

The cost-efficient fixing for flexible use in non-cracked concrete



Column bases



Stormwater overflow tank manholes

VERSIONS

- Zinc-plated steel
- Stainless steel
- Hot-dip galvanised steel

BUILDING MATERIALS

Approved for:

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

Also suitable for:

- Concrete C12/15
- Natural stone with dense structure

ASSESSMENT/APPROVAL



ADVANTAGES

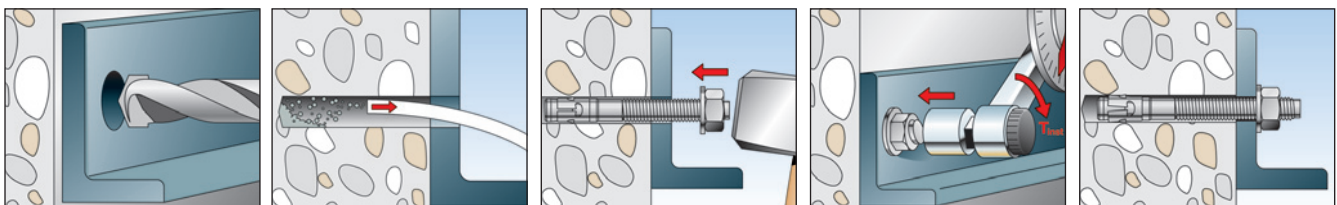
- The standard anchorage depth achieves the maximum load-bearing capacities. Thus fewer fixing points and smaller anchor plates are required.
- The reduced anchorage depth reduces the drill hole depth. This minimises the amount of time needed for installation whilst increasing flexibility.
- The long thread balances component tolerances and allows for stand-off installations, thus increasing flexibility.
- Few hammer blows and the minimal torque slippage allow for a noticeably simpler installation.
- The drive-in pin protects the thread from damage, and thus ensures a faster installation and dismantling of the attachment.
- The assessment document also covers the use of hollow drills.

APPLICATIONS

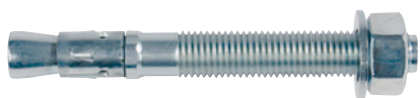
- Steel constructions
- Guard rails
- Consoles
- Ladders
- Cable trays
- Machines
- Staircases
- Gates
- Façades

FUNCTIONING

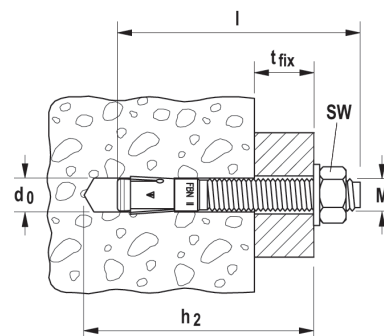
- The FBN II is suitable for pre-positioned and push-through installation; also suitable for stand-off installation under certain conditions.
- Prior to installation, place the hexagon nut in the optimal position (the drive-in pin projects by approx. 3 mm out of the hexagon nut).
- When applying the torque, the cone bolt is pulled into the expansion clip and expands it against the drill hole wall.
- The head embossing offers a simple control of the anchoring.
- In the case of series installation, we recommend using the FABS bolt anchor setting tool.



TECHNICAL DATA



Bolt anchor FBN II



Item	zinc-plated steel	stainless steel	hot-dip galva- nised steel	Approval ETA	Drill hole diameter	Min. drill hole depth for through fixings	Anchor length	Max. usable length hef,stand/ hef,red	Thread	Width across nut	Sales unit
	Art.-No.	Art.-No.	Art.-No.		d_0 [mm]	h_2 [mm]	l [mm]	t_{fix} [mm]	$\emptyset \times$ length [mm]	\circ SW [mm]	[pcs]
	gvz	A4	fvz								
FBN II 6/5	505526 ^{1) 2)}	—	—	■	6	45	50	5/-	M 6 x 12	10	100
FBN II 6/10	505527 ^{1) 2)}	505532 ^{1) 2)}	—	■	6	50	55	10/-	M 6 x 17	10	100
FBN II 6/30	505528 ^{1) 2)}	505535 ^{1) 2)}	—	■	6	70	75	30/-	M 6 x 35	10	100
FBN II 8/5	040662	—	—	■	8	61	66	5/15	M 8 x 34	13	50
FBN II 8/10	040664	507555	507575	■	8	66	71	10/20	M 8 x 39	13	50
FBN II 8/20	040669	—	—	■	8	76	81	20/30	M 8 x 49	13	50
FBN II 8/30	040700	507556	507576	■	8	86	91	30/40	M 8 x 59	13	50
FBN II 8/50	040771	507557	507577	■	8	106	111	50/60	M 8 x 79	13	50
FBN II 8/70	040777	—	507578	■	8	126	131	70/80	M 8 x 99	13	20
FBN II 8/100	040783	—	—	■	8	156	161	100/110	M 8 x 129	13	20
FBN II 10/10	040827	507558	507579	■	10	78	86	10/20	M 10 x 46	17	50
FBN II 10/20	040851	507559	—	■	10	88	96	20/30	M 10 x 56	17	50
FBN II 10/30	040854	507560	507580	■	10	98	106	30/40	M 10 x 66	17	50
FBN II 10/50	040855	507561	507582	■	10	118	126	50/60	M 10 x 86	17	20
FBN II 10/70	040931	—	—	■	10	138	146	70/80	M 10 x 106	17	20
FBN II 10/100	040943	507562	507583	■	10	168	176	100/110	M 10 x 136	17	20
FBN II 10/140	040944	—	—	■	10	208	216	140/150	M 10 x 176	17	20
FBN II 10/160	040945	—	—	■	10	228	236	160/170	M 10 x 196	17	20
FBN II 12/10	040950	507563	507589	■	12	95	106	10/25	M 12 x 59	19	20
FBN II 12/20	044558	507564	—	■	12	105	116	20/35	M 12 x 69	19	20
FBN II 12/30	045263	507565	507591	■	12	115	126	30/45	M 12 x 79	19	20
FBN II 12/50	045264	507566	507592	■	12	135	146	50/65	M 12 x 99	19	20
FBN II 12/80	045265	—	—	■	12	165	176	80/95	M 12 x 129	19	20
FBN II 12/100	045266	507567	507596	■	12	185	196	100/115	M 12 x 149	19	20
FBN II 12/120	045267	—	—	■	12	205	216	120/135	M 12 x 169	19	20
FBN II 12/140	045268	—	—	■	12	225	236	140/155	M 12 x 189	19	20
FBN II 12/160	045269	—	—	■	12	245	256	160/175	M 12 x 189	19	20
FBN II 16/10	—	507568	—	■	16	114	130	10/25	M 16 x 74	24	10
FBN II 16/25	045564	507569	507598	■	16	129	145	25/40	M 16 x 89	24	10
FBN II 16/50	045565	507570	507553	■	16	154	170	50/65	M 16 x 105	24	10
FBN II 16/80	045566	—	—	■	16	184	200	80/95	M 16 x 144	24	10
FBN II 16/100	045567	—	507554	■	16	204	220	100/115	M 16 x 164	24	10
FBN II 16/140	045568	—	—	■	16	244	260	140/155	M 16 x 184	24	10
FBN II 16/160	045569	—	—	■	16	264	280	160/175	M 16 x 184	24	10
FBN II 16/200	045570	—	—	■	16	304	320	200/215	M 16 x 184	24	10
FBN II 20/30	045573	507571	—	■	20	165	187	30/55	M 20 x 90	30	10
FBN II 20/30	—	—	508015	■	20	165	187	30/55	M 20 x 90	30	50
FBN II 20/60	045574	507572	—	■	20	195	217	60/85	M 20 x 90	30	10
FBN II 20/80	045575	—	—	■	20	215	237	80/105	M 20 x 90	30	10
FBN II 20/120	045576	—	—	■	20	255	277	120/145	M 20 x 90	30	10

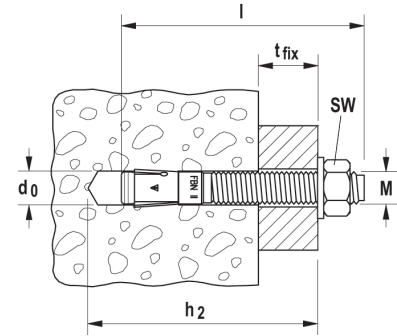
1) Use restricted to anchoring of structural components which are statically indeterminate.

2) Nut and washer not pre-assembled/supplied loose.

TECHNICAL DATA



Bolt anchor **FBN II K**



High performance steel anchors 4

	zinc-plated steel, short version	stainless steel, short version	hot-dip galvanised steel, short version	Approval	Drill hole diameter	Min. drill hole depth for through fixings	Anchor length	Max. usable length hef,stand/hef,red	Thread	Width across nut	Sales unit
	Art.-No.	Art.-No.	Art.-No.	ETA	d_0 [mm]	h_2 [mm]	l [mm]	t_{fix} [mm]	$\emptyset \times$ length [mm]	\bigcirc SW [mm]	[pcs]
Item	gvz	A4	fvz								
FBN II 8/5 K	040806	508007	508012	■	8	51	56	-/5	M 8 x 24	13	50
FBN II 8/10 K	040807	—	—	■	8	56	61	-/10	M 8 x 29	13	50
FBN II 10/5 K	040946	508010	508013	■	10	63	71	-/5	M 10 x 31	17	50
FBN II 10/10 K	040947	—	—	■	10	68	76	-/10	M 10 x 36	17	50
FBN II 12/5 K	045272	508011	508014	■	12	75	86	-/5	M 12 x 39	19	20
FBN II 12/10 K	045273	—	—	■	12	80	91	-/10	M 12 x 44	19	20
FBN II 12/30 K	045274	—	—	■	12	100	111	-/30	M 12 x 64	19	20
FBN II 16/15 K	045571	508745	507597	■	16	104	120	-/15	M 16 x 64	24	10
FBN II 16/25 K	045572	—	—	■	16	114	130	-/25	M 16 x 74	24	10
FBN II 20/10 K	045577	—	—	■	20	120	142	-/10	M 20 x 50	30	10

ACCESSORIES



fischer Anchor bolt setting tool **FABS**

Item	Art.-No.	Matching anchor type	Sales unit [pcs]
FABS	077937	FAZ II, FBN II, EXA for diameter from M6 - M12	1

LOADS

Bolt anchor FBN II

Highest permissible loads for a single anchor¹⁾ in concrete C20/25⁴⁾

For the design the complete approval ETA - 07/02 11 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 T_{inst} [Nm]	Non-cracked concrete			
					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]
FBN II 6⁵⁾		30	100	4,0	2,9	3,4	40	40
FBN II 8⁵⁾	30		100	15,0	2,9	7,1	40	40
		40	100	15,0	6,1	7,6	40	40
FBN II 10	40		100	30,0	6,1	12,0	50	80
		50	100	30,0	8,5	12,0	50	50
FBN II 12	50		100	50,0	8,5	17,9	70	100
		65	120	50,0	12,6	17,9	70	70
FBN II 16	65		120	100,0	12,6	29,0	90	120
		80	160	100,0	17,2	31,5	90	90
FBN II 20	80		160	200,0	17,2	38,3	120	120
		105	200	200,0	25,9	38,3	120	120

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 $c \geq 1,5 \times h_{ef}$. Accurate data see approval.

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⁾ The anchorage depths smaller than 40 mm are only allowed for multiple use for non-structural applications.

LOADS

Bolt anchor FBN II A4

Highest permissible loads for a single anchor¹⁾ in concrete C20/25⁴⁾

For the design the complete approval ETA - 07/02 11 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 T_{inst} [Nm]	Non-cracked concrete			
					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]
FBN II 6 A4 ⁵⁾		30	100	4,0	2,9	3,0	40	40
FBN II 8 A4 ⁵⁾	30		100	10,0	2,9	7,1	50	45
		40	100	10,0	6,1	7,3	40	45
FBN II 10 A4	40		100	20,0	6,1	11,6	50	80
		50	100	20,0	8,5	11,6	70	55
FBN II 12 A4	50		100	35,0	8,5	15,7	70	100
		65	120	35,0	12,6	15,7	70	70
FBN II 16 A4	65		120	80,0	12,6	29,0	90	120
		80	160	80,0	17,2	29,1	120	80
FBN II 20 A4	80		160	150,0	17,2	39,6	140	120
		105	200	150,0	25,9	49,1	120	120

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 $c \geq 1,5 \times h_{ef}$. Accurate data see approval.

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⁾ The anchorage depths smaller than 40 mm are only allowed for multiple use for non-structural applications.

LOADS

Bolt anchor FBN II fvz

Highest permissible loads for a single anchor¹⁾ in concrete C20/25⁴⁾

For the design the complete approval ETA - 07/02 11 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 T_{inst} [Nm]	Non-cracked concrete			
					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]
FBN II 6 fvz ⁵⁾		30	100	4,0	2,9	3,4	40	40
FBN II 8 fvz ⁵⁾	30		100	15,0	2,9	7,1	40	40
		40	100	15,0	6,1	7,6	40	40
FBN II 10 fvz	40		100	30,0	6,1	12,0	50	80
		50	100	30,0	8,5	12,0	50	50
FBN II 12 fvz	50		100	50,0	8,5	17,9	70	100
		65	120	50,0	12,6	17,9	70	70
FBN II 16 fvz	65		120	100,0	12,6	29,0	90	120
		80	160	100,0	17,2	31,5	90	90
FBN II 20 fvz	80		160	200,0	17,2	38,3	120	120
		105	200	200,0	25,9	38,3	120	120

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 $c \geq 1,5 \times h_{ef}$. Accurate data see approval.

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

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distances or spacings (anchor groups) see approval.

⁴⁾ For higher concrete strength classes up to C50/60 higher permissible loads may be possible.

⁵⁾ The anchorage depths smaller than 40 mm are only allowed for multiple use for non-structural applications.