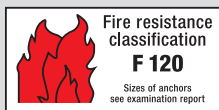




fischer Bolt FBN II

The heavyweight.



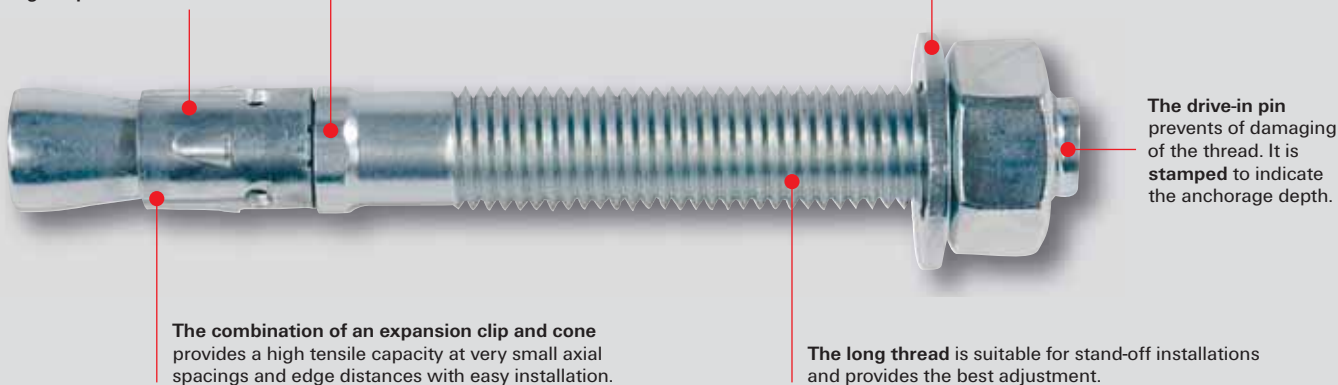
fischer [®]
FIXING SYSTEMS

For high loads with a choice of performance.

Twice as good. Every size of anchor can be installed to the **standard anchorage depth** or with a second **reduced anchorage depth**.

The identification feature of the new FBN II is the faceted collar.

The washer
The FBN II is available with large or small washer.



The combination of an expansion clip and cone provides a high tensile capacity at very small axial spacings and edge distances with easy installation.

The long thread is suitable for stand-off installations and provides the best adjustment.

The drive-in pin prevents of damaging of the thread. It is **stamped** to indicate the anchorage depth.

* The short version FBN II K is offered for the reduced anchorage depth only.

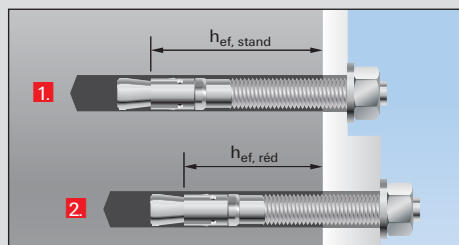
Broad product range.

The new fischer bolt FBN II does not only have outstanding performance and flexibility, but also a large product range. Additionally to the standard range (with standard or reduced anchorage depth) we provide a range of short versions with reduced anchorage depths in various sizes. The short versions are shown with "K" in the table.



Example: FBN II 12/30

- 1.** Highest load: standard anchorage depth $h_{ef, stand} = 65$ mm. Possible useable length up to 30 mm at a permissible tensile load of 12.6 kN.
- 2.** Optimum flexibility: reduced anchorage depth $h_{ef, red.} = 50$ mm. Possible useable length up to 45 mm at a reduced tensile load of 8.5 kN.



The advantages at a glance

- **High loads:** The standard anchorage depth utilises the maximum performance of the anchor and the concrete.
- **Optimum flexibility:** The anchor allows a reduced anchorage depth. This is ideal when larger useable lengths are required or the drilling depth is limited (e.g. with existing reinforcement).
- **European Technical Approval (Option 7)** for non-cracked concrete.
- **Fire resistant class F 120.**
- **Ease of installation:** The anchor is installed with only a few hammer blows. A small displacement of the anchor while tightening conveys a sense of reliability while setting the anchor.
- **More possible applications:** Smaller axial spacings and edge distances allow installation close to the edge and the fastening of smaller anchor plates.
- Suitable for **push-through and pre-positioned installation.**



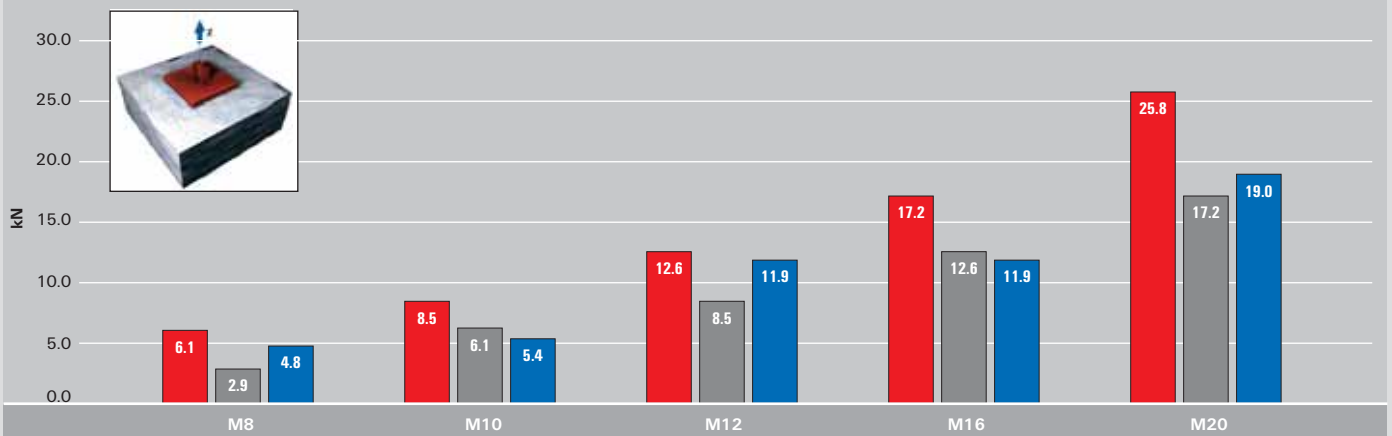
The letter stamped on the front of the bolt gives information about the total length of the anchor.



For the short versions, two strokes have been added.

fischer Bolt FBN II compared with his predecessor FBN.

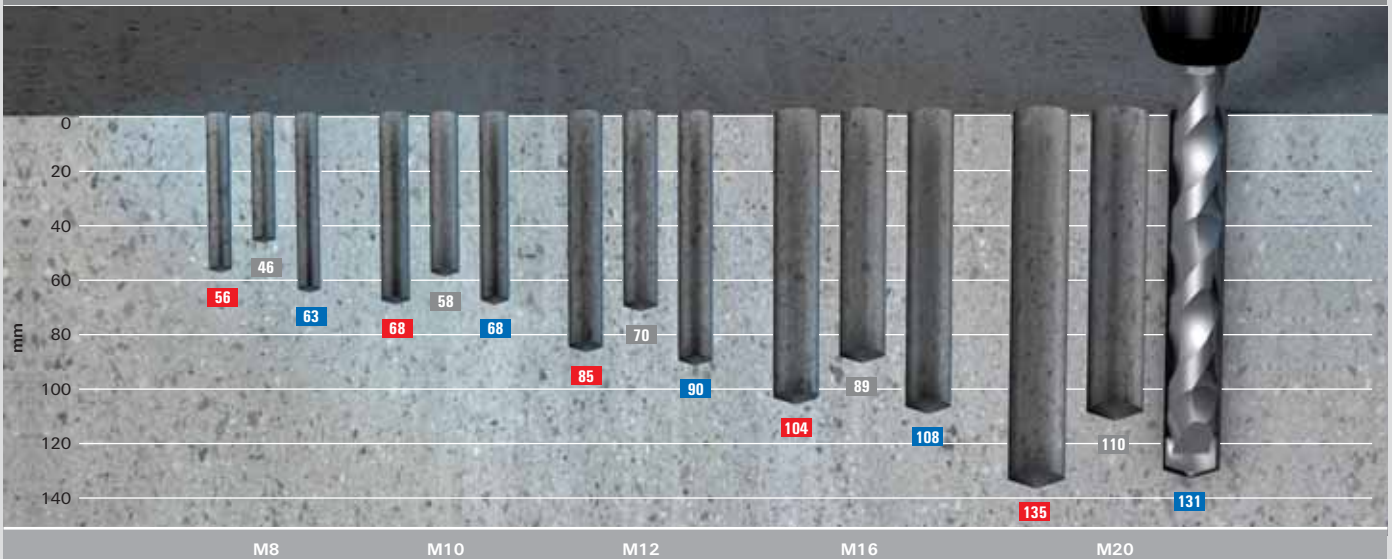
Tensile load bearing capacity N_{perm} – for single anchors without edge influence in non-cracked concrete C20/25



Proven Advantages: the fischer bolt FBN II outperforms its predecessor, FBN, at the permissible tensile loads by up to 57 % with shorter or identical drilling depths. The FBN II, in some cases, reaches the load of its predecessor with up to 20 % less drilling depth. This saves time and money!

■ FBN II (standard anchorage depth) ■ FBN II (red. anchorage depth) ■ FBN (standard anchorage depth)

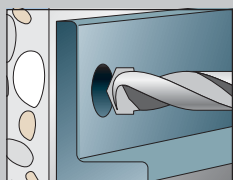
Corresponding drilling depth



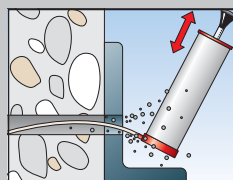
Compared to its predecessor the FBN II features up to 11 % higher loads along with reduced drill hole depth. For a equal drill hole depth the increase in performance is even 57 %. The FBN II with reduced anchorage depth or respectively the FBN II K reach the same load level as the FBN of the next smaller diameter but along with a reduced drill hole depth of up to 21 %.

■ FBN II (standard anchorage depth) ■ FBN II (red. anchorage depth) ■ FBN (standard anchorage depth)

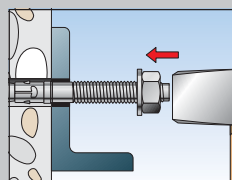
Installation instructions



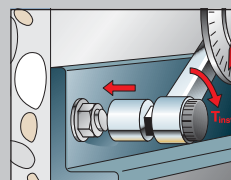
Drill the hole (through the fixture).



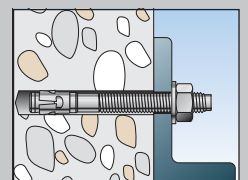
Clean the hole (e.g. blow out).



Drive in the FBN II (through the fixture) with a hammer.



Apply installation torque T_{inst} .



Done!

Loads fischer Bolt FBN II gvz.

Permissible loads¹⁾ of single anchors in normal-weight concrete C20/25²⁾.
For the design the complete approval ETA-07/0211 is to be observed.

Anchor type		FBN II 8 gvz		FBN II 10 gvz		FBN II 12 gvz		FBN II 16 gvz		FBN II 20 gvz	
Effective anchorage depth	h_{ef} [mm]	30 ³⁾	40	40	50	50	65	65	80	80	105
Permissible tensile load N_{perm} of one single anchor without edge influence, i.e. edge distance $c \geq 1.5 \times h_{ef}$ and axial spacing $s \geq 3 \times h_{ef}$											
in non-cracked concrete C20/25 ²⁾	N_{perm} [kN]	2.9 ³⁾	6.1	6.1	8.5	8.5	12.6	12.6	17.2	17.2	25.8
Permissible shear load V_{perm} of one single anchor without edge influence, i.e. edge distance $c \geq 10 \times h_{ef}$ and axial spacing $s \geq 3 \times h_{ef}$											
in non-cracked concrete C20/25 ²⁾	V_{perm} [kN]	3.9 ³⁾	6.1	6.1	8.5	8.5	11.8	22.6	22.6	34.3	38.2
Permissible bending moment	M_{perm} [Nm]	11.0 ³⁾	12.9	25.2	25.6	44.9	44.9	114.3	114.3	199.4	241.1
Anchor characteristics											
Characteristic axial spacing	$s_{cr,N}$ [mm]	90 ³⁾	120	120	150	150	195	195	240	240	315
Characteristic edge distance	$c_{cr,N}$ [mm]	45 ³⁾	60	60	75	75	97.5	97.5	120	120	157.5
Minimum axial spacing	s_{min} [mm]	40 ³⁾	40	50	50	70	70	90	90	120	120
Minimum edge distance	c_{min} [mm]	40 ³⁾	40	80	50	100	70	120	90	120	120
Minimum structural component thickness	h_{min} [mm]	100	100	100	100	100	120	120	160	160	200
Nominal drill diameter	d_o [mm]	8		10		12		16		20	
Drill hole depth	$h_f \geq$ [mm]	46 ³⁾	56	58	68	70	85	89	104	110	135
Clearance-hole in fixture to be attached	$d_f \leq$ [mm]	9		12		14		18		22	
Installation torque	T_{inst} [Nm]	15		30		50		100		200	

Note: With the fischer Design Software COMPUFIX you can use the full performance of the fischer Bolt FBN II and you are able to do designs under individual application conditions.

¹⁾ The partial safety factors for resistance and the partial safety factor for load with $\gamma_F = 1.4$ are considered. Please observe the design method A (ETAG, annex C) if combined tensile and shear loads, edge influences and influences of spacings of anchor groups are to be considered.

²⁾ The concrete is considered to be normally reinforced or non-reinforced; For higher concrete strength classes an increase in performance of up to 55% is possible.

³⁾ Use restricted to anchoring of structural components which are statically indeterminate.

Examples of application.

The fischer bolt FBN II is suitable for push-through installation and pre-positioned installation for the fixing of steel and timber structures, machines, staircases, gates, façades, window elements and much more.



Fixing of cable conduits



Fixing of steel beams, consoles and handrails

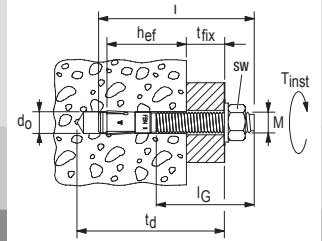


Fixing of timber structures

Product range.



Carbon steel, zinc plated and passivated



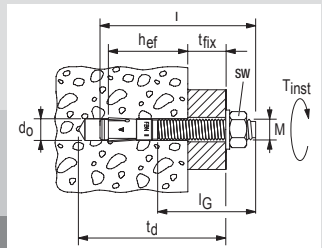
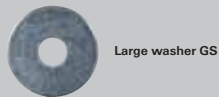
Bolt FBN II

Type	Imprint on head	Art. No.	ID	ETA	Nominal drill diameter d_0 mm	Min. drill hole depth with push-through installation t_d ≥ mm	Anchorage depth $h_{ef,stand}/h_{ef,red}$ ≥ mm	Anchor length l mm	Max. usable length t_{fix} at $h_{ef,stand}$ / t_{fix} at $h_{ef,red}$ ≤ mm	Thread length mm	Thread M	Wide across nut SW	Washer outer diameter x thickness mm	Installation torque T_{inst} Nm	Packaging pcs.
FBN 6/5	-	45130	4		6	45	20/-	40	5/-	16	6	8	12 x 1.6	8	100
FBN 6/10	-	45136	6		6	50	20/-	55	10/-	30	6	8	12 x 1.6	8	100
FBN 6/30	-	45137	3		6	70	20/-	75	30/-	30	6	8	12 x 1.6	8	100
FBN II 8/5	A	40662	5	■	8	61	40/30	66	5/15	34	8	13	16 x 1.6	15	50
FBN II 8/10	B	40664	9	■	8	66	40/30	71	10/20	39	8	13	16 x 1.6	15	50
FBN II 8/20	D	40669	4	■	8	76	40/30	81	20/30	49	8	13	16 x 1.6	15	50
FBN II 8/30	F	40700	4	■	8	86	40/30	91	30/40	59	8	13	16 x 1.6	15	50
FBN II 8/50	K	40771	4	■	8	106	40/30	111	50/60	79	8	13	16 x 1.6	15	50
FBN II 8/70	M	40777	6	■	8	126	40/30	131	70/80	99	8	13	16 x 1.6	15	20
FBN II 8/100	P	40783	7	■	8	156	40/30	161	100/110	100	8	13	16 x 1.6	15	20
FBN II 10/10	B	40827	8	■	10	78	50/40	86	10/20	46	10	17	20 x 4	30	50
FBN II 10/20	D	40851	3	■	10	88	50/40	96	20/30	56	10	17	20 x 5	30	50
FBN II 10/30	F	40854	4	■	10	98	50/40	106	30/40	66	10	17	20 x 7	30	50
FBN II 10/50	K	40855	1	■	10	118	50/40	126	50/60	86	10	17	20 x 8	30	20
FBN II 10/70	M	40931	2	■	10	138	50/40	146	70/80	100	10	17	20 x 9	30	20
FBN II 10/100	P	40943	5	■	10	168	50/40	176	100/110	100	10	17	20 x 10	30	20
FBN II 10/140	S	40944	2	■	10	208	50/40	216	140/150	100	10	17	20 x 11	30	20
FBN II 10/160	T	40945	9	■	10	228	50/40	236	160/170	100	10	17	20 x 12	30	20
FBN II 12/10	B	40950	3	■	12	95	65/50	106	10/25	59	12	19	24 x 2.5	50	20
FBN II 12/20	D	44558	7	■	12	105	65/50	116	20/35	69	12	19	24 x 2.5	50	20
FBN II 12/30	F	45263	9	■	12	115	65/50	126	30/45	79	12	19	24 x 2.5	50	20
FBN II 12/50	K	45264	6	■	12	135	65/50	146	50/65	99	12	19	24 x 2.5	50	20
FBN II 12/80	N	45265	3	■	12	165	65/50	176	80/95	129	12	19	24 x 2.5	50	20
FBN II 12/100	P	45266	0	■	12	185	65/50	196	100/115	149	12	19	24 x 2.5	50	20
FBN II 12/120	R	45267	7	■	12	205	65/50	216	120/135	169	12	19	24 x 2.5	50	20
FBN II 12/140	S	45268	4	■	12	225	65/50	236	140/155	189	12	19	24 x 2.5	50	20
FBN II 12/160	T	45269	1	■	12	245	65/50	256	160/185	100	12	19	24 x 2.5	50	20
FBN II 16/25	E	45564	7	■	16	129	80/65	145	25/40	89	16	24	30 x 3	100	10
FBN II 16/50	K	45565	4	■	16	154	80/65	170	50/65	114	16	24	30 x 3	100	10
FBN II 16/80	N	45566	1	■	16	184	80/65	200	80/95	144	16	24	30 x 3	100	10
FBN II 16/100	P	45567	8	■	16	204	80/65	220	100/115	164	16	24	30 x 3	100	10
FBN II 16/140	S	45568	5	■	16	244	80/65	260	140/155	100	16	24	30 x 3	100	10
FBN II 16/160	T	45569	2	■	16	264	80/65	280	160/175	100	16	24	30 x 3	100	10
FBN II 16/200	V	45570	8	■	16	304	80/65	320	200/215	100	16	24	30 x 3	100	10
FBN II 20/30	F	45573	9	■	20	165	105/80	184	30/55	50	20	30	37 x 3	200	10
FBN II 20/60	L	45574	6	■	20	195	105/80	214	60/85	90	20	30	37 x 3	200	10
FBN II 20/80	N	45575	3	■	20	215	105/80	234	80/105	90	20	30	37 x 3	200	10
FBN II 20/120	R	45576	0	■	20	255	105/80	274	120/145	90	20	30	37 x 3	200	10

Bolt FBN II "K"

FBN II 8/5 K	-A-	40806	3	■	8	51	-/30	56	-/5	24	8	13	16 x 1.6	15	50
FBN II 8/10 K	-B-	40807	0	■	8	56	-/30	61	-/10	29	8	13	16 x 1.6	15	50
FBN II 8/30 K	-F-	40826	1	■	8	76	-/30	81	-/30	49	8	13	16 x 1.6	15	50
FBN II 10/5 K	-A-	40946	6	■	10	63	-/40	71	-/5	31	10	17	20 x 2	30	50
FBN II 10/10 K	-B-	40947	3	■	10	68	-/40	76	-/10	36	10	17	20 x 3	30	50
FBN II 10/30 K	-F-	40948	0	■	10	88	-/40	96	-/30	56	10	17	20 x 6	30	50
FBN II 12/5 K	-A-	45272	1	■	12	75	-/50	86	-/5	39	12	19	24 x 2.5	50	20
FBN II 12/10 K	-B-	45273	8	■	12	80	-/50	91	-/10	44	12	19	24 x 2.5	50	20
FBN II 12/30 K	-F-	45274	5	■	12	100	-/50	111	-/30	64	12	19	24 x 2.5	50	20
FBN II 16/15 K	-C-	45571	5	■	16	104	-/65	120	-/15	64	16	24	30 x 3	100	10
FBN II 16/25 K	-E-	45572	2	■	16	114	-/65	130	-/25	74	16	24	30 x 3	100	10
FBN II 20/10 K	-B-	45577	7	■	20	120	-/80	139	-/10	-	20	30	37 x 3	200	10

Product range.



Bolt FBN II with large washer GS

Type	Imprint on head	Art. No.	ID	ETA	Nominal drill diameter d_b mm	Min. drill hole depth with push-through installation t_g \geq mm	Anchorage depth $h_{ef,stand} / h_{ef,red}$ \geq mm	Anchor length l mm	Max. usable length $t_{fix} \leq l$ at $h_{ef,stand} / t_{fix} \leq h_{ef,red}$ \leq mm	Thread length mm	Thread	Wide across nut SW	Washer outer diameter x thickness mm	Installation torque T_{inst} Nm	Packaging pcs.
FBN II 12/80 GS	N	45578	4	■	12	165	65/50	176	80/95	129	12	19	44 x 2.5	50	20
FBN II 12/100 GS	P	45579	1	■	12	185	65/50	196	100/115	149	12	19	44 x 2.5	50	20
FBN II 12/120 GS	R	45580	7	■	12	205	65/50	216	120/135	169	12	19	44 x 2.5	50	20
FBN II 12/140 GS	S	45581	4	■	12	225	65/50	236	140/155	189	12	19	44 x 2.5	50	10
FBN II 12/160 GS	T	45583	8	■	12	245	65/50	256	160/175	100	12	19	44 x 2.5	50	10
FBN II 12/180 GS	U	45584	5	■	12	265	65/50	276	180/195	100	12	19	44 x 2.5	50	10
FBN II 12/200 GS	V	45585	2	■	12	285	65/50	296	200/215	100	12	19	44 x 2.5	50	10
FBN II 12/250 GS	W	45586	9	■	12	335	65/50	346	250/265	100	12	19	44 x 2.5	50	10
FBN II 16/80 GS	N	45587	6	■	16	184	80/65	200	80/95	144	16	24	56 x 3	100	10
FBN II 16/100 GS	P	45588	3	■	16	204	80/65	220	100/115	164	16	24	56 x 3	100	10
FBN II 16/120 GS	R	45589	0	■	16	224	80/65	240	120/135	184	16	24	56 x 3	100	10
FBN II 16/140 GS	S	45590	6	■	16	244	80/65	260	140/155	100	16	24	56 x 3	100	10
FBN II 16/160 GS	T	45591	3	■	16	264	80/65	280	160/175	100	16	24	56 x 3	100	10
FBN II 16/180 GS	U	45592	0	■	16	284	80/65	300	180/195	100	16	24	56 x 3	100	10
FBN II 16/200 GS	V	45593	7	■	16	304	80/65	320	200/215	100	16	24	56 x 3	100	10
FBN II 16/250 GS	W	52192	2	■	16	354	80/65	370	250/265	100	16	24	56 x 3	100	10
FBN II 16/300 GS	X	52204	2	■	16	404	80/65	420	300/315	100	16	24	56 x 3	100	10

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FIXING SYSTEMS