

Bolt anchor FAZ II

For highest demands. Powerful and flexible.

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Balcony railings



Steel girders

Applications

- Steel constructions
- Guard rails
- Consoles
- Ladders
- Cable trays
- Machines
- Staircases
- Gates
- Façades
- Timber constructions

Advantages

- According to the new assessment (ETA) the tensile load capacities are decisively increased. This requires less anchors.
- The variable anchorage depths for the sizes M8 to M16 allow for the first time a millimeter-accurate adjustment to the loads.
- The design with cap nut offers a visually attractive anchoring and protects against

- injuries due to the round head shape.
- The first bolt anchor M6 with ETA Assessment for Option 1, for secure and approved anchorage.
- The international approvals guarantees maximum safety and the best performance.
- Approved for diamond-drilled holes.

Certificates



ETA-05/0069, for cracked concrete



from M10



ICC ESR-2948



Fire resistance classification R120



INOX STAINLESS STEEL



ZTV



Building materials

Approved for:

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

Also suitable for:

- Concrete C12/15
- Concrete C80/95
- Natural stone with dense structure

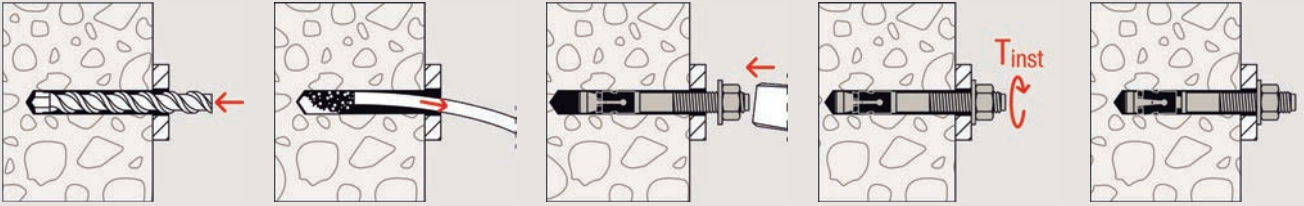
Versions

- Zinc-plated steel
- Stainless steel R
- Highly corrosion-resistant steel HCR

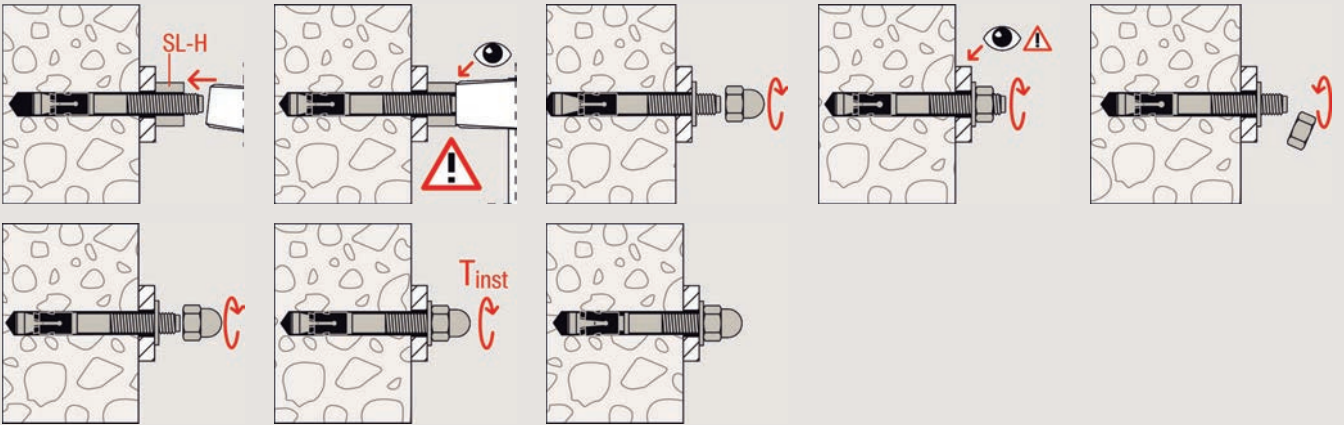
Functioning

- The FAZ II is suitable for pre-positioned and push-through installation and is also ideal for stand-off installation thanks to the long thread.
- When applying the torque, the cone bolt is pulled into the expansion sleeve and expand it against the drill hole wall.
- 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 anchor bolt setting tool or our setting tool FA-ST.

Push-through installation with hexagon nut

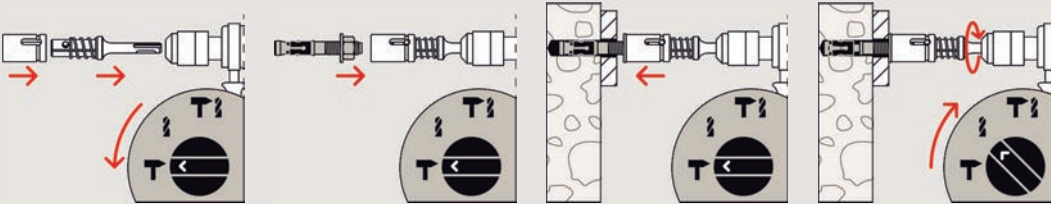


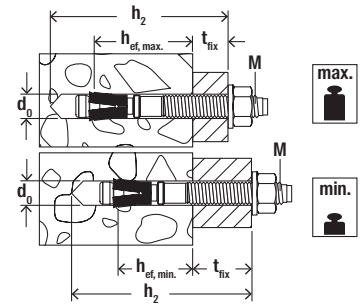
Push-through installation of the cup nut version with setting gauge



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Installation with setting tool





Technical data

Bolt anchor FAZ II

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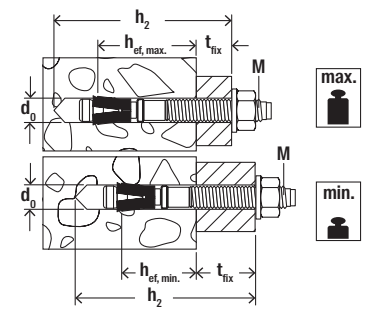


FAZ II

Item	Zinc-plated steel	Stainless steel	Highly corrosion resistant steel	Approval		Seismic-Approval	Drill hole diameter	Min. drill hole depth for through fixings	Max. usable length hef,max./ hef,min.	Anchor length	Thread	Width across nut	Sales unit
	Item No.	Item No.	Item No.	ETA	ICC		d ₀ [mm]	h ₂ [mm]	t _{fix} [mm]	l [mm]	Ø x length [mm]	SW [mm]	[pcs]
	gvz	R	HCR										
FAZ II 6/10	542621	542623	—	●	—	—	6	60	10/-	65	M 6 x 25	10	50
FAZ II 6/20	542622	542624	—	●	—	—	6	70	20/-	75	M 6 x 35	10	50
FAZ II 8/10	094871 ¹⁾	501396 ¹⁾	—	●	●	C1	8	65	10/20	75	M 8 x 38	13	50
FAZ II 8/10	—	—	501428 ¹⁾	●	●	C1	8	65	10/20	75	M 8 x 38	13	10
FAZ II 8/30	094877 ¹⁾	501399 ¹⁾	—	●	●	C1	8	85	30/40	95	M 8 x 58	13	50
FAZ II 8/30	—	—	501429 ¹⁾	●	●	C1	8	85	30/40	95	M 8 x 58	13	10
FAZ II 8/50	094878 ¹⁾	501401	—	●	●	C1	8	105	50/60	115	M 8 x 78	13	50
FAZ II 8/100	094879 ¹⁾	—	—	●	●	C1	8	155	100/110	165	M 8 x 128	13	25
FAZ II 8/160	503251 ¹⁾	—	—	●	●	C1	8	215	160/170	225	M 8 x 100	13	20
FAZ II 10/10	094981	501403	—	●	●	C1 / C2	10	85	10/30	95	M 10 x 53	17	50
FAZ II 10/10	—	—	501430	●	●	C1	10	85	10/30	95	M 10 x 53	17	10
FAZ II 10/20	094982	—	—	●	●	C1 / C2	10	95	20/40	105	M 10 x 63	17	25
FAZ II 10/20	—	501406	—	●	●	C1 / C2	10	95	20/40	105	M 10 x 63	17	50
FAZ II 10/30	094983	—	—	●	●	C1 / C2	10	105	30/50	115	M 10 x 73	17	25
FAZ II 10/30	—	501407	—	●	●	C1 / C2	10	105	30/50	115	M 10 x 73	17	50
FAZ II 10/30	—	—	503185	●	●	C1	10	105	30/50	115	M 10 x 73	17	10
FAZ II 10/50	094984	501409	—	●	●	C1 / C2	10	125	50/70	135	M 10 x 93	17	20
FAZ II 10/70	—	501410	—	●	●	C1 / C2	10	145	70/90	155	M 10 x 113	17	20
FAZ II 10/80	094985	—	—	●	●	C1 / C2	10	155	80/100	165	M 10 x 123	17	20
FAZ II 10/100	—	501411	—	●	●	C1 / C2	10	175	100/120	185	M 10 x 100	17	20
FAZ II 10/100	094986	—	—	●	●	C1 / C2	10	175	100/120	185	M 10 x 143	17	20
FAZ II 10/160	—	501412	—	●	●	—	10	235	160/180	245	M 10 x 100	17	20
FAZ II 10/160	503252	—	—	●	●	—	10	235	160/180	245	M 10 x 193	17	20
FAZ II 12/10	095419	501413	—	●	●	C1 / C2	12	100	10/30	110	M 12 x 61	19	20
FAZ II 12/10	—	—	503186	●	●	C1	12	100	10/30	110	M 12 x 61	19	10
FAZ II 12/20	095420	501415	—	●	●	C1 / C2	12	110	20/40	120	M 12 x 71	19	20
FAZ II 12/30	095421	501416	—	●	●	C1 / C2	12	120	30/50	130	M 12 x 81	19	20
FAZ II 12/30	—	—	501431	●	●	C1	12	120	30/50	130	M 12 x 81	19	10
FAZ II 12/50	095446	501419	—	●	●	C1 / C2	12	140	50/70	150	M 12 x 101	19	20
FAZ II 12/60	—	501420	—	●	●	C1 / C2	12	150	60/80	160	M 12 x 111	19	20
FAZ II 12/80	095454	—	—	●	●	C1 / C2	12	170	80/100	180	M 12 x 131	19	20
FAZ II 12/100	095470	501421	—	●	●	C1 / C2	12	190	100/120	200	M 12 x 151	19	20
FAZ II 12/160	503253	—	—	●	●	—	12	250	160/180	260	M 12 x 186	19	10
FAZ II 12/160	—	503180	—	●	●	—	12	250	160/180	260	M 12 x 100	19	20
FAZ II 12/200	095605	—	—	●	●	—	12	290	200/220	300	M 12 x 186	19	10
FAZ II 16/5	522124	—	—	●	●	C1 / C2	16	115	5/25	128	M 16 x 64	24	10
FAZ II 16/5	—	522125	—	●	●	C1 / C2	16	115	5/25	128	M 16 x 64	24	20
FAZ II 16/25	—	501423	—	●	●	C1 / C2	16	135	25/45	148	M 16 x 84	24	20

1) With minimum embedment depth only for statically indeterminate systems

Approval Seismic C1/C2 only with maximum embedment depth



Technical data

Bolt anchor FAZ II

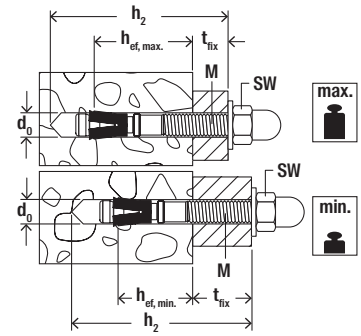


FAZ II

Item	Zinc-plated steel	Stainless steel	Highly corrosion resistant steel	Approval		Seismic-Approval	Drill hole diameter	Min. drill hole depth for through fixings	Max. usable length hef,max./hef,min.	Anchor length	Thread	Width across nut	Sales unit
	Item No.	Item No.	Item No.	ETA	ICC		d_0 [mm]	h_2 [mm]	t_{fix} [mm]	l [mm]	\emptyset x length [mm]	SW [mm]	[pcs]
	gvz	R	HCR										
FAZ II 16/25	—	—	501432	●	●	C1	16	135	25/45	148	M 16 x 84	24	10
FAZ II 16/25	095836	—	—	●	●	C1 / C2	16	135	25/45	148	M 16 x 84	24	10
FAZ II 16/50	095864	—	—	●	●	C1 / C2	16	160	50/70	173	M 16 x 109	24	10
FAZ II 16/50	—	—	503187	●	●	C1	16	160	50/70	173	M 16 x 109	24	10
FAZ II 16/50	—	501424	—	●	●	C1 / C2	16	160	50/70	173	M 16 x 109	24	20
FAZ II 16/100	095865	501425	—	●	●	C1 / C2	16	210	100/120	223	M 16 x 159	24	10
FAZ II 16/160	503254	—	—	●	●	C1 / C2	16	270	160/180	283	M 16 x 189	24	10
FAZ II 16/200	095967	—	—	●	●	—	16	310	200/220	323	M 16 x 189	24	10
FAZ II 16/250	095968	—	—	●	●	—	16	360	250/270	373	M 16 x 100	24	10
FAZ II 16/300	096188	—	—	●	●	—	16	410	300/320	423	M 16 x 100	24	10
FAZ II 20/30	046632	—	—	●	●	C1 / C2	20	155	30/-	172	M 20 x 54	30	5
FAZ II 20/30	—	501426	—	●	●	C1 / C2	20	155	30/-	172	M 20 x 54	30	4
FAZ II 20/60	046633	—	—	●	●	C1 / C2	20	185	60/-	202	M 20 x 84	30	5
FAZ II 20/60	—	503183	—	●	●	C1 / C2	20	185	60/-	202	M 20 x 84	30	4
FAZ II 20/160	503255	—	—	●	●	C1 / C2	20	285	160/-	302	M 20 x 100	30	5
FAZ II 24/30	046635	—	—	●	●	C1	24	185	30/-	205	M 24 x 58	36	5
FAZ II 24/30	—	501427	—	●	●	C1	24	185	30/-	205	M 24 x 58	36	4
FAZ II 24/60	046636	—	—	●	●	C1	24	215	60/-	235	M 24 x 88	36	5
FAZ II 24/60	—	503184	—	●	●	C1	24	215	60/-	235	M 24 x 88	36	4

1) With minimum embedment depth only for statically indeterminate systems

Approval Seismic C1/C2 only with maximum embedment depth



Technical data

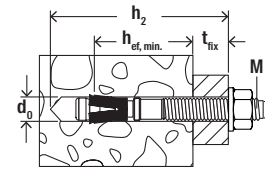
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Bolt anchor FAZ II H



Item	Zinc-plated steel	Stainless steel	Approval	Seismic-Approval	Drill hole diameter	Min. drill hole depth for through fixings	Anchor length	Max. usable length hef,max./hef,min.	Thread	Width across nut	Sales unit
	Item No.	Item No.			d_0 [mm]	h_2 [mm]		t_{fix} [mm]		\emptyset x length [mm]	
FAZ II 10/10 H	543392	543396	●	C1 / C2	10	87	95	10/30	M 10 x 53	17	20
FAZ II 10/20 H	543393	543397	●	C1 / C2	10	97	105	20/40	M 10 x 63	17	20
FAZ II 12/10 H	543394	543398	●	C1 / C2	12	99	109	10/30	M 12 x 61	19	20
FAZ II 12/20 H	543395	543399	●	C1 / C2	12	109	119	20/40	M 12 x 71	19	20
Cap nut FAZ II M10	543977 ¹⁾	543979 ¹⁾	●	—	—	—	—	—	M 10	17	20
Cap nut FAZ II M12	543978 ¹⁾	543980 ¹⁾	●	—	—	—	—	—	M 12	19	20

1) Can be combined with all bolt anchors FAZ II M10 and M12 in accordance with approval.
Approval Seismic C1/C2 only with maximum embedment depth

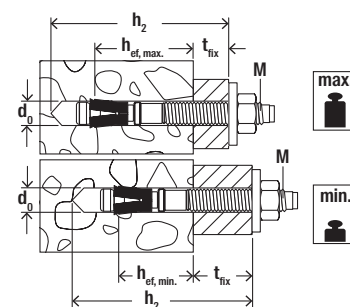


Technical data

Bolt anchor FAZ II K



Item	Zinc-plated steel	Stainless steel	Approval	Drill hole diameter	Min. drill hole depth for through fixings	Anchor length	Usable length (hef min.)	Thread	Washer (outer diameter x thickness)	Sales unit
	Item No.	Item No.		d_0 [mm]	h_2 [mm]		t_{fix} [mm]		\emptyset x length [mm]	
FAZ II 8/5 K	538989	538990	●	8	45	60	5	M 8 x 23	16 x 1,6	50
FAZ II 10/10 K	522108	522116	●	10	65	75	10	M 10 x 33	20 x 2	50
FAZ II 10/20 K	522110	—	●	10	75	85	20	M 10 x 43	20 x 2	25
FAZ II 10/20 K	—	522117	●	10	75	85	20	M 10 x 43	20 x 2	50
FAZ II 12/10 K	522118	522122	●	12	80	90	10	M 12 x 41	24 x 2,5	20
FAZ II 12/20 K	522119	522123	●	12	90	100	20	M 12 x 51	24 x 2,5	20
FAZ II 10/10 K GS	522115	—	●	10	65	75	10	M 10 x 33	25 x 3	50
FAZ II 12/10 K GS	522121	—	●	12	80	90	10	M 12 x 41	30 x 3	20



Technical data

Bolt anchor FAZ II GS and HBS

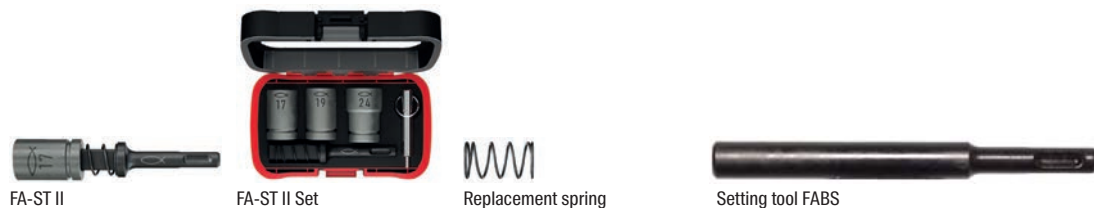


FAZ II GS with large washer FAZ II HBS washer compliant to wood construction standard DIN 1052

Item	Steel, zinc-plated, with large washer	Stainless steel, with large washer	Approval	Seismic-Approval	Drill hole diameter	Min. drill hole depth for through fixings	Anchor length	Max. usable length hef,max./ hef,min.	Thread	Width across nut	Washer (outer diameter x thickness)	Sales unit
	Item No.	Item No.			d_0 [mm]	h_2 [mm]	l [mm]	t_{fix} [mm]	$\varnothing \times$ length [mm]	SW [mm]	[mm]	[mm]
	gvz	R	ETA									
FAZ II 8/10 GS	094872	501398	●	C1	8	65	75	10/20	M 8 x 38	13	22 x 2,5	50
FAZ II 8/30 GS	096189	501400	●	C1	8	85	95	30/40	M 8 x 58	13	22 x 2,5	50
FAZ II 10/10 GS	096291	501405	●	C1 / C2	10	85	95	10/30	M 10 x 53	17	25 x 3	50
FAZ II 10/30 GS	096297	—	●	C1 / C2	10	105	115	30/50	M 10 x 73	17	25 x 3	25
FAZ II 10/30 GS	—	501408	●	C1 / C2	10	105	115	30/50	M 10 x 73	17	25 x 3	50
FAZ II 12/10 GS	096303	501414	●	C1 / C2	12	100	110	10/30	M 12 x 61	19	30 x 3	20
FAZ II 12/20 GS	502530	—	●	C1 / C2	12	110	120	20/40	M 12 x 71	19	30 x 3	20
FAZ II 12/30 GS	096340	501418	●	C1 / C2	12	120	130	30/50	M 12 x 81	19	30 x 3	20
FAZ II 12/50 GS	502531	—	●	C1 / C2	12	140	150	50/70	M 12 x 101	19	30 x 3	20
FAZ II 12/80 GS	538430	—	●	C1 / C2	12	170	180	80/100	M 12 x 131	19	44 x 4	20
FAZ II 12/100 GS	502532	—	●	C1 / C2	12	190	200	100/120	M 12 x 151	19	30 x 3	20
FAZ II 12/100 GS	538702	—	●	C1 / C2	12	190	200	100/120	M 12 x 151	19	44 x 4	20
FAZ II 12/120 GS	096367	—	●	C1 / C2	12	210	220	120/140	M 12 x 171	19	30 x 3	20
FAZ II 12/120 GS	538703	—	●	C1 / C2	12	210	220	120/140	M 12 x 171	19	44 x 4	20
FAZ II 12/140 GS	538433	—	●	C1 / C2	12	230	240	140/160	M 12 x 186	19	44 x 4	20
FAZ II 12/160 GS	538431	—	●	C1 / C2	12	250	260	160/180	M 12 x 186	19	44 x 4	20
FAZ II 12/160 GS	—	503181	●	—	12	250	260	160/180	M 12 x 186	19	44 x 4	20
FAZ II 12/180 GS	538434	—	●	C1 / C2	12	270	280	180/200	M 12 x 186	19	44 x 4	20
FAZ II 12/200 GS	538432	—	●	C1 / C2	12	290	300	200/220	M 12 x 186	19	44 x 4	20
FAZ II 16/160 GS	503261	—	●	C1 / C2	16	270	283	160/180	M 16 x 189	24	56 x 5	10
FAZ II 16/160 GS	—	503182	●	C1 / C2	16	270	283	160/180	M 16 x 100	24	56 x 5	4
FAZ II 16/200 GS	096370	—	●	—	16	310	323	200/220	M 16 x 189	24	56 x 5	10
FAZ II 12/100 HBS	522951	—	●	C1 / C2	12	190	205	100/120	M 12 x 151	19	58 x 6	20
FAZ II 12/120 HBS	522952	—	●	C1 / C2	12	210	225	120/140	M 12 x 171	19	58 x 6	20
FAZ II 16/160 HBS	522953	—	●	C1 / C2	16	270	278	160/180	M 16 x 189	24	68 x 6	10
FAZ II 16/200 HBS	522954	—	●	—	16	310	328	200/220	M 16 x 189	24	68 x 6	10

Accessories

Bolt anchor setting tool FA-ST II



Item	Item No.	Contents	Matching anchor type	Sales unit [pcs]
FABS	077937	—	FAZ II, FBZ, FBN II for diameter from M6 - M12	1
FA-ST II M10	558790	SDS adapter; socket SW17	FAZ II M10, FBZ M10, FBN II M10, EXA M10	1
FA-ST II M12	558791	SDS adapter; socket SW19	FAZ II M12, FBZ M12, FBN II M12, EXA M12	1
FA-ST II M16	558792	SDS adapter; socket SW24	FAZ II M16, FBZ M16, FBN II M16, EXA M16	1
FA-ST II Set	558789	SDS adapter; socket SW17, SW19, SW24	FAZ II M10/M12/M16, FBZ M10/M12/M16, FBN II M10/M12/M16, EXA M10/M12/M16	1
FA-ST II spring	558793	Replacement spring	FA-ST II M10/M12/M16	5

Loads

Bolt anchor FAZ II

Permissible loads of a single anchor¹⁾ in normal concrete of strength class C20/25.
For the design the complete current assessment ETA-05/0069 has to be considered.

Type	Material/surface ²⁾	Effective anchorage depth h_{ef} [mm]	Minimum member thickness h_{min} [mm]	Installation 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 6	gvz	40	90	8	0.7	3.4	35	45	3.6	3.4	35	45
	R	40	90	8	0.7	5.0	35	45	5.0	5.0	35	45
FAZ II 8	gvz	35	80	20	2.6	7.8	35	40	4.9	7.8	40	40
	gvz	45	90	20	3.8	7.8	35	40	6.7	7.8	40	40
	R	35	80	20	2.6	8.5	35	40	4.9	9.6	40	40
	R	45	90	20	3.8	9.6	35	40	6.7	9.6	40	40
FAZ II 10	gvz	40	90	45	4.1	10.8	40	45	5.9	12.2	40	45
	gvz	60	110	45	6.2	12.2	40	45	9.5	12.2	40	45
	R	40	90	45	4.1	12.2	40	45	5.9	15.1	40	45
	R	60	110	45	6.2	15.1	40	45	9.5	15.1	40	45
FAZ II 12	gvz	50	100	60	5.8	17.5	50	55	8.3	17.5	50	55
	gvz	70	120	60	9.5	17.5	50	55	10.5	17.5	50	55
	R	50	100	60	5.8	18.0	50	55	8.3	21.9	50	55
	R	70	120	60	9.5	21.9	50	55	10.5	21.9	50	55
FAZ II 16	gvz	65	140	110	8.6	27.5	65	65	12.3	31.4	65	65
	gvz	85	140	110	12.9	31.4	65	65	18.4	31.4	65	65
	R	65	140	110	8.6	27.5	65	65	12.3	36.8	65	65
	R	85	140	110	12.9	38.6	65	65	18.4	39.9	65	65
FAZ II 20	gvz	100	170	200	16.4	42.6	95	85	23.4	46.5	95	95
	R	100	170	200	16.4	42.6	95	85	23.4	60.7	95	95
FAZ II 24	gvz	125	210	270	22.9	55.0	100	100	32.7	62.9	100	135
	R	125	210	270	22.9	55.0	100	100	32.7	78.6	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.