

fischer FIS SB



Option 1 for cracked concrete



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



Information sur le niveau d'émission de substances volatiles dans l'air intérieur, présentant un risque de toxicité par inhalation, sur une échelle de classe allant de A+ (très faibles émissions) à C (fortes émissions).



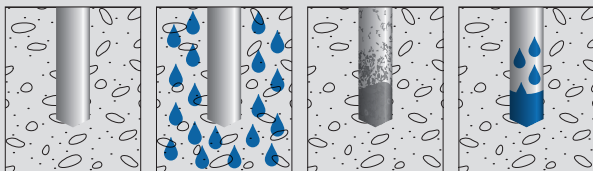
Fire resistance
classification
R 120
Anchor types
see test report



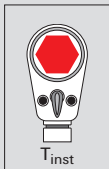
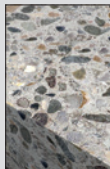
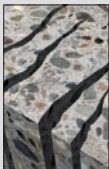
fischer FIS SB



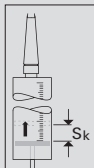
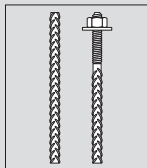
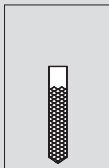
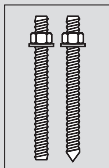
- D** Gebrauchsanweisung
- GB** Operating instructions
- F** Mode d'emploi
- NL** Montagehandleiding
- I** Istruzioni per l'installazione
- E** Instrucciones de uso
- P** Instruções de utilização
- DK** Installationsvejledning
- S** Installationsinstruktioner
- N** Installasjonsveiledning
- FIN** Asennusohjeet
- PL** Instrukcja instalacji
- CZ** Návod k instalaci
- SK** Návod na používanie
- H** Szerelési útmutató
- SL** Navodila za namestitve
- HR** Upute za instalaciju
- SRB** Uputstvo za instalaciju
- TR** Kurulum talimatları
- GR** Οδηγίες Εγκατάστασης
- BG** Инструкции за инсталиране
- RUS** Инструкция по установке
- RC** 使用说明书
- J** 取扱説明書
- UAE** تعليمات الاستخدام



D	Trockener Beton	Nasser Beton	Verschmutztes Bohrloch	Wassergefülltes Bohrloch
GB	Dry concrete	Water saturated concrete	Contaminated drill hole	Waterfilled borehole
F	Béton sec	Béton humide	Perçage non dépolvé	Trou inondé
NL	Droog beton	Met water verzadigd beton	Vervuild boorgat	Met water gevuld boorgat
I	Calcestruzzo secco	Calcestruzzo saturo d'acqua	Foro sporco	Foro pieno d'acqua nel calcestruzzo
E	Hormigón seco	Hormigón saturado de agua	Agujero de taladrado sucio	Taladro lleno de agua en hormigón
P	Betão seco	Betão saturado de água	Furo com sujidade	Furo cheio de água
DK	Tør beton	Vandmættet beton	Tilsmudset borehul	Vandfyldt borehul
S	Torrbetong	Vattenmättad betong	Smutsigt hål	Vattenfyllt hål
N	Tørr betong	Vannmettet betong	Tilskitnet borehull	Vannfylte borehull
FIN	Kuiva betony	Veden kylästämä betoni	Likaantunut poranreikä	Vedellä täyttynyt porareikä
PL	Beton suchy wodą	Beton nasycony wodą	Zabrudzony wywiercony otwór	Wywiercony otwór wypełniony
CZ	Suchý beton	Mokrý beton otvory vyvrtné do	Znečištěný vývrt	Naplněné vodou
SK	Suchý betón	Vodou nasýtený betón	Znečistený vývrt	Vodou naplnený otvor vyvrtný
H	Száraz beton	Nedves beton	Szenyezett furat	Vízzel töltött furat
SLO	Suh beton	Moker beton	Umazana izvrtina	Z vodo napolnjena izvrtina
HR	Suhi beton	Mokri beton	Zaprljani provrt	Vodom napunjen provrt
SRB	Suv beton	Mokar beton	Zaprljan provrt	Provrt napunjen vodom
TR	Kuru beton	Yaş beton	Kirli delik	Su dolu delik
GR	Στεγνό μπετόν	Υγρό μπετόν	Βρώμικη τρύπα	Τρύπα γεμάτη νερό
BG	Сух бетон	Мокър бетон	Замърсен отвор	Пълен с вода отвор
RUS	Сухой бетон	Водонасыщенный бетон	Загрязненное отверстие	Отверстие в бетоне, заполненное водой
RC	干燥混凝土	湿混凝土	受污的钻孔	注水的钻孔
J	いたベトン	湿ったベトン	汚れた掘削孔	水がたまった掘削孔
UAE	خرسانة جافة	خرسانة رطبة	ثقب ملوث	ثقب ممتلئ بالماء


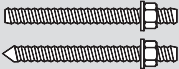










D	Gerissener Beton	Ungerissener Beton	Bewehrungsanschluss	Drehmoment	Verarbeitungszeit
GB	Cracked concrete	Non-cracked concrete	Reinforcement connection	Torque	Open time
F	Béton fissuré	Béton non fissuré	Scellement d'armatures	Couple	Temps de manipulation
NL	Gescheurd beton	Ongescheurd beton	Wapeningsaansluiting	Draaimoment	Verwerkingstijd
I	Calcestruzzo fessurato	Calcestruzzo non fessurato	Ferri di ripresa	Coppia	Tempo di lavorazione
E	Hormigón agrietado	Hormigón sin grietas	Conexión de refuerzo	Par	Tiempo de tratamiento
P	Betão fissurado	Betão não fissurado	Conetor de reforço	Binário	Tempo de processamento
DK	Revnet beton	Ikke-revnet beton	Armeringstilslutninger	Tilspændingsmoment	Forarbejdsningstid
S	Sprucken betong	Ej sprucken betong	Armeringsanslutning	Vridmoment	Bearbetningstid
N	Betong med riss	Betong uten riss	Armeringsforbindelse	Dreiemoment	Bearbeidelsestid
FIN	Haljennut betoni	Halkeamaton betoni	Vahvistusliitäntä	Vääntömomentti	Käsittelyaika
PL	Beton spełany	Beton niespełany	Złazce zbrojarskie	Moment dokręcenia	Czas żelowania
CZ	Beton s trhlinami	Beton bez trhlin	Připojka výztuže	Utahovací moment	Doba zpracování
SK	Betón s trhlinami	Betón bez trhlin	Styková výstuž	Uťahovací moment	Doba spracovania
H	Repedéses beton	Repedésmentes beton	Betonvasalatcsatlakozás	Forgatónyomaték	Feldolgozási idő
SLO	Razpokan beton	Nerazpokan beton	Priključek za armaturo	Navor	Čas obdelave
HR	Ispucani beton	Neispucani beton	Priključak armature	Okretni moment	Vrijeme obrade
SRB	Ispucao beton	Neispucao beton	Priključak armature	Obrtni moment	Vreme obrade
TR	Çatlamış beton	Çatlamamış beton	Destek bağlantısı	Tork	Kullanma süresi
GR	Μπετόν με ρωγμές	Μπετόν χωρίς ρωγμές	Σύνδεση οπλισμού	Ροπή σύσφιξης	Χρόνος επεξεργασίας
BG	Напукан бетон	Ненапукан бетон	Връзка за армировка	Въртящ момент	Време за обработка
RUS	Треснутый бетон	Цельный бетон	Соединитель армирования	Крутящий момент	Время обработки
RC	有裂縫的混凝土	无裂縫的混凝土	钢筋连接件	扭矩	加工时间
J	ひび割れがあるベトン	ひび割れないベトン	強化コネクタ	トルク	加工時間
UAE	خرسانة متصدعة	خرسانة غير متصدعة	وصلة حديد مسلح	عزم الدوران	وقت التصنيع



D	Aushärtezeit	Ankerstangen FIS A + RG M	Innengewindeanker RG MI	Bewehrungsstab Bewehrungsanker FRA	Skalenteile
GB	Hardening time	Tiges filetées FIS A + RG M	Internal thread anchors RG MI	Reinforcement rod FRA reinforcement anchor	Scale divisions
F	Temps de durcissement	Barres d'ancrage FIS A + RG M	Douilles taraudées RG MI	Barres d'armatures Ancrage d'armature FRA	Graduations
NL	Uithardtijd	Ankerstangen FIS A + RG M	Binnendraadanker RG MI	Wapeningsstaaf Wapeningsanker FRA	Schaalonderdelen
I	Tempo di indurimento	Barre di ancoraggio FIS A + RG M	Ancoraggio con filettatura interna RG MI	Ferro di ripresa Ancoraggio di ripresa FRA	Divisioni di scala
E	Tiempo de endurecimiento	Barras de anclaje FIS A + RG M	Anclaje de rosca interior RG MI	Barra de refuerzo Anclaje de refuerzo FRA	Unidades de escala
P	Tempo de endurecimento	Tirantes de ancoragem FIS A + RG M	Ancoragem de rosca interna RG MI	Barra de armação Ancoragem de reforço FRA	Intervalos de gradação
DK	Hærdetid	Gevindstænger FIS A + RG M	Anker med indvendigt gevind RG MI	Armeringsstav Armeringsanker FRA	Skalatrín
S	Hårdningstid	Förankringsstänger FIS A + RG M	Ankare med innergånga RG MI	Armeringsjärn Armeringsankare FRA	Skaldelar
N	Herdetid	Ankerstenger FIS A + RG M	Innvendig gjengeanker RG MI	Wapeningsstaaf Wapeningsanker FRA	Skaladeler
FIN	Kovettumisaika	Harustangot FIS A + RG M	Sisäkierreankkuri RG MI	Tartuntäteräs Tartunta-ankkuri FRA	Asteikkojaot
PL	Czas wiązania	Kotwy FIS A + RG M	Kotwy z gwintem wewnętrznym RG MI	Pręt zbrojarski Kotwa zbrojarska FRA	Podziałki skali
CZ	Doba vytvrzení	Kotevní tyče FIS A + RG M	Svorník s vnitřním závitem RG MI	Výztužná tyč Kotva výztuže FRA	Dílky na stupnici
SK	Doba vytvrdnutia	Kotviace tyče FIS A + RG M	Kotva s vnútorným závatom RG MI	Výstužný prút Vystužovacia kotva FRA	Diely na stupnici
H	Kikeményedési idő	Horgonyrudak FIS A + RG M	Belsőmenetes horgony RG MI	Betonvas rúd FRA horgonyzó vas	Skálarészérték
SLO	Čas strjevanja	Sidra FIS A + RG M	Sidro z notranjim navojem RG MI	Armatura palica Sidro armature FRA	Razdelki na skali
HR	Vrijeme stvrdnjavanja	Sidrene šipke FIS A + RG M	Sidro s unutrašnjim navojem RG MI	Armatura šipka Armaturno sidro FRA	Dijelovi skale
SRB	Vreme otvrdnjavanja	Šipke za ankerovanje FIS A + RG M	Kotva s unutrašnjim navojem RG MI	Armatura šipka Armatura kotva FRA	Delovi skale
TR	Sertleşme süresi	Dübel çubukları FIS A + RG M	İçten dişli dübel RG MI	Takviye çubuğu Takviye demiri FRA	Kadran bölümleri
GR	Χρόνος σκλήρυνσης	Ντιζες αγκύρωσης FIS A + RG M	Αγκύρια εσωτερικού σπειρώματος RG MI	Ράβδος οπλισμού Αγκύριο οπλισμού FRA	Διαβαθμίσεις κλίμακας
BG	Време за втвърдяване	Анкерни пръти FIS A + RG M	Анкерен болт с вътрешна резба RG MI	Армировъчен прът Армировъчен анкерен болт FRA	Части на скалата
RUS	Время отверждения	Анкерные болты FIS A + RG M	Анкеры с внутренней резьбой RG MI	Арматурный стержень Арматурный анкер FRA	Деление шкалы
RC	硬化时间	系杆 FIS A + RG M	内部螺纹系杆 RG MI	钢筋 钢筋锚杆 FRA	刻度
J	凝固時間	アンカーロッド FIS A + RG M	めねじアンカー RG MI	鉄筋 強化アンカー FRA	目盛り分割
UAE	وقت التصلب	قضبان تثبيت FIS A + RG M	لولية تثبيت داخلية RG MI	قضيب حديد مسلح تثبيت حديد مسلح FRA	أجزاء المقياس



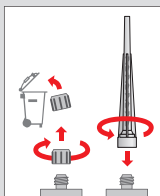
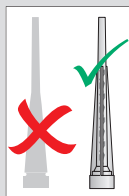
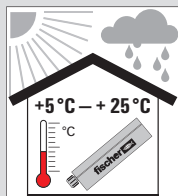
 <p>ETA-12/0258 ETAG 001-5 Option 1 for cracked concrete Seismic performance category C1, C2</p>		FIS A / RG M	8 / 11 / 12
 <p>ETA-12/0258 ETAG 001-5 Option 1 for cracked concrete</p>		RG MI	9 / 11 / 13
 <p>ETA-12/0258 ETAG 001-5 Option 1 for cracked concrete</p>		Rebar / FRA	10 / 11 / 12
 <p>See ICC-ES Evaluation Report at www.icc-es.org ESR-3572</p>		FIS A / RG M / Rebar	14 / 15 / 17
 <p>See ICC-ES Evaluation Report at www.icc-es.org ESR-3572</p>		fractional threaded rod / Rebar	14 / 16 / 17



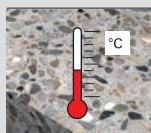
STOP



01.2018





OK?



FIS MR Plus/ FIS UMR



	t_{work} 		t_{cure} 	
	FIS SB (standard)	FIS SB HIGH SPEED	FIS SB (standard)	FIS SB HIGH SPEED
> -20 °C - -15 °C	-	60 min.	-	24 h
> -15 °C - -10 °C	60 min.	30 min.	36 h	8 h
> -10 °C - -5 °C	30 min.	15 min.	24 h	180 min.
> -5 °C - ±0 °C	20 min.	10 min.	8 h	120 min.
> ±0 °C - +5 °C	13 min.	5 min.	4 h	60 min.
> +5 °C - +10 °C	9 min.	3 min.	120 min.	45 min.
> +10 °C - +20 °C	5 min.	2 min.	60 min.	30 min.
> +20 °C - +30 °C	4 min.	1 min.	45 min.	15 min.
> +30 °C - +40 °C	2 min.	-	30 min.	-

		Art. No.	
390 ml	FIS DM S	511118	FIS MR Plus
	FIS AM	058000	
	FIS DCD S	543629	
	FIS AP	058027	
585 ml	FIS DM S-L	510992	FIS UMR
	FIS DP S-L	511125	
1500 ml	FIS DP S-XL	512401	






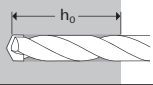
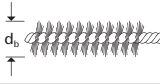
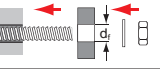
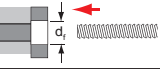
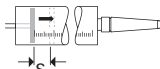
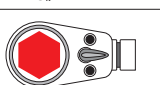
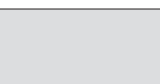
FIS A



RG M



FIS A, RG M



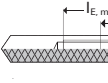
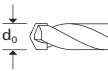
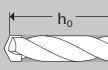
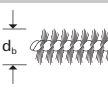
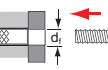
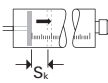
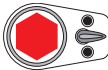
 M ...	M8	M10	M12	M16	M20	M24	M27	M30	
	✓	✓	✓	✓	✓	✓	✓	✓	
 d_0	10	12	14	18	24	28	30	35	
 h_0	$h_{0,min}$ [mm]	60	60	70	80	90	96	108	120
	$h_{0,max}$ [mm]	160	200	240	320	400	480	540	600
 d_b	fischer BS $\emptyset 10$	$\emptyset 12$	$\emptyset 14$	$\emptyset 18$	$\emptyset 24$	$\emptyset 28$	$\emptyset 35$	$\emptyset 35$	
 d_b [mm]	11	14	16	20	26	30	40	40	
 d_f	9	12	14	18	22	26	30	33	
 d_f	11	14	16	20	26	30	33	40	
 Sk	$Sk(h_{0,min})$ [-]	3	4	3	5	11	14	17	27
	$Sk(h_{0,max})$ [-]	8	12	10	19	48	69	85	132
 T_{inst} [Nm]	10	20	40	60	120	150	200	300	

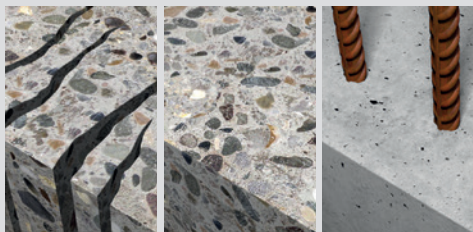
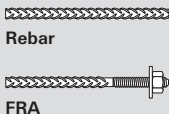


RG MI



RG MI

	M5	M6	M8	M10	M12	M16	M20
			✓	✓	✓	✓	✓
	$l_{E, \min}$ [mm] 8	8	8	10	12	16	20
	$l_{E, \max}$ [mm] 14	16	18	23	26	35	45
	d_0 [mm] 10	12	14	18	20	24	32
	h_0 [mm] 75	75	90	90	125	160	200
	fischer BS d_b [mm] 11	14	16	20	25	26	40
	d_f [mm] 6	7	9	12	14	18	22
	S_k [-] 3	3	4	6	11	17	39
	T_{inst} [Nm] -	-	10	20	40	80	120



Rebar, FRA

	Rebar	8	10	12	14	16	20	25	28	32	
	FRA	-	-	M12	-	M16	M20	M24	-	-	
	Rebar	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	FRA	-	-	✓	-	✓	✓	✓	-	-	
	d_o [mm]	12	14	16	18	20	25	30	35	40	
	$h_{o,min}$ [mm]	Rebar	60	60	70	75	80	90	100	112	128
		FRA	-	-	170	-	180	190	196	-	-
	$h_{o,max}$ [mm]	Rebar	160	200	240	280	320	400	500	560	640
		FRA	-	-	240	-	320	400	480	-	-
	fischer BS	Ø 12	Ø 14	Ø 16	Ø 18	Ø 20	Ø 25	Ø 30	Ø 35	Ø 40	
	d_b [mm]	14	16	20	20	25	27	40	40	42	
	d_f [mm]	FRA	-	-	14	-	18	22	26	-	-
	d_f [mm]	FRA	-	-	18	-	22	26	32	-	-
	$Sk (h_{o,min})$ [-]	Rebar	3	3	4	5	6	10	13	24	35
		FRA	-	-	10	-	14	22	26	-	-
	$Sk (h_{o,max})$ [-]	Rebar	7	10	14	18	24	45	65	116	173
		FRA	-	-	14	-	24	45	63	-	-
	T_{inst} [Nm]	FRA	-	-	40	-	60	120	150	-	-



FIS A



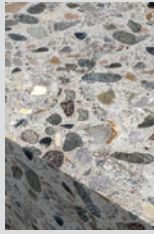
RG MI



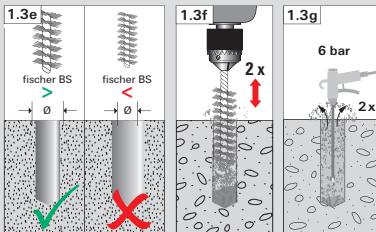
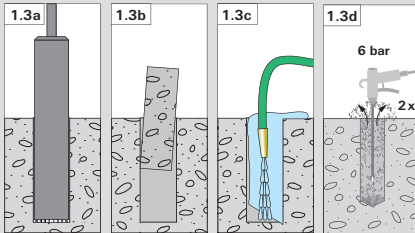
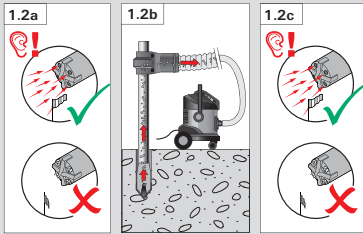
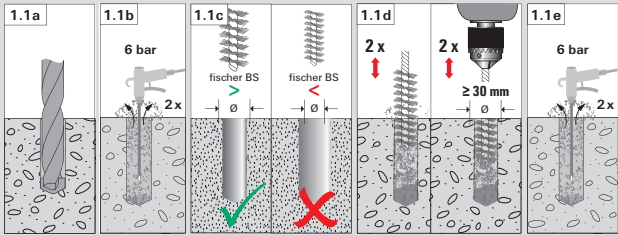
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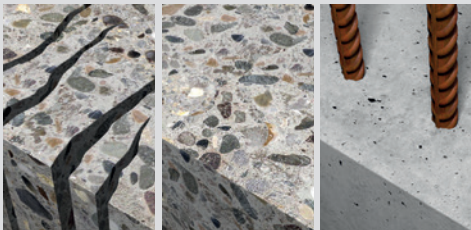
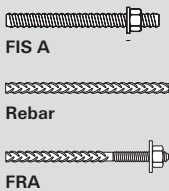


FRA

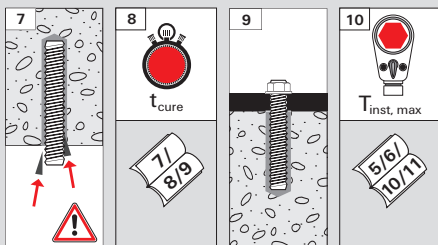
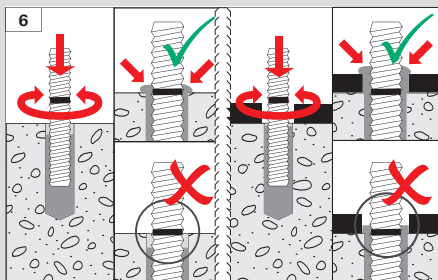
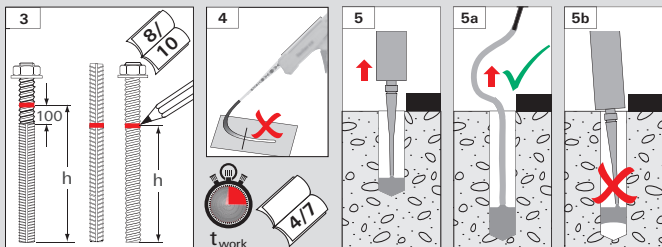


FIS A, RG MI, Rebar, FRA



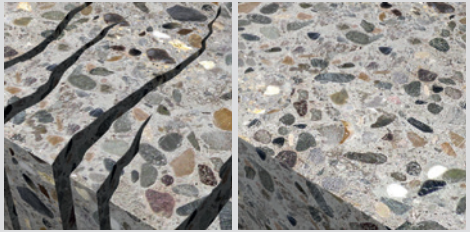


FIS A, Rebar, FRA

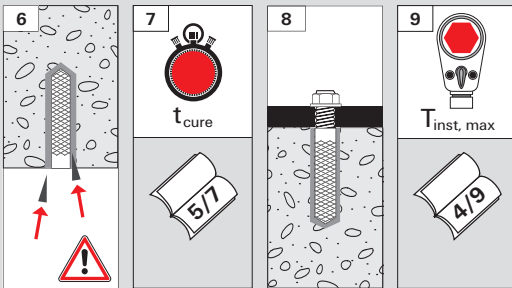
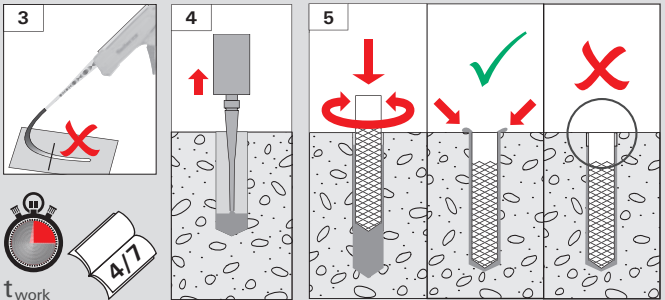




RG MI



RG MI



Installation instruction



see ICC-ES Evaluation Report
No. 3572 at www.icc-es.org

fischer adhesive anchoring system FIS SB

fischer FIS SB is an epoxy adhesive anchoring system for fastenings in normal weight concrete.

Important: Before use, read and review the installation instructions and the SDS (safety data sheet).
Do not use expired adhesive.

A Preparing the cartridge

1. Remove the cap by turning and pulling it off.
2. Screw on the static mixer (FIS MR Plus/FIS UMR) tightly and lock it in place (turn to the right).
The spiral element mixer in the static mixer must be clearly visible.
Never use without the static mixer!
3. Place the cartridge in the dispenser. Press approx. 10 cm of material out **until the resin mortar comes out evenly grey in colour.** Mortar which is not grey colour will not cure and must be disposed off.
The temperature of the concrete must be at least 5 °F (-15 °C) and at most 104 °F (40 °C) (see **Table VII**). - The temperature of the cartridge must be at least $\vartheta = 41$ °F (5 °C).
After finishing work, leave the static mixer attached to the cartridge.

Important: If the processing time is exceeded, use a new static mixer and if necessary remove encrusted material in the cartridge mouth.

B Installation

Important: Installation instructions - follow the pictograms 1-7 for the sequence of operating and refer to **Tables I-VI** for setting details. The construction drawings must be adhered. For any applications not covered by this document, or by any problems with installation contact **fischer**.

1. Drill hole with a hammer drill set. Observe the correct hole diameter and depth according to **Tables I-VI**.
- 2.1/2.2a/2.2b/2.3. Standing water in bore holes must be completely removed by blowing out before cleaning the bore hole. The drill hole must be blown out twice with compressed air (oil-free ≥ 87 psi (6 bar)), brushed two times (minimal by hand) starting from the bottom of the hole and then again blown out twice with compressed air (oil-free ≥ 87 psi (6 bar)). For drill holes $d_0 < 18$ mm it is allowed to use hand pump. The diameters of the brushes are given in **Table I**. Clean dirty brushes. Check brushes for wear with brush gauge (brush $\varnothing \geq$ drill hole \varnothing). If required use brush extension.
3. Fill approx. $\frac{2}{3}$ of the hole with mortar starting from the bottom of the hole. For drill hole depth > 150 mm use an extension tube. Observe processing time.
4. Anchoring element must be straight and free of oil and other contaminants. Mark the anchor with correct embedment depth. Press the anchoring element down to the bottom of the hole, turning it slightly while so doing. After insert the anchoring element, excess mortar must emerge from the mouth of the hole.
5. For overhead installations use wedges to support the anchor. For overhead installations, drill hole diameter > 30 mm, or drill hole depth > 250 mm use an injection adapter.
6. Do not disturb the anchoring element until cure time has elapsed. Do not apply load or installation torque moment to the anchor until the prescribed curing times are elapsed. The allowable working time and the minimum curing time are given in **Table VII**.
7. The installation torque moments are given in **Table II**.

Table VII. Processing and curing times.

Temperature range		Adhesive Temperature		Working time / processing time	Curing time
[°C]	[°F]	[°C]	[°F]	[min]	[h]
-15 to -10	+5 to +14	$\geq +5$	$\geq +41$	60	36
-10 to -5	+14 to +23	$\geq +5$	$\geq +41$	30	24
-5 to ± 0	+23 to +32	$\geq +5$	$\geq +41$	20	8
± 0 to +5	+32 to +41	$\geq +5$	$\geq +41$	13	4
+5 to +10	+41 to +50	$\geq +5$	$\geq +41$	9	2
+10 to +20	+50 to +68	$\geq +10$	$\geq +50$	5	1
+20 to +30	+68 to +86	$\geq +20$	$\geq +68$	4	3/4
+30 to +40	+86 to +104	$\geq +25$	$\geq +77$	2	1/2

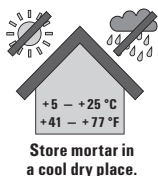





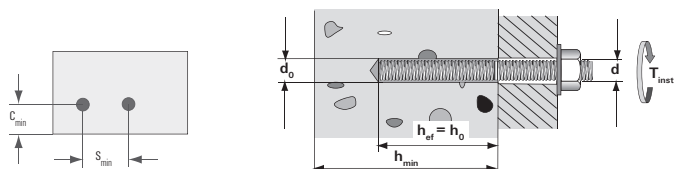
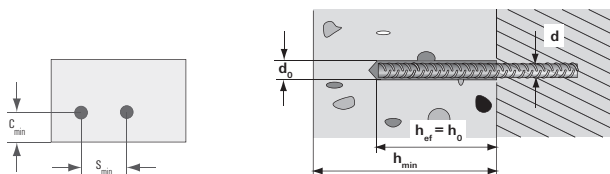


Table I Drill hole diameter / Accessories for metric sizes

Drill bit		Rods	Rebar	Brush		Injection adapter	
							
Ø [mm]	Ø [inch]	Ø [mm]	Ø [mm]	Type	Item No.	Size	Color
10	3/8	M8	-	BS 10	78178	-	-
12	7/16	M10	8	BS12	78179	12	Orange
14	9/16	M12	10	BS14	78180	14	Blue
16	5/8	-	12	BS16/18	78181	16	Red
18	3/4	M16	-	BS16/18	78181	18	Yellow
20	13/16	-	16	BS20	52277	20	Green
24	1	M20	-	BS24	78182	24	Brown
25	1	-	20	BS25	97806	25	Black
28	1 1/8	M24	-	BS28	78183	28	Blue
30	1 1/4	-	25	BS35	78184	30	Grey
35	1 3/8	M30	28	BS35	78184	35	Brown
40	1 1/2	-	32	BS40	505061	40	Red


Table II Metric threaded rods

d	d ₀		h _{ef,min}		h _{ef,max}		h _{min}		s _{min} = c _{min}		T _{inst}	
	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[Nm]	[ft-lb]
M8	10	3/8	60	2 3/8	160	6 2/7	h _{ef} + 30	h _{ef} + 1,25	40	1 4/7	10	7
M10	12	7/16	60	2 3/8	200	7 7/8			45	1 7/9	20	15
M12	14	9/16	70	2 3/4	240	9 4/9			55	2 1/6	40	30
M16	18	3/4	80	3 1/7	320	12 3/5	h _{ef} + 2d ₀	h _{ef} + 2d ₀	65	2 5/9	60	44
M20	24	1	90	3 5/9	400	15 3/4			85	3 1/3	120	89
M24	28	1 1/8	96	3 7/9	480	18 8/9			105	4 1/8	150	111
M30	35	1 3/8	120	4 5/7	600	23 5/8			140	5 1/2	300	221


Table III Metric reinforcing bars

d	d ₀		h _{ef,min}		h _{ef,max}		h _{min}		s _{min} = c _{min}	
	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]
8	12	7/16	60	2 3/8	160	6 2/7	h _{ef} + 30	h _{ef} + 1,25	45	1 7/9
10	14	9/16	60	2 3/8	200	7 7/8			45	1 7/9
12	16	5/8	70	2 3/4	240	9 4/9			55	2 1/6
16	20	13/16	80	3 1/7	320	12 3/5	h _{ef} + 2d ₀	h _{ef} + 2d ₀	65	2 5/9
20	25	1	90	3 5/9	400	15 3/4			85	3 1/3
25	30	1 1/4	100	3 8/9	500	19 2/3			110	4 1/3
28	35	1 3/8	112	4 2/5	560	22			130	5 1/8
32	40	1 1/2	128	5	640	25 1/5			160	6 2/7

Table IV Drill hole diameter / Accessories for fractional sizes

Drill bit		Rods	Rebar	Brush		Injection adapter	
\emptyset [mm]	\emptyset [inch]	\emptyset [inch]	\emptyset [inch]	Type	Item No.	Size	Color
12	7/16	3/8	-	BS12	78179	-	-
14	1/2	-	#3	BS14	78180	12	tan
15	9/16	1/2	-	BS14	78180	14	blue
16	5/8	-	#4	BS16/18	78181	16	red
18	3/4	5/8	-	BS20	52277	18	yellow
20	3/4	-	#5	BS20	52277	18	yellow
22	7/8	3/4	#6	BS20	52277	20	green
25	1	7/8	-	BS25	97806	25	black
28	1 1/8	1	#7	BS28	78183	28	blue
32	1 1/4	1 1/8	#8	BS35	78184	30	grey
35	1 3/8	1 1/4	#9	BS35	78184	35	brown
40	1 1/2	-	#10	BS40	505061	35	dark brown

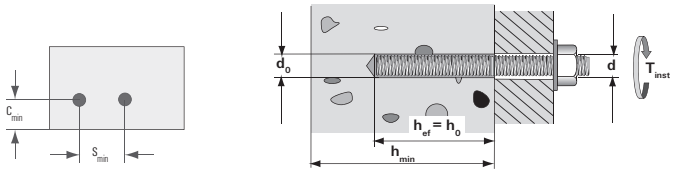


Table V Fractional threaded rods

d	d ₀		h _{ef,min}		h _{ef,max}		h _{min}		s _{min} = C _{min}		T _{inst}	
[inch]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[ft-lb]	[Nm]
3/8	7/16	12	2 3/8	60	7 1/2	191	h _{ef}	h _{ef}	12/3	42,5	15	20
1/2	9/16	15	2 3/4	70	10	254	+ 1,25	+ 30	2 1/4	57,5	30	41
5/8	3/4	18	3 1/8	79	12 1/2	318	h _{ef}	h _{ef}	2 5/9	65	50	68
3/4	7/8	22	3 1/2	89	15	381			3 1/7	80	90	122
7/8	1	25	3 1/2	89	17 1/2	445			3 3/4	95	100	136
1	1 1/8	28	4	102	20	508	+ 2d ₀	+ 2d ₀	4 1/3	110	135	183
1 1/8	1 1/4	32	4 1/2	114	22 1/2	572			5 1/3	135	180	244
1 1/4	1 3/8	35	5	127	25	635			6 2/7	160	240	325

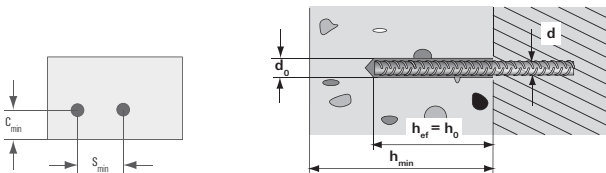
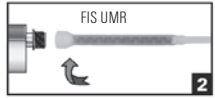
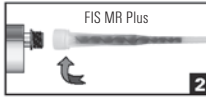
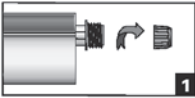


Table VI Fractional reinforcing bars

d	d ₀		h _{ef,min}		h _{ef,max}		h _{min}		s _{min} = C _{min}	
[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]
#3	14	1/2	60	2 3/8	191	7 1/2	h _{ef}	h _{ef}	43	1 5/7
#4	16	5/8	70	2 3/4	254	10	+ 30	+ 1,25	58	2 2/7
#5	20	3/4	79	3 1/8	318	12 1/2	h _{ef}	h _{ef}	65	2 5/9
#6	22	7/8	89	3 1/2	381	15			80	3 1/7
#7	28	1 1/8	89	3 1/2	445	17 1/2			95	3 3/4
#8	32	1 1/4	102	4	508	20	+ 2d ₀	+ 2d ₀	110	4 1/3
#9	35	1 3/8	114	4 1/2	572	22 1/2			130	5 1/8
#10	40	1 1/2	127	5	635	25			160	6 2/7

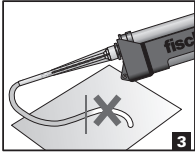
A



FIS SB 390 S / FIS SB 585 S / FIS SB 1500 S



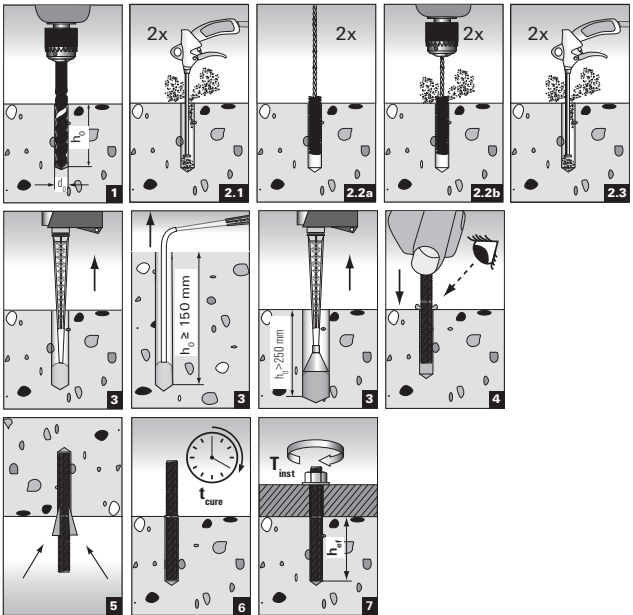
FIS SB 390 S

FIS SB 585 S, FIS SB 1500 S

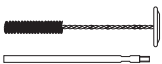


Cartridge	Dispenser	Item No.	Static mixer
390 ml = 13.2 fl oz	FIS DM S	511118	FIS MR Plus
	FIS DCD S	543629	
	FIS AP	058027	
585 ml = 19.8 fl oz	FIS DM S-L	510992	FIS UMR
	FIS DP S-L	511125	
1500 ml = 50.7 fl oz	FIS DP S-XL	512401	

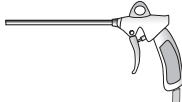
B



Brush with extension



Compressed air pistol



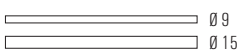
Hand pump



Static mixer FIS MR Plus/FIS UMR



Extension tube

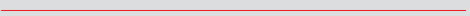


Injection adapter





A series of horizontal white lines on a light gray background, providing a template for writing or drawing.



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