



# Installation instruction

see ICC-ES Evaluation Report No. 2786  
at [www.icc-es.org](http://www.icc-es.org)

## fischer Injection Mortar FIS V Plus

### A Preparing the cartridge

1. Remove the cap by turning it to left and pulling it off.
2. Insert the static mixer and lock it in place (turn to the right). **The spiral mixer in the static mixer must be clearly visible.** Never use without the static mixer!
3. Place the cartridge in the dispenser.
4. 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 of.
5. The temperature of the concrete must be at least 23 °F (5 °C) and at most 104 °F (40 °C) (see Table III). The temperature of the cartridge must be at least 9 = 41 °F (5 °C).
6. 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–III 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 Table I and Table II.
- 2.1/2.2/2.3. Standing water in bore holes must be completely removed by blowing out before cleaning the bore hole. The drill hole must blown out four times with compressed air (oil-free  $\geq 87$  psi (6 bar)), brushed four times (minimal by hand) starting from the bottom of the hole and then again blown out four times with compressed air (oil-free  $\geq 87$  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 and applications between horizontal and overhead use the appropriate injection adapter and wedges to support the anchor during curing time. Also use an injection adapter for all applications with a drill hole depth  $> 250$  mm or a drill hole diameter  $d_0 \geq 30$  mm. Use appropriate accessories to capture excess adhesive during installation of the anchor element in order to protect the unbonded portion of the anchor element from adhesive.
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 III.
7. The installation torque moments are given in Table II.





Table III Processing and curing times

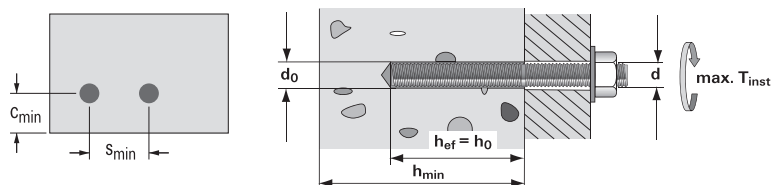
Temperature range		Working time/ processing time	Curing time
°C	°F		
- 5 to $\pm$ 0	+23 to + 32	-	24 h
> $\pm$ 0 to + 5	> +32 to + 41	13 min	180 min
> + 5 to +10	> +41 to + 50	9 min	90 min
> +10 to +20	> +50 to + 68	5 min	60 min
> +20 to +30	> +68 to + 86	4 min	45 min
> +30 to +40	> +86 to +104	2 min	36 min

Storage temperature: + 5 °C – + 25 °C / + 41 °F – + 77 °F



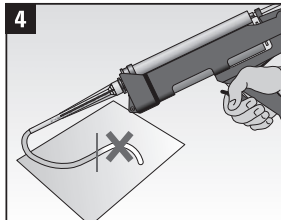
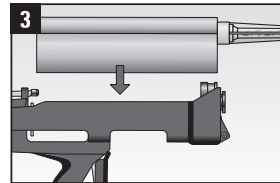
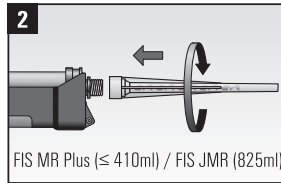
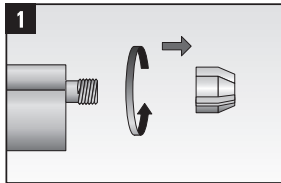
**Table I Drill hole diameter / Accessories**

Drill bit		Rods		Brush		Injection adapter	
							
Ø [mm]	Ø [inch]	Ø [mm]	Ø [inch]	Ø [mm]	item No.	size	colour
10	3/8	M 8	-	11	78178	-	-
12	7/16	M10	3/8"	14	78179	12	nature
14	9/16	M12	1/2"	16	78180	14	blue
18	3/4	M16	5/8"	20	78181	18	yellow
24	1	M20	7/8"	26	78182	24	brown
28	1 1/8	M24	1"	30	78183	30	grey
30	1 1/4	M27	-	40	78184	30	grey
35	1 3/8	M30	1 1/4"	40	78184	35	brown

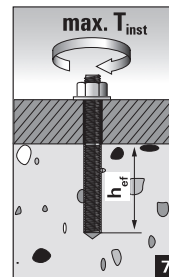
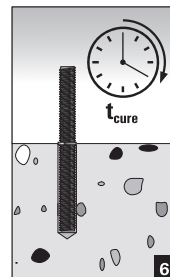
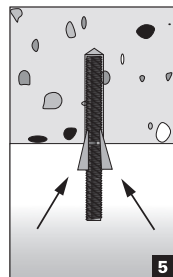
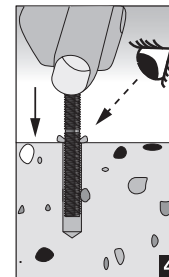
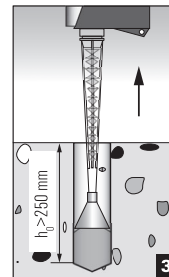
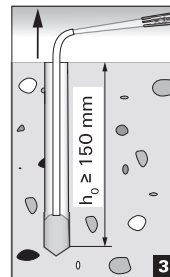
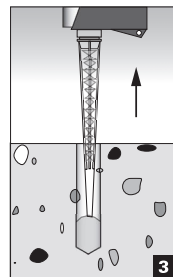
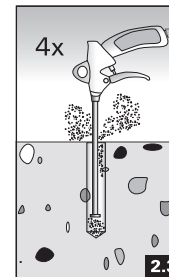
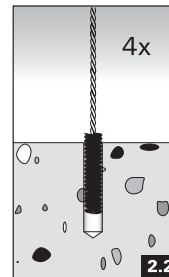
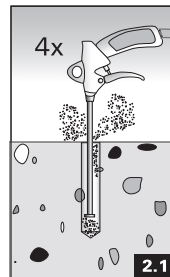
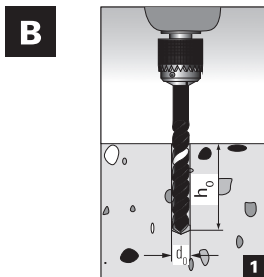

**Table II Threaded rod, metric**

d	d <sub>0</sub>		h <sub>ef,min</sub>		h <sub>ef,max</sub>		h <sub>min</sub>		s <sub>min</sub> = c <sub>min</sub>		T <sub>inst</sub>	
[mm]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[Nm]	[ft-lb]
M 8	10	3/8	60	2,36	96	3,78	h <sub>ef</sub> + 30	h <sub>ef</sub> + 1,25	40	1,57	10	7,37
M10	12	7/16	60	2,36	120	4,72			45	1,77	20	14,75
M12	14	9/16	72	2,83	144	5,67			55	2,17	40	29,50
M16	18	3/4	96	3,78	192	7,56	h <sub>ef</sub> + 2d <sub>0</sub>	h <sub>ef</sub> + 2d <sub>0</sub>	65	2,56	60	44,25
M20	24	1	120	4,72	240	9,45			85	3,35	120	88,50
M24	28	1 1/8	144	5,67	288	11,34			105	4,13	150	110,62
M27	30	1 1/4	162	6,38	324	12,76			120	4,72	200	147,49
M30	35	1 3/8	180	7,09	360	14,17			140	5,51	300	221,24

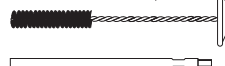
## A FIS V Plus 360 S / FIS V Plus 380 C / FIS V Plus 410 C / FIS V Plus 825 S



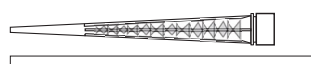
Cartridge	Dispenser	Item No.	Static mixer
360 ml	FIS DM S	511118	FIS MR Plus
	FIS AM	058000	
	FIS DB S Pro	558955	
	FIS AP	058027	
380 ml 410 ml	FIS AC	096497	FIS JMR
825 ml	FIS AM S-XL	563241	
	FIS DB SL Pro	562004	



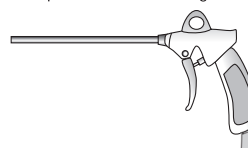
Cleaning brush (steel brush  
with steel bristles)



Static mixer FIS MR Plus / FIS JMR  
and extension tube



Compressed air cleaning tool



Injection adapter



Hand pump



**fischer**

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