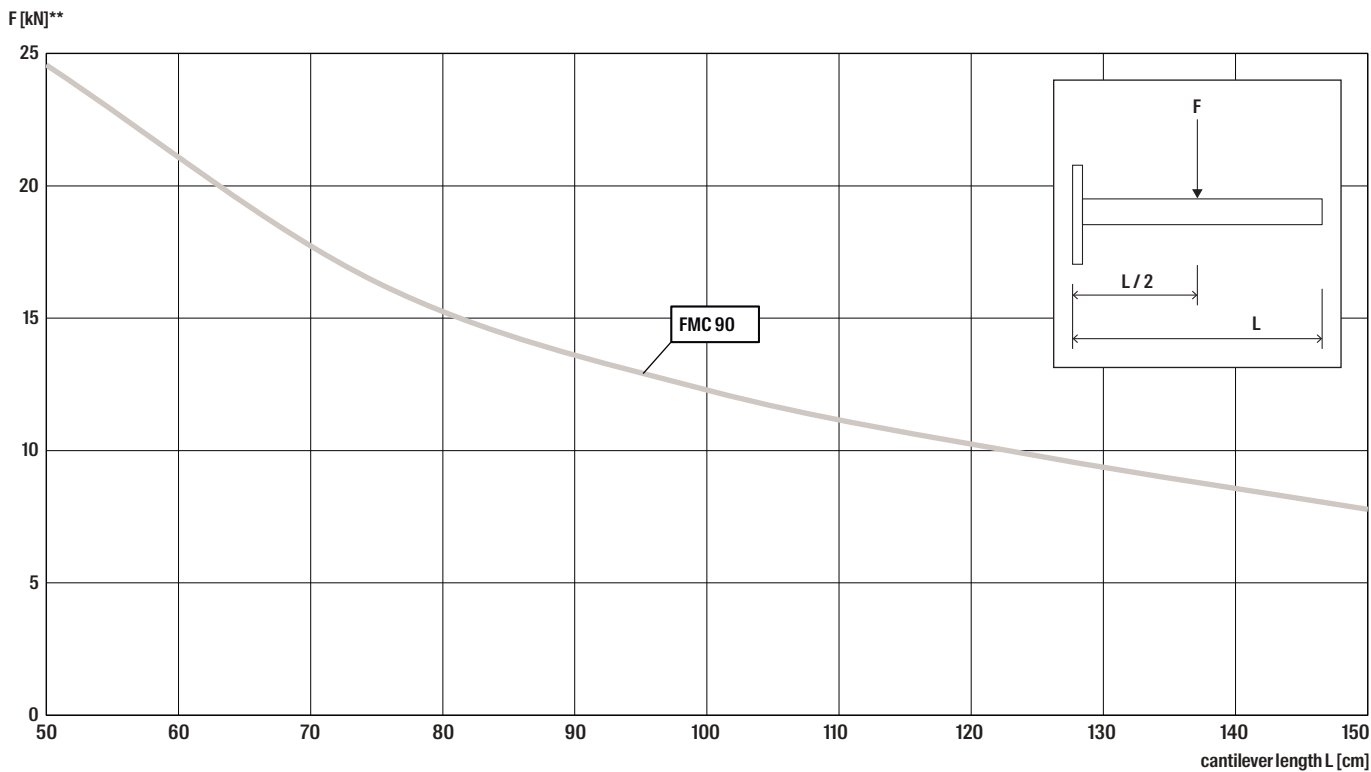
FMC

Loads

Item	Item no.	Max. recommended static load load case 1 F_{rec} [kN]	Max. recommended static load load case 2 F_{rec} [kN]	Max. recommended static load load case 3 F_{rec} [kN]	Sales unit [pcs]
FMC 90-500	547802	24.60	12.30	24.60	1
FMC 90-750	547803	16.40	8.20	16.40	1
FMC 90-1000	547804	12.30	5.60	12.30	1
FMC 90-1500	547805	7.80	2.40	6.50	1

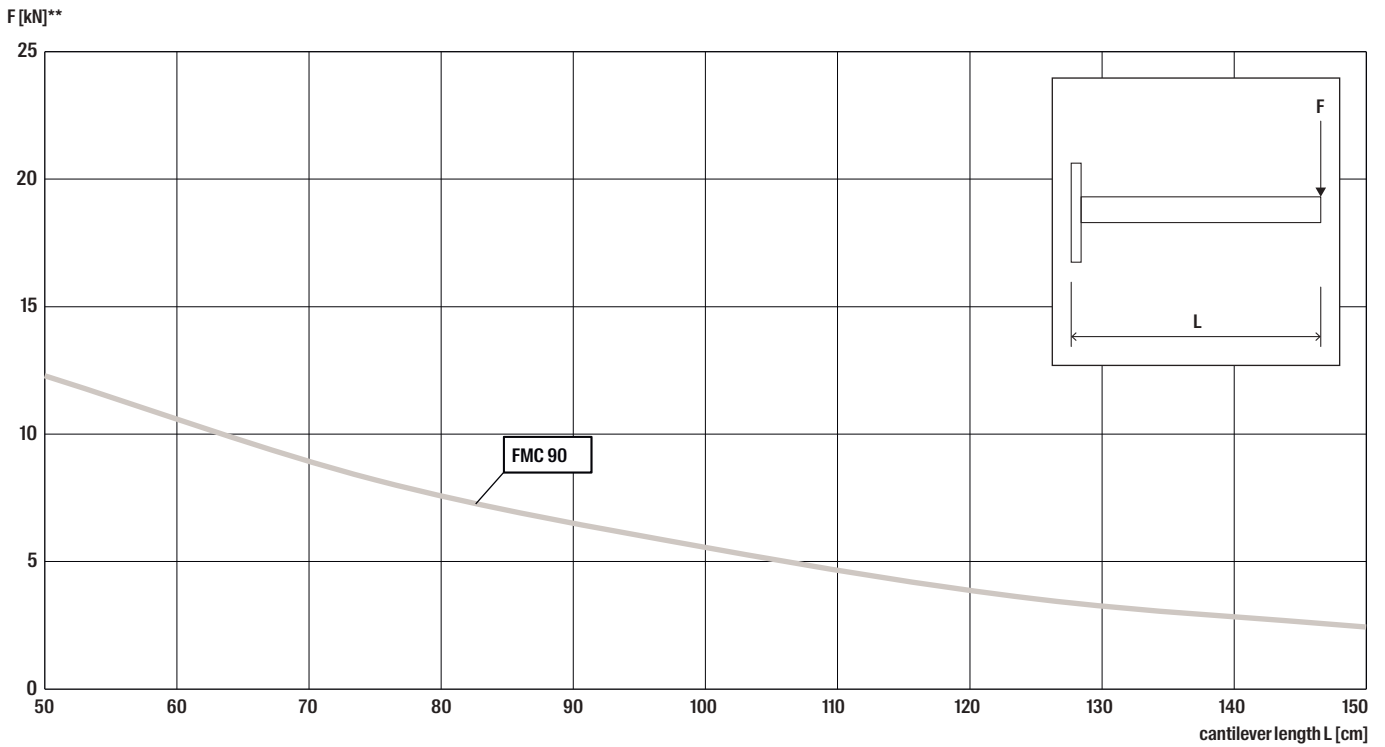
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Load case 1



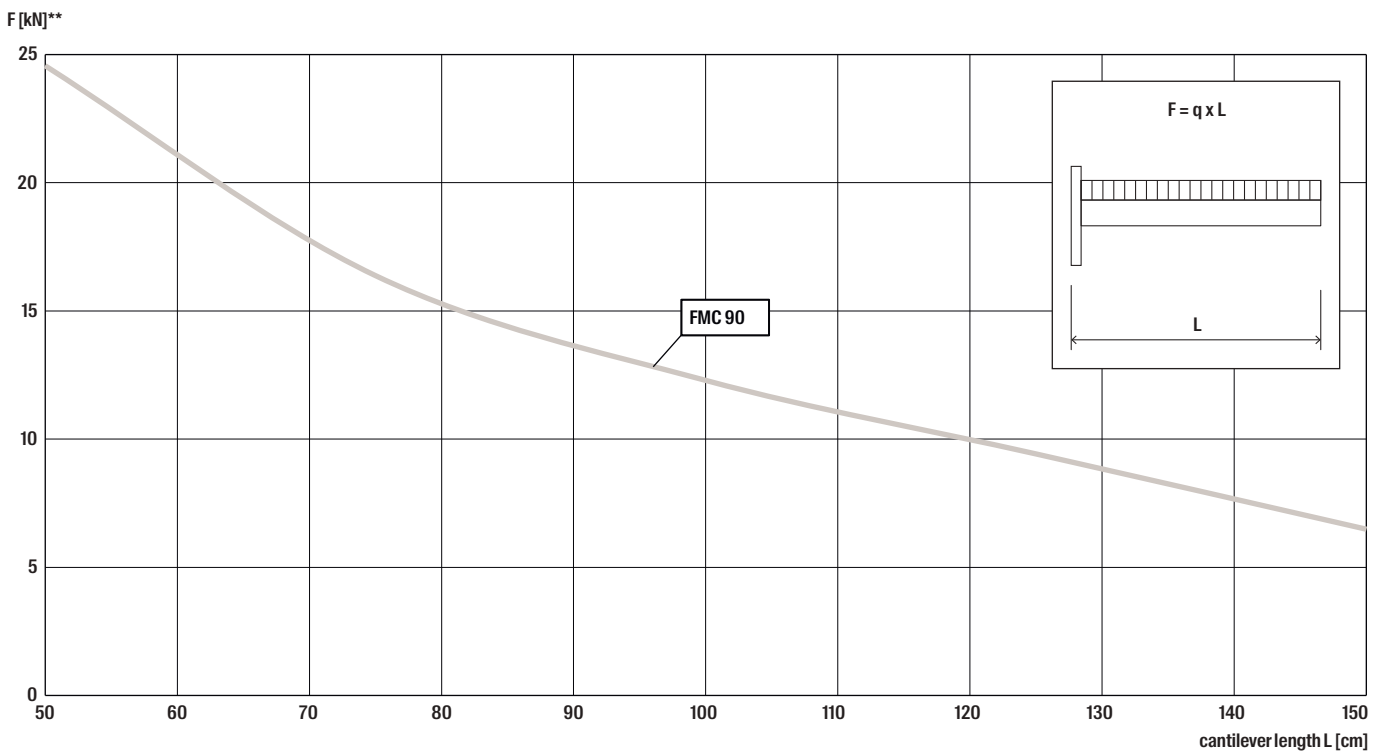
** The permissible stress is calculated acc. EN 1993; $\sigma_{rec} = f_{yk} / (\gamma_L \cdot \gamma_{MD})$ with $\gamma_L = 1,4$ and $\gamma_{MD} = 1,0$. Lower value of permissible stress (shear, bending or combined) or max. deflection (L/150) is decisive

Load case 2



** The permissible stress is calculated acc. EN 1993; $\sigma_{rec} = f_{yk} / (\gamma_L \cdot \gamma_{MO})$ with $\gamma_L = 1,4$ and $\gamma_{MO} = 1,0$. Lower value of permissible stress (shear, bending or combined) or max. deflection ($L/150$) is decisive

Load case 3



** The permissible stress is calculated acc. EN 1993; $\sigma_{rec} = f_{yk} / (\gamma_L \cdot \gamma_{MO})$ with $\gamma_L = 1,4$ and $\gamma_{MO} = 1,0$. Lower value of permissible stress (shear, bending or combined) or max. deflection ($L/150$) is decisive

End cap FMEC

The clip-on and accurately shaped end for the mounting profile FMP



U-rack construction with flat fittings

11

Applications

- Closing of profile end.

Advantages

- Suitable for FMP 90, 120 and 160 mounting profiles and cantilever arms FMC.

Properties

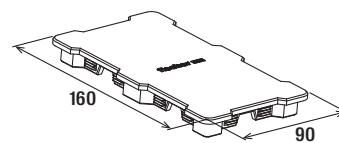
- Material: PP polypropylene, colour black



FMEC 90



FMEC 120



FMEC 160

Technical data

Item	Item no.	For profile	Sales unit
			[pcs]
FMEC 90	547806	FMP 90	100
FMEC 120	547807	FMP 120	60
FMEC 160	547808	FMP 160	40

Hammer-head push connector FMHB

Universal connector for FMP massive profiles and construction elements



U-rack construction

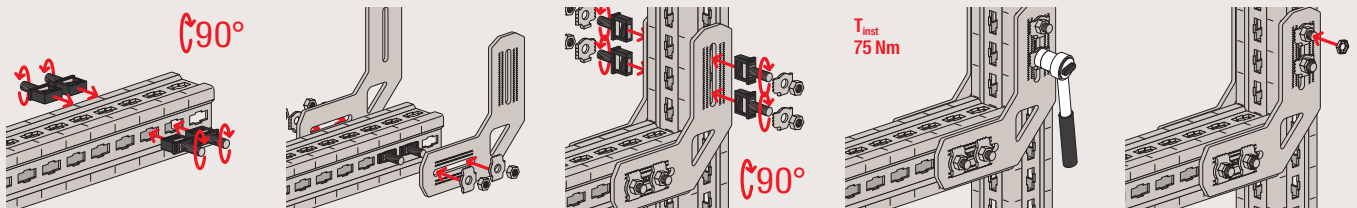
Applications

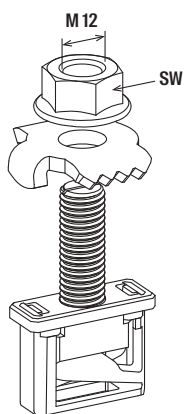
- Connecting construction elements and FMP profiles by means of plug-in connectors.
- Fastening of cables by means of threaded rods or threaded pins to the FMP profiles.
- For indoor and outdoor application.

Properties

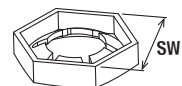
- Material: steel S235JR (material no. 1.0038) acc. to DIN EN 10025-2
- Zinc plating: hot-dip galvanised, acc. to DIN EN ISO 1461
- Material for hammer-head bolt: steel 8.8, similar to 1.0503 C45
- Material plastic cage: polypropylene PP, colour black
- Material safety nut: GB/T 805-1988 acc. to DIN 7967

Installation FMHB





FMHB



FMSB MU M12

Technical data

Item	Item no.	Thread M	Width across nut SW [mm]	Sales unit [pcs]
FMHB	547809	-	18	100
FMSB MU M12	547810	M12	19	100

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Internal thread connector FMHI

The internal thread connector is the connector for all external thread elements on the FMP profiles



FUS channel connection



Installation of pipe clamps

Applications

- Connecting construction elements and FMP profiles by means of plug-in connectors.
- Fastening of cables by means of threaded rods or threaded pins to the FMP profiles.
- For indoor and outdoor application.

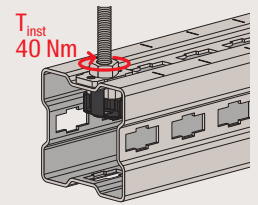
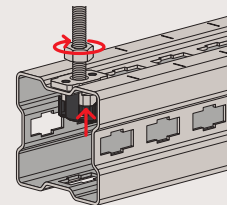
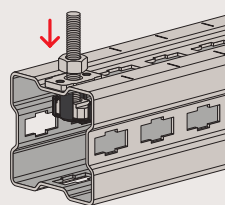
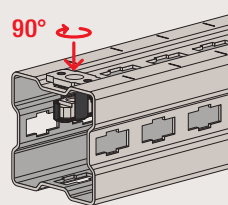
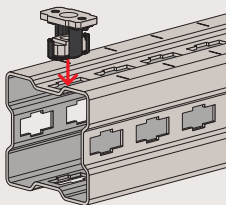
Advantages

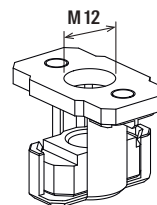
- The unique hammerhead internal thread connector makes it easy to connect different elements with base plates or FUS channels using an M12 screw.
- The special design of the hammerhead internal thread connector enables retrofitting on existing superstructures made of FMP mounting profiles and permanently simplifies the attachment of brackets and pipe clamps.
- The flexible hammerhead internal thread connector additionally enables through-hole assembly by a screw in M12 with various construction elements.

Properties

- Material of the plate: steel S355MC (material no. 1.0037) acc. to DIN EN 10149-2
- Zinc plating: hot-dip galvanised
- Material for hammer-head bolt: steel 8.8, similar to 1.0503 C45
- Material plastic cage: polypropylene PP, colour black

Installation FMHI





FMHI

Technical data

Item	Item no.	Thread M	Installation torque T_{inst} [Nm]	Max. recom. static load (centr. tension) N_{rec} [kN]	Sales unit [pcs]
Internal thread connector FMHI M12	563108	M12	40	10.00	100

Transportation connector FMTC 90

The reusable connector for the transport of FMP mounting profiles



Transportation of profile structures

Applications

- Temporary use for the transportation of profile structures.
- For indoor and outdoor application.

Advantages

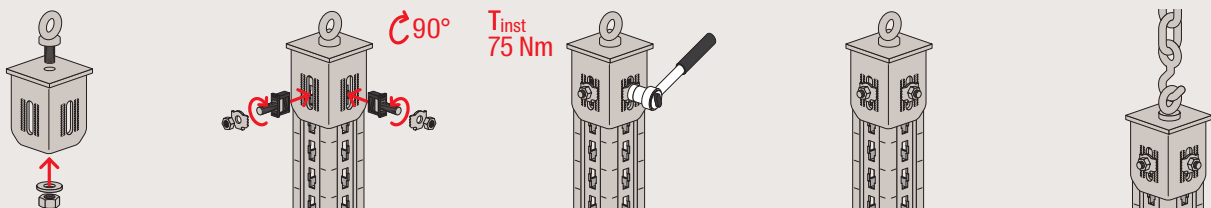
- The FMTC 90 transportation connector can be easily and securely mounted on the ends of the FMP 90 massive profile using two FMHB hammer-head push connectors and can also be dismantled again.
- The opening in the cover plate allows connection with threaded bolts or with eyebolts and nuts $\leq \varnothing 21$ mm as a mounting for transporting pre-assembled frame constructions.
- The robust construction of the FMTC 90 ensures long-lasting reusability as a transportation connector.

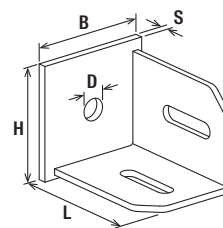
Properties

- Base plate: steel S355 (material no. 1.0976) acc. to DIN EN 10149-2
- Profile mount: steel S235JR (material no. 1.0038) acc. to DIN EN 10025-2
- Zinc plating: hot-dip galvanised acc. to DIN EN ISO 1461

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FMTC 90





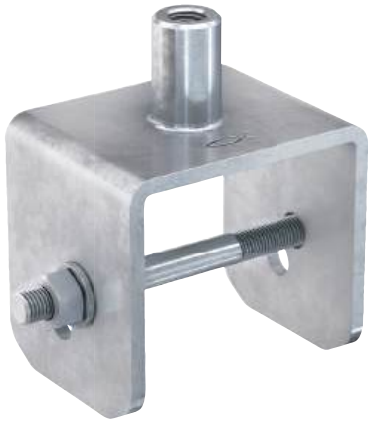
FMTC 90

Technical data

Item	Item no.	Length L [mm]	Width B [mm]	Height H [mm]	Thickness S [mm]	Hole-Ø D [mm]	Sales unit [pcs]
FMTC 90	568825	110	110	130	8.0	21	2

Connecting element FMCE

Tailor-made fixing massive profiles FMP



Pipe clamp connection to profile

Applications

- Fixing of pipes using threaded rods.
- For indoor and outdoor application.

Advantages

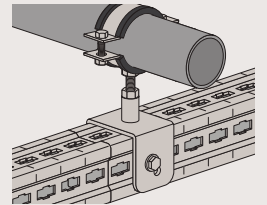
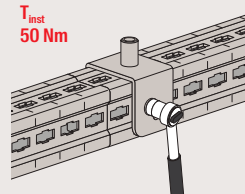
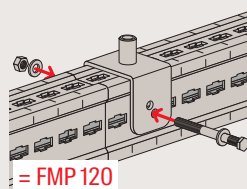
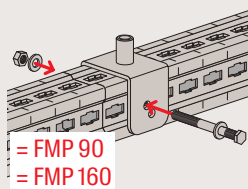
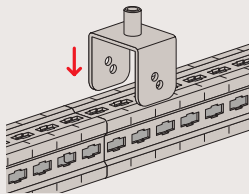
- The U-shaped connecting elements allow an easy connection of pipe clamps.
- Supplying the connecting element as a set with the necessary screw, hexagonal nut and washer ensures error-free installation.

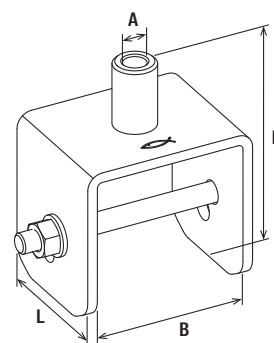
Properties

- Material: steel S235JR (material no. 1.0038) acc. to DIN EN 10025-2
- Zinc plating: hot-dip galvanised acc. to DIN EN ISO 1461
- Material screw: steel grade 8.8

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Installation FMCE





FMCE

Technical data

Item	Item no.	Thread A	Length L [mm]	Width B [mm]	Height H [mm]	Sales unit [pcs]
FMCE M12/M16	547815	M12 / M16	80	91	134	10
FMCE 1/2"	547816	1/2"	80	91	134	10
FMCE 3/4"	547817	3/4"	80	91	134	10

Connecting element FMCE-L

Tailor-made fixing of massive profiles FMP



Profile traverse to steel structure

Applications

- Fixing of pipes using threaded rods or set screws.
- For indoor and outdoor application.

Advantages

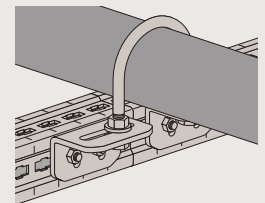
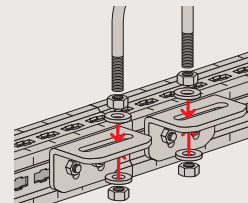
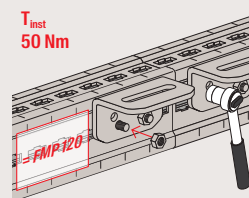
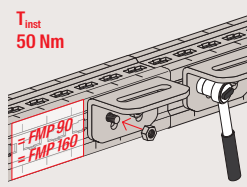
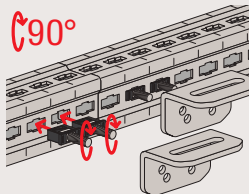
- The L-shaped connecting elements allow pipe clamps, U-bolts and elements with base plates to be easily connected.
- The L-connector FMCE-L can easily be attached to all 3 sizes of the FMP mounting profile after the FMHB hammer-head connector has been pre-positioned.

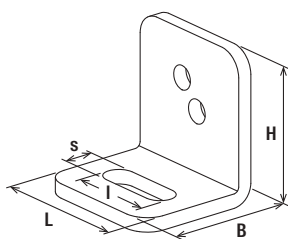
Properties

- Material: steel S235JR (material no. 1.0038) acc. to DIN EN 10025-2
- Zinc plating: hot-dip galvanised acc. to DIN EN ISO 1461

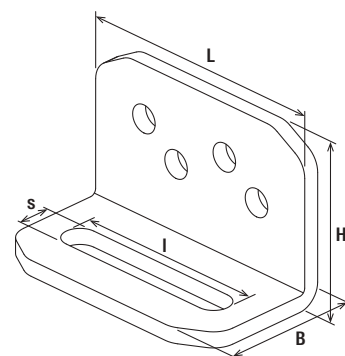
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Installation FMCE-L





FMCE-L short



FMCE-L

Technical data

Item	Item no.	Slot l x s [mm]	Length L [mm]	Width B [mm]	Height H [mm]	Sales unit [pcs]
FMCE-L short M12	554239	50 x 13.5	80	71	84	20
FMCE-L short M16	554240	50 x 17.5	80	71	84	20
FMCE-L short M20	554241	50 x 22	80	71	84	20
FMCE-L M12	547818	100 x 13.5	130	71	84	10
FMCE-L M16	547819	100 x 17.5	130	71	84	10
FMCE-L M20	547820	100 x 22	130	71	84	10

Saddle flange FMSF

Optimum connection and fastening of FMP massive profiles



U-rack at profile traverse

Applications

- For solid connections between the massive profile and building structures.
- For indoor and outdoor application.

Advantages

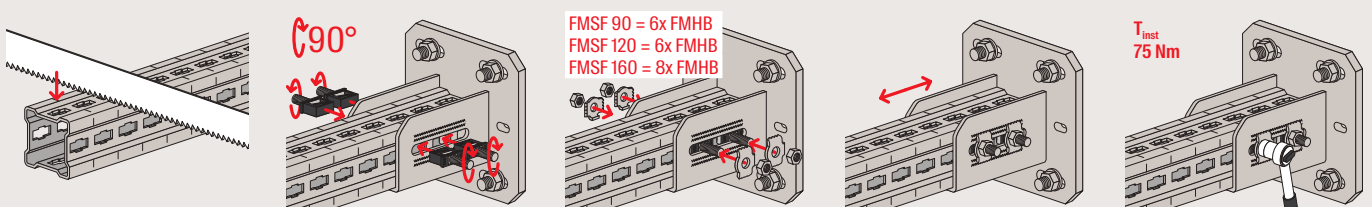
- The design of the saddle flange FMSF enables fast and secure mounting by fitting inside the profile.
- The clever design and dimensions of the base plate of the FMSF saddle flange offers the optimum load level depending on the construction and ensures a secure hold.

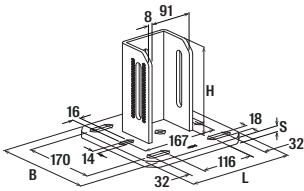
Properties

- Material: steel S235JR (material no. 1.0038) acc. to DIN EN 10025-2
- Zinc plating: hot-dip galvanised acc. to DIN EN ISO 1461

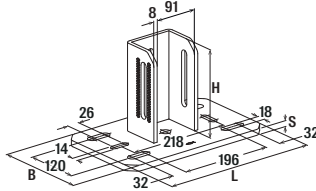
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Installation FMSF

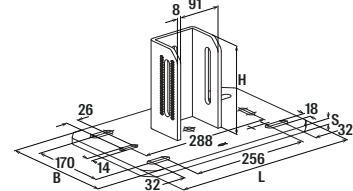




FMSF 90S



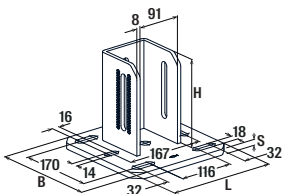
FMSF 90M



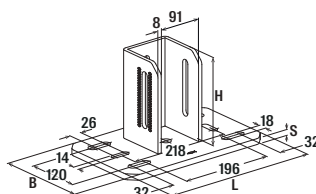
FMSF 90L

Technical data

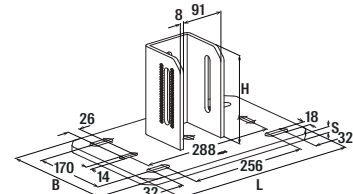
Item	Item no.	For profile	For steel beam width [mm]	Length	Width	Height	Thickness	Sales unit [pcs]
				L [mm]	B [mm]	H [mm]	S [mm]	
FMSF 90S	547821	FMP 90	100 - 160	230	230	180	12.0	1
FMSF 90M	547822	FMP 90	180 - 240	330	200	180	12.0	1
FMSF 90L	547823	FMP 90	240 - 300	400	250	180	12.0	1
FMSF 120S	547824	FMP 120	100 - 160	230	230	180	12.0	1
FMSF 120M	547825	FMP 120	180 - 240	330	200	180	12.0	1
FMSF 120L	547826	FMP 120	240 - 300	400	250	180	12.0	1
FMSF 160M	547827	FMP 160	180 - 240	330	200	180	12.0	1
FMSF 160L	547828	FMP 160	240 - 300	400	250	180	12.0	1



FMSF 120S



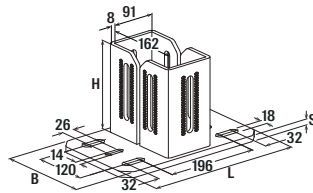
FMSF 120M



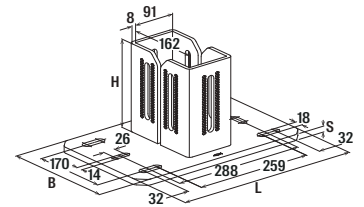
FMSF 120L

Technical data

Item	Item no.	For profile	For steel beam width [mm]	Length	Width	Height	Thickness	Sales unit [pcs]
				L [mm]	B [mm]	H [mm]	S [mm]	
FMSF 120S	547824	FMP 120	100 - 160	230	230	180	12.0	1
FMSF 120M	547825	FMP 120	180 - 240	330	200	180	12.0	1
FMSF 120L	547826	FMP 120	240 - 300	400	250	180	12.0	1
FMSF 160M	547827	FMP 160	180 - 240	330	200	180	12.0	1
FMSF 160L	547828	FMP 160	240 - 300	400	250	180	12.0	1
FMSF 90S	547821	FMP 90	100 - 160	230	230	180	12.0	1
FMSF 90M	547822	FMP 90	180 - 240	330	200	180	12.0	1
FMSF 90L	547823	FMP 90	240 - 300	400	250	180	12.0	1



FMSF 160M



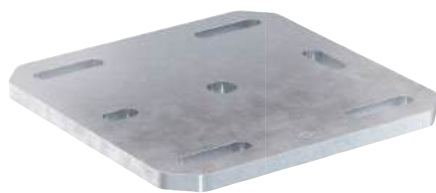
FMSF 160L

Technical data

Item	Item no.	For profile	For steel beam width [mm]	Length	Width	Height	Thickness	Sales unit [pcs]
				L [mm]	B [mm]	H [mm]	S [mm]	
FMSF 160M	547827	FMP 160	180 - 240	330	200	180	12.0	1
FMSF 160L	547828	FMP 160	240 - 300	400	250	180	12.0	1
FMSF 120S	547824	FMP 120	100 - 160	230	230	180	12.0	1
FMSF 120M	547825	FMP 120	180 - 240	330	200	180	12.0	1
FMSF 120L	547826	FMP 120	240 - 300	400	250	180	12.0	1
FMSF 90S	547821	FMP 90	100 - 160	230	230	180	12.0	1
FMSF 90M	547822	FMP 90	180 - 240	330	200	180	12.0	1
FMSF 90L	547823	FMP 90	240 - 300	400	250	180	12.0	1

Base plate FMSF BP

Optimum connection and fastening saddle flanges and cantilevers to steel- and concrete beams



Connection to steel support

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Applications

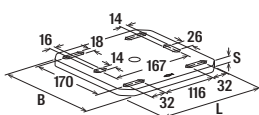
- For solid connections between the massive profile and building structures.
- For indoor and outdoor application.

Advantages

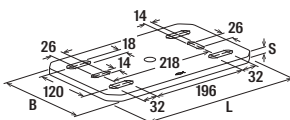
- The stable design and size graduations of the FMSF BP base plates offer optimum fixing ensuring and secure hold.
- The FMSF BP base plate is identical in construction to the base plates of the FMSF saddle flanges and enables simple connection by means of threaded rods for secure mounting on steel beams.

Properties

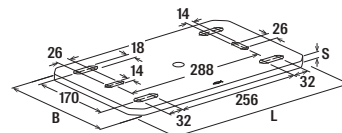
- Material: steel S235JR (material no. 1.0038) acc. to DIN EN 10025-2
- Zinc plating: hot-dip galvanised



FMSF BP S



FMSF BP M



FMSF BP L

Technical data

Item	Item no.	For steel beam width [mm]	Length L [mm]	Width B [mm]	Thickness S [mm]	Sales unit [pcs]
FMSF BP S	547829	100 - 160	230	230	12.0	1
FMSF BP M	547830	180 - 240	330	200	12.0	1
FMSF BP L	547831	240 - 300	400	250	12.0	1

Angle bracket FMASF 90

The strong connection of FMP massive profiles for frame racks



Profile structures

Applications

- Construction of multidimensional profile structures.
- Constructing variable supporting structures from profiles.
- For indoor and outdoor application.

Advantages

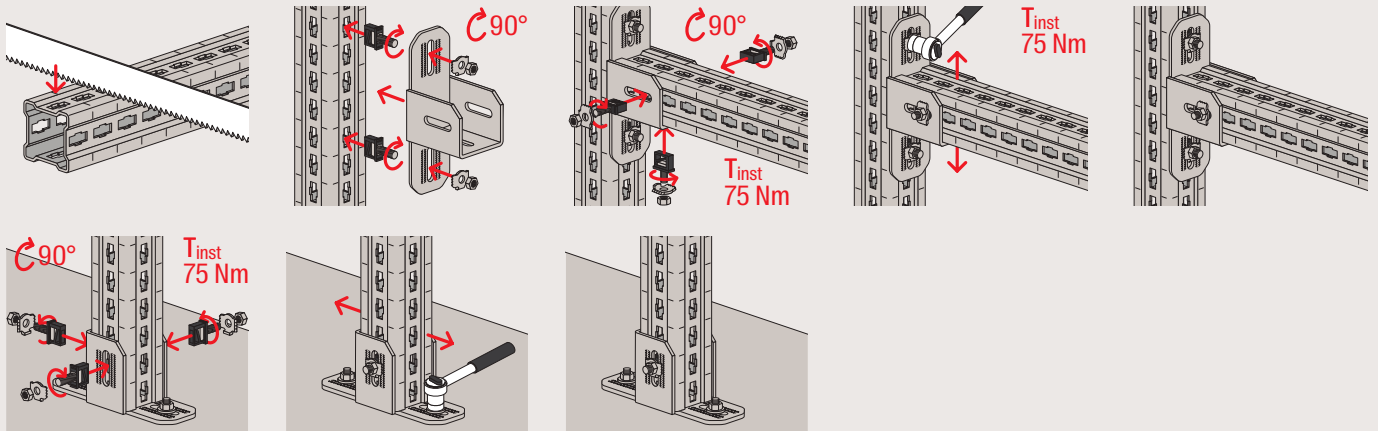
- The installation heights of the angle bracket FMASF 90 enable a connection matching the installation heights of the FMP 90 massive profile, thus allowing even more versatile constructions.
- The design of the angle bracket FMASF 90 with long slots and grating to match the FMHB hammer-head push connector enables optimum adjustment of the structure and simplifies the assembly process.
- The strong construction of the angle bracket FMASF 90 allows the transmission of high loads in the application as an angle or saddle flange.

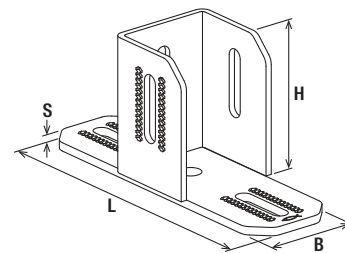
Properties

- Base plate: steel S355 (material no. 1.0976) acc. to DIN EN 10149-2
- Profile mount: steel S235JR (material no. 1.0038) acc. to DIN EN 10025-2
- Zinc plating: hot-dip galvanised acc. to DIN EN ISO 1461

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FMASF 90





FMA SF 90

Technical data

Item	Item no.	Length L [mm]	Width B [mm]	Height H [mm]	Thickness S [mm]	Sales unit [pcs]
FMA SF 90	568823	300	90	130	8.0	4

Variable bracket FMVB

Variable connection of FMP massive profiles to each other and to the substrate



Supported cantilever

Applications

- Constructions of FMP massive profiles at an angle of 0° to 180°.
- Mounting elements for the design of supporting structures with the FMP massive profiles.
- Element for the stable construction of connections between channels and building structures.
- For indoor and outdoor application.

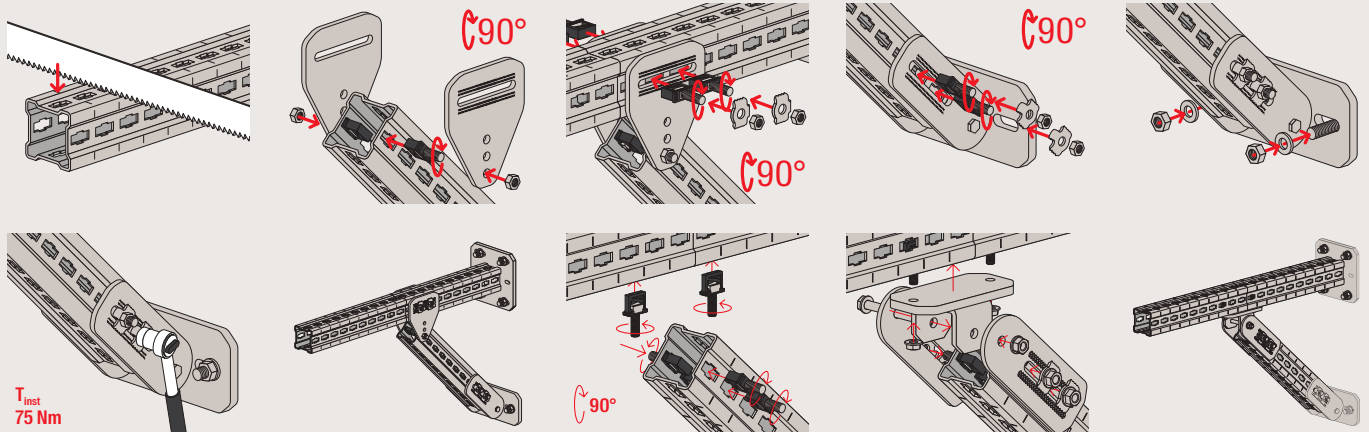
Advantages

- The variable construction elements allow stiffening or support of the profile construction at any angle and are therefore suited for versatile use.
- The stable design and the size graduation of the FMVB base plates offer the optimum fixing option depending on the construction and ensure a secure hold.
- The FMVB variable bracket with slot and grating to accommodate the toothed plate of the FMHB hammer-head push connector allows optimum adjustment of the supported profile for simple and safe installation.
- Supplying the FMVB articles as a set with the necessary screw, hexagonal nut and washer ensures error-free installation.

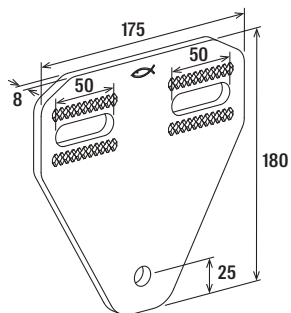
Properties

- Material: steel S235JR (material no. 1.0038) acc. to DIN EN 10025-2
- Zinc plating: hot-dip galvanised acc. to DIN EN ISO 1461
- Material: steel grade 8.8

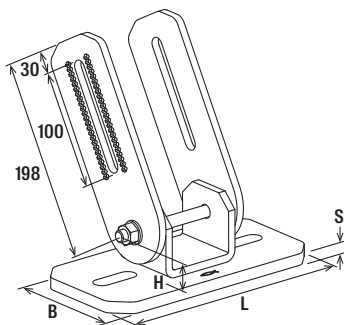
Installation FMVB



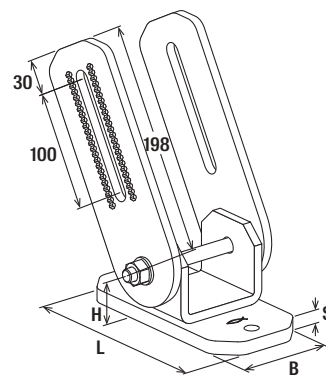
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75 Nm



FMVB P



FMVB BP



FMVB P II

Technical data

Item	Item no.	Length l [mm]	For steel beam width [mm]	Width B [mm]	Height H [mm]	Thickness S [mm]	Sales unit [pcs]
FMVB-P	547832	175	-	-	180	8.0	4
FMVB BP S	547833	250	100 - 160	125	40.5	12.0	2
FMVB BP M	547834	330	180 - 240	125	40.5	15.0	2
FMVB BP L	547835	400	240 - 300	125	40.5	15.0	2
FMVB P II	554242	190	-	90	67	12.0	2

Beam clamp FMBC

Clamping bracket for fastening FMP massive profiles to steel beams



Profile fixing with beam clamp

Applications

- Attachment to the steel beam with two beam clamps on each side.
- For indoor and outdoor application.

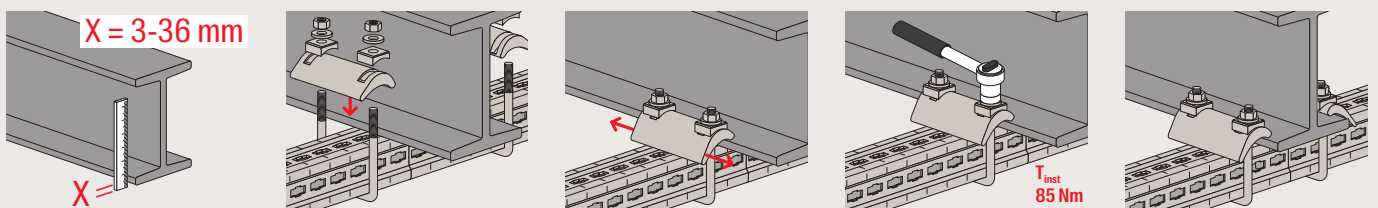
Advantages

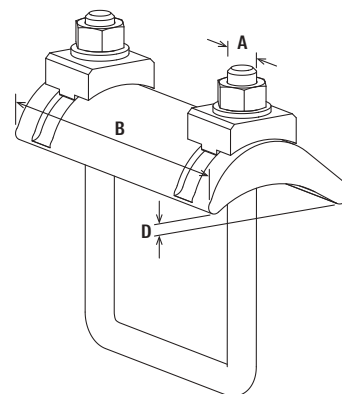
- The design of the beam clamp FMBC makes it possible to fasten to steel beams without drilling or welding.
- The large clamping range of the beam clamp FMBC allows it to be attached to all common beam flanges.
- The design of the beam clamp FMBC in the 3 matching bracket heights for the FMP massive profiles ensures fast mounting and easy moving of the profiles for adjustment.

Properties

- Material: cast iron with ductile iron (QT450-10 (material no. 5.3107) acc. to EN 1563
- Material U-bolt: steel S235JR (material no. 1.0038) acc. to DIN EN 10025-2
- Zinc plating: hot-dip galvanised acc. to DIN EN ISO 1461
- Material hexagon nut: steel resistance class 8

Installation FMBC





FMBC

Technical data

Item	Item no.	For profile	Thread A	Width B [mm]	Clamping range D [mm]	Sales unit [pcs]
FMBC 90	547836	FMP 90	M12	140	3 - 36	4
FMBC 120	547837	FMP 120	M12	140	3 - 36	4
FMBC 160	547838	FMP 160	M12	140	3 - 36	4

Beam clamp FMBC M12 and M16

Efficient connection of base plates to steel beams without welding and drilling



Fixing with beam clamp

Applications

- Simple fixing by clamping the base plate to the steel beams.
- For fixing FMSF S and FMSF BP S use FMBC M12. For FMS and FMSF BP M and L use FMBC M16.
- For indoor and outdoor application.

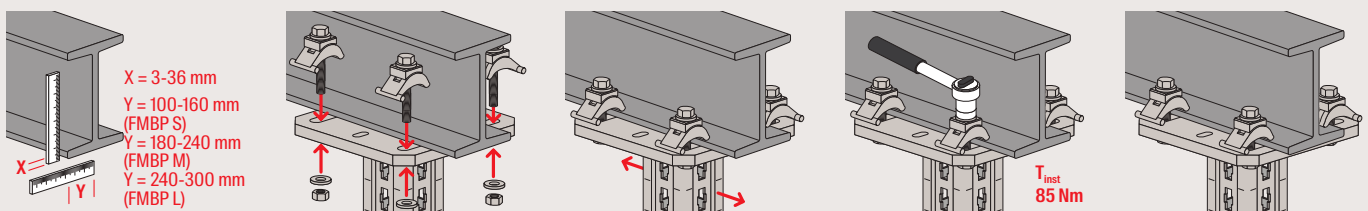
Advantages

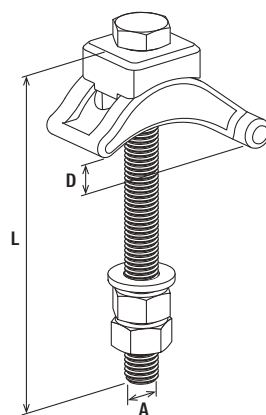
- The design of the beam clamp FMBC M12 and M16 makes it possible to fix to steel beams without drilling or welding.
- The large clamping range of the FMBC M12 and M16 allows it to be attached to all common beam flanges.
- The design of the FMBC beam clamp M12 and M16 in the 3 matching bracket heights for the FMP massive profiles ensures fast mounting and easy moving of the profiles for adjustment.

Properties

- Material: cast iron with ductile iron QT450-10 (material no. 5.3107) acc. to EN 1563
- Zinc plating: hot-dip galvanised acc. to DIN EN ISO 1461
- Material screw: steel grade 8.8

Installation FMBC M





FMBC M

Technical data

Item	Item no.	Thread A	Length L [mm]	Clamping range D [mm]	Sales unit [pcs]
FMBC M12	547839	M12	130	3 - 36	16
FMBC M16	547840	M16	150	3 - 36	12

Flat fitting FMFF 90°

Stable right-angled connection of FMP massive profiles to each other



U-rack construction with flat fittings

Applications

- Element for stable right-angled connection of massive profiles with 2 flat connectors on each.
- For indoor and outdoor application.

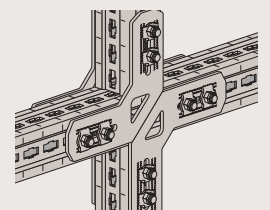
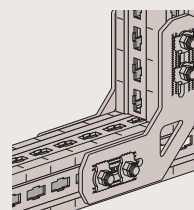
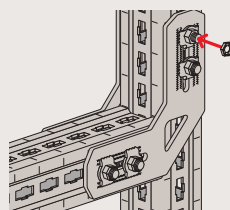
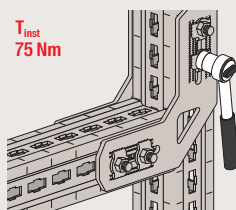
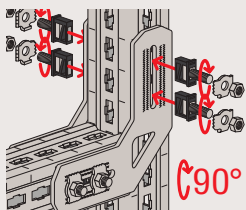
Advantages

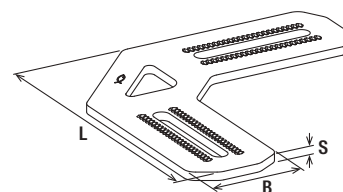
- The flat angle FMFF 90° is used in pairs and offers a high load capacity when connecting the FMP mounting profiles for the construction of massive applications.
- The design of the 90° flat angle FMFF with slotted holes and grating to accommodate the toothed plate of the FMHB hammer head connector allows optimum adjustment of the construction and simplifies the assembly process.

Properties

- Material: steel S235JR (material no. 1.0038) acc. to DIN EN 10025-2
- Zinc plating: hot-dip galvanised acc. to DIN EN ISO 1461

Installation FMFF





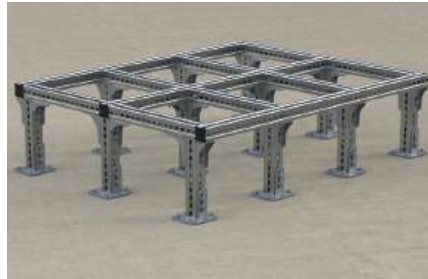
FMFF

Technical data

Item	Item no.	Length l [mm]	Width B [mm]	Thickness S [mm]	Sales unit [pcs]
FMFF 90°	547841	282	90	8.0	1

Mounting angle FMA 3 and FMA 4

The application-oriented connection of FMP mounting profiles with each other



3D frame construction

Applications

- Connecting elements for multi-dimensional channel constructions.
- For indoor and outdoor application.

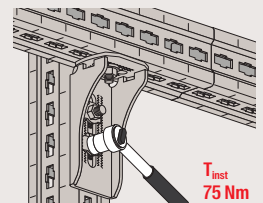
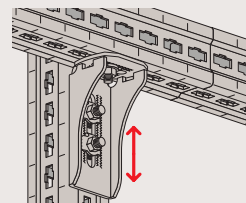
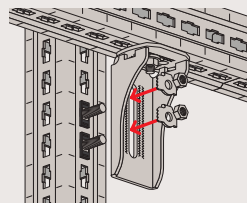
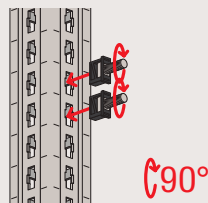
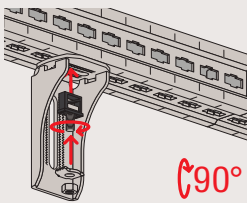
Advantages

- The different construction types of the mounting angle FMA 3 and FMA 4 enable an application oriented connection of the massive profiles FMP and make the construction possibilities even more flexible.
- The version of the mounting angle FMA with slotted holes and grating to accommodate the toothed plate of the hammer bolt connector FMHB enables the optimised adaption of the construction and simplifies the mounting process.

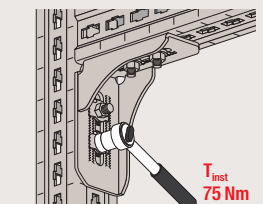
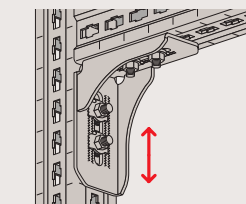
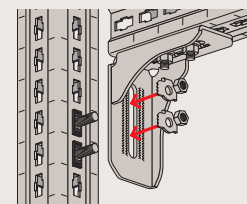
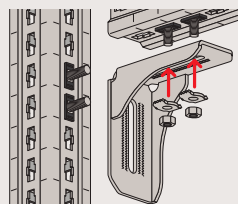
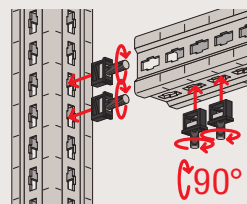
Properties

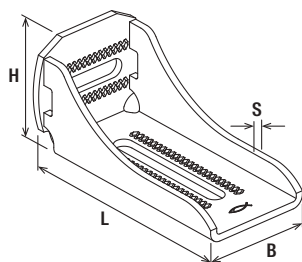
- Material: steel S235JR (material no. 1.0038) acc. to DIN EN 10025-2
- Zinc plating: hot-dip galvanised acc. to DIN EN ISO 1461

Installation FMA 3

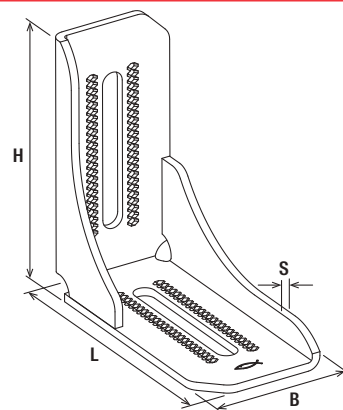


Installation FMA 4





FMA 3



FMA 4

Technical data

Item	Item no.	Length L [mm]	Width B [mm]	Height H [mm]	Thickness S [mm]	Sales unit [pcs]
FMA 3	547842	190	90	90	6.0	10
FMA 4	547843	190	90	190	6.0	8

Mounting angle FMA

The application-oriented connection of FMP massive profiles to built up racks



Frame constructions

Applications

- Mounting elements for the design of supporting structures with the FMP massive profiles.
- For indoor and outdoor application.

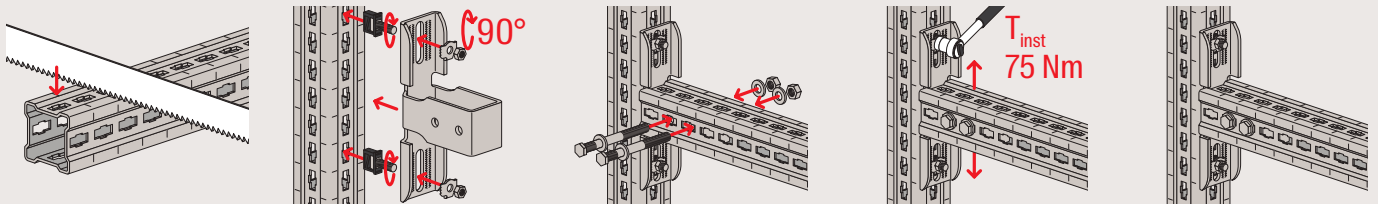
Advantages

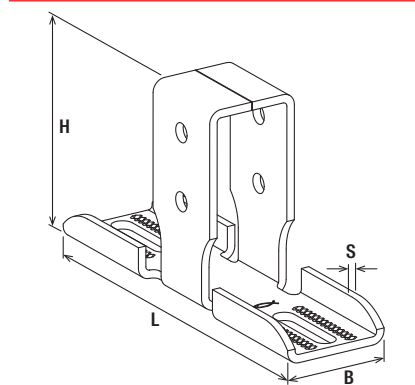
- The different construction heights of the mounting angle FMA enable the application-oriented connection according to the 3 different construction heights of the massive profiles FMP.
- The version of the mounting angle FMA with slotted holes and grating to accommodate the toothed plate of the hammer bolt connector FMHB enables the optimized adaption of the construction and simplifies the mounting process.
- Supplying the FMA articles as a set with the necessary screws, hexagonal nuts and washers ensures error-free installation.

Properties

- Material: steel S235JR (material no. 1.0038) acc. to DIN EN 10025-2
- Zinc plating: hot-dip galvanised
- Material screw: steel grade 8.8

Installation FMA





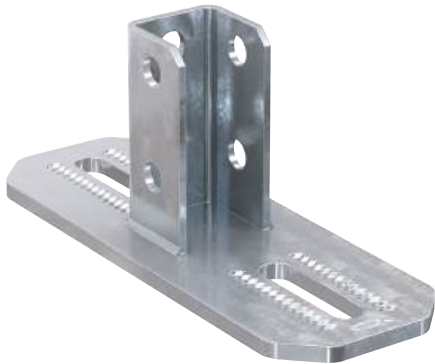
FMA 90

Technical data

Item	Item no.	Length L [mm]	Width B [mm]	Height H [mm]	Thickness S [mm]	Sales unit [pcs]
FMA 90	547844	277.5	77.5	148	6.0	4
FMA 120	547845	277.5	77.5	148	6.0	4
FMA 160	547846	350	77.5	148	6.0	4

System connector FMA-FUS

The system connection of FMP massive profiles and FUS mounting channels



Multidimensional channel structures

Applications

- Construction of multidimensional profile structures.
- Constructing variable supporting structures from profiles.
- For indoor and outdoor application.

Advantages

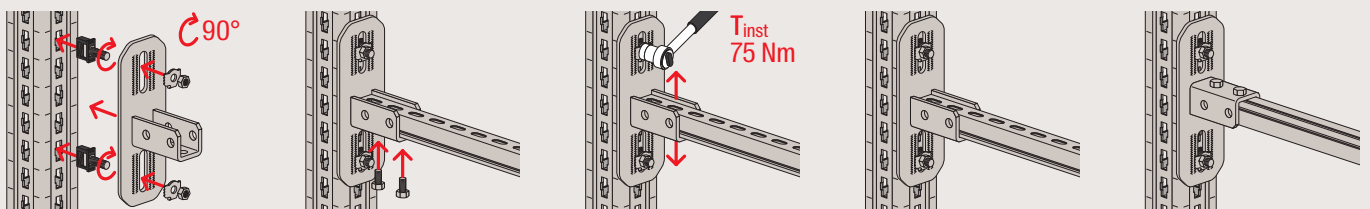
- The FMA-FUS system connector, when used as a saddle flange, allows the mounting of FUS mounting channels in various heights by means of screw connections with the FCN Clix P channel nut.
- The design of the FMA-FUS system connector with long slots and grating to match the FMHB hammer-head push connector enables optimum adjustment of the structure and simplifies the assembly process.
- The strong construction of the FMA-FUS system connector allows optimum transmission of the applied loads in the application as an angle.

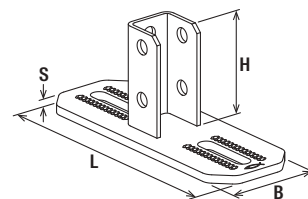
Properties

- Base plate: steel S355 (material no. 1.0976) acc. to DIN EN 10149-2
- Profile mount: steel S235JR (material no. 1.0038) acc. to DIN EN 10025-2
- Zinc plating: hot-dip galvanised

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Installation FMA-FUS





FMA-FUS

Technical data

Item	Item no.	Length L [mm]	Width B [mm]	Height H [mm]	Thickness S [mm]	Sales unit [pcs]
FMA-FUS	568824	250	90	95	8.0	6

Connecting element FMUF

Simple bracket connection of FMP massive profiles to each other and to the substrate



Pendant cantilever fixed to transverse profil

Applications

- Stable construction of connections between channels and building structures for the push-through system.
- Connecting elements for multi-dimensional channel constructions.
- For a secure transverse force connection, 2 M12x130 bolts with M12 nuts can be used alternative, which are pushed through the round openings, whereby each bolt is guided through the adjacent openings.
- For indoor and outdoor application.

Advantages

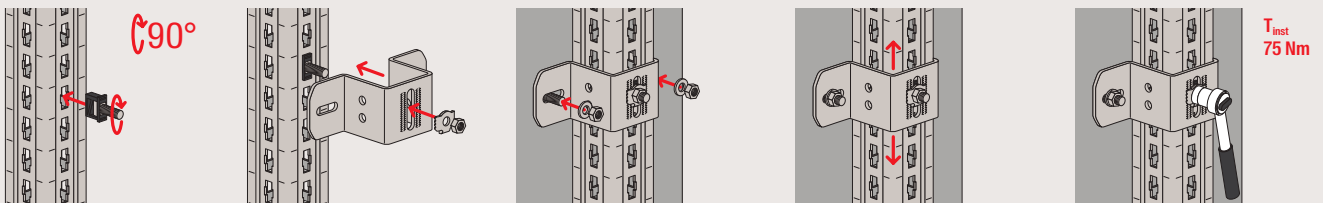
- The design of the FMUF connecting element ensures that the FMP massive profiles can be fastened to each other and to the substrate and makes it easy to fasten.
- The version of the FMUF connecting element with slot and grating to accommodate the toothed plate of the FMHB hammer-head push connector allows optimum adjustment of the supported profile for simple and safe installation.

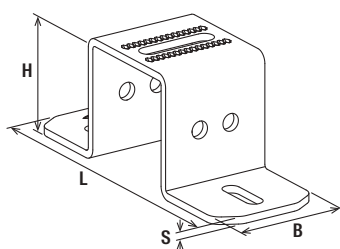
Properties

- Material: steel S235JR (material no. 1.0038) acc. to DIN EN 10025-2
- Zinc plating: hot-dip galvanised acc. to DIN EN ISO 1461
- Material hexagon nut: steel resistance class 8

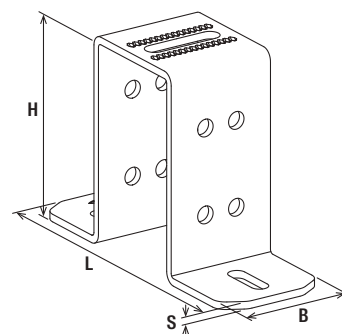
11

Installation FMUF





FMUF 90/120



FMUF 160

Technical data

Item	Item no.	Length L [mm]	Width B [mm]	Height H [mm]	Thickness S [mm]	Sales unit [pcs]
FMUF 90	547847	250	90	91	6.0	8
FMUF 120	547848	250	90	121	6.0	8
FMUF 160	547849	250	90	161	6.0	8

Fixed point U-bolt FMFS UB

Element for fixing FMPS pipe shoes and FMFS fixed point saddles



Fix-point construction with saddle

Applications

- Fixing the fixed point and sliding elements onto the massive profile FMP.
- For indoor and outdoor application.

Advantages

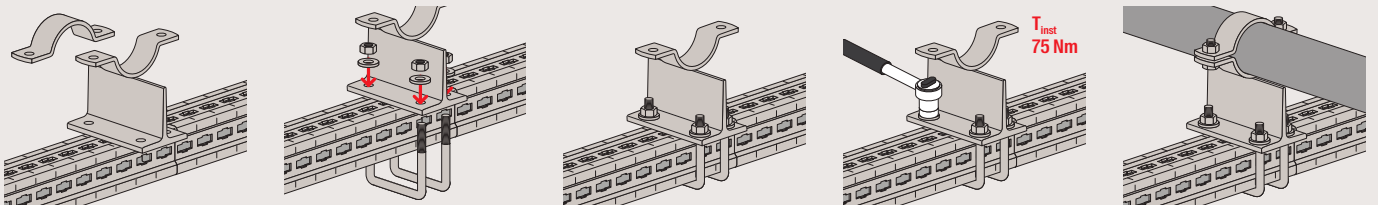
- The FMFS UB fix point U-bolt is the precisely fitting element for quick and easy fastening of fixed points or sliding elements to the massive profile FMP.
- The FMFS UB fixed point U-bolt is available in 3 sizes and is the perfect fit for fastening for the 3 sizes of massive profiles FMP.

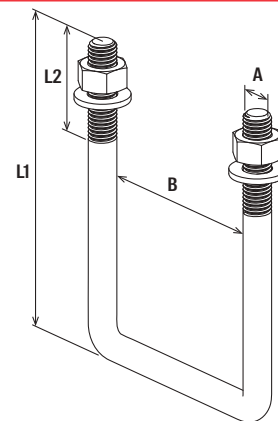
Properties

- Material: steel S235JR (material no. 1.0038) acc. to DIN EN 10025-2
- Zinc plating: hot-dip galvanised acc. to DIN EN ISO 1461
- Material nut: steel grade 8.8

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Installation FMFS UB





FMFS UB

Technical data

Item	Item no.	Thread	Length	Length	Width	Sales unit
		A	L ₁ [mm]	L ₂ [mm]	B [mm]	
FMFS UB 90	547850	M12	130	45	91	50
FMFS UB 120	547851	M12	160	45	91	40
FMFS UB 160	547852	M12	200	45	91	30

11

Pipe shoe sliding element FMFS

Element for fixing FMPS pipe shoes in case of thermal expansion



Slide bearing with pipe shoe



Frame construction

Applications

- Fixation of pipelines for thermal expansions.
- For indoor and outdoor application.

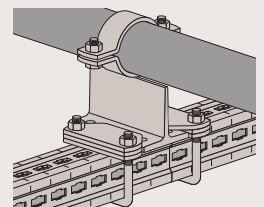
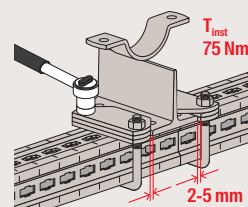
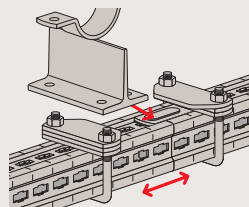
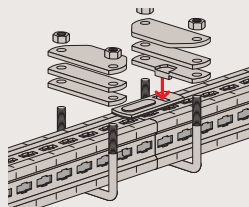
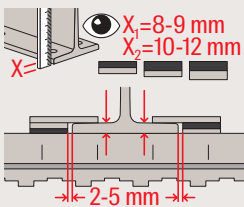
Advantages

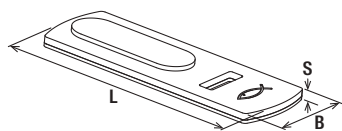
- The sliding element FMFS can be attached to the pipe shoes FMPS to provide axial guidance and lifting for safe guidance in the moment of pipe expansion.
- The sliding element FMFS fits to all base plates of the pipe shoes FMPS due to the variably applicable distance plates and is easy to install.

Properties

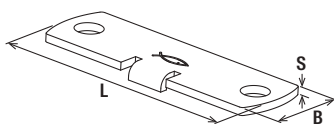
- Material: steel S235JR (material no. 1.0038) acc. to DIN EN 10025-2
- Zinc plating: hot-dip galvanised acc. to DIN EN ISO 1461
- FMFS SP: material plastic inlay: PTFE polytetrafluorethylene, colour white

Installation FMFS

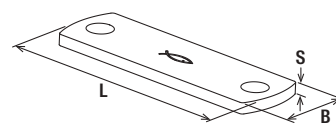




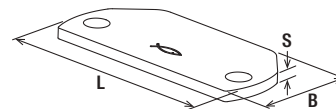
FMFS SP



FMFS SH



FMFS DP



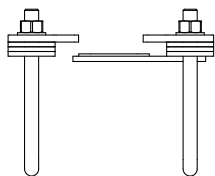
FMFS LL

Technical data

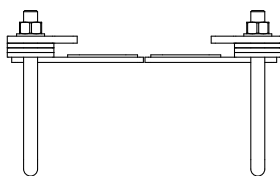
Item	Item no.	Length L [mm]	Width B [mm]	Thickness S [mm]	Sales unit [pcs]
FMFS SP	547853	113	40	4.5	10
FMFS SH	547854	130	35	4.0	10
FMFS DP4	547855	130	35	4.0	20
FMFS DP6	547856	130	35	6.0	20
FMFS LL	547857	130	60	6.0	20

11

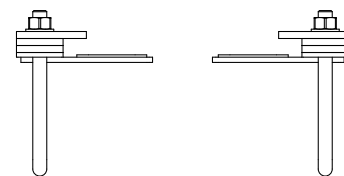
Technical information



BG 1



BG 2



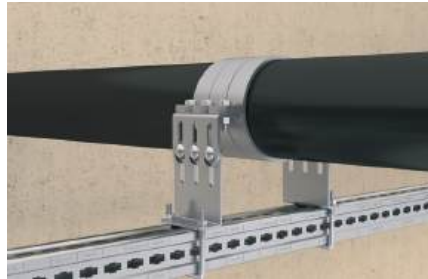
BG 3

Item	Item No.	Thickness S [mm]	Required number of sliding elements - item per pipe shoe FMFS		
			BG 1 X 1 = 8 - 9 mm [pcs]	BG 2 X 1 = 8 - 9 mm [pcs]	BG 3 X 2 = 10 - 12 mm [pcs]
FMFS SP	547853	4,5	1	2	2
FMFS SH	547854	4	1	2	2
FMFS DP4	547855	4	5	4	-
FMFS DP6	547856	6	-	-	4
FMFS LL	547857	6	2	2	2

In addition, 2 FMFS UB fixed point brackets are required in each case - size matching the FMP profile.
The kind of assembly group is listed in the tables for the pipe shoes FMPS, see pages FMPS.

Fixed point FMFS S and M

Supporting element for fixing in case of thermal expansion



Fixed point construction to profile

Applications

- Fixation of pipelines for thermal expansions.
- To use with the pipe clamp FMFSC as fixed point. Up to 3 pipe clamps in row possible.
- For indoor and outdoor application.

Advantages

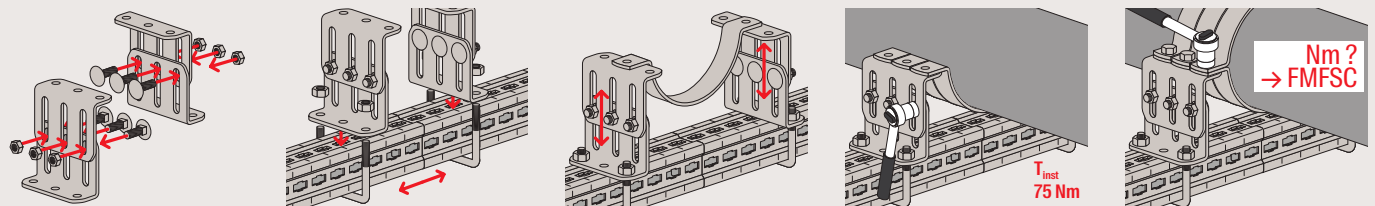
- The modular design of the fixed point saddle in 2 heights allows for optimum adaptation to the load level and pipe dimensions.
- The fixed point saddle allows for good and simple height and inclination adjustment due to the slotted hole connections.

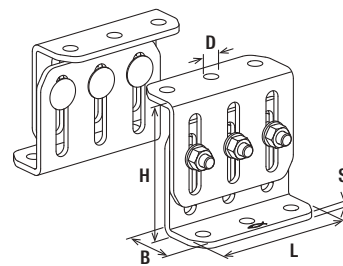
Properties

- Material: steel S235JR (material no. 1.0038) acc. to DIN EN 10025-2
- Material hexagon nut: steel resistance class 8
- Zinc plating: hot-dip galvanised acc. to DIN EN ISO 1461
- Material screw: steel grade 8.8

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Installation FMFS





FMFS

Technical data

Item	Item no.	Use with FMFSC pipe clamps	Length L [mm]	Width B [mm]	Total height H [mm]	Hole-Ø D [mm]	Thickness S [mm]	Sales unit [pcs]
FMFS S	547860	< DN 80	140	54	115 - 175	14	6.0	2
FMFS M	547861	> DN 100	140	54	175 - 240	17	6.0	2

Pipe shoes FMPS

Prefabricated elements for fixing of pipes and massive profiles FMP



Frame construction

Applications

- Fixing of heavy duty pipelines up to DN 600
- Can be used as sliding point.
- Can be used as fixed point.
- For indoor and outdoor application.

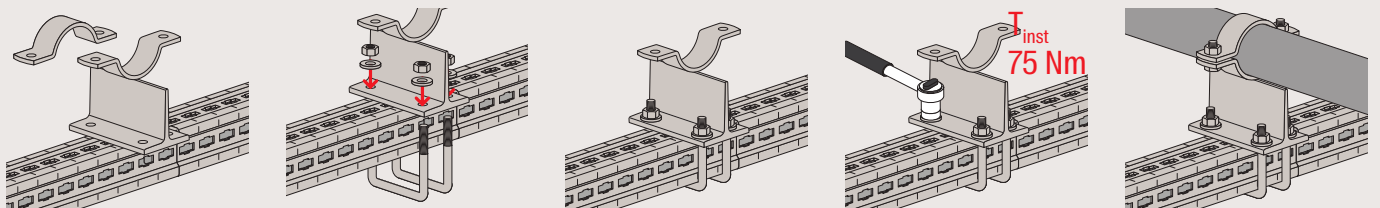
Advantages

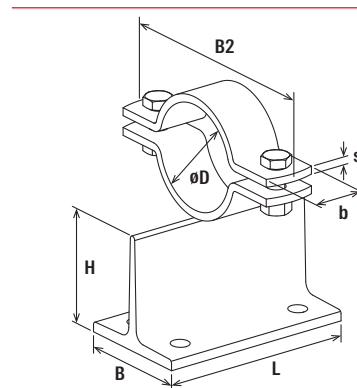
- The designs of the pipe shoes with one or two pipe clamps in standard and solid version allow for fixing of heavy duty pipes.
- Due to the additional perforation, the pipe shoes FMPS can be used as fixed points to attach with the FMFS UB fixed point U-bolt to the FMP massive profile.
- The pipe shoes FMPS can be used as sliding elements by attaching the pipe shoes-sliding bearing to the FMP massive profile.

Properties

- Material: steel S235JR (material no. 1.0038) acc. to DIN EN 10025-2
- Zinc plating: hot-dip galvanised acc. to DIN EN ISO 1461
- Material screw: steel grade 8.8
- Material hexagon nut: steel resistance class 8

Installation FMPS



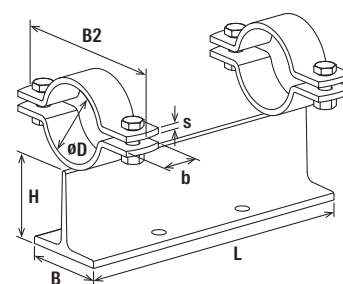


FMPS 1/1

Technical data

Item	Item no.	Size [in]	Clamping range		Length L [mm]	Width B [mm]	Width B2 [mm]	Height H [mm]	Width x thickness clamp band b x s [mm]	Locking screw	Sales unit [pcs]
			D [mm]	D							
FMPS 25 1/1-80	547862 ¹⁾	1	34	150	90	102	87.5	30 x 5	M10	1	
FMPS 40 1/1-80	547863 ¹⁾	1 1/2	49	150	90	118	87.5	30 x 5	M10	1	
FMPS 50 1/1-80	547864 ¹⁾	2	61	150	90	144	87.5	40 x 6	M12	1	
FMPS 65 1/1-80	547865 ¹⁾	2 1/2	77	150	90	158	87.5	40 x 6	M12	1	
FMPS 80 1/1-80	547866 ¹⁾	3	89	150	90	172	87.5	40 x 6	M12	1	
FMPS 25 1/1-150	548410 ¹⁾	1	34	150	150	150	150	30 x 5	M10	1	
FMPS 40 1/1-150	547867 ¹⁾	1 1/2	49	150	150	102	150	30 x 5	M10	1	
FMPS 50 1/1-150	547868 ¹⁾	2	61	150	150	118	150	30 x 5	M12	1	
FMPS 65 1/1-150	547869 ¹⁾	2 1/2	77	150	150	144	150	40 x 6	M12	1	
FMPS 80 1/1-150	547870 ¹⁾	3	89	150	150	158	150	40 x 6	M12	1	
FMPS 100 1/1-150	547871 ¹⁾	3	89	150	150	172	150	40 x 6	M12	1	
FMPS 125 1/1-150	547872 ¹⁾	4	115	150	150	220	150	50 x 8	M16	1	
FMPS 150 1/1-150	547873 ¹⁾	6	169	150	150	280	150	50 x 8	M16	1	
FMPS 200 1/1-150	547874 ¹⁾	8	220	150	150	332	150	50 x 8	M16	1	

¹⁾ Delivery time on request.

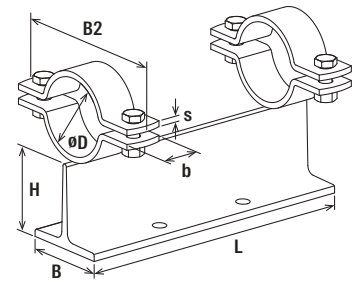


FMPS 1/2

Technical data

Item	Item no.	Size [in]	Clamping range		Length L [mm]	Width B [mm]	Width B2 [mm]	Height H [mm]	Width x thickness clamp band b x s [mm]	Locking screw	Sales unit [pcs]
			D [mm]	D							
FMPS 25 1/2-80	547875 ¹⁾	1	34	300	90	102	87.5	30 x 5	M10	1	
FMPS 40 1/2-80	547877 ¹⁾	1 1/2	49	300	90	118	87.5	30 x 5	M10	1	
FMPS 50 1/2-80	547879 ¹⁾	2	61	300	90	144	87.5	40 x 6	M12	1	
FMPS 65 1/2-80	547881 ¹⁾	2 1/2	77	300	90	158	87.5	40 x 6	M12	1	

¹⁾ Delivery time on request.



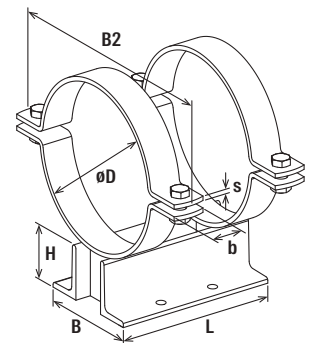
FMPS 1/2

Technical data

Item	Item no.	Size	Clamping range	Length	Width	Width	Height	Width x thickness clamp band	Locking screw	Sales unit
		[in]	D [mm]	L [mm]	B [mm]	B2 [mm]	H [mm]	b x s [mm]		
FMPS 80 1/2-80	547883 ¹⁾	3	89	300	90	172	87.5	40 x 6	M12	1
FMPS 100 1/2-110	547885	4	115	300	125	220	125	50 x 8	M16	1
FMPS 125 1/2-110	547887	5	140	300	125	252	125	50 x 8	M16	1
FMPS 150 1/2-110	547889	6	169	300	125	280	125	50 x 8	M16	1
FMPS 200 1/2-110	547891	8	220	300	125	332	125	50 x 8	M16	1
FMPS 25 1/2-150	547876 ¹⁾	1	34	300	150	102	150	30 x 5	M10	1
FMPS 40 1/2-150	547878 ¹⁾	1 1/2	49	300	150	118	150	30 x 5	M10	1
FMPS 50 1/2-150	547880 ¹⁾	2	61	300	150	144	150	40 x 6	M12	1
FMPS 65 1/2-150	547882 ¹⁾	2 1/2	77	300	150	158	150	40 x 6	M12	1
FMPS 80 1/2-150	547884 ¹⁾	3	89	300	150	172	150	40 x 6	M12	1
FMPS 100 1/2-150	547886 ¹⁾	4	115	300	150	220	150	50 x 8	M16	1
FMPS 125 1/2-150	547888 ¹⁾	5	140	300	150	252	150	50 x 8	M16	1
FMPS 150 1/2-150	547890 ¹⁾	6	169	300	150	280	150	50 x 8	M16	1
FMPS 200 1/2-150	547892	8	220	300	150	332	150	50 x 8	M16	1

¹⁾ Delivery time on request.

11

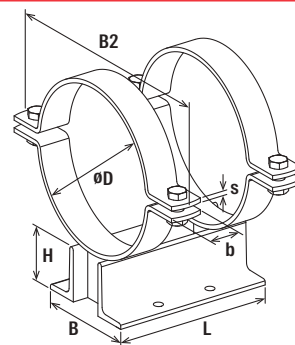


FMPS 2/2

Technical data

Item	Item no.	Size	Clamping range	Length	Width	Width	Height	Width x thickness clamp band	Locking screw	Sales unit
		[in]	D [mm]	L [mm]	B [mm]	B2 [mm]	H [mm]	b x s [mm]		
FMPS 250 2/2-110	547893	10	273	300	200	396	100	50 x 8	M16	1
FMPS 300 2/2-110	547894	12	324	300	200	458	100	60 x 8	M20	1
FMPS 350 2/2-110	547895	14	356	300	200	504	100	60 x 8	M20	1
FMPS 400 2/2-110	547896	16	407	300	200	582	100	70 x 10	M24	1
FMPS 500 2/2-110	547897	20	508	300	250	672	100	70 x 10	M24	1

¹⁾ Delivery time on request.



FMPS 2/2

Technical data

Item	Item no.	Size	Clamping range	Length	Width	Width	Height	Width x thickness clamp band b x s [mm]	Locking screw	Sales unit [pcs]
		[in]	D [mm]	L [mm]	B [mm]	B2 [mm]	H [mm]			
FMPS 600 2/2-110	547898	24	610	300	250	814	100	90 x 15	M30	1
FMPS 250 2/2-150	547899 ¹⁾	10	273	300	200	814	140	90 x 15	M16	1
FMPS 300 2/2-150	547900 ¹⁾	12	324	300	200	396	140	60 x 8	M20	1
FMPS 350 2/2-150	547901 ¹⁾	14	356	300	200	458	140	60 x 8	M20	1
FMPS 400 2/2-150	547902 ¹⁾	16	407	300	200	504	140	70 x 10	M24	1
FMPS 500 2/2-150	547903 ¹⁾	20	508	300	250	582	140	70 x 10	M24	1
FMPS 600 2/2-150	547904 ¹⁾	24	610	300	250	672	140	90 x 15	M30	1

¹⁾ Delivery time on request.

Massive pipe clamp FMFSC

Element for stable fixing of pipes and massive profiles FMP



Fixed point clamp construction

Applications

- Fixing of heavy duty pipelines up to DN 250.
- Can be used as a fixed point in combination with the FMFS saddle.
- For indoor and outdoor application.

Advantages

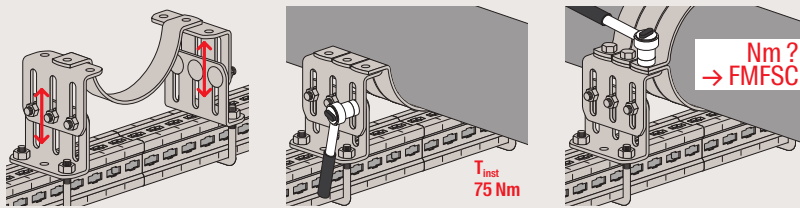
- The fischer massive pipe clamps FMFSC without rubber insert for fixing pipelines up to DN 250 can reliably fix heavy duty pipelines and can be used in many applications.

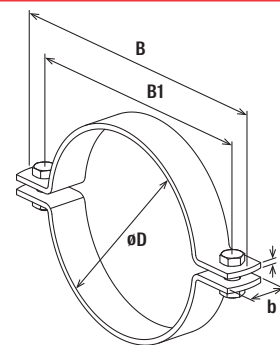
Properties

- Material: steel S235JR (material no. 1.0038) acc. to DIN EN 10025-2
- Zinc plating: hot-dip galvanised acc. to DIN EN ISO 1461
- Material screw: steel grade 8.8
- Material hexagon nut: steel resistance class 8

11

Installation FMFSC





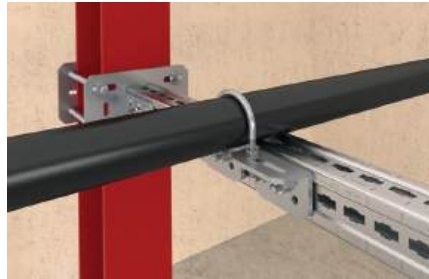
FMFSC

Technical data

Item	Item no.	Size	Clamping range	Width	Width B1	Width x thick- ness clamp band	Locking screw	Installation torque	Sales unit
		[in]	D [mm]	B [mm]	B1 [mm]	b x s [mm]		T _{inst} [Nm]	
FMFSC 25	547905	1	34	102	72	30 x 5	M10	30	1
FMFSC 32	547906	1 1/4	43	112	82	30 x 5	M10	30	1
FMFSC 40	547907	1 1/2	49	118	88	30 x 5	M10	30	1
FMFSC 50	547909	2	61	144	108	40 x 6	M12	50	1
FMFSC 65	547910	2 1/2	77	158	122	40 x 6	M12	50	1
FMFSC 80	547911	3	89	172	136	40 x 6	M12	50	1
FMFSC 100	547913	4	115	220	172	50 x 8	M16	100	1
FMFSC 125	547915	5	140	252	204	50 x 8	M16	100	1
FMFSC 150	547918	6	169	280	232	50 x 8	M16	100	1
FMFSC 200	547919	8	220	332	284	50 x 8	M16	100	1
FMFSC 250/50	547921	10	273	396	348	50 x 8	M16	100	1

Massive U-bolt FMPSU

Simple element for fixing of pipes and massive profile FMP



Profile traverse to steel structure

Applications

- Fixing of heavy duty pipelines up to DN 250.
- For indoor and outdoor application.

Advantages

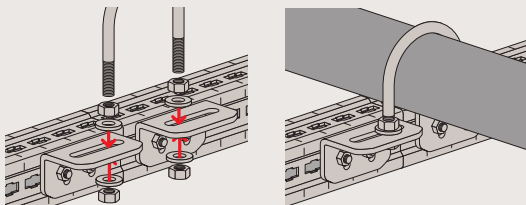
- The FMPSU massive U-bolt for fixing heavy duty pipelines directly onto the FMP massive profile is the simplest type of connection for heavy duty pipelines.

Properties

- Material: steel S235JR (material no. 1.0038) acc. to DIN EN 10025-2
- Zinc plating: hot-dip galvanised
- Material screw: steel grade 8.8
- Material hexagon nut: steel resistance class 8

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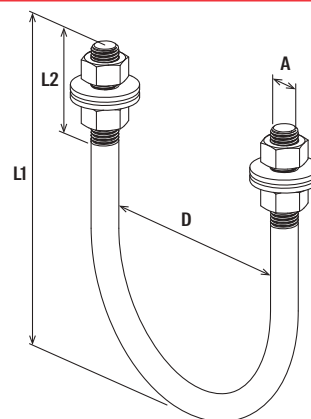
Installation FMPSU



See also:

Product family Connecting element
FMCE-L Page 3932





FMPSU




































Technical data

Item	Item no.	Size [in]	Clamping range D [mm]	Length L ₁ [mm]	Length L ₂ [mm]	Thread A	Sales unit [pcs]
FMPSU 25	547929	1	38	70	40	M10	50
FMPSU 32	547930	1 1/4	46	76	50	M10	50
FMPSU 40	547931	1 1/2	52	86	50	M10	50
FMPSU 50	547933	2	64	109	50	M12	50
FMPSU 65	547934	2 1/2	82	125	50	M12	50
FMPSU 80	547935	3	94	138	50	M12	50
FMPSU 100	547937	4	120	171	60	M16	25
FMPSU 125	547939	5	148	191	60	M16	20
FMPSU 150	547941	6	176	217	60	M16	15
FMPSU 200	547942	8	228	283	70	M20	8
FMPSU 250	547943	10	282	334	70	M20	8



12

Installation system stainless steel

Pipe clamp FRS A2/A4	434		Channel nut FCN Clix P A4	462	
Heavy duty pipe clamp FRSM A4 - metric	436		Channel nut FCN Clix M A4	464	
Channel FUS A2/A4	438		Channel nut FCN A4	466	
Cover cap FEC	441		Saddle flange SF L 41 A4	468	
Channel connector PFUF OC A4	442		Bracket FAF A4	469	
Socket wrench FSK	443		Variable bracket VB A4	470	
Cantilever arm FCA A4	444		Channel washer HK 41 A4	471	
Channel connector FDCC A4	445		Beam clamp TKR A4	472	
Push-through connector PFCN A4	447		Beam clamp TKL A4	474	
Saddle flange PSF A4	449		Beam clamp TKLS A4	475	
Universal bracket PUWS A4	450		Threaded rod G A2/A4	476	
Angle bracket PWK A4	452		Threaded stud GS A4	477	
Variable bracket PVB A4	453		Hexagonal screw SKS A4	478	
Bracing elements PSAE A4	454		Washer U A4	479	
Bracket PFFF A4	456		Hexagonal nut MU A4	480	
Bracket PFAF A4	457		Hexagonal connector VM A4	481	
Bracket PFUF A4	459		Stud screw STS A2/A4	482	
Bracket PFUF D A4	460				

Pipe clamp FRS A2/A4

The two-screw pipe clamp with simple connecting thread



Pipe assembly



Height adjustable pipe installation

12 Applications

- Secure fixing for pipes with threaded rods or stud screws.
- For indoor and outdoor applications and in environments with high stress to components due to corrosion.
- FRS A2: not suitable for use in environments containing chlorine.

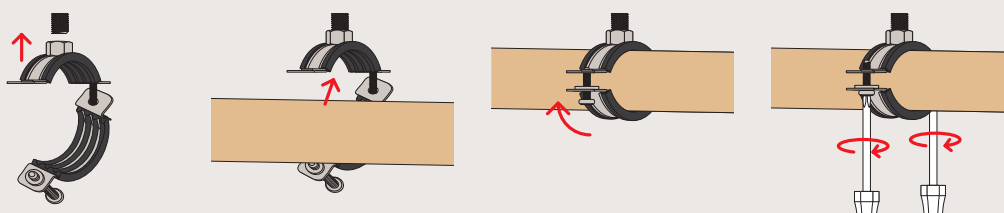
Advantages

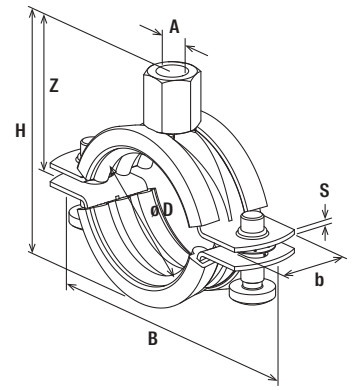
- The fire test report guarantees independently tested functional safety.
- The two screws allow an easy adjustment to suit the outer pipe diameter.
- The combination connecting nut with thread M8/M10 enables optimised mounting choices.
- The sound insulation insert offers noise protection and prevents contact corrosion.
- The screw's safety feature ensures trouble-free installation.

Properties

- Material: stainless steel A2 (material no 1.4301)
- Material: stainless steel A4 (material no 1.4401)
- Material sound insulation insert: EPDM; chlorine-free; silicone-free
- Temperature range: -40 °C to +100 °C
- Hardness: 55 ± 5° Shore A
- Fire behaviour: DIN 4102: Class B2

Installation FRS





FRS

Technical data

Item	Item no.	Thread	Size	Clamping range	Width	Height	Height	Width x thickness clamp band	Locking screw	Installation torque T_{inst} [Nm]	Max. re-com. static load (centr. tension) N_{rec} [kN]	Sales unit [pcs]
		A	[in]	D [mm]	B [mm]	H [mm]	Z [mm]	b x s [mm]				
FRS 3/8" A2	560576	M8	3/8	15 - 19	62	40	23	20 x 1.2	M6	2	1.00	25
FRS 1/2" A2	560577	M8	1/2	20 - 24	68	45	26	20 x 1.2	M6	2	1.00	25
FRS 3/4" A2	560578	M8	3/4	26 - 30	75	52	29	20 x 1.2	M6	2	1.00	25
FRS 1" A2	560579	M8	1	31 - 38	80	60	32	20 x 1.2	M6	2	1.00	25
FRS 1 1/4" A2	560580	M8	1 1/4	40 - 46	90	67	37	20 x 1.2	M6	2	1.00	25
FRS 1 1/2" A2	560581	M8	1 1/2	48 - 54	97	75	41	20 x 1.2	M6	2	1.00	25
FRS 2" A2	560583	M8	2	60 - 64	110	85	46	20 x 1.2	M6	2	1.00	10
FRS 2 1/2" A2	560585	M10	2 1/2	72 - 78	130	99	53	25 x 1.5	M6	2	1.30	10
FRS 3" A2	560587	M10	3	87 - 92	144	113	60	25 x 1.5	M6	2	1.30	10
FRS 4" A2	560589	M10	4	102 - 116	172	138	73	25 x 2.0	M6	2	2.00	10
FRS 54 - 59 A2	560582	M8	1 1/2	54 - 59	104	80	44	20 x 1.2	M6	2	1.00	25
FRS 67 - 71 A2	560584	M8	-	67 - 71	119	92	49	20 x 1.2	M6	2	1.00	10
FRS 81 - 86 A2	560586	M10	-	81 - 86	132	107	58	25 x 1.5	M6	2	1.30	10
FRS 95 - 103 A2	560588	M10	-	95 - 103	156	124	66	25 x 1.5	M6	2	1.30	10
FRS 121 - 127 A2	560590	M10	-	121 - 127	192	149	79	25 x 2.0	M8	3	2.00	5
FRS 133 - 141 A2	560591	M10	5	133 - 141	198	163	86	25 x 2.0	M8	3	2.00	5
FRS 159 - 168 A2	560592	M10	6	159 - 168	218	191	100	25 x 2.0	M8	3	2.00	5
FRS 3/8" A4	560593	M8	3/8	15 - 19	62	40	23	20 x 1.2	M6	2	1.00	25
FRS 1/2" A4	560594	M8	1/2	20 - 24	68	45	26	20 x 1.2	M6	2	1.00	25
FRS 3/4" A4	560595	M8	3/4	25 - 30	75	52	29	20 x 1.2	M6	2	1.00	25
FRS 1" A4	560596	M8	1	31 - 38	80	60	32	20 x 1.2	M6	2	1.00	25
FRS 1 1/4" A4	560597	M8	1 1/4	40 - 46	90	67	37	20 x 1.2	M6	2	1.00	25
FRS 1 1/2" A4	560598	M8	1 1/2	48 - 54	97	75	41	20 x 1.2	M6	2	1.00	25
FRS 2" A4	560600	M8	2	60 - 64	110	85	46	20 x 1.2	M6	2	1.00	10
FRS 2 1/2" A4	560602	M10	2 1/2	72 - 78	130	99	53	25 x 1.5	M6	2	1.30	10
FRS 3" A4	560604	M10	3	87 - 92	144	113	60	25 x 1.5	M6	2	1.30	10
FRS 4" A4	560606	M10	4	102 - 116	172	138	73	25 x 2.0	M6	2	2.00	10
FRS 54 - 58 A4	560599	M8	1 1/2	54 - 59	104	80	44	20 x 1.2	M6	2	1.00	25
FRS 67 - 71 A4	560601	M8	-	67 - 71	119	92	49	20 x 1.2	M6	2	1.00	10
FRS 81 - 86 A4	560603	M10	-	81 - 86	132	107	58	25 x 1.5	M6	2	1.30	10
FRS 95 - 103 A4	560605	M10	-	95 - 103	156	124	66	25 x 1.5	M6	2	1.30	10
FRS 121 - 127 A4	560607	M10	-	121 - 127	192	149	79	25 x 2.0	M6	2	2.00	5
FRS 133 - 141 A4	560608	M10	5	133 - 141	198	163	86	25 x 2.0	M6	2	2.00	5
FRS 159 - 168 A4	560609	M10	6	159 - 168	218	191	100	25 x 2.0	M6	2	2.00	5

Heavy duty pipe clamp FRSM A4- metric

The large pipe clamp with sound insulation insert for medium to heavy loads



Heavy pipe on cantilever



Heavy drainage pipe under angle bracket

12 Applications

- Fixing of medium to heavy pipes with threaded rods (hanger bolts).
- For indoor and outdoor applications and in environments with high stress to components due to corrosion.

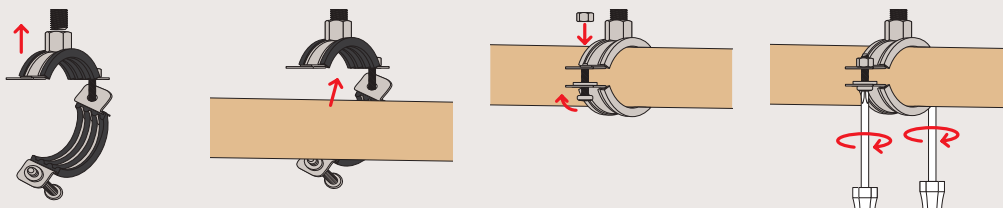
Advantages

- High tested loads guarantee safe functioning of the FRSM.
- From \varnothing 124 mm it is possible to install with 2 threaded rods, e.g. for the fixing of cast iron roof drainage pipes.
- The two screws allow for easy adjustment to suit the outer pipe diameter.
- The screw's safety features ensures trouble-free installation.

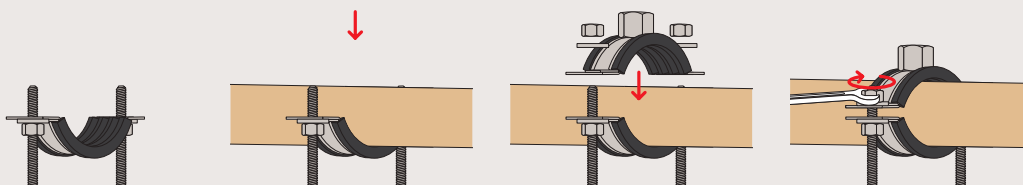
Properties

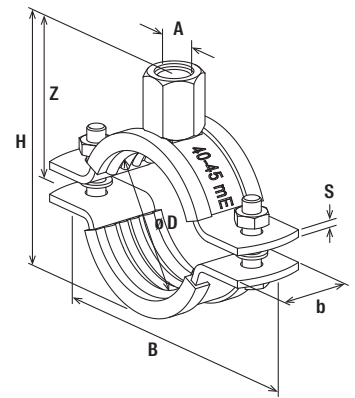
- Material: stainless steel A4 (material no. 1.4401)
- Connecting nut: M12 SW19, M16 SW24
- Locking screw: hexagon screw with nut
- Material sound insulation insert: EPDM; chlorine-free; silicone-free
- Temperature range: -50°C to $+110^{\circ}\text{C}$
- Hardness: $45 \pm 5^{\circ}$ Shore A
- Fire behaviour: DIN 4102: Class B2

Installation FRSM



Installation of FRSM with two threaded rods





FRSM - metric

Technical data

Item	Item no.	Thread	Size	Clamping range	Width	Height	Height	Width x thickness clamp band	Locking screw	Installation torque	Max. re-com. static load (centr. tension)	Sales unit
		A	[in]	D [mm]	B [mm]	H [mm]	Z [mm]	b x s [mm]	T _{inst} [Nm]	N _{rec} [kN]	[pcs]	
FRSM 165-171 M12 A4	562764	M12	6	165 - 171	232	206	113	30 x 3.0	M8	3	3.00	10
FRSM 188-194 M12 A4	562765	M12	7	188 - 194	255	229	125	30 x 3.0	M8	3	3.00	10
FRSM 196-203 M12 A4	562766	M12	-	196 - 203	263	238	129	30 x 3.0	M8	3	3.00	10
FRSM 212 M16 A4	562767	M16	-	205 - 214	297	264	147	40 x 4.0	M12	10	5.00	10
FRSM 8" M16 A4	562768	M16	8	219 - 225	308	275	153	40 x 4.0	M12	10	5.00	10
FRSM 250 M16 A4	562769	M16	-	244 - 250	333	300	165	40 x 4.0	M12	10	5.00	5
FRSM 10" M16 A4	562770	M16	10	267 - 273	356	323	177	40 x 4.0	M12	10	5.00	5
FRSM 300 M16 A4	562771	M16	-	297 - 304	387	354	192	40 x 4.0	M12	10	5.00	5
FRSM 305-316 M16 A4	562772	M16	-	305 - 316	397	366	198	40 x 4.0	M12	10	5.00	5
FRSM 12" M16 A4	562773	M16	12	320 - 328	411	378	204	40 x 4.0	M12	10	5.00	5

Channel FUS A2/A4

The universal and complete mounting channel system for a wide range of applications



3D-frame constructions



Solid frame construction

12 Applications

- Secure horizontal and vertical installations.
- Fast and efficient fixing of pipelines and supporting structures.
- For indoor and outdoor application and in environments with high stress to components due to corrosion.
- FUS A2: Not suitable for use in environments containing chlorine.

Certificates

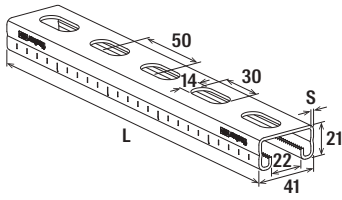


Advantages

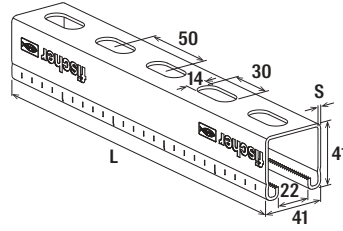
- The fire inspection report in line with MLAR/EN13501 guarantees independently tested functional safety.
- The basic channel geometry allows the usage of the complete extensive range of accessories.
- The stamped serration in the channel give the sliding nuts a secure hold for high shear loads, e.g. for vertical installation.
- Different channel wall thicknesses allow economical choices for installation.
- The scale on the mounting channels simplifies the cutting and positioning of the fixtures during the installation.

Properties

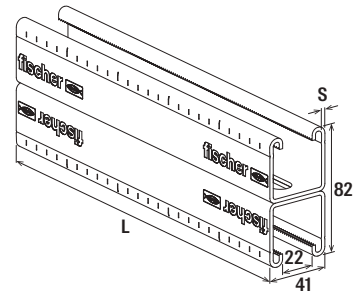
- Material: stainless steel A2 (material no. 1.4301)
- Material: stainless steel A4 (material no. 1.4404)



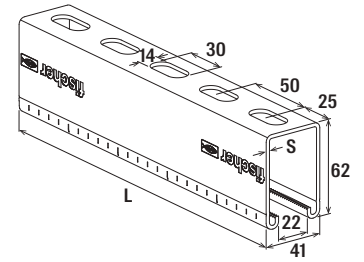
FUS 21



FUS 41



FUS 41D



FUS 62

Technical data

Item	Item no.	Fire test report	Length L [mm]	Thickness S [mm]	Sales unit [pcs]
FUS 21/2,0 A2 - 2 m	504466	-	2,000	2.0	1
FUS 21/2,0 A2 - 6 m	542735 ¹⁾	-	6,000	2.0	1
FUS 41/2,0 A2 - 2 m	504468	-	2,000	2.0	1
FUS 41/2,0 A2 - 6 m	542736 ¹⁾	-	6,000	2.0	1
FUS 41/2,5 A2 - 2 m	504470	Yes	2,000	2.5	1
FUS 41/2,5 A2 - 6 m	542737 ¹⁾	Yes	6,000	2.5	1
FUS 21/2,0 A4 - 2 m	504472	-	2,000	2.0	1
FUS 21/2,0 A4 - 6 m	542738 ¹⁾	-	6,000	2.0	1
FUS 41/2,0 A4 - 2 m	504474	-	2,000	2.0	1
FUS 41/2,0 A4 - 6 m	542739 ¹⁾	-	6,000	2.0	1
FUS 41/2,5 A4 - 2 m	504475	Yes	2,000	2.5	1
FUS 41/2,5 A4 - 6 m	542740 ¹⁾	Yes	6,000	2.5	1
FUS 41D/2,5 A4 - 6 m	562655	-	6,000	2.5	1
FUS 62/2,5 A4 - 6 m	557765	Yes	6,000	2.5	1

¹⁾ Delivery time on request.

For load information under fire exposure, see chapter Basic knowledge.

Loads

Item	Item no.	Profile weight [kg/m]	Channel cross section [cm ²]	Moment of inertia I _y [cm ⁴]	Moment of inertia I _z [cm ⁴]	Section modulus W _y [cm ³]	Section modulus W _z [cm ³]	Max. recommended static load for 1m length F _{rec} [kN]	Max. recommended static load for 2m length F _{rec} [kN]	Max. recommended static load for 3m length F _{rec} [kN]	Sales unit [pcs]
FUS 21/2,0 A2 - 2 m	504466	1.44	1.72	0.97	4.66	0.89	2.27	0.47	0.12	-	1
FUS 21/2,0 A2 - 6 m	542735 ¹⁾	1.44	1.72	0.97	4.66	0.89	2.27	0.47	0.12	0.05	1
FUS 41/2,0 A2 - 2 m	504468	2.06	2.52	5.33	7.69	2.58	3.75	1.58	0.64	-	1

¹⁾ Delivery time on request.

Loads

Item	Item no.	Profile weight	Channel cross section	Moment of inertia	Moment of inertia	Section modulus	Section modulus	Max. recommended static load for 1m length	Max. recommended static load for 2m length	Max. recommended static load for 3m length	Sales unit
		[kg/m]	[cm ²]	I_y [cm ⁴]	I_z [cm ⁴]	W_y [cm ³]	W_z [cm ³]	F_{rec} [kN]	F_{rec} [kN]	F_{rec} [kN]	
FUS 41/2,0 A2 - 6 m	542736 ¹⁾	2.06	2.52	5.33	7.69	2.58	3.75	1.58	0.64	0.28	1
FUS 41/2,5 A2 - 2 m	504470	2.45	3.00	6.00	8.99	2.85	4.38	1.74	0.72	–	1
FUS 41/2,5 A2 - 6 m	542737 ¹⁾	2.45	3.00	6.00	8.99	2.85	4.38	1.74	0.72	0.32	1
FUS 21/2,0 A4 - 2 m	504472	1.44	1.72	0.97	4.66	0.89	2.27	0.47	0.12	–	1
FUS 21/2,0 A4 - 6 m	542738 ¹⁾	1.44	1.72	0.97	4.66	0.89	2.27	0.47	0.12	0.05	1
FUS 41/2,0 A4 - 2 m	504474	2.06	2.52	5.33	7.69	2.58	3.75	1.65	0.64	–	1
FUS 41/2,0 A4 - 6 m	542739 ¹⁾	2.06	2.52	5.33	7.69	2.58	3.75	1.65	0.64	0.28	1
FUS 41/2,5 A4 - 2 m	504475	2.45	3.00	6.00	8.99	2.85	4.38	1.82	0.72	–	1
FUS 41/2,5 A4 - 6 m	542740 ¹⁾	2.45	3.00	6.00	8.99	2.85	4.38	1.82	0.72	0.32	1
FUS 41D/2,5 A4 - 6 m	562655	4.89	6.00	35.01	17.90	8.76	8.78	5.60	2.79	1.85	1
FUS 62/2,5 A4 - 6 m	557765	6.55	8.09	111.00	25.80	17.90	12.58	11.45	5.72	3.80	1

¹⁾ Delivery time on request.

Cover cap FEC

The form-flush cover cap, tailored to the FUS channel profiles for a safe termination



Applications

- Closing for channel FUS and cantilever arms FCA and large cantilever arms FCAM.

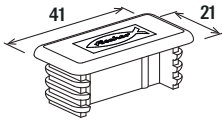
Advantages

- Suitable for channels FUS 21, FUS 41, FUS 62 and cantilever arms FCA and FCAM.

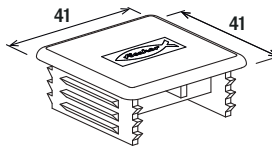
Properties

- Material: PE polyethylene, colour black

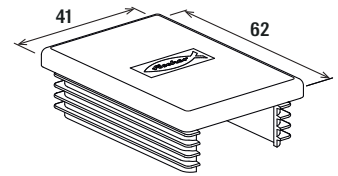
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FEC 21 B



FEC 41 B



FEC 62 B

Cover cap FEC

Item	Item no.	For profile	Material	Sales unit [pcs]
FEC 21 B	077357	41/21	Polyethylene, black	100
FEC 41 B	077355	41/41	Polyethylene, black	100
FEC 62 B	505551	41/62	Polyethylene, black	100

Channel connector PFUF OC A4

Construction element - Channel connector PFUF OC A4



Connector for installation grid



Longitudinal channel connection

12 Applications

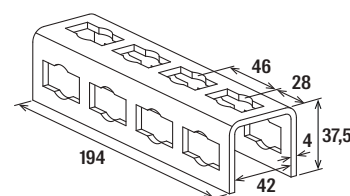
- Connection and precise alignment of channels.
- For indoor and outdoor applications and in environments with high stress to components due to corrosion.

Advantages

- The PFUF OC connector in combination with PFCN allows a simple and time-saving installation.

Properties

- Material: stainless steel A4 (material no. 1.4401)



PFUF OC

Technical data

Item	Item no.	Length L [mm]	Sales unit [pcs]
PFUF OC A4	562846	194	6

Socket wrench FSK

FSK socket wrench SW 17 long, the solution for tightening in the FUS mounting channels



Applications

- Installation of the fischer FUS channel system.
- Tightening anchor bolts and plugs.

Advantages

- The socket wrench FSK fits perfectly through the open side of the FUS mounting channel.
- The two snap-in holes between the impact wrench insert and ½" socket ensure increased connection accuracy.
- The long length of the socket wrench FSK allows it to be used for the FUS mounting channels 21, 41 and 62.

Properties

- Material: quenched and tempered steel 42CrMo4 according to EN 10083-3 (material no. 1.7225)
- Coating: black phosphatized

12

Technical data

Item	Item no.	Length L [mm]	Width across nut SW [mm]	For profile	Drive	Sales unit [pcs]
FSK Socket wrench SW17-1/2" long	563656	100	17	FUS 21, 41, 62	1/2" / SW17	1

Cantilever arm FCA A4

FUS profiles with welded base plate for direct mounting on the base material



Refrigerant pipe clamp on sliding element



Heavy pipe on cantilever

12 Applications

- Quick and easy installation of pipelines (e.g. along the wall)
- For indoor and outdoor application and in environments with high stress to components due to corrosion

Certificates

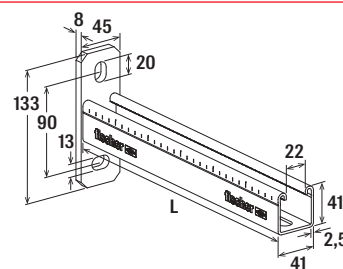


Advantages

- The fire inspection report in line with MLAR/EN13501 guarantees independently tested functional safety.
- The arm's solid base plate offers a secure hold for load-bearing construction.
- The base plate's long slots, which are at 90° to one another, allow the arm to be easily aligned.
- The stamped teeth in the channel gives the sliding nuts a secure hold for high shear loads, e.g. for vertical installation.

Properties

- Material: stainless steel A4 (material no. 1.4404)



FCA 41/2.5

Technical data

Item	Item no.	Fire test report	Profile	Length L [mm]	Sales unit [pcs]
FCA 41/2.5 A4 - 300	505487	Yes	41 / 2.5	300	1
FCA 41/2.5 A4 - 450	505488	Yes	41 / 2.5	450	1
FCA 41/2.5 A4 - 600	505489	Yes	41 / 2.5	600	1

For loads and weight of channels and cantilever arms see from pages 116 and 126.
For load information under fire exposure, see chapter Basic knowledge.

Channel connector FDCC A4

FDCC A4 channel connector - For easy preparation of FUS double channels



FUS double channel with channel connector

Applications

- Easy construction of double channels made from the FUS channel assortment.
- Suitable for FUS channels FUS 41 and FUS 62 with thickness 2,0 and 2,5 mm.
- The connection of two single channels is made with the channel connector inside the channel slots.
- Each double channel has to be equipped with an FDCC at both ends and additional FDCCs in the given installation distance as per load chart.
- For indoor and outdoor applications and in environments with high stress to components due to corrosion

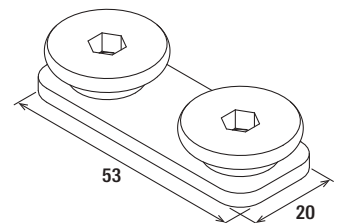
Advantages

- Easy connection of single channels backside to backside to build double channels.
- Simple solution to create individual double channels on job site.

Properties

- Material base plate: A4 stainless steel (material no. 1.4401)
- Material screw: A4 stainless steel (material no. 1.4401)

12

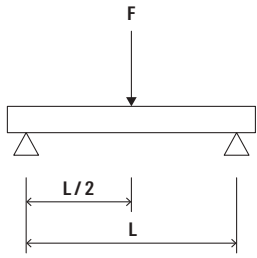


FDCC

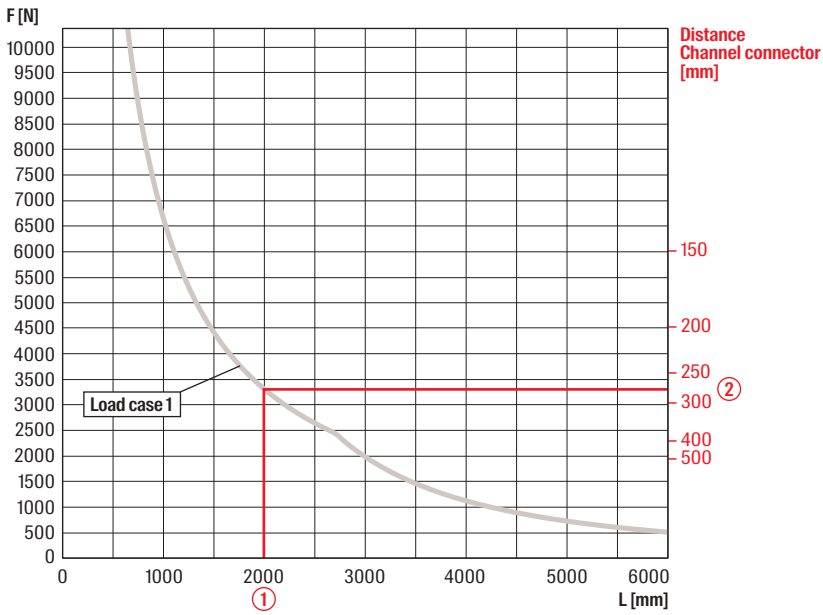
Technical data

Item	Item no.	Thread A	Drive	Tightening torque T_{inst} [Nm]	Sales unit [pcs]
FDCC A4	557376	M10	Hexagon socket 5 mm	25	100

Load case 1

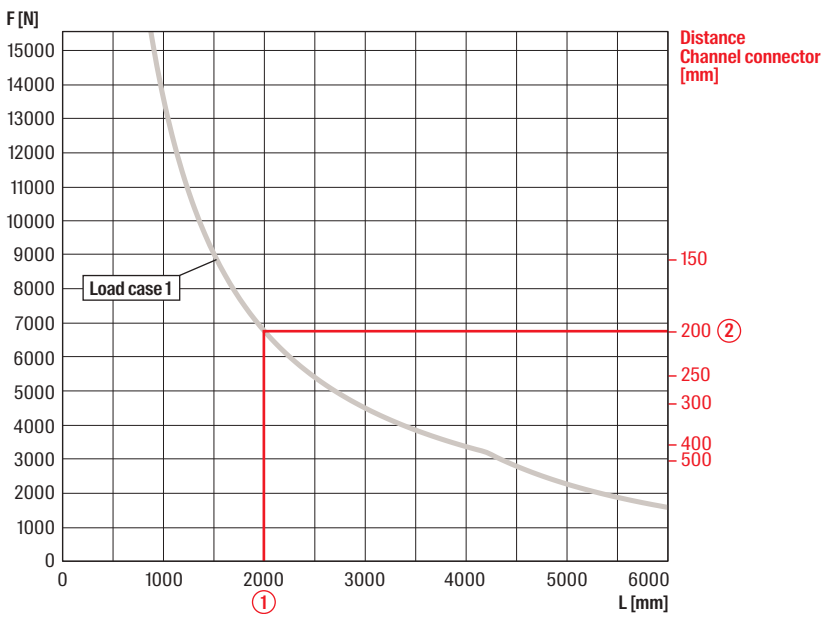


FUS 41D/2,0 - 2,5



- ① Length of channel, i.e. 2000 mm for loadcase 1 (single load centric)
- ② Distance of channel connector (for intermediate values use the lower value, i.e. 250 mm)

FUS 62D/2,5



- ① Length of channel, i.e. 2000 mm for loadcase 1 (single load centric)
- ② Distance of channel connector (for intermediate values use the lower value)

Push-through connector PFCN 41 A4

Push-through connector for the quickest and easiest connection of FUS profiles



Cross connection on channel



Cantilever with saddle flange

Applications

- Connection of FUS channels and construction elements by push-through principle.
- Universal fitting for all push-through connection elements and FUS profiles.
- For indoor and outdoor applications and in environments with high stress to components due to corrosion.

Advantages

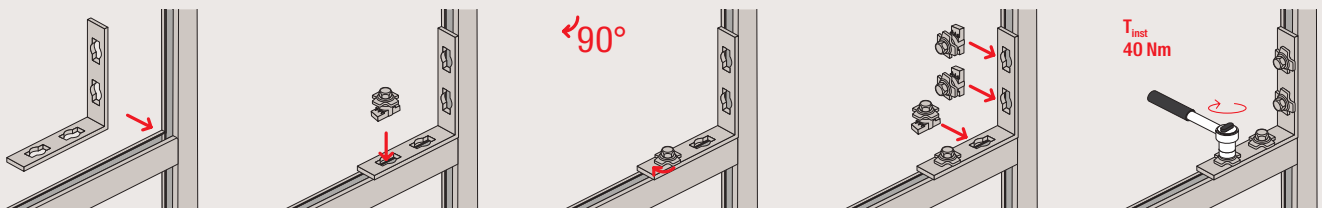
- The correct fit of the push-through connector and connection elements allows the quickest and easiest channel connection.
- The spring effect of the PFCN in set state guarantees a simple and precise positioning in the channel.
- The serration on the push-through connector provides a secure hold in the FUS channel.
- Installation by rotating 90° enables generally the post-installation in set channels.

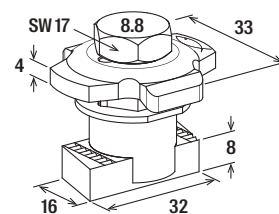
Properties

- Material cap: stainless steel A4 (material no. 1.4401)
- Material sliding nut: stainless steel A4 (material no. 1.4401)
- Material hexagon screw: stainless steel A4 (material no. 1.4401)
- Material plastic parts: polypropylene

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Installation PFCN

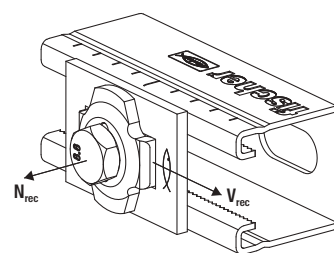




PFCN

Technical data

Item	Item no.	Thread A	Sales unit [pcs]
PFCN 41 A4	562662	M10	25



PFCN

Loads

Item	Item no.	Max. recommended tension load for FUS 2,0 mm N_{rec} [kN]	Max. recommended tension load for FUS 2,5 mm N_{rec} [kN]	Max. recommended shear load for FUS 2,0 mm V_{rec} [kN]	Max. recommended shear load for FUS 2,5 mm V_{rec} [kN]	Tightening torque for screw grade ≥ 8.8 T_{inst} [Nm]	Sales unit [pcs]
PFCN 41 A4	562662	5.0	7.0	4.5	5.0	40	25

Saddle flange PSF A4

Construction element - Saddle flange PSF A4



Pipe installation in escape route



Cantilever with saddle flange

Applications

- Stable construction of connections between channels and building structures for the push-through system
- For indoor and outdoor applications and in environments with high stress to components due to corrosion

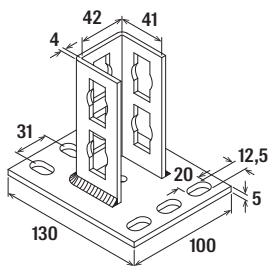
Advantages

- The perfect-fit saddle allows a simple installation by inserting the mounting channels.
- The saddle flange's stable design offers a secure hold for a load-bearing construction.

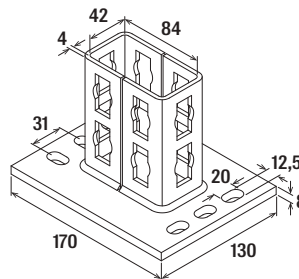
Properties

- Material: stainless steel A4 (material no 1.4401)

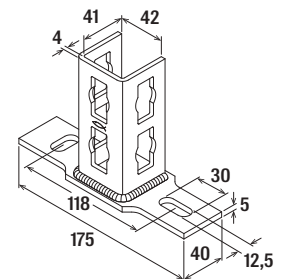
12



PSF 41



PSF 82



PSFQ 41

Technical data

Item	Item no.	For profile	Sales unit [pcs]
PSF 41 A4	562848	21D, 41, 62	10
PSF 82 A4	562849	41	5
PSFQ 41 A4	562847	41	10

See push-through connector PFCN 41 A4 for loads.

Universal bracket PUWS A4

Construction element - Universal bracket PUWS A4



3D-frame constructions

12

Applications

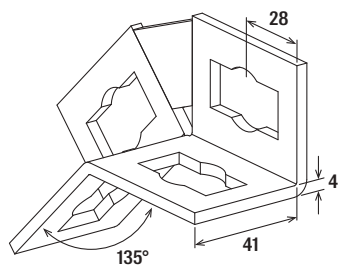
- Reinforcement of supporting structures for the push-through system.
- For indoor and outdoor applications and in environments with high stress to components due to corrosion.

Advantages

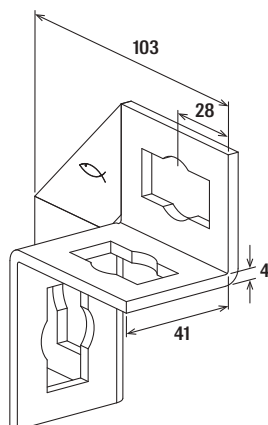
- The universal brackets for the connection of FUS channels gives a supporting structure, great stability and safety (we recommend using in pairs).

Properties

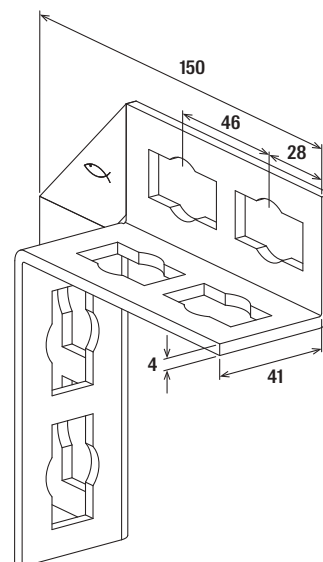
- Material: stainless steel A4 (material no. 1.4401)



PUWS 2 x 2/135°



PUWS 2 x 2



PUWS 4 x 4

Technical data

Item	Item no.		Sales unit [pcs]
PUWS 2 x 2/135° A4	562835		10
PUWS 2 x 2 A4	562833		10
PUWS 4 x 4 A4	562834		8

See push-through connector PFCN 41 A4 for loads.

Angle bracket PWK A4

Construction element - Angle bracket PWK A4



Solid frame construction



Solid frame construction

12 Applications

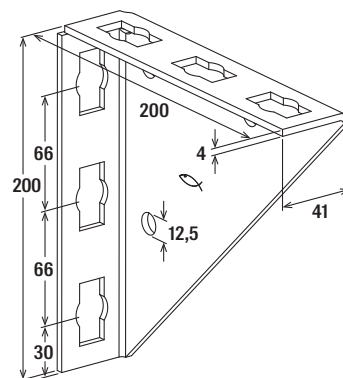
- Reinforcement in the push-through system and for lateral fixing to the substrate.
- For indoor and outdoor applications and in environments with high stress to components due to corrosion.

Advantages

- The stable angle bracket ensures a supporting structure with a very high level of stability and safety.

Properties

- Material: stainless steel A4 (material no. 1.4401)



PWK 200

Technical data

Item	Item no.	Sales unit
PWK 200/200 A4	562837	[pcs] 10

See push-through connector PFCN 41 A4 for loads.

Variable bracket PVB A4

Construction element – Variable bracket PVB A4



Supported channel



Massive bracing of cantilever arm

Applications

- Variable angular positioning of profile support in the push-through system.
- Bracket for installation with FUS channels from 0° to 180°.
- For indoor and outdoor applications and in environments with high stress to components due to corrosion.

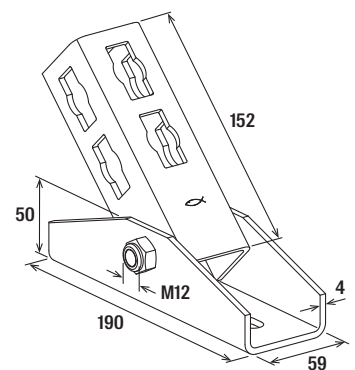
Advantages

- The design of the variable bracket PVB enables the fixation of mounting channels at an angle of 0° to 180°.
- The holes in the connecting element make it compatible with the push-through connector PFCN.
- The punched holes in the base plate allow the direct fixing onto a wall, ceiling or onto a mounting channel by screw or anchor.

Properties

- Material: stainless steel A4 (material no. 1.4401)

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PVB

Technical data

Item	Item no.	Sales unit
PVB A4	562838	[pcs] 5

See push-through connector PFCN 41 A4 for loads.

Bracing elements PSAE A4

Construction elements – Bracing elements PSAE 300 A4 and PSAE 500 A4



Supported channel

12 Applications

- Elements for stable cantilever constructions made of FUS channels or FCA cantilever arms with push-through connector PFCN.
- For indoor and outdoor applications and in environments with high stress to components due to corrosion.

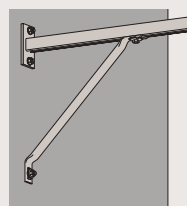
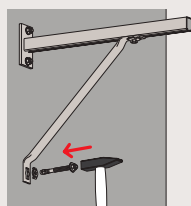
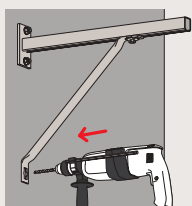
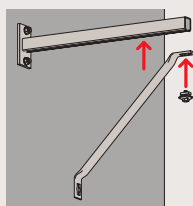
Advantages

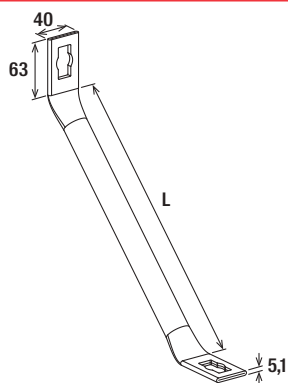
- The stable bracing element PSAE gives the supporting structure very high stability and safety.
- The holes in the base plate of the element make it compatible with the push-through connector PFCN.
- An additional PU-washer allows for fixing of elements with formholes directly onto a wall or ceiling by anchor or screw.

Properties

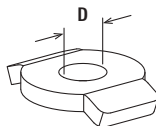
- Material: stainless steel A4 (material no. 1.4401)

Installation PSAE

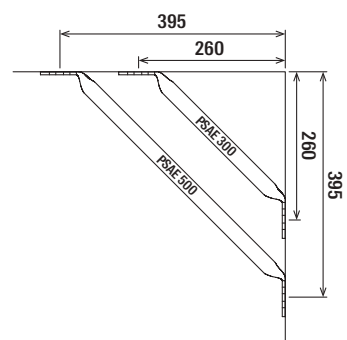




PSAE



PU



PSAE 300 and PSAE 500

Technical data

Item	Item no.	Length L [mm]	Hole-Ø D [mm]	Sales unit [pcs]
PSAE 300 A4	562839	300	-	10
PSAE 500 A4	562840	500	-	10
PU 10.5 A4	562841	-	10.5	20
PU 12.5 A4	562842	-	12.5	20

See push-through connector PFCN 41 A4 for loads.

Bracket PFFF A4

Construction elements - Brackets PFFF A4



Waste water pipe

12 Applications

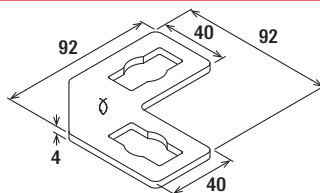
- Arrangement of simple channel constructions in the push-through system
- For indoor and outdoor applications and in environments with high stress to components due to corrosion

Advantages

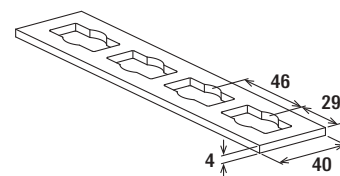
- The holes in the connecting elements make them compatible with the push-through connector PFCN 41.
- Simple creation of channel structures in conjunction with FUS channels and PFCN 41 .
- Quick installation by rotating the PFCN 41 in the channel by 90° clockwise.

Properties

- Material: stainless steel A4 (material no. 1.4401)



PFFF 2L



PFFF 4L

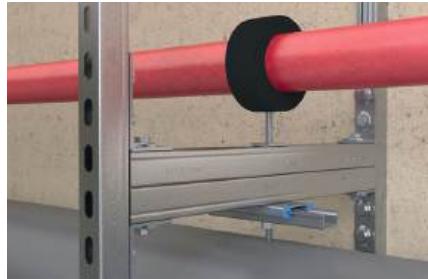
Technical data

Item	Item no.	Sales unit
		[pcs]
PFFF 2L A4	562827	20
PFFF 4L A4	562828	25

See push-through connector PFCN 41 A4 for loads.

Bracket PFAF A4

Construction elements - Brackets PFAF A4



Frame constructions



Lightweight installation on cantilever

Applications

- Arrangement of simple channel constructions in the push-through system.
- For indoor and outdoor applications and in environments with high stress to components due to corrosion.

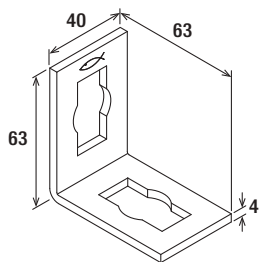
Advantages

- The holes in the connecting elements make them compatible with the push-through connector PFCN.
- Simple creation of channel structures in conjunction with FUS channels and PFCN 41.
- Quick installation by rotating the PFCN 41 in the channel by 90° clockwise.

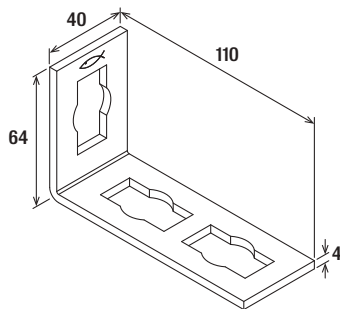
Properties

- Material: stainless steel A4 (material no. 1.4401)

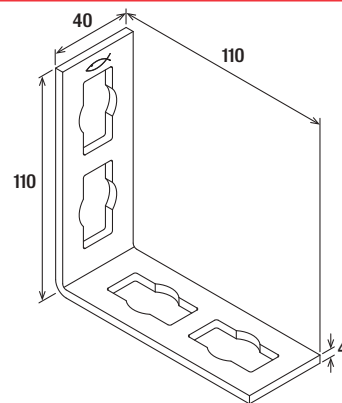
12



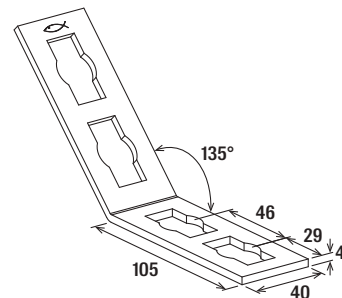
PFAF 2



PFAF 3



PFAF 4



PFAF 4/135°

Technical data

Item	Item no.	Sales unit
		[pcs]
PFAF 2 A4	562829	25
PFAF 3 A4	562830	25
PFAF 4/135° A4	562831	20
PFAF 4 A4	562832	25

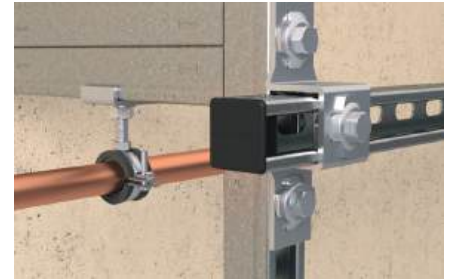
See push-through connector PFCN 41 A4 for loads.

Bracket PFUF 41 A4

Construction elements - Bracket PFUF A4



Cross connection on channel



Cross connection on channel

Applications

- Connecting element for the production of multi-dimensional constructions with FUS channels using push-through connector PFCN.
- For indoor and outdoor applications and in environments with high stress to components due to corrosion.

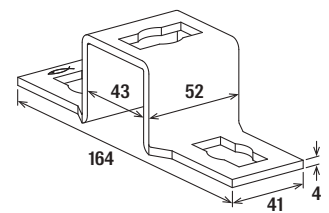
Advantages

- The various shapes of the connecting elements offer flexibility during the installation of channel constructions.
- The holes in the connecting elements make them compatible with the push-through channel nut PFCN.
- Simple creation of channel structures in conjunction with FUS channels and PFCN 41.
- Quick installation by rotating the PFCN 41 in the channel by 90° clockwise.

Properties

- Material: stainless steel A4 (material no. 1.4401)

12



PFUF 41

Technical data

Item	Item no.	Sales unit
PFUF 41 A4	562836	[pcs] 10

See push-through connector PFCN 41 A4 for loads.

Bracket PFUF D A4

Construction elements - Brackets PFUF 2D A4, 3D A4 and 4D A4



Frame constructions



Frame constructions

12

Applications

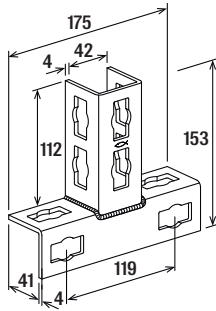
- Connecting elements for multidimensional constructions with FUS channels connected by the push-through connector PFCN.
- For indoor and outdoor applications and in environments with high stress to components due to corrosion

Advantages

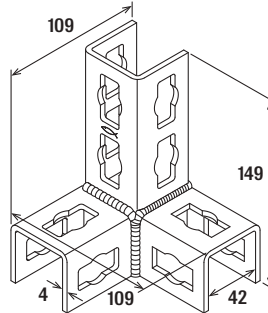
- The multidimensional PFUF A4 construction elements enable multidimensional constructions in a very short time.
- The holes in the construction elements make them compatible with the push-through connector PFCN.
- The different shapes of the construction elements generate a high flexibility for channel constructions.

Properties

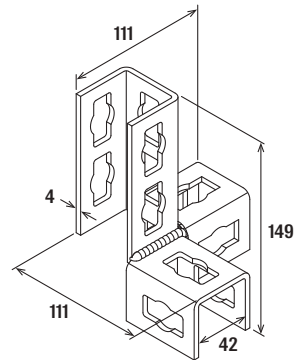
- Material: stainless steel A4 (material no. 1.4401)



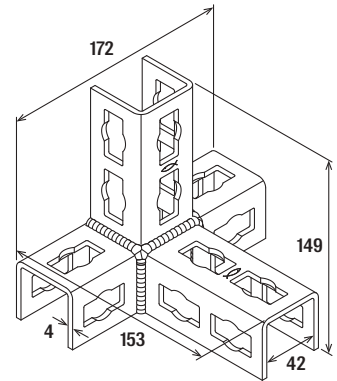
PFUF 2D



PFUF 3DL



PFUF 3DR



PFUF 4D

12

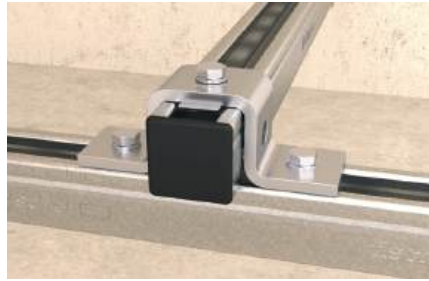
Technical data

Item	Item no.	Sales unit
		[pcs]
PFUF 2D A4	563150	10
PFUF 3DL A4	562843	10
PFUF 3DR A4	562844	10
PFUF 4D A4	562845	10

See push-through connector PFCN 41 A4 for loads.

Channel nut FCN Clix P A4

Channel nut for quick and easy fixing in FUS profiles



Cross connection

12

Applications

- Connection of FUS channels and fixtures.
- For indoor and outdoor applications and environments with high stress to components due to corrosion.

Certificates



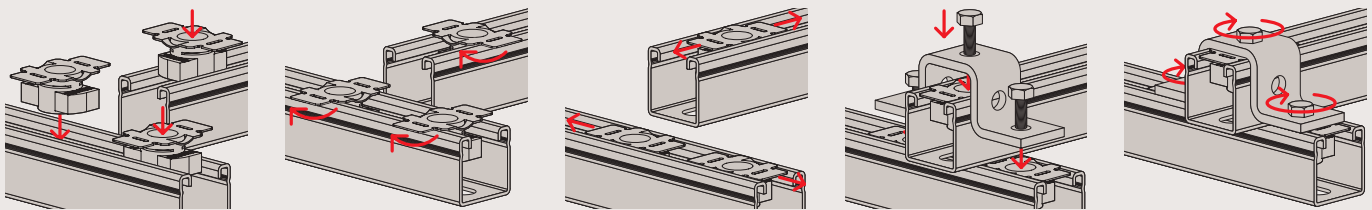
Advantages

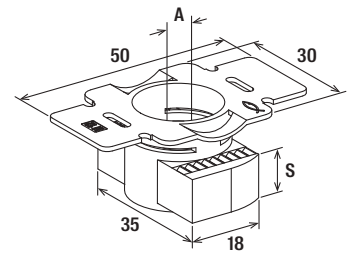
- The sliding nut design allows for quick and easy setting in the channel.
- The spring effect of the plastic clasp guarantees simple and precise positioning in the channel.
- The FCN Clix P's flat plastic mounting with wings offers a good hold and allows the fixtures to be conveniently mounted.
- The serration on the sliding nut provides a secure hold in the FUS channel.
- Installation by rotating 90° enables post-installation in installed channel.

Properties

- Material stainless steel A4 (material no. 1.4401)
- Material plastic: nylon PA 6.

Installation FCN Clix P

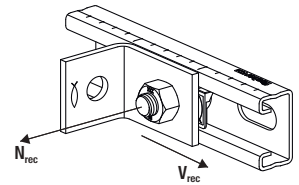




FCN Clix P

Technical data

Item	Item no.	Thread A	Thickness S [mm]	Sales unit [pcs]
FCN Clix P 8 A4	559754	M8	6.0	25
FCN Clix P 10 A4	559755	M10	8.0	25
FCN Clix P 12 A4	559756	M12	9.5	25



FCN Clix P

Loads

Item	Item no.	Max. recommended tension load for FUS 2,0 mm	Max. recommended tension load for FUS 2,5 mm	Max. recommended shear load for FUS 2,0 mm	Max. recommended shear load for FUS 2,5 mm	Tightening torque T_{inst} [Nm]	Sales unit [pcs]
		N_{rec} [kN]	N_{rec} [kN]	V_{rec} [kN]	V_{rec} [kN]		
FCN Clix P 8 A4	559754	4.0	4.0	4.0	4.0	20	25
FCN Clix P 10 A4	559755	5.0	8.0	5.0	8.0	40	25
FCN Clix P 12 A4	559756	5.0	8.0	5.0	8.0	50	25

Channel nut FCN Clix M A4

Channel nut for quick and easy fixing in FUS profiles



Connection on channel

12 Applications

- Connection of pipe clamps to FUS channel under the use of threaded rods.
- For indoor and outdoor applications and environments with high stress to components due to corrosion.

Advantages

- The sliding nut design enables a quick and easy setting in the channel.
- The serration on the sliding nut provides a secure hold in the FUS channel.
- Installation by rotating 90° enables post-installation in installed channel.

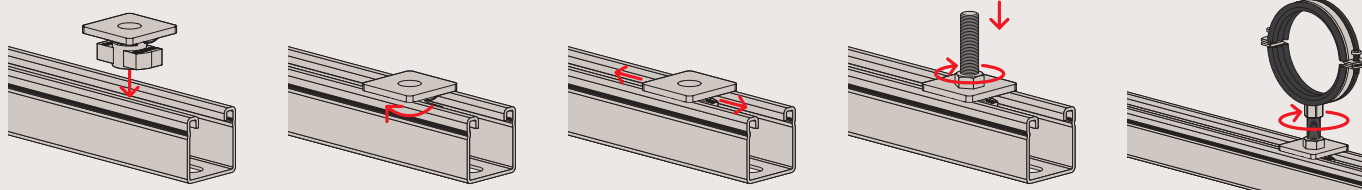
Properties

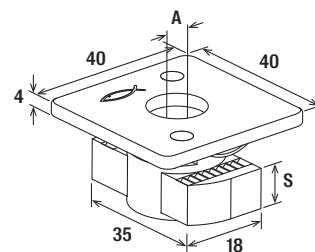
- Material: stainless steel A4 (material no. 1.4401)
- Material plastic: Nylon PA6

Certificates



Installation FCN Clix M

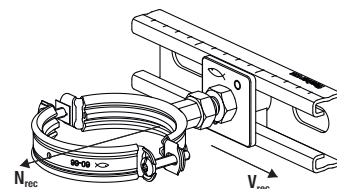




FCN Clix M

Technical data

Item	Item no.	Thread A	Thickness S [mm]	Sales unit [pcs]
FCN Clix M 8 A4	559752	M8	6.0	25
FCN Clix M 10 A4	559753	M10	8.0	25
FCN Clix M 12 A4	562663	M12	9.5	25



FCN Clix M

12

Loads

Item	Item no.	Max. recommended tension load for FUS 2,0 mm	Max. recommended tension load for FUS 2,5 mm	Tightening torque	Sales unit [pcs]
		N_{rec} [kN]	N_{rec} [kN]	T_{inst} [Nm]	
FCN Clix M 8 A4	559752	4.0	4.0	10	25
FCN Clix M 10 A4	559753	5.0	8.0	15	25
FCN Clix M 12 A4	562663	5.0	8.0	20	25

Channel nut FCN A4

Connector - Channel nut FCN A4



12 Applications

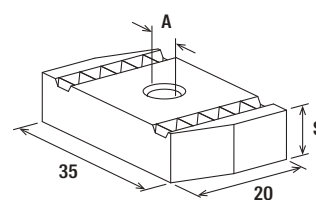
- Simple hammer-head nut for installation in FUS channels.
- The FCN is suitable for the connection of different fixtures and pipe clamps with the channel.
- For indoor and outdoor applications and in environments with high stress to components due to corrosion.

Advantages

- The serration on the sliding nut provides a secure hold in the FUS channel.

Properties

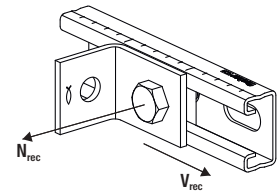
- Material: stainless steel A4 (material no. 1.4401)



FCN

Technical data

Item	Item no.	Thread A	Thickness S [mm]	Sales unit [pcs]
FCN 16 A4	562664	M16	12.0	50



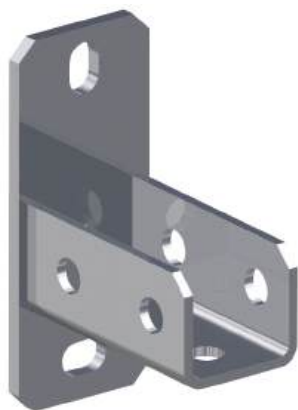
FCN

Loads

Item	Item no.	Max. recommended tension load for FUS 2,0 mm N_{rec} [kN]	Max. recommended tension load for FUS 2,5 mm N_{rec} [kN]	Max. recommended shear load for FUS 2,0/2,5 mm V_{rec} [kN]	Tightening torque for screw grade ≥ 8.8 T_{inst} [Nm]	Sales unit [pcs]
FCN 16 A4	562664	5.0	8.0	3.0	50	50

Saddle flange SF L 41 A4

Construction element - Saddle flange SF L 41 A4



Pipe installation in escape route

12 Applications

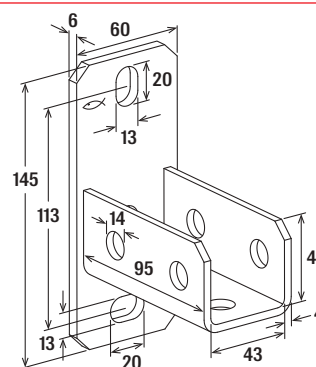
- For solid connections between the massive profile and building structures.
- For indoor and outdoor applications and in environments with high stress to components due to corrosion.

Advantages

- The perfect-fit saddle of the SF enables a simple installation by inserting the channel.
- The saddle flange's stable design offers a secure hold for a load-bearing construction.
- Fire resistance classification R120 & German model pipeline system guideline MLAR R30.

Properties

- Material: stainless steel A4 (material no. 1.4401) acc. DIN EN 10088-1



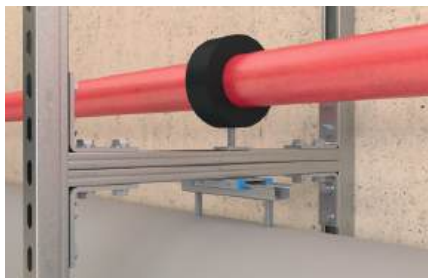
SFL 41

Technical data

Item	Item no.	Fire test report	For profile	Sales unit
SFL 41 A4	504522	Yes	FUS 21 + FUS 41	[pcs] 10

Bracket FAF A4

Construction elements - Mounting bracket FAF A4



Frame constructions

Applications

- Connecting elements for the joining or strengthening of simple channel constructions.
- For indoor and outdoor applications and in environments with high stress to components due to corrosion.

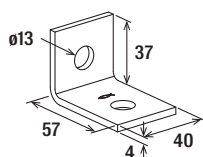
Advantages

- The various shapes of the connectors offer flexibility when it comes to the installation of channel constructions.
- The holes in the connectors guarantee a system fit with the FCN Clix P.

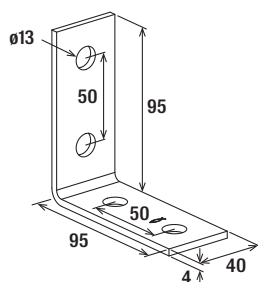
Properties

- Material: stainless steel A4 (material no. 1.4401) acc. DIN EN 10088-1

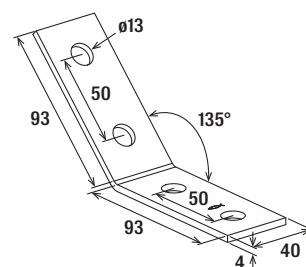
12



FAF 2



FAF 4



FAF 4/135°

Technical data

Item	Item no.	Sales unit
		[pcs]
FAF 2 A4	547512	25
FAF 4 A4	547513	25
FAF 4/135° A4	547514	25

Variable bracket VB A4

Construction element – Variable bracket VB A4



Massive bracing of cantilever arm

12 Applications

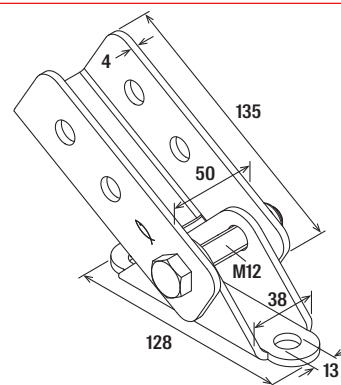
- Variable bracket to build up and strengthen supporting structures of FUS channel constructions with an angle from 0° to 180°.
- For indoor and outdoor applications and in environments with high stress to components due to corrosion

Advantages

- The design of the variable bracket VB enables the fixation of mounting channels at an angle of 0° to 180°.
- Due to the perforations on all sides of the VB, channels can be mounted with the channel opening facing downwards or laterally.
- The punched holes in the base plate allow the direct fixing onto a wall, ceiling or onto a mounting channel.

Properties

- Material: stainless steel A4 (material no. 1.4401)



VB

Technical data

Item	Item no.	Sales unit
VB A4	563574	[pcs] 5

See channel nut FCN Clix P A4 for loads.

Channel washer HK 41 A4

Connector - Channel washer HK 41 A4



Channel installation at ceiling

Applications

- The channel washer HK is used for stable connections and to strengthen the FUS profile for a fixing to the substrate.
- For indoor and outdoor applications and in environments with high stress to components due to corrosion.

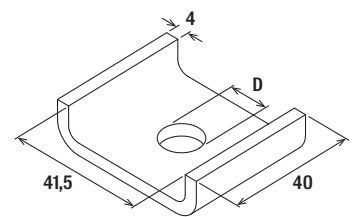
Advantages

- Perfect connection with the FUS channel thanks to laterally curved contours.
- The shape of the channel washer makes the push-through installations of channel profiles quick and easy.
- Fire resistance classification R120 & German model pipeline system guideline MLAR R30.

Properties

- Material: stainless steel A4 (material no 1.4401) acc. DIN EN 10088-1

12



HK 41

Technical data

Item	Item no.	Fire test report	For profile	Hole-Ø D [mm]	Sales unit [pcs]
HK 41 12.5 - A4	559750	Yes	all FUS channels	12.5	25
HK 41 17 - A4	562665	No	all FUS channels	17	25

Beam clamp TKR A4

Clamp for fixing of profiles to steel girders



12 Applications

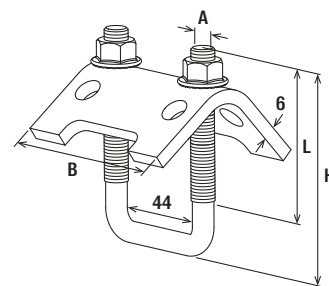
- Fixing to steel girders requires two clamps per connection.
- For indoor and outdoor applications and in environments with high stress to components due to corrosion.

Advantages

- The design of the beam clamp allows fixing without drilling or welding.
- The various lengths of the beam clamp enable the fixing on most standard beams.
- The shape of the beam clamp allows the simple adjustment of the channel connection.

Properties

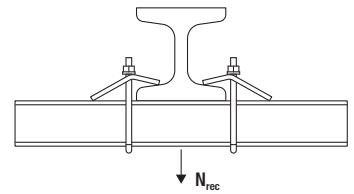
- Material: stainless steel A4 (material no 1.4401) acc. DIN EN 10088-3



TKR

Technical data

Item	Item no.	For profile	Sales unit [pcs]
TKR 21-42 A4	559751	FUS 21 + FUS 21D + FUS 41	10
TKR 82 A4	562666	FUS 62 + FUS 41D	10



TKR

Loads

Item	Item no.	Max. recom. static load (centr. tension) N_{rec} [kN]	Tightening torque T_{inst} [Nm]	Max. clamping range girders [mm]	Sales unit [pcs]
TKR 21-42 A4	559751	10.00	20	25	10
TKR 82 A4	562666	10.00	20	25	10

Beam clamp TKL A4

Clamp hanger TKL - the easy fixing solution without welding and drilling



Heavy drainage pipe on beam clamp

12 Applications

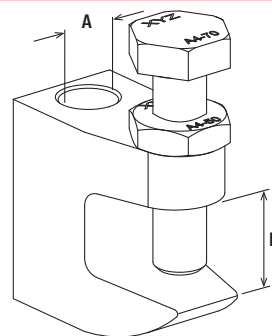
- Clamp hangers allow for simple fixing by clamping direct to steel girders.
- For indoor and outdoor applications and in environments with high stress to components due to corrosion.

Advantages

- The TKL design with its clamping screw allows for fixing to steel girders without the need for welding and drilling.
- The design of the clamping screw prevents it from slipping from the steel girder.
- The solid TKL design guarantees a high load-bearing capacity.
- The TKL with through-hole allows for height adjustment after installation.

Properties

- Material TKL: stainless steel A4 (material no. 1.4401 / AISI316) acc. to EN 10088-3
- Material bolt: stainless steel A4 acc. to DIN 933 with cup point (CP) acc. to EN ISO 4573
- Material nut: stainless steel A4 acc. to DIN 439



TKL

Technical data

Item	Item no.	Clamping range D [mm]	Thread A	Max. recom. static load (centr. tension) N_{rec} [kN]	Sales unit [pcs]
TKL 09 A4/AISI316	564395	0 - 18	Ø 9	1.20	50
TKL 011 A4/AISI316	564396	0 - 20	Ø 11	2.50	50
TKL 013 A4/AISI316	564397	0 - 26	Ø 13	3.50	50

Beam clamp TKLS A4

Clamp hangers for easy fixing to steel girders with just one tool



Applications

- All kind of fixings by threaded rods to steel beams with sloping flange plate up to 14%.
- Retaining straps SS-TKL are required for VdS equipment over \varnothing 65 mm.
- For indoor and outdoor applications and in environments with high stress to components due to corrosion.

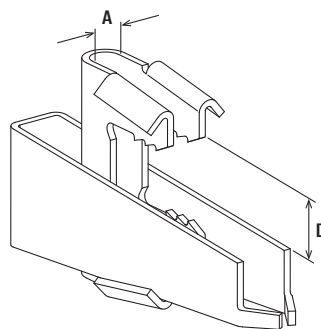
Advantages

- The TKLS design with hammering wedge allows fixing to steel beams without the need of welding and drilling.
- The teeth of the TKLS effectively prevent from slipping off the steel beam.
- VdS and FM approval guarantees objectively tested functional safety.
- The TKLS made of steel guarantees highest load-bearing capacity.
- The TKLS allows pre-assembling of threaded rods and for retrospective height adjustment.

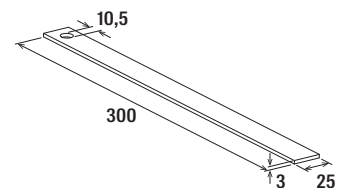
Properties

- Material: stainless steel A4 (material no. 1.4404 / AISI316L) acc. to EN 10088-3

12



TKLS



SS-TKLS

Technical data

Item	Item no.	FM approval	VdS approval	Hole- \varnothing A [mm]	Clamping range D [mm]	Max. recom. static load (centr. tension) N_{rec} [kN]	Max. recom. pipe- \varnothing acc. VDS CEA 4001	Sales unit [pcs]
TKLS \varnothing 11 A4	564391	Yes	Yes	11	8 - 20	3.50	> DN 50 \leq DN 100	25
SS-TKLS M10 A4/AISI316	564399	-	Yes	-	-	-	-	25

Threaded rod G A2/A4

Universal threaded rod for fixing pipes and channels

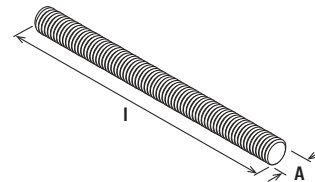


12 Applications

- For indoor and outdoor applications and in environments with high stress to components due to corrosion.
- A2: not suitable for use in environments containing chlorine.

Properties

- Material: stainless steel A2: material no. 1.4301
- Material: stainless steel A4: material no. 1.4401



G

Technical data

Item	Item no.	Length l [mm]	Thread A	Sales unit [pcs]
G M8 x 1000 A2	077644	1,000	M8	5
G M10 x 1000 A2	065173	1,000	M10	5
G M8 x 1000 A4	077645	1,000	M8	5
G M10 x 1000 A4	065174	1,000	M10	5
G M12 x 2000 A4	563016	2,000	M12	5
G M16 x 2000 A4	563017	2,000	M16	5

Threaded stud GS A4

Universal threaded pin for mounting pipes



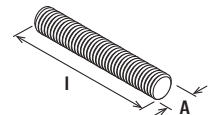
Applications

- For indoor and outdoor applications and in environments with high stress to components due to corrosion.

Properties

- Material: stainless steel A4 (material no. 1.4401) acc. to DIN EN 10088-1

12



GS

Technical data

Item	Item no.	Length l [mm]	Thread A	Sales unit [pcs]
GS M8 x 40 A4	559698	40	M8	50
GS M8 x 60 A4	559699	60	M8	50
GS M10 x 40 A4	559700	40	M10	50
GS M10 x 60 A4	559701	60	M10	50

Hexagonal screw SKS A4

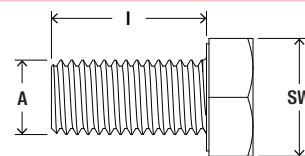


12 Applications

- For indoor and outdoor applications and in environments with high stress to components due to corrosion.

Properties

- Material: stainless steel A4 (material no. 1.4401). Property class: min. 70



SKS

Technical data

Item	Item no.	Thread A	Length I [mm]	Width across nut SW [mm]	Sales unit [pcs]
SKS M10 x 16 A4	570686	M10	16	17	200
SKS M10 x 25 A4	570687	M10	25	17	200
SKS M10 x 30 A4	559704	M10	30	17	50
SKS M12 x 20 A4	570688	M12	20	19	100
SKS M12 x 25 A4	570689	M12	25	19	50
SKS M12 x 30 A4	559705	M12	30	19	50

Washer U A4

Washer for fischer installation system



Applications

- For indoor and outdoor applications and in environments with high stress to components due to corrosion.

Properties

- Material: stainless steel A4 (material no. 1.4401, alternatively 1.4571) acc. to DIN EN 10028-7

12

Technical data

Item	Item no.	Thickness S [mm]	External- ϕ d [mm]	Hole- ϕ D [mm]	Sales unit [pcs]
U 8 x 28 A4	505542	2.0	28	8.4	100
U 8 x 40 A4	505543	3.0	40	8.4	100
U 10 x 30 A4	505544	2.0	30	10.5	100
U 10 x 40 A4	505545	3.0	40	10.5	100
U 12 x 24 A4	505546	2.0	24	12.5	100
U 12 x 40 A4	563020	3.0	40	13	50
U 16 x 30 A4	563021	2.0	30	17	50
U 16 x 40 A4	563022	3.0	40	17	50

Hexagonal nut MU A4

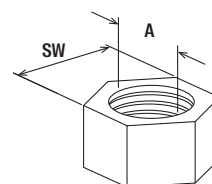


12 Applications

- For indoor and outdoor applications and in environments with high stress to components due to corrosion.

Properties

- Material: stainless steel A4, acc. to DIN EN ISO 3506-2
- Property class: min. 50, acc. to DIN EN ISO 3506-2



MU

Technical data

Item	Item no.	Thread A	Width across nut SW [mm]	Sales unit [pcs]
MU M8 A4	559702	M8	13	50
MU M10 A4	559703	M10	17	50
MU M12 A4	563018	M12	19	50
MU M16 A4	563019	M16	24	50

Hexagonal connector VM A4

Extension connector for connecting threaded rods



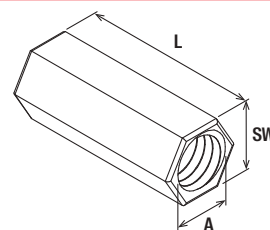
Applications

- For indoor and outdoor applications and in environments with high stress to components due to corrosion.

Properties

- Material: stainless steel A4 (material no. 1.4404).

12



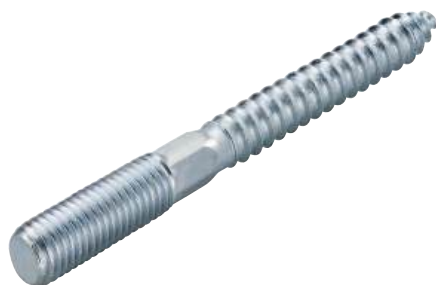
VM

Technical data

Item	Item no.	Length L [mm]	Thread A	Sales unit [pcs]
VM M8 A4	559706	30	M8	50
VM M10 A4	559707	30	M10	50

Stud screw STS A2/A4

Stud screw STS for the direct mounting of pipe clamps to the substrate



12 Applications

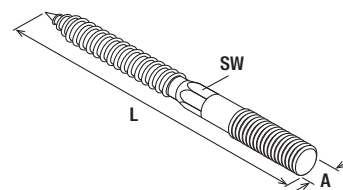
- Stud screw for easy fastening of pipe clamps directly to the substrate by adding an adequate plug.
- Direct connection to wooden substrates without dowels by means of wooden thread.
- For indoor and outdoor applications and in environments with high stress to components due to corrosion.
- STS A2: not suitable for use in environments containing chlorine.

Advantages

- Fixing with a Nylon plug to brick or direct into timber construction is simple with the integrated hexagon.
- Different thread lengths and diameters allow a wide range of applications.

Properties

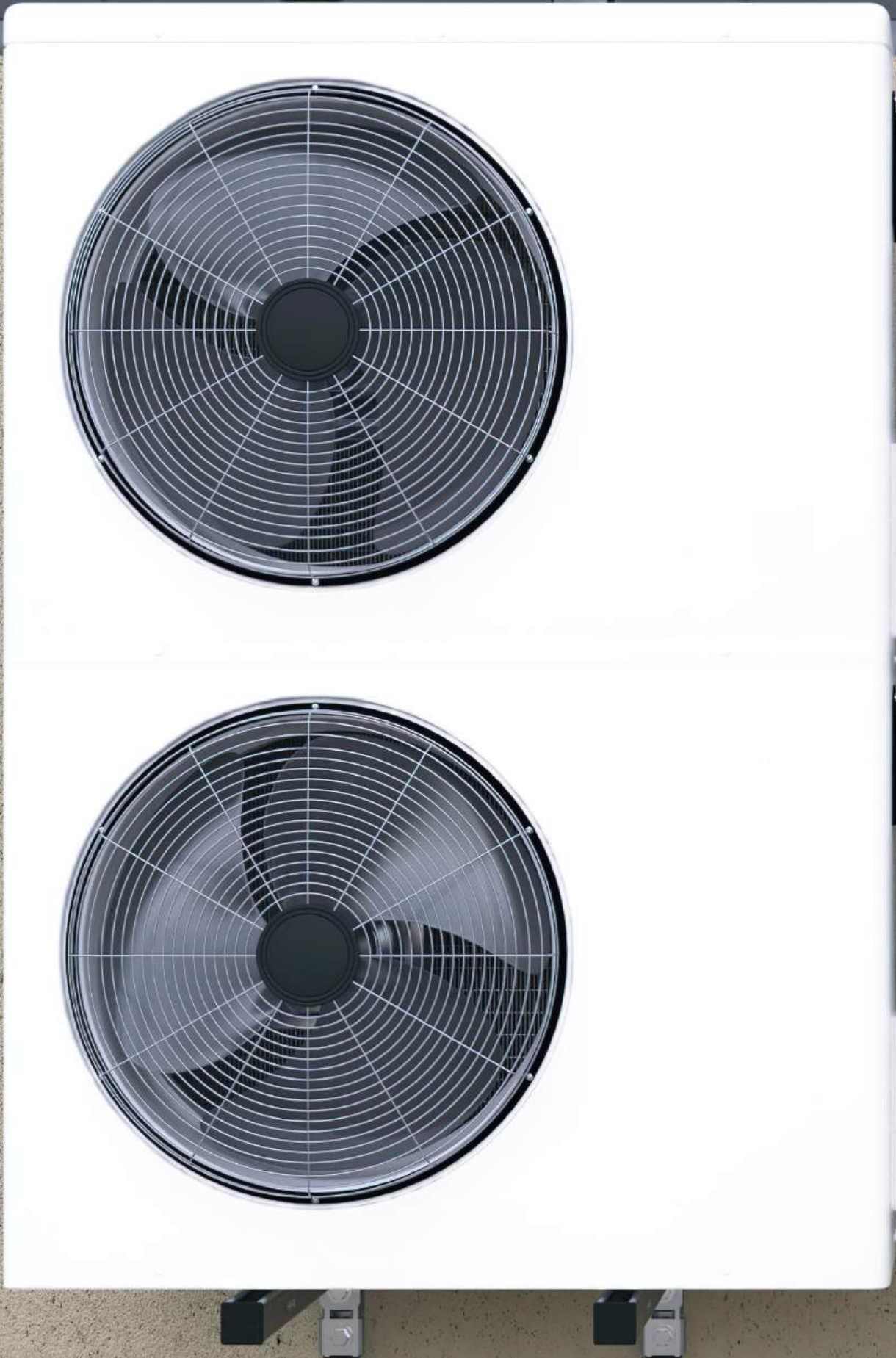
- Material: stainless steel A2 (material no. 1.4301), acc. to DIN EN 10088-1
- Material: stainless steel A4 (material no. 1.4401), acc. to DIN EN 10088-1



STS

Technical data

Item	Item no.	Thread A	Length L [mm]	Width across nut SW [mm]	Sales unit [pcs]
STS 8 x 80 A2	065132	M8	80	6	100
STS 8 x 100 A2	077643	M8	100	6	100
STS 10 x 100 A2	065153	M10	100	8	100
STS 8 x 120 A2	065169	M8	120	6	100
STS 8 x 100 A4	077715	M8	100	6	100
STS 10 x 100 A4	077716	M10	100	8	100



13

Air conditioner fixings

Air conditioner fixing MCE	486	
Air conditioner fixing KSU	488	

Air conditioner fixing MCE

The complete kit for air conditioner fixing on walls



Air conditioner on the outer wall

Applications

- Universal fixing for air conditioners
- MCE Klima Klik - air conditioner fixing onto walls with max. fixing distance of 760 mm on the horizontal channel
- Please consider: load bearing capacity of the wall and the quality of the substrate

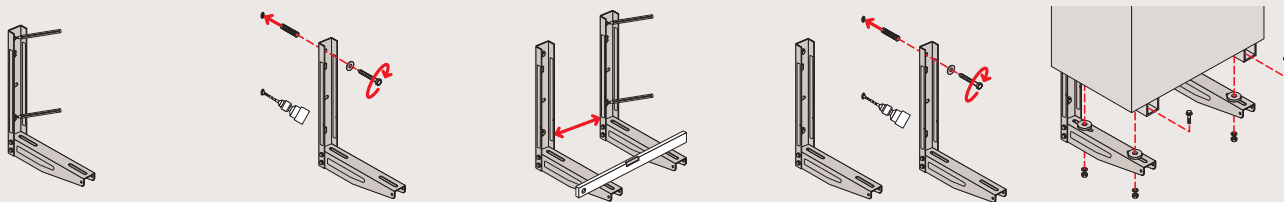
Advantages

- The complete kit including anti vibration damper, plugs and screws offers an optimised installation security.
- The bracket with quick snap (Klik) simplifies and shortens the installation.
- The horizontal channel of the MCE Klima Klik allows a flexible adjustment of the brackets and simplifies the installation additionally.
- The MCE Klima Klik horizontal channel with included horizontal level tool enables the adjustment without additional tools.

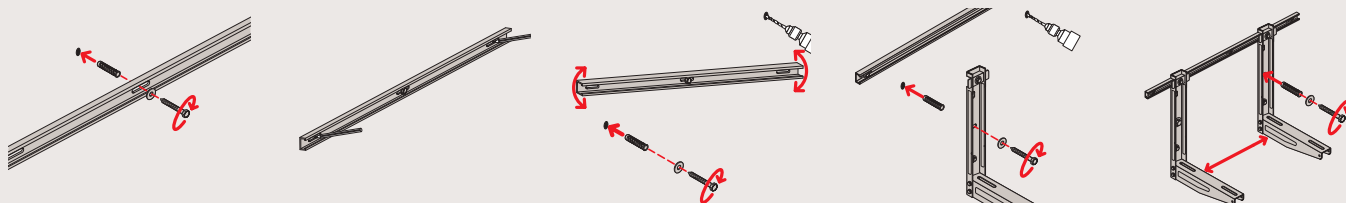
Properties

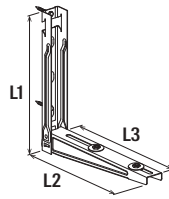
- Material: steel
- Coating: powder coating
- Colour: RAL 9002

Installation Klima Easy Klik

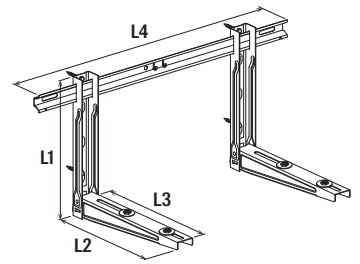


Installation Klima Klik 420





Klima Easy Klik



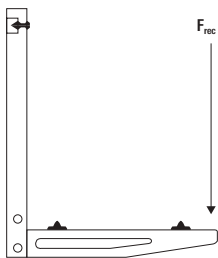
Klima Klik 420

Technical data

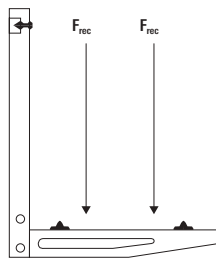
Item	Item no.	Length		Length		Max. recommended static load load case 1 F_{rec} [kN]	Max. recommended static load load case 2 F_{rec} [kN]	Sales unit [pcs]
		L1 [mm]	L2 [mm]	L3 [mm]	L4 [mm]			
KLIMA EASY KLIK	521760	400	420	380	–	1.00	1.00	1
KLIMA KLIK 420	521761	400	420	380	780	1.00	1.00	1

The loads are valid for the use in pairs (two consoles).

Load case 1



Load case 2



Air conditioner fixing KSU

The complete kit for fixing of Air conditioners, pumps or ventilators on walls



Air conditioning units

Applications

- Secure attachment of air conditioners, pumps and fans to walls with or without sound insulation element

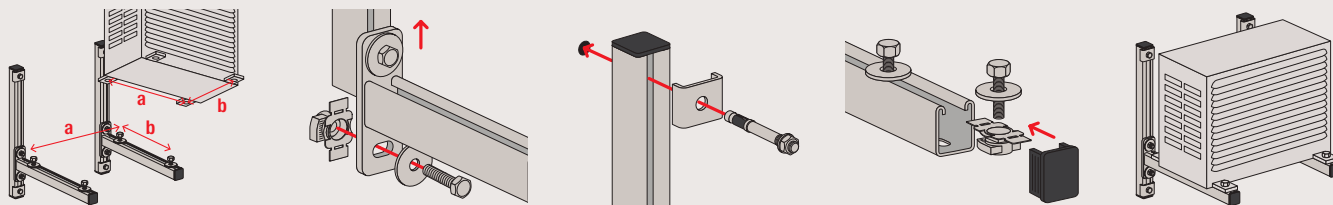
Advantages

- The KSU Sets are available in two different versions: KSU without noise reduction dampers and the KSU S with noise reduction dampers.
- The horizontal cantilevers with different lengths and the sliding nut FCN Clix P 8 allow a flexible adjustment of the noise protection dampers to simplify the installation.
- The included sliding nut FCN Clix P 10 with screws for the fixing of the cantilevers offers the possibility of an easy adjustment and a time saving installation.
- The KSU set consists of finished cut channels for instant use and avoids the accumulation of single pieces.

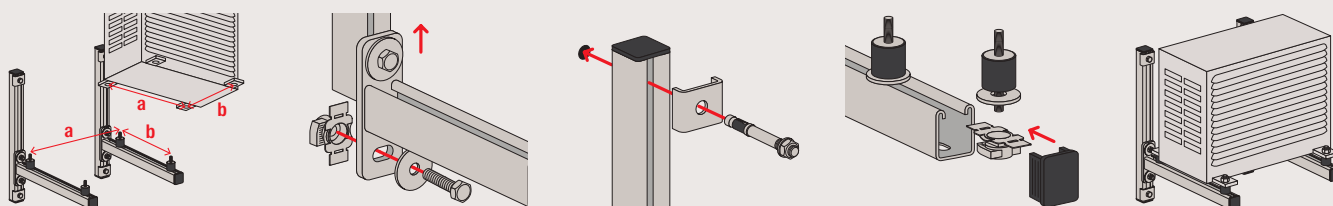
Properties

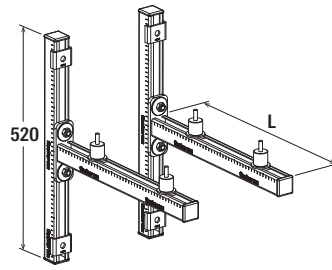
- Material channels: steel S250GD+Z275 (material no. 1.0242)
- Material cantilever arms: steel S235JR (material no. 1.0037)
- Zinc plating channels: electro zinc-plated
- Zinc plating cantilever arms: electro zinc-plated

Installation KSU

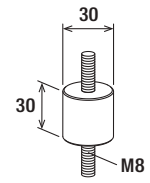


Installation KSU S





KSU



PA 30 x 30

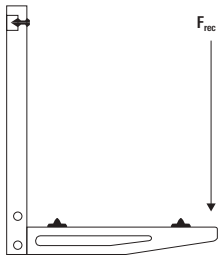
Technical data

Item	Item no.	Length L [mm]	Construction with noise protection	Max. recommended static load load case 1	Max. recommended static load load case 2	Sales unit [pcs]
				F_{rec} [kN]	F_{rec} [kN]	
KSU 450	553733	450	–	1.50	1.50	1
KSU 500	553734	500	–	1.50	1.50	1
KSU 600	553735	600	–	1.50	1.50	1
KSU S 450	553736	450	Yes	1.50	1.50	1
KSU S 500	553737	500	Yes	1.50	1.50	1
KSU S 600	553738	600	Yes	1.50	1.50	1
PA 30 x 30	512715	–	–	–	–	4

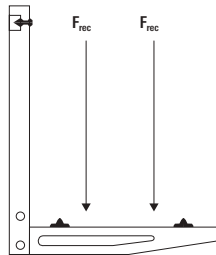
The loads are valid for the use in pairs (two consoles).

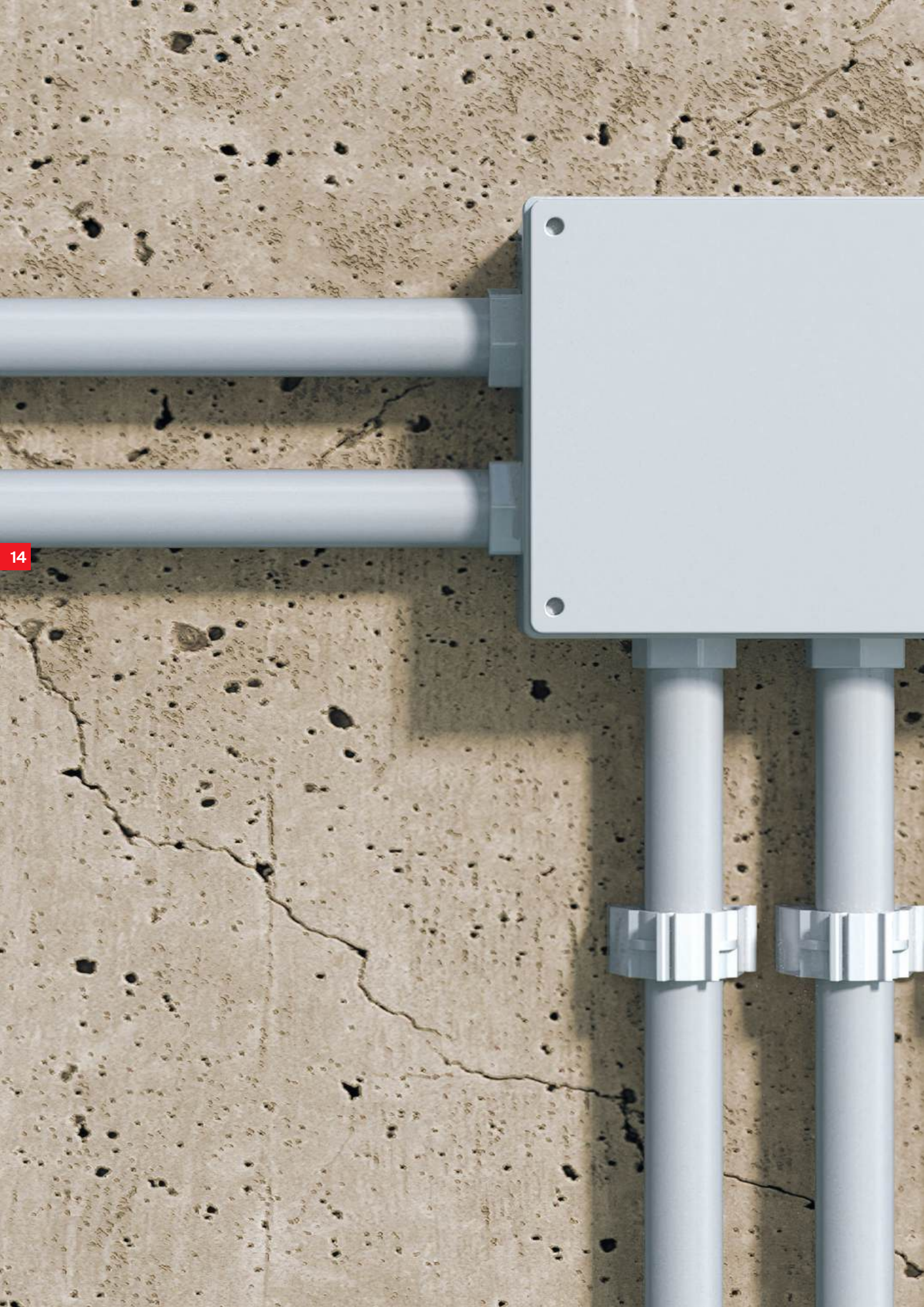
13

Load case 1

























Load case 2





14

Electrical fixings

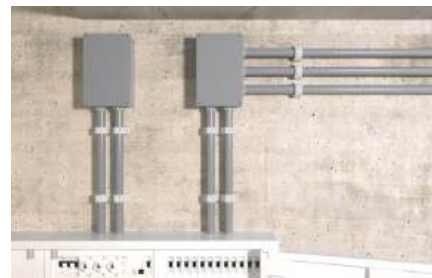
Locking clip SCN	492		Setting tool SZE	527	
Pipe clip RC	494		Cable tie BN/UBN/GBN	528	
Pipe clip FC	496		Cable tie plug FCTP	530	
Saddle clip SCH	498		Wireclip WIC	532	
Fastening tie FF	500				
ClipFix plus LS/ES/ZS	502				
ClipFix plus SD	504				
Cable clasp KB	506				
Cable harness SHA	508				
Multi cable support metal SHA M	510				
Wall slot clip FWSC	512				
Nail disc NSB	514				
Nail clip NS/MNS	516				
Spacer pipe clamp AM	518				
Conduit clip BSM/BSMD/BSMZ	520				
Textile web strapping GWB	522				
Perforated steel banding LBV/LBK	524				
Impact nail ED	526				

Locking clip SCN

The easy-to-install and secure locking clip for fixing of pipes.



Plastic pipes



Plastic pipes

Applications

- Plastic, empty pipes
- Flexible and rigid electric tubes
- Aluminium-, copper- and steel pipes

Advantages

- When pressing, the locking clip SCN automatically embraces and locks the pipe, thus enabling convenient installation.
- The mechanical lock provides a secure and reopenable fixing.
- The integrated slotted hole allows for an easy and adjustable installation.
- The double-sided couplings allow several

clips to be coupled together. This saves installation time and money.

- Flexible mounting with plugs and screws or with 11 mm C-profile rails.
- The durable nylon material is halogen- and silicone-free, allows year-round use even under frost and thus ensures a high level of safety.

Certificates / Features



Building materials

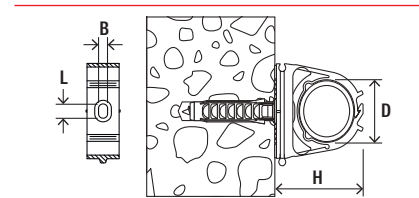
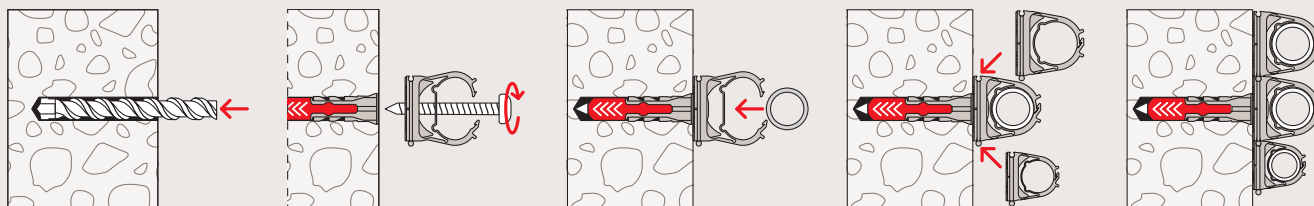
When using 2-component DuoPower plug:

- Concrete
- Solid brick
- Solid sand-lime brick
- Aerated concrete
- Vertically perforated brick
- Perforated sand-lime brick
- Plasterboard
- Gypsum plasterboard and gypsum fibreboards
- Hollow blocks made from lightweight concrete
- Cavity floor slabs made from bricks and concrete or similar
- Natural stone
- Chipboard
- Solid panel made from gypsum
- Solid brick made from lightweight concrete

Functioning

- The locking clip SCN is fixed in pre-positioned installation with a suitable plug and screw or in 11 mm C-profile rails.
- Due to the mechanical locking, the pipes are securely fixed with the clip.
- Installation temperature $-20\text{ °C} + 60\text{ °C}$
- Temperature resistance when installed $-40\text{ °C} + 80\text{ °C}$.

Installation SCN



Technical data

Locking clip SCN



SCN

Item	Item no.	Pipe to wall distance [mm]	Clamping range D [mm]	Dimension of slot B x L [mm]	Height H [mm]	Sales unit [pcs]
SCN 16	501261	11	16	4.5 x 4.5	30	100
SCN 20	501262	11	20	4.5 x 6.5	36	100
SCN 25	501263	11	25	4.5 x 6.5	42	50
SCN 32	501264	13	32	4.5 x 7.5	48	50
SCN 40	501265	13	40	4.5 x 7.5	60	25
SCN 50	501266	14	50	4.5 x 7.5	73	25

Pipe clip RC

The convenient pipe fixing.



Fixing plastic insulating conduits



Fixing plastic insulating conduits

Applications

- Flexible and rigid plastic insulating pipes

Advantages

- The pipe clip RC can be used with pre-installed clip fixing SD, with Hammerfix N 6 or in 11 mm C-shaped profile-rails, and thus allows for a flexible and cost-effective installation.
- The 6 mm-long hole allows for the optimal alignment of the pipe fixing and ensures a more user-friendly installation.
- Two additional pipe clips can be added to the sides of a pre-fixed pipe clip. This saves assembly time and materials.
- The long-lasting nylon material is halogen- and silicone-free. It can be used all year round, including during a frost. This ensures a high level of safety.

Certificates / Features



Building materials

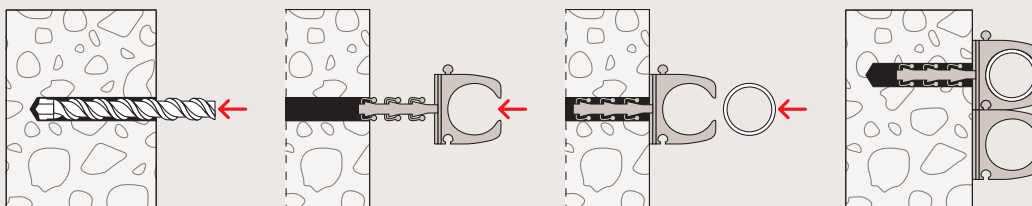
When using ClipFix SD:

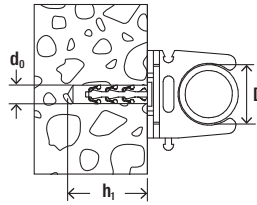
- Concrete
- Solid pumice block
- Solid sand-lime brick
- Natural stone with dense structure
- Solid brick

Functioning

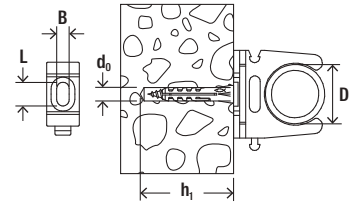
- Plastic insulation pipes are laid into the pipe clip. The pre-tensioning of the pipe clip holds the pipes securely.
- The pipe clip RC is adapted to be fixed with either clip fixing SD or Hammerfix N 6.
- Manually place the ClipFix plus SD directly into the drill hole. No additional screws are needed.
- The Hammerfix N is expanded when the nail is driven in, and holds by friction in the drill hole.
- Temperature resistance once installed from -20 °C to +80 °C.

Installation RC





SF plus RC



RC IEC

Technical data

Pipe clip RC



SF plus RC

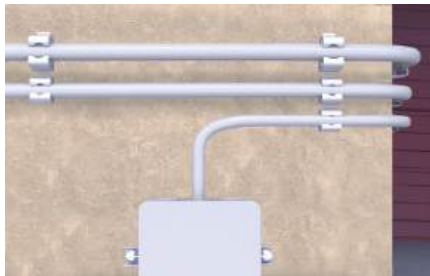
RC IEC

Item	Item no.	Drill diameter d_0 [mm]	Min. drill hole depth h_1 [mm]	Suitable for IEC	Clamping range D [mm]	Dimension of slot B x L [mm]	Sales unit [pcs]
SF plus RC IEC 16	048191	6	35	–	15 - 16	6 x 8	100
SF plus RC IEC 19	553383	6	35	–	18 - 19	6 x 10	100
SF plus RC IEC 20	048193	6	35	–	20 - 21	6 x 10	100
SF plus RC IEC 25	048197	6	35	–	24 - 25	6 x 10	50
SF plus RC IEC 32	048198	6	35	–	31 - 32	6 x 10	25
RC IEC 12	058194	–	–	12	12 - 13	6 x 7	100
RC IEC 16	058120	–	–	16	15 - 16	6 x 8	100
RC IEC 19	553363	–	–	19	18 - 19	6 x 10	100
RC IEC 20	058122	–	–	20	20 - 21	6 x 10	100
RC IEC 25	058198	–	–	25	24 - 25	6 x 10	50
RC IEC 32	058199	–	–	32	31 - 32	6 x 10	40
RC IEC 40	058200	–	–	40	38 - 40	6 x 10	40
RC IEC 50	079194 ¹⁾	–	–	50	50 - 51	6 x 10	20
RC IEC 63	079196 ¹⁾	–	–	63	62 - 64	6 x 10	15

¹⁾ Does not include latching catches, therefore cannot be mounted side by side.

Pipe clip FC

The flexible pipe clip for various diameters.



Cable fixing



Fixing plastic insulating conduits

Applications

- Electric cables
- Flexible and rigid plastic insulating pipes

Advantages

- The flexible pipe clip socket ensures a secure hold for various cable and pipe diameters, and reduces the number of products required.
- The pipe clip FC can be installed with both N 5 Hammerfixes and 11 mm-C-shaped profile-rails, and thus offers great flexibility.
- Two additional pipe clips can be added to the sides of a pre-fixed clip clamp. This saves assembly time and materials.
- The long-lasting nylon material is halogen-free. It can be used all year round, including during a frost. This ensures a high level of safety.

Certificates / Features



Building materials

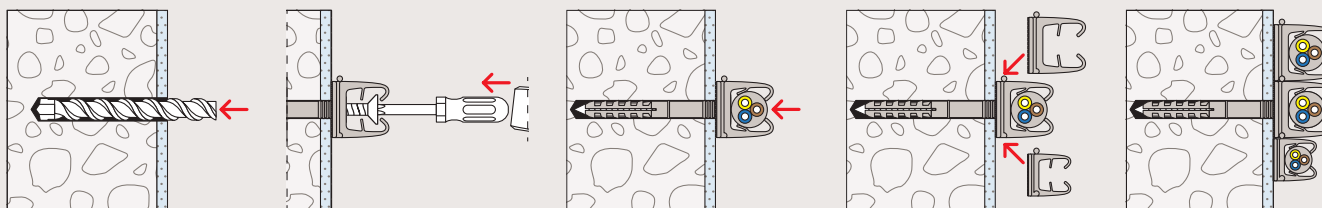
When using Hammerfix N:

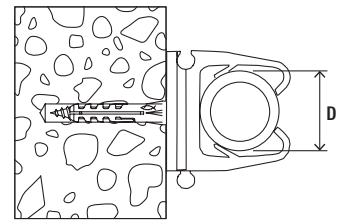
- Concrete
- Vertically perforated brick
- Hollow blocks made from lightweight concrete
- Perforated sand-lime brick
- Solid sand-lime brick
- Building brick
- Natural stone
- Aerated concrete
- Solid panel made from gypsum
- Solid brick made from lightweight concrete

Functioning

- The clip clamp FC is adapted to suit the fixture using N 5 Hammerfixes.
- The Hammerfix N is expanded when the nail is driven in, and holds by friction in the drill hole.
- The cables or pipes are then laid in the clip clamp FC. The pre-tensioning of the clip clamp holds the cables or pipes securely.
- Temperature resistance once installed from -40 °C to +80 °C.

Installation FC





Technical data

Pipe clip FC

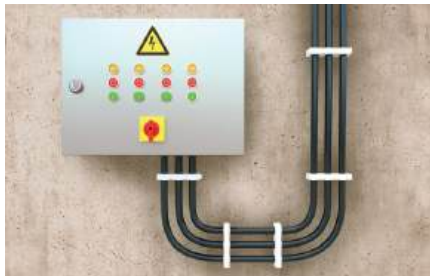


FC

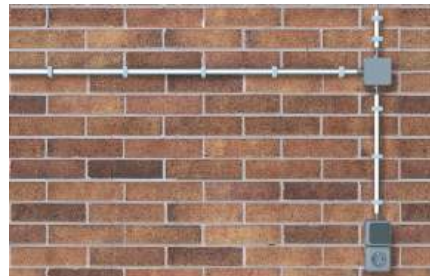
Item	Item no.	Clamping range D [mm]	Sales unit [pcs]
FC 6 - 9 GR	068060	6 - 9	100
FC 9 - 12 GR	068062	9 - 12	100
FC 12 - 16 GR	068064	12 - 16	50
FC 16 - 20 GR	068066	16 - 20	25

Saddle clip SCH

The flexible cable clamp for various diameters.



Fixing cable harnesses



Plastic conduits

Applications

- Electric cables
- Flexible and rigid plastic insulating pipes

Advantages

- With its elastic spring tabs, the saddle clip SCH can bear different cable diameters. This increases flexibility and reduces the number of products required.
- Additional clips can be added to the sides of a pre-fixed clip. This saves ins-

tallation time and materials.

- The long-lasting nylon material is halogen- and silicone-free. It can be used all year round, including during a frost. This ensures a high level of safety.

Certificates / Features



Building materials

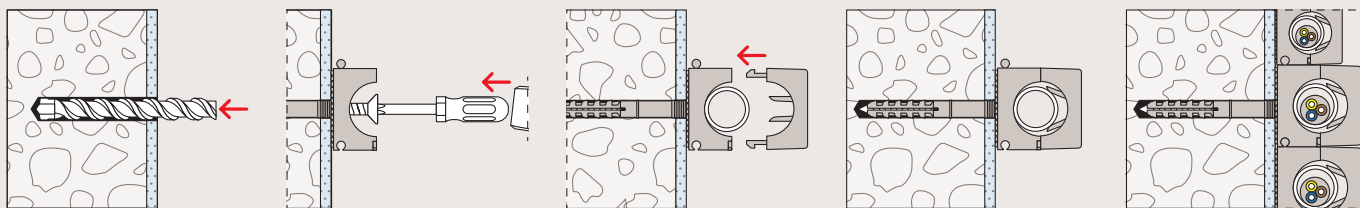
When using Hammerfix N:

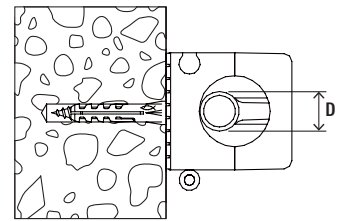
- Concrete
- Vertically perforated brick
- Hollow blocks made from lightweight concrete
- Perforated sand-lime brick
- Solid sand-lime brick
- Building brick
- Natural stone
- Aerated concrete
- Solid panel made from gypsum
- Solid brick made from lightweight concrete

Functioning

- The clamp SCH is adapted to suit the fixture using N 5 Hammerfixes.
- The Hammerfix N is expanded when the nail is driven in, and holds by friction in the drill hole.
- The cables or pipes are then laid in the clamp SCH and fixed by inserting the locking latch.
- The internal tabs adapt to fit various cable or pipe diameters.
- Temperature resistance once installed from -40 °C to +80 °C.

Installation SCH





Technical data

Saddle clip SCH



SCH grey



SCH transparent

Item	grey RAL 7035	Nylon transparent	Clamping range D [mm]	Dimension of insulated pipes	Sales unit
	Item no.	Item no.			[pcs]
SCH 812	068012	060012	8 - 12	6 x 1 - 8 x 1	100
SCH 1216	068016	060016	12 - 16	10 x 1 - 12 x 1	50
SCH 1619	068019	069019	16 - 19	15 x 1	50
SCH 1623	068023	060023	16 - 23	15 x 1 - 18 x 1	50
SCH 2332	068032	060032	23 - 32	22 x 1 - 22 x 1.5	25
SCH 3242	-	060042	32 - 42	22 x 1 - 22 x 1.5	25

Fastening tie FF

Fixing tie for bundling and fixing of cables and pipes to the substrate.



Electric cables



Plastic pipes

Applications

- Electric cables
- Flexible and rigid electric tubes
- Steel conduits

Advantages

- The socket of the FF fixing tie is fixed to the substrate with a screw or screw and plug.
- The fixing tie can be used to bundle and

- fix several cables or pipes.
- Adjustable diameter of the tie loop.
- The socket of the fixing tie can be adjusted through its slotted hole.

Certificates / Features



Building materials

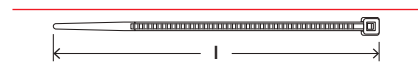
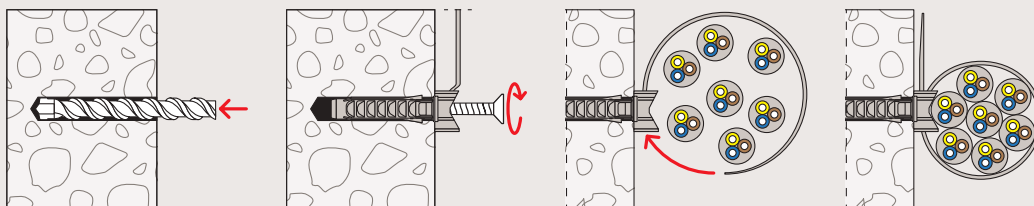
When using 2-component DuoPower plug:

- Concrete
- Solid brick
- Solid sand-lime brick
- Aerated concrete
- Vertically perforated brick
- Perforated sand-lime brick
- Plasterboard
- Gypsum plasterboard and gypsum fibreboards
- Hollow blocks made from lightweight concrete
- Cavity floor slabs made from bricks and concrete or similar
- Natural stone
- Chipboard
- Solid panel made from gypsum
- Solid brick made from lightweight concrete

Functioning

- The socket of the fixing tie is fixed with the plug and screw suitable for the substrate.
- Recommended application temperature -20 °C to +60 °C.
- Temperature resistant when installed -40 °C to +80 °C.

Installation FF



Technical data

Fastening tie FF



FF

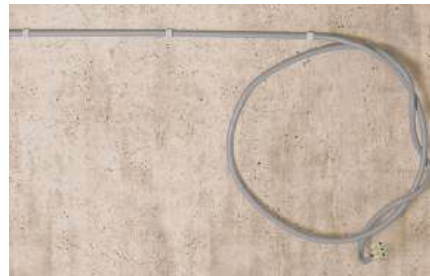
Item	Item no.	Dimension fixing base [mm]	For cables and pipes from / to d_{\min} - d_{\max} [mm]	max. screw diameter [mm]	Sales unit [pcs]
FF 8 - 32	519808	25 x 15 x 20	8 - 32	4.5	80
FF 16 - 63	519809	25 x 15 x 20	16 - 63	4.5	40

ClipFix plus LS/ES/ZS

The user-friendly clip fixing for pipes and conduits.



Fixing flexible pipes



Cable fixing

Applications

- Individual electric cables
- Cable bundles
- Flexible pipes
- Rigid plastic pipes

Advantages

- The complete element combines anchor, screw and clamp. This saves materials, allows for one-handed installation, and reduces assembly time.
- The slimline geometry of the fixing element only protrudes slightly, thus saving space.
- The three different sizes of each of the

- cable strap LS, twin clamp ZS and single clamp ES cover a range of cable diameters, thus reducing storage.
- The long-lasting nylon material is flame resistant, halogen- and silicone-free, can be used all year round, including during a frost. This ensures a high level of safety.

Certificates / Features



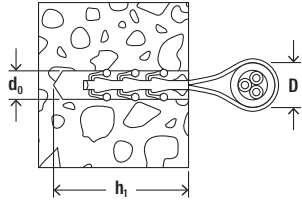
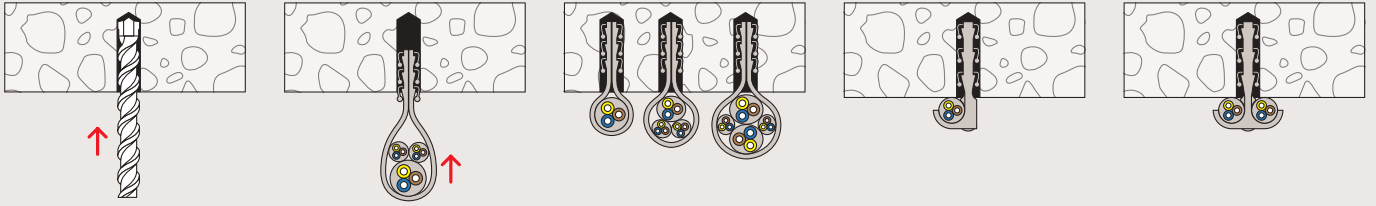
Building materials

- Concrete
- Solid pumice block
- Solid sand-lime brick
- Natural stone with dense structure
- Solid brick

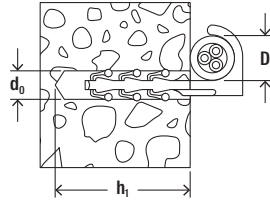
Functioning

- The clip fixing is set into the drill hole without the need for any additional screws and fixes the pipe directly to the base material.
- The clamping force of the locking catch allows the ClipFix to hold itself in the drill hole.
- Place the clasp of the cable strap LS into the drill hole so that it is level and the teeth grip.
- Recommended loads (required safety factor considered): cable strap LS up to 6 kg, twin clamp ZS and single clamp ES up to 11 kg.
- Temperature resistance once installed from -20 °C to +80 °C.
- Flammability material UL 94-V0.

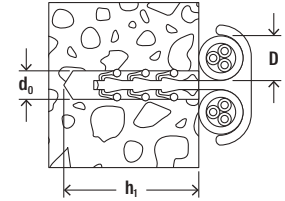
Installation LS/ES/ZS



SF plus LS



SF plus ES



SF plus ZS

Technical data

ClipFix plus LS/ES/ZS



SF plus LS

SF plus ES

SF plus ZS

Item	Item no.	Min. drill hole depth	Clamping range	Sales unit
		h_1 [mm]	D [mm]	[pcs]
SF plus LS 3/13	058155	35	3 - 13	100
SF plus LS 8/28	058156	50	8 - 28	100
SF plus LS 20/40	058157	50	20 - 40	100
SF plus ES 10	048151	40	3 - 12	100
SF plus ES 18	048152	40	10 - 25	100
SF plus ES 28	058183	40	15 - 31	100
SF plus ZS 10	058184	35	3 - 12	100
SF plus ZS 18	048161	40	10 - 25	100
SF plus ZS 28	048162	40	15 - 31	75

ClipFix plus SD

The user-friendly clip fixing for cable ducts and cable clasps.



Fixing cable ducts



Fixing cable harnesses

Applications

- Cable channels
- Cable clasps
- Installation base cable harness
- Flat building components

Advantages

- The ClipFix plus SD combines anchor and screw. This saves on materials and makes it easier to affix cable ducts that are difficult to access without the need for additional tools.
- The simple clip fixing reduces installation time.
- The extended shank of the FS plus SD 40 allows bridging of non-bearing plaster layers, as well as the fixing of thicker attachments.
- The long-lasting nylon material is flame resistant, halogen- and silicone-free. It can be used all year round, including during a frost. This ensures a high level of safety.

Certificates / Features



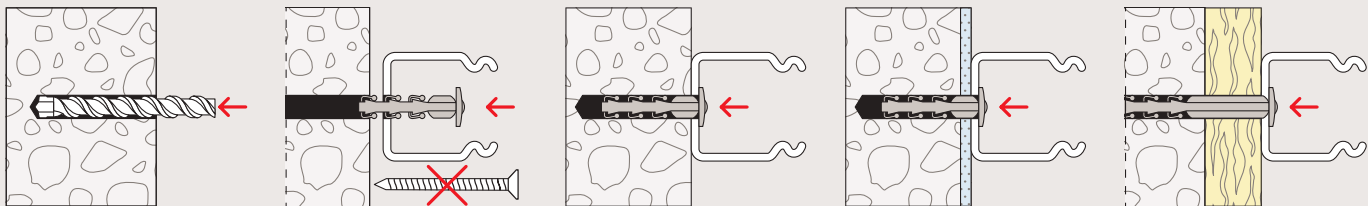
Building materials

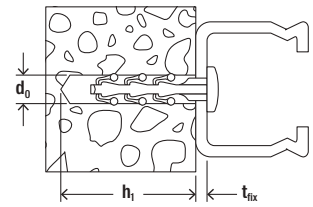
- Concrete
- Solid pumice block
- Solid sand-lime brick
- Natural stone with dense structure
- Solid brick

Functioning

- To fix, manually place the ClipFix plus SD directly into the drill hole. No additional screws are needed.
- The clamping force of the locking catch allows the ClipFix to hold itself in the drill hole.
- Recommended loads (required safety factor considered): clip fixing SD up to 11 kg.
- Temperature resistance once installed from -20 °C to +80 °C.
- Flammability material UL 94-V0.

Installation SD





Technical data

ClipFix plus SD



SF plus SD

Item	Item no.	Drill diameter d_0 [mm]	Min. drill hole depth h_1 [mm]	Max. usable length t_{fix} [mm]	Sales unit [pcs]
SF plus SD 30	058178	6	35	4	200
SF plus SD 40	058179	6	35	15	100

Cable clasp KB

The flat cable clasp for space-saving cable fixing.



Fixing cable harnesses



Fixing cable harnesses

Applications

- Several individual cables in a small installation space
- Multiple single cables in false ceilings

Advantages

- The flat design of the KB cable clasp allows for a space-saving cable fixing, and simplifies subsequent cable-laying.
- The combination of cable clasp KB and ClipFix SD allows for one-handed installation, thus enabling a flexible and

economic installation.

- The long-lasting nylon material is halogen- and silicone-free. It can be used all year round, including during a frost. This ensures a high level of safety.

Certificates / Features



Building materials

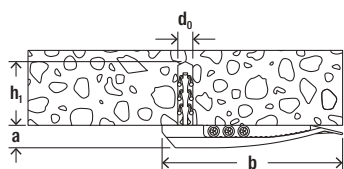
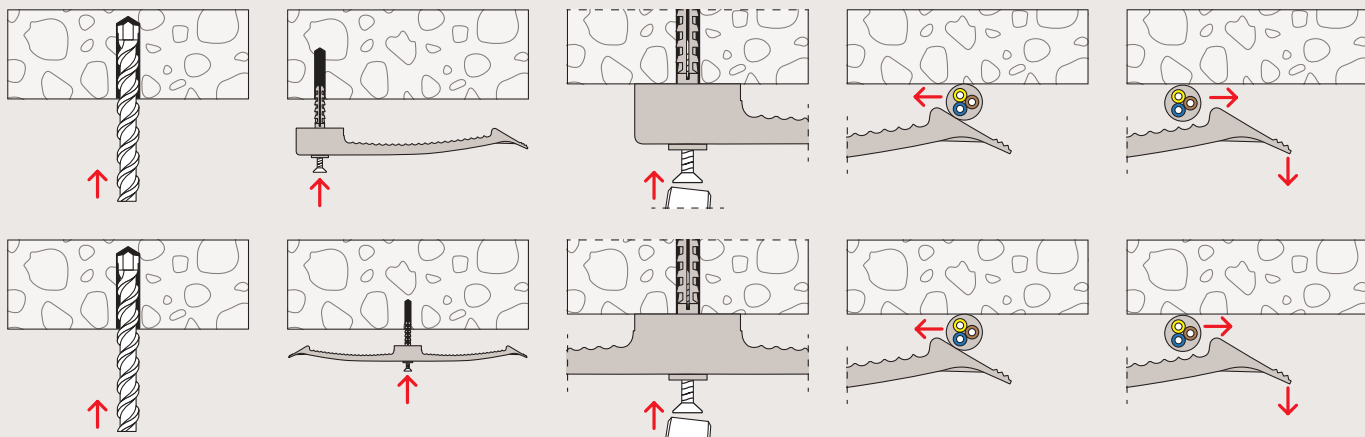
When using ClipFix SD:

- Concrete
- Solid pumice block
- Solid sand-lime brick
- Natural stone with dense structure
- Solid brick

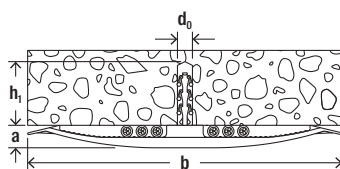
Functioning

- The cable clasp KB is adapted to suit the fixture with clip fixing SD or Hammerfix N6.
- Place the ClipFix plus SD directly into the drill hole by hand. No additional screws are needed.
- The Hammerfix N is expanded when the nail is driven in, and holds by friction in the drill hole.
- After installation, the cables are pulled under the clasp. Additional cables can be easily laid after installation too.
- Temperature resistance once installed from -20 °C to +80 °C.

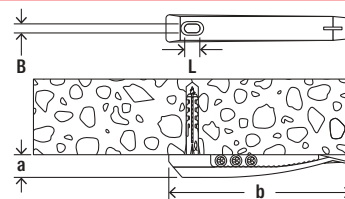
Installation KB



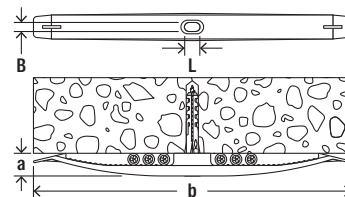
SF plus KB 8



SF plus KB 16



KB 8



KB 16

Technical data

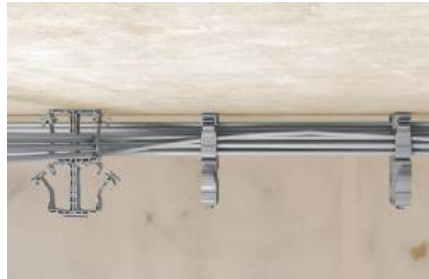
Cable clasp KB



Item	Item no.	Dimensions a x b [mm]	Dimension of slot B x L [mm]	Max. number of ducts	Sales unit [pcs]
SF plus KB 8	048171	15 x 133	6 x 10	8 ducts NYM 3 x 1,5	50
SF plus KB 16	048172	15 x 230	6 x 10	16 ducts NYM 3 x 1,5	25
KB 8	058135	15 x 133	6 x 10	8 ducts NYM 3 x 1,5	50
KB 16	058136	15 x 230	6 x 10	16 ducts NYM 3 x 1,5	50

Cable harness SHA

The adaptable cable harness for fixing cable bundles.



Fixing cable bundles



Fixing cable bundles

Applications

- Electric cables, loose and bundled

Advantages

- Simple bundling and economical laying of multiple electric cables.
- The seal of the cable harness SHA makes it easy to lay cables at a later date, thus ensuring high user-friendliness.
- Combining several SHA cable harnesses allows for a cost-effective fixing of cables to just one MS installation base.
- The MS installation base allows for various fixing options, and offers great flexibility for the installation.
- The long-lasting nylon material is halogen- and silicone-free, can be used all year round, including during a frost, and thus ensures a high level of safety.

Certificates / Features



Building materials

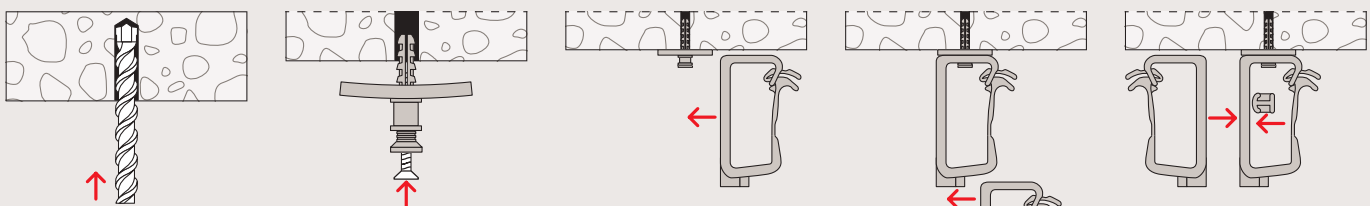
When using ClipFix SD:

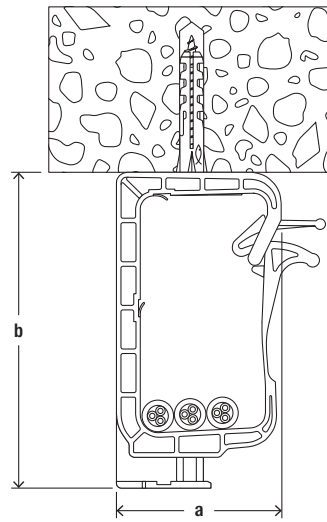
- Concrete
- Solid pumice block
- Solid sand-lime brick
- Natural stone with dense structure
- Solid brick

Functioning

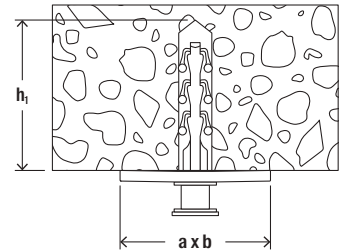
- Cable bundles can be laid in the cable harness SHA. The seal makes it easy to lay cables at a later date.
- The cable harness SHA can either be affixed with ClipFix plus, installation base MS or with plugs and screws.
- Several SHA cable harnesses can be combined below one another.
- The SHA cable harnesses can also be lined up adjacent to one another with the connection piece SHA KP.
- The maximum installation distance of 80 cm must not be exceeded.
- Temperature resistance once installed from -20 °C to +80 °C.

Installation SHA





SHA



SF plus MS

Technical data

Cable harness SHA



SHA



SHA MS



SF plus MS



SHA KP

Item	Item no.	Min. drill hole depth h_1 [mm]	Dimensions $a \times b$ [mm]	Max. number of ducts	Sales unit [pcs]
SHA 15	058139	-	93 x 49	15 ducts NYM 3 x 1,5	50
SHA 30	058140	-	128 x 59	30 ducts NYM 3 x 1,5	25
SHA MS	058141	-	41 x 27	-	50
SF plus MS	048181	35	-	-	50
SHA KP	058142	-	-	-	50

Multi cable support metal SHA M

Metal multi-cable support with high mechanical resistance and approval.



Cable fixing to the ceiling



Cable fixing to the wall

Applications

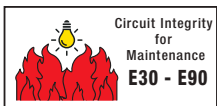
- Fixing of cables with circuit integrity maintenance.
- Installation of electrical cables above fire protection ceilings.

Advantages

- The fischer metal multi cable support SHA M has a high mechanical strength and thus offers a long service life and safety in the event of fire.
- It is approved as a cable-specific variant for circuit integrity maintenance of electric cable systems in accordance with DIN 4102 Part 12.
- This makes it suitable for safe installation above fire protection ceilings.

- Depending on the version, 15, 30 or 70 cables can be fixed.
- The lock, which can be operated without tools, allows easy subsequent cable-laying and thus ensures a high degree of ease of installation.
- The multi cable support is variably suitable for wall and ceiling installation.
- Halogen-free and without fire load.

Certificates / Features



Building materials

Approved for fastening with nail anchor FNA II:

- Concrete C12/15 to C50/60, cracked, for multiple fixings of non-structural applications

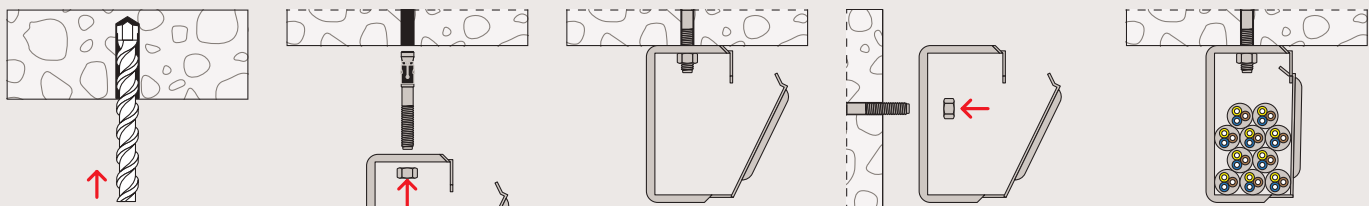
Also suitable for:

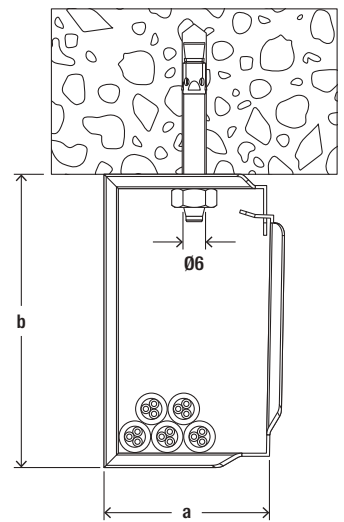
- Solid sand-lime brick
- Natural stone with dense structure
- Prestressed hollow-core concrete slabs

Functioning

- The multi cable support is fixed to walls or ceilings with plugs and screws or metal anchors suitable for the substrate and application.

Installation SHA M





Technical data

Multi cable support metal SHA M



SHA M

Item	Item no.	Mounting pipe ø [mm]	Max. number of ducts	Sales unit [pcs]
SHA M 15	544933	6	15 ducts NYM 3 x 1,5	50
SHA M 30	544934	6	30 ducts NYM 3 x 1,5	25
SHA M 70	544935	6	70 ducts NYM 3 x 1,5	10

Wall slot clip FWSC

The quick tool-free cable fixing in wall slots.



Cable fixing in wall slots > 30 mm



Cable fixing in wall slots < 55 mm

Applications

- Fixing of cables in wall slots of 30 - 55 mm width.

Advantages

- With the fischer FWSC wall slot clip, cables can be fixed quickly and without tools in wall slots 30 to 55 mm wide.
- This reduces installation time by up to 50%.
- The high expansion power of the wall slot clip guarantees a reliable fixing of the

- cables.
- Damage to the cables can be excluded due to the expansion principle.
- Thanks to its neutral colour, the wall slot clip does not shine through the plaster.
- The wall slot clip is made of halogen-free material.

Building materials

- Concrete
- Masonry

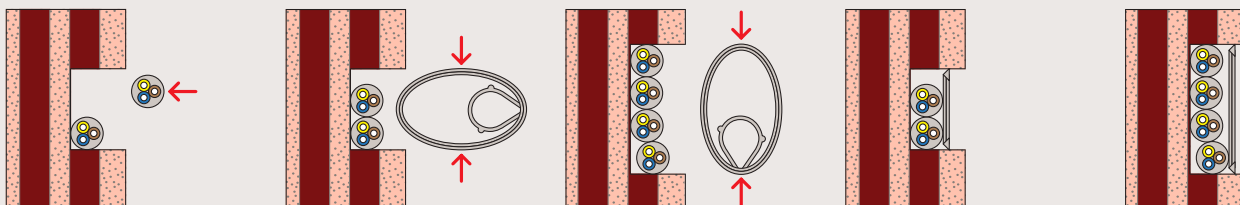
Versions

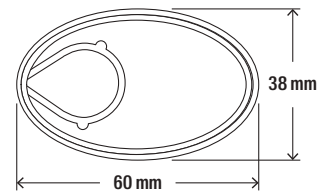
- POM, recyclable

Functioning

- The cables to be fastened are inserted into the wall slot.
- By pressing together the wall slot clip is compressed and tensed to be ready for installation in the wall slot.
- The wall slot clip can be compressed in length or width as required and thus used for wall slots with a width of 30 to 55 mm.

Installation FWSC





Technical data

Wall slot clip FWSC



FWSC

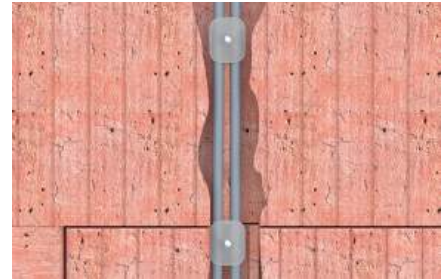
Item	Item no.	Max. slot width [mm]	Sales unit [pcs]
FWSC 30 - 55	545792	55	50

Nail disc NSB

The secure cable fixing in wall slots.



Cable fixing



Cable fixing in slots

Applications

- For fixing cables in wall slots

Advantages

- The nail disc NSB allows for use in two slot widths.
- The vaulted structure of the nail disc ensures an optimal contact pressure and, as such, for a secure hold.
- The flat nail disc only protrudes slightly, and can thus be easily plastered over.
- The nail disc NSB is made from high-strength polypropylene. The nail is made from hardened, galvanised steel. The tried and tested material combination for in-wall installation.

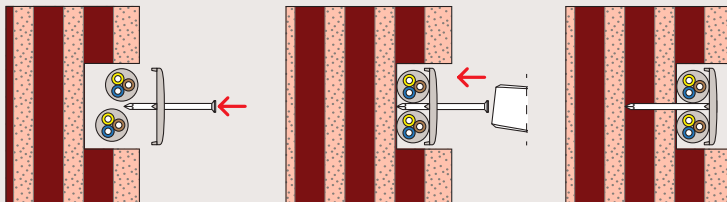
Building materials

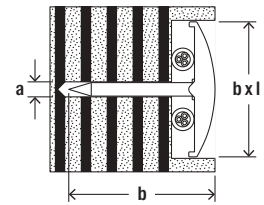
- Vertically perforated brick
- Pumice
- Lightweight aggregate concrete
- Aerated concrete
- Hardboard
- Wood
- Chipboard
- Plywood
- Solid panel made from gypsum

Functioning

- Pull in cable.
- Align the nail disc with either dimensions 27 mm or 34 mm, depending on the slot width, and hit the nail in with a hammer.
- The cables are fixed in the wall slots by the curved washer.

Installation NSB





Technical data

Nail disc NSB



NSB

Item	Item no.	Dimension of nail a x b [mm]	Dimension of disc b x l [mm]	Sales unit [pcs]
NSB 2/40	048308	2 x 40	27 x 34	200
NSB 2/50	048309	2 x 50	27 x 34	150
NSB 2/60	048310	2 x 60	27 x 34	100
NSB 3/40	048311	3 x 40	27 x 34	150
NSB 3/50	048312	3 x 50	27 x 34	150
NSB 3/60	048313	3 x 60	27 x 34	100

Nail clip NS/MNS

The fast fixing for electric cables.



Cable fixing



Cable fixing

Applications

- To fix single electric cables with varying diameters

Advantages

- The nail clip features a pre-assembled zinc-plated nail, allowing for a fast fixing, thus reducing assembly time.
- The small space required for fixing sim-

plifies installation in narrow spaces.

- The nail clip MNS covers cable diameters from 4 mm to 14 mm with just 3 sizes.

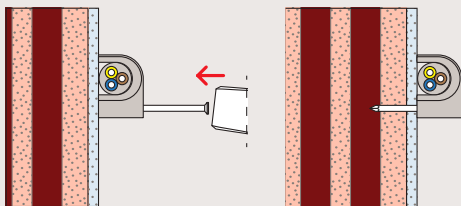
Building materials

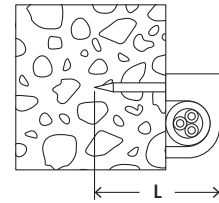
- Hardboard
- Wood
- Aerated concrete
- Chipboard
- Plywood
- Solid gypsum panels and other plastered substrates

Functioning

- Position the nail clip with the laid cable. Hammer in the pre-assembled nail with a hammer.

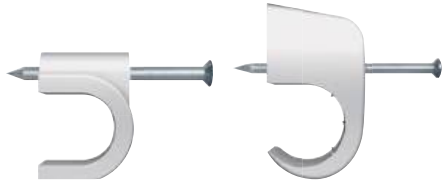
Installation NS, MNS





Technical data

Nail clip NS/MNS



NS

MNS

Item	Item no.	For cable	Length of nail	Sales unit
		[mm]	L [mm]	[pcs]
NS 7	058173	7	25	100
NS 8	058174	8	25	100
NS 9	058175	9	25	100
NS 10	058176	10	30	100
NS 12	058177	12	35	100
MNS 4-7	094673	4 - 7	25	100
MNS 7-11	094674	7 - 11	25	100
MNS 10-14	094675	10 - 14	30	100

Spacer pipe clamp AM/

The installation-friendly metal spacing disc for cables and pipes.



Fixing steel armoured conduits



Fixing conduits

Applications

- Steel conduits
- Electric cables
- Copper and metal pipes

Advantages

- The fast-locking latch ensures easy opening and closing without completely removing the screw, and allows for a simple and fast installation.
- The pre-fitted combination screw with

conventional slotted or recessed screw head allows for the use of different screwdrivers, thus allowing for a simple installation.

Building materials

When using nail anchor FNA II:

- Concrete
- Solid sand-lime brick
- Natural stone with dense structure
- Pre-stressed concrete hollow slabs

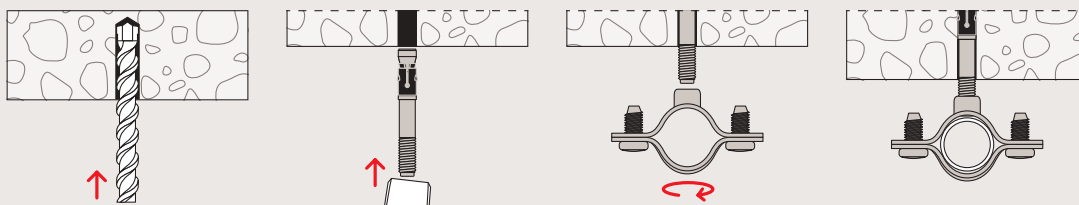
When using Hammerfix N:

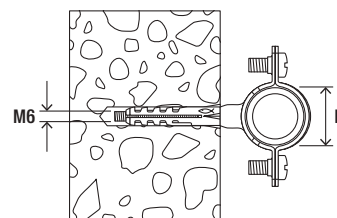
- Concrete
- Solid sand-lime brick
- Building brick
- Natural stone
- Solid brick made from lightweight concrete

Functioning

- The spacer pipe clamp AM with M6 thread can be secured with the fischer nail anchor FNA II 6x30 M6x41, stud screw STST 6x60 and STST 6x80, or Hammerfix N 6x40/10 M6 as desired.

Installation AM





Technical data

Spacer pipe clamp AM



AM

Item	Item no.	Dimension IEC	Clamping range D [mm]	Sales unit [pcs]
AM 8	060185	-	8 - 10	50
AM 10	060186	-	10 - 11	50
AM 12	060187	12	12 - 13	50
AM 14	060188	-	14 - 15	50
AM 16	060189	16	15 - 17	50
AM 18	060190	-	18 - 19	50
AM 20	060191	20	20 - 21	50
AM 22	060192	-	22 - 23	50
AM 24	060193	-	24 - 25	50
AM 26	060194	25	26 - 27	50
AM 28	060195	-	28 - 29	50
AM 32	060209	32	32 - 33	25
AM 30	060196	-	30 - 31	50
AM 34	060210	-	34 - 35	25
AM 37	060211	37	37 - 39	20
AM 40	090849	40	40 - 42	15
AM 50	090850	50	50 - 52	10
AM 63	090851	63	63 - 65	10

Conduit clip BSM/BSMD/BSMZ

The flat metal clip for cables and pipes.



Fixing armoured conduits

Applications

- Electrical conduits
- Flexible and rigid plastic insulating pipes
- Steel conduits

Advantages

- The open conduit clip BSM is ideal for the post-installation fixing of conduits.
- The conduit clip allows for a direct fixing with impact nails and is, therefore, quick

and easy to install.

- Two conduits or pipes can be fixed with just one fixing point with the twin clamp BSMZ.

Building materials

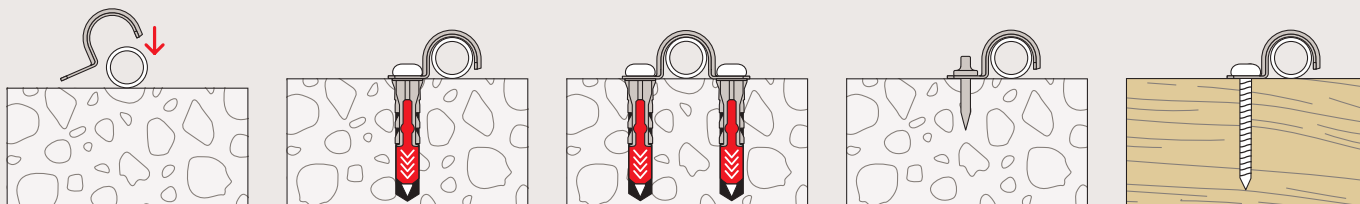
When using impact nail ED:

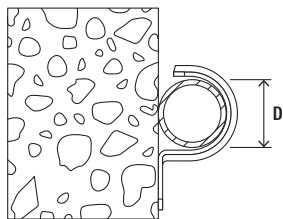
- Concrete

Functioning

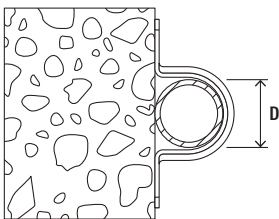
- Depending on your requirements, use a conduit clip with 1 or 2 fixing points, or a twin clamp.
- The conduits or pipes are laid in the conduit clip. Assembling the clip fixes the conduits / pipes.
- Our recommendation for fixtures on concrete: Impact nail.

Installation BSM

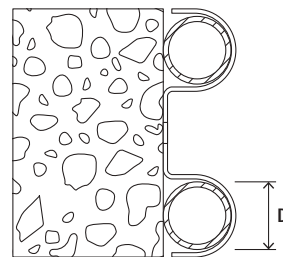




BSM



BSMD



BSMZ

Technical data

Conduit clip BSM



BSM

BSMD

BSMZ

Item	BSM Item no.	BSMD Item no.	BSMZ Item no.	Dimension IEC	Clamping range D [mm]	Sales unit [pcs]
6	015014	015066	-	-	6	100
8	015015	-	-	-	8	100
8	-	015067	-	-	8	50
10	015016	-	-	-	10	100
10	-	015068	-	-	10	50
12	015017	015069	-	-	12	50
14	015018	015070	-	-	14	50
15	015093	-	-	15	15	50
16	060149	060169	-	16	16	50
18	060150	060170	-	-	18	50
20	060151	060171	079535	20	20	50
22	060152	060172	-	-	22	50
24	060153	015075	079536	-	24	50
25	090839	090844	-	25	25	50
26	096958	015076	-	-	26	50
28	060155	-	079537	-	28	50
28	-	060175	-	-	28	25
30	015019	-	-	-	30	50
30	-	015078	-	-	30	25
32	090840	-	-	32	32	50
32	-	090845	-	32	32	25
37	060158	060178	-	-	37	25
40	090841	090846	-	40	40	25
42	015021	-	-	-	42	25
42	-	015081	-	-	42	20
47	-	015082	-	-	47	20
50	090842	-	-	50	50	20
50	-	090847	-	50	50	15
63	090843	-	-	63	63	15
63	-	090848	-	63	63	10

Textile web strapping GWB

Textile web strapping GWB for cost-effective, easy pipe fixings



Flexible and rigid plastic insulation pipes

Applications

- Pipe fixing to the substrate e.g. to the raw floor.

Advantages

- Pipe fixing using textile tape allows cheap and simple installation.
- The textile tape roll allows the correct tape length to be chosen to suit the dia-

meter in question.

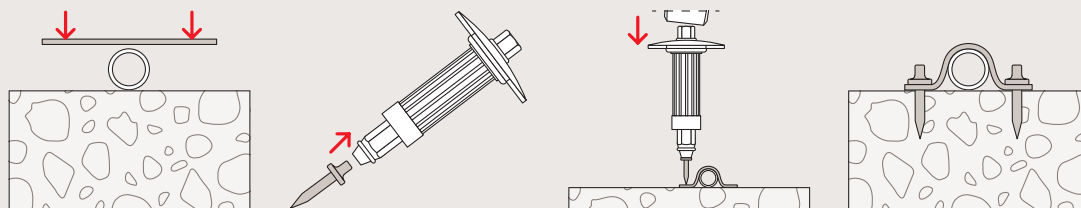
- Hangings with textile tape are a fast solution for temporary fixings.

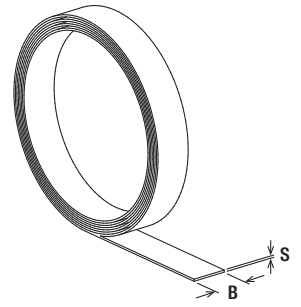
Building materials

When using impact nail ED:

- Concrete

Installation GWB





Technical data

Textile web strapping GWB



GWB

Item	Item no.	Width B [mm]	Thickness S [mm]	Sales unit [pcs]
GWB	020959	15	1.1	10

Perforated steel banding LBV/LBK

Perforated steel banding LBV/LBK for the fast fixing of pipelines



Plastic pipes

Applications

- Steel tape with stamped holes for simple installation of pipes on the substrate, e. g. on unfinished floor.
- Available as zinc-plated LBV or plastic-covered LBK.
- The fischer nail anchor FNA II is suitable for ceiling fixing in concrete.
- Use fischer thread hanger RAH for fastening to threaded rods.
- For use in dry interior areas.

Advantages

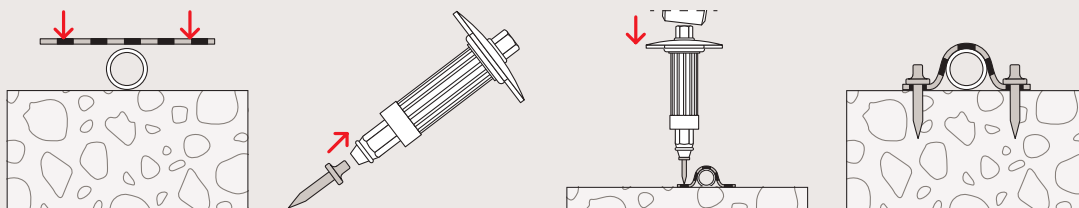
- The perforated tape's material thicknesses and plastic covering allow the tapes to be easily cut to size using metal shears.
- The perforated tape's hole geometry enables concrete fixing using the fischer impact nail ED.

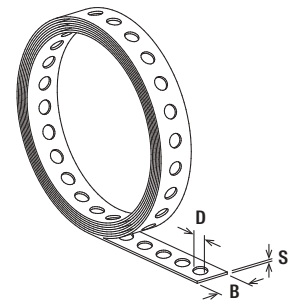
Building materials

When using impact nail ED:

- Concrete

Installation LBV, LBK





Technical data

Perforated steel banding LBV/LBK



LBV



LBK

Item	Item no.	Total length [mm]	Width B [mm]	Thickness S [mm]	Hole- ϕ D [mm]	Sales unit [pcs]
LBV 12	079549	10,000	12	0.8	5.0	10
LBV 17	079550	10,000	17	0.8	6.5	10
LBV 25	079551	10,000	25	0.9	8.5	8
LBK 14	079553	10,000	14	2.6	5.0	10
LBK 19	079554	10,000	19	2.4	6.5	8
LBK 27	079555	10,000	27	2.4	8.5	5
LBW 17	507435	10,000	17	0.8	6.5	10

Impact nail ED

Fixing in concrete without pre-drilling.



Fixing armoured conduits



Fixing perforated tapes

Applications

- Conduit clips such as BSM, BSMD, BSMZ
- Perforated band such as LBK, LBV

Advantages

- The stable impact nail ED can be set in concrete with the impact nail setting tool SZE without pre-drilling. This allows for a fast installation.
- The setting tool SZE impact protection provides the best protection for your hand, thus ensuring a safe installation.

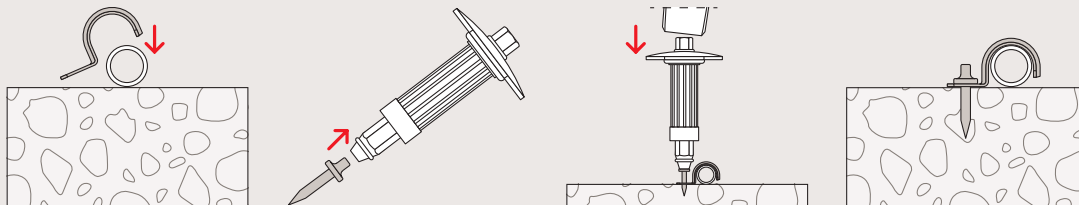
Building materials

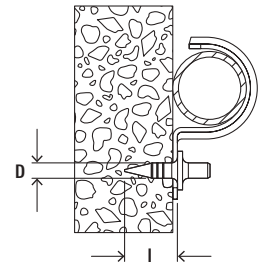
- Concrete

Functioning

- The impact nail ED is set in the setting tool SZE.
- The bracket in the setting tool holds the nail securely in place during the installation procedure.
- Pre-positioning of the element to be fixed.
- The nail can be hammered through the fixing element directly into the concrete.

Installation ED





Technical data

Impact nail ED



ED

Item	Item no.	Diameter d [mm]	Sales unit [pcs]
ED 15	048212	4.0	200
ED 18	079815	4.0	200
ED 22	014570	4.0	200

Accessories Impact nail ED

Accessories Impact nail ED



SZE

Toolset for SZE

Item	Item no.	Sales unit [pcs]
SZE	552149	1
Toolset for SZE	552150	3

14

Cable tie BN/UBN/GBN

For the simple bundling of cables and pipes.



Bundling electric cables



Electric cables

Applications

For bundling of:

- Electric cables
- Flexible and rigid plastic insulating pipes
- Steel conduits

Advantages

- The long-lasting nylon material is halogen- and silicone-free.
- The cable tie UBN (black) is made from UV-stabilised material.

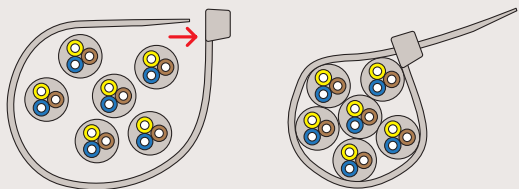
Certificates / Features

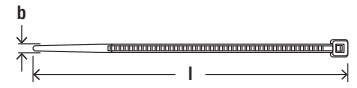


Functioning

- Lie the cable tie around the object to be fixed, and pull the band through the head of the cable tie. The cable tie can no longer be opened due to the latching of the tab in the teeth.
- Temperature resistance once installed from -10 °C to +85 °C.
- Recommended installation temperature from -10 °C to +85 °C.
- Flammability material UL 94-V2.

Installation BN, UBN



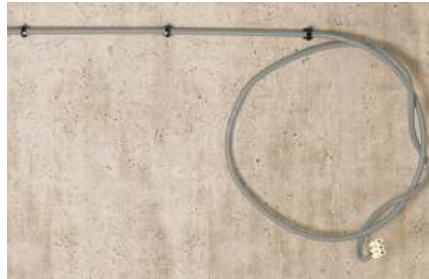
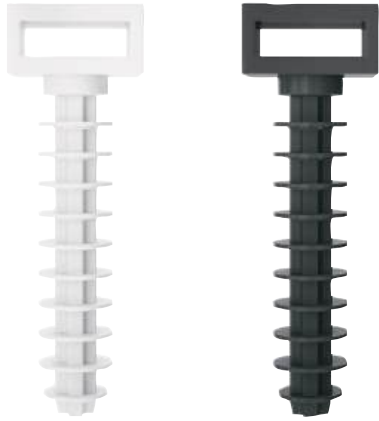


Technical data

Cable tie BN/UBN						
	transpa- rent	black	green	Dimensions	Sales unit	
Item	Item no.	Item no.	Item no.	b x l [mm]	[pcs]	
BN/UBN/GBN 2,5 x 100	087478	087488	543924	2.5 x 100	100	
BN/UBN 2,5 x 120	087479	087489	-	2.5 x 120	100	
GBN 2.5 x 150	-	-	543925	2.5 x 150	100	
BN/UBN 2,5 x 160	037489	069363	-	2.5 x 160	100	
BN/UBN/GBN 2,5 x 200	087480	087490	543926	2.5 x 200	100	
BN/UBN/GBN 3,6 x 150	087481	087491	543927	3.6 x 150	100	
BN/UBN 3,6 x 200	019802	037573	-	3.6 x 200	100	
BN/UBN 3,6 x 300	037490	069364	-	3.6 x 300	100	
BN/UBN 4,6 x 160	037501	069365	-	4.6 x 160	100	
BN/UBN 4,6 x 190	037581	069366	-	4.6 x 190	100	
BN/UBN/GBN 4,6 x 200	087484	087494	543928	4.6 x 200	100	
BN/UBN 4,8 x 250	037582	069367	-	4.8 x 250	100	
BN/UBN 4,8 x 350	037653	069368	-	4.8 x 350	100	
BN/UBN 4,8 x 370	037583	069369	-	4.8 x 370	100	
BN/UBN 4,8 x 430	037708	069370	-	4.8 x 430	100	
BN/UBN/GBN 4,8 x 280	087485	087495	543929	4.8 x 280	100	
BN/UBN 7,6 x 200	037945	069372	-	7.6 x 200	100	
BN/UBN 7,8 x 300	037949	069373	-	7.6 x 300	100	
BN/UBN 7,6 x 350	087487	087497	-	7.6 x 350	100	
BN/UBN 7,6 x 450	037996	069374	-	7.6 x 450	100	
BN/UBN 7,6 x 550	037997	069375	-	7.6 x 550	100	
BN/UBN 8,8 x 760	037998	069376	-	8.8 x 760	100	
BN/UBN 8,8 x 810	038000	069377	-	8.8 x 810	100	
BN/UBN 8,8 x 1168	038002	069379	-	8.8 x 1168	100	

Cable tie plug FCTP

The universal fixing point for cable ties.



Electric cables



Flexible and rigid plastic pipes

Applications

- Universal fixing point for fixing of cables and pipes using cable ties

Advantages

- The FCTP cable tie plug combines the function of a plug and an eyelet to which cable ties up to 9.5 mm width can be attached (e.g. fischer BN or UBN).
- It offers a universal fixing point to which various cables and pipes can be attached.

- Installation is simple and time-saving by driving the plug into the drill hole.
- The lamellas of the plug ensure a secure hold in the building material and thus fix the cable tie in the intended position.

Building materials

- Concrete
- Solid brick
- Solid sand-lime brick

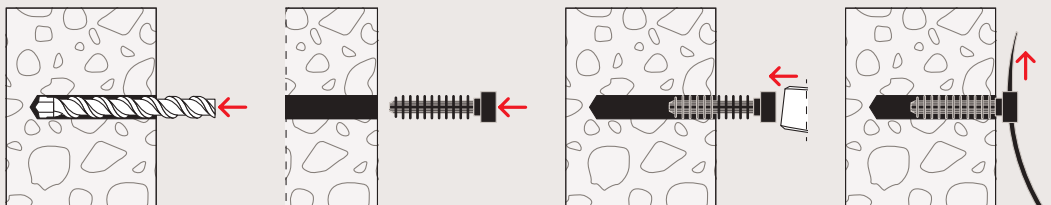
Versions

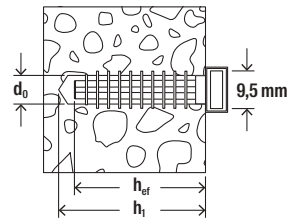
- Nylon, halogen-free

Functioning

- The cable tie plug can be hammer set.
- A cable tie is inserted through the eyelet and the object to be fastened is fixed in the intended position.
- The eyelet with a width of 9.5 mm and a height of 3 mm is suitable for all fischer cable ties.

Installation FTCP





Technical data

Cable tie plug FCTP



FCTP-W

FCTP-B

Item	Item no.	Drill diameter d_0 [mm]	Min. drill hole depth h_1 [mm]	Anchorage depth h_{er} [mm]	Total length l [mm]	Sales unit [pcs]
FCTP-W	545786	8	40	35	45	100
FCTP-B	545787	8	40	35	45	100

Wireclip WIC

Infinitely variable fixing of wire suspensions.



Suspension of signs



Suspensions for trade show exhibits

Applications

For suspension of:

- Lighting strips
- Cable trays
- Ventilation ducts
- Pipes
- Signs
- Chilled ceilings

Advantages

- The simple system guarantees ease of use.
- The Wireclip's simple closing mechanism means that no tools are needed. This allows for a cost-effective installation.
- The reclosable Wireclips make it possible to adjust the length at any time. This guarantees the greatest flexibility.

Functioning

- Loops are formed from the wire, which can be threaded through the wireclip. This allows objects to be hung. The wireclips can be adjusted at any time.
- The FNA II 6x25 OE is suitable for fixing the wire.

Note:

- Do not apply paint or any other coating.
- Do not apply lubricant.
- Do not use for lifting loads.
- Remove damaged wire ends using the wire cutter WIZ prior to introducing wires into the wire clip.

Installation WIC



Technical data

Wireclip WIC



WIC 2



WIC 3



WIC 4

Item	Item no.	Wire- ϕ	Sales unit
		[mm]	[pcs]
WIC 2 VE20	044559	2,0 - 2,5	20
WIC 2 VE100	044560	2,0 - 2,5	100
WIC 3 VE20	044561	2,5 - 3,5	20
WIC 4 VE50	044564	3,0 - 4,5	50

Accessories Wireclip WIC

Accessories Wireclip WIC



WIS



WIZ





Item	Item no.	Cable length	Wire- ϕ	Sales unit
		[m]	[mm]	[pcs]
WIS 2/1	045956	1	2.0	10
WIS 2/2	045957	2	2.0	10
WIS 2/3	045958	3	2.0	10
WIS 2/5	045959	5	2.0	10
WI ϕ 2 mm	044565 ¹⁾	200	2.0	1
WIZ	044721	-	-	1

¹⁾ On a roll.



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Sanitary fixings

Sanitary fixings for board materials	536	
Ceramic fixings	538	
Wash basin and urinal fixings	541	
Wash basin fixing WST II	544	

Sanitary fixings for board materials

Complete fixing sets for wash basins and urinals in board building materials and plumbing walls.



Urinals



Wash basins

Applications

- Wash basins
- Urinals

Advantages

- With their special geometries, KM and WDP are the specialists for fixings in plumbing and hollow walls.
- The wide transition beams of the KM and

the large base plate of the WDP ensure a good load distribution, thus allowing for a high load-bearing capacity.

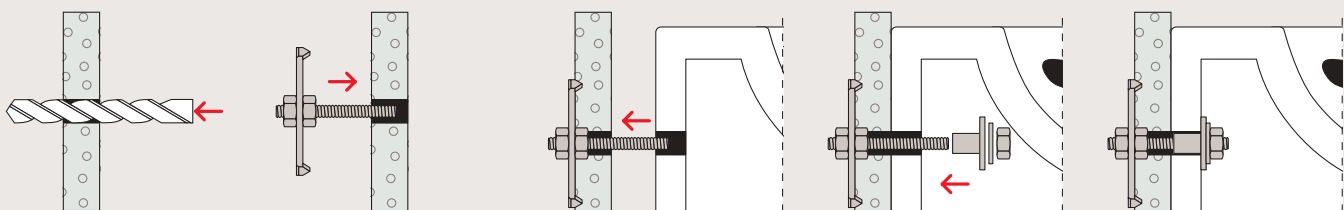
Building materials

- Gypsum plasterboard and gypsum fibreboards
- Chipboard

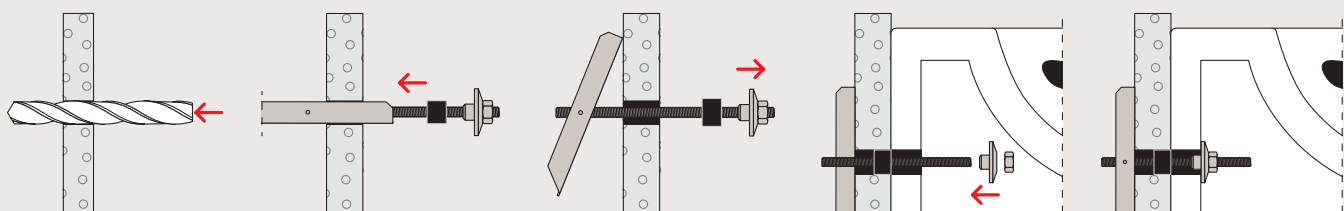
Functioning

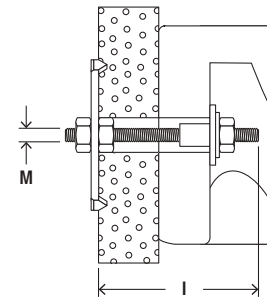
- KM is suitable for push-through installation.
- When placed in the drill hole, the wide transition beam of the KM independently swings open behind the board.
- WDP is set into the plumbing walls during wall installation.

Installation WDP



Installation KM



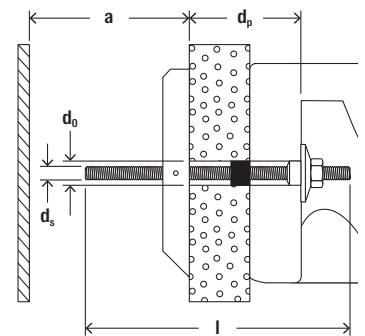


Wash basin and urinal fixing WDP



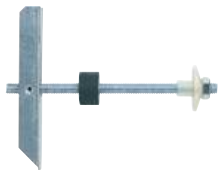
WDP

Item	Item no.	Contents	Sales unit [pcs]
WDP 10 x 170	014320	2 Threaded rods M10 x 170 with base plate 60x60x3, 2 flanged bushes BDH M10, 2 hexagon nuts M10 zinc-plated	10



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Gravity toggle KM 10



KM 10

Item	Item no.	Drill diameter d_0 [mm]	Anchor length l [mm]	Min. cavity depth a [mm]	Max. panel thickness d_p [mm]	Screw dimension $d_s \times l_s$ [mm]	Sales unit [pcs]
KM 10	050326	30	180	140	90	M10 x 180	25

Ceramic fixings

Complete fixing sets for free-standing toilets and bidets



Free-standing toilets



Bidets

Applications

- Free-standing toilets
- Bidets
- Ceramic shelves
- Mirrors

Advantages

- Complete fixing sets including brass screws allow for quick and easy installation.
- A pronounced rim prevents contact between the screw and ceramics, thus ensuring nothing gets damaged during fixing.
- The WB5N's assembly bracket with pre-drilled rows of holes allows for a flexible fixing with two directions.
- The WCN is also suitable for fixing ceramic shelves and mirrors, and can thus be used for a wide range of applications.

Certificates



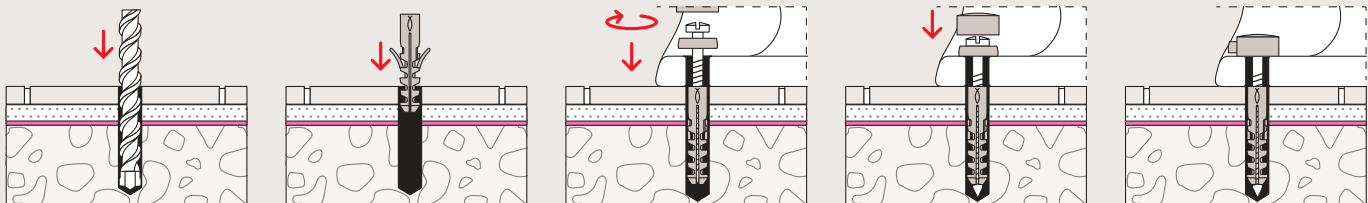
Building materials

- Concrete
- Solid sand-lime brick
- Natural stone with dense structure
- Solid brick made from lightweight concrete
- Solid brick

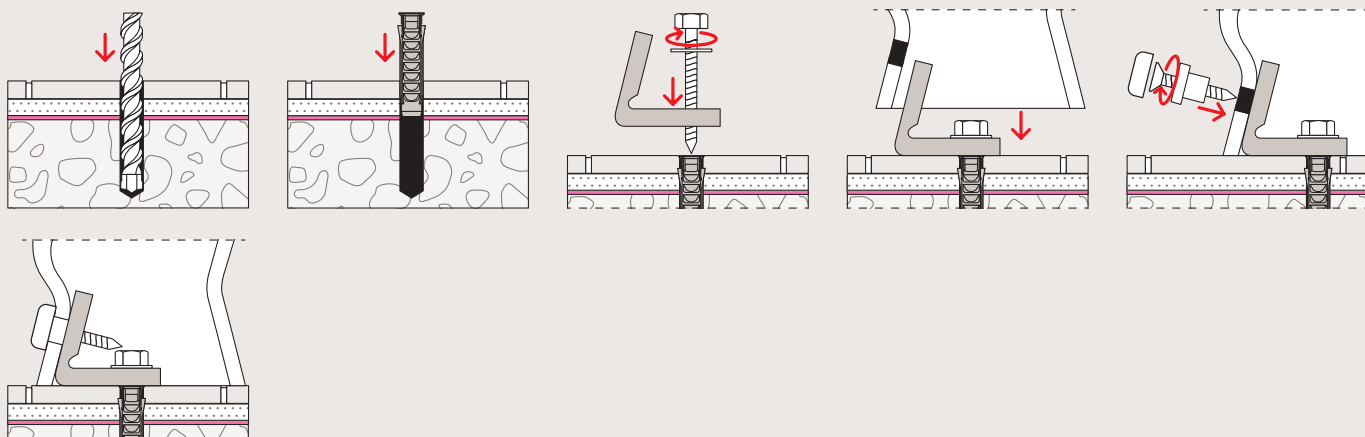
Functioning

- S 8 RD is suitable for push-through installation.
- WCN and S 8 D are suitable for both pre-positioned and push-through installation.
- The WB5N's assembly bracket is flexibly positioned on the base using the long hole. The ceramics are then fixed to the bracket via the rows of holes. These counterbalance any height differences in the ceramic assembly holes.

Installation WCN / S 8 D 70 WCR / S 8 RD WCR



Installation WB 5N



Sanitary fixing set WCN



WCN

Item	Item no.	Contents	Sales unit [pcs]
WCN 1	060561	2 wall plugs S 8, 2 stainless steel screws 6 x 70 hex., 2 cover caps white, 2 snap-fit sleeves	1
WCN 2	060562	2 wall plugs S 8, 2 stainless steel screws 6 x 70 hex., 2 cover caps chrome-coloured, 2 snap-fit sleeves	1

15

Sanitary fixing set S 8 D 70 WCR



S 8 D WCR

Item	Item no.	Contents	Sales unit [pcs]
S 8 D 70 WCR	060564	2 wall plugs S 8, 2 stainless steel screws 6 x 70 hex., 2 cover caps chrome and white, 2 snap-fit sleeves	1

Sanitary fixing set S 8 RD WCR



S 8 RD WCR

Item	Item no.	Contents	Sales unit [pcs]
S 8 RD 60 WCR	060570	2 wall plugs S 8 RD 60, 2 stainless steel screws 6 x 65 hex., 2 cover caps chrome and white	1
S 8 RD 80 WCR	060568	2 wall plugs S 8 RD 80, 2 stainless steel screws 6 x 85 hex., 2 cover caps chrome and white	1

WC fixing WB 5N

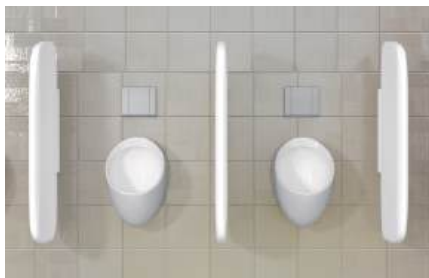


WB 5N

Item	Item no.	Contents	Sales unit [pcs]
WB 5N	018652	2 Expansion plugs SX Plus 10, 2 Screws 7x60 zinc-plated, 2 Nylon angles, 2 washers 8mm, 2 screws A2 stainless steel, 2 flanged sleeves, 2 cover caps chrom	1

Wash basin and urinal fixings

Complete fixing sets for wash basins, urinals and sanitary installations.



Urinals



Wash basins

Applications

- Wash basins
- Urinals
- Built-in toilets
- Boilers
- Gas heaters
- Cisterns
- Consoles

Advantages

- Complete fixing sets allow for quick and easy installation.
- The universal plug UX can be used in solid and hollow materials, thus offering a high level of flexibility.
- Flanged nuts and collar sleeves made of high-strength nylon are resistant to

ageing and chemicals, and guarantee a long-lasting fixing that will not damage the ceramics.

- Cover caps with a high-quality chrome finish ensure the fixture remains visually attractive for a long period of time.

15

Certificates



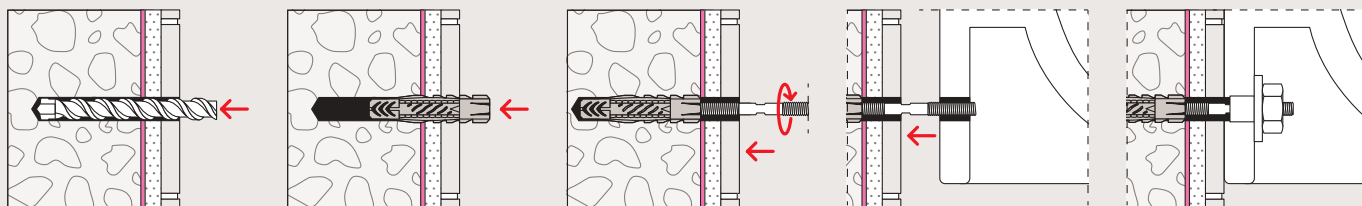
Building materials

- Concrete
- Vertically perforated brick
- Hollow blocks made from lightweight concrete
- Perforated sand-lime brick
- Solid sand-lime brick
- Natural stone
- Aerated concrete
- Solid panel made from gypsum
- Solid brick made from lightweight concrete
- Solid brick

Functioning

- The rimless UX is suitable for pre-positioned and push-through installation.
- Screwing in the screw causes the UX to expand in solid and hollow building materials.
- Maximum load-bearing capacity is achieved only if the minimum screw-in depth is reached.
- Tiles and plaster are not classed as load-bearing base materials.

Installation WD/BO/WST/UST



Wash basin and urinal fixing WD



WD

Item	Item no.	Contents	Sales unit [pcs]
WD 8 x 90	080659	2 wall plugs UX 10 x 60, 2 stud screws M8 x 90 zinc-plated, 2 flanged nuts BU M8	1
WD 8 x 110	080658	2 wall plugs UX 10 x 60, 2 stud screws M8 x 110 zinc-plated, 2 flanged nuts BU M8	1
WD 10 x 120	080655	2 wall plugs UX 14 x 75, 2 stud screws M10 x 120 zinc-plated, 2 flanged nuts BU M10 MH	1
WD 10 x 140	080656	2 wall plugs UX 14 x 75, 2 stud screws M10 x 140 zinc-plated, 2 flanged nuts BU M10 MH	1

Boiler fixing BO



BO

Item	Item no.	Contents	Sales unit [pcs]
BO 120	080654	4 wall plugs UX 14 x 75, 4 stud screws M10 x 120 zinc-plated, 4 flanged nuts BU M10	1

Wash basin fixing WST



WST

Item	Item no.	Contents	Sales unit [pcs]
WST 12 x 150	080661	2 wall plugs UX 14 x 75, 2 stud screws M12 x 150 zinc-plated, 2 flanged bushes BDH M12, 2 hexagon nuts M12 zinc-plated	1
WST 12 x 180	080662	2 wall plugs UX 14 x 75, 2 stud screws M12 x 180 zinc-plated, 2 flanged bushes BDH M12, 2 hexagon nuts M12 zinc-plated	1

Wash basin fixing WST Klik Plus



WST Klik Plus

Item	Item no.	Drill diameter d_0 [mm]	Min. drill hole depth h_1 [mm]	Anchor length l [mm]	Screw dimension $d_s \times l_s$ [mm]	Max. fixture thickness t_{fix} [mm]	Sales unit [pcs]
WST Klik Plus 120	567591	12	80	60	M10 x 127	40	1
WST Klik Plus 140	567592	14	90	70	M10 x 140	40	1

Urinal fixing UST



UST 8 x 110

UST 10 x 120

Item	Item no.	Contents	Sales unit [pcs]
UST 8 x 110	083578	2 wall plugs UX 10 x 60, 2 stud screws M8 x 110, 2 washers B 8.4 DIN 125, 2 plastic washer 8,4 x 16 x 1,6, 2 cap nuts FA 8, 2 cover caps chrome plated	1
UST 10 x 120	080668	2 wall plugs UX 14 x 75, 2 stud screws M10 x 120, 2 flanged nuts BU M10, 2 cover caps AKM 10 CR	1

WC and sanitary fixing WL



WL

Item	Item no.	Contents	Sales unit [pcs]
WL 7 x 60	080651	2 plugs S 10, 2 screws 7 x 60 hex. head zinc-plated, 2 washers zinc-plated	1
WL 8 x 70	080652	2 plugs S 10, 2 screws 8 x 70 hex. DIN 571 zinc-plated, 2 washers zinc-plated	1
WL 10 x 80	080650	2 plugs S 12, 2 screws 10 x 80 hex. DIN 571 zinc-plated, 2 washers zinc-plated	1

Flanged nut BU M

Flanged nut BU M



Item	Item no.	Thread M	Width across nut SW [mm]	Washer [mm]	Match	Sales unit [pcs]
BU M 8 MH	060200 ¹⁾	M8	17	40	STS M8	25
BU M10 MH	060201	M10	17	40	STS M10	25
BU M12 MH	060204	M12	19	40	STS M12	25

¹⁾ Delivery time on request.

Cover cap AKM

Cover cap AKM



Item	Item no.	Colour	Match	Sales unit [pcs]
AKM 10 W	080972	white	BU M10 MH	20
AKM 10 CR	080951	chrome	BU M10 MH	100
AKM 12 CR	080952	chrome	BU M12 MH	100

Wash basin fixing WST II

Complete fixing set for wash basins.



Wash basins



Urinals

Applications

- Wash basins
- Urinals
- Built-in toilets
- Cisterns

Advantages

- Complete fixing set ensures a fast and easy installation.
- The new collar nut enables the prefixing of the wash basin and is therefore suitable for an easy one man installation.
- The white collar nut fits to all established ceramics and offers therefore an optical attractive fixing solution.
- The usage of the DuoPower allows a wide range of applications with one plug.
- The usage of a diameter 12 plug reduces the drilling depth and saves time.
- The stud screw with integrated torx simplifies the installation and provides a comfortable installation.

Certificates



Building materials

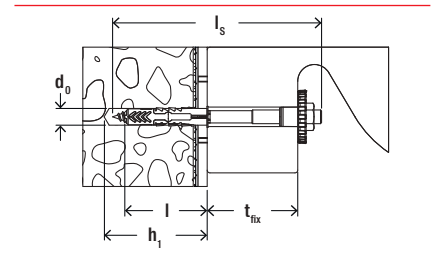
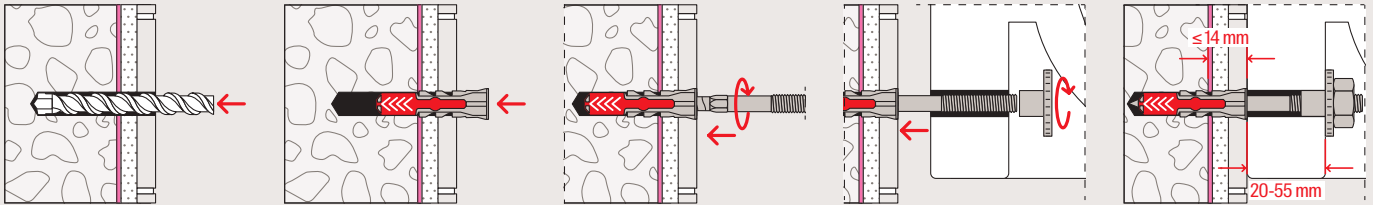
Suitable for:

- Concrete
- Vertically perforated brick
- Hollow blocks made from lightweight concrete
- Perforated sand-lime brick
- Solid sand-lime brick
- Natural stone
- Aerated concrete
- Solid panel made from gypsum
- Solid brick made from lightweight concrete
- Solid brick

Functioning

- The enclosed DuoPower made of two materials, expands, folds or knots depending on the building material and ensures thereby always the optimum product function.
- The stud screw can be installed with the inner torx in the head of the screw. This enables a fast and easy installation without the need of an additional tool.
- By turning on the white collar nut the wash basin is already prefixed and remains in his position. In the next step the metall nut is turned on the stud screw for the final installation of the wash basin.
- Maximum load-bearing capacity is achieved only if the minimum screw-in depth is reached.
- Tiles and plaster are not classed as load-bearing base materials.

Installation WST II



Technical data

Wash basin fixing WST II



WST II with DuoPower

Item	Item no.	Drill diameter d_0 [mm]	Min. drill hole depth h_1 [mm]	Anchor length l [mm]	Screw dimension $d_s \times l_s$ [mm]	Fixture thickness t_{fix} [mm]	Sales unit [pcs]
WST II 10x140	567430	12	80	60	10.0 x 140	20 - 55	1

Loads

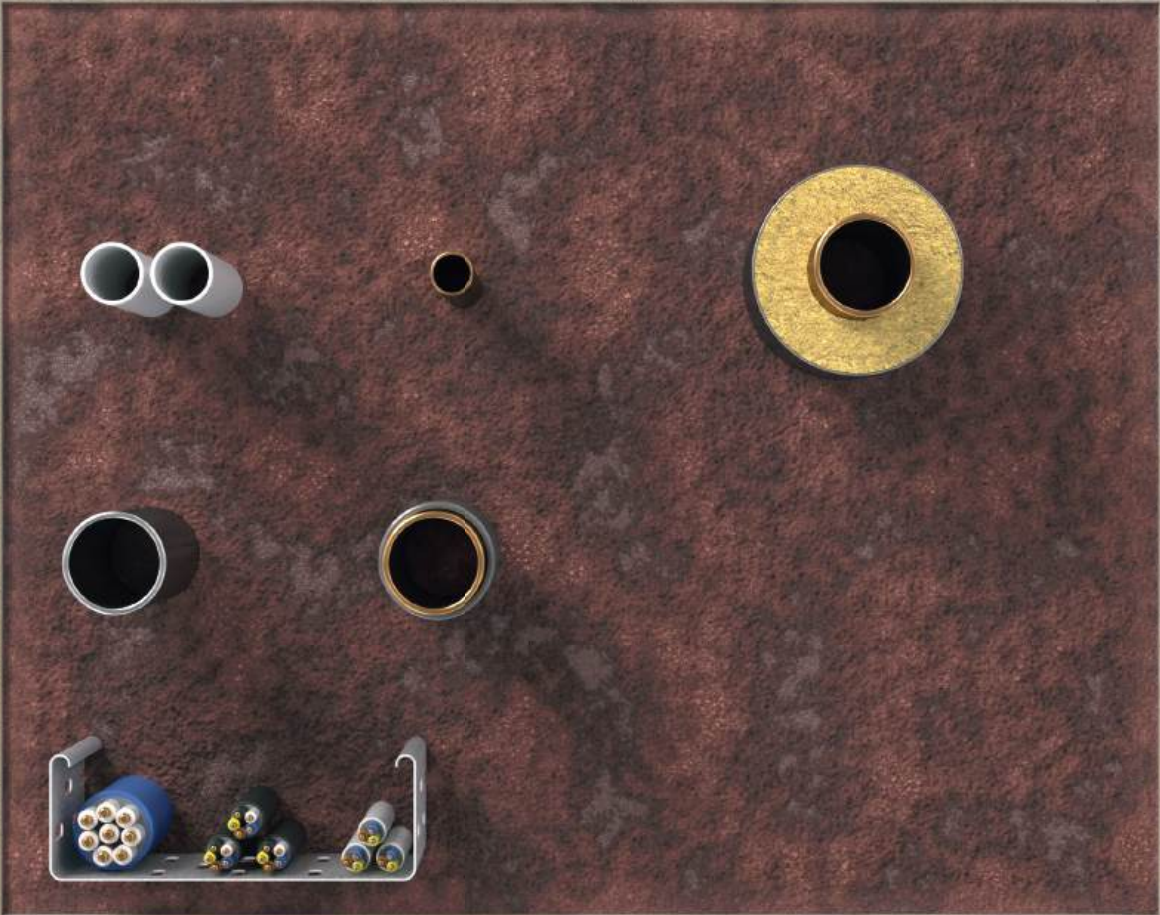
Washbasin WST II in combination with DuoPower

Recommended loads^{1) 2)} for a single anchor.

Type		WST II
Screw	[mm]	10 x 140
DuoPower plug	[mm]	12 x 60
Recommended load in the respective base material F_{rec}		
Concrete	\geq C20/25	[kN] 2.20
Solid brick	\geq Mz 12	[kN] 1.30
Solid sand-lime brick	\geq KS 12	[kN] 2.20
Aerated concrete	\geq PP2, AAC	[kN] 0.20
Aerated concrete	\geq PP4, AAC	[kN] 0.80
Vertically perforated brick	\geq Hz 12; $\rho \geq 0.9 \text{ kg/dm}^3$	[kN] 0.35
Perforated sand-lime brick	\geq KSL 12; $\rho \geq 1.6 \text{ kg/dm}^3$	[kN] 0.75
Hollow lightweight concrete blocks	\geq Hbl 2	[kN] 0.20














¹⁾ Required safety factor are considered. Load values apply when using the supplied plug, the stud screws and considering a total ceramic tile thickness (tile + tile adhesive + bonded sealant) of maximum 14 mm.

²⁾ Valid for tension load, shear load and oblique load under any angle.



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FireStop

Intumescent Acoustic Mastic FiAM	548	
Intumescent Acoustic Mastic FiAM US	551	
Rapid Fire Seal RFS 640	553	
Fire I Barr ElastoSeal FFB-ES	555	
Universal FireStopping Sealant UFS	557	
Intumescent Graphite Mastic FIGM	560	
Foam Barrier System PLUS	563	
Intumescent Pipe Wraps FiPW	566	
Intumescent Wrap Strip FiWS	569	
Fire Collar FFC	572	
Intumescent Pillows FiP	574	
Coated Panel System FCPS	576	
FireStop Compound FFSC	578	

Intumescent Acoustic Mastic FiAM

Flexible fire resistant acoustic mastic



Construction joint application



Non combustible pipe application

Applications

- Metallic pipes: 13" (325 mm)
- Cable trays: 18" x 2" (450 x 50 mm)
- Cable bunches: 4" (100 mm)
- Linear joints: flexible and rigid construction elements
- Joints between FCPS coated panel system

Advantages

- Water based
- Low VOC
- Movement capability $\pm 25\%$
- Excellent acoustic properties

- Approved for infinite linear gap length
- Halogen and solvent free
- Paintable and excellent slump characteristics

Certificates



ETA-20/1065
ETA-20/1064



EN ISO 10140
EN 1026
EN 1366-3
EN 1366-4
ASTM E 84 (UL 723)
ASTM E 1966 (UL 2079)

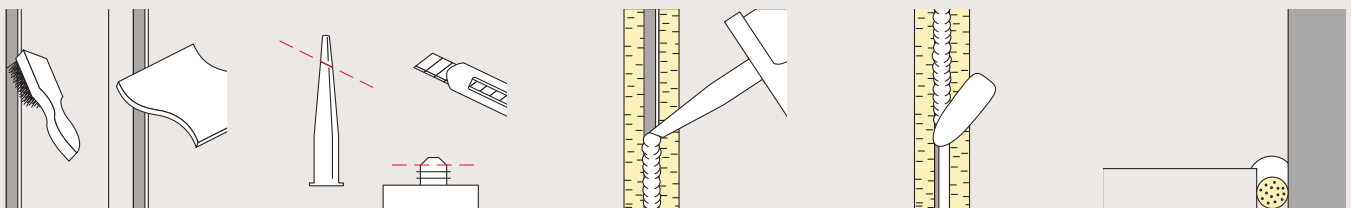
Building materials

- Flexible wall constructions
- Rigid floor and wall constructions
- Masonry
- Concrete
- Timber
- Steel
- FCPS System

Functioning

- FiAM is a one-part water-based acrylic emulsion.
- It has a fire resistance of up to 5 hours when used in construction joints and services in both vertical and horizontal applications.
- When exposed to fire, it reacts to form a highly insulative char that slows down heat transfer and provides a barrier to fire.
- It is suitably compatible in a variety of materials, and is utilised within the FCPS which is designed to seal large openings in fire rated floors and walls.

Installation FiAM



Technical data

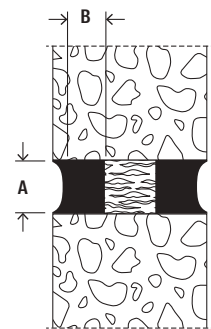
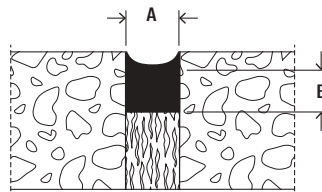
Item	Item no.	Ap- pro- val ETA	Languages on the cartridge	Contents [ml]	Contents [kg]	Adapted for	Sales unit [pcs]
FiAM 310	053011	●	DE, EN, FR, IT	310	-	-	1
FiAM 310	538152	●	DA, FI, NO, SV	310	-	-	1
FiAM 310	538150	●	ES, NL, PT, TR	310	-	-	1
FiAM 310	538151	●	CS, HU, PL, SK	310	-	-	1
FiAM 600	056006	●	-	600	-	-	1
FiAM bucket	568134	●	-	-	20	-	1
KPM 2 Plus	053117	-	-	-	-	FiAM Plus 310, FFRS 310, UFS 310, FIGM 310	1
Applicator gun 600	097967	-	-	-	-	FiAM Plus 600	1

Technical data

Base material	Water-based acrylic
Relative gravity	approx. 1.6 g/cm ³
Skin-forming time	approx. 10 min at 23 °C RH
Curing rate	-
Storage temperature	+ 5 °C to + 30 °C °C
Movement capability	-
pH Value	8 - 9.5
Acoustic performance	-
Yield per l/m	-
Colour	-
European Technical Assessment	ETA-20/1064, ETA-20/1065
CE marking	2812-CPR-JA5044

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Curing rate is dependent on substrate, air humidity and weather conditions.



Application data

Joint width A [mm]	Joint depth B [mm]	ml per linear metres*
60	5	300
50	5	250
30	5	150
15	5	75
5	5	25

*The consumption of the product depends on the application.

Substrate	Max. joint width [mm]	Fire ratings	
		Integrity rating [min]	Insulation rating [min]
Concrete/masonry	60	240	240
Concrete or masonry/steel	60	240	60
Concrete or masonry/timber	60	60	60
Concrete/masonry/head detail	60	240	240

For detailed information please refer to listed system.

Service type size		Fire ratings	
		Integrity rating [min]	Insulation rating [min]
Copper/steel/metal pipes	35 - 159 mm diameter	up to 240	up to 240
Loaded cable tray	450 x 50 (tray) cables to 21 mm	up to 120	up to 90
Single/bunched cables	21 - 100 mm diameter cables	up to 120	up to 120

Intumescent Acoustic Mastic FiAM US

General purpose fire resistant sealant designed for UL specific applications



Construction joint application



Non combustible pipe application

Applications

- Linear joints: flexible and rigid construction elements with dynamic movement
- Metallic pipes and ducts
- Insulated metallic pipes
- Conduits
- Cable and cable bunches
- Cable trays

Advantages

- Water based
- Excellent acoustic properties
- Low VOC
- Halogen and solvent free
- Various applications with two products only

- Age resistant
- Smoke resistant
- Excellent adhesion
- F-rating up to 3 hrs
- T-rating up to 3 hrs

16

Certificates



ASTM E 84 (UL 723)
ASTM E 814 (UL 1479)
ASTM E 1966 (UL 2079)

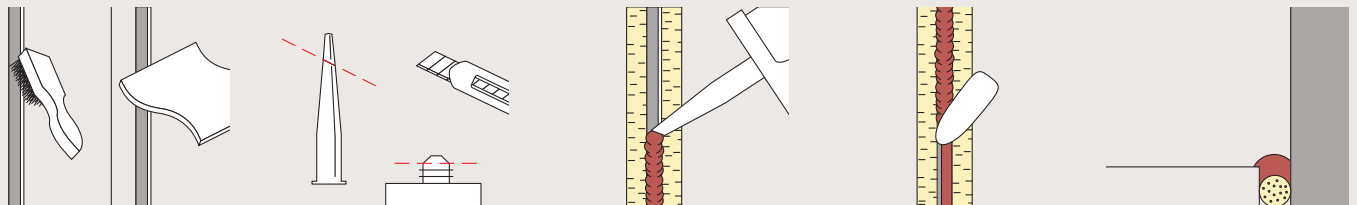
Building materials

- Flexible wall constructions
- Rigid floor and wall constructions
- Masonry
- Concrete
- Steel

Functioning

- The FiAM US is a one-part water based fire resistant sealant designed for a wide range of UL listed applications.
- The FiAM US can be used in construction joint and service penetration applications.
- The FiAM US can be used in both vertical and horizontal orientation and can be used in conjunction with the FiWS for a wide range of combustible services.

Installation FiAM US

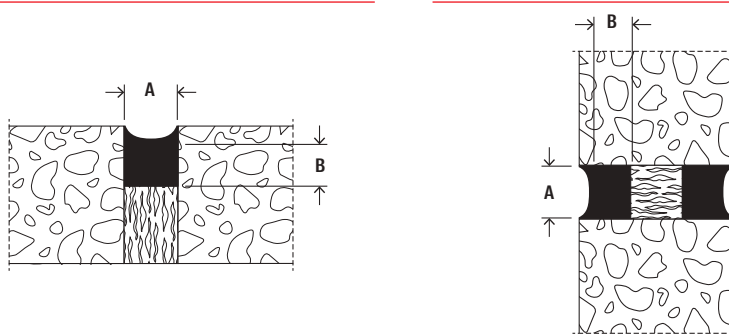


Technical data

Item	Item no.	Languages on the cartridge	Contents	Contents	Adapted for	Sales unit
			[ml]	[l]		[pcs]
FiAM US	546487	DE, EN, ES, TR	310	-	-	1
FiAM US bucket	554934	-	-	19	-	1
KPM 2 Plus	053117	-	-	-	FiAM Plus 310, FFRS 310, UFS 310, FIGM 310	1

Technical data

Base material	water-based elastomeric
Skin-forming time	approx. 20 - 30 min
Curing rate	3 to 4 weeks at 25 °C
Storage temperature	+ 2 °C to + 49 °C
Movement capability	up to 33 %
pH Value	7 - 8
Acoustic performance	65 dB
Surface burning characteristics	Flame spread: 10 - Smoke: 10
Colour	red



Application data

Joint width A [mm]	Joint depth B [mm]	ml per linear metres*
1" (25 mm)	5/8" (16 mm)	400
1" (25 mm)	1/2" (13 mm)	325
2" (50 mm)	1/4" (6 mm)	300
3-1/2" (90 mm)	1/4" (6 mm)	540
3/4" (20 mm)	5/8" (16 mm)	320

*The consumption of the product depends on the application.

Rapid Fire Seal RFS 640

Rapid fire resistant sealant



Curtain wall application



Head of wall application

Applications

- Curtain wall/slab edge: 8" (200 mm)
- Head of wall: 4" (100 mm)
- General construction joints: 8" (200 mm)
- Cable tray: 24" x 4" (600 mm x 100 mm)
- Steel pipes: 8" (200 mm)

Advantages

- Water based
- Flexible set
- Contains mould growth inhibitor
- Freeze - thaw capabilities
- Paintable
- Accelerated age and humidity tested
- Low VOC

- Spray or brush applied
- Excellent smoke seal
- Water resistant
- Asbestos and solvent free
- Can be used for internal applications and for conditions where dynamic movement may occur.

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Certificates



ASTM E 84 (UL 723)
ASTM E 814 (UL 1479)
ASTM E 1966 (UL 2079)
ASTM E 2307

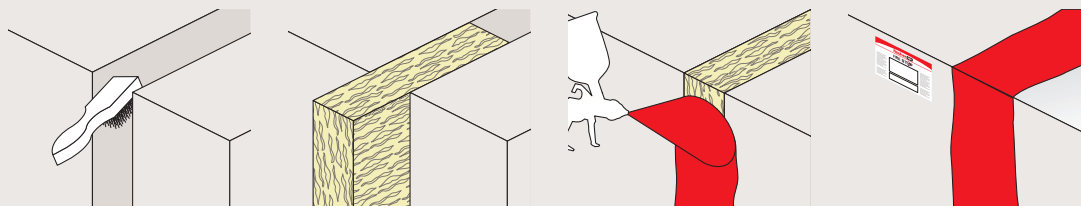
Building materials

- Flexible wall constructions
- Rigid floor and wall constructions
- Flexible wall
- Masonry
- Concrete

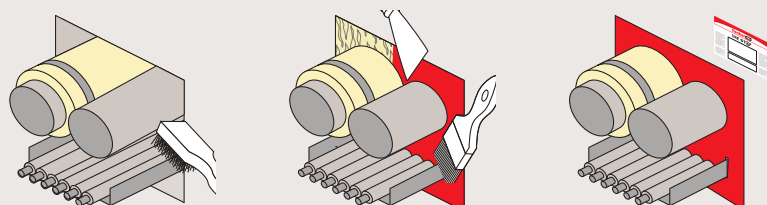
Functioning

- RFS 640 is a spray grade one-part water-based, fire rated sealant, which has been designed to provide smoke and fire protection on construction joints and service penetrations in both vertical and horizontal applications.
- Provides up to 3 hours fire rating (also in accordance with ASTM E 2307).
- Meeting the new requirements of ASTM E 1399, RFS 640 has been cycled tested up to 500 times.
- Can be used for internal applications and for conditions where dynamic movement may occur.
- RFS 640 has also been tested at positive pressure with a minimum 0.01" (2.5 mPa) water i.a.w UL 2079 test standards.

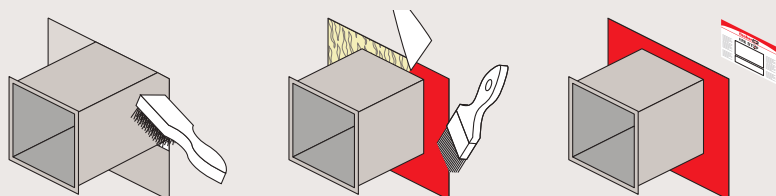
Installation RFS 640 - Joint application



Installation RFS 640 - Penetration application



Installation RFS 640 - Air duct application



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Technical data

Item	Item no.	Contents [l]	Colour	Sales unit [pcs]
RFS 640	516539	19	red	1

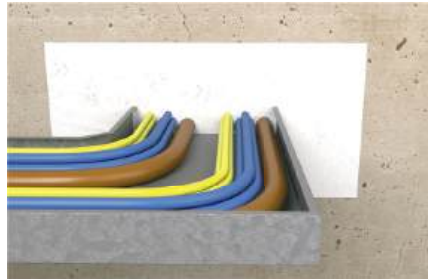
Technical data

Base material	Waterborne
Density	approx. 1.25 g/cm ³
Skin-forming time	approx. 30 - 45 min
Curing time	approx. 5 - 7 days
Storage temperature	+ 2 °C to + 49 °C
Movement capability	up to 33 %
Water resistant	Depending on individual system
pH Value	7 - 8
Accoustic performance	65 dB
Surface burning characteristics	Flame spread: 0 - Smoke: 0

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Fire I Barr ElastoSeal FFB-ES

Elastomeric fire resistant coating for construction joint and assemblies



Electrical application



Curtain wall application

Applications

- Linear joints in construction elements up to 20" (500 mm) wide
- Floor to floor
- Wall to wall
- Head of wall
- Bottom of wall
- Curtain wall
- Cabel / cabel trays
- Metallic pipes

Advantages

- Openings up to 20" (500 mm) wide
- Movement capability of 25 %
- Working temperature between -10 °C and 95 °C
- Can be spray or brush applied
- Air permability
- Acoustic performance
- 80 kg/m³ stone wool base
- 2.5 mm WFT required

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Certificates



ETA-20/1103
ETA-20/1101
EN ISO 10140
EN 1026
EN 1027
EN 1364-4
EN 1366-3
EN 1366-4

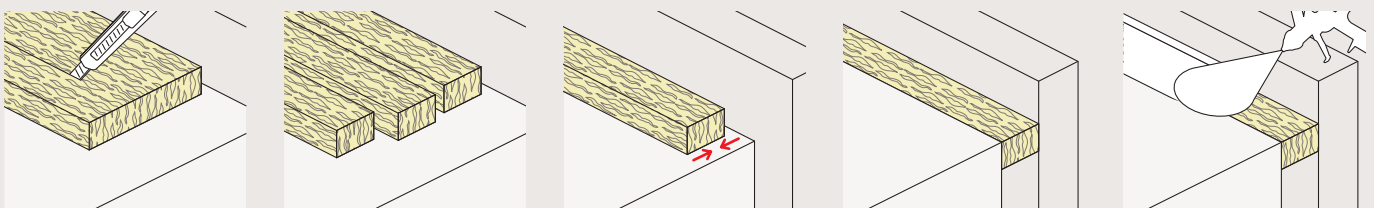
Building materials

- Flexible wall constructions
- Rigid floor and wall constructions
- Concrete
- Masonry

Functioning

- FFB-ES is a one-part water-based acrylic coating, which has been designed to provide smoke and fire protection on construction joints in both vertical and horizontal applications.
- Developed for use on 80 kg/m³ stone wool base.
- Once applied, it prevents the passage of fire and smoke and can contribute to the acoustic value of a structure between fire rated compartments giving a fire resistance for up to EI 240.

Installation FFB-ES Plus perimeter joint



Technical data

Item	Item no.	Ap- pro- val	Contents	Sales unit
		ETA	[kg]	[pcs]
FFB-ES/White	520753	●	20	1
FFB-ES/Grey	520755	●	20	1
FFB-ES/Red	520756	●	20	1

Technical data

Description	water-based, flexible acrylic coating
Density	1.25 - 1.3 g/cm ³
Coating thickness	2.5 mm nominal, wet film thickness
Sealant coverage	2.8 kg/m ² , 2.24 l/m ²
Fire resistance	EN 1366-4:2006 120 EI
Acoustic performance	-
Air permeability	600 PA positive and negative pressure and tested to EN 1026
Water permeability	450 PA positive pressure and tested to EN1027
Spraying guidance	-
Storage temperature	- 5 °C to +25 °C
Colour	white
European Technical Assessment	ETA-20/1101, ETA-20/1103
CE marking	2531-CPR-CX010324

Application data

Joint width [inch]	Joint width [mm]	Ft/gallon	Ft/pail	LM/gallon [mm]	LM/pail
0.25	6	119	800	54	244
0.50	13	99	683	44	202
0.75	19	85	567	38	173
1.00	25	73	492	33	150
1.25	32	66	443	30	135
2.00	51	49	328	22	100
4.00	102	31	207	14	63
6.00	152	22	148	10	45
8.00	203	16	108	7	33

The above table provides an approx. yield for a coverage of 2.5 mm Wet Film Thickness (WFT) with a 12.5 mm overlap. Application shall be as per listed system.

Universal FireStopping Sealant UFS

Universal firestopping sealant which is suitable for metallic, non-metallic services and construction joints



Electrical application



Combustible and non combustible pipes application

Applications

- Metallic services: steel and cast iron 20" (500 mm) - copper 6" (150 mm)
- Non metallic service: PVC 2" (51 mm open) 3" (75 mm closed)
- Insulated service: 20" (500 mm)
- Construction joints: 4" (100 mm)
- HVAC 100" (2500 mm)
- Cable bunches 4" (100 mm); busway 27" (686)

Advantages

- Water based
- Flexible set
- Contains mould growth inhibitor
- Freeze - thaw capabilities
- Paintable
- Accelerated age and humidity tested
- Low VOC
- Excellent acoustic properties

Certificates



ASTM E 84 (UL 723)
ASTM E 814 (UL 1479)
ASTM E 1966 (UL 2079)

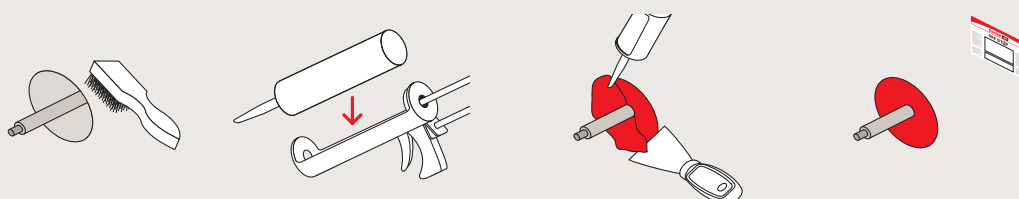
Building materials

- Wall constructions - linear joints
- Floor constructions - linear joints
- Flexible wall
- Masonry
- Concrete

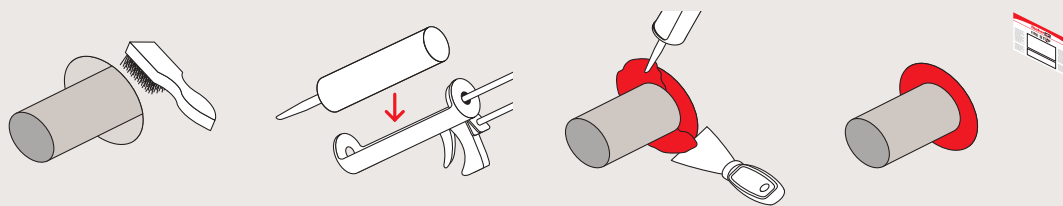
Functioning

- UFS is a one-part water-based intumescent sealant which is used for sealing construction joints and service penetration in both vertical and horizontal applications.
- Up to 4 hours of fire rating can be provided.
- It exhibits excellent slump characteristics, is easy to apply and cures to a flexible set. It is suitable for internal applications and conditions where dynamic movement may occur.
- UFS can be used for most application properties.

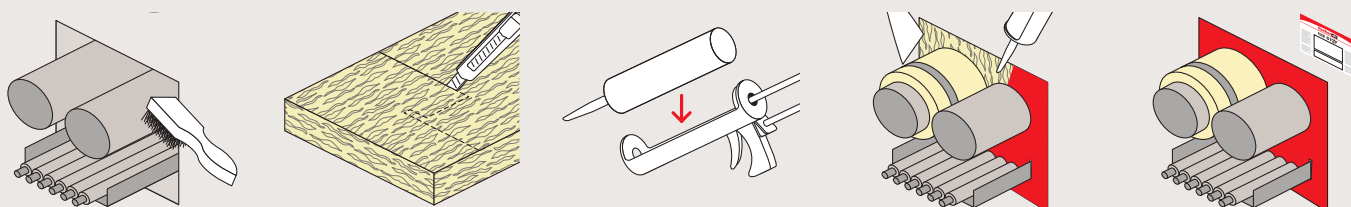
Installation UFS - Cabel application



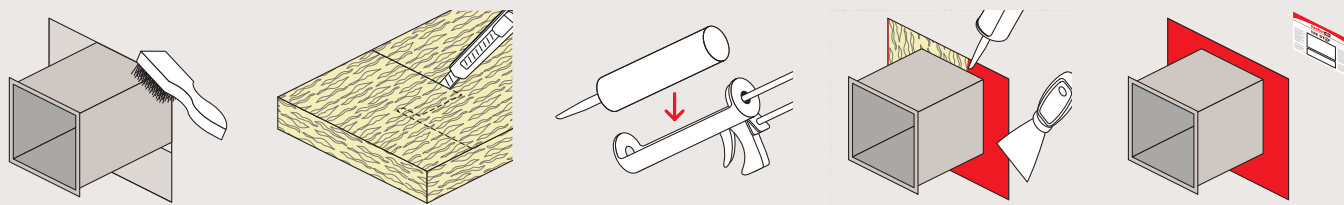
Installation UFS - Pipe application



Installation UFS - Penetration application



Installation UFS - Air duct application



Technical data

Item	Item no.	Languages on the cartridge	Contents [ml]	Contents [l]	Adapted for	Sales unit [pcs]
UFS 310	516538 ¹⁾	DE, EN, FR, NL	310	-	-	12
UFS 310	538136	CS, HU, PL, SK	310	-	-	1
UFS 310	538137	DA, FI, NO, SV	310	-	-	1
UFS 310	538135	TR, PT, ES, IT	310	-	-	1
UFS bucket	533889	-	-	19	-	1
KPM 2 Plus	053117	-	-	-	FiAM Plus 310, FFRS 310, UFS 310, FiGM 310	1

¹⁾ Curing rate is dependant on substrate, air humidity and weather conditions. Movement capability depends on UL listed system and configuration.

Technical data

Base material	water-based elastomeric
Density	approx. 1.31 g/cm ³
Skin-forming time	approx. 20 - 30 min
Curing rate	approx. 4 mm in 72 hours
Storage temperature	+ 2 °C to + 49 °C
Movement capability	up to 50 %
Intumescent activation	190 °C to 593 °C
pH Value	6.5 - 7
Surface burning characteristics	Flame spread: 0 - Smoke: 0
Colour	red

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Application data

Services Types	Sizes	Fire ratings (minutes)	
		Integrated rating	Insulation rating
PVC/CPVC closed pipe systems	3" (75 mm)	120	120
PVC/CPVC open pipe systems	2" (50 mm)	120	120
Steel and cast iron pipes	20" (508 mm)	180	0
Copper pipes	6" (152 mm)	180	0
Insulated services	20" (508 mm)	120	120
Construction joints	4" (100 mm)	120	120
HVAC	100" (2,500 mm)	120	120
Cable bunches	4" (100 mm)	120	120
Cable tray/ladder	24" (600 mm)	120	45
Bus tar	27" (686 mm)	120	45

For detailed information please refer to listed system.

Intumescent Graphite Mastic FiGM

High performance intumescent graphite fire resistant mastic



Electrical application



Insulated and combustible pipes

Applications

- Metallic pipes: 6" (159 mm)
- Non-metallic pipes: 5" (125 mm)
- Cable bunches: 1" (21 mm)
- Insulated service: 6" (159 mm)
- Construction joints: 1" (25 mm)
- Mixed services

Advantages

- Low VOC
- Excellent acoustic properties
- Halogen and solvent free
- Excellent slump characteristics

Certificates



ETA-20/1105



EN ISO 10140
EN 1026
EN 1366-3

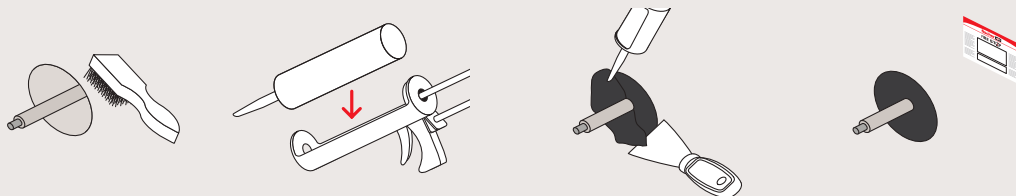
Building materials

- Concrete
- Masonry
- Steel
- Timber

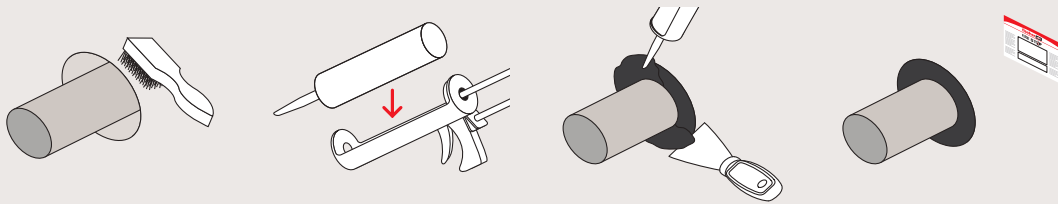
Functioning

- FiGM is a one-part water-based flexible acrylic emulsion containing a high pressure intumescent graphite, which is used to seal service penetrations in both vertical and horizontal applications.
- It can expand up to 20 times its own volume and cures to form a resilient, flexible fire seal.

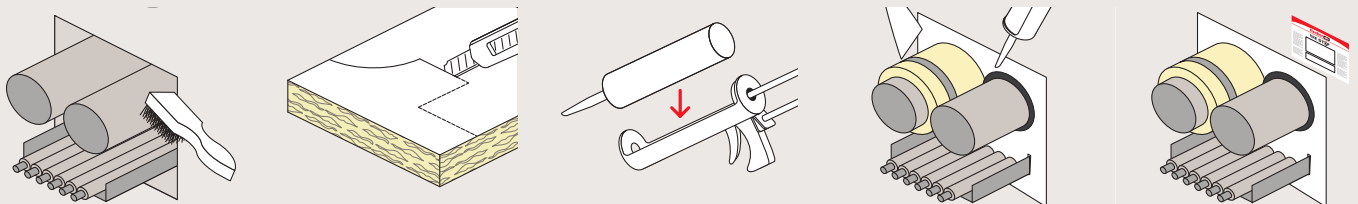
Installation FiGM - Cable application



Installation FIGM - Pipe application



Installation FIGM - Penetration application



Technical data

Item	Item no.	Ap- pro- val ETA	Languages on the cartridge	Contents [ml]	Adapted for	Sales unit [pcs]
FIGM 310 ml	508765	●	DE, EN, FR, IT	310	-	1
FIGM 310 ml	538147	●	ES, NL, PT, TR	310	-	1
FIGM 310 ml	538148	●	CS, HU, PL, SK	310	-	1
FIGM 310 ml	538149	●	DA, FI, NO, SV	310	-	1
KPM 2 Plus	053117	-	-	-	FIAM Plus 310, FFRS 310, UFS 310, FIGM 310	1

Technical data

Base material	Aqueous thixotropic paste
Density	approx. 1.3 g/cm ³
Curing rate	1.7 mm per 24 hours dependent on conditions
Storage temperature	+ 5 °C to + 30 °C
Tack free after	30 min
Curing system	Waterborne
UV resistance	good
Expansion	up to 20 times
Skin-forming time	15 min (at 25 °C and 50% relative humidity)
Acoustic performance	64 dB
Shelf life	18 months
European Technical Assessment	ETA-20/1105
CE marking	2531-CPR-CX010327
Chemical and water resistant	-
Colour	black

Application data

Services		Fire ratings (minutes)	
Types	Sizes	Integrated rating	Insulation rating
PVC pipe	Up to 125 mm diameter	120	120
HDPE pipe	Up to 90 mm diameter	120	120
ABS pipe	Up to 90 mm diameter	120	120
Insulated copper pipe	Up to 159 mm diameter + up to 100 mm insulation	120	120
Cables	Up to 21 mm diameter x bunches 10 max.	120	120
Mixed	Up to 63 mm diameter HDPE + 21 mm diameter cables x 10	120	120

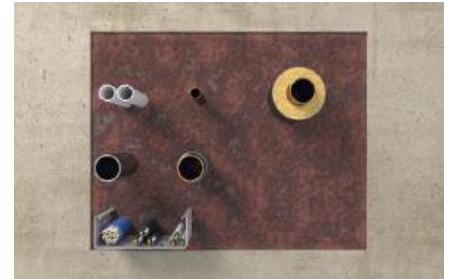
For detailed information please refer to listed system.

Foam Barrier System PLUS

FireStop Foam and FireStop Block for use in a System. Or individually. ETA approved and UL listed applications.



Electrical application



Mixed penetration application

Applications

- Metallic pipes up to 8" (203 mm)
- Insulated metallic pipes
- Conduits
- Cable and cable bunches
- Cable trays
- Mixed multiple penetrations

Advantages

- Easy access for difficult to reach openings
- Low VOC
- Various applications with two products only
- Age resistant
- Smoke resistant

- Resistant to damp
- Re-enterable and repairable
- Excellent adhesion
- No backing material required
- F-rating / E-Integrity rating up to 2 hours
- T-rating / EI-Insulation rating up to 2 hours

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Certificates



ETA-17/0845

EN 1366-3

ASTM E 814 (UL 1479)

EN 13501-1

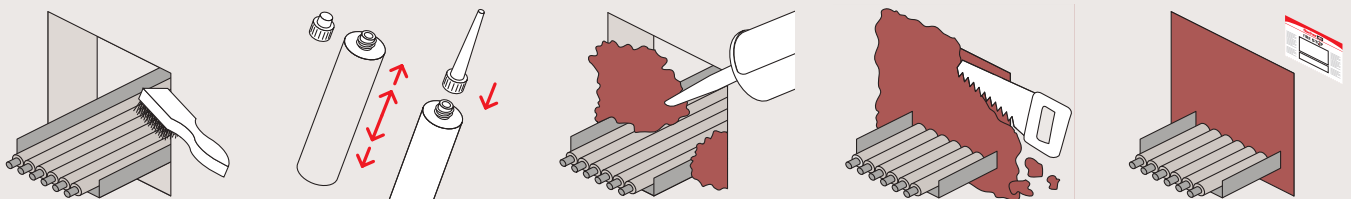
Building materials

- Concrete (wall and floors)
- Masonry
- Flexible wall

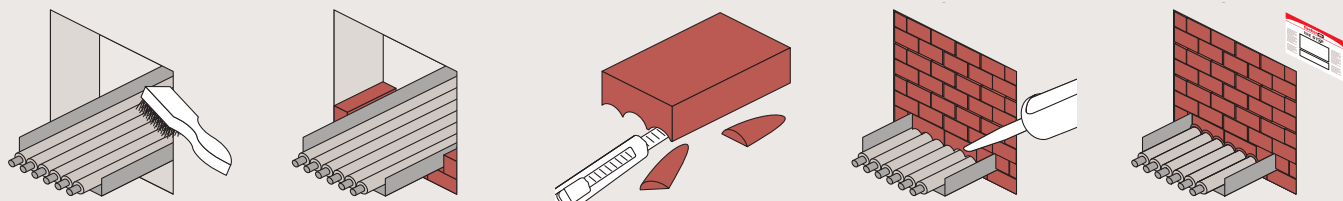
Functioning

- FBS is a two component polyurethane expanding sound, smoke and firestopping seal for hard to reach locations which expands to up to 5 times of its volume.
- FBB are highly elastic mouldable blocks.
- FIB is a glass fiber reinforced intumescent wrap to enhance the insulation value of ETA applications.
- Tested in accordance with ASTM E 814 (UL 1479) as well as EN 1366-3, EN 13501 the Barrier System PLUS allows an easy application which saves time and costs on site.

Installation FBS



Installation FBB



Technical data

Item	Item no.	Ap- pro- val ETA	Languages on the cartridge	Contents	Dimensions	Sales unit
				[ml]	[mm]	[pcs]
FBS-UL	544079	●	–	380	–	6
FBB-UL FireStop Block	544083	–	–	–	200 x 130 x 60	12
FBS-EN	544084	●	DE, EN, FR, IT	380	–	6
FBS-EN	544085	●	DA, FI, NO, SV	380	–	6
FBS-EN	544086	●	CS, HU, PL, SK	380	–	6
FBS-EN	544087	●	ES, NL, PT, TR	380	–	6
FBB-EN FireStop Block	544088	●	–	–	200 x 144 x 60	4
FIB Insulating Bandage	544089	–	–	–	5000 x 150	1
FFBD Foam Barrier Dispenser	544090	–	–	–	–	1

16 Technical data FBS-UL

Temperature resistance	–
Yield	–
Curing time	–
Shelf life	–
Storage temperature	–
Colour	reddish brown

Technical data FBS-EN

Density	–
Temperature resistance	–
Construction material class	B2 as per DIN 4102
Yield	–
Curing time	–
Shelf life	–
Storage temperature	–
Acoustic performance	–
Colour	reddish brown

Technical data FBB-EN

Temperature resistance	≤ 80 °C
Construction material class	B2 as per DIN 4102
Acoustic performance	45.5 - 68
Colour	reddish brown

Technical data FBB-UL

Temperature resistance	≤ 80 °C
Colour	reddish brown

Application data - UL

	Blank opening	Metallic pipes and conduits	Cables/Cable trays	Insulated metal pipes	Mixed penetrations
Max. possible sizes of penetrations	Max 32 x 32 inch (813 x 813 mm)	Max 8 inch (203 mm) diameter	Max 24 inch (610 mm) wide by max. 6 inch (152 mm) deep cable tray	Max 8 inch (203 mm) diameter with 1 inch (25 mm) insulation	see listed system
Barrier System PLUS UL	C-AJ-0158, W-L-0052	C-AJ-1669	C-AJ-3341, C-AJ-4110, W-L-4091	C-AJ-5383	C-AJ-8260, C-AJ-8261

Application data - ETA

		Seal thickness 144 mm	Seal thickness 200 mm
Cable / Cable Trays and Ladders	Sheathed electrical cables up to 80 mm	Wall: E120/EI60 - Floor: EI60	Wall/Floor: E120/EI90
	Tied cable bundles up to 100mm	Wall: E120/EI60 - Floor: EI60	Wall/Floor: E120/EI90
	Non-sheathed electrical cables	Wall: E120/EI45 - Floor: E60/EI30	Wall/Floor: E120/EI60
Conduits	Conduits/pipes of plastic up to a max. diameter of 40 mm	Wall: E120/EI60 - Floor: E60/EI30	Wall/Floor: EI120
Pipes	Insulated metal pipes with max. diameter of 54 mm	Wall: E120/EI90 - Floor: EI60	Wall/Floor: E120/EI90
	Non-insulated metal pipes with max. diameter of 28 mm	Wall: E120/EI60 - Floor: EI60	Wall/Floor: E120/EI90
	Insulated metal pipes with AF/Armaflex insulation up to 88.9 mm diameter	Wall: E120/EI90 - Floor: EI60	Wall/Floor: EI120
	Combustible pipes with max. 50 mm diameter	Wall: EI120 - Floor: EI60	Wall/Floor: EI120

For detailed information please refer to ETA 17/0845. Remaining space around penetrants can be filled with FBB FireStop Block.

Intumescent Pipe Wraps FiPW

An intumescent single or endless wrap for sealing flammable pipes



Combustible pipes floor application



Combustible pipe wall application

Applications

- Non-metallic pipes
- Polyvinyl Chloride PVC
- Chlorinated Polyvinyl Chloride cPVC
- Medium-density Polyethylene MDPE
- High-density Polyethylene HDPE
- Acrylonitrile Butadiene ABS

Advantages

- Efficient and effective for sealing of pipe openings in floors and walls
- Easy to fit
- Moisture resistant
- No mechanical fixing required
- Economical solution
- Up to 2 hours fire resistance
- Asbestos and halogen free
- Available on a roll for more flexibility in pipe diameters

Certificates



ETA-21/1061
EN 1366-3

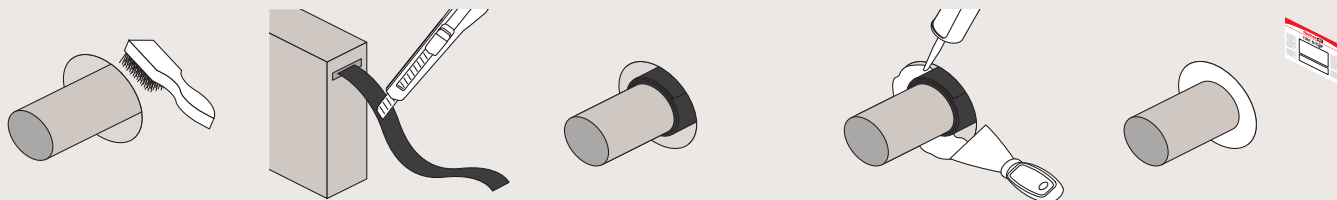
Building materials

Test Building Materials Print

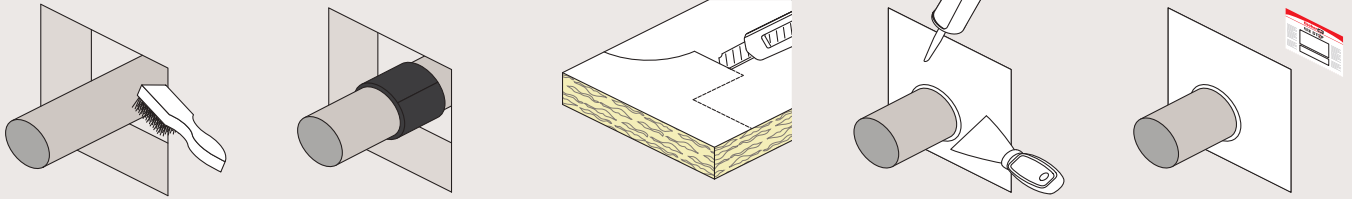
Functioning

- FiPW is a flexible composite strip, which is composed of thermoplastic component containing intumescent graphite in a synthetic compound and enclosed in an outer polyethylene cover.
- Can also be used as a cast-in solution. For large openings, use in conjunction with FCPS or FFSC.

Installation FiPW



Installation FiPW with FCPS



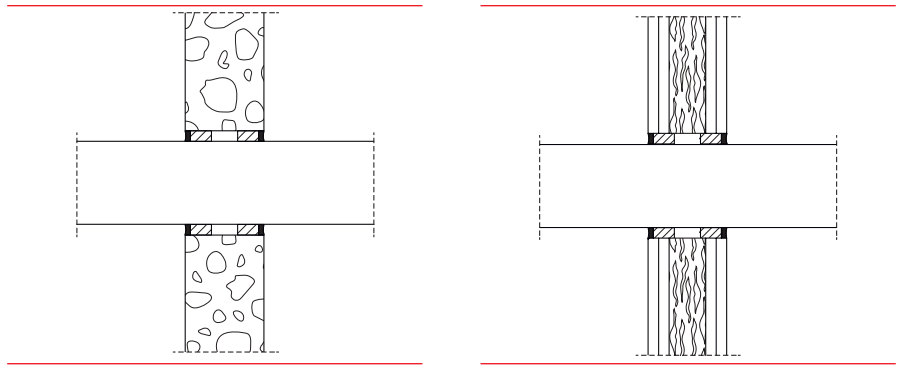
Technical data

Item	Item no.	Ap- pro- val ETA	Fits pipe-Ø [mm]	Fire rating [hours]	Sales unit [pcs]
FiPW E / 2 mm (25 meter roll)	539608	●	30 - 250	up to 2	1
FiPW 2/30-32	052546	-	30 - 32	2	1
FiPW 2/38-40	052547	-	38 - 40	2	1
FiPW 2/55	052548	-	55	2	1
FiPW 2/63	052560	-	63	2	1
FiPW 2/75	052561	-	75	2	1
FiPW 2/82	052562	-	82	2	1
FiPW 2/110	052563	-	110	2	1
FiPW 2/125	052890	-	125	2	1
FiPW 2/160	052891	-	160	2	1
FiPW 2/200	053000	-	200	2	1

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Technical data

State	solid
Colour	black inner component in outer foil carrier
Odour	odourless
Density	1.3 kg/m ³
Expansion ratio	1 : 25
Significant expansion occurs at temperature	> 180 °C
Storage temperature	+ 5 °C to + 35 °C
Thickness	2 mm
European Technical Assessment	ETA-21/1061
CE marking	2531-CPR-CX010326

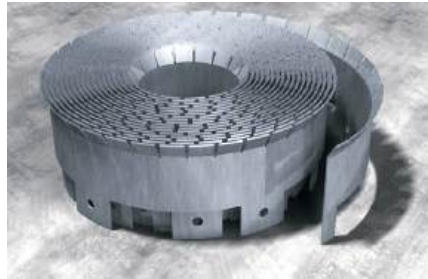


Application data

Configuration for up to 120 min.			
Outer pipe diameter [mm]	No. wraps	Thickness	Length per stacks [mm]
40	1	2	138
55	2	4	383
63	2	4	434
75	2	4	509
82	2	4	553
90	3	6	923
110	3	6	1112
125	4	8	1696
160	4	8	2136
200	5	10	3331
250	7	14	5846

Intumescent Wrap Strip FiWS

Universal intumescent wrap strip for sealing combustible services



Universal Collar 2



Combustible pipe application

Applications

- Non-metallic service: PVC 14" (355 mm), cPVC 8" (203 mm), ABS 6" (152 mm), FRPP 4" (102 mm)
- Insulated service: Steel 10" (254 mm), Iron 10" (254 mm), Copper 4" (102 mm), Glass fibre 3" (75 mm), AB/PVC flexible foam 1" (25 mm)
- Cable bunches: 3" (76 mm)

Advantages

- Efficient and effective for sealing of pipe openings in floors and walls
- Easy to fit
- Moisture resistant
- Freeze-thaw characteristics

- No mechanical fixing required
- Economical solution
- Up to 4 hours fire resistance
- Asbestos and halogen free

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Certificates

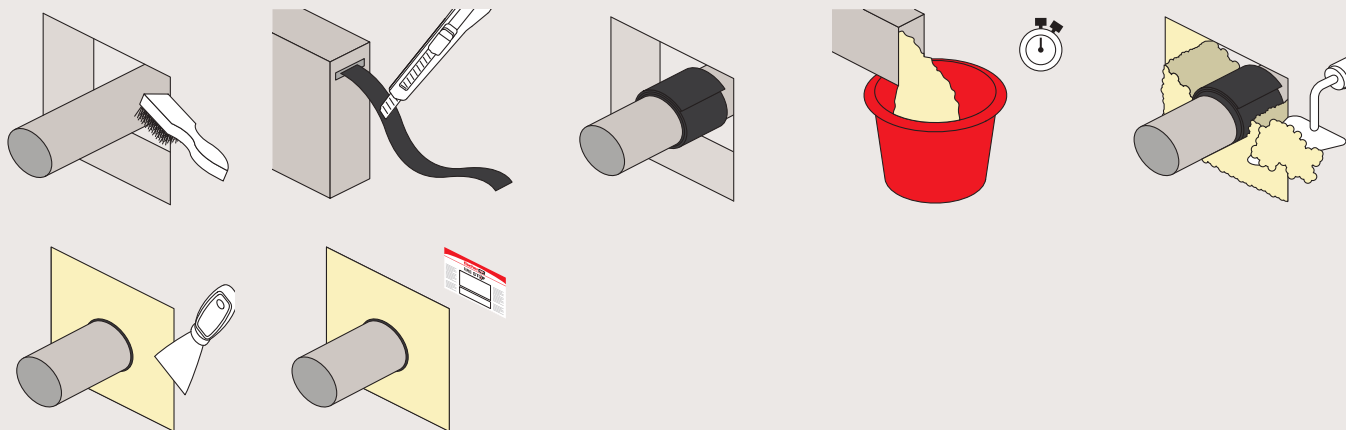


ASTM E 814 (UL 1479)
ASTM E 84 (UL 723)

Functioning

- FiWS is a flexible, intumescent graphite-based synthetic compound strip, which has been designed to be installed in both vertical and horizontal applications.
- FiWS has been developed as a PRE or cast-in FireStop solution, and has been designed to work with the fischer Universal Collar for retro fitting or surface mounted applications.
- For large openings, the FiWS can be used in conjunction with the FFSC.

Installation FiWS with FFSC

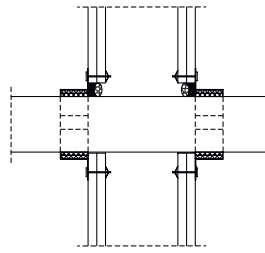


Technical data

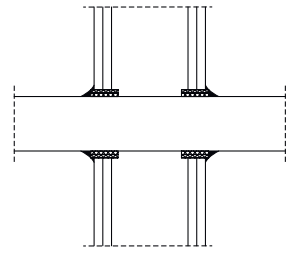
Item	Item no.	Dimensions	Sales unit
		B x L x H	[pcs]
FiWS-2	531397	50 mm x 6 mm x 5.48 m / 2" x 1/4" x 18"	1
Universal Collar 2	536053	51 mm x 15 m / 2" x 50 ft	1

Technical data

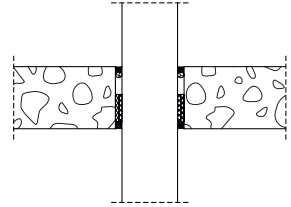
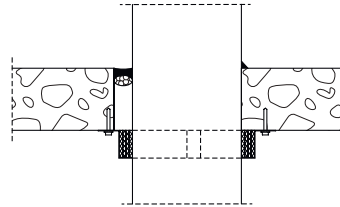
State	-
Odour	-
Density	-
Expansion ratio	-
Significant expansion occurs at temperature	-
Max. recom. pipe-ø	-
Flame spread (ASTM E 84 - UL723)	-
Smoke index (ASTM E 84 - UL723)	-
Colour	-



Both sides of the wall



Bottom of floor



Application data

FiWS - typical configuration		
Pipe diameter [mm]	No. of layers	Length per stacks [mm]
50	1	200
75	2	580
100	2	740
150	3	1640
200	4	2890
305	4	4210

Fire Collar FFC

Collar for sealing a wide range of combustible pipes where passing through fire rated walls and floors



Combustible pipe floor application



Combustible pipe wall application

Applications

- Non-metallic pipes like PVC, HDPE, MDPE, ABS of various sizes through fire rated walls and floor assemblies

Advantages

- Easy retrofit at any time
- Water resistant
- No minimum annular service required
- Pre-fixed attachment lugs
- Fold back tag for secure fixture around pipe

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Certificates



ETA-20/1066
EN 1366-3

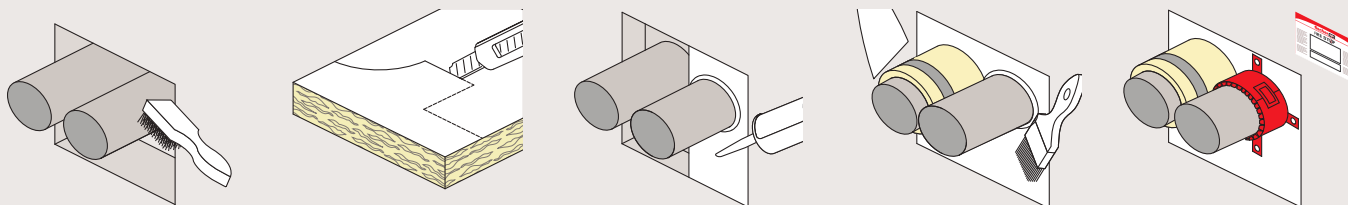
Building materials

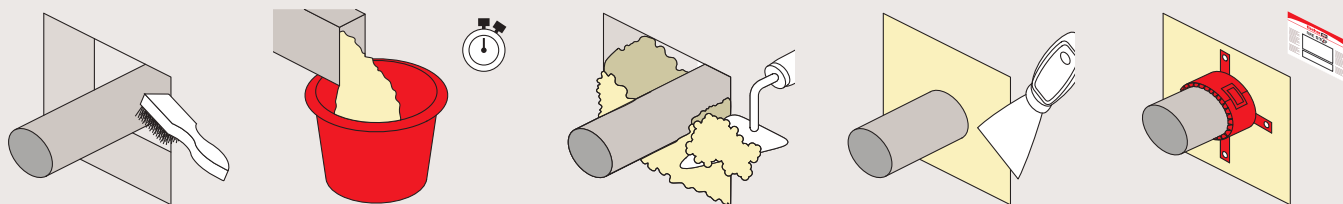
- Flexible and rigid wall constructions
- Solid concrete floors
- Hollow precast floors

Functioning

- FFC is a powder coated cylindrical steel sleeve, which contains a heat reactive graphite-based intumescent material that expands during fire.
- Designed to be securely fitted around the pipe and held in position with a retaining bolt.
- Any gaps up to 10 mm around FFC should be backfilled with FIAM or larger annular space should be closed with FCPS or FFSC.

Installation FFC with FCPS





Technical data

Item	Item no.	Ap- pro- val ETA	Fits pipe-Ø [mm]	Sales unit [pcs]
FFC 2/30-32	052456	●	30 - 250	1
FFC 2/38-40	052480	●	38 - 40	1
FFC 2/55	052481	●	55	1
FFC 2/63	052482	●	63	1
FFC 2/75	052483	●	75	1
FFC 2/82	052486	●	82	1
FFC 2/90	052487	●	90	1
FFC 2/110	052488	●	110	1
FFC 2/125	052489	●	125	1
FFC 2/160	052500	●	160	1
FFC 2/200	052501	●	200	1

Technical data

State	solid
Odour	odourless
Fire resistance	up to 4 hours
Available sizes	> 30 mm and max up to 200 mm
Significant expansion occurs at temperature	> 180 °C
Storage temperature	N/a
Colour	black inner component in outer red carrier
European Technical Assessment	ETA-20/1066
CE marking	2531-CPR-CX010322

Intumescent Pillows FiP

FireStop solution for temporary and permanent service penetrations in vertical and horizontal applications



Electrical floor application



Electrical wall application

Applications

- Metal pipes
- Cables/cable trays
- Electrical trunking
- Electrical trunking: for conformance with the 17th Edition of the IEE Wiring Regulations (BS 7671:2008)

Advantages

- Approved as permanent fire barrier
- Reusable
- Dry installation
- Quick and easy installation
- No shelf life
- Moisture resistant
- Up to 2 hours fire protection

Certificates

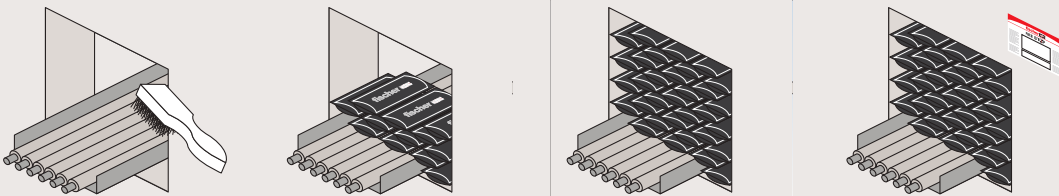


ETA-20/1063
BS 476-20
EN 1366-3
EN ISO 10140-3:1995

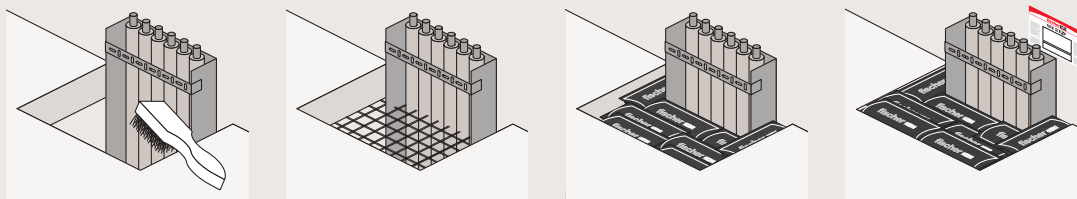
Functioning

- FiP is an intumescent graphite and mineral fibre blend covered in a glass fibre PVC coated cloth bag.
- FiP is suitable for applications where temporary and permanent fire barriers are required.

Installation FiP - Wall application



Installation FIP - Floor application



Technical data

Item	Item no.	Ap- pro- val ETA	Dimensions	Weight per pillow	Sales unit
			[mm]	[g]	[pcs]
FiP/S	516960	●	330 x 50 x 20	80	1
FiP/Std	533890	●	330 x 100 x 20	120	1
FiP/M	516959	●	330 x 200 x 25	230	1
FiP/L	516958	●	330 x 200 x 45	420	1

Technical data

State	-
Odour	-
Expansion	3 times
Significant expansion occurs at temperature	> 140 °C
European Technical Assessment	ETA-20/1063
CE marking	2812-CPR-JA5046
Colour	black

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Estimation quantities

Width [mm]	Length [mm] Size Seal type	Length [mm]											
		Large 100	Medium 100	Large 300	Medium 300	Large 500	Medium 500	Large 700	Medium 700	Large 900	Medium 900	Large 1,000	Medium 1,000
200	Wall	3	5	7	13	12	22	17	31	21	39	24	47
	Floor	2	3	4	7	6	12	9	17	11	22	12	27
400	Wall	5	9	14	26	24	44	33	61	42	78	47	95
	Floor	3	5	7	15	12	24	17	34	22	43	24	52
600	Wall	7	13	21	39	35	65	49	91	63	117	70	143
	Floor	4	7	11	22	18	36	25	51	33	65	36	79
800	Wall	9	18	28	52	47	87	66	122	84	157	94	192
	Floor	5	10	15	29	24	48	34	67	33	87	48	107
1000	Wall	10	22	35	65	59	109	82	152	105	196	117	217
	Floor	6	12	18	36	30	60	42	84	54	108	60	120

Coated Panel System FCPS

FireStop coated panel system for multiple service penetrations



Mixed penetration through the floor



Mixed penetration through the wall

Applications

- Small and large openings
- Cables/cable trays
- Air ducts with dampers
- Metallic or non-metallic pipes

Advantages

- Approved for light partition walls
- Can be installed dry
- No coatback required for services

- Excellent acoustic properties
- Asbestos and halogen free

Certificates

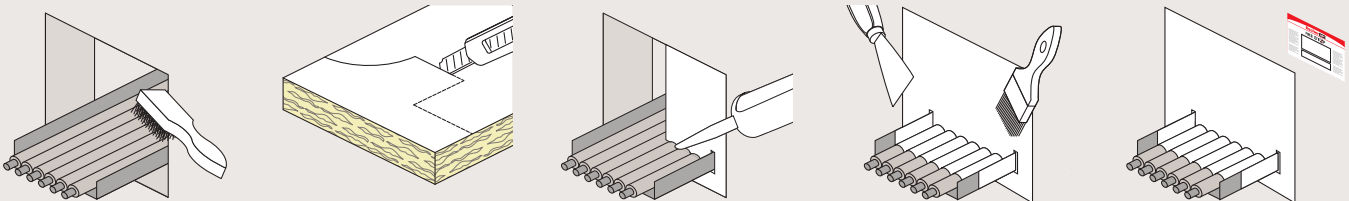


ETA-20/1067
ETA-20/1065
ETA-20/1064
ETA-20/1062
ISO 10140
EN 1366-3

Functioning

- FCPS is a rock fibre core coated with ablatant sealant FPC for use in both vertical and horizontal applications.
- It maintains the sound reduction index of a structure.
- The FCPS will allow additional services to be added or removed and will accommodate thermal and mechanical movement of services.
- FPC can be used to adhere sections of FCPS board when jigsaw assembly is required and can also be used to enhance smoke and acoustic performance.

Installation FCPS



Technical data

Item	Item no.	Ap- pro- val	Dimensions	Contents	Contents	Adapted for	Sales unit
		ETA	[mm]	[kg]	[ml]		[pcs]
FCPS/50	053252	●	1200 x 600 x 50	-	-	-	1
FPC/5kg	053253	●	-	5	-	-	1
FIAM 310	053011	●	-	-	310	-	1
KPM 2 Plus	053117	-	-	-	-	FIAM Plus 310, FFRS 310, UFS 310, FiGM 310	1
FIAM 600	056006	●	-	-	600	-	1
FIAM 310	538151	●	-	-	310	-	1
FIAM 310	538150	●	-	-	310	-	1
FIAM 310	538152	●	-	-	310	-	1
FIAM bucket	568134	●	-	20	-	-	1

Technical data

Density	140 kg/m ³
Coating thickness	1 mm WTF
Fire resistance	Depending on application
Acoustic performance	27 dB
Thermal conductivity	0,034 W/mK at 10 °C
Maximum size of seal	Wall 6,76 m ² , floor 1,65 m ²
Maximum size unsupported	1.2 x 1.2 m
Density of panel coating FPC	1.25 - 1.375 g/cm ³
Panel coating FPC coverage	approx. 1,6 kg/m ² l/m ²
Shelf life of panel coating FPC Art.-No. 53253	12 months
European Technical Assessment	ETA-20/1062, ETA-20/1067
CE marking	2531-CPR-CX010319, 2531-CPR-CX010329

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Application data

Services	Rigid partition walls [Fire rating - hours]	Flexible partition walls [Fire rating - hours]	Concrete floors [Fire rating - hours]
Cable ladder/tray/basket	Up to 2	Up to 2	Up to 2
Cables up to 26 mm diameter	Up to 2	Up to 2	Up to 2
Cables up to 80 mm diameter	Up to 2	Up to 2	Up to 2
Steel/Copper pipes up to 159 mm diameter	Up to 2	Up to 2	n/a
PVC pipes* up to 110 mm diameter	Up to 1	Up to 1	n/a
Blank seals	Up to 2	Up to 2	Up to 2

* PVC Pipes must be protected in conjunction with FiPW, which must be securely sealed in place within the FCPS.

FireStop Compound FFSC

Structural fire resistant seal for floors and walls



Mixed penetration through the floor



Mixed penetration through the floor

Applications

- Metallic services with steel and cast iron pipes
- Non-metallic services with FiPW intumescent pipe wrap or FFC pipe collar
- Voids or cavities in floors or walls
- Cable bunches

Advantages

- Water based
- Low VOC
- Load bearing

- Excellent acoustic properties
- Both vertical and horizontal applications
- Halogen and asbestos free

Certificates



ETA-21/0678

EN ISO 10140

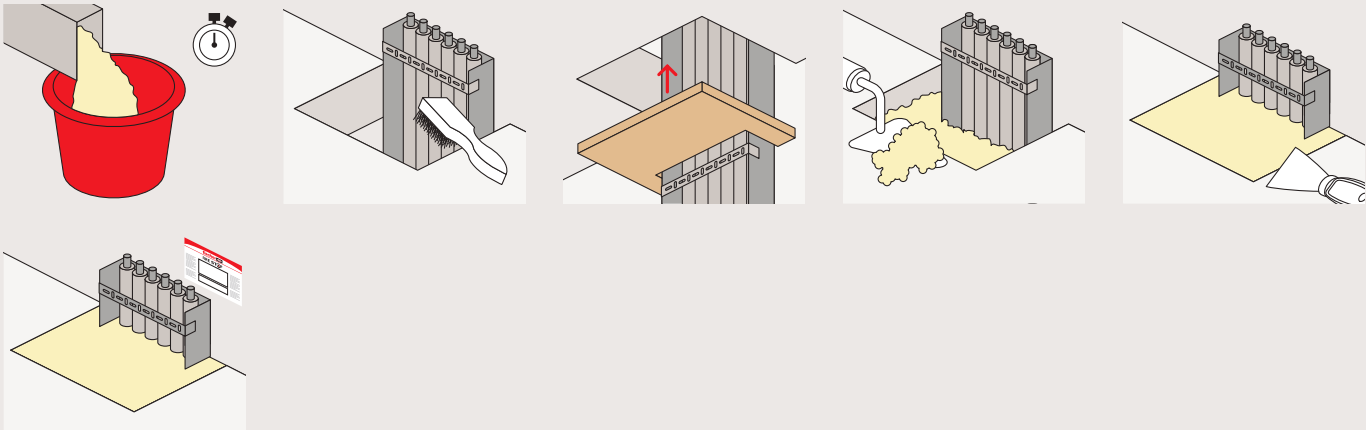
EN 1366-3

ASTM E 814 (UL 1479)

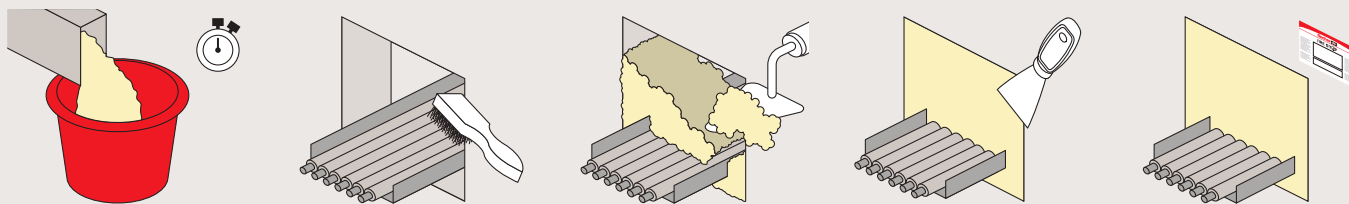
Functioning

- FFSC is a specially formulated gypsum based compound, which when mixed with water can be trowelled or poured.
- FFSC can provide up to 4 hours integrity and insulation.
- Set within 45 min depending on ambient temperature.
- Capable of accommodating foot traffic within 72 hours.

Installation FFSC - Floor application



Installation FFSC - Wall application



Technical data

Item	Item no.	Ap- pro- val	Contents	Sales unit
		ETA	[kg]	[pcs]
FFSC/20 kg	533247	●	20	1

Technical data

Base material	Gypsum
Bulk density	950 kg/m ³
Wet density	1,850
Setting time	20 min
Storage temperature	+ 5 °C to + 25 °C
Acoustic performance	59 dB
Reaction to fire	Class F
European Technical Assessment	ETA-21/0678
Tensile strength	30 N/mm ²
Thermal conductivity	0.57 W/mK at 50 %, 0.65 W/mK at 90 %
Colour	off white

Application data

	By volume Powder to water ratio
Pourable grade	2.5 : 1
Trowelable grade	3 : 1

* These are approximate calculations based on 20 kg bags. The coverage does not take into account the percentage of the hole filled with services.

** As a further safety margin, we would recommend that all floor seals with clear areas greater than 1,100 mm x 1,100 mm must be reinforced.

Load bearing note: the open area free of services: Thickness of seal ratios for non-reinforced seals given above allow an ample safety margin for normal foot traffic, e.g., loads of two men plus equipment with a combined weight up to 200 kg.



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Basics – good to know.

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Maintenance groups and applications for mounting pipe installations.

The mounting of pipe installations, distribution systems and devices in various types of buildings, as well as industrial plants and processes are combined under the umbrella term, installation systems. fischer Installation Systems is a complete range including the relevant supplementary products, in particular plugs and anchors.

The following belong to the maintenance groups which install pipes:

- Heating, ventilation and cooling systems
- Plumbing
- Sprinklers - extinguishing systems
- Electrical installations (medium and low voltage)
- Water and waste water treatment
- Energy and water supply

Through these maintenance groups, different pipe installations, which are offered by the Installation Systems product range, are created:

- Heating and cooling pipes
- Steam pipes
- Ventilation ducts and ventilation pipes
- Drinking water and service water pipes
- Waste water and drainage water pipes
- Sprinkler pipes
- Gas and compressed air pipes
- Medical gas supply
- Process pipes for gases and liquids
- Water and waste water treatment
- Energy and water supply

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Product solutions with examples.



Installation shaft with FUS channel system

Through the distinctive interlocking of the channels for the channel nuts FCN Clix P or PFCN, the FUS channel system provides a secure grip for handling high shear loads.

Also the first choice for pipe line routes due to the greater stability.



Cantilevers for different load ranges

With centred load (load case 1), the load range of the brackets is between 0.33 kN (33 kg) and 7.5 kN (750 kg).

Lightweight cantilevers in the FLS system: ALK
Medium cantilevers in the FUS system: FCA
Massive cantilevers in the FUS system: FCAM

Product solutions with examples.



Pre-assembled construction elements

The pre-assembled construction elements MW Clix 90° und SF Clix 31 guarantee for a time saving installation.

The time saving in comparison to the usual U-profile file system is around 70 %.



Fixed points and sliding elements

Sound insulation requirements for fixed points: FSFP anchor point

For all standard cases: The FFP or FFS fixed point sets with the FFPC fixed point clamp or FFRC refrigeration fixed point clamp ensures controlled movement in one direction: Sliding elements (see instructions on this under Elongation).



Refrigerant pipe clamps with integrated steel bracket

Different requirements for insulating layer thicknesses and the prevention of condensation are the basic requirements for a refrigerant pipe clamp.

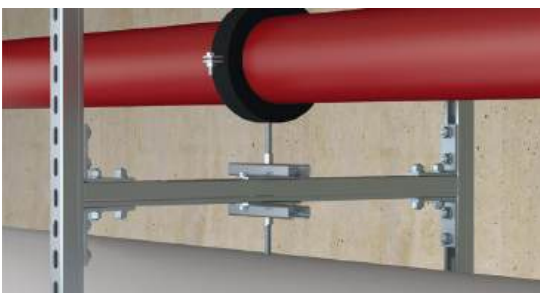
The KFT refrigerant pipe clamp allows neat bonding for insulating layer thicknesses of up to 30 mm, 40 mm or 60 mm.



Sprinkler loop with VdS and FM approval

Sprinkler systems are created according to the requirements of property insurers. The association of property insurers, VdS and FM global, testing products and give approvals for installation in water extinguishing systems. The FRSMN, FRLH and FRSP sprinkler clamp are approved sprinkler clamp or loops.

See also Mounting sprinkler installations.



Channel connection - which loads are relevant?

In the design of supports or similar components for mounting pipe installations, the load of the connecting element, such as a hammer-head screw (e. g. FHS Clix S) or channel nut (e. g. FCN Clix P) is decisive for the connection with a angle bracket, for example. The load information is shown for one element but can be doubled when using two elements. (see example on the left side).

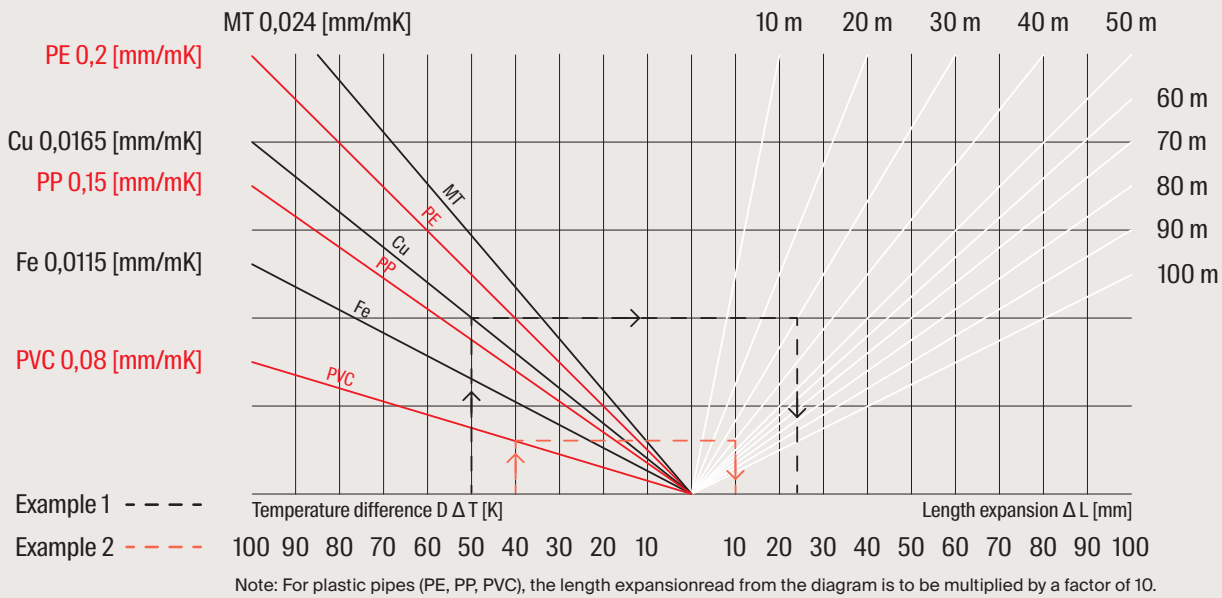
Elongation.



Materials expand with heat. For long components, the change in length is mainly considered. So it is not always a matter of expansion. Shrinkage upon cooling is to also be included in the calculation. This is important when installing pipes. Within piping, the change in length is to be specifically steered. Not doing this during installation results not only in pipe defects, but also in serious damage to components. It is therefore essential to determine how great the change in the length of a pipe can be.

For this purpose, the pipe length and the expansion coefficient of the pipe material, as well as the expected temperature difference, must be known. This is to be determined such that not only the normal operating temperatures, but also the maximum temperatures that can arise in a case of malfunction, are taken into account. The range is therefore from around 10 °C assembly temperature up to 95 °C service temperature for water filled systems.

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 Copper pipe, Cu - Length of pipe span 30 m
 Temperature difference $\Delta T = 50$ K
 Length expansion $\Delta L = 24,75$ mm

Length expansion calculation formula
 $\Delta L = L \times \Delta T \times \alpha$
 [mm] [m] [K] [mm/m K]

 PVC pipe - Length of pipe span $L = 40$ m
 Temperature difference $\Delta T = 40$ K
 Length expansion $\Delta L = 128$ mm (table value x 10)

ΔL = Change in length
 L = Length of the pipe span/section

ΔT = Temperature difference
 α = Length expansion coefficient

Soundproofing.



As defined in the appropriate standards, the goal of soundproofing is to reduce the transmission to other apartments or usage areas to a given noise range. The upper limits for permissible residual noise levels are defined in the standards.

Soundproofing - VDI 4100

In principle, the VDI 4100 values are, among other things, protection against noise from building systems that are mounted in the neighbouring area. According to VDI 4100, living areas are rooms that are in need of protection; in apartments, these are all rooms with a floor space of $> 8\text{m}^2$. This includes kitchens, bathrooms, toilets, hallways and ancillary rooms. VDI 4100 further recommends agreeing with the contracted companies the sound insulation values $\text{SSt EB I} = 35\text{ dB}$ or $\text{SSt EB II} = 30\text{ dB}$ for noise emerging from one's own area. Exceptions to this are all sounds that are influenced by the residents, i.e. self-installed air conditioners in the apartment or noises from flushing toilets, etc.

Soundproofing - DIN 4109

The DIN 4109 from 2016-07 still supplemented by A1 (2001-01), in which the permissible sound pressure level in living and sleeping areas for noise from building installations was reduced from 35 to 30 dB(A). The standard is not applicable to the protection against noise from building installations in one's own living area, but only to sounds coming from "external" areas as defined in VDI4100. For increased sound insulation, DIN 4109 Addendum 2 (from 1989) specifies a reduction in the permissible values by 5 dB(A) (to 25 dB(A)) as effective for noises from building installations.

Soundproofing - important influential factors for pipe mounting

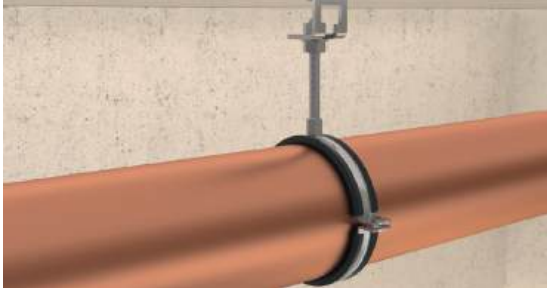
Sound propagates in vibrations. These sound waves can propagate in solid, liquid and gaseous media, where the speed of this sound propagation differs greatly in the various media. So the sound in pipe installations is primarily forwarded through the pipeline itself and not through the carried medium.

Transmission over the metal pipe is faster than in water, for example. In welded heating systems, for example, the individual sounds of striking a pipe can propagate throughout the entire building. The sound waves are transmitted in a medium in that the molecules constantly jolt one another, thereby transmitting the wave. Steel pipes or metallic mounting elements have an ordered metallic lattice, wherein forwarding is faster and with less loss than in amorphous materials, such as rubber (general elastomers). It can thus be determined that an inversely proportional relationship exists between the speed of sound [symbol; c] and the insulating behaviour of materials. That is, materials with a low sound speed always have better insulating properties than materials with a high sound speed (steel $c = 5100\text{ m/s}$). Rubber ($c \sim 40\text{ m/s}$) is therefore eminently suitable for sound insulation.

In rubber, the sound waves stop dead, so to speak, wherein the energy is converted into heat.

Therefore, the sound isolation must in principle occur between the pipes and the structure. Here, we recommend the installation of a sound insulating element as close to the sound source as possible; in the simplest case, with an insulating insert in the pipe clamp itself. Sound tested pipe clamps by fischer FGRS Universal hinged clamp, FRS pipe clamp and FRS-L Universal pipe clamp.

Corrosion protection.



In most cases, pipes and supply lines are installed in dry rooms. Therefore, in addition to corrosion resistant materials, such as plastics or stainless steel and copper, the steel products used for installation systems are galvanised. A zinc coating thickness of 5-8 μm by means of electrolytic process (galvanising) is standard. For mounting channels, Sendzimir galvanising material is mainly used. Sendzimir galvanising is a method in which the material is drawn through a molten zinc bath, thereby achieving a zinc layer thickness of 12-20 μm . This method is used when there is no more welding for the subsequent processing. This is the case for mounting channels because they are cold-formed after galvanising.

By cutting and stamping the holes, the surface in this area is not completely covered by a protective layer. Punched mounting channels are therefore only recommended for the dry interior rooms.

For cantilever brackets, non-galvanised channel pieces are used which are welded to the base plate. Following completion, the entire component is galvanised, creating a zinc coating thickness of 5-8 μm .

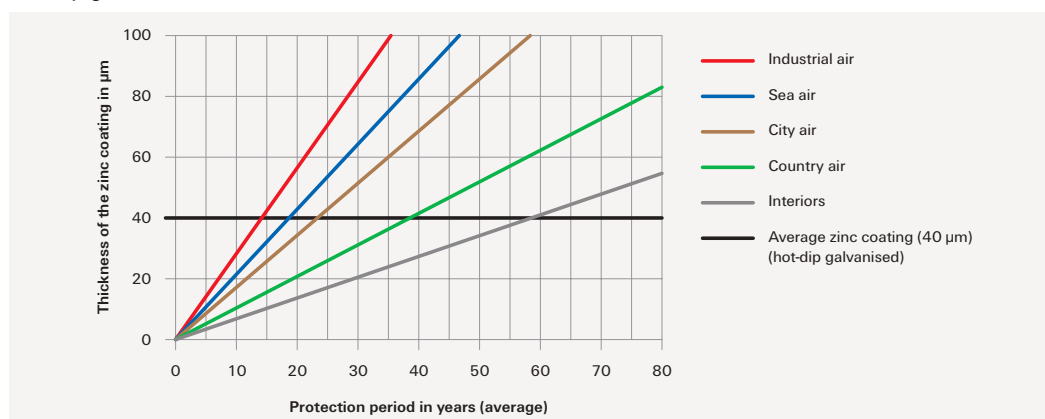
Threaded parts are either galvanised or made of stainless steel. Hot-dip galvanising is less suitable for this because the large zinc layer thickness of 40-150 μm severely impairs the thread engagement.

If installation systems are installed outdoors or in wet interior rooms, they must be made of either hot-dip galvanised steel or stainless steel.

Hot-dip galvanising is very well suited to the protection of steel. The corrosion process is thus 10 times slower than with galvanising. The zinc loss depends on the surrounding atmosphere and humidity. An annual zinc reduction of 1-10 μm can, however, be assumed. The layer thickness is therefore crucial to the durability of the material.

Crucial here are the environmental influences under which the systems are installed. An overview of the expected impact on the protective action can be seen in the following diagram and tables.

Hot-dip galvanised steel



Stainless steel						
Steel Grade					Corrosion	
Material No.	Short Name	AISI	UNS	Designation of the Steel Group with	Resistance Class	Exposure and Typical Applications
1.4305	X8CrNiS18-9	303	S 30300	A1	I/light	Indoor climate except damp location.
1.4301	X5CrNi18-10	304	S 30400	A2	II/moderate	Accessible constructions without nameable content of chlorides or sulfur dioxide, except industrial atmosphere.
1.4307	X2CrNi 18-9	304L	S 30403	A2L	II/moderate	Accessible constructions without nameable content of chlorides or sulfur dioxide, except industrial atmosphere.
1.4362	X2CrNiN23-4	324	S32304	A4	III/medium	Constructions with moderate chloride and sulfur dioxide exposure and inaccessible constructions.
1.4401	X5CrNiMo17-12-2	316	S 31600	A4	III/medium	Constructions with moderate chloride and sulfur dioxide exposure and inaccessible constructions.
1.4404	X2CrNiMo17-12-2	316 L	S 31603	A4L	III/medium	Constructions with moderate chloride and sulfur dioxide exposure and inaccessible constructions.
1.4571	X6CrNiMoTi17-12-2	316 Ti	S 31635	A5	III/medium	Constructions with moderate chloride and sulfur dioxide exposure and inaccessible constructions.
1.4529	X1NiCrMo-CuN25-20-7	-	N 08926	1.4529	IV/strong	High corrosion exposure due to chlorine, chloride and/or sulfur dioxide, high humidity as well as accumulation of hazardous substances.

Fixings in the technical building equipment.

Fixing product:

A key element in the installation of media lines is the anchor product, which ultimately forms the connection between the component and the building. A secure hold is ensured by sizing each application or project according to specific parameters. The interaction of the fixing product, such as plugs, anchors and screws, with the building material and the nature and extent of the load to which it is subjected is critical. The type of installation, such as push-through or push-in, also influences the choice of fastener. In addition, the components to be fastened can be very different in terms of the type of fastener used. For example, a mounting thread may be an internal or external thread, or a perforation in a base plate or lug. In addition, there are sometimes more stringent installation requirements. These may include the need to demonstrate fire resistance of pipework or seismic effects. Appropriate anchoring solutions with appropriate qualifications are essential.

Requirements of the building law:

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CE marking, based on European Technical Assessments (ETAs) and harmonised European standards, provides the basis for product conformity and marketability. However, the European Construction Products Regulation (CPR) does not cover the fixing of installations in building services in its product areas. Similarly, harmonised standards or guidelines for the preparation of ETAs only exist for some areas. This is also due to the fact that cable installations are not covered by the basic requirements for buildings, in particular the requirement for mechanical strength and stability of the building.

However, the building regulations with the additional technical building regulations still apply. The following categories of requirements can be derived from this:

1. Cable and device fixings without special requirements. In this case the requirements result from the loads of the cables or devices.
2. Equipment and component fixings based on a requirement in a national approval or declaration of performance/CE marking of a product:
 - a. Fixing of a fire damper
 - b. Fixing of extinguishing systems (e.g. sprinklers)
3. Requirements for the fixing of equipment and cable systems based on other building regulations:
 - a. Requirements based on national wiring system regulations (LAR)
 - b. Requirements according to the guideline on fire protection requirements for ventilation systems of the federal states (LüAR).

For categories 2 and 3, fire resistance period qualifications or approvals from insurers such as FM Factory Mutual or VdS Schadenverhütung are generally required. With the creation of a European Assessment Document (EAD), the Construction Products Regulation offers the possibility of serving as a basis for ETAs for installation systems in the future.

Fixing for installations

For practical purposes, the way in which cable systems are fixed should be categorised as follows:

1. Fixing directly to the substrate (wall or ceiling)
 - a. Single fixing
 - b. Row fixing with mounting rails
2. Suspended from the ceiling
 - a. Single fixing
 - b. Row fixing with rail constructions
3. Raised mounting
 - a. Single fixing
 - b. Multiple fixing with mounting rail constructions

As the cables generally connect the anchorage points, despite the individual anchorage points, this is a 'multiple anchorage' as failure of one anchorage point will not result in failure of the whole anchorage. Products with such ETAs are also suitable for use in cracked concrete and can therefore be used in the same way as risk resistant anchors.



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Installation types

Three types of installation fixing are important:

1. **Pre-assembly:** The plug or anchor is drilled and inserted before the attachment parts (e.g. threaded rods or hanger screw) are fitted
2. **Push-through installation:** Drilling and anchor installation is carried out using the attachment parts such as brackets, mounting rails or saddle flanges
3. **Distance installation:** usually a push-fit installation with an extended threaded connection. An object can be fixed at a distance from the substrate, for example a pipe fixed vertically to the wall. Particular attention must be paid to the installation of vertical loads (e.g. through the pipework), as the buckling moment is decisive when selecting the fixing materials (threaded rods, etc.).

Selection of anchoring in the installation technology			Installation type	Anchoring base				Anchoring product (selection)		
Installation product (example)				Concrete	Solid brick	Perforated brick	Aerated concrete	Diameter [mm]	Fixing	Product image
Product image	Type	Application								
	Channel FLS		Push-through or pre-installation ²⁾	● ¹⁾	● ¹⁾	● ¹⁾	—	6	FBS II 6	
				● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	8/10	SXR/SXRL 8/10	
	Channel FUS			● ¹⁾	● ¹⁾	● ¹⁾	—	10	FBS II 10	
				● ¹⁾	—	—	—	10/12	FAZ II Plus 10/12	
				● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	8/10	SXR/SXRL 8/10	
	Cantilever arm ALK, FCA			● ¹⁾	● ¹⁾	● ¹⁾	—	10	FBS II 10	
				● ¹⁾	—	—	—	10/12	FAZ II Plus 10/12	
	Saddle flange SF31, SF, PSF			● ¹⁾	● ¹⁾	● ¹⁾	—	10	FBS II 10	
				● ¹⁾	—	—	—	10/12	FAZ II Plus 10/12	
	Variable bracket VB, PVB			● ¹⁾	● ¹⁾	● ¹⁾	—	10	FBS II 10	
			● ¹⁾	—	—	—	10/12	FAZ II Plus 10/12		
	Fixed point saddle FFPK		● ¹⁾	● ¹⁾	● ¹⁾	—	10	FBS II 10		
			● ¹⁾	—	—	—	10/12	FAZ II Plus 10/12		
	Slider SBS		● ¹⁾	● ¹⁾	● ¹⁾	—	8/10	FBS II 8/10		
			● ¹⁾	—	—	—	10/12	FAZ II Plus 10/12		
	Base plate GPL, GPR		● ¹⁾	● ¹⁾	● ¹⁾	—	6/8	FBS II 6/8		
			● ¹⁾	—	—	—	8/10	FAZ II Plus 8/10		
	Bracing elements WS31, PSAE		● ¹⁾	● ¹⁾	● ¹⁾	—	8/10	FBS II 8/10		
			● ¹⁾	—	—	—	10/12	FAZ II Plus 10/12		
	Bracket MW-U, FAF, PFAF		● ¹⁾	● ¹⁾	● ¹⁾	—	6	FBS II 6		
			● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	8	SXR/SXRL 8		
	Slider FSC1		● ¹⁾	● ¹⁾	● ¹⁾	—	8/10	FBS II 8/10		

Selection of anchoring in the installation technology			Installation type	Anchoring base				Anchoring product (selection)		
Product image	Type	Application		Concrete	Solid brick	Perforated brick	Aerated concrete	Diameter [mm]	Fixing	Product image
	Threaded stud / - rod G, GS	External thread as connector for the installation product 	Pre-installation ³⁾	● ¹⁾	—	—	—	8	EA II 8	
				● ¹⁾	● ¹⁾	● ¹⁾	—	8/10	FBS II 8/10	
				● ¹⁾	● ¹⁾	● ¹⁾	—	8/10	Duo-Power ETA	
	Stud screw STST			● ¹⁾	—	—	—	6/8/10/12/16	EA Plus 6-16	
				● ¹⁾	● ¹⁾	—	—	12	SX	
	Sliding hanger SB			● ¹⁾	● ¹⁾	● ¹⁾	—	8/10	FBS II 8/10	
				● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	8/10	FIS V Plus 8/10	
	Pipe clamp FRS, FRS-L, FRSM, FGSR, ...	Internal thread as connector 		● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	8	FIS V Plus 8	
				● ¹⁾	● ¹⁾	● ¹⁾	—	8/10	FBS II 8/10	
	Hexagonal connector VM			● ¹⁾	—	—	—	8/10	FNA II 8/10	
	Pendulum hanger PDH/PDH-K			● ¹⁾	—	—	—	8/10	FAZ II 8/10	

1) Incl. Assessment
 2) Only in perforated sand-lime brick
 3) Push-through installation means: the anchoring is installed through the installation product. Pre-installation means: the anchoring is first installed on the free anchor base. The type of installation is described in the ETA and in the installation instructions. Depending on the application, exceptions are possible and can be explained by fischer.

Fire protection classification.

Verifications

- Fireproof installations for individual pipes and pipe routes of R30 – R120 and F30 – F120.
- Proof of compliance with the criteria according MLAR (German standard pipe system directive) for installation in escape and rescue routes.

Fire inspection reports for the installation of pipe clamps and channels:

The fire safety inspection reports described in this brochure meet the requirements for fire protection according to the building regulations of the countries and, especially for Germany, according to the nationwide homonymic German pipe systems directive (LAR), based on the standard pipe systems directive of 2005 (MLAR 2005).

Personal protection is defined in the MLAR Directive through clear rules for escape routes, such as corridors, stairwells, hallways between stairwells and the exit. The key message is to ensure the safety of the escape route by ensuring the functioning of the fireproof sub-ceiling. Therefore a minimum distance of $\min a \leq 50 \text{ mm}$ according to MLAR is required between installations and underlying suspended fire-proof F30 sub-ceilings (fire resistance of 30 minutes). Based on the fire inspections, load information for a fire resistance of 30 minutes was determined in relation to the maximum permissible deformation of channels or pipe clamps. The necessity for these considerations arises from the properties of steel, which is subjected to a temperature of $> 800 \text{ °C}$ according to the standard temperature curve (ISO curve).

Additionally, the same information is documented in inspection reports for a fire resistance rating of R30, R60, R90 and R120 according to EN1363-1 and DIN4102-2 (see load tables).

Fire inspection reports for installation systems - pipe clamps, sliding elements, channel and cantilever arm:

Following “supplementary sheets to inspection reports” from MFPA Leipzig are available:

- PUWF (Document no. GS 6.1/23-006-2)
- FRS (Document no. GS 3.2/14-175-2)
- FUS / FCA (Document no. GS3.2/14-175-4)
- FRS-L Universal (Document no. GS 3.2/15-141-3)
- FLS / ALK (Document no. GS 3.2/15-141-4)
- FASM2 / FASH2 (Document no. GS 6.1/22-066-2)

Additional available “fire inspection reports” from MPA NRW, similar to the above criteria are:

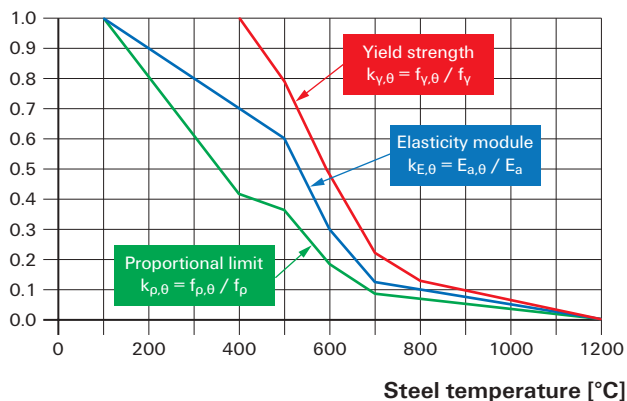
- SB sliding hanger (F120) inspection report no.
- PDH-K pendulum hanger (F120) inspection report no.

Fire protection – protection goals:

Firstly, fire protection serves to protect people and is regulated by the building laws in the respective countries (or regional states). Secondly, fire protection serves to protect property. This is regulated by the insurance associations, such as VdS and FM. These requirements partially go beyond the building legislation. This is particularly evident in the installation of fire protection systems, such as sprinklers, etc.. In these cases approved or recognised components must be used (see the fischer catalogues for further details on this).

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Reduction factors k_{θ}



Dependency of the yield strength, proportional limit and elasticity module on the temperature (basis: EN1993-1-2:2012-12 Eurocode 3).

Test preparation



Fire inspection before.






Fire inspection after.

Certificates

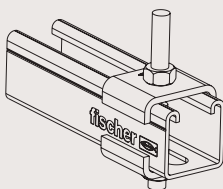


Product overview with proof in inspection reports and advisory opinions.

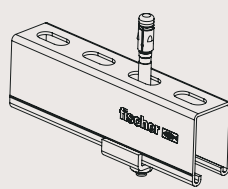
Product	Picture	Document no.	MLAR	R30 - R120	F30 - F120
FLS 37		MFPA Leipzig – GS 3.2/15-141-4	●	●	-
FUS 41		MFPA Leipzig – GS 3.2/14-175-4	●	●	-
FUS 62		MFPA Leipzig – GS 3.2/14-175-4	●	●	-
ALK 37		MFPA Leipzig – GS 3.2/15-141-4	●	●	-
FCA 41		MFPA Leipzig – GS 3.2/14-175-4	●	●	-
FCA 62		MFPA Leipzig – GS 3.2/14-175-4	●	●	-
PUWF		GS 6.1/23-006-2	●	●	-
FRS-L Universal		MFPA Leipzig – GS 3.2/15-141-3	●	●	-

Product	Picture	Document no.	MLAR	R30 - R120	F30 - F120
FRS		MFPA Leipzig – GS 3.2/14-175-2	●	●	-
SB		MPA-NRW – 210005109-7			●
FASM 2 M10-12		MFPA Leipzig GS 6.1/22-066-2	●	●	-
FASH 2 M12-16		MFPA Leipzig GS 6.1/22-066-2	●	●	-
PDH-K		MPA-NRW – 210005109-6	●	-	●

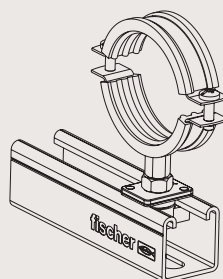
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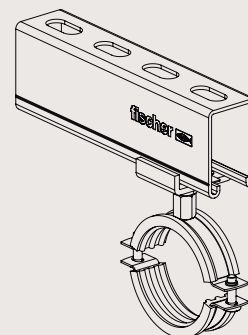
fischer channel washer
HK 41 (≥ 10,5mm) or
HK 31 (≥ 8,5mm)



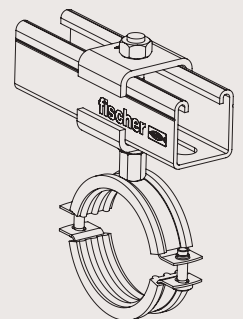
Connection ceiling fischer
anchor and fischer channel
washer HK 41 (≥ 10,5mm)
or HK 31 (≥ 8,5mm)



fischer FCN Clix M
or FSM Clix M
(M8 und M10)

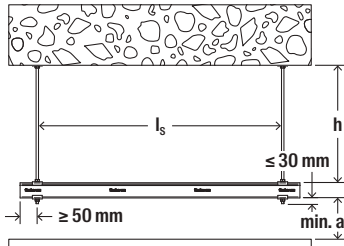


Combination with
FCN Clix P or
FSM Clix P (M8 oder M10)
and HK

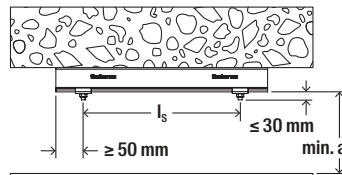


fischer channel washer
HK 41 (≥ 10,5mm) or
HK 31 (≥ 8,5mm)

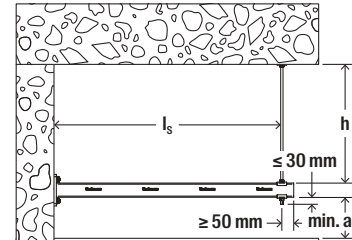
Load tables based on the advisory opinions.



Picture 1



Picture 2



Picture 3

FLS-Channel / ALK-Cantilever arm

Load table based on the Advisory Opinion No. GS 3.2/15-141-4

The following figures are valid for FLS channels and ALK cantilever arms, galvanised, hdg and stainless steel.

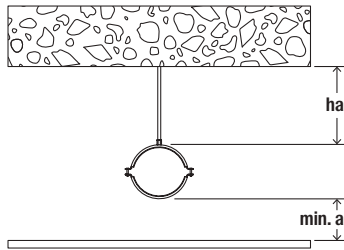
FLS/ALK 37/1,2 (Picture 1-3)		MLAR loads		Max. Loads				
		strain	F-resistance Min.	Max. strain	Fire resistance time [minute]			
Threaded rods ≥ 4.8	l_s	min a	30	min a	30	60	90	120
Load case	[mm]	[mm]	[kN]	[mm]	[kN]	[kN]	[kN]	[kN]
Point load	$\leq 400^{1)}$	≤ 50	0,24	93	0,24	0,13	0,10	0,09
	$\leq 400^{2)}$	≤ 50	0,09	289	0,47	0,38	0,33	0,30
	$\leq 400^{4)}$	≤ 50	0,32	226	1,33	0,78	0,53	0,40
Multiple load ³⁾	$\leq 400^{1)}$	≤ 50	0,72	93	0,72	0,38	0,30	0,27
	$\leq 400^{2)}$	≤ 50	0,26	289	1,42	1,13	0,99	0,90
	$\leq 400^{4)}$	≤ 50	0,81	226	1,33	0,78	0,53	0,40
Uniformly distributed load	$\leq 400^{1)}$	≤ 50	0,72	93	0,72	0,38	0,30	0,27
	$\leq 400^{2)}$	≤ 50	0,35	308	1,37	1,19	1,06	0,95
	$\leq 400^{4)}$	≤ 50	0,81	226	1,33	0,78	0,53	0,40

1) Valid for a suspension height $h_a = 0$ mm, s. picture 2

2) Valid for a suspension height $h_a = 500$ mm, s. picture 1 (Expansion length of threaded rods in case of fire ~ 10 mm/m)

3) Given load values apply for multiple loads as summated point loads symmetrical allocated

4) This values are valid for ALK 37-450 with additional support by threaded rod, s picture 3 ($h_a = 500$ mm)



Pipe clamp FRS

Load table based on the Advisory Opinion No. GS 3.2/14-175-2

The following figures are valid for all FRS pipe clamps, galvanised, hdg and stainless steel.

FRS M8/M10 Threaded rods ≥ 4.8		MLAR strain min a	F-resistance 30	Maximale Lasten				
Clamping range [mm]	h_a [mm]			Max. strain min a	Fire resistance time [minute]			
					30	60	90	120
			[kN]	[mm]	[kN]	[kN]	[kN]	[kN]
12-67	≤ 250	≤ 50	0,56	51	0,56	0,29	0,20	0,15
	≤ 500	≤ 50	0,56	54	0,56	0,29	0,20	0,15
	≤ 750	≤ 50	0,56	57	0,56	0,29	0,20	0,15
	≤ 1000	≤ 50	0,55	60	0,56	0,29	0,20	0,15
72-92	≤ 250	≤ 50	0,65	50	0,79	0,49	0,36	0,29
	≤ 500	≤ 50	0,62	53	0,79	0,49	0,36	0,29
	≤ 750	≤ 50	0,59	56	0,79	0,49	0,36	0,29
	≤ 1000	≤ 50	0,57	59	0,79	0,49	0,36	0,29
108-116	≤ 250	≤ 50	0,48	61	0,63	0,39	0,29	0,23
	≤ 500	≤ 50	0,43	64	0,63	0,39	0,29	0,23
	≤ 750	≤ 50	0,39	66	0,63	0,39	0,29	0,23
	≤ 1000	≤ 50	0,35	69	0,63	0,39	0,29	0,23
121-168	≤ 250	≤ 50	0,96	61	1,00	0,51	0,34	0,25
	≤ 500	≤ 50	0,89	63	1,00	0,51	0,34	0,25
	≤ 750	≤ 50	0,82	66	1,00	0,51	0,34	0,25
	≤ 1000	≤ 50	0,85	69	1,00	0,51	0,34	0,25

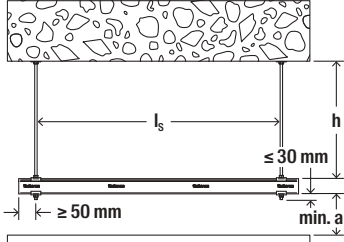
Pipe clamp FRS-L Universal

Load table based on the Advisory Opinion No. GS 3.2/18-120-2

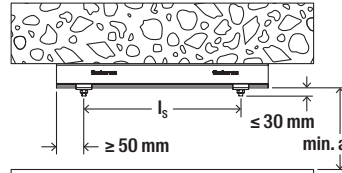
The following figures are valid for all FRS-L Universal pipe clamps, galvanised, hdg and stainless steel

FRS-L Universal M8/M10 Threaded rods ≥ 4.8		MLAR -Loads		Max. Loads				
Clamping range [mm]	h_a [mm]	strain min a	F-resistance 30	Max. strain min a	Fire resistance time [minute]			
					30	60	90	120
			[kN]	[mm]	[kN]	[kN]	[kN]	[kN]
8-37	≤ 250	≤ 50	0,27	54	0,27	0,14	0,09	0,07
	≤ 500	≤ 50	0,26	57	0,27	0,14	0,09	0,07
	≤ 750	≤ 50	0,24	60	0,27	0,14	0,09	0,07
	≤ 1000	≤ 50	0,22	62	0,27	0,14	0,09	0,07
38-66	≤ 250	≤ 50	0,17	72	0,29	0,14	0,09	0,06
	≤ 500	≤ 50	0,16	75	0,29	0,14	0,09	0,06
	≤ 750	≤ 50	0,15	78	0,29	0,14	0,09	0,06
	≤ 1000	≤ 50	0,13	80	0,29	0,14	0,09	0,06
67-119	≤ 250	≤ 50	0,53	75	0,53	0,35	0,27	0,22
	≤ 500	≤ 50	0,53	78	0,53	0,35	0,27	0,22
	≤ 750	≤ 50	0,53	81	0,53	0,35	0,27	0,22
	≤ 1000	≤ 50	0,53	83	0,53	0,35	0,27	0,22
120-172	≤ 250	≤ 50	0,40	65	0,42	0,31	0,25	0,22
	≤ 500	≤ 50	0,40	68	0,42	0,31	0,25	0,22
	≤ 750	≤ 50	0,38	72	0,42	0,31	0,25	0,22
	≤ 1000	≤ 50	0,36	75	0,42	0,31	0,25	0,22

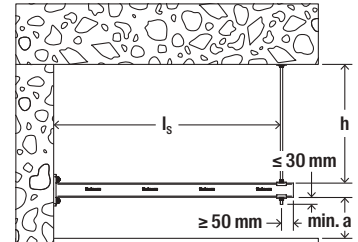
Load tables based on the advisory opinions.



Picture 1



Picture 2



Picture 3

Note: Picture 1 - 3 are valid for FUS/FCA and FLS/ALK load tables

FUS-Channel / FCA-Cantilever arm

Load table based on the Advisory Opinion No. GS 3.2/14-175-4

The following figures are valid for FUS channels and FCA cantilever arms, galvanised, hdg and stainless steel.

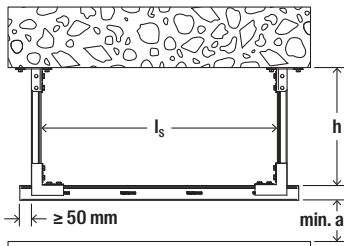
FUS/FCA 41/2,5 (Picture 1-3)		MLAR loads		Max. Loads		Fire resistance time [minute]			
Load case	ls [mm]	strain min a ¹⁾ [mm]	F-resistance 30 [kN]	Max. strain min a ²⁾ [mm]	Fire resistance time [minute]				
					30 [kN]	60 [kN]	90 [kN]	120 [kN]	
Point load	≤ 400	≤ 50	0,90	278	2,40	1,33	0,92	0,72	
	≤ 700	≤ 50	-	320	1,61	1,04	0,80	0,67	
Multiple load ³⁾	≤ 400	≤ 50	0,90	278	2,40	1,33	0,92	0,72	
	≤ 700	≤ 50	-	320	1,61	1,04	0,80	0,67	
Uniformly distributed load	≤ 400	≤ 50	1,50	258	3,00	2,10	1,41	1,06	
	≤ 700	≤ 50	0,60	299	2,44	1,57	1,21	1,00	
	≤ 1250	≤ 50	-	468	3,29	1,81	1,27	0,98	
FUS/FCA 62/2,5 (Picture 1-3)		MLAR loads		Max. Loads		Fire resistance time [minute]			
Load case	ls [mm]	strain min a ¹⁾ [mm]	F-resistance Min. 30 [kN]	Max. strain min a ²⁾ [mm]	Fire resistance time [minute]				
					30 [kN]	60 [kN]	90 [kN]	120 [kN]	
Point load	≤ 400	≤ 50	1,76	25	1,76	1,06	0,78	0,62	
	≤ 1000	≤ 50	-	460	2,27	1,31	0,93	0,72	
Multiple load ³⁾	≤ 400	≤ 50	1,76	25	1,76	1,06	0,78	0,62	
	≤ 960 ⁴⁾	≤ 50	4,30	550	4,30	2,14	1,39	1,01	
	≤ 1000	≤ 50	0,55	661	2,52	1,60	1,21	0,99	
Uniformly distributed load	≤ 400	≤ 50	1,76	25	1,76	1,06	0,78	0,62	
	≤ 960 ⁴⁾	≤ 50	4,30	550	4,30	2,14	1,39	1,01	
	≤ 1000	≤ 50	0,55	661	2,52	1,60	1,21	0,99	
	≤ 1250	≤ 50	0,50	592	2,41	1,65	1,31	1,11	
FUS 62/2,5 (Picture 4)		MLAR loads		Max. Loads		Fire resistance time [minute]			
Load case	ls [mm]	strain min a ¹⁾ [mm]	F-resistance 30 [kN]	Max. strain min a ²⁾ [mm]	Fire resistance time [minute]				
					30 [kN]	60 [kN]	90 [kN]	120 [kN]	
Point load	≤ 1000	≤ 50	0,57	369	1,33	0,87	0,68	0,57	
	≤ 1000	≤ 50	0,62	649	1,92	1,34	1,08	0,92	
Multiple load ³⁾	≤ 1000	≤ 50	0,62	649	1,92	1,34	1,08	0,92	
	≤ 1000	≤ 50	0,62	649	1,92	1,34	1,08	0,92	

1) Valid for a suspension height $h_a \geq 500$ mm

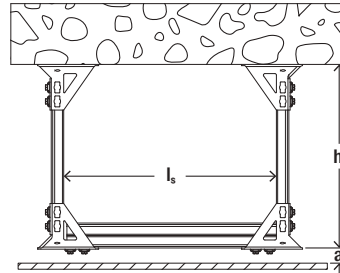
2) Based on suspension height $h_a = 250$ mm, Expansion length of threaded rods in case of fire ~ 10 mm/m

3) Given load values apply for multiple loads as summated point loads symmetrical allocated

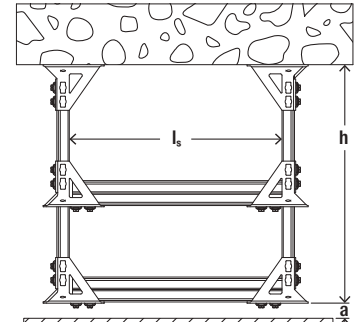
4) This values are valid for FCA 62/2,5 with additional support by threaded rod



Picture 4



Picture 5



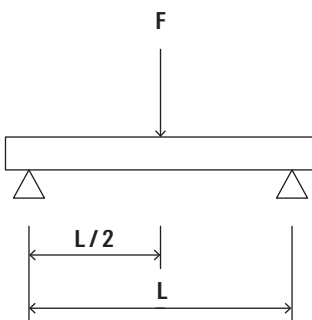
Picture 6

PUWF

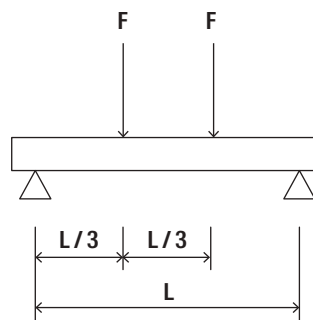
Load table PUWF - Frame construction with loads for fire protection application

These loads apply with the same height and position/distribution of the mechanical load(s) and with the same bracing height h to smaller widths than the investigated clear width l_s , with the same total height of the mechanical load and the same static system, to a higher number of uniformly distributed concentrated loads than tested, with the same height of each individual mechanical load and the same static system, to less than the tested number of individual loads.

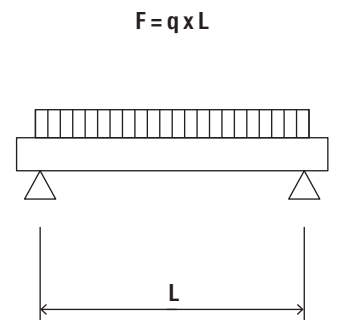
Without intermediate level (picture 5)		MLAR		Maximum loads			
FUS 41-2,5 / FUS 41D-2,5/ PUWF/ PFCN 41		Deformation	F-duration Min.	Fire resistance duration in minutes			
Load type	Distance l_s^* [mm]	min a^1 [mm]	30 [kN]	30 [kN]	60 [kN]	90 [kN]	120 [kN]
Individual load	1250	≤50	0,592	2,262	1,415	1,133	0,992
With intermediate level (picture 6)		MLAR		Maximum loads			
FUS 41-2,5 / FUS 41D-2,5/ PUWF/ PFCN 41		Deformation	F-duration Min.	Fire resistance duration in minutes			
Load type	Distance l_s^* [mm]	min a^1 [mm]	30 [kN]	30 [kN]	60 [kN]	90 [kN]	120 [kN]
Individual load per level	1250	≤50	0,478	1,311	0,805	0,637	0,553
Individual load total			0,956	2,621	1,611	1,274	1,106



Point load
Spot load, e.g. a pipeclamp on the channel.



Uniform load
Uniform distribution of load on the channels, e.g. bend-proof ventilation duct.



Multiple load
More than one load point on the channel, e.g. several pipe clamps.

Fixing of sprinkler systems.



Sprinkler systems are designed and installed to different standards. For example, to the German VdS standard (VdS CEA 4001), to the American FM standard 1951 (Factory Mutual Insurance Company, FM Global), to the UL (Underwriters Laboratories, UL) based on the NFPA 13 standard (National Fire Protection Association, NFPA) or to the European standard EN 12845.

The European guideline CEA 4001 was introduced in 1995 by the insurance industry in collaboration with the manufacturers' association and in Germany in 2003 by "VdS Schadensverhütung GmbH" as VdS CEA 4001.

EN 12845 was created on the basis of the CEA 4001 of 1995 and the VdS CEA 4001 of 2003, so that the resulting standard is virtually the same. The EN 12845 is supplemented by the EN 12259 series of standards for the most important components but does not cover the further requirements of fixing products.

The American standards correspond with each other and with the European standards and guidelines regarding the fixing of pipework. The differences are in the detail and must be noted in the respective use.

Certification symbol



VdS CEA 4001 compliance symbol in concrete ceilings:



Load values, fixing distances and connection sizes for pipe loops and pipe clamps for the most common guidelines

Pipe sizes DN	FM1951			NFPA13				VdS CEA 4001			
	Test load distance	Max. distance	Min. rod size [metric] [inch]	Test load calculated [kN]	Max. distance [m]	Min. rod size [metric] [inch]	Loading capacity [kN]	Max. [m]	Min. Thread size [metric] [inch]		
15	-	-	- -	1.4	3.60	9.5 3/8	2.0	4.00	M8 -		
20	1.512	3.6	M10 3/8	1.5	3.60	9.5 3/8	2.0	4.00	M8 -		
25	1.824	3.6	M10 3/8	1.7	3.66	9.5 3/8	2.0	4.00	M8 -		
32	1.913	3.6	M10 3/8	1.9	3.66	9.5 3/8	2.0	4.00	M8 -		
40	2.313	4.6	M10 3/8	2.4	4.57	9.5 3/8	2.0	4.00	M8 -		
50	2.825	4.6	M10 3/8	2.9	4.57	9.5 3/8	3.5	4.00	M10 -		
65	4.181	4.6	M10 3/8	3.8	4.57	9.5 3/8	3.5	6.00	M10 -		
80	4.715	4.6	M10 3/8	4.8	4.57	9.5 3/8	3.5	6.00	M10 -		
90	5.583	4.6	M10 3/8	5.7	4.57	9.5 3/8	3.5	6.00	M10 -		
100	6.561	4.6	M10 3/8	6.7	4.57	9.5 3/8	5.0	6.00	M10 -		
125	8.896	4.6	M12 1/2	9.0	4.57	12.7 1/2	5.0	6.00	M12 -		
150	11.632	4.6	M12 1/2	11.8	4.57	12.7 1/2	8.5	6.00	M12 -		
200	16.903	4.6	M12 1/2	18.2	4.57	12.7 1/2	8.5	6.00	M16 -		
250	26.044	4.6	M16 5/8	26.7	4.60	15.9 5/8	-	6.00	- -		
300	35.141	4.6	M16 5/8	36.0	4.60	15.9 5/8	-	6.00	- -		
350	-	-	- -	42.9	4.60	- -	-	6.00	- -		
400	-	-	- -	55.7	4.60	- -	-	6.00	- -		
450	-	-	- -	70.1	4.60	- -	-	6.00	- -		
500	-	-	- -	84.4	4.60	- -	-	6.00	- -		

Mounting gas pipe.



A specification for the usable anchors emerged from the DVGW-TRGI revision in 2008. This is regulated in TRGI 2008 in Chapter II under item 5.3 "Preparation of pipe installations". In the TRGI from 2008, plastic anchors are now explicitly allowed under certain conditions.

The basis in the previous TRGI was the determination that gas pipes need to be mounted in the way that there are no free pipe cross-sections in the event of fire. In the new version, this was amended in that, in the event of fire, there may be no free pipe cross-sections up to a temperature of 650 °C. For pipe connections, this means that the axial restraint was also specified, and a brazed pipe joint, for example, is not considered as an axial restraint. Thus, standard commercially available plastic anchors with non-combustible pipe supports may be used for mounting metal inner pipes with an axial restraint of >650 °C. It should be noted that attachments are made to components with sufficient strength according to TRGI 2008. In addition, the mounting distances are governed in TRGI 2008, and are mandatory.

According to DVGW-TRGI 2008, plastic pipes for indoor pipes with an operating pressure up to 100 mbar are also allowed for the first time. For laying plastic inner pipes, in comparison to metal and non-combustible pipe installations, plastic pipes for gas installations are, without exception, subject to the system engagement of the manufacturer.

The fixing materials for open gas pipes can also be made of plastic if the static requirements are met. The requirement for using plastic pipes in gas installations is the installation of a type K gas flow monitor in conjunction with an additional thermally activated shut-off device (TAE), as the destruction of the openly laid plastic gas pipes in the event of fire must be assumed.

Integration of rules regarding building classes according to the German model building regulations (MBO) was also implemented in DVGW TRGI 2008. An alignment of the fire protection requirements, which are specified in the German standard pipe systems directive (MLAR 2005) for the installation of pipes in buildings was, therefore, only logical. The limit for increased demands on the gas installation according to TRGI 2008 are > 2 utilisation units (building class 3) for buildings and for a floor level upper edge of more than 7m of the top floor (building class 4).

If any of these conditions exists, or if any of them are exceeded, it is not possible to lay plastic pipes in escape routes. For metal pipes, the requirements of MLAR 2005 for laying in installation channels or below plaster and plaster base are applicable. For pipe mounting with anchors, MLAR 2005 stipulates that either officially approved anchors are used or, alternatively, that the provisions of DIN4102-T.4, section 8.5.7.5 (or DIN EN 1366-1, section 13.6) are observed. The same rule also applies to the installation of pipes through officially approved partitions in walls and ceilings, as the mechanical destruction of the partitions by pipes in the event of fire must be prevented.

When installing gas pipes, we therefore recommend the use of approved metal anchors, since, through the general official approval and the European technical approval, the certificate of suitability for the anchor is provided, also for in the event of fire. This gives the installer the necessary safety, also at the limits.

Seismic and dynamic.



The seismic and dynamic requirements for non-structural installations, such as pipe installations, are often underestimated in comparison to those of structural installations. But even here, the rule is that the weakest link in the chain can lead to failure or to damage.

Since basically every building in which such requirements, or additional requirements included by property insurers, such as FM, are different, it is also not possible to specify standard details. In addition, the solutions to be developed should also include the links to the components.

For this reason, we recommend everyone to use the support of our technical staff, in order to develop a suitable and project-specific solution.

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Dimension and weights of pipes, ventilation ducts and ventilation pipes.

Boiler pipe acc. to DIN 2448 / DIN EN 10220						
DN	Size	Pipe outer-ø	Pipe weight empty	Pipe weight waterfilled	Pipe weight waterfilled + insulated ¹⁾	Support widths [m]
		[mm]	[kg/m]	[kg/m]	[kg/m]	
8	1/4"	13.5	0.5	0.6	1.4	2.00
10	3/8"	17.2	0.7	0.8	1.9	2.25
15	1/2"	21.3	1.0	1.2	2.2	2.75
		25.0	1.1	1.5	2.8	2.75
20	3/4"	26.9	1.4	1.8	3.1	3.00
		30.0	1.8	2.3	4.0	3.00
		31.8	1.9	2.4	4.2	3.00
25	1"	33.7	2.0	2.6	4.7	3.50
		38.0	2.3	3.1	5.2	3.50
32	1 1/4"	42.4	2.6	3.7	5.7	3.75
		44.5	2.7	3.9	6.9	3.75
40	1 1/2"	48.3	3.0	4.4	7.4	4.25
		51.0	3.1	4.8	7.7	4.40
		57.0	3.9	6.0	10.0	4.60
50	2"	60.3	4.1	6.5	10.5	4.75
		63.5	4.4	7.0	11.0	4.75
		70.0	4.8	8.1	13.4	4.75
65	2 1/2"	76.1	5.3	9.2	14.8	5.50
		82.5	6.3	10.9	19.2	5.75
80	3"	88.9	6.8	12.2	20.4	6.00
		101.6	8.8	15.8	27.0	6.00
		108.0	9.3	17.3	29.1	6.00
100	4"	114.3	9.9	18.9	30.6	6.00
		127.0	12.2	23.3	36.1	6.00
		133.0	12.8	25.1	37.8	6.00
125	5"	139.7	13.5	27.1	40.3	6.00
		152.4	16.5	32.7	47.1	6.00
		159.0	17.3	34.9	49.2	6.00
		165.1	17.9	37.1	52.0	6.00
150	6"	168.3	18.3	38.2	53.0	6.00
		177.8	21.4	43.6	58.1	6.00
		193.7	25.2	51.5	68.0	6.00
200	8"	219.1	31.2	65.0	83.3	6.00
		244.5	37.2	79.5	98.6	6.00
		267.0	40.8	91.6	112.7	6.00
250	10"	273.0	41.6	94.9	117.7	6.00
300	12"	323.9	55.6	131.0	156.6	6.00

1) Heat insulation: density 120 kg/m³ + sheet metal jacket: density 7865 kg/m³

2) Heat insulation: density 120 kg/m³

The corresponding pipe manufacturer's data are to be considered.

Copper pipe acc. to DIN EN 1057						
DN	Size	Pipe outer- \emptyset	Pipe weight empty	Pipe weight waterfilled	Pipe weight waterfilled + insulated ¹⁾	Support widths
		[mm]	[kg/m]	[kg/m]	[kg/m]	[m]
10	–	17.2	0.6	0.8	1.8	1.3
15	–	21.3	1.0	1.2	2.3	1.5
20	–	26.9	1.3	1.7	2.9	2.0
25	–	33.7	1.6	2.3	4.3	2.3
32	–	42.4	2.0	3.2	5.2	2.8
40	–	48.3	2.3	3.9	6.8	3.0
50	–	60.3	2.9	5.4	9.5	3.5
65	–	76.1	3.7	7.8	13.5	4.3
80	–	88.9	4.4	10.0	18.2	4.8
100	–	114.3	7.3	16.6	28.3	5.0
125	–	139.7	8.9	23.1	36.4	5.0
150	–	168.3	13.2	34.1	48.9	5.0
200	–	219.1	17.3	52.8	71.2	5.0
250	–	273.0	21.6	80.1	100.9	5.0
300	–	323.9	25.7	108.1	132.0	5.0
400	–	406.4	32.3	162.0	190.6	5.0
500	–	508.0	40.4	243.1	279.8	5.0

Threaded pipe acc. to DIN 2440 / DIN EN 10255						
DN	Size	Pipe outer- \emptyset	Pipe weight empty	Pipe weight waterfilled	Pipe weight waterfilled + insulated ¹⁾	Support widths
		[mm]	[kg/m]	[kg/m]	[kg/m]	[m]
8	1/4"	13.5	0.7	0.7	1.6	2.00
10	3/8"	17.2	0.9	1.0	2.0	2.25
15	1/2"	21.3	1.2	1.4	2.5	2.75
20	3/4"	26.9	1.6	2.0	3.2	3.00
25	1"	33.7	2.4	3.0	5.1	3.50
32	1 1/4"	42.4	3.1	4.2	6.2	3.75
40	1 1/2"	48.3	3.6	5.0	8.0	4.25
50	2"	60.3	5.1	7.3	11.4	4.75
65	2 1/2"	76.1	6.5	10.2	15.9	5.50
80	3"	88.9	8.5	13.6	21.8	6.00
100	4"	114.3	12.1	20.8	32.5	6.00
125	5"	139.7	16.2	29.5	42.7	6.00
150	6"	165.1	19.2	38.2	53.1	6.00

1) Heat insulation: density 120 kg/m³ + sheet metal jacket: density 7865 kg/m³
The corresponding pipe manufacturer's data are to be considered.

Copper pipe acc. to DIN EN 1057						
DN	Size	Pipe outer- \emptyset	Pipe weight empty	Pipe weight waterfilled	Pipe weight waterfilled + insulated ¹⁾	Support widths
		[mm]	[kg/m]	[kg/m]	[kg/m]	[m]
8	10x1	10	0.3	0.3	0.4	1.00
10	12x1	12	0.3	0.4	0.5	1.25
12	15x1	15	0.4	0.5	0.8	1.25
15	18x1	18	0.5	0.7	1.0	1.50
20	22x1	22	0.6	0.9	1.3	2.00
25	28x1.5	28	1.1	1.6	2.4	2.25
32	35x1.5	35	1.4	2.2	3.1	2.75
40	42x1.5	42	1.7	2.9	4.4	3.00
50	54x2	54	2.9	4.9	7.3	3.50
50	64x2	64	3.5	6.3	9.8	4.00
65	76.1x2	76.1	4.1	8.2	14.0	4.25
80	88.9x2	88.9	4.9	10.5	16.4	4.75
100	108x2.5	108	7.4	15.75	27.5	5.00

Stainless steel pressure system						
DN	Size	Pipe outer- \emptyset	Pipe weight empty	Pipe weight waterfilled	Pipe weight waterfilled + insulated ¹⁾	Support widths
		[mm]	[kg/m]	[kg/m]	[kg/m]	[m]
12	15x1	15	0.3	0.5	0.8	1.50
15	18x1	18	0.4	0.6	1.0	1.50
20	22x1.2	22	0.6	0.9	1.3	2.50
25	28x1.2	28	0.8	1.3	2.4	2.50
32	35x1.5	35	1.2	2.0	3.1	3.50
40	42x1.5	42	1.5	2.7	4.4	3.50
50	54x1.5	54	2.0	4.0	7.3	3.50
65	76.1x2	76.1	3.6	7.6	14.0	5.00
80	88.9x2	88.9	4.2	9.8	16.4	5.00
100	108x2	108	5.1	13.5	27.5	5.00

Metal composite pipe						
DN	Size	Pipe outer- \emptyset	Pipe weight empty	Pipe weight waterfilled	Pipe weight waterfilled + insulated ¹⁾	Support widths
		[mm]	[kg/m]	[kg/m]	[kg/m]	[m]
10	14x2	14	0.1	0.2	0.4	1.0
12	16x2.25	16	0.1	0.2	0.5	1.0
15	20x2.5	20	0.2	0.4	0.7	1.0
20	26x3	26	0.3	0.6	0.9	1.5
25	32x3	32	0.4	0.9	1.2	2.0
32	40x3.5	40	0.6	1.5	2.1	2.0
40	50x4	50	0.9	2.3	3.2	2.5
50	63x4.5	63	1.3	3.6	5.2	2.5

1) Heat insulation: density 120 kg/m³ + sheet metal jacket: density 7865 kg/m³
The corresponding pipe manufacturer's data are to be considered.

Drain pipe. Cast iron. SML. DIN 19522				
DN	Pipe outer- \emptyset	Pipe weight empty	Pipe weight water filled	Support widths
	[mm]	[kg/m]	[kg/m]	[m]
40	48	3.1	4.5	¹⁾
50	58	4.3	6.4	¹⁾
70	78	5.9	9.9	¹⁾
80	83	6.1	10.6	¹⁾
100	110	8.4	17.7	¹⁾
125	135	11.8	24.5	¹⁾
150	160	14.1	32.3	¹⁾
200	210	23.1	54.6	¹⁾
250	274	33.3	87.7	¹⁾
300	326	43.2	120.8	¹⁾
400	429	60.0	193.3	¹⁾
500	532	82.6	290.1	¹⁾

Drain pipe. PVC-U. DIN 8062					
DN	Pipe outer- \emptyset	Pipe weight empty	Pipe weight water filled	Support widths	
				20°	40°
	[mm]	[kg/m]	[kg/m]	[m]	[m]
40	50	0.8	1.3	0.8	0.6
50	63	1.3	2.0	1.1	0.7
65	75	1.8	3.9	1.3	0.8
80	90	2.6	3.9	1.3	0.8
100	110	3.9	8.0	1.6	1.0
125	125	5.0	12.4	1.8	1.1
150	160	8.2	18.0	2.2	1.2

LORO-X steel drain pipe				
DN	Pipe outer- \emptyset	Pipe weight empty	Pipe weight water filled	Support widths
	[mm]	[kg/m]	[kg/m]	[m]
40	42	1.5	2.7	¹⁾
50	53	2.2	4.2	¹⁾
70	73	3.3	7.1	¹⁾
80	89	4.1	9.9	¹⁾
100	102	5.8	13.3	¹⁾
125	133	9.6	22.5	¹⁾
150	159	11.5	30.1	¹⁾
200	219	21.5	57.2	¹⁾
250	273	22.5	78.5	¹⁾
300	324	25.0	104.4	¹⁾

Note: The values for the max. support widths are based on the permissible deflection under load of the pipes and the corresponding recommendations from the pipe manufacturer. The permissible loads of the pipe fasteners and mountings are not taken into consideration.

1) approx. 1,50 m – 2,00 m. According to the manufacturer's data, each pipe length should be supported in at least two places. The corresponding data from the pipe manufacturer are to be taken into consideration.

Drain pipe. GA. DIN 19500					
DN	Pipe outer-ø	Wall thickness	Pipe weight empty	Pipe weight water filled	Support widths
	[mm]	[mm]	[kg/m]	[kg/m]	[m]
50	60	3.5	5.19	7.39	1)
70	80	3.5	7.02	11.21	1)
100	112	4.0	11.33	19.83	1)
125	137	4.0	13.96	27.03	1)
150	162	5.0	20.59	38.74	1)
200	212	6.0	32.42	63.84	1)

Drain pipe. PE. DIN 19535				
DN	Pipe outer-ø	Pipe weight empty	Pipe weight water filled	Support widths
	[mm]	[kg/m]	[kg/m]	[m]
25	32	0.3	0.8	0.5
32	40	0.3	1.3	0.5
40	50	0.4	2.0	0.8
50	56	0.5	2.5	0.8
57	63	0.6	3.1	0.8
70	75	0.7	4.4	0.8
80	90	1.0	6.4	0.9
100	110	1.4	9.5	1.1
125	125	1.8	12.3	1.3
125	140	2.3	15.4	1.4
150	160	3.0	20.1	1.6
200	200	3.8	31.5	2.0
250	250	6.0	49.2	2.0

Spiral lock seam pipe. round. acc. to DIN EN12237																													
DN	71	80	90	100	112	125	140	150	160	180	200	224	250	280	300	315	355	400	450	500	560	600	630	710	800	900	1000	1120	1250
Pipe outer-ø [mm]	75	84	94	105	117	130	145	155	165	185	205	229	255	285	307	322	362	407	457	507	567	609	639	719	810	1012	1012	1132	1262
Sheet thickness [mm]	0.4	0.4	0.4	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.0	1.0	1.0	1.0	1.0	1.2	1.2	1.2
Pipe weight empty [kg/m]	0.8	0.9	1.0	1.7	1.9	2.1	2.4	2.6	2.7	3.1	3.4	3.8	4.2	4.7	5.2	7.1	8.0	9.0	10.2	11.3	12.6	13.5	17.7	20.0	22.5	25.4	34.9	39.1	43.7

Weights of galvanised air ducts in kg/m with insulation (80 kg/m ³ , 5 cm thickness)																									
Sheet metal 0.75			Sheet metal 0.88						Sheet metal 1.0						Sheet metal 1.13						Sheet metal 1.25				
200	224	250	280	315	355	400	450	500	560	630	710	800	900	1000	1120	1250	1400	1600	1800	2000	2240	2500	2800	3150	Ø-B -H
9.1	9.6	10.2	12.1	13.0	14.0	15.2	16.4	17.7	21.0	22.9	25.1	27.6	30.4	33.2	39.8	43.8	48.3	54.3	60.4	66.4	79.4	87.8	97.6	109.0	200
-	10.2	10.8	12.7	13.6	14.6	15.8	17.0	18.3	21.7	23.6	25.8	28.3	31.1	33.8	40.6	44.5	49.0	55.0	61.1	67.1	80.2	88.6	98.4	109.8	224
-	-	11.4	13.4	14.3	15.3	16.4	17.7	19.0	22.4	24.3	26.5	29.0	31.8	34.5	41.3	45.3	49.8	55.8	61.9	67.9	81.0	89.5	99.2	110.6	250
-	-	-	14.2	15.0	16.0	17.2	18.4	19.7	23.2	25.1	27.3	29.8	32.6	35.4	42.2	46.2	50.7	56.7	62.8	68.8	82.0	90.4	100.2	111.6	280
-	-	-	-	15.9	16.9	18.1	19.3	20.6	24.2	26.1	28.3	30.8	33.6	36.3	43.3	47.2	51.8	57.8	63.8	69.9	83.1	91.6	101.3	112.7	315
-	-	-	-	-	17.9	19.1	20.3	21.6	25.3	27.2	29.4	31.9	34.7	37.4	44.5	48.4	53.0	59.0	65.0	71.1	84.4	92.9	102.6	114.0	355
-	-	-	-	-	-	20.2	21.5	22.7	26.5	28.5	30.7	33.2	35.9	38.7	45.9	49.8	54.3	60.4	66.4	72.4	85.9	94.3	104.1	115.5	400
-	-	-	-	-	-	-	22.7	24.0	27.9	29.8	32.0	34.5	37.3	40.1	47.4	51.3	55.8	61.9	67.9	73.9	87.5	96.0	105.7	117.1	450
-	-	-	-	-	-	-	-	25.3	29.3	31.2	33.4	35.9	38.7	41.4	48.9	52.8	57.3	63.4	69.4	75.4	89.1	97.6	107.4	118.7	500
-	-	-	-	-	-	-	-	-	30.9	32.9	35.1	37.6	40.3	43.1	50.7	54.6	59.1	65.2	71.2	77.3	91.1	99.5	109.3	120.7	560
-	-	-	-	-	-	-	-	-	-	34.8	37.0	39.5	42.3	45.0	52.8	56.7	61.3	67.3	73.3	79.4	93.4	101.8	111.6	123.0	630
-	-	-	-	-	-	-	-	-	-	-	39.2	41.7	44.5	47.2	55.2	59.1	63.7	69.7	75.7	81.8	96.0	104.4	114.2	125.6	710
-	-	-	-	-	-	-	-	-	-	-	-	44.2	47.0	49.7	57.9	61.9	66.4	72.4	78.5	84.5	98.9	107.4	117.1	128.5	800
-	-	-	-	-	-	-	-	-	-	-	-	-	49.7	52.5	61.0	64.9	69.4	75.4	81.5	87.5	102.1	110.6	120.4	131.8	900
-	-	-	-	-	-	-	-	-	-	-	-	-	-	55.3	64.0	67.9	72.4	78.5	84.5	90.5	105.4	113.9	123.6	135.0	1000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	67.6	71.5	76.0	82.1	88.1	94.1	109.3	117.8	127.5	138.9	1120
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	75.4	80.8	86.0	92.0	98.1	113.5	122.0	131.8	143.1	1250
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	84.5	90.5	96.6	102.6	118.4	126.9	136.6	148.0	1400
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	96.6	102.6	108.6	124.9	133.4	143.1	154.5	1600	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	108.6	114.7	131.4	139.9	149.6	161.0	1800	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120.7	137.9	146.4	156.2	167.5	2000	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	145.7	154.2	164.0	175.3	2240	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	162.7	172.4	183.8	2500	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	182.2	193.6	2800	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	204.9	3150	

Weights of galvanised ventilation ducts in kg/m without insulation																									
Sheet metal 0.75			Sheet metal 0.88						Sheet metal 1.0						Sheet metal 1.13						Sheet metal 1.25				
200	224	250	280	315	355	400	450	500	560	630	710	800	900	1000	1120	1250	1400	1600	1800	2000	2240	2500	2800	3150	Ø-B -H
5.9	6.2	6.6	8.3	8.9	9.6	10.4	11.2	12.1	14.9	16.3	17.9	19.6	21.6	23.6	29.3	32.2	35.5	39.9	44.4	48.8	59.9	66.2	73.6	82.8	200
-	6.6	7.0	8.7	9.3	10.0	10.8	11.6	12.5	15.4	16.8	18.3	20.1	22.1	24.0	29.8	32.7	36.0	40.4	44.9	49.3	60.4	66.8	74.2	82.2	224
-	-	7.4	9.2	9.8	10.4	11.2	12.1	13.0	15.9	17.3	18.8	20.6	22.6	24.5	30.4	33.3	36.6	41.0	45.5	49.9	61.1	67.5	74.8	83.4	250
-	-	-	9.7	10.3	11.0	11.7	12.6	13.5	16.5	17.9	19.4	21.2	23.2	25.1	31.0	33.9	37.3	41.7	46.1	50.6	61.8	68.2	75.6	84.1	280
-	-	-	-	10.9	11.6	12.3	13.2	14.1	17.2	18.5	20.1	21.9	23.8	25.8	31.8	34.7	38.0	42.5	46.9	51.3	62.7	69.1	76.4	85.0	315
-	-	-	-	-	12.3	13.0	13.9	14.8	18.0	19.3	20.9	22.7	24.6	26.6	32.7	35.6	38.9	43.4	47.8	52.2	63.7	70.0	77.4	86.0	355
-	-	-	-	-	-	13.8	14.7	15.5	18.8	20.2	21.8	23.6	25.5	27.5	33.7	36.6	39.9	44.4	48.8	53.2	64.8	71.1	78.5	87.1	400
-	-	-	-	-	-	-	15.5	16.4	19.8	21.2	22.8	24.5	26.5	28.5	34.8	37.7	41.0	45.5	49.9	54.3	66.0	72.4	79.7	88.3	450
-	-	-	-	-	-	-	-	17.3	20.8	22.2	23.7	25.5	27.5	29.4	35.9	38.8	42.1	46.6	51.0	55.4	67.2	73.6	81.0	89.5	500
-	-	-	-	-	-	-	-	-	22.0	23.4	24.9	26.7	28.7	30.6	37.3	40.1	43.5	47.9	52.3	56.8	68.7	75.1	82.4	91.0	560
-	-	-	-	-	-	-	-	-	-	24.7	26.3	28.1	30.0	32.0	38.8	41.7	45.0	49.5	53.9	58.3	70.4	76.8	84.1	92.7	630
-	-	-	-	-	-	-	-	-	-	-	27.9	29.6	31.6	33.6	40.6	43.5	46.8	51.2	55.7	60.1	72.4	78.7	86.1	94.7	710
-	-	-	-	-	-	-	-	-	-	-	-	31.4	33.4	35.3	42.6	45.5	48.8	53.2	57.7	62.1	74.6	81.0	88.3	96.9	800
-	-	-	-	-	-	-	-	-	-	-	-	-	35.3	37.3	44.8	47.7	51.0	55.4	59.9	64.3	77.0	83.4	90.8	99.4	900
-	-	-	-	-	-	-	-	-	-	-	-	-	-	39.3	47.0	49.9	53.2	57.7	62.1	66.5	79.5	85.9	93.2	101.8	1000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	49.7	52.6	55.9	60.3	64.8	69.2	82.4	88.8	96.2	104.7	1120
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	55.4	58.8	63.2	67.6	72.1	85.6	92.0	99.4	107.9	1250
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	62.1	66.5	71.0	75.4	89.3	95.7	103.0	111.6	1400
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71.0	75.4	79.8	94.2	100.6	107.9	116.5	1600	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	79.8	84.3	99.1	105.5	112.8	121.4	1800	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	88.7	104.0	110.4	117.8	126.3	2000	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	109.9	116.3	123.6	132.2	2240	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	122.7	130.0	138.6	2500	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	137.4	146.0	2800	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	154.5	3150	

The weights in kg/m are reference values. The weights can deviate, depending on the sheet metal thickness and the type of flange used. The flange weight is included flat -rate. The loads based on a mineral wool weight of 80 kg/m² and a thickness of 5 cm.

Important dimensions, variables and units.

Comparison of material standards			
DIN EN ISO	Material-No.		DIN EN ISO
Description			ASTM
S250GD+Z	1.0242	EN10027-2	A653
DD11	1.0332	DIN EN 10111	A621CQ
DC01	1.0330	DIN EN 10130	A366
St22	1.0320	DIN 1614-1	n/a
DX51D+Z275NA-C	1.0226+Z	DIN EN 10327	A653/CQ
S235JR	1.0037	DIN EN 10025	A283
S355MC	1.0976	DIN EN 10149	n/a
4.6; 4.8	DIN EN ISO 898-1		F568M

Variables and units					
Size	Formula symbol	Unit SI	others	related	Note
	[mm]	[mm]	[kg/m]	[kg/m]	[m]
Length	l	m	–	1 m = 10 dm = 100 cm = 1.000 mm 1 mm = 1.000 µm 1 km = 1.000 m	1 inch = 1 Zoll = 25.4 mm
Area	A, S	m ²	a, ha	1 m ² = 10.000 cm ² = 1.000.000 m ² 1 a = 100 m ² 1 ha = 100 a = 10.000 m ²	–
Volume	V	m ³	l	1 m ³ = 1.000 dm ³ = 1.000.000 cm ³ 1 l = 1 dm ³ = 0.001 m ³ 1 ml = 1 cm ³	–
Time	t	s	min, h, d	1 min = 60 s 1 h = 60 min = 3.600 s 1 d = 24 h	–
Frequency	f	Hz	–	1 Hz = 1/s	–
Speed	v	m/s	m/s, km/h	1 m/s = 3.6 km/h	–
Acceleration	a, g	m/s ²	–	g = 9.81 m/s ²	Formula character g only for acceleration due to gravity
Weight	m	kg	g, t	1 kg = 1.000 g 1 t = 1.000 kg	–
Density	ρ	kg/m ³	–	1.000 kg/m ³ = 1 t/m ³ = 1 kg/dm ³	–
Moment of inertia, 2nd degree	J	kg · m ²	–	–	Formerly: Mass moment of inertia
Force	F	N	–	1 N = 1 kg · m/s ²	Formerly: kp (kilopond) 1 kp = 9,80665 kgm/s ² = 9,81 N
Torque	M	N · m	–	–	–
Bending moment	M _b	N · m	–	–	–
Torsion moment	T	N · m	–	–	–
Mechanical tension	σ, τ	N/m ²	–	–	–
Area-wise moment, 2nd degree	I	m ⁴	–	–	Formerly: Area moment of inertia
Energy, work	E, W	J	–	1 J = 1 N · m = 1 W · s	Formerly: cal (calorie) 1 cal = 4,1868 Ws = 4,19 J
Power	P	W	–	1 W = 1 J/s = 1 N · m/s	Formerly: hp (horsepower) 1 PS = 75 kpm/s = 75 · 9,81 N/ms = 0,736 kW
Thermodynamic temperature	T	K	–	0 °C = 273 K -273 °C = 0 K	–
Heat quantity	Q	J	(Wh)	1 J = 1 W · s = 1 N · m	–
Specific heat value	H	J/kg	–	–	–
Substance quantity	n	mol	–	1 corresponds to approx 6 · 10 ²³	–
Light intensity	lv	cd	–	–	–

Approvals, markings and their importance.

In the following, excerpts of approvals that are currently issued in Europe and their symbols will be given with their corresponding importance. Please check whether your application is safety relevant.

An application is safety relevant when failure of anchorages would cause risk to human life or serious injuries and/or lead to considerable economic consequences. In this case please use anchors with a European Technical (ETA) or with a German Approval.

You may recognise these anchors by:



ETA-05/0069, for cracked concrete

European Technical Approval/Assessment

Issued by a European approval authority (e.g. DIBt) on the basis of the guidelines for European technical approvals (ETAG). ETA (English): European Technical Approval/Assessment. CE: The CE marks the conformity of the product to all applicable legal provisions in which their installation is intended. This means that the CE mark only certifies that the requirements determined in the relevant harmonisation legal provisions of the union have been complied with. Products with the CE mark can be freely traded in the European Economic Market.



General Building Authority Approval:

German approval, issued by the DIBt, Berlin with the accompanying certificate of conformity for construction products with the general building authority approval. Confirmed by a material testing institute.



ICC ESR-2948

ICC = International Code Council, formed from BOCA, ICBO & SBCCI:

ICC Evaluation Service Inc. (ICC ES) issues reports, e.g. for subsequent anchoring on the basis of the International Building Code® and the related standards in the United States of America.



FM Certificate:

Recognised for use in local water-based fire extinguisher systems (Factory Mutual Research Corporation for Property Conservation, American insurance company).



VdS-Certificate:

Recognised for the use in local water-based fire extinguisher systems (formerly: Association of Property Insurers, now: VdS Damage Prevention)



Sprinkler Systems:

Meets the requirements according to VdS CEA 4001.



UL Certificate:

Recognised as pipe hangers for use e.g. in local water-based fire extinguisher systems (UL Online Certification Directory, VFXT.EX16429).

**Fire-tested product MLAR:**

The product was subjected to a fire test. A "Examination report regarding testing according the German Muster-Leitungsanlagenrichtlinie" (MLAR) is available.

**Fire-tested product MLAR:**

The product was subjected to a fire test. A "Examination report regarding testing according the German Muster-Leitungsanlagenrichtlinie" (MLAR) is available.

**Fire-tested product DIN EN 1366-1:**

The product was subjected to a fire test. A "Examination report" according DIN EN 1366-1 is available.

**Fire-tested product DIN 4102-2:**

The product was subjected to a fire test. A "Examination report" according DIN 4102-2 is available.

**Sound insulation tested according DIN 4109:**

The product was subjected to a sound insulation test. A "measurement of the insertion loss" is available in a test report.

**Fixing that can be dynamically loaded:**

The fixing is suitable and approved for anchoring of "not predominantly static" (i.e. dynamic) loads.



Tested for flame resistance according to VDE.



The RAL Gütezeichen (quality mark) for Rohrbefestigung (pipe supports) is awarded by the RAL Gütegemeinschaft Rohrbefestigung e.V. This organization grants specific quality marks:

Rohrbefestigung (RAL-GZ 655):

This mark is given to products that meet stringent technical and quality standards for pipe supports, such as pipe clamps, brackets, and mounting rails.

Catalogue fixing systems.

Products for use in fixing technology.

The fixing catalogue offers many facts and helps with quick and safe product selection, e.g.:

- Produktbeschreibungen mit Vorteile/Nutzen im Überblick
- Tips for installation
- Application aids
- Detailed technical data and drawings
- Basics of fastening technology
- All you need to know about professional fixing

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Main catalogue ETICS.

All about the fischer range for façades with external thermal insulation composite systems (ETICS) for new build and renovation.

We offer a wide range of fixing solutions for the installation of insulation boards, such as:

- Products for different building materials, materials, thicknesses and fire protection and system requirements.
- System providers and installers of ETICS can find the optimal building the optimum solution in terms of building physics, easy to apply and safe solution within the framework of the European Technical Assessment (ETA).

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Catalogue Façade Systems.

All facts about the fischer façade range and its applications.

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- Application support.
- Basic knowledge about undercut anchors and subframe systems.
- Available design software

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Catalogue FireStop.

Products for use in passive fire protection.

The FireStop catalogue offers many facts and helps with fast and safe product selection, e.g.:

- Basics of passive fire protection
- Product and system presentations
- Application aids
- Detailed technical data and drawings

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