The best performance in cracked concrete with the least installation effort

Bridge railings

Balcony railings

VERSIONS

- zinc-plated steel
- stainless steel
- highly corrosion-resistant steel

BUILDING MATERIALS

Approved for:

- Concrete C20/25 to C50/60, cracked and non-cracked

Also suitable for:

- Concrete C12/15

APPROVALS

ETA-05/0164
ETAG 001-5
Option 1 for cracked concrete

Fire resistance classification R 120

Shock-tested; BZS approval for shockproof fixings in civilian shelters.

ADVANTAGES

- The reduced anchorage depth of the FHB II-A S minimises the drilling and installation effort. In addition using the combination with FHB II-P/-PF capsule no drill hole cleaning is required. Thus allowing for an especially economical and time-saving fixing.
- With the anchor rod FHB II-A S, the drill bit diameter is the same as the thread diameter. This allows for push-through installation without any tools and reduces the amount of mortar required.
- The cone shape of the anchor rod FHB II-A S is optimised for small axial and edge distances in cracked concrete, as well as thin concrete members. As a result, it is suitable for a wide range of applications.
- The anchor rod FHB II-A S is approved for use both with capsules and with injection mortar. This guarantees maximum flexibility in the application.

APPLICATIONS

- Guard rails
- Façades
- Staircases
- Steel consoles
- Masts
- Skirting protection
- Steelwork constructions
- Timber constructions

Ideal for:

- Push-through installation

FUNCTIONING

- The FHB II-A S is a bonded anchor with torque-controlled expansion for pre-positioned and push-through installation.
- With the FHB II-A S, the drill bit diameter is the same as the thread diameter, similar to with an anchor bolt.
- The anchor rod can be set either with injection mortar FIS HB or with the capsule FHB II-P / FHB II-PF HIGH SPEED, and is fully bonded in the drill hole.
- When tightening the hexagon nut, the anchor rod cones are pulled into the mortar shell, which expands against the drill hole wall.
- The styrene-free vinyl ester mortar fully seals the drill hole.
- When using the resin capsule, set the anchor rod through rotating and hitting motions with a hammer drill. Use the RA-SDS setting tool, Art.-No. 62420.

FOR USE WITH

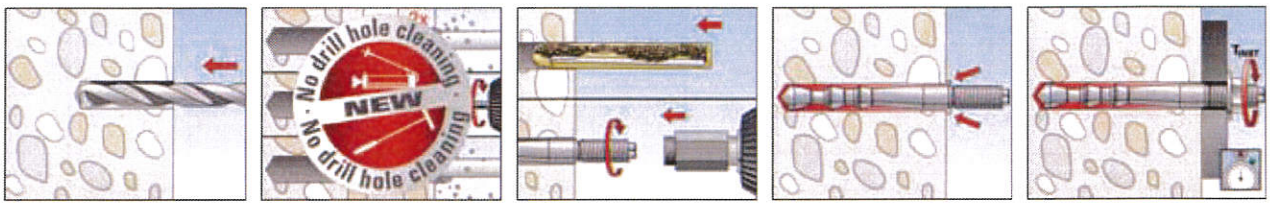
FIS HB mortar
see page 67

Resin capsule FHB II-P
see page 66

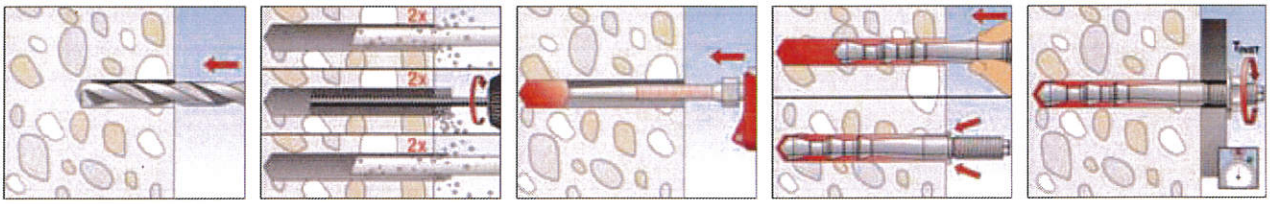
Resin capsule FHB II-PF HIGH SPEED
see page 66

Highbond anchor FHB II-A S

INSTALLATION WITH CAPSULE

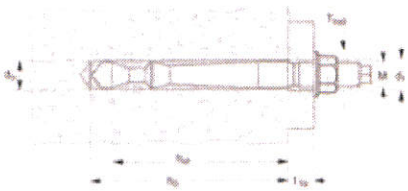


INSTALLATION WITH INJECTION MORTAR



TECHNICAL DATA

Highbond anchor **FHB II-A S** (short version)



	zinc-plated steel	stainless steel	highly corrosion resistant steel	Approval	Drill hole diameter	Drill hole depth	Anchorage depth	Usable length	Thread	Width across nut	Sales unit
	Art.-No.	Art.-No.	Art.-No.	ETA	d_0 [mm]	h_0 [mm]	h_{ef} [mm]	t_{fix} [mm]	M	○ SW [mm]	[pcs]
Item	gvz	A4	C								
FHB II-A S M10 x 60/10	**097072**	097630	097704 1)	■	10	75	60	10	M 10	17	10
FHB II-A S M10 x 60/20	**097073**	097631	–	■	10	75	60	20	M 10	17	10
FHB II-A S M10 x 60/40	–	097632	–	■	10	75	60	40	M 10	17	10
FHB II-A S M10 x 60/60	**097074**	097633	–	■	10	75	60	60	M 10	17	10
FHB II-A S M10 x 60/100	**097206**	097634	–	■	10	75	60	100	M 10	17	10
FHB II-A S M10 x 75/10	**506884**	506888	–	■	10	90	75	10	M 10	17	10
FHB II-A S M10 x 75/20	**506885**	506889	–	■	10	90	75	20	M 10	17	10
FHB II-A S M10 x 75/40	–	506890	–	■	10	90	75	40	M 10	17	10
FHB II-A S M10 x 75/60	**506886**	506891	–	■	10	90	75	60	M 10	17	10
FHB II-A S M10 x 75/100	**506887**	506892	–	■	10	90	75	100	M 10	17	10
FHB II-A S M12 x 75/10	**097257**	097635	–	■	12	90	75	10	M 12	19	10
FHB II-A S M12 x 75/25	**097268**	097636	097706 1)	■	12	90	75	25	M 12	19	10
FHB II-A S M12 x 75/40	–	097637	–	■	12	90	75	40	M 12	19	10
FHB II-A S M12 x 75/60	**097274**	097638	–	■	12	90	75	60	M 12	19	10
FHB II-A S M12 x 75/100	**097275**	097639	–	■	12	90	75	100	M 12	19	10
FHB II-A S M12 x 75/165	**097280**	097640	–	■	12	90	75	165	M 12	19	10
FHB II-A S M16 x 95/30	**097281**	097641	097708 1)	■	16	110	95	30	M 16	24	10
FHB II-A S M16 x 95/60	**097286**	097642	–	■	16	110	95	60	M 16	24	10
FHB II-A S M16 x 95/100	**097295**	097643	–	■	16	110	95	100	M 16	24	10
FHB II-A S M16 x 95/165	**097296**	097644	–	■	16	110	95	165	M 16	24	10
FHB II-A S M20 x 170/50	**506917**	506919	–	■	25	190	170	50	M 20	30	4
FHB II-A S M24 x 170/50	**097297**	097645	–	■	25	190	170	50	M 24	36	4

1) Delivery time on request.

FILLING QUANTITIES

Type	Drill hole diameter [mm]	Min. drill hole depth [mm]	Mortar volume in scale units shown on the cartridge labels' corresponding scala	Anchor per cartridge FIS HB 345 S *)
FHB II-A S M10 x 60	10	75	3	56
FHB II-A S M10 x 75	10	90	4	42
FHB II-A S M12 x 75	12	90	4	42
FHB II-A S M16 x 95	16	110	8	21
FHB II-A S M20 x 170	25	190	26	6
FHB II-A S M24 x 170	25	190	26	6

*) max. number with one static mixer

ACCESSORIES

Centring wedge

Machine setting tool **RA-SDS**

Item	Art.-No.	Match		Sales unit [pcs]
Centring wedge	**093076**	for overhead installations		10
RA-SDS	**062420**	Adapter suitable fits set screw		1

LOADS

Highbond anchor FHB II

Highest permissible loads for a single anchor[1) 5) 6)] in concrete C20/25[4)]

For the design the complete approval ETA - 05/0164 has to be considered.

				Cracked concrete				Non-cracked concrete			
Type	Effective anchorage depth h_{ef} [mm]	minimum member thickness h_{min} [mm]	Installation torque T_{inst} [Nm]	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]	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]
FHB II-A S M10x60	60	100	15,0	8,0	11,3	40	40	11,2	11,3	40	40
FHB II-A S M10x75	75	120	15,0	11,1	11,3	40	40	12,0	11,3	40	40
FHB II-A S M12x75	75	120	30,0	11,1	15,6	40	40	15,6	15,6	40	40
FHB II-A S M16x95	95	150	50,0	15,9	29,0	50	50	22,3	29,0	50	50
FHB II-A S M20x170	170	240	100,0	38,0	45,9	80	80	53,3	45,9	80	80
FHB II-A S M24x170	170	240	100,0	38,0	65,3	80	80	53,3	65,3	80	80

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.

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.

5) Valid for injection mortar FIS HB. For using the glass capsule FHP II-P or FHP II-PF see approval.

6) The given loads are valid for injection mortar FIS HB for fixations in dry and humid concrete for temperatures in the substrate up to +50°C (resp. short term up to 80°C) and best possible drillhole cleaning according approval. When the glass capsule FHB II-P or FHB II-PF are used no drillhole cleaning is required. Please see approval.