Bolt anchor FAZ II Plus dynamic

Design values for cyclic fatigue loading[1] of a single anchor in cracked or non-cracked normal concrete of strength class C20/25[2].
For the design the complete current assessment ETA-20/0897 of 22.05.2023 has to be considered.

					Cracked concrete				Non-cracked concrete			
					Design values of tension ($\Delta N_{Ed,max}$) and shear loads ($\Delta V_{Ed,max}$); minimum spacing (s_{min}) and edge distances (c_{min}) with reduced loads				Design values of tension ($\Delta N_{Ed,max}$) and shear loads ($\Delta V_{Ed,max}$); minimum spacing (s_{min}) and edge distances (c_{min}) with reduced loads			
Type	Material/ surface	Effective anchorage depth h_{ef} [mm]	Minimum member thickness h_{min} [mm]	Installation torque T_{inst} [Nm]	$\Delta N_{Ed,max}$ [3] [kN]	$\Delta V_{Ed,max}$ [3] [kN]	s_{min} [3] [mm]	c_{min} [3] [mm]	$\Delta N_{Ed,max}$ [3] [kN]	$\Delta V_{Ed,max}$ [3] [kN]	s_{min} [3] [mm]	c_{min} [3] [mm]
FAZ II Plus 16	gvz	65	140	110	6.0	4.7	65	65	6.4	4.7	65	65
	gvz	85	140	110	6.4	4.7	65	65	6.4	4.7	65	65
	gvz	160	240	110	6.4	4.7	65	65	6.4	4.7	65	65
	R	65	140	110	3.1	6.0	65	65	3.1	6.0	65	65
	R	85	140	110	3.1	6.0	65	65	3.1	6.0	65	65
	R	160	240	110	3.1	6.0	65	65	3.1	6.0	65	65
FAZ II Plus 20	gvz	100	160	200	8.8	6.1	95	85	8.8	6.1	95	95
	gvz	180	270	200	8.8	6.1	95	85	8.8	6.1	95	95
	R	100	160	200	4.7	9.4	95	85	4.7	9.4	95	95
	R	180	270	200	4.7	9.4	95	85	4.7	9.4	95	95
FAZ II Plus 24	gvz	125	200	270	14.7	9.5	100	100	14.7	9.5	100	135
	R	125	200	270	6.9	13.6	100	100	6.9	13.6	100	135

[1] The design values of the cyclic fatigue loading apply for load cycles > 10^8 in accordance with design method I acc. to TR061 – for unknown static lower load. If the static lower load is known and / or for lower number of load cycles higher load values are possible. The partial safety factors as regulated in the design standard are considered. As a single anchor counts e.g. an anchor with a spacing $s \geq 3 \times h_{ef}$. Drill hole cleaning acc. to assessment.

[2] For higher concrete strength classes up to C50/60 higher permissible loads may be possible. - see assessment. The concrete is assumed to be standard-reinforced.

[3] In the case of combinations of tensile loads and shear loads, with reduced or minimum spacing and edge distances (anchor groups) the design must be carried out in accordance with the provisions of the complete assessment.