

Bolt anchor FBN II

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

For the design the complete approval ETA - 07/0211 has to be considered.

Type	Min. effective anchorage depth	Max. effective anchorage depth	Min. member thickness	Installation torque	Non-cracked concrete			
	$h_{ef,min}$ [mm]	$h_{ef,max}$ [mm]	h_{min} [mm]	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]
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 a 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.

Bolt anchor FBN II A4

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

For the design the complete approval ETA - 07/0211 has to be considered.

Type	Min. effective anchorage depth	Max. effective anchorage depth	Min. member thickness	Installation torque	Non-cracked concrete			
	$h_{ef,min}$ [mm]	$h_{ef,max}$ [mm]	h_{min} [mm]	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]
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.