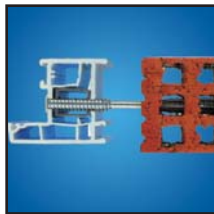


Fixing Technology



Application of Fixings

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Metal Dowels

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Heavy-duty Fixings

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Impact Anchors

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**Composite Anchor,
Injection Mortar FIT**

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Frame Anchors

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**Lightweight Building
Fixings**

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**Insulation and Scaffolding
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Frame Anchors Metal
















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Cavity Fixings

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Application table for lightweight fixing

Designation	AGR	Solid building material					Perforated bricks			Foam		Fiberboards			Lightweight build. material	Page
		Concrete	Natural stone	Lightweight concrete PB2 - PB4	Solid brick	Solid sand-lime brick	Perforated sand-lime brick	Hollow blocks	Vertically perforated brick	Rigid foam	Polystyrene	Gypsum plasterboard	Cement fiber board	Wooden fiber board	Lightweight concrete PB1 - PB2	
Multipurpose plug																
	8108	●	●	●	●	●	●	●	●			●	●	●	●	7/112
All-purpose plug																
	8100/8101	●		●	●	●	●								●	7/113
Multipurpose 4MZ																
	8105/8106	●	●	●	●	●	●	●	●			●	●	●	●	7/113
Expansion anchor Nylon																
	8000	●			●	●									●	7/118
Hollow brick plug																
	8010						●	●	●						●	7/119
Nail plug																
	8018 - 8022	●														7/130
Nail plug with mushroom head																
	8025	●														7/130
Threaded nail plug																
	8022	●														7/131
Express nail																
	8023	●			●	●										7/131
Sealing nail																
	8024	●			●	●										7/132
Hammer rivets																
	8028	●			●											7/132
Frame anchor, short																
	8011	●			●	●										7/133
Frame anchor, long																
	8012						●	●							●	7/133
Multi-functional frame anchor MFR																
	8107	●			●	●	●		●						●	7/136
Lightweight concrete anchor																
	8130			●											●	7/142

Application table for lightweight fixing

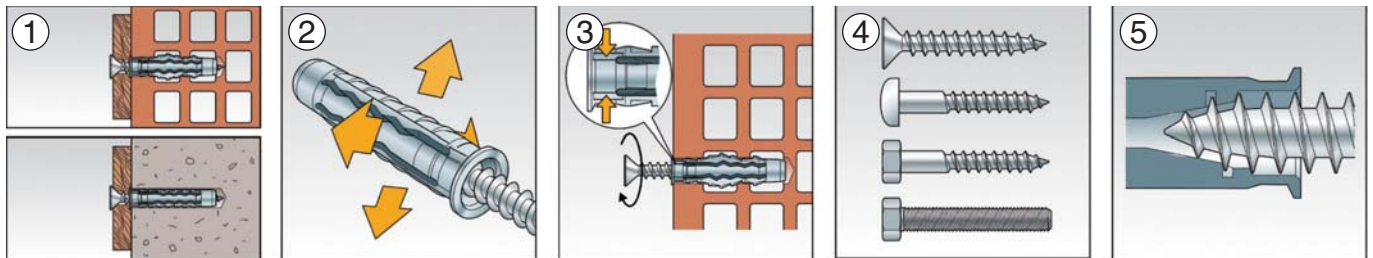
Designation	AGR	Solid building materials					Perforated bricks			Foam		Fiberboards			Lightweight build. material	
		Concrete	Natural stone	Lightweight concrete PB2 - PB4	Solid brick	Solid sand-lime brick	Perforated sand-lime brick	Hollow blocks	Vertically perforated brick	Rigid foam	Polystyrene	Gypsum plasterboard	Cement fiber board	Wooden fiber board	Lightweight concrete PB1 - PB2	Page
ISO Spiral plug																
	8137									•	•					7/142
Insulation plugs, plastic																
	8084/8085/8086	•			•			•								7/143
Insulation plug, metal																
	8082	•						•	•							7/148
Distance mounting sleeve																
	8154									•	•	•	•	•		7/149
Scaffolding plug																
	8090/8091	•	•		•			•							•	7/154
Frame anchor, metal																
	8040/8042	•			•			•	•						•	7/156
Plasterboard plug																
	8055											•			•	7/158
Board anchor																
	8104	•			•			•	•			•	•	•		7/158
Hollow plug																
	8145											•	•	•		7/160
Spring toggle bolt																
	8060/8061/8062											•	•	•		7/161
Toggle bolt																
	8065/8066/8067											•	•	•		7/166
Spike grid metal																
	8155	•							•						•	7/167
Expansion anchor brass																
	8050	•			•	•										7/167

Application table for heavy-duty fixing

Designation	AGR	Material				Approval						Page
		Cracked concrete	Non-cracked concrete	Hollow blocks	Solid brick	ETA approval	DIBt approval	Fire-protection tested	VDS	FM	Shock-tested	
Impact anchor E, steel/stainless steel A4												
	8250/8252		•			•	•	•	•	•		7/200
Ceiling Anchor												
	8255	•	•				•	•				7/206
Nail anchor												
	8254	•					•	•				7/206
Wedge Anchor R-SPT, Steel/ Stainless Steel A4												
	8168		•			•						7/207
Wedge Anchor B, Steel												
	8165		•			•	•	•	•	•		7/212
Wedge Anchor M2-U, Steel												
	8165		•			•		•				7/218
Wedge Anchor B, Stainless Steel A4												
	8166		•				•	•	•	•		7/219
Wedge Anchor BZ Plus, Steel/ Stainless Steel A4												
	8169	•	•			•		•	•	•	•	7/225
Heavy-duty anchor type SZ-S												
	8176		•				•		•			7/237
Heavy-duty anchor type SZ-B												
	8177	•	•			•		•	•			7/240
Screw anchor/Rail anchor												
	8170		•				•					7/246
Composite anchor												
	8160		•				•		•			7/253
	8161/8162											

Universal Plug GX Premium

- Innovative multipurpose/multi plug made of nylon of premium quality
- Quadruple expansion guarantees highest retaining values (pictures 1+2) in concrete and all brickwork materials
- A flexible plug flange avoids slipping in deep bore holes; however, if necessary it allows penetration (safety and push-through assembly, picture 3)
- Applicable for all existing types of screws such as wood screws, chipboard screws, tapping screws as well as screws with metric thread (picture 4)
- Screw-in centering ensures the expansion function (picture 5)



Article No.	Dimension		Article No.	QTY
8108 5	5 mm	H	8108P 5	1000
8108 6	6 mm	H	8108P 6	1000
8108 8	8 mm	H	8108P 8	500
8108 10	10 mm	f	8108P 10	250
8108 12	12 mm	g	8108P 12	200
8108 14	14 mm	w	8108P 14	100

Technical Data		Recommended load in kN			
Designation	Screw Ø mm	Concrete	Solid bricks	Vertically perfor. bricks	Lightw. concrete
G x 5	3,0 - 4,0	1,20	1,00	0,80	0,30
G x 6	4,0 - 5,0	1,80	1,00	0,80	0,40
G x 8	4,5 - 6,0	2,50	2,00	1,50	0,90
G x 10	6,0 - 8,0	8,00	4,00	3,00	1,10
G x 12	8,0 - 10,0	12,00	4,60	3,30	1,30
G x 14	10,0 - 12,0	24,00	5,10	3,60	2,00

Universal Plug GX Premium Packed in System Box

- Several small packs per dimension, sorted in a high-quality system plastic case

Article No.	Article Description	QTY
8108S 5	SB<40.0>UNI.PLUG PREMIUM GX 5	1
8108S 6	SB<40.0>UNI.PLUG PREMIUM GX 6	1
8108S 8	SB<16.0>UNI.PLUG PREMIUM GX 8	1
8108S 10	SB<8.0>UNI.PLUG PREMIUM GX 10	1
8108S 12	SB<5.0>UNI.PLUG PREMIUM GX 12	1
8108S 14	SB<3.2>UNI.PLUG PREMIUM GX 14	1

Contents:

- Art. No. 8108S 5 40 packaging unit à 100 pieces
- Art. No. 8108S 6 40 packaging unit à 100 pieces
- Art. No. 8108S 8 16 packaging unit à 100 pieces
- Art. No. 8108S 10 16 packaging unit à 50 pieces
- Art. No. 8108S 12 20 packaging unit à 25 pieces
- Art. No. 8108S 14 16 packaging unit à 20 pieces



System Box Empty

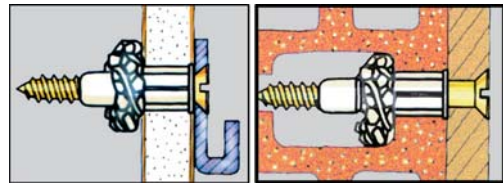
- Dimensions LxWxH: 40 x 30 x 22 mm

Article No.	Article Description	QTY
9027 403022	SYSTEM BOX - SMALL PARTS	1



All-Purpose Plug

- For through-bolt mountings
- For secure attachment in concrete, solid and perforated bricks
- Knotting of the plug in hollow spaces



Article No.	Dimension		Article No.	QTY
8100 5	5 x 32	F	8100P 5	1000
8100 6	6 x 36	F	8100P 6	1000
8100 8	8 x 51	W	8100P 8	500
8100 10	10 x 61	H	8100P 10	250
8100 12	12 x 71	f	8100P 12	200
8100 14	14 x 75	g	8100P 14	120

Technical Data		*Recommended load in kN				
Screw Ø mm	Concrete*	Lightw. concrete PB4*	Solid brick*	Perfor. sand-lime brick*	Solid sand-lime brick*	
3,0 - 3,5	0,28	0,15	0,15	0,15	0,15	
3,0 - 4,0	0,45	0,15	0,25	0,20	0,25	
4,0 - 6,0	1,00	0,40	0,80	0,35	0,80	
6,0 - 8,0	1,10	0,50	0,90	0,50	0,90	
8,0 - 10,0	1,30	0,60	0,95	0,60	0,95	
10,0 - 12,0	2,40	0,82	1,10	0,85	0,85	

All-Purpose Plug with Flange

- The cap or flange prevents sliding of the plug into the hollow space
- For flush mounting
- For secure attachment in concrete, solid and perforated bricks
- Knotting of the plug in hollow spaces



Article No.	Dimension		Article No.	QTY
8101 5	5 X 32	F	8101P 5	1000
8101 6	6 X 36	F	8101P 6	1000
8101 8	8 X 51	W	8101P 8	450
8101 10	10 X 61	H	8101P 10	250
8101 12	12 X 71	f	8101P 12	150
8101 14	14 X 75	g	8101P 14	120

Technical Data		*Recommended load in kN				
Screw Ø mm	Concrete*	Lightw. concr. PB4*	Solid brick*	Perfor. sand-lime brick*	Solid sand-lime brick*	
3,0 - 3,5	0,28	0,15	0,15	0,15	0,15	
3,0 - 4,0	0,45	0,15	0,25	0,20	0,25	
4,0 - 6,0	1,00	0,40	0,80	0,35	0,80	
6,0 - 8,0	1,10	0,50	0,90	0,50	0,90	
8,0 - 10,0	1,30	0,60	0,95	0,60	0,95	
10,0 - 12,0	2,40	0,82	1,10	0,85	0,85	

Multipurpose Plug 4 MZ

- For through-bolt mountings
- For secure attachment in concrete, solid and perforated bricks
- Knotting of the plug in hollow spaces



Article No.	Article Description	QTY
8105 6	MULTIPURPOSE PLUG 4MZ 6	500
8105 6 40	MULTIPURPOSE PLUG 4MZ 6X40	400
8105 8	MULTIPURPOSE PLUG 4MZ 8	200
8105 10	MULTIPURPOSE PLUG 4MZ 10	100
8105 12	MULTIPURPOSE PLUG 4MZ 12	50
8105 14	MULTIPURPOSE PLUG 4MZ 14	50

Technical Data		*Recommended loads in kN				
Scr. Ø mm	Concr.*	L. concr. PB4*	Solid brick*	Perf. sand-lime brick*	Solid sand-l. brick*	
3,0 - 4,5	0,30	0,06	0,16	0,22	0,26	
3,0 - 4,5	0,72	0,12	0,27	0,21	0,51	
3,5 - 6,0	0,52	0,14	0,43	0,27	0,59	
6,0 - 8,0	1,56	0,25	0,68	0,31	1,07	
8,0 - 10,0	2,02	0,39	-	0,42	1,31	
10,0 - 12,0	-	0,59	-	0,33	-	

Multipurpose Plug 4 MZ-K with Flange

- The flange prevents sliding of the plug into the hollow space
- For flush mounting
- For secure attachment in concrete, solid and perforated bricks
- Knotting of the plug in hollow spaces



Article No.	Article Description	QTY
8106 6	MULTIPURPOSE PLUG 4MZ-K 6	500
8106 6 41	MULTIPURPOSE PLUG 4MZ-K 6X41	300
8106 8	MULTIPURPOSE PLUG 4MZ-K 8	150
8106 10	MULTIPURPOSE PLUG 4MZ-K 10	100
8106 12	MULTIPURPOSE PLUG 4MZ-K 12	50
8106 14	MULTIPURPOSE PLUG 4MZ-K 14	50

Technical Data		*Recommended load in kN				
Scr. Ø mm	Concr.*	L.concr. PB4*	Solid brick*	Vert. perf. brick*	Solid sand l. brick*	
3,0 - 4,5	0,30	0,06	0,16	0,22	0,26	
3,0 - 4,5	0,72	0,12	0,27	0,21	0,51	
3,5 - 6,0	0,52	0,14	0,43	0,27	0,59	
6,0 - 8,0	1,56	0,25	0,68	0,31	1,07	
8,0 - 10,0	2,02	0,39	-	0,42	1,31	
10,0 - 12,0	-	0,59	-	0,33	-	

Expansion Anchor F Nylon

- Appropriate for all solid materials
- To fix all objects which can be secured with wood or chipboard screws



Article No.	Dimension		Article No.	Contents
8000 4	4 X 20	F		
8000 5	5 X 25	V		
8000 6	6 X 30	HF	8000P 6	1500
8000 7	7 X 35	V		
8000 8	8 X 40	Z	8000P 8	700
8000 10	10 X 50	G	8000P 10	250
8000 12	12 X 60	f	8000P 12	200
8000 14	14 X 70	f	8000P 14	130
8000 16	16 X 80	g		

Screw-Ø mm	*Recommended load in kN			
	Concrete*	Lightweight* concrete	Solid brick*	Perf. sand lime brick.*
2.0 - 3.0	0.25	0.02	0.20	0.10
3.0 - 4.0	0.35	0.04	0.30	0.15
4.0 - 5.0	0.60	0.06	0.50	0.51
4.0 - 5.0	0.70	0.07	0.65	0.55
4.5 - 6.0	0.85	0.09	0.80	0.64
6.0 - 8.0	1.40	0.20	1.00	0.65
8.0 - 10.0	1.80	0.40	1.50	-
10.0	3.00	0.50	1.60	-
10.0	3.50	0.60	1.60	-

Expansion Anchor F Black

- Appropriate for all solid materials To fix all objects which can be secured with wood or chipboard screws



Article No.	Dimension		Article No.	Contents
8000 2 6	6 X 30	HF	8000P 2 6	1500
8000 2 8	8 X 40	Z	8000P 2 8	700
8000 2 10	10X 50	G	8000P 2 10	250
8000 2 12	12X 60	f	8000P 2 12	200
8000 2 14	14X 70	f	8000P 2 14	130

Screw Ø mm	Concr. B25*	*Recommended load in kN				
		Lightw. concr.* P2	Lightw. concr.* P4	Solid brick*	Vert. perf. brick*	Perf. sand lime brick*
5.0	0.50	0.08	0.12	0.50	0.25	0.50
6.0	0.80	0.16	0.21	0.80	0.35	0.80
8.0	1.25	0.25	0.35	1.12	0.45	1.50
10.0	1.80	0.25	0.50	1.50	0.55	1.70
12.0	2.85	0.36	0.75	-	-	-

Sound Insulation Anchor

- For light and medium loads
- Solid-borne sound insulation integrated in the dowel, reduced sound level up to 15.5 dB
- Suitable for all types of screws with wood thread, e. g. hanger and shoulder screws
- Excellent screw guidance, no eruption at the side
- Pre or through hole installation (without collar) possible
- UV and weather resistant
- Silicone and halogen free
- Temperature resistant from -40°C to +100°C

Applications:

- For attachment in heating, ventilation and sanitation (e.g. substructures, sound-absorbing constructions, cable and pipe clamps, bathrooms, flushing tanks, garage doors etc.)
- Can be used in concrete, nature stone, solid brick, sand-lime brick, gypsum wall panels, hollow blocks, vertically perforated bricks and perforated sand-lime brick

Mounting hints:

- The screw should not penetrate the dowel in order to prevent sound bridges

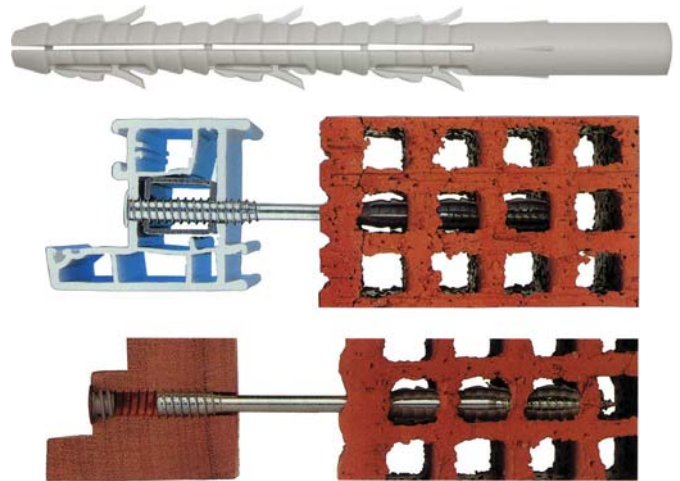
Article No.	Article Description	VPE
8031 10 30	SOU.INSU.ANCH.WITHO.COLL.10X30	25
8031 12 40	SOU.INSU.ANCH.WITHO.COLL.12X40	25
8031 14 50	SOU.INSU.ANCH.WITHO.COLL.14X50	25
8031 16 60	SOU.INSU.ANCH.WITHO.COLL.16X60	25
8031 18 70	SOU.INSU.ANCH.WITHO.COLL.18X70	25
8031 10 34	SOU.INSU.ANCH.WITH COLLAR10X34	25
8031 12 44	SOU.INSU.ANCH.WITH COLLAR12X44	25
8031 14 55	SOU.INSU.ANCH.WITH COLLAR14X55	25
8031 16 66	SOU.INSU.ANCH.WITH COLLAR16X66	25
8031 18 76	SOU.INSU.ANCH.WITH COLLAR18X76	25



Technical Data				*Recommended load in kN			
Wood screw Ø mm	Hanger bolt Ø mm	Collar strength and Ø mm	Sound insul. value dB	Concrete ≥C20/ 25	Solid brick ≥MZ12, KS12	Vert. perf. brick ≥HLZ 12	Per. sand lime brick ≥KSL 12
3.5- 5.0	-	-	12.5	0.15	0.15	0.10	0.15
4.5- 6.0	-	-	10.5	0.30	0.30	0.12	0.20
6.0- 8.0	8.0	-	13.5	0.50	0.50	0.20	0.30
8.0-10.0	10.0	-	15.0	0.80	0.80	0.25	0.60
10.0-12.0	12.0	-	15.5	1.20	1.20	0.35	0.80
3.5- 5.0	-	4 x 22	12.5	0.15	0.15	0.10	0.15
4.5- 6.0	-	4 x 30	10.5	0.30	0.30	0.12	0.20
6.0- 8.0	8.0	5 x 34	13.5	0.50	0.50	0.20	0.30
8.0-10.0	10.0	6 x 42	15.0	0.80	0.80	0.25	0.60
10.0-12.0	12.0	6 x 42	15.5	1.20	1.20	0.35	0.80

Hollow Brick Plug

- Extra-long plug for all hollow bricks such as vertically perforated bricks, perforated sand-lime bricks as well as lightweight concrete and other types of walls at best possible pull-out safety
- Triple plug locks positioned one after another - excellent overwind protection
- Long stable plug neck - For the types B 8 H 100 and B 8 H 120 the long plug neck serves as additional reinforcement and sound insulation when fixing window frames and door frames in particular in connection with spacer bolts

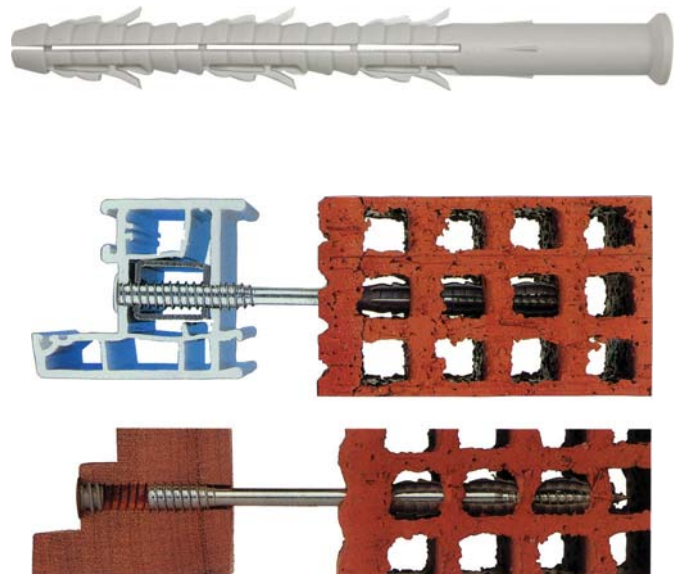


Article No.	Dimension		Article No.	Contents
8010 6 60	6X60	W	8010P 6 60	600
8010 8 80	8X80	H	8010P 8 80	350
8010 8 100	8X100	H	8010P 8 100	300
8010 10 90	10X90	H	8010P 10 90	250

Technical Data				*Recommended load in kN			
Art. No.	Screw-Ø mm	Min. drill.-depth mm	Min. drill hole mm	Hollow block*	Vert. perf. brick*	Lightw. concrete*	Perf. sand-lime brick*
8010 6 60	3.5 - 4.5	60	70	0.10	0.15	0.15	0.20
8010 8 80	4.5 - 6.0	80	90	0.15	0.25	0.20	0.30
8010 8 100	4.5 - 6.0	80	90	0.15	0.25	0.20	0.30
8010 10 90	6.0 - 8.0	90	100	0.20	0.35	0.35	0.50

Hollow Brick Plug with Collar

- Extra-long plugs for all hollow bricks such as vertically perforated bricks, as well as lightweight concrete and other types of walls at best possible pull-out safety
- Triple plug locks positioned one after another for excellent overwind protection
- Long stable plug neck, for the types B 8 H 100 and B 8 H 120 the long plug neck serves as additional reinforcement and sound insulation when fixing window frames and door frames in particular in connection with spacer bolts



Article No.	Dimension		Article No.	Contents
8010 8 100 1	8X100	H	8010P 8 100 1	250
8010 8 120	8X120	H	8010P 8 120	250
8010 10 120	10X120	fH		
8010 10 135	10X135	f		
8010 10 160	10X160	f		
8010 10 185	10X185	f		
8010 10 230	10X230	f		
8010 14 135	14X135	g		
8010 14 160	14X160	g		
8010 14 185	14X185	g		
8010 14 230	14X230	g		

Technical Data				*Recommended load in kN			
Item No	Screw Ø mm	Min. drilling depth mm	Minimum drilling hole depth mm	Hollow block*-	Vertically perforated brick*	Lightweight concrete*	Perforated sand-lime brick*
8010 8 100 1	4.5 - 6.0	80	90	0.15	0.20	0.30	0.25
8010 8 120	4.5 - 6.0	80	90	0.15	0.20	0.30	0.25
8010 10 120	6.0 - 8.0	90	100	0.20	0.35	0.50	0.35
8010 10 135	6.0 - 8.0	90	100	0.20	0.35	0.50	0.35
8010 10 160	6.0 - 8.0	90	100	0.20	0.35	0.50	0.35
8010 10 185	6.0 - 8.0	90	100	0.20	0.35	0.50	0.35
8010 10 230	6.0 - 8.0	90	100	0.20	0.35	0.50	0.35
8010 14 135	10.0 - 12.0	100	110	-	-	-	-
8010 14 160	10.0 - 12.0	100	110	-	-	-	-
8010 14 185	10.0 - 12.0	100	110	-	-	-	-
8010 14 230	10.0 - 12.0	100	110	-	-	-	-

Nail Plug with Countersunk Head

- Drive PZ 2
- Pre-assembled
- 100% nylon/polyamide
 - Rot-proof, resistant against concrete silicid acid
 - Best possible pull-out values, resistant against chemical influences



8020



8020P

Article No.	Dimension		Article No.	QTY
8020 5 30	5 x 30	W	8020P 5 30	1000
8020 5 35	5 x 35	W	8020P 5 35	1000
8020 5 50	5 x 50	W	8020P 5 50	1000
8020 6 35	6 x 35	W	8020P 6 35	1000
8020 6 40	6 x 40	W	8020P 6 40	1000
8020 6 60	6 x 60	W	8020P 6 60	1000
8020 6 80	6 x 80	W	8020P 6 80	1000
8020 8 60	8 x 60	H		
8020 8 80	8 x 80	H		
8020 8 100	8 x 100	H		
8020 8 120	8 x 120	f		
8020 8 140	8 x 140	f		
8020 8 160	8 x 160	f		

Technical Data		*Recommended load in kN
Min. anch. depth mm	Max. useful length mm	Concrete*
20	10	0,20
25	15	0,15
25	30	0,15
35	10	0,15
30	15	0,25
30	35	0,25
30	45	0,25
40	20	0,35
40	40	0,35
40	60	0,35
40	80	0,35
40	100	0,35
40	120	0,35

Nail Plug with Flat Head

- Drive PZ 2
- Pre-assembled
- 100% nylon/polyamide, rot-proof, resistant against concrete silicid acid
 - Best possible pull-out values, resistant against chemical influences
- Type with flat/cylinder head, plane abut for profile and channel fixture and this way highest fixing safety



Article No.	Article Description	QTY
8021 5 30	NAIL PLUG PZ FLAT HEAD 5X30	200
8021 5 50	NAIL PLUG PZ FLAT HEAD 5X50	200
8021 6 40	NAIL PLUG PZ FLAT HEAD 6X40	200
8021 6 60	NAIL PLUG PZ FLAT HEAD 6X60	200
8021 6 80	NAIL PLUG PZ FLAT HEAD 6X80	200
8021 8 60	NAIL PLUG PZ FLAT HEAD 8X60	100
8021 8 80	NAIL PLUG PZ FLAT HEAD 8X80	100
8021 8 100	NAIL PLUG PZ FLAT HEAD 8X100	100
8021 8 120	NAIL PLUG PZ FLAT HEAD 8X120	50

Technical Data		*Recommended load in kN
Min. anch. depth mm	Max. useful length mm	Concrete*
25	10	0,15
25	30	0,15
30	15	0,25
30	35	0,25
30	45	0,25
40	20	0,35
40	40	0,35
40	60	0,35
40	80	0,35

Nail Plug with Mushroom Head

- Drive PZ 2
- Pre-assembled
- Special nylon
 - Tough, tear-proof, heat- and cold-resistant
- Rot-proof
 - Resistant against concrete silicid acid



Article No.	Article Description	QTY
8025 6 40	NAIL PLUG MUSHROOM HEAD Z16X40	200
8025 6 60	NAIL PLUG MUSHROOM HEAD Z16X60	200

Technical Data		*Recommended load in kN
Min. anch. depth mm	Max. useful length mm	Concrete*
30	10	0,25
30	30	0,25

Nail Plug-Countersunk Threaded Head

- Metric thread
- Pre-assembled, screw blue galvanized
- 100% nylon/polyamide, rot-proof, resistant against concrete silicid acid
- Best possible pull-out values, resistant against chemical influences



Article No.	Article Description	QTY
8022 6 40 6	CSK NAIL PLUG M6 6X40	200
8022 8 60 8	CSK NAIL PLUG M8 8X60	100

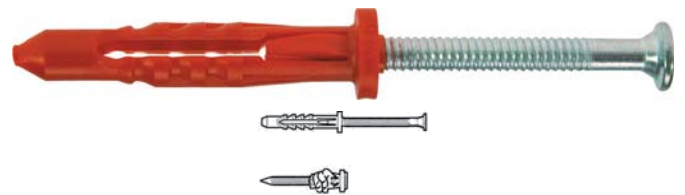
Technical Data		*Recommended load in kN
Min. anch. depth mm	Thread	Concrete*
40	M6	0,25
60	M8	0,35

Nail Plug with Flat Head Multi

- Drive PZ2
- Pre-assembled, screw blue galvanized

Application:

- For all kinds of substructures
- To be driven into concrete and brick, to be firmly screwed in difficult substructures, such as gypsum plasterboards, hollow bricks and gas concrete
- Particularly appropriate for electrical installation and interior work



Article No.	Article Description	QTY
8022 5 30	NAIL PLUG MULTI FL.HEAD 5X30MM	200
8022 6 40	NAIL PLUG MULTI FL.HEAD 6X40MM	200

Technical Data		*Recommended load in kN			
Min. anch. depth mm	Useful assembly length max. mm	Concrete*	Hollow brick*	Gypsum plast.*	Gas concrete*
25	5	0,15	0,07	0,07	0,13
30	10	0,25	0,10	0,10	0,14

Express Nails

- Hardened spring steel
 - High tensile and heavy-duty load
 - High safety
- Galvanized and yellow chromated
 - Double corrosion protection
- The rapid and safe fixture of steel sheet profiles, lath substructures, frames, window fixtures and other objects to be firmly mounted on any solid materials



Article No.	Article Description	QTY
8023 6 30	EXPR. NAILS YELLOW GAL. 6X 30	100
8023 6 60	EXPR. NAILS YELLOW GAL. 6X 60	100
8023 6 80	EXPR. NAILS YELLOW GAL. 6X 80	100
8023 8 70	EXPR. NAILS YELLOW GAL. 8X 70	100
8023 8 90	EXPR. NAILS YELLOW GAL. 8X 90	100
8023 8 110	EXPR. NAILS YELLOW GAL. 8X110	100
8023 8 130	EXPR. NAILS YELLOW GAL. 8X130	100
8023 8 150	EXPR. NAILS YELLOW GAL. 8X150	100
8023 8 180	EXPR. NAILS YELLOW GAL. 8X180	100

Technical Data		*Recommended load in kN		
Min. anch. depth mm	Max. usef. length	Concr.*	Solid brick*	Chalky sandstone*
28	2	0,70	0,50	0,60
30	30	0,70	0,50	0,60
30	50	0,70	0,50	0,60
40	30	1,00	0,80	0,90
40	50	1,00	0,80	0,90
40	70	1,00	0,80	0,90
40	90	1,00	0,80	0,90
40	110	1,00	0,80	0,90
40	140	1,00	0,80	0,90

Sealing Nails

- Impact-resistant plastic made of polyamide
- Resistant to weather and ageing
- Sealing washer made of EPDM-rubber
- Conical centering point for easy processes
- Colour-coordinated to zinc and copper sheets
- Head-Ø 12 mm

Application:

- Attachment of sheets and connecting profiles
- Ideally suitable for all attachments in connection with full thermal insulation as no cold bridges arise
- Good pull-out values in concrete, sand-lime brick, brick and other solid building materials



Article No.	Dimension	Article No.	QTY
8024 6 44 1	6 x 44mm W	8024P 6 44 1	500
8024 6 44 2	6 x 44mm W	8024P 6 44 2	500

Technical Data		*Recommended loads in kN		
*Concrete	*Solid brick	*Sand-lime brick	*Wood	
1,2	0,7	0,5	1,0	
1,2	0,7	0,5	1,0	

Sealing Nails, Packed in System Box

- Several small packs per colour, sorted in high-quality system plastic case



Article No.	Article Description	QTY
8024S 6441	SB<16.0>SEAL.NAIL6X44 ZI-COL.	1
8024S 6442	SB<16.0>SEAL.NAIL6X44 COP.COL.	1

Contents:

- Art. No. 8024S 6 44 1 8 packaging unit á 200 pieces
- Art. No. 8024S 6 44 2 8 packaging unit á 200 pieces

Hammer Rivets

- Safe and secure attachment of aluminum and steel sheet profiles, connecting walls and roof edge profiles, storm collars, copings, dome lights, roof sheetings, flange fixtures on solid materials
- Head-Ø 16 mm
- Rivet sleeve/head: special alloy (AL MG SI)
- Mandrel: stainless steel A2



Article No.	Article Description	QTY
8028 48 20	HAMMER RIVET K16MM 4.8X20	200
8028 48 26	HAMMER RIVET K16MM 4.8X26	200
8028 48 30	HAMMER RIVET K16MM 4.8X30	200
8028 48 35	HAMMER RIVET K16MM 4.8X35	200
8028 48 40	HAMMER RIVET K16MM 4.8X40	200
8028 48 50	HAMMER RIVET K16MM 4.8X50	200
8028 64 40	HAMMER RIVET K16MM 6.4X40	100

Technical Data			*Recommended loads in kN	
Rivet mm	Drill Ø mm	Cl.-press. width mm	Concrete*	Solid brick*
48 x 20	5,0	5,0	0,35	0,35
48 x 26	5,0	10,0	0,35	0,35
48 x 30	5,0	15,0	0,35	0,35
48 x 35	5,0	20,0	0,35	0,35
48 x 40	5,0	35,0	0,35	0,35
48 x 50	5,0	45,0	0,35	0,35
64 x 40	7,0	35,0	0,39	0,40

Hammer Rivets Neoprene Sealing Rubber

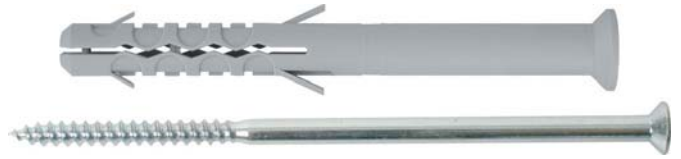
- For water-proof attachment
- Ø 15 mm



Article No.	Article Description	QTY
8029 15	NEOPRENE SEALING RUBBER 15MM	100

Frame Anchor, Short Spreading, Countersunk Head

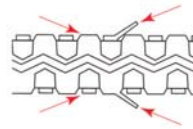
- Drive: Ø 8 Pozzi; Ø 10 TORX
- Short spreading area
- Anchor is delivered with screw
- For attaching: squared timber, wooden slats, mouldings, window and door frames, facade and roof construction made of wood, metal and plastic
- Anchor neck prevents premature moving
- Highly resistant against dynamic loads
- Temperature resistant from -40° C to +80° C
- High flexibility and mechanical properties such as impact-resistance and tensile strength



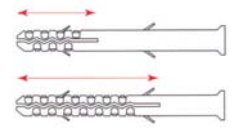
Knock-in lock prevents premature spreading of the anchor during installation.



The conical anchor prevents slipping through into the drilling hole.



Support bracing and block profiles prevent rotation and allow optimum contact pressure when mounting.



The spreading area with M-toothing causes that the contact pressure on the whole circumference surface is exercised with form closure when the screw is turned in.

Article No.	Article Description	QTY
8011 8 60	CSK-PZ3 FRAME ANCH.SH.SPR.8X60	100
8011 8 80	CSK-PZ3 FRAME ANCH.SH.SPR.8X80	100
8011 8 100	CSK-PZ3 FRAME ANCH.SH.SP.8X100	50
8011 8 120	CSK-PZ3 FRAME ANCH.SH.SP.8X120	50
8011 10 100	CSK-TX40FRAME ANC.SH.SP.10X100	50
8011 10 120	CSK-TX40FRAME ANC.SH.SP.10X120	50
8011 10 140	CSK-TX40FRAME ANC.SH.SP.10X140	50
8011 10 160	CSK-TX40FRAME ANC.SH.SP.10X160	50

Frame Anchor, Long Spreading, Countersunk Head

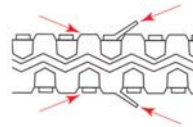
- Drive: Ø 8 Pozzi; Ø 10 TORX
- Long spreading area
- Anchor is delivered with screw
- For attaching: squared timber, wooden slats, mouldings, window and door frames, facade and roof construction made of wood, metal and plastic
- Anchor neck prevents premature moving
- Highly resistant against dynamic loads
- Temperature resistant from -40° C to +80° C
- High flexibility and mechanical properties such as impact-resistance and tensile strength



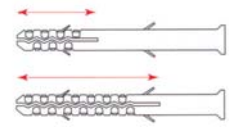
Knock-in lock prevents premature spreading of the anchor during installation.



The conical anchor prevents slipping through into the drilling hole.



Support bracing and block profiles prevent rotation and allow optimum contact pressure when mounting.



The spreading area with M-toothing causes that the contact pressure on the whole circumference surface is exercised with form closure when the screw is turned in.

Article No.	Article Description	QTY
8012 8 100	CSK-PZ3FRAME ANC.L.SPREA.8X100	50
8012 8 120	CSK-PZ3FRAME ANC.L.SPREA.8X120	50
8012 8 140	CSK-PZ3FRAME ANC.L.SPREA.8X140	50
8012 10 80	CS TX40 FR.ANCH. L. EXPZ.10X80	50
8012 10 100	CSK-TX40FRAME ANC.L.SPR.10X100	50
8012 10 120	CSK-TX40FRAME ANC.L.SPR.10X120	50
8012 10 140	CSK-TX40FRAME ANC.L.SPR.10X140	50
8012 10 160	CSK-TX40FRAME ANC.L.SPR.10X160	50
8012 10 200	CSK-TX40FRAME ANC.L.SPR.10X200	50

Facade Plug R, Short, Cross Recessed Head PZ

- Drive: PZ 3
- Short expansion zone
- Plug is always delivered including screw
- To fix: wooden slabs, squared timbers, battens, cladding and roof substructures made of wood, metal and plastic material, window and door frames, metal profiles, insulating materials, steel sheets, casings, etc.
- Plug neck avoids lateral shifting
- For facade, wood and metal construction, roofers, carpenters, shutter construction
- Appropriate for concrete, solid brick and natural stone



Approved by the building authorities for the anchoring of facade cladding, as well as statically comparable systems



Article No.	Article Description	QTY
8102 8 60	CS PZ3 FACADE PLUG SH. 8X 60	25
8102 8 80	CS PZ3 FACADE PLUG SH. 8X 80	25
8102 8 100	CS PZ3 FACADE PLUG SH. 8X100	50
8102 10 80	CS PZ4 FACADE PLUG SH. 10X 80	100
8102 10 100	CS PZ4 FACADE PLUG SH. 10X100	50
8102 10 115	CS PZ4 FACADE PLUG SH. 10X115	50
8102 10 135	CS PZ4 FACADE PLUG SH. 10X135	50
8102 10 160	CS PZ4 FACADE PLUG SH. 10X160	50

Item No 8102 8 60, 8102 8 80 and 8102 8 100 not part of the approval

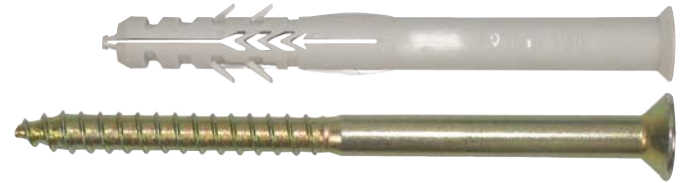
Max. useful length mm	*Recommended loads in kN					
	Concrete*	Solid brick*	Solid sand-lime brick*	Vertically perforated brick*	Perforated sand-lime brick*	Light weight concrete*
20	0,85	0,75	0,75	0,45	0,45	-
40	0,85	0,75	0,75	0,45	0,45	-
60	0,85	0,75	0,75	0,45	0,45	-
30	0,80	0,60	0,60	-	-	0,25
50	0,80	0,60	0,60	-	-	0,25
65	0,80	0,60	0,60	-	-	0,25
85	0,80	0,60	0,60	-	-	0,25
110	0,80	0,60	0,60	-	-	0,25

Facade Plug R, Short Torx

- Drive: TX 40
- Short expansion zone
- Plug is always delivered including screw
- To fix: wooden slabs, squared timbers, battens, cladding and roof substructures made of wood, metal and plastic material, window and door frames, metal profiles, insulating materials, steel sheets, casings, etc.
- Plug neck avoids lateral shifting
- For facade, wood and metal construction, roofers, carpenters, shutter construction
- Appropriate for concrete, solid brick and natural stone



Approved by the building authorities for the anchoring of facade cladding, as well as statically comparable systems



Article No.	Article Description	QTY
8102 1 10 80	CS TX40 FACADE PLUG SH. 10X80	100
8102 1 10 100	CS TX40 FACADE PLUG SH. 10X100	50
8102 1 10 115	CS TX40 FACADE PLUG SH. 10X115	50
8102 1 10 135	CS TX40 FACADE PLUG SH. 10X135	50
8102 1 10 160	CS TX40 FACADE PLUG SH. 10X160	50
8102 1 10 200	CS TX40 FACADE PLUG SH. 10X200	25
8102 1 10 240	CS TX40 FACADE PLUG SH. 10X240	25

Max. useful length mm	*Recommended loads in kN					
	Concrete*	Solid brick*	Solid sand-lime brick*	Vertically perforated brick*	Perforated sand-lime brick*	Light weight concrete*
30	0,80	0,60	0,60	-	-	0,25
50	0,80	0,60	0,60	-	-	0,25
65	0,80	0,60	0,60	-	-	0,25
85	0,80	0,60	0,60	-	-	0,25
110	0,80	0,60	0,60	-	-	0,25
150	0,80	0,60	0,60	-	-	0,25
190	0,80	0,60	0,60	-	-	0,25

Facade Plug R, Short, Hexagon

- Drive: hexagon
- Short expansion zone
- Plug is always delivered including screw
- To fix: wooden slabs, squared timbers, battens, cladding and roof substructures made of wood, metal and plastic material, window and door frames, metal profiles, insulating materials, steel sheets, casings, etc.
- Plug neck avoids lateral shifting
- For facade, wood and metal construction, roofers, carpenters, shutter construction
- Appropriate for concrete, solid brick and natural stone



Approved by the building authorities for the anchoring of facade cladding, as well as statically comparable systems



Article No.	Article Description	QTY
8102 2 10 60	HEX. FACADE PLUG SH. 10X 60	100
8102 2 10 80	HEX. FACADE PLUG SH. 10X 80	100
8102 2 10 100	HEX. FACADE PLUG SH. 10X100	50
8102 2 10 115	HEX. FACADE PLUG SH. 10X115	50
8102 2 10 135	HEX. FACADE PLUG SH. 10X135	50
8102 2 10 160	HEX. FACADE PLUG SH. 10X160	50

Max. useful length mm	*Recommended loads in kN					
	Concrete*	Solid brick*	Solid sand-lime brick*	Vertically perforated brick*	Perforated sand-lime brick*	Light weight concrete*
10	0,80	0,60	0,60	-	-	0,25
30	0,80	0,60	0,60	-	-	0,25
50	0,80	0,60	0,60	-	-	0,25
65	0,80	0,60	0,60	-	-	0,25
85	0,80	0,60	0,60	-	-	0,25
110	0,80	0,60	0,60	-	-	0,25

Facade Plug HBR, Long, Cross Recessed Head PZ

- Drive: PZ 3
- Long expansion zone
- Plug is always delivered including screw
- To fix: wooden slabs, squared timbers, battens, cladding and roof substructures made of wood, metal and plastic material, window and door frames, metal profiles, insulating materials, steel sheets, casings, etc.
- Plug neck avoids lateral shifting
- For facade, wood and metal construction, roofers, carpenters, shutter construction
- appropriate for: perforated brick, gypsum, gas concrete and light-weight concrete
 - Necessary strength categories can be read from the current approval by building authorities



Approved by the building authorities for the anchoring of facade cladding, as well as statically comparable systems



Article No.	Article Description	QTY
8103 8 80	CS PZ3 FACADE PLUG L. 8X 80	25
8103 10 100	CS PZ3 FACADE PLUG L. 10X100	50
8103 10 115	CS PZ3 FACADE PLUG L. 10X115	50
8103 10 135	CS PZ3 FACADE PLUG L. 10X135	50
8103 10 160	CS PZ3 FACADE PLUG L. 10X160	50

Technical Data Max. useful length mm	*Recommended loads in kN					
	Concrete*	Solid brick*	Solid sand-lime brick*	Vertically perforated brick*	Perforated sand-lime brick*	Light-weight concrete*
0	-	-	-	0,50	0,50	0,37
10	-	-	-	0,30	0,40	0,25
25	-	-	-	0,30	0,40	0,25
45	-	-	-	0,30	0,40	0,25
70	-	-	-	0,30	0,40	0,25

Facade Plug HBR, Long Torx

- Drive: TX 40
- Long expansion zone
- Plug is always delivered including screw
- To fix: wooden slabs, squared timbers, battens, cladding and roof substructures made of wood, metal and plastic material, window and door frames, metal profiles, insulating materials, steel sheets, casings, etc.
- Plug neck avoids lateral shifting
- For facade, wood and metal construction, roofers, carpenters, shutter construction
- appropriate for: perforated brick, gypsum, gas concrete and light-weight concrete
 - Necessary strength categories can be read from the current approval by building authorities



Approved by the building authorities for the anchoring of facade cladding, as well as statically comparable systems

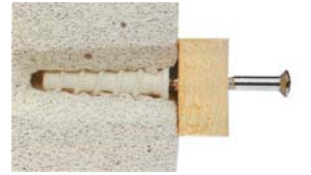


Article No.	Article Description	QTY
8103 1 10 100	CS TX40 FACADE PLUG L. 10X100	50
8103 1 10 115	CS TX40 FACADE PLUG L. 10X115	50
8103 1 10 135	CS TX40 FACADE PLUG L. 10X135	50
8103 1 10 160	CS TX40 FACADE PLUG L. 10X160	50
8103 1 10 200	CS TX40 FACADE PLUG L. 10X200	25
8103 1 10 240	CS TX40 FACADE PLUG L. 10X240	25
8103 3 14 80	CS TX40 FACADE PLUG L. 14X 80	25
8103 3 14 110	CS TX40 FACADE PLUG L. 14X110	25
8103 3 14 140	CS TX40 FACADE PLUG L. 14X140	25
8103 3 14 170	CS TX40 FACADE PLUG L. 14X170	25
8103 3 14 200	CS TX40 FACADE PLUG L. 14X200	25
8103 3 14 230	CS TX40 FACADE PLUG L. 14X230	25
8103 3 14 270	CS TX40 FACADE PLUG L. 14X270	25

Technical Data Max. useful length mm	*Recommended loads in kN					
	Concrete*	Solid brick*	Solid sand-lime brick*	Vertically perforated brick*	Perforated sand-lime brick*	Light-weight concrete*
10	-	-	-	0,30	0,40	0,25
25	-	-	-	0,30	0,40	0,25
45	-	-	-	0,30	0,40	0,25
70	-	-	-	0,30	0,40	0,25
110	-	-	-	0,30	0,40	0,25
150	-	-	-	0,30	0,40	0,25
10	-	-	-	0,60	0,60	0,50
40	-	-	-	0,60	0,60	0,50
70	-	-	-	0,60	0,60	0,50
100	-	-	-	0,60	0,60	0,50
130	-	-	-	0,60	0,60	0,50
160	-	-	-	0,60	0,60	0,50
200	-	-	-	0,60	0,60	0,50

Lightweight Concrete Anchor

- For expansion-free fixtures in lightweight concrete and gypsum
- 100% nylon – rot-proof, high pull-out values
- Screws with metric or wooden thread can be screwed in
- **Including appropriate screwing-in tool of HP**



Article No.	Dimension		Article No.	Contents
8130 6	6 X 60	H	8130P 6	200
8130 8	8 X 70	f	8130P 8	120
8130 10	10 X 80	b	8130P 10	70

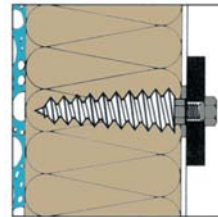
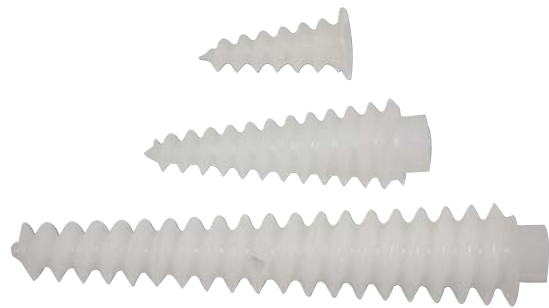
Technical Data						*Recommended loads in kN	
Item No	Drilling Ø mm			Screw Ø wood	Screw Ø M	Lightweight concrete P1-P2*	Lightweight concrete P3-P4*
	Lightweight Air concrete	concrete	Hexagon drive SW				
8130 6	10	8	10	5,0 - 6,0	6	1,1	2,6
8130 8	12	10	12	7,0 - 8,0	8	1,7	3,8
8130 10	14	12	14	9,0 - 10,0	10	2,3	5,5

ISO Spiral Plug

- For polystyrene and rigid foam plates
- Main users: cryogenics and climate control technique, electrical systems and structural-facing sector
- To fix among others: lightnings, alarm systems, substructures, transparents, interphone systems, downpipes, switching systems and control systems for insulation
- Screws with metric or wooden thread can be used

Mounting hint:

- On plastered rigid foam plates the plaster needs to be drilled out before the mounting of the plug up to a max plug diameter
- For metal-coated sandwich plates it is necessary to drill a hole of max. diameter before assembly
- The holes need to be sealed using silicone (for sandwich plates), or acrylic (for plaster) against penetration of humidity



Article No.	Dimension		Article No.	Contents
8137 50	50	H	8137P 50	170
8137 90	90	g	8137P 90	50
8137 170	170	z		

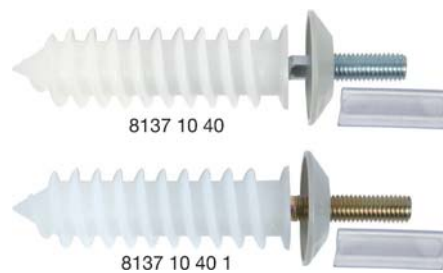
Technical Data						*Recommended loads in kN	
Item No	Max. plug-Ø mm	Length mm	Drive	Inside drill depth mm	Screws wood mm	Screws wood mm	Polystyrene*
8137 90	30	90	Hex SW 17	50	8,0 / M8	8,0 / M8	0,08
8137 170	33	170	Hex SW 17	100	8,0 / M8	8,0 / M8	-

ISO Spiral Plug with Connecting Thread

- Insulating anchoring for mounting pipe clamps on polystyrene and rigid foam plates
- Connecting thread M10 x 40mm, blue passivated for zinc pipe clamps and yellow galvanized for copper pipe clamps
- Effectively prevents thermal bridges as plastic plug
- Fast processing, can be stressed immediately
- With coveing rosette for unscrewing and grommet for thread protection when plastering

Mounting hint:

- For plastered insulations the plaster must be pre-drilled with Ø 30mm prior to mounting the plug
- The bore must be sealed with acrylic to prevent ingress of moisture



Article No.	Article Description	QTY
8137 10 40	ISO PLUG M10X40 F.PIPE CLAM.ZI	z 50
8137 10 40 1	ISO PLUG M10X40 F.PIPE CLAM.CO	z 50

Technical Data			*Recommended loads in kN	
Max. plug-Ø mm	Plug length mm	Drive	Polystyrene	Rigid foam
30	95	TX 25	0.08	0.20

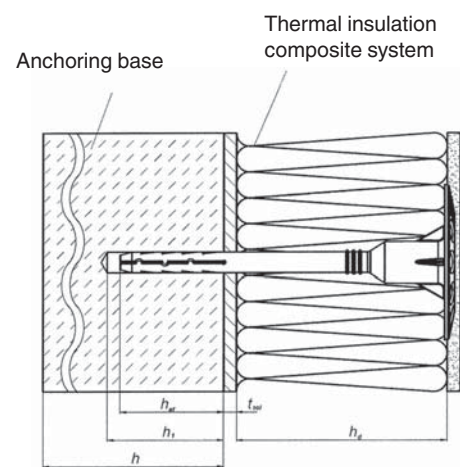
Insulation Plugs ETICS

- Impact anchor to fix external thermal insulation composite systems with rendering in concrete and brickwork
- With reduced installation depth of 35 mm
- With European technical approval ETA-07/0336
- The plug must only be used as multi-fixture for the anchoring of glued external thermal insulation composite systems (ETICS) according to ETAG 004 in concrete and brickwork.
- Appropriate for concrete and brickwork
- The used ETICS is not subject of this general technical approval



Technical Data			
Item No	Plug Ø length mm	Disc-Ø mm	Insulation material thickness mm
8086 8 95	8 x 95	60	60
8086 8 115	8 x 115	60	80
8086 8 135	8 x 135	60	100
8086 8 155	8 x 155	60	120
8086 8 175	8 x 175	60	140
8086 8 195	8 x 195	60	160
8086 8 215	8 x 215	60	180
8086 8 235	8 x 235	60	200
8086 8 255	8 x 255	60	220
8086 8 275	8 x 275	60	240

Article No.	Article Description	QTY
8086 8 95	INSULATION PLUGS ETICS 8 X 95	200
8086 8 115	INSULATION PLUGS ETICS 8 X 115	200
8086 8 135	INSULATION PLUGS ETICS 8 X 135	200
8086 8 155	INSULATION PLUGS ETICS 8 X 155	200
8086 8 175	INSULATION PLUGS ETICS 8 X 175	200
8086 8 195	INSULATION PLUGS ETICS 8 X 195	200
8086 8 215	INSULATION PLUGS ETICS 8 X 215	100
8086 8 235	INSULATION PLUGS ETICS 8 X 235	100
8086 8 255	INSULATION PLUGS ETICS 8 X 255	100
8086 8 275	INSULATION PLUGS ETICS 8 X 275	100

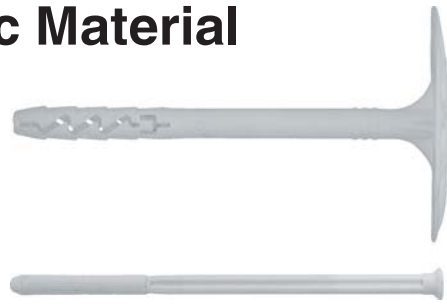


Characteristic Tensile Strength N_{RK} in Concrete and Brickwork, kN each Plug

Plug type				TFIX-8M
Anchoring base	Tube density class (kg/dm ³)	Min.resistance to pressure β (N/mm ²)	Notes	N_{RK} (kN)
Concrete C 12/15			EN 206-1	1,5
Concrete C 20/25			EN 206-1	1,5
Concrete C 50/60			EN 206-1	1,5
Brick e.g. according to DIN 105, Mz	$\geq 2,0$	12	Cross section up to 15% reduced by vertical perforation with regard to the bearing surface	1,5
Solid sand-lime brick e.g. acc. to DIN 106, KS	$\geq 1,8$	12	Cross section up to 15% reduced by vertical perforation with regard to the bearing surface	1,5
Solid sand-lime brick e.g. according to DIN 106, KSL	$\geq 1,6$	12	Cross section up to 15% reduced by vertical perforation with regard to the bearing surface, thickness of the outer strap ≥ 20 mm	0,9
Vertically perforated brick e.g. acc. to DIN 106, KS	$\geq 1,0$	12	Cross section more than 15% and less than 50% reduced by perforation (2) EN 206-1	0,6
Lightweight concrete solid block DIN 18152, Vbl	$\geq 0,7$	4	Ratio of the handle holes to the bearing surface up to 10%, maximum size of the holes: 110 x 45 mm	0,5
Lightweight concrete block DIN 18151, Hbl	$\geq 0,9$	2	According to annex 6 (3)	0,5
Corresponding partial safety factor γ_M				2,0 (1)
(1) To be used in the absence of national regulations				
(2) Thickness of the outer strap ≥ 14 mm				
(3) Thickness of the outer strap ≥ 35 mm				

Insulation Plugs made of Plastic Material

- Pre-mounted with plastic expansion nail
- For building heights up to 8 meters in order to fix polysterene
- To fix smooth and pressure-resistant insulation boards
- On bricks, lightweight concrete, lightweight and solid bricks, etc.
- High-quality, impact-proof plastic material – high retaining values
- For stuccoers, plasterers, painters and facade constructor
- Minimum depth of the anchorage: 50 mm



Article No.	Article Description	QTY
8084 90	INS.PL. M.- OF PLASTIC MAT. 90	250
8084 120	INS. PL. M.-OF PLAST. MAT.120	250
8084 140	INS. PL. M.-OF PLAST.MAT. 140	250
8084 160	INS. PL. M.-OF PLAST. MAT. 160	250
8084 180	INS. PL. M.-OF PLAST. MAT.180	250

Technical Data			*Recommended loads in kN		
Plug Ø	Disk Ø	Insulation material thickness mm	Concrete*	Vertically perforated brick*	Solid brick*
mm	mm	mm			
10 x 90	50	40	0,18	0,12	0,14
10 x 120	60	70	0,18	0,12	0,14
10 x 140	65	90	0,18	0,12	0,14
10 x 160	60	110	0,18	0,12	0,14
10 x 180	60	130	0,18	0,12	0,14

Insulation Plug Metal

- Steel nail with plastic cap, galvanized pre-mounted
- For building heights of up to 8 meters, to fix polysterene
- To fix smooth and pressure-resistant insulation boards
- On bricks, lightweight concrete, lightweight and solid bricks, etc.
- For stuccoers, plasterers, painters and facade constructor
- Minimum depth of the anchorage: 50 mm



Article No.	Article Description	QTY
8085 90	INSULATION PLUG METAL 90	250
8085 110	INSULATION PLUG METAL 110	250
8085 130	INSULATION PLUG METAL 130	250
8085 150	INSULATION PLUG METAL 150	250
8085 170	INSULATION PLUG METAL 170	250
8085 190	INSULATION PLUG METAL 190	250
8085 210	INSULATION PLUG METAL 210	250

Technical Data			*Recommended loads in kN		
Plug Ø	Disk Ø	Insulation material thickness mm	Concrete*	Vertically perforated brick*	Solid brick*
mm	mm	mm			
8 x 90	60	40	0,15	0,16	0,17
8 x 110	60	60	0,15	0,16	0,17
8 x 130	60	80	0,15	0,16	0,17
8 x 150	60	100	0,15	0,16	0,17
8 x 170	60	120	0,15	0,16	0,17
8 x 190	60	140	0,15	0,16	0,17
8 x 210	60	160	0,15	0,16	0,17

Insulation Board Fixing Metal

- All-metal guidance, therefore fire-resistant
- Increased corrosion protection due to aluminum-zinc layer
- To fix smooth and pressure-resistant insulation boards
- On bricks, lightweight concrete, lightweight and solid bricks, etc.
- For stuccoers, plasterers, painters and facade constructor
- Disk Ø: 35 mm
- Drive in lightweight concrete G2/G4 without pre-drilling



Article No.	Article Description	QTY
8082 30	INSUL. BOARD FIXING METAL 30	250
8082 60	INSUL. BOARD FIXING METAL 60	250
8082 90	INSUL. BOARD FIXING METAL 90	250

Technical Data		*Recommended loads in kN		
Plug-Ø	Insul. mat. thickness mm	Concrete*	Vertically perf. brick*	Solid brick*
mm	mm			
8 x 80	0 - 30	0,20	0,05	0,20
8 x 110	30 - 60	0,20	0,05	0,20
8 x 140	60 - 90	0,20	0,05	0,20

Insulation Board Disk made of Metal

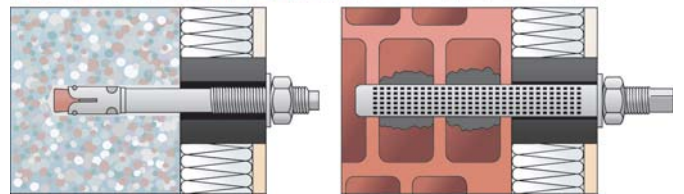
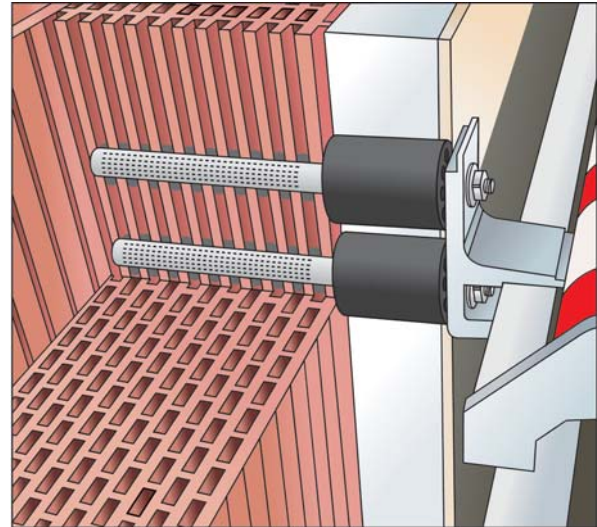
- Appropriate for insulation board fixing metal
- In particular for smooth insulation boards



Article No.	Article Description	QTY
8083 80	INSUL. BOARD DISK M.-OF MET.80	250

Distance Mounting Bushes DIMO-BLOCK

- Material: plastic material
- Pluggable distance bush to bridge loads of heavy-duty fixings in facades with full thermal protection
- To mount marquees, projecting roofs, window shutters, industrial ladders, consoles, etc.
- Applicable with FÖRCH injection mortar, anchor bolts, heavy-duty anchors or cladding plugs, etc.



Technical Data

Outer Ø mm	Inner Ø mm	Distance height mm	Drilling Ø mm
49	18	10	50/51
49	18	30	50/51
49	18	50	50/51
49	18	100	50/51

Article No.	Article Description	QTY
8154 10	DIMO-BLOCK 10MM	50
8154 30	DIMO-BLOCK 30MM	25
8154 50	DIMO-BLOCK 50MM	25
8154 100	DIMO-BLOCK 100MM	20

Hole Saw XL DIMO-BLOCK

- Bimetal hole saw to drill in insulations

Item No 5750 4 50:

- Ø 50 mm, length 120 mm

Item No 5750 4 51:

- Ø 51 mm, length 250 mm

Item No 5750 4 50 and item No 5750 4 51:

- Incl. hexagon adapter and drill bit



Article No.	Article Description	QTY
5750 4 50	KIT BMETAL HOLE SAW XL DIMO 50	1
5750 4 50 1	BIMETAL HOLE SAW XL DIMO 50	1
5750 4 51	KIT BMETAL HOLE SAW XL DIMO 51	1
5750 4 51 1	BIMETAL HOLE SAW XL DIMO 50	1

Scaffolding Screws

- **To fix:**
- Scaffolds, tensioning ropes, chains for trellis, safety harnesses, etc.
- **Appropriate for:**
- Concrete, natural stones, solid bricks, hollow blocks, lightweight concrete, wood (without plugs), etc.
- Eyebolt Ø 23 mm



Article No.	Article Description	QTY
8090 12 90	SCAFF. EYEBOLT YELL. EB 12X 90	20
8090 12 120	SCAFF. EYEBOLT YELL. EB 12X120	20
8090 12 160	SCAFF. EYEBOLT YELL. EB 12X160	20
8090 12 190	SCAFF. EYEBOLT YELL. EB 12X190	10
8090 12 230	SCAFF. EYEBOLT YELL. EB 12X230	20
8090 12 300	SCAFF. EYEBOLT YELL. EB 12X300	20
8090 12 350	SCAFF. EYEBOLT YELL. EB 12X350	20

(Shaft dimensions Ø mm x L mm)

Scaffolding Plug Nylon



Article No.	Article Description	QTY
8091 14 70	SCAFFOLDING PLUG NYLON 14X70	20
8091 14 100	SCAFFOLDING PLUG NYLON 14X100	20
8091 14 135	SCAFFOLDING PLUG NYLON 14X135	20
8091 14 185	SCAFFOLDING PLUG NYLON 14X185	20

(Drill bit Ø mm/plug length mm)

Technical Data			
Min. drill hole depth for push-through mounting mm	Min. depth of anchoring mm	Max. useful length mm	Min. slide-in depth mm
80	70	-	75
110	70	30	105
145	70	65	140
195	70	110	190

Cover Caps for Drill Holes

- Avoids the penetration of humidity
- Slightly cracked drill holes are well-covered
- For multiple use of a drill hole or plug the cap can be easily disassembled using a screwdriver



Article No.	Article Description	QTY
8092 1	COVER CAPS 12X40 WHITE	100
8092 2	COVER CAPS 12X40 GREY	100

Frame Anchor Metal with Countersunk Head Screw TX



- With torx 30 drive
- Rapid and stable frame mounting of windows and doors
- Special stud avoids that the cone rotates simultaneously
- Material:
 - Screw: steel, yellow chromated
 - Cone: steel diecast, yellow chromated
 - Bush: steel, aluminum-zinc coated
- Perfect hold in smooth and porous surface such as gas concrete, lightweight concrete, pumice and surfaces which can not be clearly defined and which occur when performing renovation works
- Screw head Ø 13 mm

Article No.	Article Description	QTY
8042 10 112	CS TX30METAL FR.ANCH. SP10X112	100
8042 10 132	CS TX30METAL FR.ANCH. SP10X132	100
8042 10 152	CS TX30METAL FR.ANCH. SP10X152	100
8042 10 182	CS TX30METAL FR.ANCH. SP10X182	100
8042 10 202	CS TX30METAL FR.ANCH. SP10X202	100

Technical Data			*Recommended loads in kN					*Recommended transverse loads in kN				
Art. No.	min. dr. hole depth at push-through mount. mm	max. useful length mm	Concr.*	Solid brick*	Vert. perf. brick*	Perf. sand-lime brick*	Lightw. concr.*	Concr.*	Solid brick*	Vert. perf. brick*	Perf. sand-lime brick*	Lightw. concr.*
8042 10 112	130	47	0,3	0,3	0,3	0,3	0,3	0,4	0,4	0,3	0,4	0,3
8042 10 132	150	67	0,3	0,3	0,3	0,3	0,3	0,4	0,4	0,3	0,4	0,3
8042 10 152	170	87	0,3	0,3	0,3	0,3	0,3	0,4	0,4	0,3	0,4	0,3
8042 10 182	200	117	0,3	0,3	0,3	0,3	0,3	0,4	0,4	0,3	0,4	0,3
8042 10 202	215	137	0,3	0,3	0,3	0,3	0,3	0,4	0,4	0,3	0,4	0,3

Cover Caps for Frame Plugs Metal TX

- For torx drive
- For AGR 8043, 8042



Article No.	Article Description	QTY
8044 15	COV.CAPS CONVEX WHITE 15 9016	H 500
8044 16	COV.CAPS FLAT WHITE 16 9016	H 500

Technical Data		
For plug Ø	Type	Color
10 mm	Curved Ø 15 mm	white RAL 9016
10 mm	Flat Ø 16 mm	white RAL 9016

Cover Caps for Frame Plugs Metal PZ

- For PZ drive
- For AGR 8040



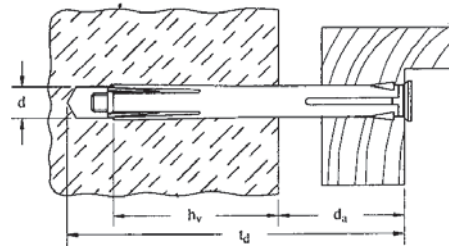
Article No.	Article Description	QTY
8041 15	COV.CAPS CONVEX WHITE 15 9016	H 500
8041 15 1	COV.CAPS CONVEX D.BR.15 1 8017	H 500
8041 16	COV.CAPS FLAT WHITE 16 9016	H 500
8041 16 1	COV.CAPS FLAT D.BR.16 1 8017	H 500

Technical Data	
For plug Ø	Type
10 mm	Curved Ø 15 mm
10 mm	Curved Ø 15 mm
10 mm	Flat Ø 16 mm
10 mm	Flat Ø 16 mm

Frame Anchor Metal with Countersunk Head Screw PZ



- With PZ 3 drive
- Screw head \varnothing 13 mm, with captive cone
- Rapid, stable frame mounting without stresses and without back filling or splitting with a wedge
- Exact distance mounting of window and door frames made of wood, plastic material light metal or steel
- Exact radial tensioning of the metal bushes
- Special stud avoids that the cone rotates simultaneously
- Material:
 - Screw: steel, yellow chromated
 - Cone: steel diecast, yellow chromated
 - Bush: steel, aluminum-zinc coated
- Appropriate for concrete, solid bricks, solid sand-lime bricks, vertically perforated bricks, perforated sand-lime bricks, hollow blocks, solid pumice, gas concrete, natural stone, etc.
- Min. anchoring depth 30 mm (refer to hv)

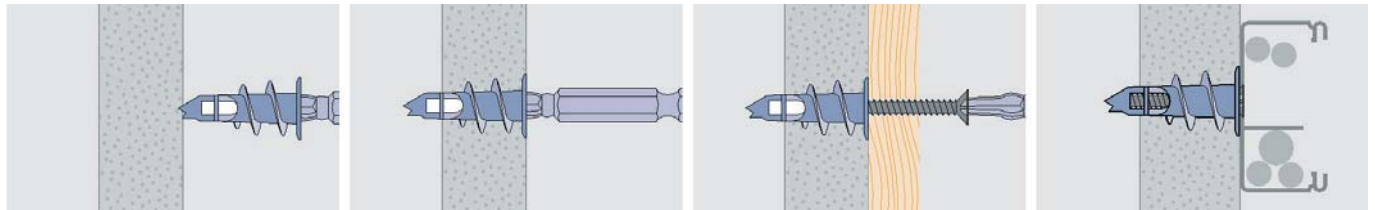
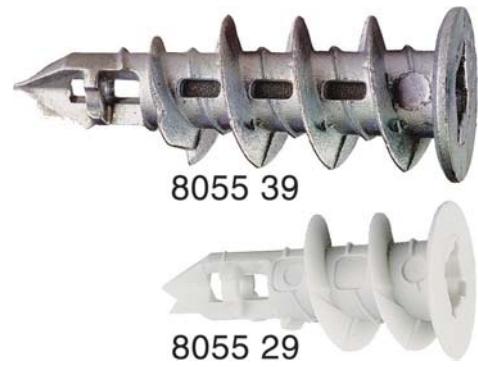


Article No.	Article Description	QTY
8040 10 72	CS PZ3 METAL FR.ANCH. 10X 72	100
8040 10 92	CS PZ3 METAL FR.ANCH. 10X 92	100
8040 10 112	CS PZ3 METAL FR.ANCH. 10X112	100
8040 10 132	CS PZ3 METAL FR.ANCH. 10X132	100
8040 10 152	CS PZ3 METAL FR.ANCH. 10X152	100
8040 10 182	CS PZ3 METAL FR.ANCH. 10X182	100
8040 10 202	CS PZ3 METAL FR.ANCH. 10X202	100

Technical Data			*Recommended loads in kN					*Recommended transverse loads in kN				
Art. No.	min. dr. hole depth at push-through mount. mm	max. useful length mm	Concr.*	Solid brick*	Vert. perf. brick*	Perf. sand-lime brick*	Lightw. concr.*	Concr.*	Solid brick*	Vert. perf. brick*	Perf. sand-lime brick*	Lightw. concr.*
8040 10 72	90	42	0,6	0,6	0,5	0,3	0,1	0,4	0,4	0,4	0,4	0,25
8040 10 92	110	62	0,6	0,6	0,5	0,3	0,1	0,4	0,4	0,4	0,4	0,25
8040 10 112	130	82	0,6	0,6	0,5	0,3	0,1	0,4	0,4	0,4	0,4	0,25
8040 10 132	150	102	0,6	0,6	0,5	0,3	0,1	0,4	0,4	0,4	0,4	0,25
8040 10 152	170	122	0,6	0,6	0,5	0,3	0,1	0,4	0,4	0,4	0,4	0,25
8040 10 182	200	152	0,6	0,6	0,5	0,3	0,1	0,4	0,4	0,4	0,4	0,25
8040 10 202	215	172	0,6	0,6	0,5	0,3	0,1	0,4	0,4	0,4	0,4	0,25

Plasterboard Plug

- Perfect for plasterboard and lightweight construction boards such as lightweight concrete and gypsum – for gypsum pre-drill 8 mm
- Centered plug drill bit – precise marking
- Special structure of the interior threads – wooden screws of 3.9 - 4.5 as well as threaded screws M 4 can be universally screwed in
- Delivery including appropriate screw-in tool in HP



Article No.	Dimension		Article No.	Contents
8055 39	39	R	8055P 39	500
8055 29	25	R	8055P 29	750

(mm)

Technical Data		*Recommended loads in kN	
Screw mm	Material	Gypsum plasterboards*	Lightweight concrete*
4,0 - 4,5 / M4	Metal	0,10	0,10
4,0 - 4,5 / M4	Plastic material	0,09	-

Duo-Bit for Plasterboard Plugs

- Drive 1/4" hexagon E 6.3
- Duo-Bit for type 29 + 39
- Screwing in the plug and a screw with PZ/PH 2 drive



Article No.	Article Description	QTY
8055 39 1	DUO-BIT F.PLASTERBOARD PLUG	e 10

Board Anchor

- To mount light-weighted structural components into gypsum plasterboards and chipboards
- For chipboard screws 3.5 mm, minimum screw length 50 mm
- Appropriate for electricians, interior work
- Clamping width plate thickness max. 2 x 12.5 mm

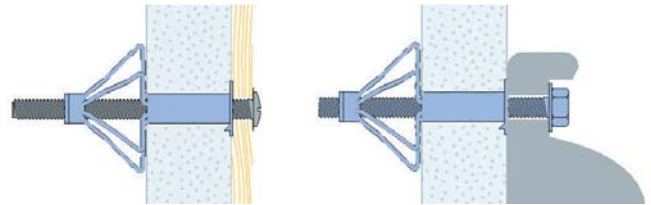


Article No.	Dimension		Article No.	Contents
8104 10 47	10X47	H	8104P 10 47	250

Technical Data		*Recommended loads in kN			
Screw	Concrete*	Solid brick*	Vertically perforated brick*	Perforated sand-lime brick*	Gypsum plasterboard*
Ø mm					
4,0 - 5,0	0,30	2,00	0,10	0,20	0,08

Hollow Plug Metal

- To fix component parts of medium weight on gypsum plasterboards or other board materials
- Appropriate for electricians, heat, air conditioning and sanitary installers, drywall installation and interior work
- Screws pre-mounted
- Efficient, easy expanding process by using tongs



Article No.	Article Description	QTY
8145 4 38	LK-PH2 METAL HOLLOW PLUG 4x38	100
8145 4 45	LK-PH2 METAL HOLLOW PLUG 4x45	100
8145 4 52	LK-PH2 METAL HOLLOW PLUG 4x52	100
8145 5 52	LK-PH2 METAL HOLLOW PLUG 5x52	100
8145 5 65	LK-PH2 METAL HOLLOW PLUG 5x65	100
8145 5 80	LK-PH2 METAL HOLLOW PLUG 5x80	100
8145 6 52	LK-PH2 METAL HOLLOW PLUG 6x52	100
8145 6 65	LK-PH2 METAL HOLLOW PLUG 6x65	100
8145 6 80	LK-PH2 METAL HOLLOW PLUG 6x80	100
8145 8 53	LK-PH2 METAL HOLLOW PLUG 8x53	100
8145 8 66	LK-PH2 METAL HOLLOW PLUG 8x66	100
8145 8 81	LK-PH2 METAL HOLLOW PLUG 8x81	100

Technical Data			*Recommended loads in kN		
Drive	Clamp. thickn. plate thickn. mm	Drill-Ø mm	Plaster board*	Wooden board*	Cement fibre board*
PH 2	8 - 16	8	0,15	0,20	0,35
PH 2	18 - 24	8	0,15	0,20	0,35
PH 2	32 - 38	8	0,18	0,25	0,40
PH 2	3 - 16	10	0,18	0,25	0,40
PH 2	14 - 32	10	0,18	0,25	0,40
PH 2	32 - 45	10	0,20	0,28	0,42
PH 2	3 - 16	12	0,20	0,28	0,42
PH 2	14 - 32	12	0,20	0,28	0,42
PH 2	32 - 45	12	0,20	0,30	0,45
PH 2	3 - 16	13	0,20	0,30	0,45
PH 2	16 - 32	13	0,20	0,30	0,45
PH 2	32 - 45	13	0,20	0,30	0,45

Mounting Tongs for Hollow Plugs Made of Metal



8145 1



8145 2

Article No.	Article Description	QTY
8145 1	MONTAGEZANGE F.HOHLRAUMD.M4-M6	1
8145 2	MONTAGEZANGE F.HOHLRAUMD.M4-M8	1

Spring Toggle Fixing with Knurled Nut



Article No.	Article Description	QTY
8060 3 85	SPR. TOG. FIX. W.MS-MU. M3X85	100
8060 4 95	SPR. TOG. FIX. W.MS-MU. M4X95	50

Technical Data		*Recommended loads in kN			
Drilling Ø mm	Thread M x length mm	Plaster- board*	Wooden board*	Cement fiber plate*	Breaking forces*
11	3 x 85	0,16*	0,30*	0,33	1,00
15	4 x 95	0,20*	0,35*	0,57	2,00

Spring Toggle Fixing with Disk

- Appropriate for: plasterboards, gypsum fibreboards, chipboards, cement fibreboards, wood wool slabs, hardboards, hollow tile ceilings, reinforced block floor, hollow brick ceilings, trapezoidal sheet metal, etc.
- To fix: racks, switches, wall units, curtain rails, cable ducts, boilers, wardrobes, etc.



Article No.	Article Description	QTY
8061 4 95	SP.TOG. FIX. W.NUT A.WA.M4X95	50

Technical Data		*Recommended loads in kN			
Drilling Ø mm	Thread M x length mm	Plaster- board*	Wooden board*	Cement fiber plate*	Breaking forces*
15	4 x 95	0,16*	0,3*	0,33	2,00

Spring Toggle Fixing with Hook and Disk

Appropriate for:

- plasterboards, gypsum fibreboards, chipboards, cement fibreboards, wood wool slabs, hardboards, hollow tile ceilings, reinforced block floor, hollow brick ceilings, trapezoidal sheet metal, etc.

To fix:

- lamps, hanging baskets, etc.



Article No.	Article Description	QTY
8062 3 85	SPR. TOGG. FIXING W.HOOK M3X90	100
8062 4 95	SPR. TOGG. FIXING W.HOOK M4X95	50

Technical Data		*Recommended loads in kN			
Drilling Ø mm	Thread M x length mm	Plaster- board*	Wooden board*	Cement fiber plate*	Breaking forces*
11	3 x 85	0,16	0,30	0,33*	0,10**
15	4 x 95	0,20	0,35	0,57*	0,40**

* Indicated values depending on the building material

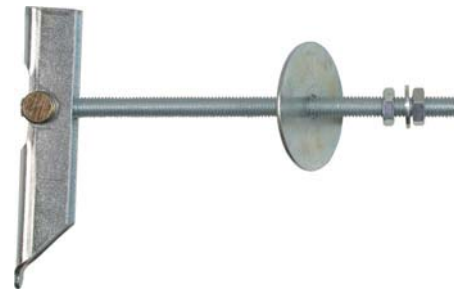
** Hooks are bending up

Breaking forces:

Threaded rod breaking or failure of the tipping element (the load-bearing capacity of the ceiling or of the wall is not considered)

Toggle Fixing with Disk

- Appropriate for: plasterboards, gypsum fibreboards, chipboards, cement fibreboards, wood wool slabs, hardboards, hollow tile ceilings, reinforced block floor, hollow brick ceilings, trapezoidal sheet metal, etc.
- To fix: lamps, racks, switches, wall units, curtain rails, rack rails, cable ducts, boilers, wardrobes, etc.



Article No.	Article Description	QTY
8065 5 100	TOGG.FIX. W.NUT A.WASH. M5X100	25

Technical Data		*Recommended loads in kN			
Drilling Ø mm	Thread M x length mm	Plaster-board*	Wooden board*	Cement fiber plate*	Breaking forces*
14	5 x 100	0,23*	0,40*	0,65*	3,00

Toggle Fixing with Hook

- Appropriate for: plasterboards, gypsum fibreboards, chipboards, cement fibreboards, wood wool slabs, hardboards, hollow tile ceilings, reinforced block floor, hollow brick ceilings, trapezoidal sheet metal, etc.
- To fix: lamps, hanging baskets, etc.



Article No.	Article Description	QTY
8066 5 100	TOGGLE FIXING W.HOOK M5X100	25

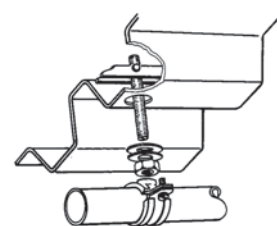
Technical Data		*Recommended loads in kN			
Drilling Ø mm	Thread M x length mm	Plaster-board*	Wooden board*	Cement fiber plate*	Breaking forces*
14	5 x 100	0,23*	0,40*	0,65*	0,60**

Toggle Bolt for Trapezoidal Steel Sheets

- Pre-mounted including turnout-protected threaded rod, Hypalen sealing disk, U-washer and hexagon nut – rapidly and economic
- FM-tested and approved by the VdS No G 4890027 – approved for tube fixture up to Ø 50 according to VdS provisions as well as of air conditioning channels, illumination rails, mounting rails, holding traverses, etc. – tested and guaranteed safety
- Turnable threaded rod – each fixing point can be leveled individually; it is possible to create any incline
- Galvanized – corrosion-protected

Load value:

- Max. point load on trapezoidal sheet metals / tubes and other fixtures: 800 N / 1000 N
- Breaking load value plug: 20 kN
- It is recommended to apply each 4th or 5th fixture at a statically highly loadable position



Article No.	Article Description	QTY
8067 8 100	TOGG.FIX. F.TRAP. SH. M. 8X100	50
8067 8 200	TOGG.FIX. F.TRAP. SH. M. 8X200	25
8067 8 300	TOGG. FIX. F.TRAP. SH. M.8X300	25
8067 10 100	TOGG. FIX. F.TRAP. SH.M.10X100	25

Technical Data	
Drilling Ø	Thread M x length mm
22 mm	8 x 100
22 mm	8 x 200
22 mm	8 x 300
25 mm	10 x 100

* Indicated values depending on the building material

** Hooks are bending up

Breaking forces:

Threaded rod breaking or failure of the tipping element (the load-bearing capacity of the ceiling or of the wall is not considered)

Spring Toggle Fixing for Washstand Attachment

- Pre-mounted with turnout-protected threaded rod, rubber plug to fill the drilling hole and to center the threaded rod, nylon collar bushing and hexagon nut M10
- Large bearing surface – perfect wash stand fixing, in particular in smooth materials with little compressive strength such as gas concrete, plasterboard or similar materials
- Galvanized – corrosion-protected
- Drilling hole Ø: 30 mm
- Required cavity depth: 90 mm
- Max. wall and ceiling thickness: 140 mm incl. fixing object



Article No.	Article Description	QTY
8063 10 180	SPR.TOGG. FIX. WASH ST. 10X180	25

Spring Toggle Fixings for Washstand Attachment

- Pre-mounted with turnout-protected threaded rod, rubber plug to fill the drilling hole and to center the threaded rod, nylon collar bushing and hexagon nut M10
- Large bearing surface – perfect wash stand fixing, in particular in smooth materials with little compressive strength such as gas concrete, plasterboard or similar materials
- Galvanized – corrosion-protected
- Drilling hole Ø: 30 mm
- Required cavity depth: 145 mm
- Max. wall and ceiling thickness: 140 mm incl. fixing object
- Bearing surface: 30 cm²



Article No.	Article Description	QTY
8068 10 180	TOGG. FIXING F.WASH ST. 10X180	25

Spike Grid Metal

- Applicable in poroton, perforated brick tiles, pumice and lightweight concrete
- Particularly designed for light-weight assemblies
- Drive in the plug into gas concrete without pre-drilling
- For hanger bolts, wooden boards, chipboards and drywall screws, etc.
- Complies with the technical guidelines for gas installations (TRGI) in relation with hanger bolts



Article No.	Dimension	Article No.	Contents
8155 6	6X32 H	8155P 6	1000
8155 8	8X38 H	8155P 8	500
8155 8 60	8X60 H	8155P 8 60	250
8155 10	10 X 60 H	8155P 10	200

Technical Data Screws Ø mm	*Recommended loads in kN		
	Concrete B25*	Light-weight concrete*	Vertically perforated brick*
5 - 6	0,30	0,12	0,15
6 - 8	0,44	0,18	0,22
6 - 8	0,76	0,35	0,38
8 - 10	0,86	0,42	0,43

Expansion Anchor Brass

- Applicable in concrete, solid bricks, natural stone, clinker, sand-lime bricks, solid wood and composite lumber
- With metric interior thread
- High retaining values, turn-proof and slip-proof



Article No.	Article Description	QTY
8050 5	BRASS EXPANSION ANCHOR M 5	100
8050 6	BRASS EXPANSION ANCHOR M 6	100
8050 8	BRASS EXPANSION ANCHOR M 8	100
8050 10	BRASS EXPANSION ANCHOR M10	100
8050 12	BRASS EXPANSION ANCHOR M12	50
8050 16	BRASS EXPANSION ANCHOR M16	25

Technical Data			*Recommended loads in kN	
Screws M	Drilling Ø mm	min. drilling hole depth mm	Concrete B25*	Solid brick*
5	7,0	30	0,30	0,26
6	8,0	30	0,40	0,36
8	10,0	40	0,8	0,63
10	12,0	45	1,00	0,9
12	15,0	50	1,22	1,1
16	22,0	60	3,90	2,35

Impact Anchor E, Galvanized Steel

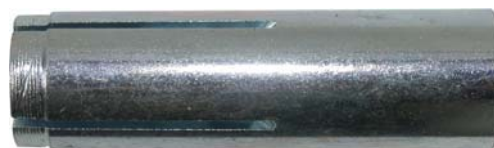
- The new impact anchor E is ETA, option 7 approved
- Due to the two-level, deformable expansion cone which guarantees the easy expansion of the anchor bushing in differently firm concrete, the impact anchor E allows safer and more rapid assemblies than before
- The marking/setting tool puts on the anchor bushing and generates a visible marking which confirms the correct assembly
- Due to the controlled expansion the necessary axis and edge distances are considerably reduced
- Advantage: For application according to ETA trial loads are omitted, also for applications according to Z-21.12-1090 and use of the marking/setting tool AGR 8251 1

Examples for applications:

- Suspensions in the heating, sanitary and air conditioning field, anchoring with threaded rods and screws, flat steel, professional steel
- Item No 8250 12 1: impact anchor EM 12 D (drilling diameter 16 mm) is recommended to fix diamond drilling apparatuses
- Load range: 1,1 kN – 28,6 kN
- Concrete quality: C20/25 – C50/60

Article No.	Article Description	QTY
8250 6	IMPACT ANCHOR E M 6 A4	100
8250 8	IMPACT ANCHOR E M 8	100
8250 8 40	IMPACT ANCHOR E M 8/40	100
8250 10	IMPACT ANCHOR E M 10	50
8250 12	IMPACT ANCHOR E M 12	50
8250 12 1	IMPACT ANCHOR E M D 12	50
8250 16	IMPACT ANCHOR E M 16	25
8250 20	IMPACT ANCHOR E M 20	25

Item No 8250 12 1: not part of the approval



Impact Anchor E A4

Drilling hole, produced with new drill in concrete C20/25: cone does not deform when assembling

Impact Anchor E A4

Drilling hole, produced with new drill in high-strength concrete (e.g. C50/60): cone does not deform when assembling

Due to the marking/setting tool EMSW, the anchor bushing is visibly marked when it is correctly assembled

Impact Anchor E, A4 Stainless Steel

- With European Technical Approval ETA-03-0031 and 05-0117



Article No.	Article Description	QTY
8252 6	IMPACT ANCHOR E M 6 A4	100
8252 8	IMPACT ANCHOR E M 8 A4	100
8252 8 40	IMPACT ANCHOR E M 8/40A4	100
8252 10	IMPACT ANCHOR E M 10 A4	50
8252 12	IMPACT ANCHOR E M 12 A4	50
8252 16	IMPACT ANCHOR E M 16 A4	25



Marking/Setting Tool for Impact Anchor

- Due to the marking/setting tool, the tensioning bushing is visibly marked according to ETA approval, if it is correctly assembled

Article No.	Article Description	QTY
8251 1 8	MARK./SET. TOOL IMP. ANCH. GAL 8	1
8251 1 8 40	MARK./SET. TL. IMP. AN. GAL 8X40	1
8251 1 10	MARK./SET. TOOL IMP. AN. GAL 10	1
8251 1 12	MARK./SET. TOOL IMP. AN. GAL 12	1
8251 1 16	MARK./SET. TOOL IMP. AN. GAL 16	1
8251 1 20	MARK./SET. TOOL IMP. AN. GAL 20	1



Expansion Tool for Impact Anchor

- Non-approval compliant according to ETA

Article No.	Article Description	QTY
8251 6	IMPACT TOOL EAW H 6	1
8251 8	IMPACT TOOL EAW H 8	1
8251 8 40	IMPACT TOOL EAW H 8/40	1
8251 10	IMPACT TOOL EAW H 10	1
8251 12	IMPACT TOOL EAW H 12	1
8251 16	IMPACT TOOL EAW H 16	1
8251 20	IMPACT TOOL EAW H 20	1



Technical Data

For anchor mm

6 x 25
8 x 30
8 x 40
10 x 40
12 x 50
16 x 65
20 x 80

Impact Anchor E, steel

Abstract from the service conditions of the approval ETA-02/0020

Anchor capacity, transverse load without influence of axis and edge distances.

Total safety factor according to ETAG is considered (γ_M und γ_F)

Loads and characteristic values	Impact anchor E M			M	M	M	M	M	M	M	M
				5 ¹⁾	6 ¹⁾	8 ¹⁾	8x40	10	12	16	20
Non-cracked concrete											
Admissible tensile load (screw 5.6)	C20/25	admissible N	[kN]	1,1	2,7	2,3	3,0	4,2	5,9	8,7	11,9
	C25/30	admissible N	[kN]	1,2	3,0	2,6	3,3	4,6	6,5	9,6	13,1
	C30/37	admissible N	[kN]	1,4	3,1	2,7	3,4	4,9	6,8	10,0	13,7
	C40/50	admissible N	[kN]	1,6	3,4	2,9	3,7	5,2	7,3	10,8	14,8
	C50/60	admissible N	[kN]	1,8	3,6	3,1	3,9	5,5	7,7	11,4	15,5
Admissible transverse load (screw 5.6) \geq	C20/25	admissible V	[kN]	1,5	2,1	3,3	3,9	4,1	9,0	16,8	26,2
Admissible transverse load (screw 5.8/8.8) \geq	C20/25	admissible V	[kN]	2,0	2,9	3,3	3,9	4,1	10,6	18,0	28,6
Admissible bending moment (screw 5.6)	zul. M	[Nm]	-	2,7	8,1	8,1	15,8	27,8	27,8	71,0	
Admissible bending moment (screw 5.8)	zul. M	[Nm]	-	3,7	10,9	10,9	21,1	37,1	37,1	94,9	
Admissible bending moment (screw 8.8)	zul. M	[Nm]	-	5,8	17,1	17,1	34,3	60,0	60,0	152,0	
Axis and edge distances											
Anchoring depth	h_{ef}	[mm]		25	30	30	40	40	50	65	80
Distinctive axis distance	s_{cr}	[mm]		75	90	90	120	120	150	195	240
Distinctive edge distance	c_{cr}	[mm]		37,5	45	45	60	60	75	97,5	120
Minimum axis distance	s_{min}	[mm]		60	60	55	80	100	120	150	160
Minimum edge distance	c_{min}	[mm]		95	95	95	95	135	165	200	260
Minimum component thickness	h_{min}	[mm]		100	100	100	100	120	130	160	200
Assembly data											
Drilling hole diameter	d_o	[mm]		8	8	10	10	12	15	20	25
Clearance hole in the add-on part	d_f	[mm]		6	7	9	9	12	14	18	22
Drilling hole depth	h_1	[mm]		28	33	33	44	44	54	71	86
Torque when anchoring	T_{inst}	[Nm]		3	4	8	8	15	35	60	120

1) Application only for statical undetermined systems. Size M5 is not part of the ETA approval Z-21.12-1090, controls the anchoring of light-weight ceiling claddings and suspended ceilings according to DIN 18 168 for the sizes M5 to M12.

Impact Anchor E, Stainless Steel A4

Abstract from the service conditions of the approval ETA -03/0031

Anchor capacity, transverse load without influence of axis and edge distances.

Total safety factor according to ETAG is considered (γ_M und γ_F)

Loads and characteristic values	Impact anchor E A4			M	M	M	M	M	M	M	M
				5 ¹⁾	6 ¹⁾	8 ¹⁾	8x40	10	12	16	20
Non-cracked concrete											
Admissible tensile load	C20/25	admissible N	[kN]	1,3	2,7	2,7	3,0	5,1	7,1	10,5	14,3
	C25/30	admissible N	[kN]	1,5	3,0	3,0	3,3	5,5	7,7	11,5	15,7
	C30/37	admissible N	[kN]	1,6	3,3	3,3	3,6	6,2	8,6	12,8	17,4
	C40/50	admissible N	[kN]	1,9	3,9	3,9	4,2	7,2	10,0	14,8	20,2
	C50/60	admissible N	[kN]	2,1	4,2	4,2	4,6	7,8	11,0	16,2	22,2
Admissible transverse load \geq	C20/25	admissible V	[kN]	2,3	3,2	4,6	4,6	6,0	11,9	19,2	28,6
Admissible bending moment		admissible M	[Nm]	-	5,0	11,9	11,9	23,8	42,1	106,7	207,9
Axis and edge distances											
Anchoring depth	h_{ef}	[mm]		25	30	30	40	40	50	65	80
Distinctive axis distance	s_{cr}	[mm]		75	90	90	120	120	150	195	240
Distinctive edge distance	c_{cr}	[mm]		37,5	45	45	60	60	75	100	120
Minimum axis distance	s_{min}	[mm]		60	60	60	80	100	120	150	160
Minimum edge distance	c_{min}	[mm]		95	80	95	95	135	165	200	260
Minimum component thickness	h_{min}	[mm]		100	100	100	100	130	140	160	250
Assembly data											
Drilling hole diameter	d_o	[mm]		8	8	10	10	12	15	20	25
Clearance hole in the add-on part	d_f	[mm]		6	7	9	9	12	14	18	22
Drilling hole depth	h_1	[mm]		28	33	33	44	44	54	71	86
Torque when anchoring	T_{inst}	[Nm]		3	4	8	8	15	35	60	120

1) Application only for statical undetermined systems. Size M5 is not part of the ETA approval Z-21.12-1090, controls the anchoring of light-weight ceiling claddings and suspended ceilings according to DIN 18 168 for the sizes M5 to M12.

Nail Anchor MND, Galvanized Steel

- Ideal for universal, rapid, rational and secure impact installation of laths, metal profiles, squared timber, wood constructions, chains, ropes, perforated tapes, wood wool - lightweight construction panels (for roof insulation with e.g. washer and insulation board disks metal Art. No. 8083 80) and other rail systems
- For the use in dry rooms
- Full metal design
 - Fire resistance class F 30-F 120
- Designed load in uncracked and cracked concrete C20/25 - C50/60 of 0.7 kN for multiple fixings
- Pre-spreads when plugging in - holding of workpiece not required
- Drilling diameter 6 mm and min. installation depth 30 mm



Article No.	Article Description	QTY
8256 6 50	NAIL ANCHOR MND 6/50 GALVAN.	100

Technical Data			*Permissible loads in kN
Anchor length	Effective length		Concrete*
mm	mm		
50	10		0.7

Nail Anchor MND with Washer, Galvanized Steel

- Ideal for universal, rapid, rational and secure impact installation of laths, metal profiles, squared timber, wood constructions, wire hangers, chains, ropes, perforated tapes, wood wool - lightweight construction panels (for roof insulation with insulation board disks metal Art. No. 8083 80) and other rail systems
- For the use in dry rooms
- Full metal design
 - Fire resistance class F 30-F 120
- Designed load in uncracked and cracked concrete C20/25 - C50/60 of 1.0 kN for multiple fixings
- Pre-spreads when plugging in - holding of workpiece not required
- Drilling diameter 6 mm and min. installation depth 32 mm
 - Large surface covering head with washer
 - High tear strength and clean covering



Article No.	Article Description	QTY
8257 6 45	NAIL ANCHOR MND 6/45 WASHER GA	100

Technical Data				*Permissible loads in kN
Anchor length	Effective length	Washer-Ø		Concrete*
mm	mm	mm		
45	5	16		1.0

Nail Anchors MND with Washer, Stainless Steel A4

- Ideal for universal, rapid, rational and secure impact installation of laths, metal profiles, squared timber, wood constructions, wire hangers, chains, ropes, perforated tapes, wood wool - lightweight construction panels (for roof insulation with e.g. insulation board disks metal Art. No. 8083 80) and other rail systems
- For the use in dry and wet rooms as well as for outdoor use as far as no special aggressive conditions are given
- Full metal design
 - Fire resistance class F 30-F 120
- Designed load in uncracked and cracked concrete C20/25 - C50/60 of 1.0 kN for multiple fixings
- Pre-spreads when plugging in - holding of workpiece not required
- Drilling diameter 6 mm and min. installation depth 32 mm
 - Large surface covering head with washer
 - High tear strength and clean covering



Article No.	Article Description	QTY
8257 6 45 1	NAIL ANCHOR MND 6/45 WASHER A4	100

Technical Data				*Permissible loads in kN
Anchor length	Effective length	Washer-Ø		Concrete
mm	mm	mm		
45	5	16		1.0

Ceiling Anchor MAN, Galvanized Steel

- Perfect for the universal rapid, efficient and safe impact assembly of battens, squared timbers, wooden substructures, metal profiles, chains, ropes, perforated tapes, wire hangers, extension nuts with threaded rods, fire sealing, air conditioning lines, suspended ceilings, etc.
- All-metal design
 - Fire rating F 30 F 80 / F 120
- Admissible load in concrete C20/25 - C50/60 in the pressure or tension zone (non-cracked or cracked concrete) 1.2 kN
- Drilling-Ø: 6 mm and minimum depth of the anchorage: 32 mm
 - Large-scale set head
 - High pull-out strength and neat covering



Article No.	Article Description	QTY
8255 45	CEILING ANCHOR MAN 6/40	100
8255 350	CEILING ANCHOR MAN 6/70	100

Technical Data		*Recommended loads in kN
Anchor length	Effective length	Concrete*
mm	mm	
40	4.5	1.2
70	35	1.2

Nail Anchor FNA II, Galvanized Steel

- Perfect for the universal rapid efficient and safe impact assembly of battens, squared timbers, wooden substructures, metal profiles, chains, ropes, perforated tapes, wire hangers, extension nuts with threaded rods, fire sealing, air conditioning lines, suspended ceilings, etc.
- All-metal design
 - Fire rating F 30 - F 120
- Admissible load in concrete C12/15 - C50/60 in the pressure or tension zone (non-cracked or cracked concrete) 1.2 kN
- Drilling-Ø: 6 mm and minimum depth of the anchorage: 30 mm
- FNA with nail head
 - Large-scale set head
 - High pull-out strength and neat covering



Article No.	Article Description	QTY
8254 5	NAIL ANCHOR FNA II 6X30/ 5	100
8254 50	NAIL ANCHOR FNA II 6X30/50	50

Technical Data		*Recommended loads in kN
Anchor length	Effective length	Concrete*
mm	mm	
40	5	1.2
85	50	1.2

Wedge Anchor R-XPT, Galvanized Steel



- Wedge anchor R-XPT with ETA-approval, option 7 is appropriate for time-saving push-through assembly in non-cracked concrete
- Cost-efficient push-through assembly to fix metal structure, metal profiles, base plates, consoles, facades, windows, grids, pipelines, machines, wooden constructions, beams, purlins, supports
- Load range: 9 - 30 kN
- Concrete quality: C20/25 to C50/60
- Drilling-Ø 6 mm: not part of the approval



Article No.	Article Description	QTY
8178 6 5	WEDGE ANCHOR R-XPT GA 6 5/ 65	100
8178 6 25	WEDGE ANCHOR R-XPT GA 6 25/ 85	100
8178 8 0	WEDGE ANCHOR R-XPT GA 8 0/ 60	100
8178 8 10	WEDGE ANCHOR R-XPT GA 8 10/ 75	100
8178 8 30	WEDGE ANCHOR R-XPT GA 8 30/ 95	100
8178 8 50	WEDGE ANCHOR R-XPT GA 8 50/115	100
8178 8 75	WEDGE ANCHOR R-XPT GA 8 75/140	100
8178 10 0	WEDGE ANCHOR R-XPT GA10 0/ 65	50
8178 10 10	WEDGE ANCHOR R-XPT GA10 10/ 80	50
8178 10 25	WEDGE ANCHOR R-XPT GA10 25/ 95	50
8178 10 45	WEDGE ANCHOR R-XPT GA10 45/115	50
8178 10 70	WEDGE ANCHOR R-XPT GA10 70/140	50
8178 12 0	WEDGE ANCHOR R-XPT GA12 0/ 80	50
8178 12 5	WEDGE ANCHOR R-XPT GA12 5/100	50
8178 12 30	WEDGE ANCHOR R-XPT GA12 30/125	50
8178 12 55	WEDGE ANCHOR R-XPT GA12 55/150	50
8178 12 85	WEDGE ANCHOR R-XPT GA12 85/180	50
8178 16 0	WEDGE ANCHOR R-XPT GA16 0/100	25
8178 16 5	WEDGE ANCHOR R-XPT GA16 5/125	25
8178 16 30	WEDGE ANCHOR R-XPT GA16 30/150	25
8178 16 60	WEDGE ANCHOR R-XPT GA16 60/180	25

Technical Data			
Drill-Ø mm	Anchor length mm	Clamp. thickn. S mm	Clamp. thickn. R mm
6	65	5	25
6	85	25	45
8	60	0	10
8	75	10	25
8	95	30	45
8	115	50	65
8	140	75	90
10	65	0	5
10	80	10	20
10	95	25	35
10	115	45	55
10	140	70	80
12	80	0	5
12	100	5	25
12	125	30	50
12	150	55	75
12	180	85	105
16	100	0	5
16	125	5	25
16	150	30	50
16	180	60	80

S = Standardized installation depth / R = Reduced installation depth

Wedge Anchor R-XPT, Stainless Steel A4

- Suitable for time-saving push-through assembly in non-cracked concrete in the outdoor area
- Cost-efficient push-through assembly to fix metal constructions, metal profiles, base plates, consoles, rails, facades, windows, grids, pipelines, machines, wooden construction, beams, purlins, supports
- Load range: 9 - 30kN
- Concrete quality: C20/25 to C50/60



Article No.	Article Description	QTY
8179 8 10	WEDGE ANCHOR R-XPT A4 8 10/ 75	100
8179 8 20	WEDGE ANCHOR R-XPT A4 8 20/ 85	100
8179 8 30	WEDGE ANCHOR R-XPT A4 8 30/ 95	100
8179 8 40	WEDGE ANCHOR R-XPT A4 8 40/105	100
8179 8 50	WEDGE ANCHOR R-XPT A4 8 50/115	100
8179 10 0	WEDGE ANCHOR R-XPT A4 10 0/ 65	50
8179 10 10	WEDGE ANCH. R-XPT A4 10 10/ 80	50
8179 10 25	WEDGE ANCH. R-XPT A4 10 25/ 95	50
8179 10 45	WEDGE ANCH. R-XPT A4 10 45/115	50
8179 10 60	WEDGE ANCH. R-XPT A4 10 60/130	50
8179 10 70	WEDGE ANCH. R-XPT A4 10 70/140	50
8179 12 0	WEDGE ANCH. R-XPT A4 12 0/ 80	50
8179 12 5	WEDGE ANCHOR R-XPT A4 12 5/100	50
8179 12 30	WEDGE ANCH. R-XPT A4 12 30/125	50
8179 12 55	WEDGE ANCH. R-XPT A4 12 55/150	50
8179 16 5	WEDGE ANCHOR R-XPT A4 16 5/125	50
8179 16 20	WEDGE ANCH. R-XPT A4 16 20/140	25
8179 16 30	WEDGE ANCH. R-XPT A4 16 30/150	25
8179 16 60	WEDGE ANCH. R-XPT A4 16 60/180	25

Technical Data			
Drill-Ø mm	Anchor length mm	Clamp. thickn. S mm	Clamp. thickn. R mm
8	75	10	25
8	85	20	35
8	95	30	45
8	105	40	55
8	115	50	65
10	65	0	5
10	80	10	20
10	95	25	35
10	115	45	55
10	130	60	70
10	140	70	80
12	80	0	5
12	100	5	25
12	125	30	50
12	150	55	75
16	125	5	25
16	140	20	40
16	150	30	50
16	180	60	80

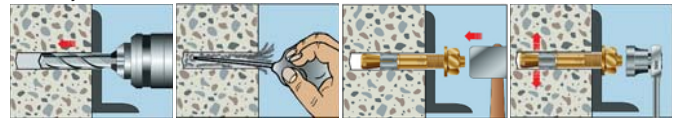
S = Standard installation depth / R = Reduced installation depth

Wedge Anchor B, Galvanized Steel

- Wedge anchor B with ETA approval, option 7 is appropriate for time-saving push-through assembly in non-cracked concrete as well as ceiling suspensions and similar anchorings
- Combines high bearing capacity with axial and edge distances
- Cost-efficient push-through assembly to fix metal constructions, metal profiles, base plates, consoles, handrails, facades, windows, fences, piping, machines, wooden constructions, beams, purlins, supports
- Load range: 2,9 kN - 37,1 kN
- Concrete quality: C20/25 - C50/60



Assembly:



Article No.	Article Description	QTY
8165 6 5	WEDGE ANCHOR B GAL. 6/ 5	100
8165 6 10	WEDGE ANCHOR B GAL. 6/ 10	100
8165 6 25	WEDGE ANCHOR B GAL. 6/ 25	100
8165 6 40	WEDGE ANCHOR B GAL. 6/ 40	100
8165 8 5	WEDGE ANCHOR B GAL. 8/ 5	100
8165 8 10 60	WEDGE ANCHOR B GAL. 8/10-60	100
8165 8 10	WEDGE ANCHOR B GAL. 8/ 10	100
8165 8 15	WEDGE ANCHOR B GAL. 8/ 15	100
8165 8 20	WEDGE ANCHOR B GAL. 8/ 20	100
8165 8 30	WEDGE ANCHOR B GAL. 8/ 30	100
8165 8 45	WEDGE ANCHOR B GAL. 8/ 45	100
8165 8 55	WEDGE ANCHOR B GAL. 8/ 55	100
8165 10 10 60	WEDGE ANCHOR B GAL. 10/10-60	50
8165 10 10	WEDGE ANCHOR B GAL. 10/ 10	50
8165 10 15	WEDGE ANCHOR B GAL. 10/ 15	50
8165 10 20	WEDGE ANCHOR B GAL. 10/ 20	50
8165 10 45	WEDGE ANCHOR B GAL. 10/ 45	50
8165 10 50	WEDGE ANCHOR B GAL. 10/ 50	50
8165 10 70	WEDGE ANCHOR B GAL. 10/ 70	50
8165 10 100	WEDGE ANCHOR B GAL. 10/100	50
8165 10 140	WEDGE ANCHOR B GAL. 10/140	25
8165 12 5	WEDGE ANCHOR B GAL. 12/ 5	25
8165 12 10	WEDGE ANCHOR B GAL. 12/ 10	25
8165 12 15	WEDGE ANCHOR B GAL. 12/ 15	25
8165 12 20	WEDGE ANCHOR B GAL. 12/ 20	25
8165 12 30	WEDGE ANCHOR B GAL. 12/ 30	25
8165 12 50	WEDGE ANCHOR B GAL. 12/ 50	25
8165 12 65	WEDGE ANCHOR B GAL. 12/ 65	25
8165 12 85	WEDGE ANCHOR B GAL. 12/ 85	25
8165 12 105	WEDGE ANCHOR B GAL. 12/105	25
8165 12 125	WEDGE ANCHOR B GAL. 12/125	25
8165 12 145	WEDGE ANCHOR B GAL. 12/145	20
8165 12 160	WEDGE ANCHOR B GAL. 12/160	20
8165 12 190	WEDGE ANCHOR B GAL. 12/190	20
8165 12 230	WEDGE ANCHOR B GAL. 12/230	20
8165 12 260	WEDGE ANCHOR B GAL. 12/260	20
8165 16 5	WEDGE ANCHOR B GAL. 16/ 5	20
8165 16 15	WEDGE ANCHOR B GAL. 16/ 15	20
8165 16 30	WEDGE ANCHOR B GAL. 16/ 30	20
8165 16 60	WEDGE ANCHOR B GAL. 16/ 60	20
8165 16 80	WEDGE ANCHOR B GAL. 16/ 80	10
8165 16 100	WEDGE ANCHOR B GAL. 16/100	10
8165 16 130	WEDGE ANCHOR B GAL. 16/130	10
8165 16 165	WEDGE ANCHOR B GAL. 16/165	10
8165 16 200	WEDGE ANCHOR B GAL. 16/200	10
8165 20 35	WEDGE ANCHOR B GAL. 20/ 35	10
8165 20 95	WEDGE ANCHOR B GAL. 20/ 95	10

Technical Data

Item No	Drilling Ø	Anchor length	Minimum drilling
	mm	mm	hole depth mm
8165 6 5*	6	40	35
8165 6 10	6	67	55
8165 6 25	6	82	55
8165 6 40	6	97	55
8165 8 5*	8	50	45
8165 8 10 60*	8	60	50
8165 8 10	8	75	65
8165 8 15	8	80	65
8165 8 20	8	85	65
8165 8 30	8	95	65
8165 8 45	8	110	65
8165 8 55	8	120	65
8165 10 10 60	10	60	50
8165 10 10*	10	85	70
8165 10 15	10	90	70
8165 10 20	10	95	70
8165 10 45	10	120	70
8165 10 50	10	125	70
8165 10 70	10	145	70
8165 10 100	10	175	70
8165 10 140	10	215	70
8165 12 5*	12	75	65
8165 12 10*	12	95	80
8165 12 15	12	110	90
8165 12 20	12	115	90
8165 12 30	12	125	90
8165 12 50	12	145	90
8165 12 65	12	160	90
8165 12 85	12	180	90
8165 12 105	12	200	90
8165 12 125	12	220	90
8165 12 145	12	240	90
8165 12 160	12	255	90
8165 12 190	12	285	90
8165 12 230	12	325	90
8165 12 260	12	355	90
8165 16 5*	16	90	75
8165 16 15*	16	115	80
8165 16 30	16	150	110
8165 16 60	16	180	110
8165 16 80	16	200	110
8165 16 100	16	220	110
8165 16 130	16	250	110
8165 16 165	16	285	110
8165 16 200	16	320	110
8165 20 35	20	180	130
8165 20 95	20	240	130

* not part of the approval

Wedge Anchor B, Steel

Abstract from the service conditions of the approval ETA -01/0013

Anchor capacities, transverse load without influence of axial and edge distances.

Total safety factor according to ETAG considered (γ_M und γ_F)

Loads and characteristic values	wedge anchor B			M 6	M 8	Non-cracked concrete			M 20
						M 10	M 12	M 16	
Admissible tensile load	C20/25	admissible N	[kN]	3,0	4,0	5,3	9,9	13,9	19,9
	C25/30	admissible N	[kN]	3,3	4,4	5,9	11,0	15,4	21,9
	C30/37	admissible N	[kN]	3,6	4,8	6,5	12,1	16,9	24,2
	C40/50	admissible N	[kN]	4,2	5,6	7,5	14,0	19,6	28,0
	C50/60	admissible N	[kN]	4,6	6,2	8,2	15,4	21,5	30,8
Admissible transverse load	C20/25	admissible V	[kN]	2,9	5,8	6,7	14,3	23,6	37,1
	≥ C25/30	admissible V	[kN]	2,9	6,3	7,3	14,3	23,6	37,1
Admissible bending moment		admissible M	[Nm]	5,1	13,1	25,7	44,6	99,9	195,0
Axis and edge distances									
Anchoring depth		h_{ef}	[mm]	40	44	48	65	82	100
Distinctive axis distance		s_{cr}	[mm]	120	132	144	195	246	300
Distinctive edge distance		c_{cr}	[mm]	60	66	72	98	123	150
Minimum axis distance		s_{min}	[mm]	40	50	55	75	90	105
Minimum edge distance		c_{min}	[mm]	40	50	65	90	105	125
Minimum component thickness		h_{min}	[mm]	100	100	100	130	170	200
Axial and edge distances for reduced anchoring depth									
Anchoring depth, red.		h_{ef} , red.	[mm]	24	35	42	48	64	79
Distinctive axial distance		s_{cr}	[mm]	120	132	144	195	246	300
Distinctive edge distance		c_{cr}	[mm]	60	66	72	98	123	150
Minimum axial distance		s_{min}	[mm]	40	50	55	90	105	120
Minimum edge distance		c_{min}	[mm]	40	50	65	105	125	145
Minimum component thickness		h_{min}	[mm]	100	100	100	100	130	160
Assembly data									
Drilling hole diameter		d_o	[mm]	6	8	10	12	16	20
Clearance hole in the add-on part		d_f	[mm]	7	9	12	14	18	22
Drilling hole depth		h_1	[mm]	55/34 ¹⁾	65/55 ¹⁾	70/65 ¹⁾	90/70 ¹⁾	110/90 ¹⁾	130/110 ¹⁾
Torque when anchoring		T_{inst}	[mm]	8	15	30	50	100	200
Wrench size		SW	[mm]	10	13	17	19	24	30

1) Reduced anchoring depth (consider reduced loads)

Wedge Anchor M2-U, Galvanized Steel

- Wedge anchor M2-U with ETA approval, option 7 appropriate for time-saving push-through assembly in non-cracked concrete, heavy-duty type
- With extra large washer, DIN 9021 especially for woodwork
- Cost-efficient push-through assembly to fix metal constructions, metal profiles, base plates, consoles, handrails, facades, windows, fences, piping, machines, wooden constructions, beams, purlins, supports
- Concrete quality: C20/25 - C50/60



Montage:



Article No.	Article Description	QTY
8165 1 12 90	WEDGE ANCHOR M2-U GAL 12/90	25
8165 1 12 105	WEDGE ANCHOR M2-U GAL 12/105	25
8165 1 12 125	WEDGE ANCHOR M2-U GAL 12/125	20
8165 1 12 145	WEDGE ANCHOR M2-U GAL 12/145	20
8165 1 12 165	WEDGE ANCHOR M2-U GAL 12/165	20
8165 1 12 205	WEDGE ANCHOR M2-U GAL 12/205	15
8165 1 12 265	WEDGE ANCHOR M2-U GAL 12/265	15
8165 1 16 105	WEDGE ANCHOR M2-U GAL 16/105	10
8165 1 16 145	WEDGE ANCHOR M2-U GAL 16/145	10
8165 1 16 185	WEDGE ANCHOR M2-U GAL 16/185	5
8165 1 16 215	WEDGE ANCHOR M2-U GAL 16/215	5

Technical Data			
Item No	Drilling Ø	Anchor length	Minimum drilling hole depth
	mm	mm	mm
8165 1 12 90	12	185	90
8165 1 12 105	12	200	90
8165 1 12 125	12	220	90
8165 1 12 145	12	240	90
8165 1 12 165	12	260	90
8165 1 12 205	12	300	90
8165 1 12 265	12	360	90
8165 1 16 105	16	220	110
8165 1 16 145	16	260	110
8165 1 16 185	16	300	110
8165 1 16 215	16	330	110

Data regarding Wedge Anchor M2-U, Galvanized Steel

				M 12	M 16
Recommended tensile load concrete ¹⁾	C20/25	N _{Emp}	[kN]	9,8	13,5
Recommended transverse load		V _{Emp}	[kN]	12,2	16,2
Recommended bending moment		M _{EMP}	[Nm]	52,6	83,9
Edge distance nominal		c	[mm]	102	120
Axial distance nominal		s	[mm]	204	240
Minimum component thickness		h _{min}	[mm]	136	160
Effective anchoring depth		h _{ef}	[mm]	68	80
Wrench size		sw	[mm]	19	24
Torque when anchoring		T _{inst}	[Nm]	50	100
Drilling hole depth		h ₁	[mm]	90	110
Drilling hole-Ø in the building material		d _o	[mm]	12	16
Hole-Ø in the add-on part		d _f	[mm]	14	18
U-washers-Ø		d _μ	[mm]	37	50
Thread length		l _G	[mm]	120	120
External-Ø plug		d _{nom}	[mm]	12	16
Useful assembly length		t _{fix}	[mm]	90 105 145 205 265	105 145 185 215 325

¹⁾ Reduced anchoring depth (consider reduced loads)

Wedge Anchor B, Stainless Steel A4

- Wedge anchor B A4 with national DIBt approval (ETA, option 7), stainless steel type of the proven wedge anchor B which is approved for non-cracked concrete for the interior and exterior
- ETA-approval ETAG 001-part 6 for cracked and non-cracked concrete for multiple use and sizes M6/30 and M6/40
- Cost-efficient push-through assembly to fix metal constructions, metal profiles, base plates, consoles, handrails, facades, windows, fences, piping, machines, wooden constructions, beams, purlins, supports, etc. appropriate for concrete > B 15, compression-proof natural stone
- Load capacity: 1.5 kN - 9.5 kN
- Concrete quality: C20/25 - C50/60



Montage:



Article No.	Article Description	QTY
8166 6 5	WEDGE ANCHOR A4 B 6/ 5	100
8166 6 10	WEDGE ANCHOR A4 B 6/ 10	100
8166 6 40	WEDGE ANCHOR A4 B 6/ 40	100
8166 8 5	WEDGE ANCHOR A4 B 8/ 5	100
8166 8 10 60	WEDGE ANCHOR A4 B 8/ 10-60	100
8166 8 10	WEDGE ANCHOR A4 B 8/ 10	100
8166 8 15	WEDGE ANCHOR A4 B 8/ 15	100
8166 8 20	WEDGE ANCHOR A4 B 8/ 20	100
8166 8 30	WEDGE ANCHOR A4 B 8/ 30	100
8166 8 45	WEDGE ANCHOR A4 B 8/ 45	100
8166 8 55	WEDGE ANCHOR A4 B 8/ 55	100
8166 10 10 60	WEDGE ANCHOR A4 B 10/ 10-60	50
8166 10 10	WEDGE ANCHOR A4 B 10/ 10	50
8166 10 15	WEDGE ANCHOR A4 B 10/ 15	50
8166 10 20	WEDGE ANCHOR A4 B 10/ 20	50
8166 10 45	WEDGE ANCHOR A4 B 10/ 45	50
8166 10 50	WEDGE ANCHOR A4 B 10/ 50	50
8166 10 70	WEDGE ANCHOR A4 B 10/ 70	50
8166 10 100	WEDGE ANCHOR A4 B 10/100	50
8166 10 140	WEDGE ANCHOR A4 B 10/140	25
8166 12 5	WEDGE ANCHOR A4 B 12/ 5	25
8166 12 10	WEDGE ANCHOR A4 B 12/ 10	25
8166 12 15	WEDGE ANCHOR A4 B 12/ 15	25
8166 12 20	WEDGE ANCHOR A4 B 12/ 20	25
8166 12 30	WEDGE ANCHOR A4 B 12/ 30	25
8166 12 50	WEDGE ANCHOR A4 B 12/ 50	25
8166 12 65	WEDGE ANCHOR A4 B 12/ 65	25
8166 12 85	WEDGE ANCHOR A4 B 12/ 85	25
8166 12 105	WEDGE ANCHOR A4 B 12/105	25
8166 12 125	WEDGE ANCHOR A4 B 12/125	25
8166 12 145	WEDGE ANCHOR A4 B 12/145	20
8166 16 15	WEDGE ANCHOR A4 B 16/ 15	20
8166 16 30	WEDGE ANCHOR A4 B 16/ 30	20
8166 16 60	WEDGE ANCHOR A4 B 16/ 60	20
8166 16 80	WEDGE ANCHOR A4 B 16/ 80	10
8166 16 100	WEDGE ANCHOR A4 B 16/100	10
8166 20 5	WEDGE ANCHOR A4 B 20/ 5	10
8166 20 35	WEDGE ANCHOR A4 B 20/ 35	10
8166 20 95	WEDGE ANCHOR A4 B 20/ 95	10

Technical Data			
Item No	Drilling Ø mm	Anchor length mm	Minimum drilling hole depth mm
8166 6 5*	6	40	35
8166 6 10	6	67	55
8166 6 40	6	97	55
8166 8 5*	8	50	45
8166 8 10 60*	8	60	50
8166 8 10	8	75	65
8166 8 15	8	80	65
8166 8 20	8	85	65
8166 8 30	8	95	65
8166 8 45	8	110	65
8166 8 55	8	120	65
8166 10 10 60*	10	60	50
8166 10 10	10	85	70
8166 10 15	10	90	70
8166 10 20	10	95	70
8166 10 45	10	120	70
8166 10 50	10	125	70
8166 10 70	10	145	70
8166 10 100	10	175	70
8166 10 140	10	215	70
8166 12 5*	12	75	65
8166 12 10*	12	95	80
8166 12 15	12	105	90
8166 12 20	12	110	90
8166 12 30	12	125	90
8166 12 50	12	145	90
8166 12 65	12	160	90
8166 12 85	12	180	90
8166 12 105	12	200	90
8166 12 125	12	220	90
8166 12 145	12	240	90
8166 16 15*	16	115	90
8166 16 30	16	150	110
8166 16 60	16	180	110
8166 16 80	16	200	110
8166 16 100	16	220	110
8166 20 5	20	150	130
8166 20 35	20	180	130
8166 20 95	20	240	130

* Not part of the approval

Wedge Anchor B, Stainless Steel A4

Abstract from the service conditions of the approval ETA Z-21.1-1598

Anchor capacities, transverse load without influence of axial and edge distances.

Total safety factor according to ETAG considered (γ_M und γ_F)

Loads and characteristic values				Heavy-duty anchor B A4 M6	M 8	M 10	M 12	M 16	
					Non-cracked concrete				
Admissible tensile load/transverse load	C20/25	admissible F	[kN]	1,5	2,8	4,0	5,7	8,4	
	\geq C30/37	admissible F	[kN]	1,8	3,5	4,8	6,5	9,5	
Admissible tensile load/transverse load		admissible M	[Nm]	3,8	9,4	18,7	32,7	83,1	
Axial and edge distances									
Anchoring depth		h_{ef}	[mm]	40	44	48	65	82	
Axial distance		a	[mm]	160	180	260	340	460	
Edge distance		a_r	[mm]	80	90	130	170	320	
Minimum component thickness		h_{min}	[mm]	150	150	200	220	250	
Assembly data									
Drilling hole diameter		d_o	[mm]	6	8	10	12	16	
Clearance hole in the add-on part		d_f	[mm]	7	9	12	14	18	
Drilling hole depth		h_1	[mm]	60	65	70	90	110	
Torque when anchoring		T_{inst}	[Nm]	6	15	30	50	100	
Wrench size		SW	[mm]	10	13	17	19	24	

Wedge Anchor BZ Plus, Galvanized Steel

- With European Technical Approval ETA-03/0017, option 1 for cracked concrete, approved for cracked and non-cracked concrete (tension and pressure zone)
- Plug for large range of applications
- Wedge anchor BZ Plus combines high admissible loads and little edge and axial distances
- Easy setting process: drill hole, insert anchor, tighten, expansion clip will be expanded after driving in the wedge anchor B-Z by tensioning the hexagon socket nut, immediately resistant, perfect pressure distribution, minimum slipping
- Perfect average and heavy loads
- Force-controlled expansion at high safety margins
- Tested by VdS (Verband der Schadenversicherer e. V. Köln), approved for the mounting of sprinkler systems
- Fire-protection tested
- Shock approval by the 'Bundesamt für Zivilschutz' at Bern



Montage:



Article No.	Article Description	QTY
8169 8 10	WEDGE ANCH. B-Z PLUS GAL8/ 10	100
8169 8 15	WEDGE ANCH. B-Z PLUS GAL8/ 15	100
8169 8 30	WEDGE ANCH. B-Z PLUS GAL8/ 30	100
8169 8 50	WEDGE ANCH. B-Z PLUS GAL8/ 50	100
8169 8 100	WEDGE ANCH. B-Z PLUS GAL8/100	50
8169 10 10	WEDGE ANCH. B-Z PLUS GAL10/ 10	50
8169 10 15	WEDGE ANCH. B-Z PLUS GAL10/ 15	50
8169 10 20	WEDGE ANCH. B-Z PLUS GAL10/ 20	50
8169 10 30	WEDGE ANCH. B-Z PLUS GAL10/ 30	50
8169 10 50	WEDGE ANCH. B-Z PLUS GAL10/ 50	50
8169 10 75	WEDGE ANCH. B-Z PLUS GAL10/ 75	50
8169 12 15	WEDGE ANCH. B-Z PLUS GAL12/ 15	25
8169 12 20	WEDGE ANCH. B-Z PLUS GAL12/ 20	25
8169 12 30	WEDGE ANCH. B-Z PLUS GAL12/ 30	25
8169 12 50	WEDGE ANCH. B-Z PLUS GAL12/ 50	25
8169 12 65	WEDGE ANCH. B-Z PLUS GAL12/ 65	25
8169 12 85	WEDGE ANCH. B-Z PLUS GAL12/ 85	25
8169 12 105	WEDGE ANCH. B-Z PLUS GAL12/105	25
8169 12 125	WEDGE ANCH. B-Z PLUS GAL12/125	25
8169 12 145	WEDGE ANCH. B-Z PLUS GAL12/145	20
8169 12 160	WEDGE ANCH. B-Z PLUS GAL12/160	20
8169 16 15	WEDGE ANCH. B-Z PLUS GAL16/ 15	20
8169 16 25	WEDGE ANCH. B-Z PLUS GAL16/ 25	20
8169 16 50	WEDGE ANCH. B-Z PLUS GAL16/ 50	20
8169 16 100	WEDGE ANCH. B-Z PLUS GAL16/100	10
8169 16 140	WEDGE ANCH. B-Z PLUS GAL16/140	10
8169 16 180	WEDGE ANCH. B-Z PLUS GAL16/180	10

Technical Data

Load class	Anchor length mm	Minimum depth of the anchorage in mm	Minimum drilling hole depth mm
1,5	75	52	60
1,5	80	52	60
1,5	95	52	60
1,5	115	52	60
1,5	165	52	60
2,5	90	67	75
2,5	95	67	75
2,5	100	67	75
2,5	110	67	75
2,5	130	67	75
2,5	155	67	75
3,5	110	80	90
3,5	115	80	90
3,5	125	80	90
3,5	145	80	90
3,5	160	80	90
3,5	180	80	90
3,5	200	80	90
3,5	220	80	90
3,5	240	80	90
3,5	255	80	90
6,0	135	100	110
6,0	145	100	110
6,0	170	100	110
6,0	220	100	110
6,0	240	100	110
6,0	300	100	110

Wedge Anchor BZ Plus, Galvanized Steel

Abstract from the service conditions of the approval ETA-03/0017

Anchor capacities, transverse load without influence of axial and edge distances.

Total safety factor according to ETAG considered (γ_M and γ_F)

Loads and characteristic values		Wedge Anchor BZ Plus		M 8	M 10	M 12	M 16
				Cracked concrete			
Admissible tensile load	C20/25	admissible N	[kN]	2,0	3,6	4,8	9,9
	C25/30	admissible N	[kN]	2,2	4,0	5,3	11,0
	C30/37	admissible N	[kN]	2,4	4,4	5,8	12,1
	C40/50	admissible N	[kN]	2,8	5,0	6,7	14,0
	C50/60	admissible N	[kN]	3,1	5,5	7,4	15,4
				Non-cracked concrete			
Admissible tensile load	C20/25	admissible N	[kN]	4,8	6,3	7,9	13,9
	C25/30	admissible N	[kN]	5,3	7,1	8,8	15,4
	C30/37	admissible N	[kN]	5,8	7,7	9,7	16,9
	C40/50	admissible N	[kN]	6,7	9,0	11,2	19,6
	C50/60	admissible N	[kN]	7,4	9,8	12,3	21,5
				Cracked and non-cracked concrete			
Admissible transverse load	C20/25	admissible N	[kN]	8,6	12,6	15,0	22,4
	\geq C25/30	admissible N	[kN]	8,6	12,6	16,4	24,5
Admissible bending size		admissible N	[Nm]	13,1	26,9	46,9	119,4
Axial and edge distances							
Anchoring depth		h_{ef}	[mm]	46	60	65	85
Distinctive axial distance		s_{cr}	[mm]	138	180	195	255
Distinctive edge distance		c_{cr}	[mm]	69	90	97,5	127,5
				Cracked concrete			
Minimum axial distance / for edge distance c		s_{min}/c	[mm]	40/60	45/70	60/100	60/100
Minimum edge distance / for axial distance s		c_{min}/s	[mm]	40/70	45/90	60/140	60/180
				Non-cracked concrete			
Minimum axial distance / for edge distance c		s_{min}/c	[mm]	40/70	45/70	60/120	65/120
Minimum edge distance / for axial distance s		c_{min}/s	[mm]	40/80	50/100	75/150	80/150
Minimum component thickness		h_{min}	[mm]	100	120	130	170
Assembly data							
Drilling hole diameter		d_o	[mm]	8	10	12	16
Clearance hole in the add-on part		d_f	[mm]	9	12	14	18
Drilling hole depth		h_1	[mm]	60	75	90	110
Torque when anchoring		T_{inst}	[mm]	15	25	45	90
Wrench size		SW	[mm]	13	17	19	24

Wedge Anchor BZ Plus, Stainless Steel A4

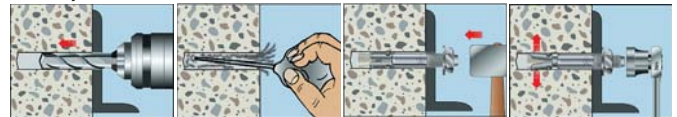
- Wedge anchor BZ Plus, stainless steel A4 (ETA, option 1) combines high admissible loads with little edge and axial distances
- Expansion cone is provided with durable heat-resistant sliding coating which avoids direct contact of the cone and expansion bushing, ensures the necessary re-extending in case of crack formation in concrete
- Shock-tested by the 'Bundesamt für Bevölkerungsschutz' at Bern

Application:

- Anchoring of average and heavy loads in cracked and non-cracked concrete: supports, steel beams, consoles, gates, handrails, facade structures
- Load range: 1,7 kN - 23,4 kN
- Concrete quality: C20/25 - C50/60



Assembly:



Article No.	Article Description	QTY
8169 1 8 10	WEDGE ANCH. B-Z PLUS A4 8/ 10	100
8169 1 8 15	WEDGE ANCH. B-Z PLUS A4 8/ 15	100
8169 1 8 30	WEDGE ANCH. B-Z PLUS A4 8/ 30	100
8169 1 8 50	WEDGE ANCH. B-Z PLUS A4 8/ 50	100
8169 1 10 10	WEDGE ANCH. B-Z PLUS A4 10/ 10	50
8169 1 10 15	WEDGE ANCH. B-Z PLUS A4 10/ 15	50
8169 1 10 30	WEDGE ANCH. B-Z PLUS A4 10/ 30	50
8169 1 10 50	WEDGE ANCH. B-Z PLUS A4 10/ 50	50
8169 1 12 15	WEDGE ANCH. B-Z PLUS A4 12/ 15	25
8169 1 12 20	WEDGE ANCH. B-Z PLUS A4 12/ 20	25
8169 1 12 30	WEDGE ANCH. B-Z PLUS A4 12/ 30	25
8169 1 12 50	WEDGE ANCH. B-Z PLUS A4 12/ 50	25
8169 1 12 85	WEDGE ANCH. B-Z PLUS A4 12/ 85	25
8169 1 12 125	WEDGE ANCH. B-Z PLUS A4 12/125	25
8169 1 16 25	WEDGE ANCH. B-Z PLUS A4 16/ 25	20
8169 1 16 50	WEDGE ANCH. B-Z PLUS A4 16/ 50	20

Technical Data

Drilling Ø mm	Anchor length mm	Minimum drilling hole depth mm
8	75	60
8	80	60
8	95	60
8	115	60
10	90	75
10	95	75
10	110	75
10	130	75
12	110	90
12	115	90
12	125	90
12	145	90
12	180	90
12	220	90
16	140	105
16	165	105

Wedge Anchor BZ Plus, Stainless Steel A4

Abstract from the service conditions of the approval ETA-99/0010

Anchor capacities, transverse load without influence of axial and edge distances.

Total safety factor according to ETAG considered (γ_M and γ_F)

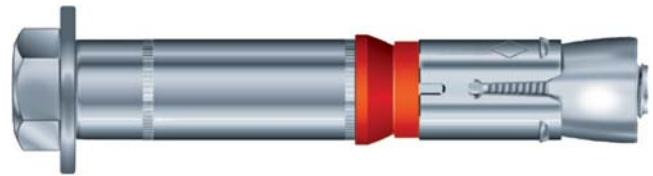
Loads and characteristic values	Wedge Anchor BZ Plus		M 8	M 10	M 12	M 16	
Admissible tensile load	C20/25	admissible N	[kN]	Cracked concrete			
	C25/30	admissible N	[kN]	1,7	3,0	4,0	6,6
	C30/37	admissible N	[kN]	1,8	3,3	4,4	7,3
	C40/50	admissible N	[kN]	2,0	3,6	4,8	8,0
	C50/60	admissible N	[kN]	2,3	4,2	5,6	9,3
Admissible tensile load	C20/25	admissible N	[kN]	Non-cracked concrete			
	C25/30	admissible N	[kN]	4,0	5,3	6,6	9,9
	C30/37	admissible N	[kN]	4,4	5,9	7,3	11,0
	C40/50	admissible N	[kN]	4,8	6,4	8,1	12,1
	C50/60	admissible N	[kN]	5,6	7,5	9,3	14,0
Admissible transverse load	C20/25	admissible N	[kN]	Cracked and non-cracked concrete			
	\geq C25/30	admissible N	[kN]	6,1	9,5	14,0	20,4
Admissible bending size		admissible N	[Nm]	6,1	19,5	14,0	23,4
				15,6	30,7	54,1	123,4
Axial and edge distances							
Anchoring depth	h_{ef}		[mm]	45	58	65	80
Distinctive axial distance	s_{cr}		[mm]	135	174	195	240
Distinctive edge distance	c_{cr}		[mm]	68	87	98	120
Minimum axial distance / for edge distance c	s_{min}/c		[mm]	Cracked concrete			
				50/60	60/80	70/100	80/120
Minimum edge distance / for axial distance s	c_{min}/s		[mm]	50/75	60/100	70/100	80/120
Minimum axial distance / for edge distance c	s_{min}/c		[mm]	Non-cracked concrete			
				50/80	60/100	65/120	80/160
Minimum edge distance / for axial distance s	c_{min}/s		[mm]	50/115	60/155	70/170	100/210
Minimum component thickness	h_{min}		[mm]	100	120	130	160
Assembly data							
Drilling hole diameter	d_o		[mm]	8	10	12	16
Clearance hole in the add-on part	d_f		[mm]	9	12	14	18
Drilling hole depth	h_1		[mm]	60	75	90	105
Torque when anchoring	T_{inst}		[mm]	20	35	55	110
Wrench size	SW		[mm]	13	17	19	24

Heavy-duty Anchor Type SZ-S

- Heavy-duty anchor type SZ-S with ETA approval, option 1, is a high performance push-through anchoring system with triple expanding special bushing which allows very high admissible loads at little axial and edge distances
- Plastic pressure ring ensures durable bracing of the fixing part against the substructure and avoids turning with the anchor during assembly
- Available in three types
- Shock-tested by the 'Bundesamt für Bevölkerungsschutz' at Bern

Application:

- Average to heavy anchoring in cracked concrete of steel supports, handrails, machines, scaffolds, consoles
- Load range: 2,0 kN - 31,3 kN
- Concrete quality: C20/25 - C50/60



Assembly:



Article No.	Article Description	QTY
8176 10 0	H.-DUTY ANCH. TYPE SZ-S 10/ 0	100
8176 10 10	H.-DUTY ANCH. TYPE SZ-S 10/ 10	50
8176 10 30	H.-DUTY ANCH. TYPE SZ-S 10/ 30	50
8176 10 50	H.-DUTY ANCH. TYPE SZ-S 10/ 50	50
8176 12 0	H.-DUTY ANCH. TYPE SZ-S 12/ 0	50
8176 12 10	H.-DUTY ANCH. TYPE SZ-S 12/ 10	50
8176 12 30	H.-DUTY ANCH. TYPE SZ-S 12/ 30	50
8176 12 50	H.-DUTY ANCH. TYPE SZ-S 12/ 50	25
8176 15 0	H.-DUTY ANCH. TYPE SZ-S 15/ 0	25
8176 15 15	H.-DUTY ANCH. TYPE SZ-S 15/ 15	25
8176 15 25	H.-DUTY ANCH. TYPE SZ-S 15/ 25	25
8176 15 45	H.-DUTY ANCH. TYPE SZ-S 15/ 45	25
8176 15 95	H.-DUTY ANCH. TYPE SZ-S 15/ 95	25
8176 18 0	H.-DUTY ANCH. TYPE SZ-S 18/ 0	20
8176 18 10	H.-DUTY ANCH. TYPE SZ-S 18/ 10	20
8176 18 20	H.-DUTY ANCH. TYPE SZ-S 18/ 20	20
8176 18 40	H.-DUTY ANCH. TYPE SZ-S 18/ 40	20
8176 18 70	H.-DUTY ANCH. TYPE SZ-S 18/ 70	20
8176 24 0	H.-DUTY ANCH. TYPE SZ-S 24/ 0	10
8176 24 20	H.-DUTY ANCH. TYPE SZ-S 24/ 20	10
8176 24 50	H.-DUTY ANCH. TYPE SZ-S 24/ 50	10

Technical Data

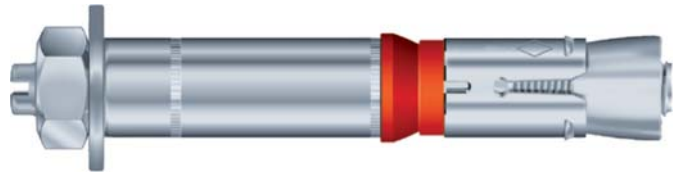
Drilling Ø mm	Anchor length mm	Minimum drilling hole depth mm
10	60	60
10	70	60
10	90	60
10	110	60
12	70	70
12	80	70
12	100	70
12	120	70
15	85	85
15	100	85
15	110	85
15	130	85
15	180	85
18	100	95
18	110	95
18	120	95
18	140	95
18	170	95
24	120	120
24	140	120
24	170	120

Heavy-duty Anchor Type SZ-B

- Heavy-duty anchor type SZ-B with ETA approval, option 1, is a high performance push-through anchoring system with triple expanding special bushing which allows very high admissible loads at little axial and edge distances
- Plastic pressure ring ensures durable bracing of the fixing part against the substructure and avoids turning with the anchor during assembly
- Available in three types
- Shock-tested by the 'Bundesamt für Bevölkerungsschutz' at Bern

Application:

- Average to heavy anchoring in cracked concrete of steel supports, handrails, machines, scaffolds, consoles
- Load range: 2,0 kN - 31,3 kN
- Concrete quality: C20/25 - C50/60



Assembly:



Article No.	Article Description	QTY
8177 10 0	H.-DUTY ANCH. TYPE SZ-B 10/ 0	100
8177 10 10	H.-DUTY ANCH. TYPE SZ-B 10/ 10	50
8177 10 30	H.-DUTY ANCH. TYPE SZ-B 10/ 30	50
8177 10 50	H.-DUTY ANCH. TYPE SZ-B 10/ 50	50
8177 10 100	H.-DUTY ANCH. TYPE SZ-B 10/100	25
8177 12 0	H.-DUTY ANCH. TYPE SZ-B 12/ 0	50
8177 12 10	H.-DUTY ANCH. TYPE SZ-B 12/ 10	50
8177 12 30	H.-DUTY ANCH. TYPE SZ-B 12/ 30	50
8177 12 50	H.-DUTY ANCH. TYPE SZ-B 12/ 50	25
8177 12 100	H.-DUTY ANCH. TYPE SZ-B 12/100	25
8177 15 0	H.-DUTY ANCH. TYPE SZ-B 15/ 0	25
8177 15 15	H.-DUTY ANCH. TYPE SZ-B 15/ 15	25
8177 15 25	H.-DUTY ANCH. TYPE SZ-B 15/ 25	25
8177 15 45	H.-DUTY ANCH. TYPE SZ-B 15/ 45	25
8177 15 95	H.-DUTY ANCH. TYPE SZ-B 15/ 95	25
8177 18 0	H.-DUTY ANCH. TYPE SZ-B 18/ 0	20
8177 18 10	H.-DUTY ANCH. TYPE SZ-B 18/ 10	20
8177 18 20	H.-DUTY ANCH. TYPE SZ-B 18/ 20	20
8177 18 40	H.-DUTY ANCH. TYPE SZ-B 18/ 40	20
8177 18 70	H.-DUTY ANCH. TYPE SZ-B 18/ 70	20
8177 18 100	H.-DUTY ANCH. TYPE SZ-B 18/100	10
8177 24 0	H.-DUTY ANCH. TYPE SZ-B 24/ 0	10
8177 24 20	H.-DUTY ANCH. TYPE SZ-B 24/ 20	10
8177 24 50	H.-DUTY ANCH. TYPE SZ-B 24/ 50	10
8177 24 100	H.-DUTY ANCH. TYPE SZ-B 24/100	5

Technical Data

Drilling Ø	Anchor length	Minimum drilling hole depth
mm	mm	mm
10	69	60
10	79	60
10	99	60
10	119	60
10	169	60
12	82	70
12	92	70
12	112	70
12	132	70
12	182	70
15	98	85
15	113	85
15	123	85
15	143	85
15	193	85
18	115	95
18	125	95
18	135	95
18	155	95
18	185	95
18	215	95
24	141	120
24	161	120
24	191	120
24	241	120

Heavy-duty Anchor Type SZ-S and type SZ-B

Abstract from the service conditions of the approval ETA-02/0030

Anchor capacities, transverse load without influence of axial and edge distances.

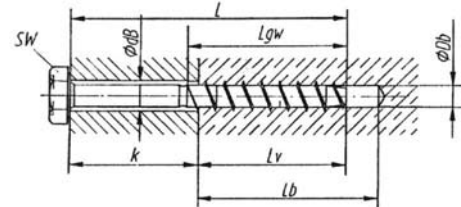
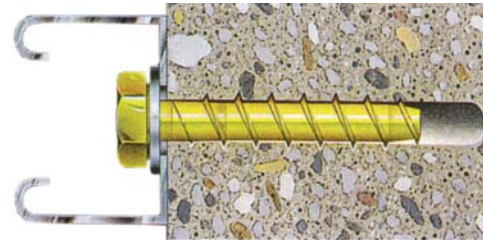
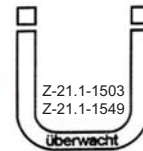
Total safety factor according to ETAG considered (γ_M and γ_F)

Loads and characteristic values	Heavy-duty Anchor Type			SZ 10	SZ 12	SZ 15	SZ 18	SZ 24	
					M 6	M 8	M 10	M 12	M 16
Admissible tensile load	C20/25	admissible N	[kN]		Cracked concrete				
	C25/30	admissible N	[kN]		2,0	4,8	6,3	9,9	13,9
	C30/37	admissible N	[kN]		2,2	5,3	7,1	11,0	15,4
	C40/50	admissible N	[kN]		2,4	5,8	7,7	12,1	16,9
	C50/60	admissible N	[kN]		2,8	6,7	9,0	14,0	19,6
Admissible tensile load	C20/25	admissible N	[kN]		Non-cracked concrete				
	C25/30	admissible N	[kN]		6,3	7,9	11,9	13,9	19,8
	C30/37	admissible N	[kN]		7,1	8,8	13,1	15,4	21,9
	C40/50	admissible N	[kN]		7,7	9,7	14,5	16,9	24,2
	C50/60	admissible N	[kN]		7,7	11,2	16,8	19,6	28,0
Admissible transverse load	C20/25	admissible V	[kN]		Cracked and non-cracked concrete				
	≥ C20/25	admissible V	[kN]		6,9	11,4	17,1	20,4	28,6
Admissible bending size		admissible M	[Nm]		6,9	11,4	17,1	22,4	31,3
					7,0	17,1	34,3	60,0	152,0
Axial and edge distances									
Anchoring depth		h_{ef}	[mm]		50	60	71	80	100
Distinctive axial distance		s_{cr}	[mm]		150	180	213	240	300
Distinctive edge distance		c_{cr}	[mm]		75	90	107	120	150
Minimum axial distance / for edge distance c	s_{min}/c		[mm]	50/80	60/100	70/120	80/160	100/180	
Minimum edge distance / for axial distance s	c_{min}/s		[mm]	50/100	60/120	70/175	80/200	100/220	
Minimum component thickness		h_{min}	[mm]		100	120	140	160	200
Assembly data									
Drilling hole diameter		d_o	[mm]		10	12	15	18	24
Clearance hole in the add-on part		d_f	[mm]		12	14	17	20	26
Drilling hole depth		h_1	[mm]		65	80	95	105	130
Torque when anchoring		T_{inst}	[Nm]		15/12*)	30/35*)	50/65*)	80/100*)	120
Wrench size		SW	[mm]		10	13	17	19	24
Wrench size hexagon socket		SW _{Hex}	[mm]		5	6	8	10	-

*) Tightening torque for SZ-SK (with countersunk head)

Screw Anchor, Blue Galvanized Steel

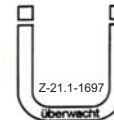
- With general technical approval number Z-21.1-1503 for anchoring in non-cracked concrete and for anchoring of light-weight ceiling claddings and suspended ceilings in concrete
- Screw anchor from $\varnothing 10.0 \times 70$ on with general technical approval number Z-21.1-1549 or ETA approval ETA 05/0010 for anchoring in cracked and non-cracked concrete
- Wrench size $\varnothing 7.5 = SW 13$, $\varnothing 10.0 = SW 16$, $\varnothing 12.0 = SW 18$
- Fixture with technical approval without screw in concrete, in the interior
- Assembly of handrails, metal structures, pipings in the sanitary and ventilation field, wood structures, joists, purlins, sills, etc.
- Assembly of light-weight suspended ceilings and ceiling claddings
- High extract values at little setting depths
- Fire protection tested; fulfills fire resistance class F 120
- Fire protection tested in concrete, sand-lime bricks, solid bricks, clinker, natural stone and hollow block concrete
- From 12 x 200 on: is used in wooden construction to fix sills (incl. appropriate washer DIN 440)
- tem No 8170 120 60: not part of the approval



Article No.	Article Description	QTY
8170 75 45	HEX. SCREW ANCH. GAL. 7.5X 45	100
8170 75 50	HEX. SCREW ANCH. GAL. 7.5X 50	100
8170 75 60	HEX. SCREW ANCH. GAL. 7.5X 60	100
8170 75 80	HEX. SCREW ANCH. GAL. 7.5X 80	50
8170 75 100	HEX. SCREW ANCH. GAL. 7.5X100	50
8170 75 120	HEX. SCREW ANCH. GAL. 7.5X120	50
8170 100 60	HEX. SCREW ANCH. GAL. 10.0X 60	50
8170 100 70	HEX. SCREW ANCH. GAL. 10.0X 70	50
8170 100 80	HEX. SCREW ANCH. GAL. 10.0X 80	50
8170 100 100	HEX. SCREW ANCH. GAL. 10.0X100	25
8170 100 120	HEX. SCREW ANCH. GAL. 10.0X120	25
8170 100 140	HEX. SCREW ANCH. GAL. 10.0X140	25
8170 100 160	HEX. SCREW ANCH. GAL. 10.0X160	25
8170 120 60	HEX. SCREW ANCH. GAL. 12.0X 60	25
8170 120 80	HEX. SCREW ANCH. GAL. 12.0X 80	25
8170 120 90	HEX. SCREW ANCH. GAL. 12.0X 90	25
8170 120 100	HEX. SCREW ANCH. GAL. 12.0X100	25
8170 120 120	HEX. SCREW ANCH. GAL. 12.0X120	25
8170 120 140	HEX. SCREW ANCH. GAL. 12.0X140	25
8170 120 160	HEX. SCREW ANCH. GAL. 12.0X160	25
8170 120 200	HEX. SCREW ANCH. GAL. 12.0X200	25
8170 120 240	HEX. SCREW ANCH. GAL. 12.0X240	25
8170 120 280	HEX. SCREW ANCH. GAL. 12.0X280	25
8170 120 320	HEX. SCREW ANCH. GAL. 12.0X320	25

Screw Anchor, Stainless Steel A4

- Screw anchor Ø 7.5 mm with general technical approval number Z-21.1-1697 for anchoring in non-cracked concrete and for anchoring of light-weighted ceiling claddings and suspended ceilings in concrete
- Screw anchor from Ø 10.0 with general technical approval number Z-21.1-1701 or ETA approval ETA 05/0010 for anchoring in cracked and non-cracked concrete
- Fixture with technical approval without screw in concrete
- Assembly of handrails, metal structures, pipings in the sanitary and ventilation field, wood structures, joists, purlins, sills, etc.
- Wrench sizes: Ø 7,5 = SW 13, Ø 10,0 = SW 16, Ø 12,0 = SW 18
- High extract values at little setting depths



Article No.	Article Description	QTY
8170 1 75 65	HEX. SCREW ANCH. A4 7.5X50/ 65	50
8170 1 75 75	HEX. SCREW ANCH. A4 7.5X60/ 75	50
8170 1 100 85	HEX. SCREW ANCH. A4 10.0X70/85	25
8170 1 120 100	HEX. SCR. ANCH.A4 12.0X100/120	25

Rail Anchor

- With general technical approval number Z-21.1-1503 – high extract values at little setting depths
- Anchor for rails with slot width of 17 mm
- Fixture with technical approval without screw in concrete, in the interior
- Assembly of handrails, metal structures, pipings in the sanitary and ventilation field, wood structures, joists, purlins, sills, etc.



Article No.	Article Description	QTY
8170 2 75 45	RAIL ANCH. TX30 GAL. 7.5X 45	100
8170 2 75 50	RAIL ANCH. TX30 GAL 7.5X 50	100
8170 2 75 60	RAIL ANCH. TX30 GAL 7.5X 60	50

Screw Anchor with Round Head

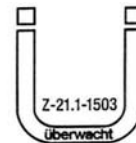
- With general technical approval number Z-21.1-1503
- Anchor for rails with slot width of 13 mm
- Fixture with technical approval without screw in concrete, in the interior



Article No.	Article Description	QTY
8170 4 75 50	SCR. ANC.W.R.HEAD TX VZ 7,5X50	100

Screw Anchor Combined Thread M8/M10

- With general technical approval number Z-21.1-1503
- Combined thread M8/M10



Article No.	Article Description	QTY
8170 60 55	HEX. SCR.ANCH. GAL7.5X55M8/10	50

Screw Anchor AGR 8170

Abstract from the service conditions of the approval Z-21.1-1503

Admissible loads in kN (concrete strength class \geq B25 and \leq B55) as well as related characteristic values of anchors and component dimensions to fix light-weighted ceiling claddings and suspended ceilings.

Anchor size			$\varnothing 7,5$	$\varnothing 7,5$	$\varnothing 10$
Admissible load per anchor [kN]			0,5	0,8	0,8
Drill bit diameter	d_0	[mm]	6,0	6,0	8,0
Cutting edge diameter	$d_{cut} \leq$	[mm]	6,4	6,4	8,45
Clearance hole in the add-on part	$d_f \leq$	[mm]	8,0	8,0	10,5
Drilling hole depth	$h_1 \geq$	[mm]	55	65	65
Anchoring depth	$h_{ef} \geq$	[mm]	45	55	55
Axial distance	$s \geq$	[mm]	200		
Edge distance	$c \geq$	[mm]	100		
Component width	$b \geq$	[mm]	200		
Minimum component thickness	$h_{min} \geq$	[mm]	$h_1 + 50$ mm		

Admissible loads (concrete strength class \geq B25 and \leq B55) under fire load in the intermediate ceilings range of light-weight ceiling claddings and suspended ceilings as well as screw distances and component dimensions.

Anchor size			$\varnothing 7,5^1)$	$\varnothing 10$
Admissible load per anchor for Fire protection requirements F 120 [kN]			0,5	0,8
Axial distance	$s \geq$	[mm]	200	
Edge distance	$c \geq$	[mm]	100	
Minimum component thickness	$h_{min} \geq$	[mm]	$h_1 + 50$ mm	
Recommended maximum tightening torque	$M_{d_{max}} =$	[mm]	20	50

1) Effective anchoring depth $h_{ef} = 40$ mm

Admissible loads for fixings in cracked and non-cracked concrete with MMS-10 to MMS 16

For the dimensioning the over-all approval notification needs to be considered

Anchor size		MMS-10		MMSplus-10		MMS-12		MMS-14	MMS-16
		gvz	A4	gvz	A4	gvz	gvz	gvz	
Approval document No Z-21.1-		-1549	-1701	-1702	-1701	-1549	-1549	-1549	
Highest admissible tensile load *) "N_{Zul}" of a single anchor without edge influence¹⁾									
Cracked concrete B 25 ³⁾	[kN]	2,0	2,5		4,1	6,8	11,3		
Non-cracked concrete B 25 ³⁾	[kN]	3,4	4,1		5,4	8,4	13,2		
Highest admissible transverse load *) "V_{Zul}" of a single anchor without edge influence¹⁾									
Cracked concrete B 25 ³⁾	[kN]	6,3	7,5		10,4	8,7	17,6	22,6	
on-cracked concrete B 25 ³⁾	[kN]	8,7	9,8	8,3	12,8	12,2	19,7	27,1	
Highest admissible transverse load *) "M_{Zul}"									
	[Nm]	31,1	29,6	27,1	39,5	61,7	81,4	133,8	
Component dimensions and characteristic values of assembly									
Nominal diameter of drill	d_0	[mm]	8,0	8,0	10,0	12,0	14,0		
Drilling hole depth	$h_1 \geq$	[mm]	75	90	75	100	85	105	130
Total anchoring depth	$h_{nom} \geq$	[mm]	65	75	65	90	75	95	115
Calculative anchoring depth	h_{ef}	40	40	40	50	50	80	95	
Min. axial distance	$s_{min} =$	[mm]	60	60	60	60	90	90	
Min. edge distance	$c_{min} =$		60	60	60	60	90	90	
Minimum component thickness	$h_{min} =$	[mm]	115	130	115	140	125	150	180
Clearance hole in the add-on part	$d_f \leq$	[mm]	12	12	14	16	18		
Recommended max. tightening torque ⁴⁾	$M_{d_{max}} =$	[mm]	50	50	80	100	150		

1) I.e. $c \geq 1,5 * h_{ef}$ und $s > 3 * h_{ef}$

2) I.e. $c \geq 10 * h_{ef}$

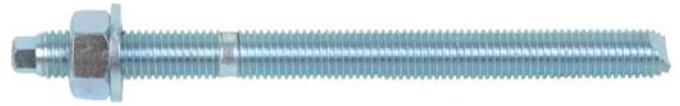
3) 3) The concrete is assessed as standardized reinforced. At higher concrete strengths correspondingly higher resistances are possible

4) Tightening torque is not determined in the approval notification, therefore the compliance with this specification is not relevant for the approval

*) The determined partial safety factors of the screw resistances as well as the partial safety factors of the influence of $\gamma_G = 1.35$ are considered in the approval notifications. For combined loads, screw groups as well as axial and edge influences please consider the determinations for the dimensioning procedure A in annex C of the ETAG or our dimensioning assistance.

Composite Anchor Rods, Galvanized Steel

- With European Technical Approval ETA-05/0231
- For heavy-duty fixings in the non-cracked interior
- Anchoring in concrete free from expansion pressure
- Little edge and axial distances
- Tight structure of the gluing compound
- Setting processes also possible in aged or humid concrete
- To fix: steel structures, supports, rails, foot and head plates, high racks, consoles, handrails, windows, crash barriers, scaffolds, sign gantries, controlling systems, machines, facades, sound-insulating walls, etc.
- The delivery is generally performed with exterior hexagon screw and setting tools



Article No.	Article Description	QTY
8161 8 110	COMP. ANCH. ROD GAL 8/110	10
8161 10 130	COMP. ANCH. ROD GAL 10/130	10
8161 10 165	COMP. ANCH. ROD GAL 10/165	10
8161 10 190	COMP. ANCH. ROD GAL 10/190	10
8161 12 160	COMP. ANCH. ROD GAL 12/160	10
8161 12 220	COMP. ANCH. ROD GAL 12/220	10
8161 16 165	COMP. ANCH. ROD GAL 16/165	10
8161 16 190	COMP. ANCH. ROD GAL 16/190	10
8161 16 250	COMP. ANCH. ROD GAL 16/250	10
8161 20 220	COMP. ANCH. ROD GAL 20/220	10
8161 20 260	COMP. ANCH. ROD GAL 20/260	10
8161 24 300	COMP. ANCH. ROD GAL 24/300	5

Technical Data	
Drilling Ø	Clamping thickness
mm	mm
10	20
12	30
12	65
12	90
14	35
14	95
18	20
18	45
18	105
25	20
25	60
28	55

Composite Anchor Rods, Stainless Steel A4

- With European Technical Approval ETA-05/0231
- For heavy-duty fixings in non-cracked exterior or in damp rooms



Article No.	Article Description	QTY
8162 8 110	COMP. ANCH. ROD A4 8/110	10
8162 10 130	COMP. ANCH. ROD A4 10/130	10
8162 12 160	COMP. ANCH. ROD A4 12/160	10
8162 16 190	COMP. ANCH. ROD A4 16/190	10
8162 20 260	COMP. ANCH. ROD A4 20/260	10
8162 24 300	COMP. ANCH. ROD A4 24/300	5

Technical Data	
Drilling Ø	Clamping thickness
mm	mm
10	20
12	30
14	35
18	45
25	60
28	55

Composite Anchor Cartridges

- With European Technical Approval ETA-05/0231 in connection with anchor rods
- For the pressure zone
- Drilling hole needs to be well-cleaned and free of grease
- Fix anchor rod by turning-knocking into the drilling hole



Article No.	Article Description	QTY
8160 8	COMP. ANCH. CARTRIDGES 8	10
8160 10	COMP. ANCH. CARTRIDGES 10	10
8160 12	COMP. ANCH. CARTRIDGES 12	10
8160 14	COMP. ANCH. CARTRIDGES 14	10
8160 16	COMP. ANCH. CARTRIDGES 16	10
8160 20	COMP. ANCH. CARTRIDGES 20	10
8160 24	COMP. ANCH. CARTRIDGES 24	5

Technical Data	
Drilling Ø	Clamping thickness
mm	mm
10	80
12	90
14	110
16	120
18	125
25	170
28	210

* not part of the approval

Abstract from the service conditions of the ETA approval 05/0231

Admissible load for each single screw in non-cracked concrete for centric traction, transversal load and diagonal pull under any angle, assembly and specific values of screws as well as corresponding screw distances and dimensions of structural components

Loads and characteristic values	Verbundanker V	M 8	M 10	M 12	M 14	M 16	M 20	M 24
Non-cracked concrete								
Admissible tensile load	C12/15 ¹⁾ admissible N [kN]	3,0	5,0	7,0	8,0	10,0	19,0	26,0
	≥C20/25 admissible N [kN]	7,9	11,9	15,9	12,0	19,8	29,8	35,7
Admissible transverse load (steel, quality 5.8)	C12/15 ¹⁾ admissible V [kN]	3,0	5,0	7,0	8,0	10,0	19,0	26,0
	≥C20/25 admissible V [kN]	5,1	8,0	12,0	12,0	22,3	34,9	50,3
Admissible transverse load (steel, quality 8.8)	≥C20/25 admissible V [kN]	8,6	13,1	18,9	-	36,0	56,0	80,6
Admissible bending moment (steel, quality 5.8)	admissible M [Nm]	10,9	21,1	37,1	59,4	94,9	185,7	320,6
Admissible bending moment (steel, quality 8.8)	admissible M [Nm]	17,1	34,3	60,0	-	152,0	296,7	513,1
Axial and edge distances								
Anchoring depth	h_{ef} [mm]	80	90	110	120	125	170	210
Axial distance	$s_{cr,N}$ [mm]	240	180	220	300	250	340	420
Edge distance	$C_{cr,N}$ [mm]	120	90	110	150	125	170	210
Minimum axial distance	s_{min} [mm]	40	45	55	120	65	85	105
Minimum edge distance	c_{min} [mm]	40	45	55	60	65	85	105
Minimum component thickness	h_{min} [mm]	110	120	140	170	160	220	260
Assembly data								
Drilling hole diameter	d_o [mm]	10	12	14	16	18	25	28
Clearance hole in the add-on part	d_f [mm]	9	12	14	16	18	22	26
Drilling hole depth	h_o [mm]	80	90	110	120	125	170	210
Torque when anchoring	T_{inst} [Nm]	10	20	40	60	80	120	180
Wrench size	SW [mm]	13	17	19	22	24	30	36
Wrench size external distance	SW _{Hex} [mm]	5	6	8	10	12	14	17

¹⁾ Recommended loads for the sizes M14 and M30 and in concrete C12/15
Upon request: the practice-oriented dimensioning program upon request.

Compound Anchor Setting Tool

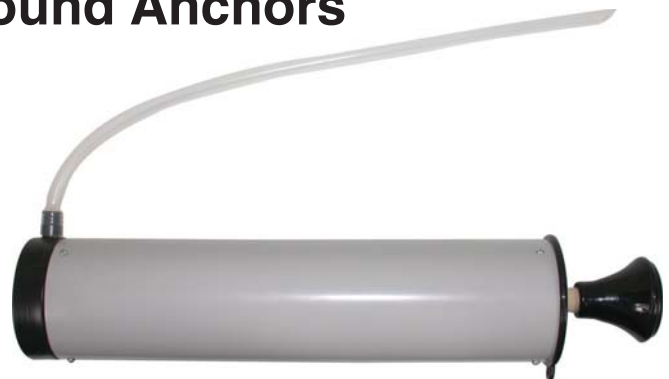
- For the easy, rapid setting of anchor rods

Article No.	Article Description	QTY
8163 16	COMP. ANCH. SETTING TOOL 16 (Appropriate for anchor rods M)	1



Blow-out Pumps for Compound Anchors

Article No.	Article Description	QTY
8163 1	BLOW-OUT PUMP 410MM	1
8163 2	BLOW-OUT PUMP 310MM	1



Cleaning Brush for Compound Anchors

Article No.	Article Description	QTY
8163 14 1	CLEANING BRUSH Ø 8 - 12	1
8163 16 1	CLEANING BRUSH Ø 14 - 18	1
8163 24 1	CLEANING BRUSH Ø 20 - 28	1



Technical Data Fit Z-B

Assembly data

Nominal diameter	Ø d _o Nominal diameter of the drill	d _f through boring of the companion structures	h _o Depth of hole		h _e Effective anchorage depth		T _{inst} Tightening torque	h _{min} Minimum thickness of the concrete plate	
			« 8d »	« 12d »	« 8d »	« 12d »		« 8d »	« 12d »
hef	-	-	« 8d »	« 12d »	« 8d »	« 12d »	-	« 8d »	« 12d »
M8	10	9	64	96	64	96	10	100	125
M10	12	12	80	120	80	120	20	110	150
M12	14	14	96	144	96	144	40	125	175
M16	18	18	128	192	128	192	80	160	225
M20	22	22	160	240	160	240	150	200	280
M24	26	26	192	288	192	288	200	240	335

Typical resistance values against tensile load for dimensioning method A with galvanized threaded rod

			M8	M10	M12	M16	M20	M24
Steel failure with standard threaded rod class 5.8								
Typical bearing capacity	N _{Rk,s}	[kN]	19	30	44	82	127	184
Partial safety factor	γ _{Ms}	-	1.5					
Steel failure with standard threaded rod class 8.8								
Typical bearing capacity	N _{Rk,s}	[kN]	29	46	67	126	196	282
Partial safety factor	γ _{Ms}	-	1.5					
Steel failure with standard threaded rod class 10.9								
Typical bearing capacity	N _{Rk,s}	[kN]	38	60	88	163	255	367
Partial safety factor	γ _{Ms}	-	1.4					

Typical resistant values against tensile load for dimensioning method A with threaded rods made of stainless steel A4

			M8	M10	M12	M16	M20	M24
Steel failure with standard threaded rod								
Typical bearing capacity	N _{Rk,s}	[kN]	26	41	59	110	171	247
Partial safety factor	γ _{Ms}	-	1.9					
Steel failure with standard threaded rod A4-80								
Typical bearing capacity	N _{Rk,s}	[kN]	29	46	67	126	196	282
Partial safety factor	γ _{Ms}	-	1.6					
Steel failure with standard threaded rods made of highly corrosion-resistant steel 1.4529								
Typical bearing capacity	N _{Rk,s}	[kN]	26	41	59	110	172	247
Partial safety factor	γ _{Ms}	-	1.5					

Anchor Rod VMZ, Galvanized

- Galvanized steel
- Approved for the use with Injection Mortar VMZ
- Suitable for components in closed rooms with the exception of damp rooms



Article No.	Article Description	QTY
8180 8 65	ANCHOR ROD VMZ GALV.8-15/65	10
8180 8 80	ANCHOR ROD VMZ GALV.8-15/80	10
8180 8 95	ANCHOR ROD VMZ GALV.8-30/95	10
8180 8 110	ANCHOR ROD VMZ GALV.8-45/110	10
8180 10 85	ANCHOR ROD VMZ GALV.10-10/85	10
8180 10 95	ANCHOR ROD VMZ GALV.10-20/95	10
8180 10 105	ANCHOR ROD VMZ GALV.10-30/105	10
8180 10 135	ANCHOR ROD VMZ GALV.10-60/135	10
8180 10 175	ANCHOR ROD VMZ GALV.10-100/175	10
8180 10 110	ANCHOR ROD VMZ GALV.10-20/110	10
8180 12 115	ANCHOR ROD VMZ GALV.12-25/115	10
8180 12 110	ANCHOR ROD VMZ GALV.12-10/110	10
8180 12 125	ANCHOR ROD VMZ GALV.12-25/125	10
8180 12 150	ANCHOR ROD VMZ GALV.12-50/150	10
8180 12 200	ANCHOR ROD VMZ GALV.12-100/200	10
8180 12 225	ANCHOR ROD VMZ GALV.12-125/225	10
8180 12 265	ANCHOR ROD VMZ GALV.12-165/265	10
8180 12 140	ANCHOR ROD VMZ GALV.12-25/140	10
8180 12 145	ANCHOR ROD VMZ GALV.12-25/145	10
8180 12 180	ANCHOR ROD VMZ GALV.12-60/180	10
8180 12 220	ANCHOR ROD VMZ GALV.12-100/220	10
8180 12 155	ANCHOR ROD VMZ GALV.12-25/155	10
8180 12 170	ANCHOR ROD VMZ GALV.12-25/170	10
8180 16 145	ANCHOR ROD VMZ GALV.16-30/145	10
8180 16 160	ANCHOR ROD VMZ GALV.16-30/160	10
8180 16 180	ANCHOR ROD VMZ GALV.16-30/180	10
8180 16 210	ANCHOR ROD VMZ GALV.16-60/210	10
8180 16 250	ANCHOR ROD VMZ GALV.16-100/250	10
8180 16 315	ANCHOR ROD VMZ GALV.16-165/315	10
8180 16 200	ANCHOR ROD VMZ GALV.16-30/200	10
8180 20 175	ANCHOR ROD VMZ GALV.20-30/175	5
8180 20 225	ANCHOR ROD VMZ GAL.20-20/225LG	5
8180 20 230	ANCHOR ROD VMZ GALV.20-25/230	5
8180 20 255	ANCHOR ROD VMZ GALV.20-50/255	5
8180 20 305	ANCHOR ROD VMZ GALV.20-100/305	5
8180 20 275	ANCHOR ROD VMZ GALV.20-50/275	5

(Dowel-Ø/ clamping strength in mm/ dowel length in mm)

Technical Data				
Effective anchor depth mm	Drill nominal Ø mm	Hole Ø Connection construction	Tightening torque Nm	Tensile capacity of cracked concrete kN
40	10	9	10	4.3
50	10	9	10	6.1
50	10	9	10	6.1
50	10	9	10	6.1
60	12	12	15	8
60	12	12	15	8
60	12	12	15	8
60	12	12	15	8
60	12	12	15	8
75	12	12	15	11.1
70	14	14	25	10
80	14	14	25	12.3
80	14	14	25	12.3
80	14	14	25	12.3
80	14	14	25	12.3
80	14	14	25	12.3
80	14	14	25	12.3
80	14	14	25	12.3
95	14	14	25	15.9
100	14	14	30	17.1
100	14	14	30	17.1
100	14	14	30	17.1
110	14	14	30	19.8
125	14	14	30	24
90	18	18	50	14.6
105	18	18	50	18.4
125	18	18	50	24
125	18	18	50	24
125	18	18	50	24
125	18	18	50	24
145	18	18	50	30
115	22	22	80	21.1
170	24	24	80	38
170	24	24	80	38
170	24	24	80	38
170	24	24	80	38
190	24	24	80	44.9

Anchor Rod VMZ, Stainless Steel A4

- **Stainless steel A4**
- Approved for the use with Injection Mortar VMZ
- Suitable for damp rooms and outdoors, also in industrial atmosphere and areas close to the sea



Article No.	Article Description	QTY
8180 8 65 1	ANCHOR ROD VMZ A4 8-15/65	10
8180 8 80 1	ANCHOR ROD VMZ A4 8-15/80	10
8180 8 95 1	ANCHOR ROD VMZ A4 8-30/95	10
8180 8 110 1	ANCHOR ROD VMZ A4 8-45/110	10
8180 10 85 1	ANCHOR ROD VMZ A4 10-10/85	10
8180 10 95 1	ANCHOR ROD VMZ A4 10-20/95	10
8180 10 105 1	ANCHOR ROD VMZ A4 10-30/105	10
8180 10 135 1	ANCHOR ROD VMZ A4 10-60/135	10
8180 10 175 1	ANCHOR ROD VMZ A4 10-100/175	10
8180 10 110 1	ANCHOR ROD VMZ A4 10-20/110	10
8180 10 130 1	ANCHOR ROD VMZ A4 10-40/130	10
8180 12 115 1	ANCHOR ROD VMZ A4 12-25/115	10
8180 12 130 1	ANCHOR ROD VMZ A4 12-40/130	10
8180 12 110 1	ANCHOR ROD VMZ A4 12-10/110	10
8180 12 125 1	ANCHOR ROD VMZ A4 12-25/125	10
8180 12 150 1	ANCHOR ROD VMZ A4 12-50/150	10
8180 12 200 1	ANCHOR ROD VMZ A4 12-100/200	10
8180 12 225 1	ANCHOR ROD VMZ A4 12-125/225	10
8180 12 265 1	ANCHOR ROD VMZ A4 12-165/265	10
8180 12 140 1	ANCHOR ROD VMZ A4 12-25/140	10
8180 12 145 1	ANCHOR ROD VMZ A4 12-25/145	10
8180 12 180 1	ANCHOR ROD VMZ A4 12-60/180	10
8180 12 220 1	ANCHOR ROD VMZ A4 12-100/220	10
8180 12 155 1	ANCHOR ROD VMZ A4 12-25/155	10
8180 12 170 1	ANCHOR ROD VMZ A4 12-25/170	10
8180 16 145 1	ANCHOR ROD VMZ A4 16-30/145	10
8180 16 160 1	ANCHOR ROD VMZ A4 16-45/160	10
8180 16 175 1	ANCHOR ROD VMZ A4 16-60/175	10
8180 16 160 1 1	ANCHOR ROD VMZ A4 16-30/160	10
8180 16 180 1	ANCHOR ROD VMZ A4 16-30/180	10
8180 16 210 1	ANCHOR ROD VMZ A4 16-60/210	10
8180 16 250 1	ANCHOR ROD VMZ A4 16-100/250	10
8180 16 315 1	ANCHOR ROD VMZ A4 16-165/315	10
8180 16 200 1	ANCHOR ROD VMZ A4 16-30/200	10
8180 20 175 1	ANCHOR ROD VMZ A4 20-30/175	5
8180 20 225 1	ANCHOR ROD VMZ A4 20-20/225LG	5
8180 20 230 1	ANCHOR ROD VMZ A4 20-25/230	5
8180 20 255 1	ANCHOR ROD VMZ A4 20-50/255	5
8180 20 305 1	ANCHOR ROD VMZ A4 20-100/305	5
8180 20 275 1	ANCHOR ROD VMZ A4 20-50/275	5

(Dowel-Ø/ clamping strength in mm/ dowel length in mm)

Technical Data				
Effective anchor depth mm	Drill nominal Ø mm	Hole Ø Connection construction	Tightening torque Nm	Tensile capacity of cracked concrete kN
40	10	9	10	4.3
50	10	9	10	6.1
50	10	9	10	6.1
50	10	9	10	6.1
60	12	12	15	8
60	12	12	15	8
60	12	12	15	8
60	12	12	15	8
60	12	12	15	8
75	12	12	15	11.1
75	12	12	15	11.1
70	14	14	25	10
70	14	14	25	10
80	14	14	25	12.3
80	14	14	25	12.3
80	14	14	25	12.3
80	14	14	25	12.3
80	14	14	25	12.3
80	14	14	25	12.3
95	14	14	25	15.9
100	14	14	30	17.1
100	14	14	30	17.1
100	14	14	30	17.1
110	14	14	30	19.8
125	14	14	30	24
90	18	18	50	14.6
90	18	18	50	14.6
90	18	18	50	14.6
105	18	18	50	18.4
125	18	18	50	24
125	18	18	50	24
125	18	18	50	24
125	18	18	50	24
145	18	18	50	30
115	22	22	80	21.1
170	24	24	80	38
170	24	24	80	38
170	24	24	80	38
170	24	24	80	38
190	24	24	80	44.9

Assortment Box FIT

- Solid plastic material box
- Break-proof
- Perfect for mobile use

Article No.	Article Description	QTY
8156 8	FIT ASSORTMENT BOX	1

Contents:

Art. No.	Art. Description	Quantity
8150 345	INJECT. MORTAR FIT Z-M 345	2
8152 15 85	PERF. SLEEVE TYPE SH 15X 85	2
8152 15 100	PERF. SLEEVE TYPE SH 15X100	2
8153 3	MIXER	2
8153 30	CLEANING BRUSH 30 X 85	1
8153 345	FIT CARTR. APPL. GUN 235+345ML	1
8156 9	EMPTY ASSORTMENT CASE	1
8163 2	BLOW-OUT PUMP 310MM	1



Assembly Box FIT

- Solid aluminium box with separate storage compartments
- Break-proof
- Lockable
- Rapid opening and closing
- Perfect for mobile use
- Well-arranged basic assortment
- Optimum choice of accessories, for most common fixing technique
- Also for fixtures according to approval
- Including handy carrying strap

Article No.	Article Description	QTY
8156 10	FIT ASSEMBLY BOX	1
8156 11	ASSEMBLY BOX EMPTY	1

Contents:

Art. No.	Art. Description	Quantity
8150 345	INJECT. MORTAR FIT Z-M 345	2
8152 8 100	ANCHOR ROD GAL TYPE S 8X110	20
8152 10 110	ANCHOR ROD GAL TYPE S 10X110	20
8152 15 85	PERF. SLEEVE TYPE SH 15X 85	10
8152 15 100	PERF. SLEEVE TYPE SH 15X100	10
8153 1	FIT MIXING NOZZLE FOR FIT Z-M	5
8153 2	FIT EXTENSION TUBE	5
8153 3	MIXER	10
8153 30	CLEANING BRUSH 30 X 85	1
8153 345	FIT CARTR. APPL. GUN 235+345ML	1
8156 11	ASSEMBLY BOX EMPTY	1
8158 13 85	FIT PERF. SLEEVE PLASTIC13X 85	10
8158 18 85	FIT PERF. SLEEVE PLASTIC18X 85	10
8159 8 80	FIT INT. THR. SLEEVE GAL M8X80	10
8159 10 80	FIT IN. THR. SLEEVE GAL M10X80	10
8163 2	BLOW-OUT PUMP 310MM	1



Anchor Rods FIT Type S

- With approval
- Galvanized steel
- Appropriate for components in closed rooms except for damp rooms

Article No.	Article Description	QTY
8152 8 100	ANCHOR ROD GAL TYPE S 8X110	10
8152 10 110	ANCHOR ROD GAL TYPE S 10X110	10

(Dimensions in mm)



Technical Data	
Minimum anchoring depth (mm)	
	80
	90

Anchor Rods FIT Type SV

- With approval
- Stainless steel V4A
- Appropriate for damp rooms and in the exterior, also in industrial atmospheres and near by the sea

Article No.	Article Description	QTY
8152 8 110	ANCHOR ROD V4A TYPE S 8X110V	10
8152 10 130	ANCHOR ROD V4A TYPE S 10X130V	10

(Dimension in mm)

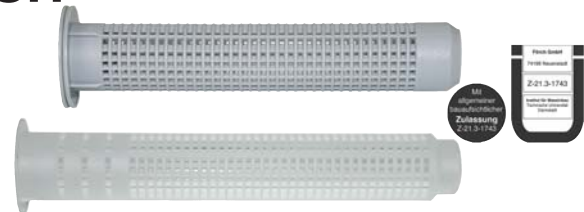


Technical Data	
Minimum anchoring depth (mm)	
	80
	90

Perforated Sleeves FIT Type SH

- With approval
 - Plastic material
- Item No 8152 15 100:**
- For brickstone walls made of solid and perforated sand-lime bricks always use the perforated sleeve SH 15 x 100

Article No.	Article Description	QTY
8152 15 85	PERF. SLEEVE TYPE SH 15X 85	ü 10
8152 15 100	PERF. SLEEVE TYPE SH 15X100	10



Technical Data		
Drilling Ø in mm	Resin filling quantity ml	
16		15
16		18

Mixer

- With approval
- To plug on item No 8153 1 mixing nozzle FIT
- Filling of perforated sleeve type SH according to the approval

Article No.	Article Description	QTY
8153 3	MIXER	10



Anchor Rods FIT

- Yellow galvanized steel 4.6
- Item No 8157 6 70:**
- Available with approval AGR 8152



Article No.	Article Description	QTY
8157 6 70	FIT ANCHOR ROD YELLOW M 6X 70	100
8157 12 115	FIT ANCHOR ROD YELLOW M12X115	z 100

Technical Data		
Drilling Ø in mm	Minimum anchoring depth	Max. clamping thickness in mm
8	50	15
14	85	19

Perforated Sleeves FIT Plastic Material

- To fix anchor rods or internal thread sleeves in hollow building material



Article No.	Article Description	QTY
8158 9 50	FIT PERF. SLEEVE PLASTIC 9X 50	10
8158 13 85	FIT PERF. SLEEVE PLASTIC13X 85	10
8158 13 130	FIT PERF. SLEEVE PLASTIC13X130	10
8158 18 85	FIT PERF. SLEEVE PLASTIC18X 85	10

Technical Data			
Drilling Ø	Internal Ø	Resin filling quantity (scale divisions)	
in mm	in mm	235/345 ml	300 ml
11	9	3	3
15	13	8	9
15	13	13	14
20	18	13	14

Perforated Sleeve FIT Metal

- To fix anchor rods and threaded rods in hollow building material

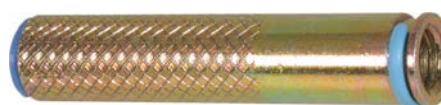


Article No.	Article Description	QTY
8158 95 1000	FIT PERF. SLEE. METAL 9.5X1000	1
8158 125 1000	FIT PERF. SL. METAL 12.5X1000	1
8158 185 1000	FIT PERF. SL. METAL 18.5X1000	1

Technical Data		
Drilling Ø in mm	Internal Ø in mm	External Ø in mm
12	9,5	11
16	12,5	14
22	18,5	20

Internal Thread Sleeves FIT

- Yellow galvanized steel
- To be used in perforated sleeves or in solid material
- For demountable metric screwings



Article No.	Article Description	QTY
8159 6 48	FIT INT. THREAD SLEEVE M 6X48	10
8159 8 80	FIT INT. THR. SLEEVE GAL M8X80	10
8159 10 80	FIT IN. THR. SLEEVE GAL M10X80	10
8159 12 80	FIT INT. THR. SL. YEL. M12X80	10

Technical Data		
Drilling Ø in mm	External Ø in mm	minimum drilling hole depth
10	8	50
14	10	90
16	14	90
18	16	90

Spot drilling aids

Recommendation for speed, driving power and cooling agent quantity

Diameter mm	Speed		Driving power			Quantity of cooling agent
	Concrete (2-3 m/s) min-1	Reinforcement (1,2-1,8 m/s) min-1	kW			l/min.
20	1900 - 2900	1150 - 1700	1	2	3	0.5 - 1
30	1300 - 1900	750 - 1150				1 - 2
40	950 - 1450	570 - 860				2 - 3
52	750 - 1100	440 - 660				3 - 4
62	620 - 950	370 - 550	2	3	3	2 - 3
72	550 - 800	320 - 480				2 - 3
82	475 - 700	280 - 420				3 - 4
107	360 - 550	220 - 340				3 - 4
122	320 - 780	190 - 280				3 - 4
142	270 - 400	160 - 240				3 - 4
162	240 - 350	140 - 210				3 - 4
182	210 - 320	120 - 190				3 - 4
212	180 - 270	110 - 160				3 - 4
250	150 - 230	100 - 140				3 - 4

1. Select the correct driving power and circumferential speed.
2. Make sure that the drill stand is firmly assembled and that dowels respectively vacuum plates are firmly seated.
3. Reduce the circumferential speed to 2-3 m/s when impinging on concrete and to 1.2 – 1.8 m/s when impinging on reinforcements.
4. Check water supply, select quantity of water in a way that the rinsing water is ‘milky’.
5. Spot drill carefully – make sure that the drill bit runs out as little as possible - important for the exact guide of the drill – no lateral friction on the tube.
6. Reduce feed pressure when impinging on reinforcements.
7. Back out the drill bit from the bore hole as soon as you get at the drilling depth
8. If the core does not remain in the bore hole, i.e. if it gets stuck in the drill bit, do not remove it by hitting on the tube. There is a high risk of bending, which would result in lateral run out.
9. Spot drill for deep drill depths using a drill bit with wider segments in order to avoid that the drill bit gets stuck.