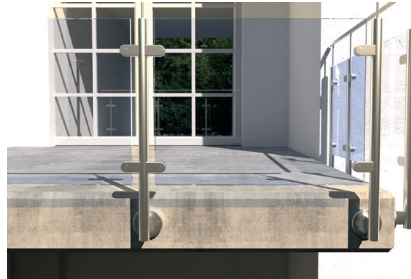


Bolt anchor FAZ II Plus

For highest demands. Powerful and flexible.



Balcony railings



Conveyor belt

Applications

- Steel constructions
- Guard rails
- Consoles
- Lifts
- Lifting platforms
- Conveyor belts
- Pumps
- Cable trays
- Façades
- Timber constructions

Advantages

- Quick and easier assembly without the need for drill hole cleaning (M8-M16) according external report.
- With the new assessment (ETA), the tensile strengths increase decisively. As a result, fewer fixing points and anchors are required.
- The new ETA confirms the use of the FAZ II Plus for dynamic loads for diameters M16-M24.
- An external independent assessment

- confirms the service life of anchorages up to 120 years. Thus, the FAZ II Plus outlasts a whole century and is perfectly suited for large, long-lasting construction projects (M10-M16).
- The FAZ II Plus allows the absorption of high seismic loads of performance category C1 and C2 for diameters M10-M24.
- The first bolt anchor M6 with ETA evaluation option 1 ensures a safe and approved anchorage.

Certificates



ETA-19/0520, in concrete
ETA-20/0897, for
dynamic load in concrete



from M10



M8-M20

Building materials

Approved for:

- Concrete C20/25 to C50/60, cracked and non-cracked

Also suitable for:

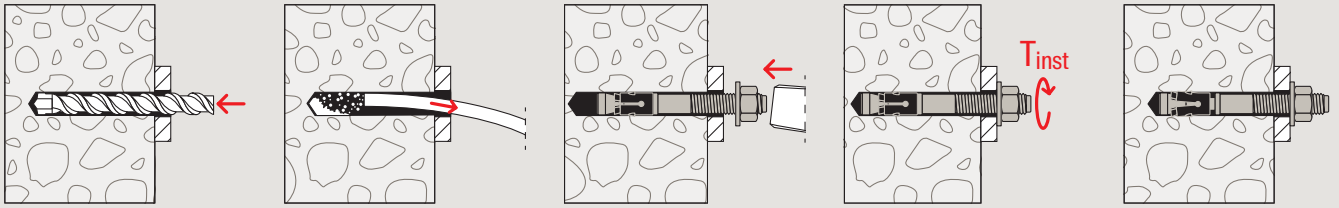
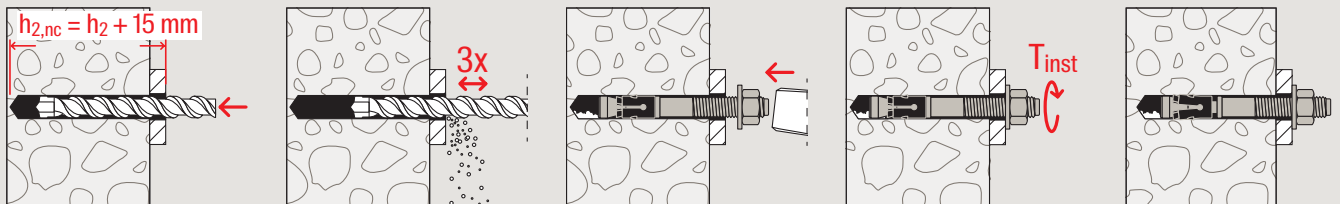
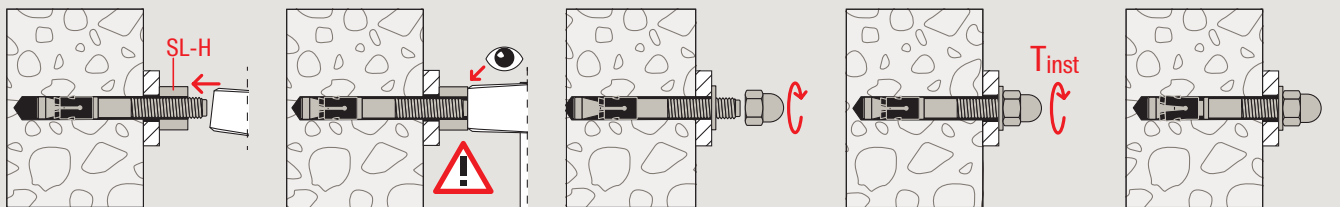
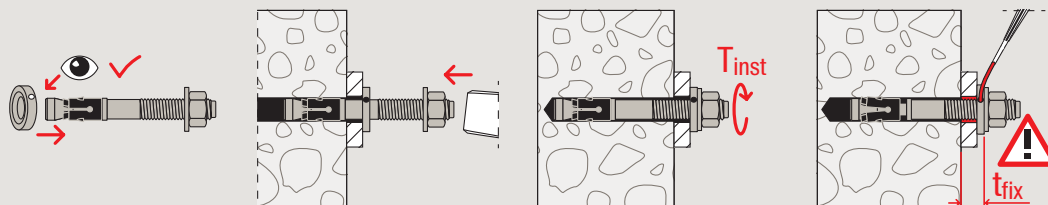
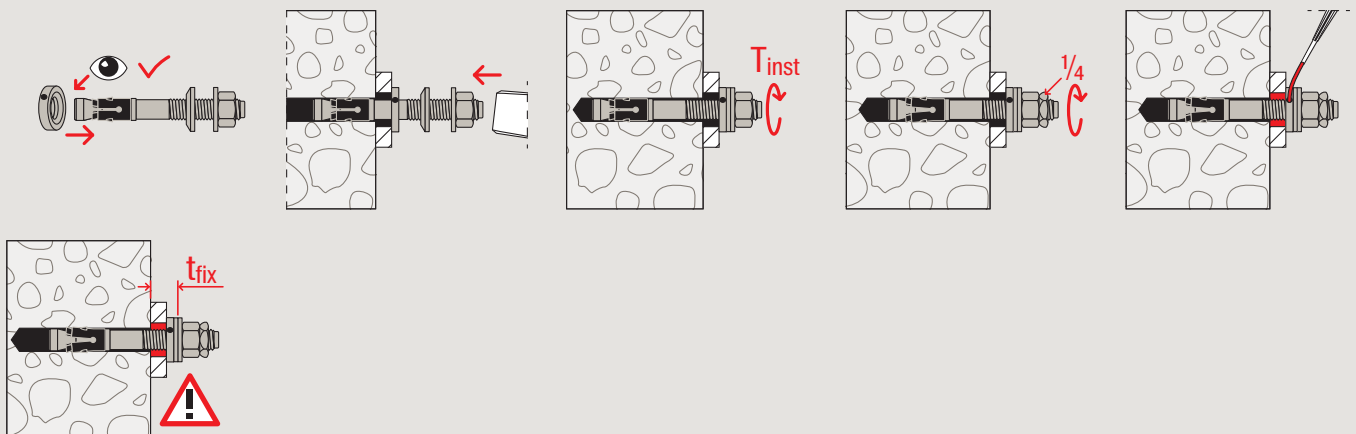
- Concrete C12/15 (classification available)
- Concrete C80/95 (classification available)
- Steel fiber concrete (classification available)
- Solid sand-lime brick (classification available)

Versions

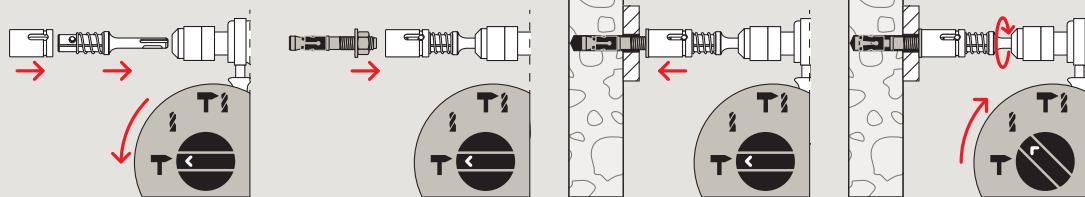
- Galvanised steel
- Stainless steel R
- Highly corrosion-resistant steel HCR

Functioning

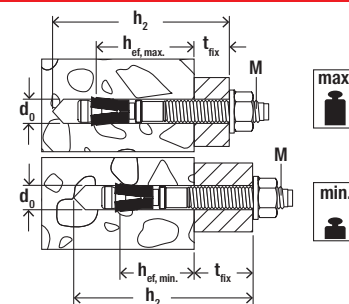
- The FAZ II Plus is suitable for pre-positioned and push-through installation and is also ideal for stand-off installation thanks to the long thread.
- The anchor is set in line with the approval once the preset installation torque is achieved.
- In the case of series installation, we recommend using the FABS or FA-ST II anchor bolt setting tools.
- In case of seismic demands, the annular gap can be filled using the filling disc FFD.
- For dynamic loads, an additional „dynamic set“ is used, which is filled with injection mortar (compressive strength $\geq 50 \text{ N/mm}^2$ e.g.: FIS V Plus, FIS EM Plus, FIS HB or FIS SB) after installation.

Push-through installation with hexagon nut**Without borehole cleaning****Push-through installation of the cup nut version with setting gauge****With backfill disc for seismic application****Installation with dynamic set**

Installation with setting tool



4



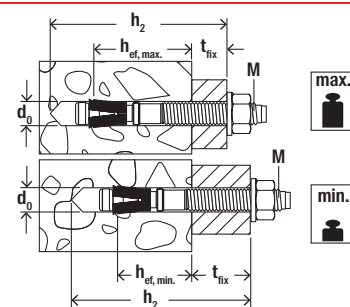
Technical data

Bolt anchor FAZ II Plus



FAZ II Plus

	Galvani- sed steel	Stainless steel	Highly corrosion- resistant steel	Ap- pro- val	Drill diameter	Max. usable length hef,stand./ hef,min.	Anchor length	Thread	Width across nut	Sales unit
	Item no.	Item no.	Item no.	ETA	d ₀ [mm]	t _{fix} [mm]	L [mm]	Ø x length [mm]	SW [mm]	[pcs]
Item	gvz	R	HCR							
FAZ II Plus 6/10	564572	564607	–	●	6	10 / –	65	M6 x 25	10	50
FAZ II Plus 6/20	564573	564608	–	●	6	20 / –	75	M6 x 35	10	50
FAZ II Plus 8/10	564574	564609	–	●	8	10 / 20	75	M8 x 38	13	50
FAZ II Plus 8/10	–	–	564635	●	8	10 / 20	75	M8 x 38	13	10
FAZ II Plus 8/30	564575	564610	–	●	8	30 / 40	95	M8 x 58	13	50
FAZ II Plus 8/30	–	–	564636	●	8	30 / 40	95	M8 x 58	13	10
FAZ II Plus 8/50	564576	564611	–	●	8	50 / 60	115	M8 x 78	13	50
FAZ II Plus 8/50	–	–	564637	●	8	50 / 60	115	M8 x 78	13	10
FAZ II Plus 8/100	564577	–	–	●	8	100 / 110	165	M8 x 128	13	25
FAZ II Plus 8/160	564578	–	–	●	8	160 / 170	225	M8 x 100	13	20
FAZ II Plus 10/10	564579	564612	–	●	10	10 / 30	95	M10 x 53	17	50
FAZ II Plus 10/10	–	–	564638	●	10	10 / 30	95	M10 x 53	17	10
FAZ II Plus 10/20	564580	–	–	●	10	20 / 40	105	M10 x 63	17	25
FAZ II Plus 10/20	–	564613	–	●	10	20 / 40	105	M10 x 63	17	50
FAZ II Plus 10/30	564581	–	–	●	10	30 / 50	115	M10 x 73	17	25
FAZ II Plus 10/30	–	564614	–	●	10	30 / 50	115	M10 x 73	17	50
FAZ II Plus 10/30	–	–	564639	●	10	30 / 50	115	M10 x 73	17	10
FAZ II Plus 10/50	564582	564615	–	●	10	50 / 70	135	M10 x 93	17	20
FAZ II Plus 10/70	–	564616	–	●	10	70 / 90	155	M10 x 113	17	20
FAZ II Plus 10/80	564583	–	–	●	10	80 / 100	165	M10 x 123	17	20
FAZ II Plus 10/100	564584	–	–	●	10	100 / 120	185	M10 x 143	17	20
FAZ II Plus 10/100	–	564617	–	●	10	100 / 120	185	M10 x 100	17	20
FAZ II Plus 10/160	564585	–	–	●	10	160 / 180	245	M10 x 193	17	20
FAZ II Plus 10/160	–	564618	–	●	10	160 / 180	245	M10 x 100	17	20
FAZ II Plus 12/10	564586	564619	–	●	12	10 / 30	110	M12 x 61	19	20
FAZ II Plus 12/10	–	–	564640	●	12	10 / 30	110	M12 x 61	19	10
FAZ II Plus 12/20	564587	564620	–	●	12	20 / 40	120	M12 x 71	19	20
FAZ II Plus 12/30	564588	564621	–	●	12	30 / 50	130	M12 x 81	19	20
FAZ II Plus 12/30	–	–	564641	●	12	30 / 50	130	M12 x 81	19	10



Technical data

4

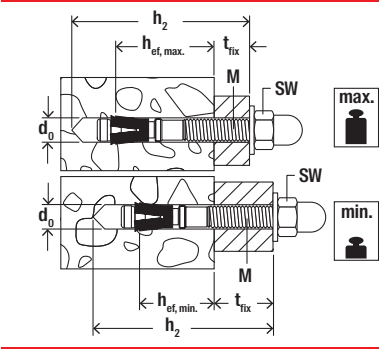
Bolt anchor FAZ II Plus



FAZ II Plus

	Galvani- sed steel	Stainless steel	Highly corrosion- resistant steel	Ap- pro- val	Drill diameter	Max. usable length hef,stand./ hef,min.	Anchor length	Thread	Width across nut	Sales unit
	Item no.	Item no.	Item no.	ETA	d ₀ [mm]	t _{fix} [mm]	L [mm]	Ø x length [mm]	SW [mm]	[pcs]
Item	gvz	R	HCR							
FAZ II Plus 12/50	564589	564622	–	●	12	50 / 70	150	M12 x 101	19	20
FAZ II Plus 12/60	–	564623	–	●	12	60 / 80	160	M12 x 111	19	20
FAZ II Plus 12/80	564590	–	–	●	12	80 / 100	180	M12 x 131	19	20
FAZ II Plus 12/100	564591	564624	–	●	12	100 / 120	200	M12 x 151	19	20
FAZ II Plus 12/160	564592	–	–	●	12	160 / 180	260	M12 x 186	19	10
FAZ II Plus 12/160	–	564625	–	●	12	160 / 180	260	M12 x 100	19	20
FAZ II Plus 12/200	564593	–	–	●	12	200 / 220	300	M12 x 186	19	10
FAZ II Plus 16/5	564594	–	–	●	16	5 / 25	128	M16 x 64	24	10
FAZ II Plus 16/5	–	564626	–	●	16	5 / 25	128	M16 x 64	24	20
FAZ II Plus 16/25	564595	–	564642	●	16	25 / 45	148	M16 x 84	24	10
FAZ II Plus 16/25	–	564627	–	●	16	25 / 45	148	M16 x 84	24	20
FAZ II Plus 16/50	564596	–	564643	●	16	50 / 70	173	M16 x 109	24	10
FAZ II Plus 16/50	–	564628	–	●	16	50 / 70	173	M16 x 109	24	20
FAZ II Plus 16/60	–	564629	–	●	16	60 / 80	183	M16 x 119	24	20
FAZ II Plus 16/100	564597	564630	–	●	16	100 / 120	223	M16 x 159	24	10
FAZ II Plus 16/160	564598	–	–	●	16	160 / 180	283	M16 x 189	24	10
FAZ II Plus 16/200	564599	–	–	●	16	200 / 220	323	M16 x 189	24	10
FAZ II Plus 16/250	564600	–	–	●	16	250 / 270	373	M16 x 100	24	10
FAZ II Plus 16/300	564601	–	–	●	16	300 / 320	423	M16 x 100	24	10
FAZ II Plus 20/30	564602	–	–	●	20	30 / -	172	M20 x 54	30	5
FAZ II Plus 20/30	–	564631	–	●	20	30 / -	172	M20 x 54	30	4
FAZ II Plus 20/60	564603	–	–	●	20	60 / -	202	M20 x 84	30	5
FAZ II Plus 20/60	–	564632	–	●	20	60 / -	202	M20 x 84	30	4
FAZ II Plus 20/160	564604	–	–	●	20	160 / -	302	M20 x 100	30	5
FAZ II Plus 24/30	564605	–	–	●	24	30 / -	205	M24 x 58	36	5
FAZ II Plus 24/30	–	564633	–	●	24	30 / -	205	M24 x 58	36	4
FAZ II Plus 24/60	564606	–	–	●	24	60 / -	235	M24 x 88	36	5
FAZ II Plus 24/60	–	564634	–	●	24	60 / -	235	M24 x 88	36	4

Technical data

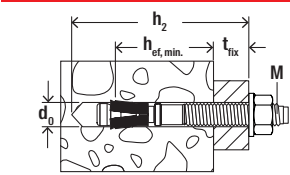


Bolt anchor FAZ II Plus H (version with cap nut)



FAZ II Plus H

	Galvani- sed steel	Stainless steel	Ap- pro- val	Seismic-Ap- proval	Drill diameter	Min. drill hole depth for through fixings	Max. usable length hef,stand./ hef,min.	Anchor length	Thread	Width across nut	Sales unit
	Item no.	Item no.	ETA		d ₀ [mm]	h ₂ [mm]	t _{fix} [mm]	L [mm]	Ø x length [mm]	SW [mm]	[pcs]
Item	gvz	R									
FAZ II Plus 10/10 H	564687	564691	●	C1 / C2	10	87	10 / 30	95	M10 x 53	17	20
FAZ II Plus 10/20 H	564688	564692	●	C1 / C2	10	97	20 / 40	105	M10 x 63	17	20
FAZ II Plus 12/10 H	564689	564693	●	C1 / C2	12	99	10 / 30	109	M12 x 61	19	20
FAZ II Plus 12/20 H	564690	564694	●	C1 / C2	12	109	20 / 40	119	M12 x 71	19	20



Technical data

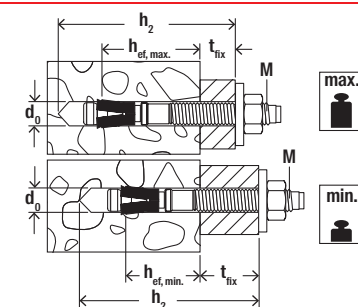
Bolt anchor FAZ II Plus K / Bolt anchor FAZ II Plus K GS (short version)



FAZ II Plus K

FAZ II Plus K GS

	Galvani- sed steel	Stainless steel	Ap- pro- val	Drill diameter	Min. drill hole depth for through fixings	Anchor length	Thread	Washer (outer dia- meter x thickness)	Sales unit
	Item no.	Item no.	ETA	d ₀ [mm]	h ₂ [mm]	L [mm]	Ø x length [mm]	[mm]	[pcs]
Item	gvz	R							
FAZ II Plus 8/5 K	564671	564676	●	8	45	60	M8 x 23	16 x 1.6	50
FAZ II Plus 10/10 K	564672	564677	●	10	65	75	M10 x 33	20 x 2	50
FAZ II Plus 10/20 K	564673	–	●	10	75	85	M10 x 43	20 x 2	25
FAZ II Plus 10/20 K	–	564678	●	10	75	85	M10 x 43	20 x 2	50
FAZ II Plus 12/10 K	564674	564679	●	12	80	90	M12 x 41	18 x 2	20
FAZ II Plus 12/20 K	564675	564680	●	12	90	100	M12 x 51	18 x 2	20
FAZ II Plus 10/10 K GS	564681	–	●	10	65	75	M10 x 33	25 x 3	50
FAZ II Plus 12/10 K GS	564682	–	●	12	80	90	M12 x 41	30 x 3	20



Technical data

Bolt anchor FAZ II Plus GS (with large washer) / Bolt anchor FAZ II Plus HBS (washer compliant to timber construction standard DIN 1052)



FAZ II Plus GS

FAZ II Plus HBS

	Galvani- sed steel	Stainless steel	Ap- pro- val	Seismic-Ap- proval	Drill dia- meter	Min. drill hole depth for through fixings	Max. usable length hef,stand./ hef,min.	Anchor length	Thread	Width across nut	Washer (ou- ter diameter x thickness)	Sales unit
	Item no.	Item no.	ETA		d ₀ [mm]	h ₂ [mm]	t _{fix} [mm]	L [mm]	Ø x length [mm]	SW [mm]	[mm]	[pcs]
Item	gvz	R										
FAZ II Plus 8/10 GS	564644	–	●	C1	8	65	10 / 20	75	M8 x 38	13	44 x 4	50
FAZ II Plus 8/10 GS	–	564663	●	C1	8	65	10 / 20	75	M8 x 38	13	22 x 2.5	50
FAZ II Plus 8/30 GS	564645	564664	●	C1	8	85	30 / 40	95	M8 x 58	13	22 x 2.5	50
FAZ II Plus 10/10 GS	564646	564665	●	C1 / C2	10	85	10 / 30	95	M10 x 53	17	25 x 3	50
FAZ II Plus 10/30 GS	564647	–	●	C1 / C2	10	105	30 / 50	115	M10 x 73	17	25 x 3	25
FAZ II Plus 10/30 GS	–	564666	●	C1 / C2	10	105	30 / 50	115	M10 x 73	17	25 x 3	50
FAZ II Plus 12/10 GS	564648	564667	●	C1 / C2	12	100	10 / 30	110	M12 x 61	19	30 x 3	20
FAZ II Plus 12/20 GS	564649	–	●	C1 / C2	12	110	20 / 40	120	M12 x 71	19	30 x 3	20
FAZ II Plus 12/30 GS	564650	564668	●	C1 / C2	12	120	30 / 50	130	M12 x 81	19	30 x 3	20
FAZ II Plus 12/50 GS	564651	–	●	C1 / C2	12	140	50 / 70	150	M12 x 101	19	30 x 3	20
FAZ II Plus 12/80 GS	564652	–	●	C1 / C2	12	170	80 / 100	180	M12 x 131	19	44 x 4	20
FAZ II Plus 12/100 GS	564654	–	●	C1 / C2	12	190	100 / 120	200	M12 x 151	19	44 x 4	20
FAZ II Plus 12/100 GS	564653	–	●	C1 / C2	12	190	100 / 120	200	M12 x 151	19	30 x 3	20
FAZ II Plus 12/120 GS	564655	–	●	C1 / C2	12	210	120 / 140	220	M12 x 171	19	30 x 3	20
FAZ II Plus 12/120 GS	564656	–	●	C1 / C2	12	210	120 / 140	220	M12 x 171	19	44 x 4	20
FAZ II Plus 12/140 GS	564657	–	●	C1 / C2	12	230	140 / 160	240	M12 x 186	19	44 x 4	20
FAZ II Plus 12/160 GS	564658	564669	●	C1 / C2	12	250	160 / 180	260	M12 x 186	19	44 x 4	20
FAZ II Plus 12/180 GS	564659	–	●	C1 / C2	12	270	180 / 200	280	M12 x 186	19	44 x 4	20
FAZ II Plus 16/160 GS	–	564670	●	C1 / C2	16	270	160 / 180	283	M16 x 100	24	56 x 5	4
FAZ II Plus 16/160 GS	564661	–	●	C1 / C2	16	270	160 / 180	283	M16 x 189	24	56 x 5	10
FAZ II Plus 12/200 GS	564660	–	●	C1 / C2	12	290	200 / 220	300	M12 x 186	19	44 x 4	20
FAZ II Plus 16/200 GS	564662	–	●	C1 / C2	16	310	200 / 220	323	M16 x 189	24	56 x 5	10
FAZ II Plus 12/100 HBS	564683	–	●	C1 / C2	12	190	100 / 120	205	M12 x 151	19	58 x 6	20
FAZ II Plus 12/120 HBS	564684	–	●	C1 / C2	12	210	120 / 140	225	M12 x 171	19	58 x 6	20
FAZ II Plus 16/160 HBS	564685	–	●	C1 / C2	16	270	160 / 180	278	M16 x 189	24	68 x 6	10
FAZ II Plus 16/200 HBS	564686	–	●	–	16	310	200 / 220	328	M16 x 189	24	68 x 6	10

Cap nut FAZ II Plus

Cap nut FAZ II Plus



Cap nut FAZ II Plus

	Galvani- sed steel	Stainless steel	Approval		Thread	Cap nut height	Width across nut	Sales unit
	Item no. gvz	Item no. R	ETA	DIBt	Ø x length [mm]	[mm]	SW [mm]	[pcs]
Item								
Cap nut FAZ II Plus M10	569126 ¹⁾	569127 ¹⁾	●	●	M10	23	17	20
Cap nut FAZ II Plus M12	569128 ¹⁾	569129 ¹⁾	●	●	M12	29	19	20

¹⁾ Can be combined with all bolt anchors FAZ II M 10 and M12 in accordance with approval.

Accessories

Accessories



Filling disc FFD

FABS

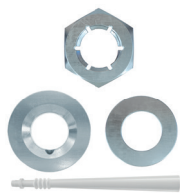
FA-ST II

FA-ST II Set

	Item no.	Internal diameter D	External-Ø	Match	Contents	Sales unit
		[mm]	d [mm]			[pcs]
Item						
FFD 26 x 12 x 6	538458	12	26	FAZ II Plus M8/M10		4
FFD 26x12x6 R	541986	12	26	FAZ II Plus M8/M10 R		4
FFD 30 x 14 x 6	538459	14	30	FAZ II Plus M12		4
FFD 30x14x6 R	541987	14	30	FAZ II Plus M12 R		4
FFD 38 x 19 x 7	538460	19	38	FAZ II Plus M16		4
FFD 38x19x7 R	541988	19	40	FAZ II Plus M16 R		4
FFD 46 x 23 x 8	538461	23	46	FAZ II Plus M20		4
FFD 46x23x8 R	541989	23	50	FAZ II Plus M20 R		4
FFD 54 x 28 x 10	538462	28	54	FAZ II Plus M24		4
FFD 54x28x10 R	541990	28	55	FAZ II Plus M24 R		4
FABS	077937	–	–	FAZ II Plus for diameter from M6 up to M12		1
FA-ST II M10	558790	–	–	FAZ II M10, FBZ M10, FBN II M10, EXA M10	SDS Adapter; Socket SW17	1
FA-ST II M12	558791	–	–	FAZ II M12, FBZ M12, FBN II M12, EXA M12	SDS Adapter; Socket SW19	1
FA-ST II M16	558792	–	–	FAZ II M16, FBZ M16, FBN II M16, EXA M16	SDS Adapter; Socket SW24	1
FA-ST II Set	558789	–	–	–	SDS Adapter; Socket SW17, SW19, SW24	1

Accessories Dynamic set

Accessories Dynamic set



Dynamic set

	Item no.	External-Ø d [mm]	Thickness [mm]	Min. fixture thickness t _{fix} [mm]	Match	Sales unit [pcs]
Item						
Dynamic set M16	568785	38	11	15	FAZ II Plus M16	10
Dynamic set M20	568786	46	13	20	FAZ II Plus M20	10
Dynamic set M24	568787	54	17	24	FAZ II Plus M24	10
Dynamic set M16 R	568788	40	11	15	FAZ II Plus M16 R	10
Dynamic set M20 R	568789	50	13	20	FAZ II Plus M20 R	10
Dynamic set M24 R	568790	55	17	24	FAZ II Plus M24 R	10

Loads

Bolt anchor FAZ II Plus

Permissible loads of a single anchor¹⁾ in normal concrete of strength class C20/25.

For the design the complete current assessment ETA-19/0520 of 21.02.2022 has to be considered.

Type	Material/ surface ²⁾	Effective anchorage depth h_{ef} [mm]	Minimum member thickness h_{min} [mm]	Instal- lation torque T_{inst} [Nm]	Cracked concrete				Non-cracked concrete			
					Permissible tension (N_{perm}) and shear loads (V_{perm}); minimum spacing (s_{min}) and edge distances (c_{min}) with reduced loads				Permissible tension (N_{perm}) and shear loads (V_{perm}); minimum spacing (s_{min}) and edge distances (c_{min}) with reduced loads			
					$N_{perm}^{3)}$ [kN]	$V_{perm}^{3)}$ [kN]	$s_{min}^{3)}$ [mm]	$c_{min}^{3)}$ [mm]	$N_{perm}^{3)}$ [kN]	$V_{perm}^{3)}$ [kN]	$s_{min}^{3)}$ [mm]	$c_{min}^{3)}$ [mm]
FAZ II Plus 6	gvz	40	80	8	0.7	4.3	35	40	5.0	4.3	35	40
	gvz	80	120	8	0.7	4.3	35	40	5.0	4.3	35	40
	R	40	80	8	0.7	5.0	35	40	5.0	5.0	35	40
	R	80	120	8	0.7	5.0	35	40	5.0	5.0	35	40
FAZ II Plus 8	gvz	35	80	20	2.6	8.5	35	40	4.8	9.3	40	40
	gvz	90	140	20	3.8	9.3	35	40	6.7	9.3	40	40
	R	35	80	20	2.6	8.5	35	40	4.8	10.1	40	40
	R	90	140	20	3.8	10.1	35	40	6.7	10.1	40	40
FAZ II Plus 10	gvz	40	80	45	4.1	10.8	40	45	5.9	15.0	40	45
	gvz	100	150	45	6.2	15.0	40	45	9.5	15.0	40	45
	R	40	80	45	4.1	10.8	40	45	5.9	15.1	40	45
	R	100	150	45	6.2	15.1	40	45	9.5	15.1	40	45
FAZ II Plus 12	gvz	50	100	60	5.8	18.0	50	55	8.3	21.1	50	55
	gvz	125	190	60	9.5	21.1	50	55	10.5	21.1	50	55
	R	50	100	60	5.8	18.0	50	55	8.3	24.1	50	55
	R	125	190	60	9.5	24.1	50	55	10.5	24.1	50	55
FAZ II Plus 16	gvz	65	140	110	8.6	27.5	65	65	12.3	39.1	65	65
	gvz	160	240	110	12.9	39.1	65	65	18.4	39.1	65	65
	R	65	140	110	8.6	27.5	65	65	12.3	39.3	65	65
	R	160	240	110	12.9	40.6	65	65	18.4	40.6	65	65
FAZ II Plus 20	gvz	100	160	200	16.4	47.4	95	85	23.4	47.4	95	95
	gvz	180	270	200	16.4	47.4	95	85	23.4	47.4	95	95
	R	100	160	200	16.4	52.5	95	85	23.4	61.7	95	95
	R	180	270	200	16.4	61.7	95	85	23.4	61.7	95	95
FAZ II Plus 24	gvz	125	200	270	22.9	73.3	100	100	32.7	73.3	100	135
	R	125	200	270	22.9	73.3	100	100	32.7	90.3	100	135

¹⁾ Design according to EN 1992-4:2018 (for static resp. quasi-static loads). The partial safety factors for material resistance as regulated in the ETA as well as a partial safety factor for load actions of $\gamma_L = 1.4$ are considered. As a single anchor counts e.g. an anchor with a spacing $s \geq 3 \times h_{ef}$ and an edge distance $c \geq 1.5 \times h_{ef}$. Accurate data see ETA.

²⁾ Further steel grades, versions and technical data see ETA, e.g. for dry internal conditions, galvanised steel (gvz); for damp interiors and for outdoor use, stainless steel (R).

³⁾ In the case of combinations of tension and shear loads, bending moments with reduced or minimum spacing and edge distances (anchor groups), the design must be carried out in accordance with the provisions of the complete ETA and the provisions of the EN 1992-4:2018. We recommend using our anchor design software C-FIX.

Loads

Bolt anchor FAZ II Plus dynamic

Design values for cyclic fatigue loading¹⁾ of a single anchor in cracked or non-cracked normal concrete of strength class C20/25²⁾.
For the design the complete current assessment ETA-20/0897 of 20.12.2022 has to be considered.

Type	Material/ surface	Effective ancho- rage depth	Mini- mum member thick- ness	Instal- lation torque	Cracked concrete				Non-cracked concrete			
		h_{ef}	h_{min}	T_{inst}	Design values of tension ($\Delta N_{Ed,max}$) and shear loads ($\Delta V_{Ed,max}$); minimum spacing (s_{min}) and edge distances (c_{min}) with reduced loads				Design values of tension ($\Delta N_{Ed,max}$) and shear loads ($\Delta V_{Ed,max}$); minimum spacing (s_{min}) and edge distances (c_{min}) with reduced loads			
		[mm]	[mm]	[Nm]	$\Delta N_{Ed,max}^{(3)}$ [kN]	$\Delta V_{Ed,max}^{(3)}$ [kN]	$s_{min}^{(3)}$ [mm]	$c_{min}^{(3)}$ [mm]	$\Delta N_{Ed,max}^{(3)}$ [kN]	$\Delta V_{Ed,max}^{(3)}$ [kN]	$s_{min}^{(3)}$ [mm]	$c_{min}^{(3)}$ [mm]
FAZ II Plus 16	gvz	65	140	110	6.0	4.7	65	65	6.4	4.7	65	65
	gvz	85	140	110	6.4	4.7	65	65	6.4	4.7	65	65
	gvz	160	240	110	6.4	4.7	65	65	6.4	4.7	65	65
	R	65	140	110	3.1	6.0	65	65	3.1	6.0	65	65
	R	85	140	110	3.1	6.0	65	65	3.1	6.0	65	65
	R	160	240	110	3.1	6.0	65	65	3.1	6.0	65	65
FAZ II Plus 20	gvz	100	160	200	8.8	6.1	95	85	8.8	6.1	95	95
	gvz	180	270	200	8.8	6.1	95	85	8.8	6.1	95	95
	R	100	160	200	4.7	9.4	95	85	4.7	9.4	95	95
	R	180	270	200	4.7	9.4	95	85	4.7	9.4	95	95
FAZ II Plus 24	gvz	125	200	270	14.7	9.5	100	100	14.7	9.5	100	135
	R	125	200	270	6.9	13.6	100	100	6.9	13.6	100	135

¹⁾ The design values of the cyclic fatigue loading apply for load cycles $> 10^6$ in accordance with design method I acc. to TR061 – for unknown static lower load. If the static lower load is known and / or for lower number of load cycles higher load values are possible. The partial safety factors as regulated in the design standard are considered. As a single anchor counts e.g. an anchor with a spacing $s \geq 3 \times h_{ef}$. Drill hole cleaning acc. to assessment.

²⁾ For higher concrete strength classes up to C50/60 higher permissible loads may be possible. - see assessment. The concrete is assumed to be standard-reinforced.

³⁾ In the case of combinations of tensile loads and shear loads, with reduced or minimum spacing and edge distances (anchor groups) the design must be carried out in accordance with the provisions of the complete assessment.