For highest demands. Powerful and flexible.

Balcony railings

Steel girders

VERSIONS

- zinc-plated steel
- stainless steel
- highly corrosion-resistant steel

BUILDING MATERIALS

Approved for:

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

Also suitable for:

- Concrete C12/15
- Natural stone with dense structure

ASSESSMENT/APPROVAL

ETA-05/0069
ETAG 001
Option 1 for cracked concrete
seismic performance category C1, C2

EDELSTAHL Rost frei
INOX
STAINLESS STEEL

ICC ES
ESR-2948
See ICC-ES Evaluation Report at www.icc-es.org

Fire resistance classification
R 120
Anchor types see test report

FM
APPROVED
from M10

M8 - M20

ZTV
anchor types see test report
(only FAZ II C)
1200 °C

SEISMIC

ADVANTAGES

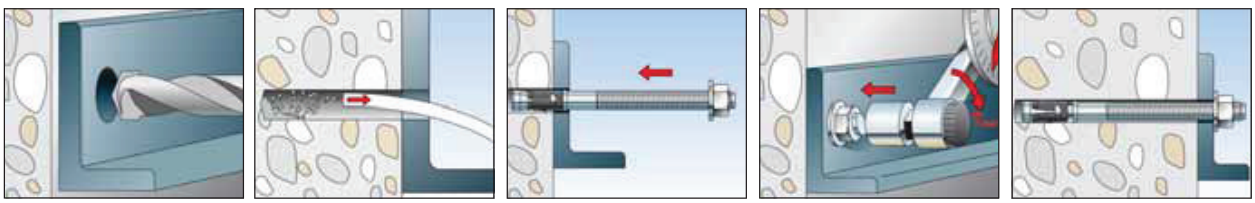
- The FAZ II tried and tested expansion clip enables the highest load bearing capacity. Thus fewer fixing points and smaller anchor plates are required.
- The reduced anchorage depth allows for significantly reduced drill hole depths and reduces the number of reinforcement hits. This allows for a noticeably quicker installation.
- Fewer hammer blows when hammering in the anchor, together with the low torque slippage, ensure a noticeably simple and comfortable setting process.
- The international approvals guarantee maximum safety and the best performance. These approvals even cover use in earthquake zones (seismic C1 + C2). ICC approval only with standard embedment depth.

APPLICATIONS

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

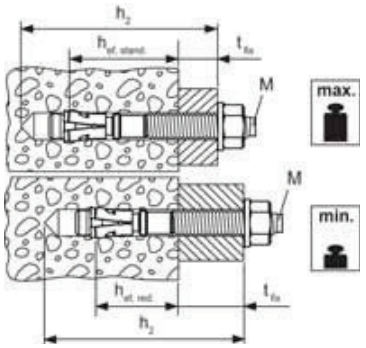
FUNCTIONING

- 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.



TECHNICAL DATA

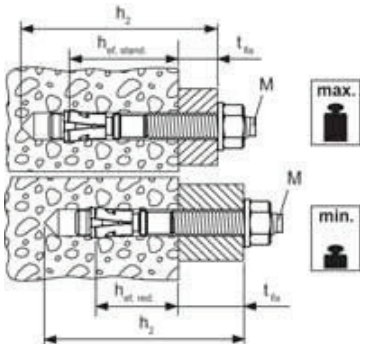
Bolt anchor **FAZ II**



	zinc-plated steel	stainless steel	highly corrosion resistant steel	Approval		Seismic-Approval	Drill hole diameter	Min. drill hole depth for through fixings	Anchor length	Max. usable length hef,stand/ hef,red	Thread	Width across nut	Sales unit
	Art.-No.	Art.-No.	Art.-No.	ETA	ICC		d_0 [mm]	h_2 [mm]	l [mm]	t_{fix} [mm]	Ø x length [mm]	⬡ SW [mm]	[pcs]
Item	gvz	A4	C										
FAZ II 8/10	094871	501396	–	■	▲	C1	8	65	75	10/-	M 8 x 38	13	50
FAZ II 8/10	–	–	501428	■	▲	C1	8	65	75	10/-	M 8 x 38	13	10
FAZ II 8/30	094877	501399	–	■	▲	C1	8	85	95	30/-	M 8 x 58	13	50
FAZ II 8/30	–	–	501429	■	▲	C1	8	85	95	30/-	M 8 x 58	13	10
FAZ II 8/50	094878	501401	–	■	▲	C1	8	105	115	50/-	M 8 x 78	13	50
FAZ II 8/100	094879	–	–	■	▲	C1	8	155	165	100/-	M 8 x 128	13	25
FAZ II 8/160	503251	–	–	■	▲	C1	8	215	225	160/-	M 8 x 100	13	20
FAZ II 10/10	094981	501403	–	■	▲	C1 / C2	10	85	95	10/30	M 10 x 53	17	50
FAZ II 10/10	–	–	501430	■	▲	C1	10	85	95	10/30	M 10 x 53	17	10
FAZ II 10/20	094982	–	–	■	▲	C1 / C2	10	95	105	20/40	M 10 x 63	17	25
FAZ II 10/20	–	501406	–	■	▲	C1 / C2	10	95	105	20/40	M 10 x 63	17	50
FAZ II 10/30	094983	–	–	■	▲	C1 / C2	10	105	115	30/50	M 10 x 73	17	25
FAZ II 10/30	–	501407	–	■	▲	C1 / C2	10	105	115	30/50	M 10 x 73	17	50
FAZ II 10/30	–	–	503185	■	▲	C1	10	105	115	30/50	M 10 x 73	17	10
FAZ II 10/50	094984	501409	–	■	▲	C1 / C2	10	125	135	50/70	M 10 x 93	17	20
FAZ II 10/70	–	501410	–	■	▲	C1 / C2	10	145	155	70/90	M 10 x 113	17	20
FAZ II 10/80	094985	–	–	■	▲	C1 / C2	10	155	165	80/100	M 10 x 123	17	20
FAZ II 10/100	–	501411	–	■	▲	C1 / C2	10	175	185	100/120	M 10 x 100	17	20
FAZ II 10/100	094986	–	–	■	▲	C1 / C2	10	175	185	100/120	M 10 x 143	17	20
FAZ II 10/160	–	501412	–	■	▲	–	10	235	245	160/180	M 10 x 100	17	20
FAZ II 10/160	503252	–	–	■	▲	–	10	235	245	160/180	M 10 x 193	17	20
FAZ II 12/10	095419	501413	–	■	▲	C1 / C2	12	100	110	10/30	M 12 x 61	19	20
FAZ II 12/10	–	–	503186	■	▲	C1	12	100	110	10/30	M 12 x 61	19	10
FAZ II 12/20	095420	501415	–	■	▲	C1 / C2	12	110	120	20/40	M 12 x 71	19	20
FAZ II 12/30	095421	501416	–	■	▲	C1 / C2	12	120	130	30/50	M 12 x 81	19	20
FAZ II 12/30	–	–	501431	■	▲	C1	12	120	130	30/50	M 12 x 81	19	10
FAZ II 12/50	095446	501419	–	■	▲	C1 / C2	12	140	150	50/70	M 12 x 101	19	20
FAZ II 12/60	–	501420	–	■	▲	C1 / C2	12	150	160	60/80	M 12 x 111	19	20
FAZ II 12/80	095454	–	–	■	▲	C1 / C2	12	170	180	80/100	M 12 x 131	19	20
FAZ II 12/100	095470	501421	–	■	▲	C1 / C2	12	190	200	100/120	M 12 x 151	19	20
FAZ II 12/160	503253	–	–	■	▲	–	12	250	260	160/180	M 12 x 186	19	10
FAZ II 12/160	–	503180	–	■	▲	–	12	250	260	160/180	M 12 x 100	19	20
FAZ II 12/200	095605	–	–	■	▲	–	12	290	300	200/220	M 12 x 186	19	10
FAZ II 16/5	522124	–	–	■	▲	C1 / C2	16	115	128	5/25	M 16 x 64	24	20
FAZ II 16/5	–	522125	–	■	▲	C1 / C2	16	115	128	5/25	M 16 x 64	24	10
FAZ II 16/25	–	501423	–	■	▲	C1 / C2	16	135	148	25/45	M 16 x 84	24	20
FAZ II 16/25	–	–	501432	■	▲	C1	16	135	148	25/45	M 16 x 84	24	10
FAZ II 16/25	095836	–	–	■	▲	C1 / C2	16	135	148	25/45	M 16 x 84	24	10
FAZ II 16/50	095864	–	–	■	▲	C1 / C2	16	160	173	50/70	M 16 x 109	24	10
FAZ II 16/50	–	–	503187	■	▲	C1	16	160	173	50/70	M 16 x 109	24	10
FAZ II 16/50	–	501424	–	■	▲	C1 / C2	16	160	173	50/70	M 16 x 109	24	20
FAZ II 16/100	095865	501425	–	■	▲	C1 / C2	16	210	223	100/120	M 16 x 159	24	10
FAZ II 16/160	503254	–	–	■	▲	C1 / C2	16	270	283	160/180	M 16 x 189	24	10
FAZ II 16/200	095967	–	–	■	▲	–	16	310	323	200/220	M 16 x 189	24	10

TECHNICAL DATA

Bolt anchor **FAZ II**



	zinc-plated steel	stainless steel	highly corrosion resistant steel	Approval		Seismic-Approval	Drill hole diameter	Min. drill hole depth for through fixings	Anchor length	Max. usable length hef,stand/ hef,red	Thread	Width across nut	Sales unit
	Art.-No.	Art.-No.	Art.-No.	ETA	ICC		d_0 [mm]	h_2 [mm]	l [mm]	t_{fix} [mm]	Ø x length [mm]	⬡ SW [mm]	[pcs]
Item	**gvz**	**A4**	**C**										
FAZ II 16/250	**095968**	–	–	■	▲	–	16	360	373	250/270	M 16 x 100	24	10
FAZ II 16/300	**096188**	–	–	■	▲	–	16	410	423	300/320	M 16 x 100	24	10
FAZ II 20/30	**046632**	–	–	■	▲	C1 / C2	20	155	172	30/-	M 20 x 54	30	5
FAZ II 20/30	–	**501426**	–	■	▲	C1 / C2	20	155	172	30/-	M 20 x 54	30	4
FAZ II 20/60	**046633**	–	–	■	▲	C1 / C2	20	185	202	60/-	M 20 x 84	30	5
FAZ II 20/60	–	**503183**	–	■	▲	C1 / C2	20	185	202	60/-	M 20 x 84	30	4
FAZ II 20/160	**503255**	–	–	■	▲	C1 / C2	20	285	302	160/-	M 20 x 100	30	5
FAZ II 24/30	**046635**	–	–	■	▲	C1	24	185	205	30/-	M 24 x 58	36	5
FAZ II 24/30	–	**501427**	–	■	▲	C1	24	185	205	30/-	M 24 x 58	36	4
FAZ II 24/60	**046636**	–	–	■	▲	C1	24	215	235	60/-	M 24 x 88	36	5
FAZ II 24/60	–	**503184**	–	■	▲	C1	24	215	235	60/-	M 24 x 88	36	4

ACCESSORIES

fischer Anchor bolt setting tool **FABS**

Item	Art.-No.	Matching anchor type	Sales unit [pcs]
FABS	**077937**	FAZ II, FBN II, EXA for diameter from M6 - M12	1

LOADS

Bolt anchor FAZ II

Highest permissible loads for a single anchor[1] in concrete C20/25[4]

For the design the complete approval ETA - 05/0069 has to be considered.

					Cracked concrete				Non-cracked concrete			
Type	minimum effective anchorage depth $h_{ef,min}$ [mm]	maximum effective anchorage depth $h_{ef,max}$ [mm]	minimum member thickness[5] h_{min} [mm]	torque moment T_{inst} [Nm]	permissible tensile load N_{perm}[3] [kN]	permissible shear load V_{perm}[3] [kN]	min. spacing s_{min}[2] [mm]	min. edge distance c_{min}[2] [mm]	permissible tensile load N_{perm}[3] [kN]	permissible shear load V_{perm}[3] [kN]	min. spacing s_{min}[2] [mm]	min. edge distance c_{min}[2] [mm]
FAZ II 8		45	100	20,0	2,4	6,9	35	40	4,3	6,9	40	40
FAZ II 10	40		80	45,0	4,3	8,7	40	45	6,1	11,4	40	45
		60	120	45,0	4,3	11,4	40	45	7,6	11,4	40	45
FAZ II 12	50		100	60,0	6,1	13,9	50	55	8,5	16,9	50	55
		70	140	60,0	7,6	16,9	50	55	11,9	16,9	50	55
FAZ II 16	65		140	110,0	9,0	20,7	65	65	12,6	29,0	65	65
		85	170	110,0	13,4	31,4	65	65	18,8	31,4	65	65
FAZ II 20		100	200	200,0	17,1	40,0	95	85	24,0	40,0	95	95
FAZ II 24		125	250	270,0	24,0	49,1	100	100	33,6	49,1	100	135

[1] The partial safety factors for material resistance as regulated in the approval as well as a partial safety factor for load actions of γ_L = 1,4 are considered. As an 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 approval.

[2] Minimum possible axial spacings resp. edge distance while reducing the permissible load for the minimum member thickness ($h_{min} \geq 2 \times h_{ef}$). The combination of the given min. spacing and min. edge distance is not possible. One of them has to be increased according approval.

[3] For combination of tensile loads, shear loads, bending moments as well as reduced edge distances or spacings (anchor groups) see approval.

[4] For higher concrete strength classes up to C50/60 higher permissible loads may be possible.

[5] According approval the minimum member thickness ($h_{min} \geq 2 \times h_{ef}$) can be reduced under specific conditions.

LOADS

Bolt anchor FAZ II A4

Highest permissible loads for a single anchor[1] in concrete C20/25[4]

For the design the complete approval ETA - 05/0069 has to be considered.

					gerissener Beton				ungerissener Beton			
Type	minimum effective anchorage depth $h_{ef,min}$ [mm]	maximum effective anchorage depth $h_{ef,max}$ [mm]	minimum member thickness[5] h_{min} [mm]	torque moment T_{inst} [Nm]	permissible tensile load N_{perm}[3] [kN]	permissible shear load V_{perm}[3] [kN]	min. spacing s_{min}[2] [mm]	min. edge distance c_{min}[2] [mm]	permissible tensile load N_{perm}[3] [kN]	permissible shear load V_{perm}[3] [kN]	min. spacing s_{min}[2] [mm]	min. edge distance c_{min}[2] [mm]
FAZ II 8 A4		45	100	20,0	2,4	6,9	35	40	4,3	6,9	40	40
FAZ II 10 A4	40		80	45,0	4,3	8,7	40	45	6,1	11,4	40	45
		60	120	45,0	4,3	11,4	40	45	7,6	11,4	40	45
FAZ II 12 A4	50		100	60,0	6,1	13,9	50	55	8,5	16,9	50	55
		70	140	60,0	7,6	16,9	50	55	11,9	16,9	50	55
FAZ II 16 A4	65		140	110,0	9,0	20,7	65	65	12,6	29,0	65	65
		85	170	110,0	13,4	31,4	65	65	18,8	31,4	65	65
FAZ II 20 A4		100	200	200,0	17,1	40,0	95	85	24,0	40,0	95	95
FAZ II 24 A4		125	250	270,0	24,0	49,1	100	100	33,6	49,1	100	135

[1] The partial safety factors for material resistance as regulated in the approval as well as a partial safety factor for load actions of γ_L = 1,4 are considered. As an 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 approval.

[2] Minimum possible axial spacings resp. edge distance while reducing the permissible load for the minimum member thickness ($h_{min} \geq 2 \times h_{ef}$). The combination of the given min. spacing and min. edge distance is not possible. One of them has to be increased according approval.

[3] For combination of tensile loads, shear loads, bending moments as well as reduced edge distances or spacings (anchor groups) see approval.

[4] For higher concrete strength classes up to C50/60 higher permissible loads may be possible.

[5] According approval the minimum member thickness ($h_{min} \geq 2 \times h_{ef}$) can be reduced under specific conditions.

LOADS

Bolt anchor FAZ II C

Highest permissible loads for a single anchor[1] in concrete C20/25[4]

For the design the complete approval ETA - 05/0069 has to be considered.

					Cracked concrete				Non-cracked concrete			
Type	**minimum effective anchorage depth** $h_{ef,min}$ [mm]	**maximum effective anchorage depth** $h_{ef,max}$ [mm]	**minimum member thickness**[5] h_{min} [mm]	**torque moment** T_{inst} [Nm]	**permissible tensile load** N_{perm}[3] [kN]	**permissible shear load** V_{perm}[3] [kN]	**min. spacing** s_{min}[2] [mm]	**min. edge distance** c_{min}[2] [mm]	**permissible tensile load** N_{perm}[3] [kN]	**permissible shear load** V_{perm}[3] [kN]	**min. spacing** s_{min}[2] [mm]	**min. edge distance** c_{min}[2] [mm]
FAZ II 8 C		45	100	20,0	2,4	6,9	35	40	4,3	6,9	40	40
FAZ II 10 C	40		80	45,0	4,3	8,7	40	45	6,1	11,4	40	45
		60	120	45,0	4,3	11,4	40	45	7,6	11,4	40	45
FAZ II 12 C	50		100	60,0	6,1	13,9	50	55	8,5	16,9	50	55
		70	140	60,0	7,6	16,9	50	55	11,9	16,9	50	55
FAZ II 16 C	65		140	110,0	9,0	20,7	65	65	12,6	29,0	65	65
		85	170	110,0	13,4	31,4	65	65	18,8	31,4	65	65
FAZ II 20 C		100	200	200,0	17,1	40,0	95	85	24,0	40,0	95	95
FAZ II 24 C		125	250	270,0	24,0	49,1	100	100	33,6	49,1	100	135

[1] The partial safety factors for material resistance as regulated in the approval as well as a partial safety factor for load actions of $\gamma_L = 1,4$ are considered. As an 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 approval.

[2] Minimum possible axial spacings resp. edge distance while reducing the permissible load for the minimum member thickness ($h_{min} \geq 2 \times h_{ef}$). The combination of the given min. spacing and min. edge distance is not possible. One of them has to be increased according approval.

[3] For combination of tensile loads, shear loads, bending moments as well as reduced edge distances or spacings (anchor groups) see approval.

[4] For higher concrete strength classes up to C50/60 higher permissible loads may be possible.

[5] According approval the minimum member thickness ($h_{min} \geq 2 \times h_{ef}$) can be reduced under specific conditions.