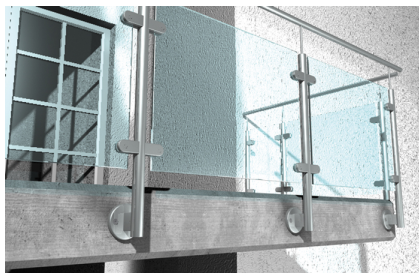


## Efficient bevestigen in gescheurd beton



### UITVOERINGEN

- elektrolytisch verzinkt staal
- roestvast staal
- hoog corrosiewerend staal

### BOUWMATERIALEN

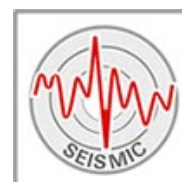
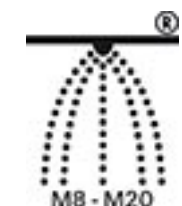
#### Goedgekeurd voor:

- Beton C20/25 tot C50/60, gescheurd
- Beton C20/25 tot C50/60, ongescheurd

#### Tevens geschikt voor:

- Beton C12/15
- Natuursteen met hoge dichtheid

### GOEDKEURINGEN



### VOORDELEN

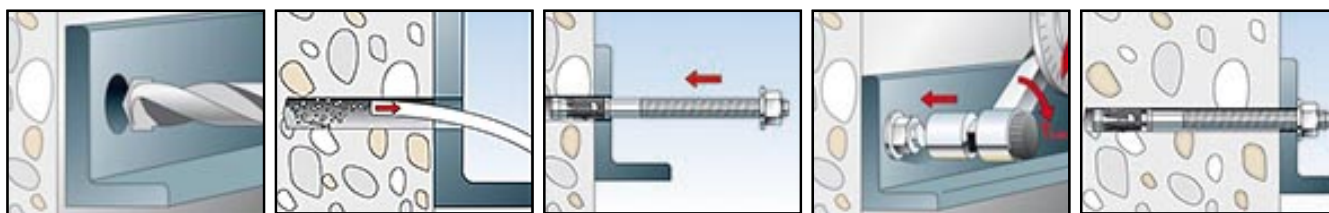
- De geoptimaliseerde spreidclip staat hoge belastingen toe. Dus minder bevestigingspunten en kleinere ankers zijn nodig.
- De internationale goedkeuringen garanderen de maximale veiligheid en de beste resultaten.
- De ankergeometrie staat optimale belasting toe en daarom kan het dicht bij randen en dunne componenten worden toegepast.
- Enkele hamerslagen en nagenoeg geen slijp zorgen voor snelle verwerking.
- De pin beschermt de kop van beschadiging en zorgt voor probleemloos verwijderen van het aanbouwdeel.

### TOEPASSINGEN

- Stalen constructies
- Leuningen
- Consoles
- Ladders
- Kabelgoten
- Machines
- Trappen
- Hekwerk
- Gevelsystemen
- Houtconstructies

### FUNCTIE

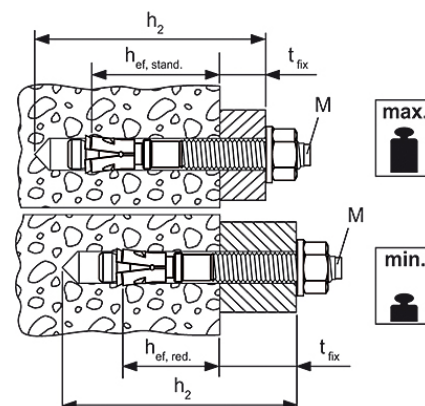
- De FAZ II is geschikt voor doorsteek- en voorsteekmontage; ook geschikt voor afstandsmontage onder bepaalde voorwaarden.
- Plaats voorafgaand aan montage de zeskantmoer in de optimale positie (de insteekpen steekt ca. 3 mm uit de zeskantmoer).
- Bij het aanbrengen van koppel wordt de conoubout in de spreidingsklem getrokken, waardoor deze tegen de boorgatwand wordt geklemd.
- Het kopreliëf maakt een eenvoudig gebruik van het anker mogelijk.
- Bij een serie-installatie raden we het gebruik aan van het FABS ankerbout montagehulpstuk.



## TECHNISCHE GEGEVENS



Doorsteekanker FAZ II



Elektrolytisch verzinkt

Artikelnaam	Art.-Nr.	Goed-keuring	ICC goedkeuring		Boorgatdiameter $d_0$ [mm]	Pluglengte $l$ [mm]	Max. dikte aanbouwdeel (standaard) $t_{fix}$ [mm]	Max. dikte aanbouwdeel (gereduceerd) $t_{fix}$ [mm]
FAZ II 8/10	094871	■	▲	C1	8	75	10	
FAZ II 8/30	094877	■	▲	C1	8	95	30	
FAZ II 8/50	094878	■	▲	C1	8	115	50	
FAZ II 8/100	094879	■	▲	C1	8	165	100	
FAZ II 8/160	503251	■	▲	C1	8	225	160	
FAZ II 10/10	094981	■	▲	C1 / C2	10	95	10	30
FAZ II 10/20	094982	■	▲	C1 / C2	10	105	20	40
FAZ II 10/30	094983	■	▲	C1 / C2	10	115	30	50
FAZ II 10/50	094984	■	▲	C1 / C2	10	135	50	70
FAZ II 10/80	094985	■	▲	C1 / C2	10	165	80	100
FAZ II 10/100	094986	■	▲	C1 / C2	10	185	100	120
FAZ II 10/160	503252	■	▲		10	245	160	180
FAZ II 12/10	095419	■	▲	C1 / C2	12	110	10	30
FAZ II 12/20	095420	■	▲	C1 / C2	12	120	20	40
FAZ II 12/30	095421	■	▲	C1 / C2	12	130	30	50
FAZ II 12/50	095446	■	▲	C1 / C2	12	150	50	70
FAZ II 12/80	095454	■	▲	C1 / C2	12	180	80	100
FAZ II 12/100	095470	■	▲	C1 / C2	12	200	100	120
FAZ II 12/160	503253	■	▲		12	260	160	180
FAZ II 12/200	095605	■	▲		12	300	200	220
FAZ II 16/5	522124	■	▲	C1 / C2	16	128	5	25
FAZ II 16/25	095836	■	▲	C1 / C2	16	148	25	45
FAZ II 16/50	095864	■	▲	C1 / C2	16	173	50	70
FAZ II 16/100	095865	■	▲	C1 / C2	16	223	100	120
FAZ II 16/160	503254	■	▲	C1 / C2	16	283	160	180
FAZ II 16/200	095967	■	▲		16	323	200	220
FAZ II 16/250	095968	■	▲		16	373	250	270
FAZ II 16/300	096188	■	▲		16	423	300	320
FAZ II 20/30	046632	■	▲	C1 / C2	20	172	30	
FAZ II 20/60	046633	■	▲	C1 / C2	20	202	60	
FAZ II 20/160	503255	■	▲	C1 / C2	20	302	160	
FAZ II 24/30	046635	■	▲	C1	24	205	30	
FAZ II 24/60	046636	■	▲	C1	24	235	60	

## Roestvast staal A4, corrosieweerstandsklasse III

Artikelnaam	Art.-Nr.	Goed-keuring	ICC goedkeuring		Boorgatdiameter $d_0$ [mm]	Pluglengte $l$ [mm]	Max. dikte aanbouwdeel (standaard) $t_{fix}$ [mm]	Max. dikte aanbouwdeel (gereduceerd) $t_{fix}$ [mm]
FAZ II 8/10 A4	501396	■	▲	C1	8	75	10	
FAZ II 8/30 A4	501399	■	▲	C1	8	95	30	
FAZ II 8/50 A4	501401	■	▲	C1	8	115	50	
FAZ II 10/10 A4	501403	■	▲	C1 / C2	10	95	10	30
FAZ II 10/20 A4	501406	■	▲	C1 / C2	10	105	20	40
FAZ II 10/30 A4	501407	■	▲	C1 / C2	10	115	30	50
FAZ II 10/50 A4	501409	■	▲	C1 / C2	10	135	50	70
FAZ II 10/70 A4	501410	■	▲	C1 / C2	10	155	70	90
FAZ II 10/100 A4	501411	■	▲	C1 / C2	10	185		
FAZ II 10/160 A4	501412	■	▲		10	245	160	180
FAZ II 12/10 A4	501413	■	▲	C1 / C2	12	110	10	30
FAZ II 12/20 A4	501415	■	▲	C1 / C2	12	120	20	40
FAZ II 12/30 A4	501416	■	▲	C1 / C2	12	130	30	50
FAZ II 12/50 A4	501419	■	▲	C1 / C2	12	150	50	70
FAZ II 12/60 A4	501420	■	▲	C1 / C2	12	160	80	100
FAZ II 12/100 A4	501421	■	▲	C1 / C2	12	200	100	120
FAZ II 12/160 A4	503180	■	▲		12	260	160	180
FAZ II 16/5 A4	522125	■	▲	C1 / C2	16	128	5	25
FAZ II 16/25 A4	501423	■	▲	C1 / C2	16	148	25	45
FAZ II 16/50 A4	501424	■	▲	C1 / C2	16	173	50	70
FAZ II 16/60 A4	532570	■	▲	C1 / C2	16	183	60	80
FAZ II 16/100 A4	501425	■	▲	C1 / C2	16	223	100	120
FAZ II 20/30 A4	501426	■	▲	C1 / C2	20	172	30	
FAZ II 20/60 A4	503183	■	▲	C1 / C2	20	202	60	
FAZ II 24/30 A4	501427	■	▲	C1	24	205	30	
FAZ II 24/60 A4	503184	■	▲	C1	24	235	60	

## Hoog corrosiewerend staal, corrosieweerstandsklasse IV

Artikelnaam	Art.-Nr.	Goed-keuring	ICC goedkeuring		Boorgatdiameter $d_0$ [mm]	Pluglengte $l$ [mm]	Max. dikte aanbouwdeel (standaard) $t_{fix}$ [mm]	Max. dikte aanbouwdeel (gereduceerd) $t_{fix}$ [mm]
FAZ II 8/10 C	501428	■	▲	C1	8	75	10	
FAZ II 8/30 C	501429	■	▲	C1	8	95	30	
FAZ II 10/10 C	501430	■	▲	C1	10	95	10	30
FAZ II 10/30 C	503185	■	▲	C1	10	115	30	50
FAZ II 12/10 C	503186	■	▲	C1	12	110	10	30
FAZ II 12/30 C	501431	■	▲	C1	12	130	30	50
FAZ II 16/25 C	501432	■	▲	C1	16	148	25	45
FAZ II 16/50 C	503187	■	▲	C1	16	173	50	70

## LOADS

### Bolt anchor FAZ II

Highest permissible loads for a single anchor<sup>1)</sup> in concrete C20/25<sup>4)</sup>

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

Type	minimum effective anchorage depth $h_{ef,min}$ [mm]	maximum effective anchorage depth $h_{ef,max}$ [mm]	minimum member thickness <sup>5)</sup> $h_{min}$ [mm]	torque moment $T_{inst}$ [Nm]	Cracked concrete				Non-cracked concrete			
					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]
<b>FAZ II 8</b>		45	100	20,0	2,4	6,9	35	40	4,3	6,9	40	40
<b>FAZ II 10</b>	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
<b>FAZ II 12</b>	50		100	60,0	6,1	13,9	45	55	8,5	16,9	50	55
		70	140	60,0	7,6	16,9	45	55	11,9	16,9	50	55
<b>FAZ II 16</b>	65		140	110,0	9,0	20,7	60	65	12,6	29,0	60	65
		85	170	110,0	13,4	31,4	60	65	18,8	31,4	60	65
<b>FAZ II 20</b>		100	200	200,0	17,1	40,0	95	85	24,0	40,0	95	95
<b>FAZ II 24</b>		125	250	270,0	24,0	49,1	100	100	33,6	49,1	100	135

<sup>1)</sup> The partial safety factors for material resistance as regulated in the approval as well as a partial safety factor for load actions of  $\gamma_t = 1,4$  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.

<sup>2)</sup> 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.

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

<sup>4)</sup> For higher concrete strength classes up to C50/60 higher permissible loads may be possible.

<sup>5)</sup> 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<sup>1)</sup> in concrete C20/25<sup>4)</sup>

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

Type	minimum effective anchorage depth $h_{ef,min}$ [mm]	maximum effective anchorage depth $h_{ef,max}$ [mm]	minimum member thickness <sup>5)</sup> $h_{min}$ [mm]	torque moment $T_{inst}$ [Nm]	gerissener Beton				ungerissener Beton			
					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]
<b>FAZ II 8 A4</b>		45	100	20,0	2,4	6,9	35	40	4,3	6,9	40	40
<b>FAZ II 10 A4</b>	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
<b>FAZ II 12 A4</b>	50		100	60,0	6,1	13,9	45	55	8,5	16,9	50	55
		70	140	60,0	7,6	16,9	45	55	11,9	16,9	50	55
<b>FAZ II 16 A4</b>	65		140	110,0	9,0	20,7	60	65	12,6	29,0	60	65
		85	170	110,0	13,4	31,4	60	65	18,8	31,4	60	65
<b>FAZ II 20 A4</b>		100	200	200,0	17,1	40,0	95	85	24,0	40,0	95	95
<b>FAZ II 24 A4</b>		125	250	270,0	24,0	49,1	100	100	33,6	49,1	100	135

<sup>1)</sup> 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.

<sup>2)</sup> 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.

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

<sup>4)</sup> For higher concrete strength classes up to C50/60 higher permissible loads may be possible.

<sup>5)</sup> 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<sup>1)</sup> in concrete C20/25<sup>4)</sup>

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

Type	minimum effective anchorage depth $h_{ef,min}$ [mm]	maximum effective anchorage depth $h_{ef,max}$ [mm]	minimum member thickness <sup>5)</sup> $h_{min}$ [mm]	torque moment $T_{inst}$ [Nm]	Cracked concrete				Non-cracked concrete			
					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]
<b>FAZ II 8 C</b>		45	100	20,0	2,4	6,9	35	40	4,3	6,9	40	40
<b>FAZ II 10 C</b>	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
<b>FAZ II 12 C</b>	50		100	60,0	6,1	13,9	45	55	8,5	16,9	50	55
		70	140	60,0	7,6	16,9	45	55	11,9	16,9	50	55
<b>FAZ II 16 C</b>	65		140	110,0	9,0	20,7	60	65	12,6	29,0	60	65
		85	170	110,0	13,4	31,4	60	65	18,8	31,4	60	65
<b>FAZ II 20 C</b>		100	200	200,0	17,1	40,0	95	85	24,0	40,0	95	95
<b>FAZ II 24 C</b>		125	250	270,0	24,0	49,1	100	100	33,6	49,1	100	135

<sup>1)</sup> 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.

<sup>2)</sup> 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.

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

<sup>4)</sup> For higher concrete strength classes up to C50/60 higher permissible loads may be possible.

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

## LOADS

### Bolt anchor FAZ II GS

Highest permissible loads for a single anchor<sup>1)</sup> in concrete C20/25<sup>4)</sup>

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

Type	minimum effective anchorage depth $h_{ef,min}$ [mm]	maximum effective anchorage depth $h_{ef,max}$ [mm]	minimum member thickness <sup>5)</sup> $h_{min}$ [mm]	torque moment $T_{inst}$ [Nm]	Cracked concrete				Non-cracked concrete			
					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]
<b>FAZ II 8 GS</b>		45	100	20,0	2,4	6,9	35	40	4,3	6,9	40	40
<b>FAZ II 10 GS</b>	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
<b>FAZ II 12 GS</b>	50		100	60,0	6,1	13,9	45	55	8,5	16,9	50	55
		70	140	60,0	7,6	16,9	45	55	11,9	16,9	50	55
<b>FAZ II 16 GS</b>	65		140	110,0	9,0	20,7	60	65	12,6	29,0	60	65
		85	170	110,0	13,4	31,4	60	65	18,8	31,4	60	65

<sup>1)</sup> 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.

<sup>2)</sup> 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.

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

<sup>4)</sup> For higher concrete strength classes up to C50/60 higher permissible loads may be possible.

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



## LOADS

### Bolt anchor FAZ II GS A4

Highest permissible loads for a single anchor<sup>1)</sup> in concrete C20/25<sup>4)</sup>

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

Type	minimum effective anchorage depth $h_{ef,min}$ [mm]	maximum effective anchorage depth $h_{ef,max}$ [mm]	minimum member thickness <sup>5)</sup> $h_{min}$ [mm]	torque moment $T_{inst}$ [Nm]	Cracked concrete				Non-cracked concrete			
					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]
<b>FAZ II 8 GS A4</b>		45	100	20,0	2,4	6,9	35	40	4,3	6,9	40	40
<b>FAZ II 10 GS A4</b>	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
<b>FAZ II 12 GS A4</b>	50		100	60,0	6,1	13,9	45	55	8,5	16,9	50	55
		70	140	60,0	7,6	16,9	45	55	11,9	16,9	50	55
<b>FAZ II 16 GS A4</b>	65		140	110,0	9,0	20,7	60	65	12,6	29,0	60	65
		85	170	110,0	13,4	31,4	60	65	18,8	31,4	60	65

<sup>1)</sup> 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.

<sup>2)</sup> 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.

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

<sup>4)</sup> For higher concrete strength classes up to C50/60 higher permissible loads may be possible.

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