fischer bonded anchor systems for cracked concrete

Three systems – one goal –
the maximum performance

fischer
innovative solutions

fischer composite anchor systems for cracked concrete at a glance.

Selection aid see page 25.

fischer Highbond system FHB II

NEW

Page 3

The premium solution for cracked concrete

- Maximum loads in all strengths of concrete
- Safety tested and proven a million times
- System with conical anchor technology
- Capsules FHB II-P and -PF without drill hole cleaning
- Minimum edge and axial spacings

fischer Powerbond System FPB

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The cost effective solution for cracked concrete

- High load capacity
- Variable anchorage depth
- Unique Powersleeve technology for variability and efficiency
- Optimum for thin concrete components

fischer Superbond System FSB

NEW

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The universal solution for cracked concrete

- Injection and resin capsule systems with conventional anchor rods
- For mounting up to –30 °C
- Anchorage depth of 60 mm – 600 mm
- For anchor rods M8 – M30
- For seismic applications

fischer Highbond System FHB II:
The premium solution for cracked concrete.

fischer Highbond System FHB II: The premium solution for cracked concrete.

Advantages at a glance

- Maximum loads in all strengths of concrete
- Free choice between resin capsule and injection cartridge
- No drill hole cleaning required if using resin capsules FHB II-P and -PF
- Minimum edge distance and axial spacing
- Full range with options in zinc plated steel, stainless steel A4 and highly corrosion-resistant steel (1.4529) from M8 to M24

For maximum safety

For maximum loads

For fast installation

For particularly corrosive environments

For minimum axial and edge spacing

For applications with performance

The fischer Highbond System consists of 2 components.

Component 1: Highbond anchor rod FHB II-A
The **conical anchor geometry** generates a low introduction of load with minimum axial and edge spaces.
Smaller anchor plates are therefore possible.

FHB II-S model

- Short version for **standard applications** with reduced anchor depth for minimum installation effort. This saves time in drilling and money for the quantity of resin.
- The **thread diameter** is the same as the drill diameter for installer-friendly push-through installation.

FHB II-L model

- The **performance optimised version,** with greater anchorage depth for maximum loads.

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Option 1 for cracked concrete

Fire resistance classification R 120
Sizes of anchors see examination report

ZTV
1200 °C
Anchor types see test report

Component 2: Composite resin
You can freely choose between resin capsules or injection resin, independently from the load.

FHB II-P (Standard) / FHB II-PF *HIGH SPEED*

- Pre-portioned resin capsules are a cost-effective solution for individual applications.
- New: Now without drill hole cleaning! Time saving of up to 25% for setting the anchor. Low levels of dust and dirt. No deep-drilling, no compaction of drilling dust, no hollow chisel mortiser with suction required.
- Additional time saving if using the *HIGH SPEED* FHB II-PF capsule. Anchor fully loadable after just 2 min. at 20 °C.

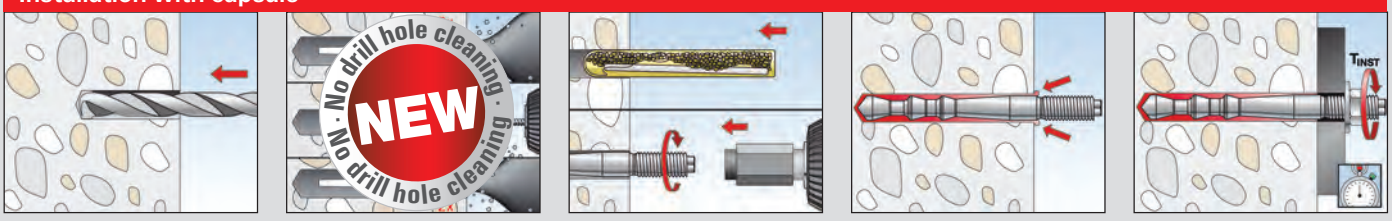
Highbond resin FIS HB 345 S

- Injection mortar FIS HB is primarily recommended for series applications. It is suitable for all Highbond anchor rods. After injecting the resin, the Highbond anchor rod is manually set in the resin.

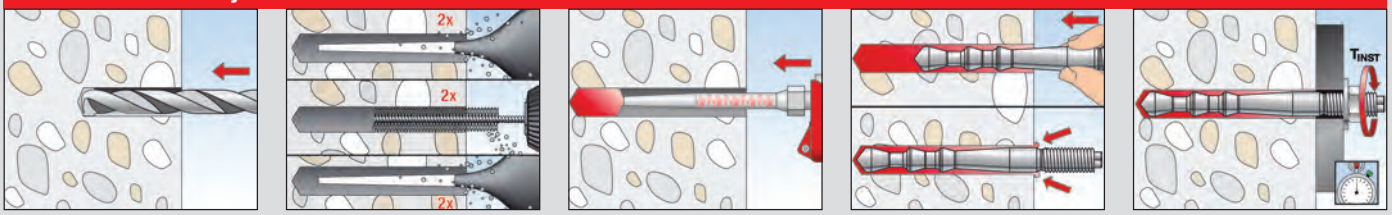
Curing times

Temperature in anchoring base	Capsule FHB II-PF *HIGH SPEED*	Capsule FHB II-P (Standard)	Injection resin FIS HB 345 S
– 5 °C	8 minutes	240 minutes	360 minutes
0 °C	6 minutes	45 minutes	180 minutes
20 °C	2 minutes	10 minutes	35 minutes

Installation with capsule



Installation with injection resin



fischer Highbond System FHB II: Full range.

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Option 1 for cracked concrete

Highbond anchor rod FHB II-A S

Article description	Zinc-plated steel Art. no.	Stainless steel A4-70 Art. no.	Highly corrosion-resistant steel 1.4529 Art. No.	Drill-Ø d_o [mm]	Drill hole depth h_o [mm]	Anchorage depth h_{ef} [mm]	Usable length t_{fix} [mm]	Required quantity FIS HB in scale divisions	Installation torque T_{inst} [Nm]	Wrench size SW	Corresponding capsule FHB II-P	Corresponding capsule FHB II-PF	Sales unit [pcs]
FHB II-A S M 10 x 60/10	097072	097630	097704	10	75	60	10	3	15	17	096847	500547	10
FHB II-A S M 10 x 60/20	097073	097631	097705	10	75	60	20	3	15	17	096847	500547	10
FHB II-A S M 10 x 60/40	–	097632	–	10	75	60	40	3	15	17	096847	500547	10
FHB II-A S M 10 x 60/60	097074	097633	–	10	75	60	60	3	15	17	096847	500547	10
FHB II-A S M 10 x 60/100	097206	097634	–	10	75	60	100	3	15	17	096847	500547	10
FHB II-A S M 10 x 75/10	506884	506888	–	10	90	75	10	4	15	17	507920	507999	10
FHB II-A S M 10 x 75/20	506885	506889	–	10	90	75	20	4	15	17	507920	507999	10
FHB II-A S M 10 x 75/40	–	506890	–	10	90	75	40	4	15	17	507920	507999	10
FHB II-A S M 10 x 75/60	506886	506891	–	10	90	75	60	4	15	17	507920	507999	10
FHB II-A S M 10 x 75/100	506887	506892	–	10	90	75	100	4	15	17	507920	507999	10
FHB II-A S M 12 x 75/10	097257	097635	–	12	90	75	10	4	30	19	096848	500548	10
FHB II-A S M 12 x 75/25	097268	097636	097706	12	90	75	25	4	30	19	096848	500548	10
FHB II-A S M 12 x 75/40	–	097637	097707	12	90	75	40	4	30	19	096848	500548	10
FHB II-A S M 12 x 75/60	097274	097638	–	12	90	75	60	4	30	19	096848	500548	10
FHB II-A S M 12 x 75/100	097275	097639	–	12	90	75	100	4	30	19	096848	500548	10
FHB II-A S M 12 x 75/165	097280	097640	–	12	90	75	165	4	30	19	096848	500548	10
FHB II-A S M 16 x 95/30	097281	097641	097708	16	110	95	30	8	50	24	096849	500549	10
FHB II-A S M 16 x 95/60	097286	097642	097709	16	110	95	60	8	50	24	096849	500549	10
FHB II-A S M 16 x 95/100	097295	097643	–	16	110	95	100	8	50	24	096849	500549	10
FHB II-A S M 16 x 95/165	097296	097644	–	16	110	95	165	8	50	24	96849	500549	10
FHB II-A S M 20 x 170/50	506917	506919	–	25	190	170	50	26	100	30	507925	508003	4
FHB II-A S M 24 x 170/50	097297	097645	097711	25	190	170	50	26	100	36	096851	500550	4

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Option 1 for cracked concrete

Highbond anchor rod FHB II-A L

Article description	Zinc-plated steel Art. no.	Stainless steel A4-70 Art. no.	Highly corrosion-resistant steel 1.4529 Art. No.	Drill-Ø d_o [mm]	Drill hole depth h_o [mm]	Anchorage depth h_{ef} [mm]	Usable length t_{fix} [mm]	Required quantity FIS HB in scale divisions	Installation torque T_{inst} [Nm]	Wrench size SW	Corresponding capsule FHB II-P	Corresponding capsule FHB II-PF	Sales unit [pcs]
FHB II-A L M 8 x 60/10	097298	097298	097696	10	75	60	10	3	15	13	096824	500542	10
FHB II-A L M 8 x 60/30	097033	097299	097697	10	75	60	30	3	15	13	096824	500542	10
FHB II-A L M 8 x 60/50	097034	097440	–	10	75	60	50	3	15	13	096824	500542	10
FHB II-A L M 10 x 95/10	096907	097616	097698	12	110	95	10	5	20	17	096843	500543	10
FHB II-A L M 10 x 95/100	096942	097620	–	12	110	95	100	5	20	17	096843	500543	10
FHB II-A L M 10 x 95/20	096940	097617	097699	12	110	95	20	5	20	17	096843	500543	10
FHB II-A L M 10 x 95/40	–	097618	–	12	110	95	40	5	20	17	096843	500543	10
FHB II-A L M 10 x 95/60	096941	097619	–	12	110	95	60	5	20	17	096843	500543	10
FHB II-A L M 12 x 100/10	506893	506897	–	14	115	100	10	7	40	19	507922	508000	10
FHB II-A L M 12 x 100/100	506896	506902	–	14	115	100	100	7	40	19	507922	508000	10

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Option 1 for cracked concrete

Highbond anchor rod FHB II-A L

Article description	Zinc-plated steel Art. no.	Stainless steel A4-70 Art. no.	Highly corrosion-resistant steel 1.4529 Art. No.	Drill-Ø d_o [mm]	Drill hole depth h_o [mm]	Anchorage depth h_{ef} [mm]	Usable length t_{fix} [mm]	Required quantity FIS HB in scale divisions	Installation torque T_{inst} [Nm]	Wrench size SW	Corresponding capsule FHB II-P	Corresponding capsule FHB II-PF	Sales unit [pcs]
FHB II-A L M 12 x 100/25	506894	506898	–	14	115	100	25	7	40	19	507922	508000	10
FHB II-A L M 12 x 100/40	–	506899	–	14	115	100	40	7	40	19	507922	508000	10
FHB II-A L M 12 x 100/60	506895	506901	–	14	115	100	60	7	40	19	507922	508000	10
FHB II-A L M 12 x 120/10	096943	097621	–	14	135	120	10	7	40	19	096844	500544	10
FHB II-A L M 12 x 120/100	097031	097625	–	14	135	120	100	7	40	19	096844	500544	10
FHB II-A L M 12 x 120/25	096944	097622	097700	14	135	120	25	7	40	19	096844	500544	10
FHB II-A L M 12 x 120/40	–	097623	097701	14	135	120	40	7	40	19	096844	500544	10
FHB II-A L M 12 x 120/60	097014	097624	–	14	135	120	60	7	40	19	096844	500544	10
FHB II-A L M 16 x 125/100	506905	506910	–	18	145	125	100	11	60	24	507923	508001	10
FHB II-A L M 16 x 125/30	506903	506906	–	18	145	125	30	11	60	24	507923	508001	10
FHB II-A L M 16 x 125/60	506904	506909	–	18	145	125	60	11	60	24	507923	508001	10
FHB II-A L M 16 x 145/100	506913	506916	–	18	165	145	100	13	60	24	507924	508002	10
FHB II-A L M 16 x 145/30	506911	506914	–	18	165	145	30	13	60	24	507924	508002	10
FHB II-A L M 16 x 145/60	506912	506915	–	18	165	145	60	13	60	24	507924	508002	10
FHB II-A L M 16 x 160/100	097070	097628	–	18	175	160	100	13	60	24	096845	500545	10
FHB II-A L M 16 x 160/30	097035	097626	097702	18	175	160	30	13	60	24	096845	500545	10
FHB II-A L M 16 x 160/60	097038	097627	–	18	175	160	60	13	60	24	096845	500545	10
FHB II-A L M 20 x 210/50	097071	097629	097703	25	235	210	50	33	100	30	096846	500546	4
FHB II-A L M 24 x 210/50	506920	506921	–	25	235	210	50	33	100	36	507926	508004	4

FHB II - P

FHB II - PF *HIGH SPEED*

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Capsule FHB II - P / Capsule FHB II - PF *HIGH SPEED*

Standard	Art. no.	Fast curing	Art. no.	Fits	Drill-Ø d_o	Drill hole depth h_o	Anchoring depth h_{ef}	Sales unit [pcs]
FHB II - P 8 x 60	096824	FHB II - PF 8 x 60	500542	FHB II-A L M 8 x 60	10 mm	75 mm	60 mm	10
FHB II - P 10 x 60	096847	FHB II - PF 10 x 60	500547	FHB II-A S M 10 x 60	10 mm	75 mm	60 mm	10
FHB II - P 10 x 75	507920	FHB II - PF 10 x 75	507999	FHB II- A S 10 x 75	10 mm	90 mm	75 mm	10
FHB II - P 10 x 95	096843	FHB II - PF 10 x 95	500543	FHB II-A L M 10 x 95	12 mm	110 mm	95 mm	10
FHB II - P 12 x 75	096848	FHB II - PF 12 x 75	500548	FHB II-A S M 12 x 75	12 mm	90 mm	75 mm	10
FHB II - P 12 x 100	507922	FHB II - PF 12 x 100	508000	FHB II- A L 12 x 100	14 mm	115 mm	100 mm	10
FHB II - P 12 x 120	096844	FHB II - PF 12 x 120	500544	FHB II-A L M 12 x 120	14 mm	135 mm	120 mm	10
FHB II - P 16 x 95	096849	FHB II - PF 16 x 95	500549	FHB II-A S M 16 x 95	16 mm	110 mm	95 mm	10
FHB II - P 16 x 125	507923	FHB II - PF 16 x 125	508001	FHB II- A L 16 x 125	18 mm	145 mm	125 mm	10
FHB II - P 16 x 145	507924	FHB II - PF 16 x 145	508002	FHB II- A L 16 x 145	18 mm	165 mm	145 mm	10
FHB II - P 16 x 160	096845	FHB II - PF 16 x 160	500545	FHB II-A L M 16 x 160	18 mm	175 mm	160 mm	10
FHB II - P 20 x 170	507925	FHB II - PF 20 x 170	508003	FHB II- A S 20 x 170	25 mm	190 mm	170 mm	4
FHB II - P 20 x 210	098646	FHB II - PF 20 x 210	500546	FHB II-A L M 20 x 210	25 mm	235 mm	210 mm	4
FHB II - P 24 x 170	096851	FHB II - PF 24 x 170	500550	FHB II-A S M 24 x 170	25 mm	190 mm	170 mm	4
FHB II - P 24 x 210	507926	FHB II - PF 24 x 210	508004	FHB II- A L 24 x 210	25 mm	235 mm	210 mm	4

fischer Highbond System FHB II: Full range.

FIS HB 345 S

FIS HB 150 C

FIS Mixer Red

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Option 1 for cracked concrete

Highbond special resin FIS HB

	Art. no.	Language	Contents	Content scale units	Sales unit [pcs]
FIS HB 345 S	033211	D, GB, F, E, NL, CZ	1 cartridge 360 ml, 2 x mixer red	180	6
FIS HB 345 S	502913	D, GB, DK, S, FIN, N	1 cartridge 360 ml, 2 x mixer red	180	6
FIS HB 150 C	077529	D, GB, F, E, NL, CZ	1 cartridge 145 ml, 2 x mixer red	70	6
FIS HB 150 C	519665	D, F, NL	1 cartridge 145 ml, 2 x mixer red	70	6
FIS Mixer Red	096448	-	10 x static mixer	-	10

FIS DM S

FIS AP

FIS DC S

FIS AM

Dispensing units

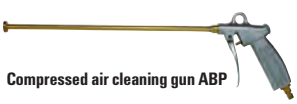
Article description	Art. no.	Art.	Sales unit [pcs]
FIS DM S	511118	Manual dispensing unit	1
FIS AP	058027	Pneumatic dispensing unit	1
FIS DC S	513423	Battery dispenser unit	1
FIS AM	058000	Manual dispensing unit	1

Cleaning brushes BS

SDS holder

Cleaning brushes BS

Article description	Art. no.	Description	Fits	Drill-Ø d_0	Sales unit [pcs]
BS Ø 10	078178	-	FHB II-A L M 8 x 60, FHB II-A S M 10 x 60, FHB II-A S M 10 x 75	10 mm	1
BS Ø 12	078179	-	FHB II-A L M 10 x 95, FHB II-A S M 12 x 75	12 mm	1
BS Ø 14	078180	-	FHB II-A L M 12 x 100, FHB II-A L M 12 x 120	14 mm	1
BS Ø 16/18	078181	-	FHB II-A S M 16 x 95, FHB II-A L 16 x 125, FHB II-A L M 16 x 145, FHB II-A L M 16 x 160	18 mm	1
BS Ø 25	097806	-	FHB II-A L M 20 x 170, FHB II-A L M 20 x 210, FHB II-A L M 24 x 210	25 mm	1
SDS holder	511961	with inner thread M8	-	-	1



Compressed air cleaning gun ABP

Blow-out pump ABG

Centring wedge

Machine setting tool RA-SDS

Compressed air cleaning gun, blow-out pump and centring device

Article description	Art. no.	Description	Suitable for	Sales unit [pcs]
Compressed air cleaning gun ABP	059456	-	FHB M20 - M24	1
Blow-out pump ABG	089300	-	-	1
Centring wedge	093076	-	-	10
Machine setting tool RA-SDS	062420	Setting tool with hammer drill with SDS holder	-	1

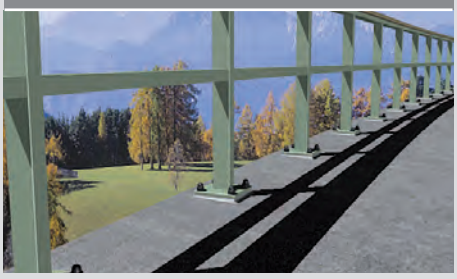
fischer Powerbond System FPB: The cost effective solution for cracked concrete.

fischer Powerbond System FPB: The cost effective solution for cracked concrete.

Advantages at a glance

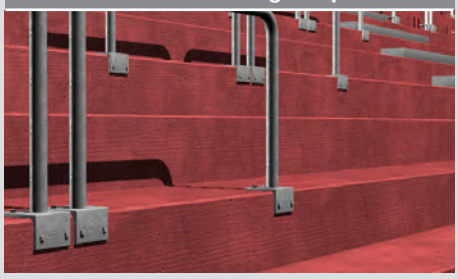
- Variable anchorage depth of 60 – 192 mm
- Preferred effective length from FIS A rod range
- May also be installed in water-filled drill holes
- No tightening torque required
- Optimum for thin concrete components
- Low anchorage depth – reduced drilling effort
- Also approved for diamond drilling

Ideal for series installation



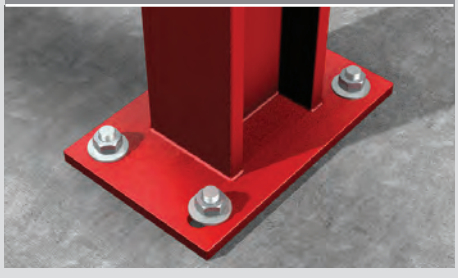
For high load capacity

For variable anchorage depth



Variable effective length

For diamond drilling



For a wide range of application

NEW

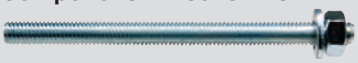
The fischer Powerbond System consists of 3 components.

The heart of this high-performance composite anchor is the Powersleeve FIS PS,
which forms the basis for a high load level in cracked concrete. Combining the fischer Powersleeve FIS PS with the fischer anchor rod FIS A/RGM and the Powerbond Special Resin FIS PM guarantees a high degree of safety.
Approved for pre-positioned and push-through installation.

Component 1: fischer FIS PS – Powersleeve

- The Powersleeve with conical geometry is made of stainless steel and can therefore be used both indoors and outdoors.

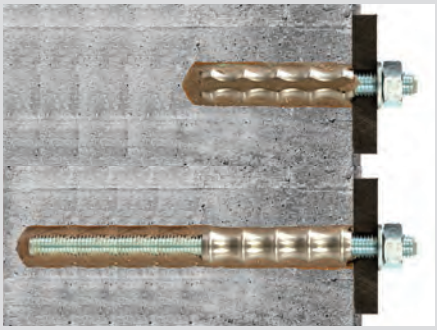
Component 2: fischer FIS A – Anchor rod



- Approved in sizes M10, M12 and M16 made of zinc-plated steel 5.8 and 8.8, as well as stainless steel A4.
- Comprehensive range of FIS A/RGM and FIS A, which can be individually cut to size.
- Depending on the application and requirement, the required anchorage depth is matched precisely to the required load. This saves money, as the anchor can always be calculated to 100 % utilisation.

Component 3: fischer Powerbond Special resin FIS PM

- fischer FIS PM is a highly powerful vinyl ester injection resin, which was developed especially for the fischer Powerbond-System.
- fischer Powerbond Special resin may be installed in **dry, damp** and **water-filled drill holes.**
- Usable up to –5 °C.
- No tightening torque is required; with stand-off installation, the time-consuming tensioning against the subsoil in tension and transverse loads can be dispensed with.
- The system is approved at the same load level for hammer-drilled or diamond-drilled drill holes.



Curing times

Temperature in anchoring base	Curing time Special Resin FIS PM
– 5 °C – 0 °C	360 minutes
> 0 °C – + 5 °C	180 minutes
> + 20 °C – + 30 °C	35 minutes

In damp concrete, the curing time needs to be doubled.

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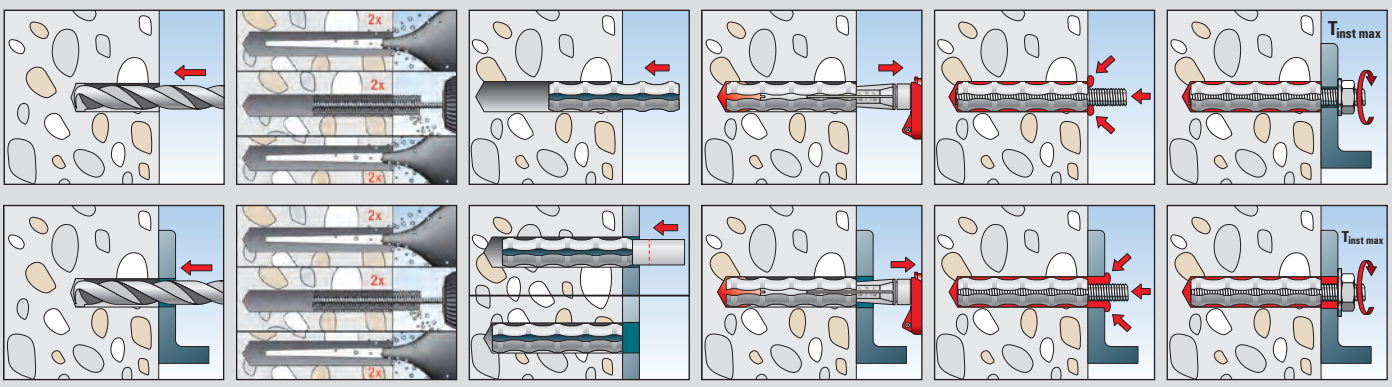
Option 1 for cracked concrete

Fire resistance classification
R 120
Sizes of anchors see examination report

Pre-positioned installation and push-through installation



fischer Powerbond System FPB: Full range.

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Option 1 for cracked concrete

Powersleeve FIS PS

Article description	Art. no.	Drill hole-Ø d_o [mm]	Minimum drill depth $h_{o,\,min}$ [mm]	Minimum anchorage depth $h_{ef,\,min}$ [mm]	Minimum fill level [scale units]	Fits	Sleeve length [mm]	Sales unit [units]
FIS PS M10	517871	14	60	60	4	FIS A M10, RGM 10	60	10
FIS PS M12	517872	16	72	72	6	FIS A M12, RGM 12	72	10
FIS PS M16	517873	20	96	96	10	FIS A M16, RGM 16	96	10

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Option 1 for cracked concrete

Anchor rod FIS A

Article description	Zinc-plated steel, steel grade 5.8 Art. no.	Zinc-plated steel, steel grade 8.8 Art. no.	Stainless steel A4-70 Art. no.	Drill hole diameter d_o [mm]	Minimum anchorage depth $h_{ef,\,min}$ [mm]	Fill quantity [scale units]	Usable length [mm]	Max. anchorage depth $h_{ef,\,min}$ [mm]	Fill quantity [scale units]	Usable length [mm]	Sales unit [units]
FIS A M 10 x 110	090278	–	090444	14	60	4	37	96	7	1	10
FIS A M 10 x 130	090279	519478	090447	14	60	4	57	116	8	1	10
FIS A M 10 x 150	090281	517935	090448	14	60	4	77	120	8	17	10
FIS A M 10 x 170	044969	519395	044973	14	60	4	97	120	8	37	10
FIS A M 10 x 190	–	517936	519420	14	60	4	117	120	8	57	10
FIS A M 10 x 200	090282	519396	090449	14	60	4	127	120	8	67	10
FIS A M 12 x 120	044971	519397	044974	16	72	6	32	103	9	1	10
FIS A M 12 x 140	090283	519398	090450	16	72	6	52	123	11	1	10
FIS A M 12 x 160	090284	517937	090451	16	72	6	72	143	12	1	10
FIS A M 12 x 180	090285	519399	090452	16	72	6	92	144	12	20	10
FIS A M 12 x 200	-	517938	519421	16	72	6	112	144	12	40	10
FIS A M 12 x 210	090286	-	090453	16	72	6	122	144	12	50	10
FIS A M 12 x 260	090287	-	090454	16	72	6	172	144	12	100	10
FIS A M 16 x 130	044972	519400	044975	20	96	10	14	109	12	1	10
FIS A M 16 x 175	090288	519401	090455	20	96	10	59	154	18	1	10
FIS A M 16 x 200	090289	517939	090456	20	96	10	84	179	18	1	10
FIS A M 16 x 250	090290	517940	090457	20	96	10	134	192	18	38	10
FIS A M 16 x 300	090291	519402	090458	20	96	10	184	192	18	88	10

Other usable lengths available on request.

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Option 1 for cracked concrete

Powerbond FPB Set, consisting of anchor rod FIS A and Powersleeve FIS PS

Article description	Zinc-plated steel, steel grade 8.8 Art. no.	Stainless steel A4-70 Art. no.	Consisting of	Nominal drill diameter d_o [mm]	Minimum anchorage depth $h_{ef,\,min}$ [mm]	Fill quantity [scale units]	Usable length [mm]	Maximum anchorage depth $h_{ef,\,max}$ [mm]	Fill quantity [scale units]	Usable length [mm]	Sales unit [units]
Powerbond FPB Set 10 x 110	519726	519719	FIS A M10 x 110 + FIS PS M10	14	60	4	37	96	7	1	10
Powerbond FPB Set 10 x 130	519727	519720	FIS A M10 x 130 + FIS PS M10	14	60	4	57	120	8	1	10
Powerbond FPB Set 12 x 120	519728	519721	FIS A M12 x 120 + FIS PS M12	16	72	6	32	103	9	1	10
Powerbond FPB Set 12 x 160	519729	519722	FIS A M12 x 160 + FIS PS M12	16	72	6	72	143	12	1	10
Powerbond FPB Set 12 x 200	519730	519723	FIS A M12 x 200 + FIS PS M12	16	72	6	112	144	12	40	10
Powerbond FPB Set 12 x 260	519731	–	FIS A M12 x 260 + FIS PS M12	16	72	6	172	144	12	100	10
Powerbond FPB Set 16 x 150	519732	519724	FIS A M16 x 150 + FIS PS M16	20	96	10	34	129	18	1	10
Powerbond FPB Set 16 x 250	519733	519725	FIS A M16 x 250 + FIS PS M16	20	96	10	134	192	18	38	10

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Option 1 for cracked concrete

Anchor rod FIS A

Article description	Zinc-plated steel, steel grade 5.8 Art. no.	Zinc-plated steel, steel grade 8.8 Art. no.	Stainless steel A4-70 Art. no.	Drill hole Ø d_o [mm]	Minimum anchorage depth $h_{ef,min}$ [mm]	Minimum fill level [scale units]	Usable length [mm]	Max. anchorage depth $h_{ef,min}$ [mm]	Minimum fill level [scale units]	Usable length [mm]	Sales unit [units]
FIS A M 10 x 1000	509215	509223	509231	14	60	4	-	120	8	-	10
FIS A M 12 x 1000	509216	509224	509232	16	72	6	-	144	12	-	10
FIS A M 16 x 1000	509217	509225	509233	20	96	10	-	192	18	-	10

Please order nut and threaded bolt separately.

Nut and washer

Article description	Zinc-plated steel, steel grade 8 Art. no.	Stainless steel A4-70 Art. no.	Wrench size SW	Washer (outside-Ø x thickness) [mm]	Fits	Sales unit [units]
Nut and washer M10	510510	510514	17	20 x 2	FIS A M10 x 1000	50
Nut and washer M12	510511	510515	19	24 x 2.5	FIS A M12 x 1000	25
Nut and washer M16	510512	510516	24	30 x 3	FIS A M16 x 1000	20

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Option 1 for cracked concrete

Anchor rod RG M

Article description	Zinc-plated steel, steel grade 5.8 Art. no.	Zinc-plated steel, steel grade 8.8 Art. no.	Stainless steel A4-70 Art. no.	Drill hole Ø d_o [mm]	Minimum anchorage depth $h_{ef,min}$ [mm]	Minimum fill level [scale units]	Usable length [mm]	Max. effective anchorage depth $h_{ef,max}$ [mm]	Minimum fill level [scale units]	Usable length [mm]	Sales unit [units]
RG M 10 x 130	050257	–	050264	14	60	4	50	109	8	1	10
RG M 10 x 165	050280	–	050294	14	60	4	85	120	8	25	10
RG M 10 x 190	050281	–	050296	14	60	4	110	120	8	50	10
RG M 10 x 220	–	519444	–	14	60	4	140	120	8	80	10
RG M 10 x 250	095703	–	095701	14	60	4	170	120	8	110	10
RG M 10 x 350	095718	–	095709	14	60	4	270	120	8	210	10
RG M 12 x 160	050258	–	050265	16	72	6	64	135	12	1	10
RG M 12 x 200 E	050572	–	050576	16	72	6	104	144	12	32	10
RG M 12 x 220	050283	519445	050297	16	72	6	124	144	12	52	10
RG M 12 x 250	050284	–	095702	16	72	6	154	144	12	82	10
RG M 12 x 300	050285	–	095705	16	72	6	204	144	12	132	10
RG M 12 x 380	095720	–	095710	16	72	6	284	144	12	212	10
RG M 16 x 165	050287	–	095704	20	96	10	37	134	14	1	10
RG M 16 x 190	050259	–	050266	20	96	10	62	157	15	1	10
RG M 16 x 235 E	090716	–	–	20	96	10	107	192	18	11	10
RG M 16 x 250	050288	–	050298	20	96	10	122	192	18	26	10
RG M 16 x 270	–	519446	–	20	96	10	142	192	18	46	10
RG M 16 x 300	050289	–	050299	20	96	10	172	192	18	76	10
RG M 16 x 380	095722	–	095712	20	96	10	252	192	18	156	10
RG M 16 x 500	095723	–	095713	20	96	10	372	192	18	276	10

Other usable lengths available on request.

fischer Powerbond System FPB: Full range.

FIS PM 360 S

FIS Mixer Red

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Option 1 for cracked concrete

Powerbond Special resin FIS PM

Article description	Art. no.	Language	Content	Content [scale units]	Sales unit [units]
FIS PM 360 S	518600	D,F,NL	1 cartridge 360 ml + 2 x FIS Mixer Red	180	6
FIS PM 360 S	518785	GB, E, P	1 cartridge 360 ml + 2 x FIS Mixer Red	180	6
FIS PM 360 S	520527	I, GB, D	1 cartridge 360 ml + 2 x FIS Mixer Red	180	6
FIS PM 360 S	520560	DK, SE, NO, FIN	1 cartridge 360 ml + 2 x FIS Mixer Red	180	6
FIS PM 360 S	520596	PL, RUS, H	1 cartridge 360 ml + 2 x FIS Mixer Red	180	6
FIS Mixer Red	096448		10 x static mixer	10	10

FIS DM S

FIS AP

FIS DC S

FIS AM

Dispensing units

Article description	Art. no.	Art.	Sales unit [units]
FIS DM S	511118	Manual dispensing unit	1
FIS AP	058027	Pneumatic dispensing unit	1
FIS DC S	513423	Battery dispenser unit	1
FIS AM	058000	Manual dispensing unit	1

Cleaning brushes BS

SDS holder

Cleaning brushes BS

Article description	Art. no.	Description	Fits	Drill-Ø d_o	Sales unit [units]
BS ø 14	078180		FIS PS 10 + FIS A M10	14 mm	1
BS Ø 16/18	078181		FIS PS 12 + FIS A M12	16 mm	1
BS ø 20	052277		FIS PS 16 + FIS A M16	20 mm	1
SDS holder	511961	with inner thread M8			

Compressed air cleaning gun ABP

Blow-out pump ABG

Compressed air cleaning guns and blow-out pumps

Article description	Art. no.		Sales unit [units]
Compressed air cleaning gun ABP	093286		1
Blow-out pump ABG	089300		1

fischer Superbond System FSB:
The universal solution for concrete.

NEW

fischer Superbond System FSB: The universal solution for concrete.

Advantages at a glance

- Variable anchorage depth of 60 – 600 mm
- Free choice between injection resin FIS SB and reaction capsule RSB
- Approved for installation from –30 °C
- Reaction capsule RSB is approved for water-filled drill holes and diamond drill holes
- Anchor sizes M8 – M30
- Approved for seismic applications according to category C1

Superbond Resin FIS SB 390 S

Anchor rod FIS A / RG M

Reaction capsule RSB

Internally threaded anchor RG MI

For soundproof walls

For silo systems

For seismic-retrofitting

For underwater installations

For low axial and edge distances

For installing in freezing temperatures

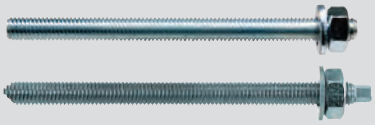
The fischer Superbond System consists of 2 components.

The different steel parts (anchor rod FIS A/RGM inner thread anchor RG MI, reinforcing bars, reinforcing thread anchor FRA) can be anchored in cracked concrete with the newly developed fischer Superbond resin FIS SB or the resin capsule RSB.
New! The system is now also approved for seismic applications. System operating range from –40 °C to +150 °C.

Component 1: Steel part

Free selection between FIS A, RGM, RG MI.

Anchor rod **FIS A/RGM**



- Anchor rods in the models of zinc-plated steel 5.8, 8.8, stainless steel A4 and highly corrosion-resistant steel.

Inner thread anchor **RG MI**

- Inner thread anchor for surface-flush installation in the model of zinc-plated and stainless steel A4.

Component 2: Composite resin

Reaction capsule **RSB**

- The reaction capsule RSB simplifies hole cleaning, no brushing of drill hole required.
- The RSB has a very short curing time and can be mounted from – 30 °C (see table).

Superbond resin **FIS SB**

- With the Superbond resin FIS SB anchor rods of sizes M8 to M30 can be installed.
- Superbond mortar FIS SB *HIGH SPEED* is approved for installations with temperatures as low as -20 °C.
- Superbond mortar FIS SB *LOW SPEED* offers an extended processing time. It is particularly suitable for applications with large anchorage depths and large drill holes as well as for processing at high ambient temperatures.
- The new silane technology enables high anchoring forces.

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Option 1 for cracked concrete

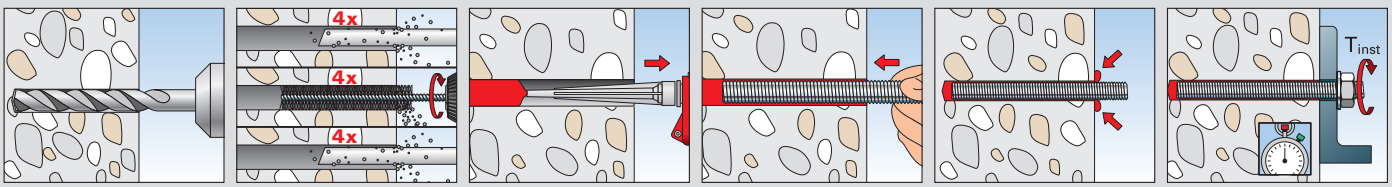
Fire resistance classification
R 120
Sizes of anchors see examination report

SEISMIC

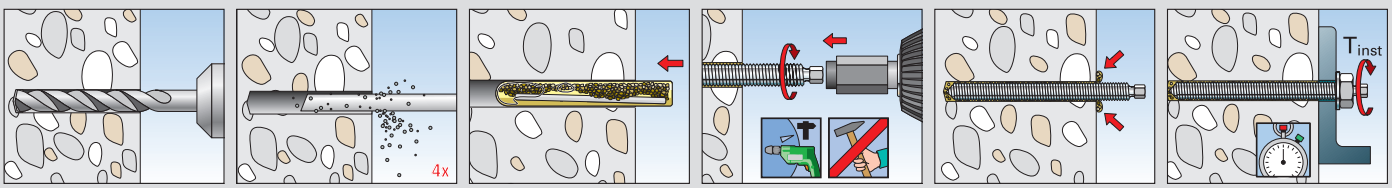
Curing times

Temperature in anchoring base	Curing times			
	FIS SB *LOW SPEED*	FIS SB (standard)	FIS SB *HIGH SPEED*	RSB
– 30 °C to – 20 °C	–	–		120 hours
> – 20 °C to – 15 °C	–	–	24 hours	48 hours
> – 15 °C to – 10 °C	–	36 hours	8 hours	30 hours
> ± 0 °C to + 5 °C	17 hours	4 hours	60 minutes	45 minutes
> + 20 °C to + 30 °C	60 minutes	45 minutes	15 minutes	5 minutes
> + 30 °C to + 40 °C	60 minutes	30 minutes	–	3 minutes

Installation with injection resin FIS SB in hammer-drilled drill hole



Installation with reaction capsule RSB in hammer-drilled drill hole



fischer Superbond System FSB: Full range.

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Option 1 for cracked concrete

Anchor rod FIS A for installing with Superbond resin FIS SB

Article description	Zinc-plated steel steel grade 5.8 Art. no.	Zinc-plated steel steel grade 8.8 Art. no.	Stainless steel A4-70 Art. no.	Drill hole diameter d_o [mm]	Minimum anchorage depth $h_{ef,min}$ [mm]	Usable length wtith $h_{ef,min}$ $t_{fix,hef\ min}$ [mm]	Fill quantity FIS SB at $h_{ef,min}$ [scale units]	Maximum anchorage depth $h_{ef,max}$ [mm]	Usable length with $h_{ef,max}$ $t_{fix,hef\ max}$ [mm]	Fill quantity FIS SB at $h_{ef,max}$ [scale units]	Sales unit [units]
FIS A M 8 x 90	090274	519390	090440	10	60	19	2	78	1	3	10
FIS A M 8 x 110	090275	519391	090441	10	60	39	2	98	1	3	10
FIS A M 8 x 130	090276	519392	090442	10	60	59	2	118	1	4	10
FIS A M 8 x 175	090277	519393	090443	10	60	104	2	160	4	5	10
FIS A M 8 x 1000	509214	519394	509230	10	60	-	2	160	-	5	10
FIS A M 10 x 110	090278	–	090444	12	60	37	3	96	1	4	10
FIS A M 10 x 130	090279	–	090447	12	60	57	3	116	1	5	10
FIS A M 10 x 150	090281	517935	090448	12	60	77	3	136	1	5	10
FIS A M 10 x 170	044969	519395	044973	12	60	97	3	156	1	6	10
FIS A M 10 x 190	–	517936	519420	12	60	117	3	176	1	7	10
FIS A M 10 x 200	090282	519396	090449	12	60	127	3	186	1	7	10
FIS A M 10 x 1000*	509215	509223	509231	12	60	-	3	200	-	7	10
FIS A M 12 x 120	044971	519397	044974	14	70	34	3	103	1	5	10
FIS A M 12 x 140	090283	519398	090450	14	70	54	3	123	1	6	10
FIS A M 12 x 160	090284	517937	090451	14	70	74	3	143	1	7	10
FIS A M 12 x 180	090285	519399	090452	14	70	94	3	163	1	7	10
FIS A M 12 x 200	–	517938	519421	14	70	114	3	183	1	8	10
FIS A M 12 x 210	090286	–	090453	14	70	124	3	193	1	9	10
FIS A M 12 x 260	090287	–	090454	14	70	174	3	240	4	10	10
FIS A M 12 x 1000*	509216	509224	509232	14	70	-	3	240	-	10	10
FIS A M 16 x 130	044972	519400	044975	18	80	30	5	109	1	7	10
FIS A M 16 x 175	090288	519401	090455	18	80	75	5	154	1	10	10
FIS A M 16 x 200	090289	517939	090456	18	80	100	5	179	1	11	10
FIS A M 16 x 250	090290	517940	090457	18	80	150	5	229	1	14	10
FIS A M 16 x 300	090291	519402	090458	18	80	200	5	279	1	17	10
FIS A M 16 x 1000*	509217	509225	509233	18	80	-	5	320	-	19	10
FIS A M 20 x 245	090292	519404	090459	24	90	131	11	220	1	28	10
FIS A M 20 x 290	090293	519406	090460	24	90	176	11	265	1	32	10
FIS A M 20 x 1000*	–	519410	519427	24	90	-	11	400	-	48	10
FIS A M 24 x 290	090294	–	090468	28	96	165	15	260	1	39	5
FIS A M 24 x 380	090295	–	090462	28	96	255	15	350	1	52	5
FIS A M 30 x 340	090296	–	090463	35	120	185	28	304	1	67	5
FIS A M 30 x 430	090297	–	090464	35	120	275	28	394	1	88	5

* excluding nuts and washers – FIS A highly corrosion-resistant steel 1.4529 on request. Additional sizes on request.

Nut and washer

Article description	Zinc-plated steel steel grade 8 Art. no.	Stainless steel A4-70 Art. no.	Wrench size SW	Washer (outside-Ø x thickness) [mm]	Fits	Sales unit [units]
Nut and washer M8	510509	510113	13	16 x 1.6	FIS A M8 x 1000	50
Nut and washer M10	510510	510514	17	20 x 2	FIS A M10 x 1000	50
Nut and washer M12	510511	510515	19	24 x 2.5	FIS A M12 x 1000	25
Nut and washer M16	510512	510516	24	30 x 3	FIS A M16 x 1000	20
Nut and washer M20	519737	519738	30	37 x 3	FIS A M20 x 1000	10

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Option 1 for cracked concrete

Anchor rod RG M for installation with FIS SB or reaction capsule RSB

Article description	Zinc-plated steel steel grade 5.8 Art. no.	Zinc-plated steel steel grade 8.8 Art. no.	Stainless steel A4-70 Art. no.	Steel highly resistant to corrosion 1.4529 Art. Nr.	Nominal drill hole diameter d_0 [mm]	Short anchorage depth $h_{ef,1}$			Standard anchorage depth $h_{ef,2}$			Large anchorage depth $h_{ef,3}$			Sales unit
						Anchorage depth $h_{ef,1}$ [mm]	Usable length $t_{fix,1}$ [mm]	Number of capsules and description	Anchorage depth $h_{ef,2}$ [mm]	Usable length $t_{fix,2}$ [mm]	Number of capsules and description	Anchorage depth $h_{ef,3}$ [mm]	Usable length $t_{fix,3}$ [mm]	Number of capsules and description	[units]
RG M 8 x 110	050256	–	050263	096316	10				80	14	1 x RSB 8				10
RG M 8 x 150	095698	519443	050293	–	10				80	54	1 x RSB 8				10
RG M 8 x 250	095699	–	095700	–	10				80	154	1 x RSB 8				10
RG M 10 x 130	050257	–	050264	096217	12	75	35	1 x RSB 10 mini	90	20	1 x RSB 10				10
RG M 10 x 165	050280	–	050294	–	12	75	70	1 x RSB 10 mini	90	55	1 x RSB 10				10
RG M 10 x 190	050281	–	050296	–	12	75	95	1 x RSB 10 mini	90	80	1 x RSB 10	150	20	2 x RSB 10 mini	10
RG M 10 x 220	–	519444	–	–	12	75	125	1 x RSB 10 mini	90	110	1 x RSB 10	150	50	2 x RSB 10 mini	10
RG M 10 x 250	095703	–	095701	–	12	75	155	1 x RSB 10 mini	90	140	1 x RSB 10	150	80	2 x RSB 10 mini	10
RG M 10 x 300	–	–	512246	–	12	75	205	1 x RSB 10 mini	90	190	1 x RSB 10	150	130	2 x RSB 10 mini	10
RG M 10 x 350	095718	–	095709	–	12	75	255	1 x RSB 10 mini	90	240	1 x RSB 10	150	180	2 x RSB 10 mini	10
RG M 12 x 160	050258	–	050265	096218	14	75	61	1 x RSB 12 mini	110	26	1 x RSB 12				10
RG M 12 x 180	512248	–	512249	–	14	75	81	1 x RSB 12 mini	110	46	1 x RSB 12	150	6	2 x RSB 12 mini	10
RG M 12 x 200 E	050572	–	050576	–	14	75	101	1 x RSB 12 mini	110	66	1 x RSB 12	150	26	2 x RSB 12 mini	10
RG M 12 x 220	050283	519445	050297	–	14	75	121	1 x RSB 12 mini	110	86	1 x RSB 12	150	46	2 x RSB 12 mini	10
RG M 12 x 250	050284	–	095702	–	14	75	151	1 x RSB 12 mini	110	116	1 x RSB 12	150	76	2 x RSB 12 mini	10
RG M 12 x 300	050285	–	095705	–	14	75	201	1 x RSB 12 mini	110	166	1 x RSB 12	150	126	2 x RSB 12 mini	10
RG M 12 x 380	095720	–	095710	–	14	75	281	1 x RSB 12 mini	110	246	1 x RSB 12	150	206	2 x RSB 12 mini	10
RG M 16 x 165	050287	–	095704	–	18	95	38	1 x RSB 16 mini	125	8	1 x RSB 16				10
RG M 16 x 190	050259	–	050266	096219	18	95	63	1 x RSB 16 mini	125	33	1 x RSB 16				10
RG M 16 x 250	050288	–	050298	–	18	95	123	1 x RSB 16 mini	125	93	1 x RSB 16	190	28	2 x RSB 16 mini	10
RG M 16 x 270	–	519446	–	–	18	95	143	1 x RSB 16 mini	125	113	1 x RSB 16	190	48	2 x RSB 16 mini	10
RG M 16 x 300	050289	–	050299	–	18	95	173	1 x RSB 16 mini	125	143	1 x RSB 16	190	78	2 x RSB 16 mini	10
RG M 16 x 380	095722	–	095712	–	18	95	253	1 x RSB 16 mini	125	223	1 x RSB 16	190	158	2 x RSB 16 mini	10
RG M 16 x 500	095723	–	095713	–	18	95	373	1 x RSB 16 mini	125	343	1 x RSB 16	190	278	2 x RSB 16 mini	10
RG M 20 x 220	512251	–	–	–	25				170	14	1 x RSB 20				10
RG M 20 x 260	050260	–	050267	–	25				170	54	1 x RSB 20	210	14	1 x RSB 20 E / 24	10
RG M 20 x 290	–	519447	–	–	25				170	84	1 x RSB 20	210	44	1 x RSB 20 E / 24	10
RG M 20 x 350	095707	–	095706	–	25				170	144	1 x RSB 20	210	104	1 x RSB 20 E / 24	10
RG M 20 x 500	095725	–	–	–	25				170	294	1 x RSB 20	210	254	1 x RSB 20 E / 24	10
RG M 24 x 295	–	519448	–	–	28				210	56	1 x RSB 20 E / 24				10
RG M 24 x 300	050261	–	050268	–	28				210	61	1 x RSB 20 E / 24				10
RG M 24 x 400	095727	–	095715	–	28				210	161	1 x RSB 20 E / 24				10
RG M 24 x 600	095728	–	–	–	28				210	361	1 x RSB 20 E / 24				5
RG M 30 x 380	050262	–	090726	–	35				280	65	1 x RSB 30				5
RG M 30 x 500	095730	–	–	–	35				280	185	1 x RSB 30				5

Further sizes can be delivered on request.

fischer Superbond System FIS SB: Full range.

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Option 1 for cracked concrete

Internally threaded rod anchor RG MI for installation with Superbond resin FIS SB or reaction capsule RSB

Article description	Zinc-plated steel steel grade 5.8 Art. no.	Stainless steel A4-70 Art. no.	Connection thread M	Nominal drill diameter d_o [mm]	Anchorage depth h_{ef} [mm]	RSB	Fill quantity [scale units]	Apply bolt penetration [mm]	Max. bolt penetration [mm]	Sales unit [units]
RG 12 x 90 M8 I	**050552**	**050565**	M8	14	90	RSB 10	5	8	18	10
RG 16 x 90 M10 I	**050553**	**050566**	M10	18	90	RSB 12	7	10	23	10
RG 16 x 125 M12 I	**050562**	**050567**	M12	20	125	RSB 16	11	12	26	10
RG 22 x 160 M16 I	**050563**	**050568**	M16	24	160	RSB 16 E	17	16	35	5
RG 28 x 200 M20 I	**050564**	**050569**	M20	32	200	RSB 20 E/24	48	20	45	5

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Option 1 for cracked concrete

Reaction capsule RSB

Article description	Art. no.	Drill-Ø d_o	Anchoring depth h_{ef}	Suitable for	Sales unit [units]
RSB 8	**518807**	10	80	RG M8	10
RSB 10 mini	**518820**	12	75 / 150 [1]	RG M10	10
RSB 10	**518821**	12 / 14 [2]	90	RG M10/RG M8 I	10
RSB 12 mini	**518822**	14	75 / 150 [1]	RG M12	10
RSB 12	**518823**	14 / 18 [2]	110 / 90 [2]	RG M12 / RG M10 I	10
RSB 16 mini	**518824**	18	95 / 190 [1]	RG M16	10
RSB 16	**518825**	18 / 20 [2]	125	RG M16 / RG M12 I	10
RSB 16 E	**518826**	18	160	RG M16 I	10
RSB 20	**518827**	24	170	RG M20	10
RSB 20 E/24	**518828**	24 / 28 / 32 [2]	210 / 200 [2]	RG M20 / RG M24 / RG M20 I	5
RSB 30	**518829**	35	280	RG M30	5

[1] with 2 capsules behind each other [2] in connection with internally threaded rod anchor RG MI

FIS SB 390 S

FIS Mixer Red

FIS Ultra Mixer Red

ETA-12/0258
ETAG 001-5
Option 1 for cracked concrete

Superbond resin FIS SB

Article description	Art. no.	Language	Content	Content [scale units]	[units]
FIS SB 390 S	**519451**	D, F, NL	1 cartridge 390 ml + 2 x FIS Mixer Red	180	6
FIS SB 390 S	**520557**	D, SLO, SRB, BG	1 cartridge 390 ml + 2 x FIS Mixer Red	180	6
FIS SB 390 S	**518831**	GB, E, P	1 cartridge 390 ml + 2 x FIS Mixer Red	180	6
FIS SB 390 S	**519450**	I, GB, D	1 cartridge 390 ml + 2 x FIS Mixer Red	180	6
FIS SB 390 S	**520559**	DK, SE, NO, D, FIN	1 cartridge 390 ml + 2 x FIS Mixer Red	180	6
FIS SB 390 S	**520555**	CZ, SK, RO	1 cartridge 390 ml + 2 x FIS Mixer Red	180	6
FIS SB 390 S	**520595**	PL, RUS, H	1 cartridge 390 ml + 2 x FIS Mixer Red	180	6
FIS SB 585 S	**519452**	GB, E, P	1 cartridge 585 ml + 2 x FIS Ultra Mixer Red	270	6
FIS SB 585 S	**520526**	I, GB, D	1 cartridge 585 ml + 2 x FIS Ultra Mixer Red	270	6
FIS SB 1500 S	**519453**	D,GB, F, NL, E, P	1 cartridge 1500 ml + 2 x FIS Ultra Mixer Red	700	4
FIS SB 1500 S	**520528**	GB, I, PL, RUS, CZ, SK	1 cartridge 1500 ml + 2 x FIS Ultra Mixer Red	700	4
FIS SB HIGH SPEED 390 S	**523300**	(D)	1 cartridge 390 ml + 2 x FIS Mixer Red	180	6
FIS SB HIGH SPEED 390 S	**523301**	(GB,E,P)	1 cartridge 390 ml + 2 x FIS Mixer Red	180	6
FIS SB HIGH SPEED 390 S	**523302**	(CZ,SK,RO)	1 cartridge 390 ml + 2 x FIS Mixer Red	180	6
FIS SB HIGH SPEED 390 S	**523303**	(PL,RUS,H)	1 cartridge 390 ml + 2 x FIS Mixer Red	180	6
FIS Mixer Red	**096448**	–	10 x static mixer for 390-ml-cartridge	–	10
FIS Ultra Mixer Red	**520593**	–	10 x static mixer for 585-ml- and 1500-ml-cartridge	-	10

FIS DM S

FIS AP

FIS DC S

FIS AM

FIS DP-XL

Dispensing units

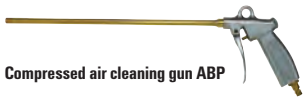
Article description	Art. no.	Art.	Sales unit [units]
FIS DM S	**511118**	Manual dispensing unit for FIS SB 390 S	1
FIS AP	**058027**	Pneumatic dispensing unit for FIS SB 390 S	1
FIS DC S	**513423**	Battery dispensing unit for FIS SB 390 S	1
Battery Pack (LI-ION) Battery 10.8 Volt	**513425**	10.8 V / LI-ION FIS DC S 1 (replacement battery)	1
FIS AM	**058000**	Manual dispensing unit for FIS SB 390 S	1
FIS DP-XL	**512401**	Pneumatic dispensing unit for FIS SB 1500 S	1

Cleaning brushes BS

SDS holder

Cleaning brushes BS

Article description	Art. no.	Description	Fits	Drill-Ø d_o	Sales unit [units]
BS Ø 10	**078178**		RG M 8 / RG M 5 I	10 mm	1
BS Ø 12	**078179**		RG M 10 / RG M 6 I	12 mm	1
BS Ø 14	**078180**		RG M 12 / RG M 8 I	14 mm	1
BS Ø 18	**078181**		RG M 16 / RG M 10 I	16 / 18 mm	1
BS Ø 20	**052277**		RG M 12 I	20 mm	1
BS Ø 24	**078182**		RG M 20 / RG M 16 I	24 mm	1
BS Ø 25	**097806**		RG M 20 / RG M I	27 mm	1
BS Ø 28	**078183**		RG M 24/27	30 mm	1
BS Ø 35	**078184**		RG M 30 / RG M 20 I	40 mm	1
SDS holder	**511961**	with inner thread M8	-	-	1
Brush extension	**508791**	for extensions with deep drill holes	-	-	1



Compressed air cleaning gun ABP

Blow-out pump ABG

Centring wegde

Machine setting tool RA-SDS

Compressed air cleaning gun, blow-out pump and centring device

Article description	Art. no.	Description	Sales unit [units]
Compressed air cleaning gun ABP	**093286**	-	1
Blow-out pump ABG	**089300**	-	1
Centring wedge	**093076**	-	10
Machine setting tool RA-SDS	**062420**	Setting tool with hammer drill with SDS holder	1

Load table Highbond.

fischer Highbond System FHB II

Permissible loads[1] of a single anchor in normal cracked concrete (concrete tensile zone) of strength C20/25[3] (~B25)

Model	Material	Effective anchorage depth h_{ef} [mm]	Permissible tension load $N_{perm.}$[2] [kN]	Permissible shear load $V_{perm.}$[2] [kN]	Required edge distance (at one edge) for: Max. tension load $c_{cr,N}$ [mm]	Required edge distance (at one edge) for: Max. shear load c [mm]	Required axial spacing for max. tension load without edge influence s_{cr} [mm]	Minimum component thickness h_{min} [mm]	Minimum distances with simultaneous reduction in load: Apply Axial spacing s_{min} [mm]	Minimum distances with simultaneous reduction in load: Apply Edge distance c_{min} [mm]
FHB II-A L M 8 x 60	gvz	60	8.0[4]	7.8	90	165	180	100	40	40
	A4 / C			8.7		185				
FHB II-A S M 10 x 60	gvz	60	8.0[4]	11.3	90	245	180	100	40	40
	A4 / C			13.8		310				
FHB II-A S M 10 x 75	gvz	75	11.1	11.3	113	215	225	120	40	40
	A4 / C			13.8		270				
FHB II-A L M 10 x 95	gvz	95	15.9	11.9	143	200	285	140	40	40
	A4 / C			13.3		225				
FHB II-A S M 12 x 75	gvz	75	11.1	15.6	113	305	225	120	40	40
	A4 / C			19.3		385				
FHB II-A L M 12 x 100	gvz	100	17.1	17.3	150	300	300	140	50	50
	A4 / C			19.3		335				
FHB II-A L M 12 x 120	gvz	120	22.5	17.3	180	260	360	170	50	50
	A4 / C			19.3		295				
FHB II-A S M 16 x 95	gvz	95	15.9	29.0	143	510	285	150	50	50
	A4 / C			31.7		560				
FHB II-A L M 16 x 125	gvz	125	24.0	32.2	188	505	375	170	55	55
	A4 / C			35.8		570				
FHB II-A L M 16 x 145	gvz	145	29.9	32.2	218	465	435	190	60	60
	A4 / C			35.8		525				
FHB II-A L M 16 x 160	gvz	160	34.7	32.2	240	420	480	220	70	70
	A4 / C			35.8		475				
FHB II-A S M 20 x 170	gvz	170	38.0	45.9	255	575	510	240	80	80
	A4 / C			55.9		720				
FHB II-A L M 20 x 210	gvz	210	52.2	50.2	315	560	630	280	90	90
	A4 / C			55.9		635				
FHB II-A S M 24 x 170	gvz	170	38.0	65.3	255	860	510	240	80	80
	A4			71.1		945				
	C			76.0		1020				
FHB II-A L M 24 x 210	gvz	210	52.2	72.5	315	860	630	280	90	90
	A4 / C			80.6		970				

When dimensioning, observe the approval certificate ETA-05/0164 (Highbond System FHB II) in its entirety.

1) The partial safety factors for material resistance and a partial safety factor for the load action of γ_F =1,4 which are regulated in the approval, are considered. A single anchor could be, for example, an anchor with an axial spacing $s \geq 3 \times h_{ef}$. See approval certificate for exact details. The specified loads are applicable for anchoring in dry and damp concrete for temperatures in the anchor base of -40 °C to +50 °C (or short-term up to +80 °C) and sufficient drill hole cleaning according to the approval certificate.

2) With combinations of tension and shear loads, or with shear loads with a lever (bending), and with reduced edge and axial spacing (anchor groups), a detailed measurement of the anchor, e. g. with our measurement programme Compufix, is required.

3) With higher concrete strengths up to C50/60, higher permissible loads up to 55 % are possible. This only applies to the Powerbond system FPB if concrete failure is considerable. See approval. The concrete is assumed to be normal reinforced.

4) Valid for injection resin FIS HB. When using the resin capsule FHB II-P or FHB II-PF, see approval.

5) The anchorage depth h_{ef} can be chosen freely between the values $h_{ef,min}$ and $h_{ef,max}$ according to the static requirements.

6) When using material 1.4529-80, higher loads could be possible. In this case, it could be necessary to increase the edge distance for the max. tension and shear load.

Load tables
Powerbond, Superbond.

fischer Powerbond System FPB with fischer anchor rods FIS A / RGM

Permissible loads[1] of a single anchor in normal cracked concrete (concrete tensile zone) of strength C20/25[3] (~B25)

Model	Effective anchorage depth h_{ef}[5] [mm]	Anchor rod material	Permissible tension load $N_{perm.}$[2] [kN]	Permissible shear load $V_{perm.}$[2] [kN]	Required edge distance (at one edge) for: Max. tension load c [mm]	Required edge distance (at one edge) for: Max. shear load d [mm]	Required axial spacing for max. tension load without edge influence s_{cr} [mm]	Minimum component thickness h_{min} [mm]	Minimum distances with simultaneous reduction in load: Apply Axial spacing s_{min} [mm]	Minimum distances with simultaneous reduction in load: Apply Edge distance c_{min} [mm]
FPB 10	$h_{ef,min}$ = 60	gvz., 5.8	8.0	8.6	90	185	180	100	50	50
		gvz., 8.8		13.1		290				
		A4-70; 1.4529-70[6]		9.2		195				
	$h_{ef,max}$ = 120	gvz., 5.8	13.8	8.6	95	130	360	150	50	50
		gvz., 8.8	18.0	13.1	135	210				
		A4-70; 1.4529-70[6]	15.7	9.2	110	140				
FPB 12	$h_{ef,min}$ = 72	gvz., 5.8	10.5	12.0	110	250	216	104	55	55
		gvz., 8.8		19.4		425				
		A4-70; 1.4529-70[6]		13.7		290				
	$h_{ef,max}$ = 144	gvz., 5.8	20.5	12.0	130	165	432	176	55	55
		gvz., 8.8	25.9	19.4	185	285				
		A4-70; 1.4529-70[6]	22.5	13.7	150	190				
FPB 16	$h_{ef,min}$ = 96	gvz., 5.8	16.1	22.3	145	400	288	136	60	60
		gvz., 8.8		32.2		600				
		A4-70; 1.4529-70[6]		25.2		460				
	$h_{ef,max}$ = 192	gvz., 5.8	37.6	22.3	225	260	576	232	60	60
		gvz., 8.8	45.6	36.0	290	460				
		A4-70; 1.4529-70[6]	42.0	25.2	260	300				

When dimensioning, observe the approval certificate ETA-12/0160 (Powerbond System FPB) in its entirety.

Footnotes see page 22.

fischer Superbond System FSB with fischer anchor rods FIS A / RGM

Permissible loads[1] of a single anchor in normal cracked concrete (concrete tensile zone) of strength C20/25[3] (~B25)

Model	Effective anchorage depth h_{ef}[3] [mm]	Also possible with resin capsule RSB and anchor rod RGM	Anchor rod material	Permissible tension load $N_{perm.}$[2] [kN]	Permissible shear load $V_{perm.}$[2] [kN]	Required edge distance (at one edge) for: Max. tension load c [mm]	Required edge distance (at one edge) for: Max. shear load d [mm]	Required axial spacing for max. tension load without edge influence s_{cr} [mm]	Minimum component thickness h_{min} [mm]	Minimum distances with simultaneous reduction in load: Apply Axial spacing s_{min} [mm]	Minimum distances with simultaneous reduction in load: Apply Edge distance c_{min} [mm]
FSB 8	$h_{ef,min}$ = 60		gvz., 5.8	4.3	5.1	90	105	180	100	40	40
			gvz., 8.8		8.6		190				
			A4-70; 1.4529-70[5]		6.0		125				
	h_{ef} = 80	■	gvz., 5.8	5.7	5.1	105	95	240	110		
			gvz., 8.8		8.6		170				
			A4-70; 1.4529-70[5]		6.0		115				
	$h_{ef,max}$ = 160		gvz., 5.8	9.1	5.1	75	80	480	190		
			gvz., 8.8	11.5	8.6	105	115				
			A4-70; 1.4529-70[5]	9.9	6.0	85	90				
FSB 10	$h_{ef,min}$ = 60		gvz., 5.8	5.8	8.6	90	185	180	100	45	45
			gvz., 8.8		11.6		255				
			A4-70; 1.4529-70[5]		9.1		195				
	h_{ef} = 75	■	gvz., 5.8	7.3	8.6	115	170	225	105		
			gvz., 8.8		13.1		280				
			A4-70; 1.4529-70[5]		9.2		185				
	h_{ef} = 90	■	gvz., 5.8	8.8	8.6	130	155	270	120		
			gvz., 8.8		13.1		250				
			A4-70; 1.4529-70[5]		9.2		165				
	h_{ef} = 150	■	gvz., 5.8	13.8	8.6	120	115	450	180		
			gvz., 8.8	14.6	13.1	130	185				
			A4-70; 1.4529-70[5]	14.6	9.2	130	120				
	$h_{ef,max}$ = 200		gvz., 5.8	13.8	8.6	80	110	600	230		
			gvz., 8.8	19.4	13.1	130	150				
			A4-70; 1.4529-70[5]	15.7	9.2	95	115				
FSB 12	$h_{ef,min}$ = 70		gvz., 5.8	9.4	12.0	105	255	210	100	55	55
			gvz., 8.8		18.9		420				
			A4-70; 1.4529-70[5]		13.7		295				
	h_{ef} = 75	■	gvz., 5.8	10.1	12.0	115	245	225	105		
			gvz., 8.8		19.4		420				
			A4-70; 1.4529-70[5]		13.7		285				
	h_{ef} = 110	■	gvz., 5.8	14.8	12.0	155	195	330	140		
			gvz., 8.8		19.4		340				
			A4-70; 1.4529-70[5]		13.7		230				
	h_{ef} = 150	■	gvz., 5.8	20.2	12.0	155	160	450	180		
			gvz., 8.8		19.4		280				
			A4-70; 1.4529-70[5]		13.7		185				
	$h_{ef,max}$ = 240		gvz., 5.8	20.5	12.0	75	135	720	270		
			gvz., 8.8	32.2	19.4	155	200				
			A4-70; 1.4529-70[5]	22.5	13.7	90	150				

Load table Superbond.

fischer Superbond System FSB with fischer anchor rods FIS A / RGM

Permissible loads[1] of a single anchor in normal cracked concrete (concrete tensile zone) of strength C20/25[3] (~B25)

Model	Effective anchorage depth h_{ef}[3] [mm]	Also possible with resin capsule RSB and anchor rod RGM	Anchor rod material	Permissible tension load $N_{perm.}$[2] [kN]	Permissible shear load $V_{perm.}$[2] [kN]	Required edge distance (at one edge) for: Max. tension load c [mm]	Required edge distance (at one edge) for: Max. shear load d [mm]	Required axial spacing for max. tension load without edge influence s_{cr} [mm]	Minimum component thickness h_{min} [mm]	Minimum distances with simultaneous reduction in load: Apply Axial spacing s_{min} [mm]	Minimum distances with simultaneous reduction in load: Apply Edge distance c_{min} [mm]
FSB 16	$h_{ef,min}$ = 80		gvz., 5.8	12.3	22.3	120	445	240	116	65	65
			gvz., 8.8		24.5		495				
			A4-70; 1.4529-70[5]		24.5		495				
	h_{ef} = 95	■	gvz., 5.8	15.9	22.3	145	400	285	131		
			gvz., 8.8		31.7		605				
			A4-70; 1.4529-70[5]		25.2		470				
	hef = 125	■	gvz., 5.8	22.4	22.3	190	350	375	161		
			gvz., 8.8		36.0		600				
			A4-70; 1.4529-70[5]		25.2		400				
	h_{ef} = 190	■	gvz., 5.8	34.1	22.3	215	265	570	226		
			gvz., 8.8		36.0		465				
			A4-70; 1.4529-70[5]		25.2		305				
	$h_{ef,max}$ = 320		gvz., 5.8	37.6	22.3	115	195	960	356		
			gvz., 8.8	57.4	36.0	215	320				
			A4-70; 1.4529-70[5]	42.0	25.2	135	215				
FSB 20	$h_{ef,min}$ = 90		gvz., 5.8	14.6	29.3	135	530	270	138	85	85
			gvz., 8.8								
			A4-70; 1.4529-70[5]								
	h_{ef} = 170	■	gvz., 5.8	38.0	34.9	255	455	510	218		
			gvz., 8.8		56.0		780				
			A4-70; 1.4529-70[5]		39.4		520				
	h_{ef} = 210	■	gvz., 5.8	47.1	34.9	280	395	630	258		
			gvz., 8.8		56.0		690				
			A4-70; 1.4529-70[5]		39.4		455				
	$h_{ef,max}$ = 400		gvz., 5.8	58.6	34.9	140	260	1200	448		
			gvz., 8.8	89.7	56.0	320	435				
			A4-70; 1.4529-70[5]	65.7	39.4	170	285				
FSB 24	$h_{ef,min}$ = 96		gvz., 5.8	16.1	32.2	145	545	288	152	105	105
			gvz., 8.8								
			A4-70; 1.4529-70[5]								
	h_{ef} = 210	■	gvz., 5.8	52.2	50.9	315	590	630	266		
			gvz., 8.8		80.6		1005				
			A4-70; 1.4529-70[5]		56.8		670				
	$h_{ef,max}$ = 480		gvz., 5.8	84.3	50.9	160	330	1440	536		
			gvz., 8.8	129.2	80.6	450	570				
			A4-70; 1.4529-70[5]	94.4	56.8	230	360				
FSB 27	$h_{ef,min}$ = 108		gvz., 5.8	19.2	38.5	165	610	324	168	120	120
			gvz., 8.8								
			A4-70; 1.4529-70[5]								
	$h_{ef,max}$ = 540		gvz., 5.8	109.5	65.7	240	390	1620	600		
			gvz., 8.8	152.9	105.1	490	700				
			A4-70; 1.4529-70[5]	123.0	73.7	325	445				
FSB 30	$h_{ef,min}$ = 120		gvz., 5.8	22.5	45.0	180	660	360	190	140	140
			gvz., 8.8								
			A4-70; 1.4529-70[5]								
	h_{ef} = 280	■	gvz., 5.8	80.3	80.6	420	795	840	350		
			gvz., 8.8		128.6		1375				
			A4-70; 1.4529-70[5]		90.2		910				
	$h_{ef,max}$ = 600		gvz., 5.8	133.8	80.6	300	440	1800	670		
			gvz., 8.8	188.4	128.6	600	805				
			A4-70; 1.4529-70[5]	150.1	90.2	395	510				

When dimensioning, observe the approval ETA-12/0258 in its entirety.

1) The partial safety factors for material resistance and a partial safety factor for the load action of γ_F =1,4 which are regulated in the approval, are considered. A single anchor could be, for ex ample, an anchor with an axial spacing $s \geq 3 \times h_{ef}$. See approval certificate for exact details. The specified loads are applicable for anchoring in dry and wet concrete, and for temperatures in the anchor base (in a cured condition) from -40 °C to +50 °C (or short-term up to +80 °C). Drill hole creation through hammer drilling and adequate drill hole cleaning according to the approval certificate.

2) With combinations of tension and shear loads, or with shear loads with a lever (bending), and with reduced edge and axial spacing (anchor groups), a detailed measurement of the anchor, e. g. with our measurement programme Compufix, is required.

3) The anchorage depth h_ef can be chosen freely between the values $h_{ef,min}$ and $h_{ef,max}$ according to the static requirements. When using RSB capsules, only the fixed anchorage depths h_{ef} are possible. RSB capsules only in combination with anchor rod RGM. Application of smooth tapped anchor rods FIS A only with resin FIS SB.

4) With higher concrete strengths up to C50/60, higher permissible loads up to 55 % are possible, when concrete failure is considerable. See approval. The concrete is assumed to be normal reinforced.

5) When using the material 1.4529-80, possible higher loads are possible. In this case, it could be necessary to increase the edge distance for the max. tension and shear load.

System selection guide.

		Highbond System	Powerbond System	Superbond System
				
Range				
Diameter	M8	■		■
	M10	■	■	■
	M12	■	■	■
	M16	■	■	■
	M20	■		■
	M24	■		■
	M27			■
	M30			■
Anchor material	zinc-plated 5.8		■	■
	zinc-plated 8.8	■	■	■
	stainless A4-70	■	■	■
	stainless A4-80		■	■
	highly resistant to corrosion 1.4529	■		■
Internal thread	M8 – M20			■
Installation				
Anchorage depth	minimum	6 x threads-Ø	from 6 x thread-Ø (stepless) up to 12 x threads-Ø	from 4 x thread-Ø (stepless) up to 20 x threads-Ø
	maximum	10 x threads-Ø		
Installation/drilling effort		very low	low	low
Diamond-drilled drill hole		not approved – but report available	permissible	permissible with capsule
Water-filled drill holes		permissible with capsule	permissible	permissible with capsule
Component temperature during installation		≥ -5 °C	≥ -5 °C	≥ ±0 °C with FIS SB *LOW SPEED*
				≥ -15 °C witht FIS SB (Standard)
				≥ -20 °C with FIS SB *HIGH SPEED*
				≥ -30 °C with RSB capsule
Simplified Push-through installation		very high	normal	high
Assembly with	Resin capsule	yes		yes
	Injection resin	yes	yes	yes
Types of mortar	LOW SPEED	–	–	injection resin
	Standard	injection resin / capsule	injection resin	injection resin / capsule
	HIGH SPEED	capsule	–	injection resin
Fast curing resin cartridge		yes		
Installation torque		required	not required	not required
Temperature after hardening		-40 °C to +80 °C	-40 °C to +80 °C	-40 °C to +150 °C
Fire classification according to DIN 4102		available	available	available
ZTV fire classification		available		
Load capacity increase with higher strength concrete		up to 55 %	up to 30 %	up to 10 %
Lower strength concrete B15		report available		
Light concrete ≥ LB 15		report available		
Approved for seismic applications				category C1

Design software COMPUFIX simplifies design and construction.

- Design and construct steel anchors and nylon anchors safely and economically without great effort.
- An automatic calculation gives immediate information on the effect of your change.
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