

## Highbond anchor FHB II Inject: Injection mortar FIS HB with Anchor rod FHB II-A Inject

stainless steel A4

Permissible loads of a single anchor in non-cracked normal concrete (concrete compression zone) of strength class C20/25 (~B25) <sup>1)2)3)</sup>										Minimum spacings while reducing the load	
Type	Material fixing element	Min. member thickness	Effective anchorage depth	Installation torque	Permissible tensile load	Permissible shear load	Required edge distance (with one edge) for		Required spacing for	Min. spacing	Min. edge distance
							Max. tension load c	Max. shear load c			
		h <sub>min</sub> [mm]	h <sub>ef</sub> [mm]	T <sub>inst</sub> [Nm]	N <sub>perm</sub> <sup>4)</sup> [kN]	V <sub>perm</sub> <sup>4)</sup> [kN]	[mm]	[mm]	[mm]	[mm]	[mm]
<b>FHB II-A S Inject M10 x 60</b>	A4	100	60	15	11,2	13,8	150	210	180	40	40
<b>FHB II-A L Inject M10 x 95</b>	A4	140	95	20	16,4	13,3	140	150	285	40	40
<b>FHB II-A S Inject M12 x 75</b>	A4	120	75	30	15,6	19,3	150	265	225	40	40
<b>FHB II-A L Inject M12 x 100</b>	A4	140	100	40	23,7	19,3	190	225	300	50	50
<b>FHB II-A L Inject M12 x 120</b>	A4	170	120	40	23,7	19,3	180	195	360	50	50
<b>FHB II-A S Inject M16 x 95</b>	A4	150	95	50	22,3	35,8	170	435	285	50	50
<b>FHB II-A L Inject M16 x 125</b>	A4	170	125	60	33,6	35,8	190	385	375	55	55
<b>FHB II-A L Inject M16 x 160</b>	A4	220	160	60	46,0	35,8	270	325	480	70	70

For the design the complete assessment ETA-16/0637 has to be considered. <sup>6)</sup>

<sup>1)</sup> The partial safety factors for material resistance as regulated in the ETA-16/0637 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  $s \geq 3 \cdot h_{gr}$  and an edge distance  $c \geq 1,5 \cdot h_{gr}$ . Accurate data see ETA-16/0637.

<sup>2)</sup> For higher concrete strength classes up to C50/60 higher permissible loads may be possible.

<sup>3)</sup> Drill method hammer drilling.

<sup>4)</sup> For combinations of tensile loads and shear loads or for shear loads with lever arm (bending moments) as well as reduced edge distances or spacings (anchor groups) we recommend to use our anchor design software C-FIX.

<sup>5)</sup> Minimum possible axial spacings resp. edge distance while reducing the permissible load.

<sup>6)</sup> The given loads refer to the European Technical Assessment ETA-16/0637, issue date 14/12/2017. Design of the loads according to ETAG 001, Annex C, Method A (for static resp. quasi-static loads).

## Highbond anchor FHB II Inject: Injection mortar FIS HB with Anchor rod FHB II-A Inject

stainless steel A4

Permissible loads of a single anchor in cracked normal concrete (concrete tension zone) of strength class C20/25 (~B25) <sup>1) 2) 3) 7)</sup>										Minimum spacings while reducing the load	
Type	Material fixing element	Min. member thickness	Effective anchorage depth	Installation torque	Permissible tensile load	Permissible shear load	Required edge distance (with one edge) for		Required spacing for	Min. spacing	Min. edge distance
							Max. tension load c	Max. shear load c			
		h <sub>min</sub> [mm]	h <sub>ef</sub> [mm]	T <sub>inst</sub> [Nm]	N <sub>perm</sub> <sup>4)</sup> [kN]	V <sub>perm</sub> <sup>4)</sup> [kN]	[mm]	[mm]	[mm]	[mm]	[mm]
<b>FHB II-A S Inject M10 x 60</b>	A4	100	60	15	8,0	13,8	90	310	180	40	40
<b>FHB II-A L Inject M10 x 95</b>	A4	140	95	20	15,9	13,3	145	225	285	40	40
<b>FHB II-A S Inject M12 x 75</b>	A4	120	75	30	11,1	19,3	115	385	225	40	40
<b>FHB II-A L Inject M12 x 100</b>	A4	140	100	40	17,1	19,3	150	335	300	50	50
<b>FHB II-A L Inject M12 x 120</b>	A4	170	120	40	22,5	19,3	180	295	360	50	50
<b>FHB II-A S Inject M16 x 95</b>	A4	150	95	50	15,9	31,7	145	560	285	50	50
<b>FHB II-A L Inject M16 x 125</b>	A4	170	125	60	24,0	35,8	190	570	375	55	55
<b>FHB II-A L Inject M16 x 160</b>	A4	220	160	60	34,7	35,8	240	480	480	70	70

For the design the complete assessment ETA-16/0637 has to be considered. <sup>6)</sup>

<sup>1)</sup> The partial safety factors for material resistance as regulated in the ETA-16/0637 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  $s \geq 3 \cdot h_{ef}$  and an edge distance  $c \geq 1,5 \cdot h_{ef}$ . Accurate data see ETA-16/0637.

<sup>2)</sup> For higher concrete strength classes up to C50/60 higher permissible loads may be possible.

<sup>3)</sup> Drill method hammer drilling.

<sup>4)</sup> For combinations of tensile loads and shear loads or for shear loads with lever arm (bending moments) as well as reduced edge distances or spacings (anchor groups) we recommend to use our anchor design software C-FIX.

<sup>5)</sup> Minimum possible axial spacings resp. edge distance while reducing the permissible load.

<sup>6)</sup> The given loads refer to the European Technical Assessment ETA-16/0637, issue date 14/12/2017. Design of the loads according to ETAG 001, Annex C, Method A (for static resp. quasi-static loads).

<sup>7)</sup> A reinforcement in the concrete to prevent splitting is required. The width of the cracks has to be limited under consideration of the splitting forces at  $w_k \sim 0,3$  mm.