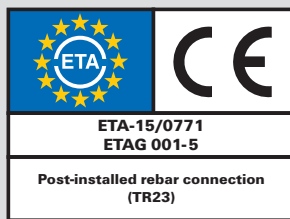
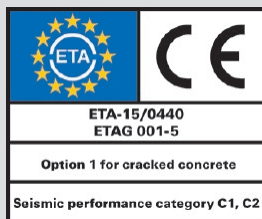


fischer Epoxy Mortar FIS EB

The basic epoxy mortar for applications in concrete



fischer [®]
innovative solutions

fischer Epoxy Mortar FIS EB: For standard applications in concrete and rebar connections.

Advantages at a glance

- Epoxy mortar for applications in concrete and rebar connections
- Approved for water-filled and diamond-drilled drill holes
- Approved for seismic applications performance category C1 and C2.
- Application temperature range: -40°C up to +72°C

NEW

Injection Mortar
FIS EB 390 S

Anchor rod
FIS A / RG M

Reinforcing bar

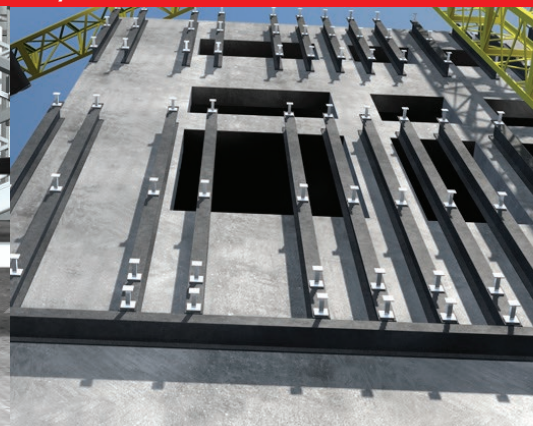
Traffic signs



High racks



Façade substructures



Rebar connections



Diamond drilling



Sound insulation walls



Epoxy mortar FIS EB:

FIS EB is an injection mortar based on epoxy resin suitable for standard applications in non-cracked and cracked concrete and for post-installed rebar connections.

It achieves high bonding strength and can be used under various conditions (dry / wet concrete, flooded drill holes), thus working in almost all situations on the construction site.

Moreover, the ETA approval Option 1 covers seismic applications of performance category C1 and C2 which allows FIS EB to be used also in earthquake regions.

Anchor rods FIS A / RG M:

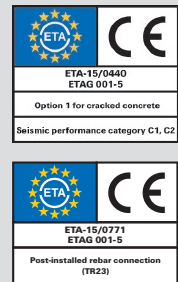
- Anchor rods FIS A or RG M in zinc-plated steel 5.8 or 8.8 and stainless steel A4 from M8 to M30 can be used with FIS EB.
- Variable embedment depths allow for ideal adaptation to the load to be applied and for high flexibility on site.



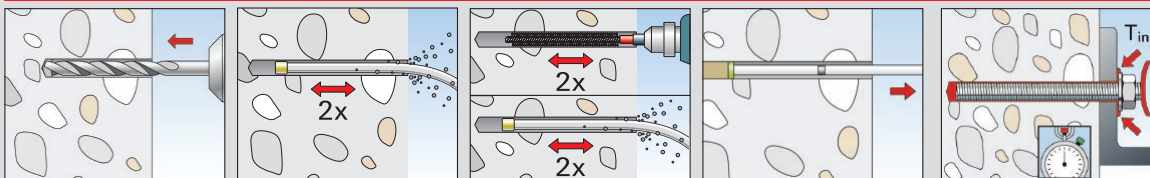
FIS A



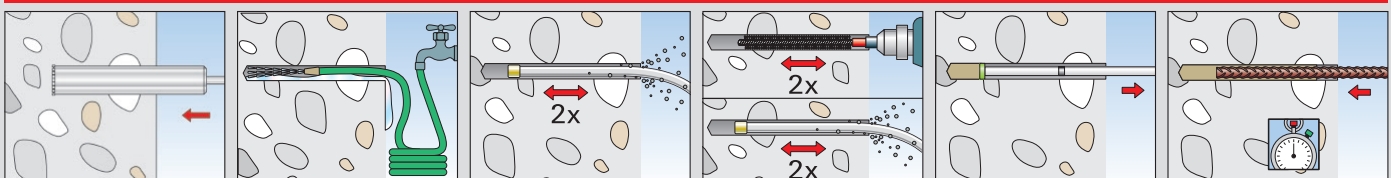
RG M



Installation of epoxy mortar FIS EB in hammer-drilled holes



Installation of epoxy mortar FIS EB in diamond-drilled holes



fischer Epoxy Mortar FIS EB: Full range

Processing and curing times

System temperature [°C]	+5 to +10	> +10 to +20	> +20 to +30	> +30 to +40
Maximum processing time [minutes]	120	30	14	7
Minimum curing time ¹⁾ [hours]	45	22	12	6

¹⁾ In damp concrete and water-filled drill holes, the curing time is to be doubled.



FIS EB 390 S



FIS EB 585 S



FIS Mixer Red



Ultra Mixer Red

Injection mortar FIS EB

Type	Art. No.	Approval	Languages on the cartridge	Contents	Sales unit
		ETA			[pcs]
FIS EB 390 S	534984	■	GB, E, P	1 cartridge 390 ml + 2 x mixing nozzles	6
FIS EB 390 S	534985	■	TR, RUS, ROK	1 cartridge 390 ml + 2 x mixing nozzles	6
FIS EB 585 S	534986	■	GB, E, P	1 cartridge 585 ml + 2 x mixing nozzles	6
FIS Mixer Red	096448	-	-	10 static mixing nozzles for FIS EB 390 S	10
Ultra Mixer Red	520593	-	-	10 static mixing nozzles for FIS EB 585 S	10



FIS DM S



FIS AP



FIS DC S



FIS AM



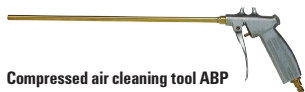
FIS DM S-L



FIS DP S-L

Dispensers

Type	Art. No.	Description	Sales unit [pcs]
FIS DM S	511118	Manual dispenser for FIS EB 390 S	1
FIS AP	058027	Pneumatic dispenser for FIS EB 390 S	1
FIS DC S	513423	Battery dispenser for FIS EB 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 dispenser for FIS EB 390 S	1
FIS DM S-L	510992	Manual dispenser for FIS EB 585 S	1
FIS DP S-L	511125	Pneumatic dispenser for FIS EB 585 S	1



Compressed air cleaning tool ABP



Centring wedges

Compressed air cleaning tool and centring wedges

Type	Art. No.	Description	Sales unit [pcs]
Compressed air cleaning tool ABP	093286	-	1
Centring wedges	093076	-	10

fischer Epoxy Mortar FIS EB: Full range



Anchor rod FIS A for installation with FIS EB

Type	Zinc-plated steel grade 5.8 Art. No.	Zinc-plated steel grade 8.8 Art. No.	Stain less steel A4-70 Art. No.	Drill hole diameter d_0 [mm]	Minimum anchorage depth $h_{ef, min}$ [mm]	Usable length with $h_{ef, min}$ $t_{fix, hef, min}$ [mm]	Filling quantity FIS EB at $h_{ef, min}$ [scale units]	Maximum anchorage depth $h_{ef, max}$ [mm]	Usable length with $h_{ef, max}$ $t_{fix, hef, max}$ [mm]	Filling quantity FIS EB at $h_{ef, max}$ [scale units]	Sales unit [pcs]
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	509222	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	-	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	-	090461	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 430	090297	-	090464	35	120	275	28	394	1	88	5

* excluding nuts and washers. Additional sizes on request.



Nut and washer

Type	Zinc-plated steel grade 8.8 Art. No.	Stain less steel A4-70 Art. No.	Wrench size SW	Washer (outside- \varnothing x thickness) [mm]	Fits	Sales unit [pcs]
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 2.0	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 3.0	FIS A M16 x 1000	20
Nut and washer M20	519737	519738	30	37 x 3.0	FIS A M20 x 1000	10

fischer Epoxy Mortar FIS EB: Full range



Cleaning brush BS



SDS chuck with internal thread M8

Cleaning brushes BS

Type	Art. No.	Description	Brush diameter [mm]	Drill-Ø d ₆	Sales unit [pcs]
BS ø 10	078178		11	10 mm	1
BS ø 12	078179		13	12 mm	1
BS ø 14	078180		16	14 mm	1
BS ø 18	078181		20	16 /18 mm	1
BS ø 24	078182		26	24 mm	1
BS ø 25	097806		27	25 mm	1
BS ø 28	078183		30	28 mm	1
BS ø 35	078184		40	30/32/35 mm	1
SDS chuck	530332	with internal thread M8	-	-	1
Brush extension	508791	extension for deep drill holes	-	-	1

fischer Epoxy Mortar FIS EB: Load table

Injection system FIS EB with threaded rod FIS A (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-15/0440 has to be considered.

Type	Min. effective anchorage depth $h_{ef,min}$ [mm]	Max. effective anchorage depth $h_{ef,max}$ [mm]	Min. member thickness h_{min} [mm]	Installation torque moment $T_{inst,max}$ [Nm]	Cracked concrete				Non-cracked concrete			
					Permissible tension load $N_{perm.}^{3)}$ [kN]	Permissible shear load $V_{perm.}^{3)}$ [kN]	Min. axial spacing $s_{min}^{2)}$ [mm]	min. edge distance $c_{min}^{2)}$ [mm]	Permissible tensile load $N_{perm.}^{3)}$ [kN]	Permissible shear load $V_{perm.}^{3)}$ [kN]	Min. spacing $s_{min}^{2)}$ [mm]	Min. edge distance $c_{min}^{2)}$ [mm]
FIS A M8	60		100	10.0	3.6	7.2	40	40	7.9	8.4	40	40
		160	190	10.0	9.6	8.4	40	40	13.9	8.4	40	40
FIS A M10	60		100	20.0	4.5	9.0	45	45	9.0	13.3	45	45
		200	230	20.0	15.0	13.3	45	45	22.1	13.3	45	45
FIS A M12	70		100	40.0	6.3	12.6	55	55	12.6	19.3	55	55
		240	270	40.0	21.5	19.3	55	55	32.1	19.3	55	55
FIS A M16	80		116	60.0	7.7	15.3	65	65	17.2	34.4	65	65
		320	356	60.0	30.6	35.9	65	65	59.8	35.9	65	65
FIS A M20	90		138	120.0	10.8	21.5	85	85	20.5	41.1	85	85
		400	448	120.0	47.9	56.0	85	85	93.3	56.0	85	85
FIS A M24	96		152	150.0	13.4	32.2	105	105	18.8	45.2	105	105
		480	536	150.0	71.8	80.7	105	105	114.9	80.7	105	105
FIS A M27	108		168	200.0	16.0	38.5	120	120	22.5	54.0	120	120
		540	600	200.0	90.9	104.9	120	120	136.3	104.9	120	120
FIS A M30	120		190	300.0	18.8	45.1	140	140	26.3	63.2	140	140
		600	670	300.0	112.2	128.2	140	140	168.3	128.2	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 $\gamma_f = 1.4$ are considered. As a single anchor counts e.g. an anchor with a spacing $s \geq 3 \times h_{ef}$ and an edge distance $c \geq 1.5 \times h_{ef}$.

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 72 °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.

Injection system FIS EB with Rebars from steel type B500B⁵⁾

Design resistant loads and permissible tensile loads^{1) 6)} of a single post-installed Rebar in concrete C20/25⁴⁾. For the design and planning⁷⁾ the relevant assessment ETA-15/0771 has to be considered.

Rebar	Basic anchorage length ⁴⁾ for FIS EB $l_{b,req}$ [mm]	Max. permissible embedment depth $max l_e$ [mm]	Cracked and non-cracked concrete	
			Max. design resistance for tensile load $N_{Rd,s}^{3)}$ [kN]	Max. permissible tensile load $N_{perm,s}^{3)}$ [kN]
Ø 8 mm	378	1800	21.9	15.6
Ø 10 mm	473	1800	34.1	24.4
Ø 12 mm	567	1800	49.2	35.1
Ø 14 mm	662	1800	66.9	47.8
Ø 16 mm	756	1800	87.4	62.4
Ø 20 mm	945	1800	136.6	97.6
Ø 25 mm	1181	2000	213.4	152.4
Ø 28 mm	1323	2000	267.7	191.2
Ø 32 mm	1512	2000	349.7	249.8
Ø 36 mm	1701	2000	442.6	316.1
Ø 40 mm	1890	2000	546.4	390.3

¹⁾ The partial safety factors for material resistance as regulated in the European Standard EN 1992-1-1 as well as a partial safety factor for load actions of $\gamma_f = 1.4$ are considered.

²⁾ The ETA-assessment for FIS EB allows post-installed rebar connections in concrete C12/15 up to C50/60. When using another concrete strength class the given basic anchorage length will change.

³⁾ When using the full steel capacity.

⁴⁾ Basic anchorage length⁷⁾ according EN 1992-1-1, chapter 8.4.3 for concrete strength class C20/25 for "good bond conditions".

⁵⁾ Rebars with a characteristic yield strength $f_{yk} = 400 - 600 \text{ N/mm}^2$ according EN 1992-1-1, Annex C are permitted. When using an other steel quality the given basic anchorage length as well as the steel capacity (see foot note 3) will change.

⁶⁾ Fixations with post-installed rebars with FIS EB are permitted in dry and wet concrete for temperatures in the substrate up to +50 °C (resp. short term up to 80 °C) and best possible drillhole cleaning according assessment.

⁷⁾ For determination of the installation measures (minimum concrete cover, spacings e.g.) as well as an eventually required transverse reinforcement see EN 1992-1-1 and the general instruction rules of the assessments.

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