





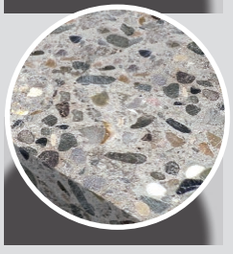


fischer Superbond System

The universal solution for cracked concrete.







ETA-12/0258
ETAG 001-5

Option 1 for cracked concrete

Fire resistance classification
R 120
Sizes of anchors see examination report





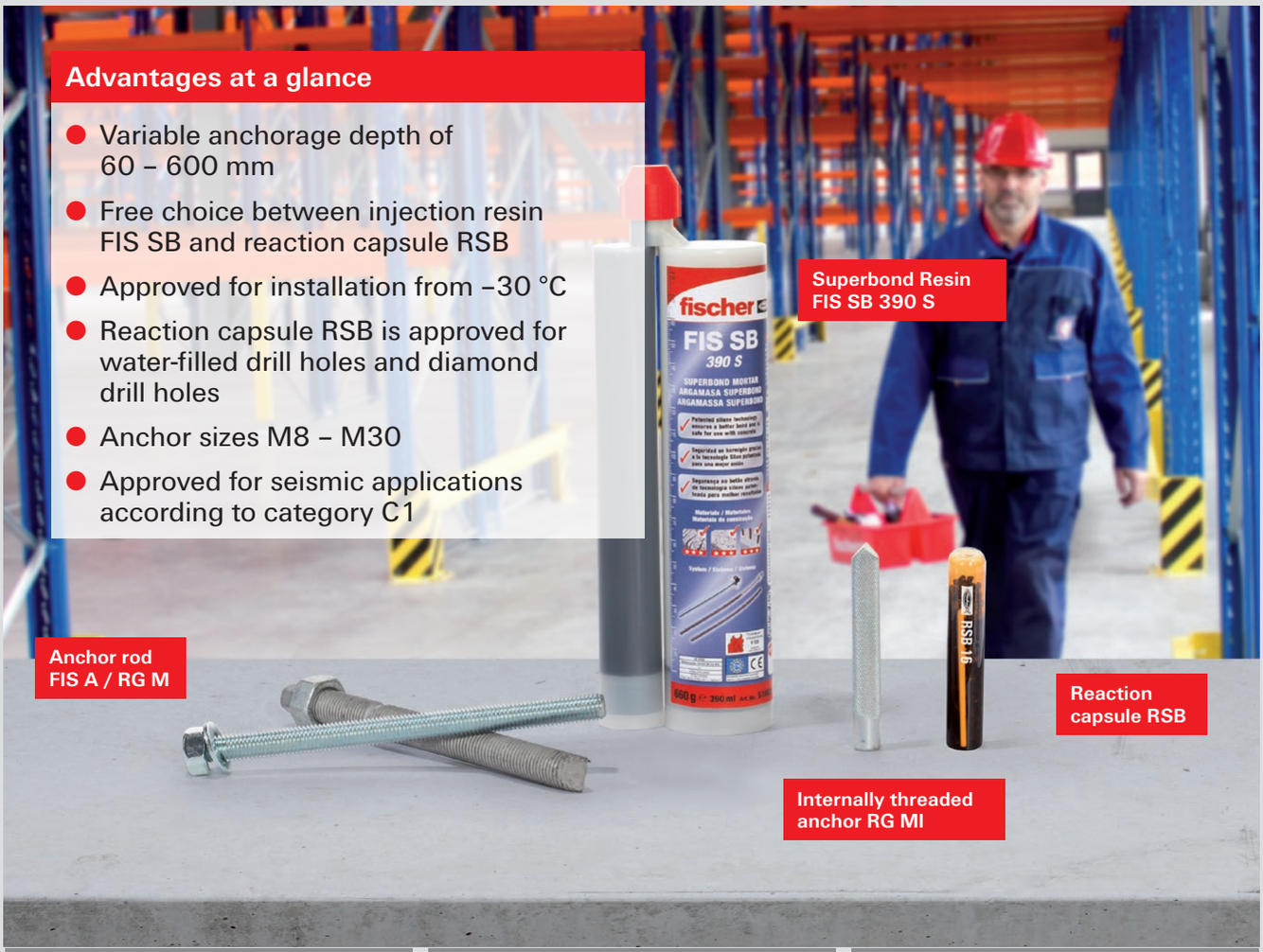
fischer

innovative solutions

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

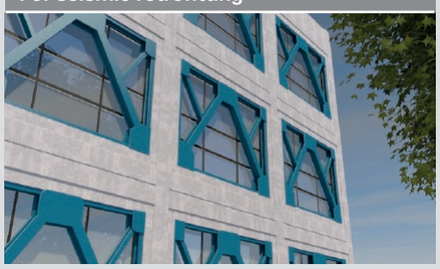
For soundproof walls



For silo systems



For seismic-retrofitting



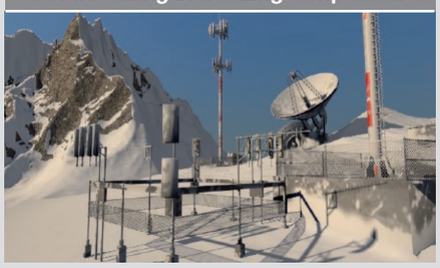
For underwater installations



For low axial and edge distances



For installing in freezing temperatures



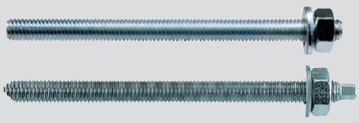
The fischer Superbond System consists of 2 components.

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

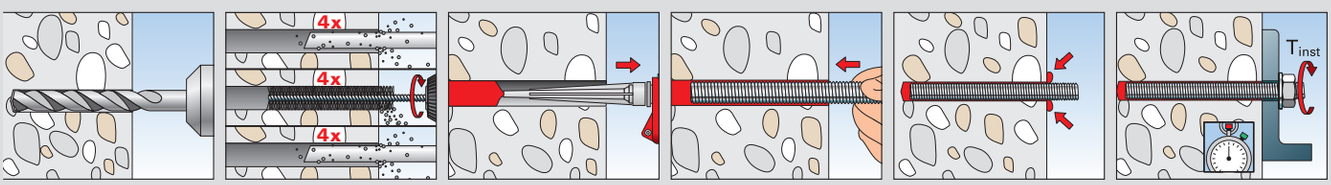
Fire resistance classification
R 120
Sizes of anchors see examination report

SEISMIC

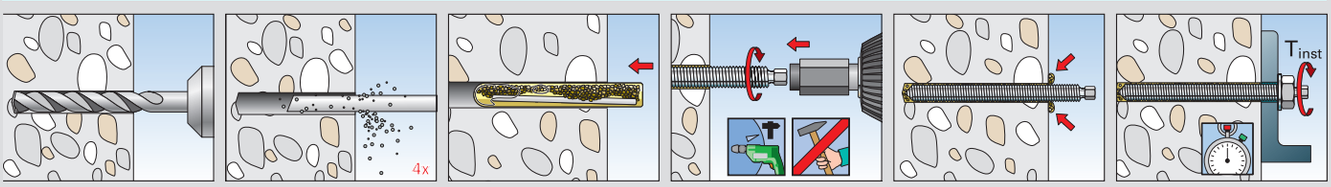
Curing times

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: 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: 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



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Option 1 for cracked concrete

Superbond resin FIS SB

Article description	Art. no.	Language	Content	Content [scale units]	Sales unit [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 Superbond.

Superbond Injection mortar FIS SB with threaded rod FIS A[7] (property class 8.8)

Highest permissible loads for a single anchor[1) 6)] in concrete C20/25[4)]. For the design the complete approval ETA-12/0258 has to be considered.

Typ	Min. effective anchorage depth	Max. effective anchorage depth	Min. member thickness	Max. torque moment	Cracked concrete				Non-cracked concrete			
					Permissible tensile load	Permissible shear load	Min. spacing	Min. edge distance	Permissible tensile load	Permissible shear load	Min. spacing	Min. edge distance
	$h_{ef,min}$ [mm]	$h_{ef,max}$ [mm]	h_{min} [mm]	$T_{inst,max}$ [Nm]	N_{perm}[3)] [kN]	V_{perm}[3)] [kN]	s_{min}[2)] [mm]	c_{min}[2)] [mm]	N_{perm}[3)] [kN]	V_{perm}[3)] [kN]	s_{min}[2)] [mm]	c_{min}[2)] [mm]
FIS A M8 (8.8)	60	-	100	10.0	4.3	8.6	40	40	8.6	8.6	40	40
	-	160	190	10.0	11.5	8.6	40	40	14.3	8.6	40	40
FIS A M10 (8.8)	60	-	100	20.0	5.8	11.7	45	45	10.8	13.1	45	45
	-	200	230	20.0	19.4	13.1	45	45	22.4	13.1	45	45
FIS A M12 (8.8)	70	-	100	40.0	9.4	18.8	55	55	14.1	19.4	55	55
	-	240	270	40.0	32.3	19.4	55	55	32.4	19.4	55	55
FIS A M16 (8.8)	80	-	116	60.0	12.3	24.5	65	65	17.2	34.4	65	65
	-	320	356	60.0	57.4	36.0	65	65	60.0	36.0	65	65
FIS A M20 (8.8)	90	-	138	120.0	14.6	29.3	85	85	20.5	41.1	85	85
	-	400	448	120.0	89.8	56.0	85	85	93.3	56.0	85	85
FIS A M24 (8.8)	96	-	152	150.0	16.1	32.2	105	105	22.6	45.2	105	105
	-	480	536	150.0	129.3	80.6	105	105	134.3	80.6	105	105
FIS A M27 (8.8)	108	-	168	200.0	19.2	38.5	120	120	27.0	54.0	120	120
	-	540	600	200.0	152.7	105.1	120	120	175.2	105.1	120	120
FIS A M30 (8.8)	120	-	190	300.0	22.5	45.1	140	140	31.6	63.2	140	140
	-	600	670	300.0	188.5	128.6	140	140	213.8	128.6	140	140

Superbond Injection mortar FIS SB with threaded rod FIS A A4[7)] (property class A4-70)

Highest permissible loads for a single anchor[1) 6)] in concrete C20/25[4)]. For the design the complete approval ETA-12/0258 has to be considered.

Typ	Min. effective anchorage depth	Max. effective anchorage depth	Min. member thickness	Max. torque moment	Cracked concrete				Non-cracked concrete			
					Permissible tensile load	Permissible shear load	Min. spacing	Min. edge distance	Permissible tensile load	Permissible shear load	Min. spacing	Min. edge distance
	$h_{ef,min}$ [mm]	$h_{ef,max}$ [mm]	h_{min} [mm]	$T_{inst,max}$ [Nm]	N_{perm}[3)] [kN]	V_{perm}[3)] [kN]	s_{min}[2)] [mm]	c_{min}[2)] [mm]	N_{perm}[3)] [kN]	V_{perm}[3)] [kN]	s_{min}[2)] [mm]	c_{min}[2)] [mm]
FIS A M8 (A4-70)	60	-	100	10	4.3	6	40	40	8.6	6	40	40
	-	160	190	10	9.9	6	40	40	9.9	6	40	40
FIS A M10 (A4-70)	60	-	100	20	5.8	9.2	45	45	10.8	9.2	45	45
	-	200	230	20	15.7	9.2	45	45	15.7	9.2	45	45
FIS A M12 (A4-70)	70	-	100	40	9.4	13.7	55	55	14.1	13.7	55	55
	-	240	270	40	22.5	13.7	55	55	22.5	13.7	55	55
FIS A M16 (A4-70)	80	-	116	60	12.3	24.5	65	65	17.2	25.2	65	65
	-	320	356	60	42	25.2	65	65	42	25.2	65	65
FIS A M20 (A4-70)	90	-	138	120	14.6	29.3	85	85	20.5	39.4	85	85
	-	400	448	120	65.7	39.4	85	85	65.7	39.4	85	85
FIS A M24 (A4-70)	96	-	152	150	16.1	32.2	105	105	22.6	45.2	105	105
	-	480	536	150	94.3	56.8	105	105	94.3	56.8	105	105
FIS A M27 (A4-70)	108	-	168	200	19.2	38.5	120	120	27	54	120	120
	-	540	600	200	123	73.7	120	120	123	73.7	120	120
FIS A M30 (A4-70)	120	-	190	300	22.5	45.1	140	140	31.6	63.2	140	140
	-	600	670	300	150.1	90.2	140	140	150.1	90.2	140	140

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 $c \geq 1{,}5 \times h_{ef}$.

2) Minimum possible axial spacings resp. edge distance while reducing the permissible load.

3) For combinations 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.

6) The given loads are valid for temperatures in the substrate up to +50 °C (resp. short term up to +80 °C). Erection of the drill hole by hammer drilling with best possible drill hole cleaning according approval.
The anchor may be installed in dry or wet concrete.

7) The given values apply as well to the threaded rod RGM in the same property class.

Superbond Injection mortar FIS SB with threaded rod FIS A A4[7] (property class C-70)

Highest permissible loads for a single anchor[1] [6] in concrete C20/25[4]. For the design the complete approval ETA-12/0258 has to be considered.

Typ	Min. effective anchorage depth $h_{ef,min}$ [mm]	Max. effective anchorage depth $h_{ef,max}$ [mm]	Min. member thickness h_{min} [mm]	Max. torque moment $T_{inst,max}$ [Nm]	Cracked concrete: Permissible tensile load N_{perm}[3] [kN]	Cracked concrete: Permissible shear load V_{perm}[3] [kN]	Cracked concrete: Min. spacing s_{min}[2] [mm]	Cracked concrete: Min. edge distance c_{min}[2] [mm]	Non-cracked concrete: Permissible tensile load N_{perm}[3] [kN]	Non-cracked concrete: Permissible shear load V_{perm}[3] [kN]	Non-cracked concrete: Min. spacing s_{min}[2] [mm]	Non-cracked concrete: Min. edge distance c_{min}[2] [mm]
FIS A M8 (C-70)	60	–	100	10	4.3	7.4	40	40	8.6	7.4	40	40
	–	160	190	10	11.5	7.4	40	40	12.4	7.4	40	40
FIS A M10 (C-70)	60	–	100	20	5.8	11.4	45	45	10.8	11.4	45	45
	–	200	230	20	19.4	11.4	45	45	19.5	11.4	45	45
FIS A M12 (C-70)	70	–	100	40	9.4	17.1	55	55	14.1	17.1	55	55
	–	240	270	40	28.1	17.1	55	55	28.1	17.1	55	55
FIS A M16 (C-70)	80	–	116	60	12.3	24.5	65	65	17.2	31.4	65	65
	–	320	356	60	52.4	31.4	65	65	52.4	31.4	65	65
FIS A M20 (C-70)	90	–	138	120	14.6	29.3	85	85	20.5	41.1	85	85
	–	400	448	120	81.9	49.1	85	85	81.9	49.1	85	85
FIS A M24 (C-70)	96	–	152	150	16.1	32.2	105	105	22.6	45.2	105	105
	–	480	536	150	117.6	70.9	105	105	117.6	70.9	105	105
FIS A M27 (C-70)	108	–	168	200	19.2	38.5	120	120	27	54	120	120
	–	540	600	200	152.7	92	120	120	153.3	92	120	120
FIS A M30 (C-70)	120	–	190	300	22.5	45.1	140	140	31.6	63.2	140	140
	–	600	670	300	187.1	112.6	140	140	187.1	112.6	140	140

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 $c \geq 1{,}5 \times h_{ef}$.
2) Minimum possible axial spacings resp. edge distance while reducing the permissible load.
3) For combinations 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.
6) The given loads are valid for temperatures in the substrate up to +50 °C (resp. short term up to +80 °C). Erection of the drill hole by hammer drilling with best possible drill hole cleaning according approval.
The anchor may be installed in dry or wet concrete.
7) The given values apply as well to the threaded rod RGM in the same property class.

Superbond Mortar capsule RSB with threaded rod RG M (property class 8.8)

Highest permissible loads for a single anchor[1] [6] in concrete C20/25[4]. For the design the complete approval ETA-12/0258 has to be considered.

Typ	Effective anchorage depth h_{ef} [mm]	Min. member thickness h_{min} [mm]	Max. torque moment $T_{inst,max}$ [Nm]	Cracked concrete: Permissible tensile load N_{perm}[3] [kN]	Cracked concrete: Permissible shear load V_{perm}[3] [kN]	Cracked concrete: Min. spacing s_{min}[2] [mm]	Cracked concrete: Min. edge distance c_{min}[2] [mm]	Non-cracked concrete: Permissible tensile load N_{perm}[3] [kN]	Non-cracked concrete: Permissible shear load V_{perm}[3] [kN]	Non-cracked concrete: Min. spacing s_{min}[2] [mm]	Non-cracked concrete: Min. edge distance c_{min}[2] [mm]
RG M 8 (8.8)	80	110	10	5.7	8.6	40	40	11.5	8.6	40	40
RG M 10 (8.8)	75	105	20	7.3	13.1	45	45	13.5	13.1	45	45
	90	120	20	8.8	13.1	45	45	16.2	13.1	45	45
	150	180	20	14.6	13.1	45	45	22.4	13.1	45	45
RG M 12 (8.8)	75	105	40	10.1	19.4	55	55	15.6	19.4	55	55
	110	140	40	14.8	19.4	55	55	23.7	19.4	55	55
	150	180	40	20.2	19.4	55	55	32.3	19.4	55	55
RG M 16 (8.8)	95	131	60	15.9	31.7	65	65	22.3	36	65	65
	125	161	60	22.4	36	65	65	33.6	36	65	65
	190	226	60	34.1	36	65	65	59.1	36	65	65
RG M 20 (8.8)	170	218	120	38	56	85	85	53.3	56	85	85
	210	258	120	47.1	56	85	85	73.2	56	85	85
RG M 24 (8.8)	210	266	150	52.2	80.6	105	105	73.2	80.6	105	105
RG M 30 (8.8)	280	350	300	80.3	128.6	140	140	112.7	128.6	140	140

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 $c \geq 1{,}5 \times h_{ef}$.
2) Minimum possible axial spacings resp. edge distance while reducing the permissible load.
3) For combinations 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.
6) The given loads are valid for temperatures in the substrate up to +50 °C (resp. short term up to +80 °C). Erection of the drill hole by hammer drilling with best possible drill hole cleaning according approval.
The anchor may be installed in dry or wet concrete.

Load table Superbond.

Superbond Mortar capsule RSB with threaded rod RG M A4 (property class A4-70)

Highest permissible loads for a single anchor[1) 6)] in concrete C20/25[4)]. For the design the complete approval ETA-12/0258 has to be considered.

Typ	Effective anchorage depth	Min. member thickness	Max. torque moment	Cracked concrete				Non-cracked concrete			
				Permissible tensile load	Permissible shear load	Min. spacing	Min. edge distance	Permissible tensile load	Permissible shear load	Min. spacing	Min. edge distance
	h_{ef} [mm]	h_{min} [mm]	$T_{inst,max}$ [Nm]	N_{perm}[3)] [kN]	V_{perm}[3)] [kN]	s_{min}[2)] [mm]	c_{min}[2)] [mm]	N_{perm}[3)] [kN]	V_{perm}[3)] [kN]	s_{min}[2)] [mm]	c_{min}[2)] [mm]
RG M 8 (A4-70)	80	110	10	5.7	6	40	40	9.9	6	40	40
RG M 10 (A4-70)	75	105	20	7.3	9.2	45	45	13.5	9.2	45	45
	90	120	20	8.8	9.2	45	45	15.7	9.2	45	45
	150	180	20	14.6	9.2	45	45	15.7	9.2	45	45
RG M 12 (A4-70)	75	105	40	10.1	13.7	55	55	15.6	13.7	55	55
	110	140	40	14.8	13.7	55	55	22.5	13.7	55	55
	150	180	40	20.2	13.7	55	55	22.5	13.7	55	55
RG M 16 (A4-70)	95	131	60	15.9	25.2	65	65	22.3	25.2	65	65
	125	161	60	22.4	25.2	65	65	33.6	25.2	65	65
	190	226	60	34.1	25.2	65	65	42	25.2	65	65
RG M 20 (A4-70)	170	218	120	38	39.4	85	85	53.3	39.4	85	85
	210	258	120	47.1	39.4	85	85	65.7	39.4	85	85
RG M 24 (A4-70)	210	266	150	52.2	56.8	105	105	73.2	56.8	105	105
RG M 30 (A4-70)	280	350	300	80.3	90.2	140	140	112.7	90.2	140	140

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 $c \geq 1{,}5 \times h_{ef}$.
2) Minimum possible axial spacings resp. edge distance while reducing the permissible load.
3) For combinations 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.
6) The given loads are valid for temperatures in the substrate up to +50 °C (resp. short term up to +80 °C). Erection of the drill hole by hammer drilling with best possible drill hole cleaning according approval.
The anchor may be installed in dry or wet concrete.

Superbond Mortar capsule RSB with threaded rod RG M C (property class C-70)

Highest permissible loads for a single anchor[1) 6)] in concrete C20/25[4)]. For the design the complete approval ETA-12/0258 has to be considered.

Typ	Effective anchorage depth	Min. member thickness	Max. torque moment	Cracked concrete				Non-cracked concrete			
				Permissible tensile load	Permissible shear load	Min. spacing	Min. edge distance	Permissible tensile load	Permissible shear load	Min. spacing	Min. edge distance
	h_{ef} [mm]	h_{min} [mm]	$T_{inst,max}$ [Nm]	N_{perm}[3)] [kN]	V_{perm}[3)] [kN]	s_{min}[2)] [mm]	c_{min}[2)] [mm]	N_{perm}[3)] [kN]	V_{perm}[3)] [kN]	s_{min}[2)] [mm]	c_{min}[2)] [mm]
RG M 8 (C-70)	80	110	10	5.7	7.4	40	40	11.5	7.4	40	40
RG M 10 (C-70)	75	105	20	7.3	11.4	45	45	13.5	11.4	45	45
	90	120	20	8.8	11.4	45	45	16.2	11.4	45	45
	150	180	20	14.6	11.4	45	45	19.5	11.4	45	45
RG M 12 (C-70)	75	105	40	10.1	17.1	55	55	15.6	17.1	55	55
	110	140	40	14.8	17.1	55	55	23.7	17.1	55	55
	150	180	40	20.2	17.1	55	55	28.1	17.1	55	55
RG M 16 (C-70)	95	131	60	15.9	31.4	65	65	22.3	31.4	65	65
	125	161	60	22.4	31.4	65	65	33.6	31.4	65	65
	190	226	60	34.1	31.4	65	65	52.4	31.4	65	65
RG M 20 (C-70)	170	218	120	38	49.1	85	85	53.3	49.1	85	85
	210	258	120	47.1	49.1	85	85	73.2	49.1	85	85
RG M 24 (C-70)	210	266	150	52.2	70.9	105	105	73.2	70.9	105	105
RG M 30 (C-70)	280	350	300	80.3	112.6	140	140	112.7	112.6	140	140

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 $c \geq 1{,}5 \times h_{ef}$.
2) Minimum possible axial spacings resp. edge distance while reducing the permissible load.
3) For combinations 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.
6) The given loads are valid for temperatures in the substrate up to +50 °C (resp. short term up to +80 °C). Erection of the drill hole by hammer drilling with best possible drill hole cleaning according approval.
The anchor may be installed in dry or wet concrete.

Superbond-Injection mortar FIS SB[7] with internal threaded anchor RG MI (screw property class 8.8)

Highest permissible loads for a single anchor[1) 6)] in concrete C20/25[4)]. For the design the complete approval ETA-12/0258 has to be considered.

Typ	Effective anchorage depth	Min. member thickness	Max. torque moment	Cracked concrete				Non-cracked concrete			
				Permissible tensile load	Permissible shear load	Min. spacing	Min. edge distance	Permissible tensile load	Permissible shear load	Min. spacing	Min. edge distance
	h_{ef} [mm]	h_{min} [mm]	$T_{inst,max}$ [Nm]	N_{perm}[3)] [kN]	V_{perm}[3)] [kN]	s_{min}[2)] [mm]	c_{min}[2)] [mm]	N_{perm}[3)] [kN]	V_{perm}[3)] [kN]	s_{min}[2)] [mm]	c_{min}[2)] [mm]
RG M 8 I	90	120	10	8.1	8.3	55	55	13.8	8.3	55	55
RG M 10 I	90	125	20	10.8	13.3	65	65	20.5	13.3	65	65
RG M 12 I	125	165	40	16.8	19.3	75	75	32.4	19.3	75	75
RG M 16 I	160	205	80	26.3	30.9	95	95	48.7	30.9	95	95
RG M 20 I	200	260	120	41.9	51.4	125	125	68	51.4	125	125

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 $c \geq 1{,}5 \times h_{ef}$.
2) Minimum possible axial spacings resp. edge distance while reducing the permissible load.
3) For combinations 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.
6) The given loads are valid for temperatures in the substrate up to +50 °C (resp. short term up to +80 °C). Erection of the drill hole by hammer drilling with best possible drill hole cleaning according approval.
The anchor may be installed in dry or wet concrete.
7) The given values apply to the Superbond-Resin capsule RSB as well.

Superbond Injection mortar FIS SB[7] with internal threaded anchor RG MI A4 (screw property class A4-70)

Highest permissible loads for a single anchor[1) 6)] in concrete C20/25[4)]. For the design the complete approval ETA-12/0258 has to be considered.

Typ	Effective anchorage depth	Min. member thickness	Max. torque moment	Cracked concrete				Non-cracked concrete			
				Permissible tensile load	Permissible shear load	Min. spacing	Min. edge distance	Permissible tensile load	Permissible shear load	Min. spacing	Min. edge distance
	h_{ef} [mm]	h_{min} [mm]	$T_{inst,max}$ [Nm]	N_{perm}[3)] [kN]	V_{perm}[3)] [kN]	s_{min}[2)] [mm]	c_{min}[2)] [mm]	N_{perm}[3)] [kN]	V_{perm}[3)] [kN]	s_{min}[2)] [mm]	c_{min}[2)] [mm]
RG M 8 I A4	90	120	10	8.1	5.9	55	55	9.9	5.9	55	55
RG M 10 I A4	90	125	20	10.8	9.3	65	65	15.7	9.3	65	65
RG M 12 I A4	125	165	40	16.8	13.5	75	75	22.5	13.5	75	75
RG M 16 I A4	160	205	80	26.3	25.1	95	95	42	25.1	95	95
RG M 20 I A4	200	260	120	41.9	39.4	125	125	65.7	39.4	125	125

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 $c \geq 1{,}5 \times h_{ef}$.
2) Minimum possible axial spacings resp. edge distance while reducing the permissible load.
3) For combinations 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.
6) The given loads are valid for temperatures in the substrate up to +50 °C (resp. short term up to +80 °C). Erection of the drill hole by hammer drilling with best possible drill hole cleaning according approval.
The anchor may be installed in dry or wet concrete.
7) The given values apply to the Superbond-Resin capsule RSB as well.

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fischer FZE (Regional Office)
R/A 07, BA 01 - 04
Jebel Ali Free Zone
Dubai, UAE
P. O. Box 261738
Tel: +971 4 883 7477
Fax: +971 4 883 7476
Email: enquiry@fischer.ae

Abu Dhabi
Tel: +971 2 552 5777
Fax: +971 2 552 6566
Email: enquiry@fischer.ae

State of Qatar
Tel: +974 4036 3100
Fax: +974 4471 0898
Email: qatar@fischer.ae

Kingdom of Saudi Arabia
Tel: +966 13 8140866
Fax: +966 13 8140855
Email: saudi@fischer.ae

State of Kuwait
Tel: +965 2481 8786,
+965 2482 5972
Fax: +965 2481 8385
Email: kuwait@fischer.ae

Kingdom of Bahrain
Tel: +973 17408090
Fax: +973 17404323
Email: bahrain@fischer.ae

Sultanate of Oman
Tel: +968 24445425/26/27/28/30
Fax: +968 24445423
Email: oman@fischer.ae

Pakistan
Tel: +923 01 8266216
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