

Dynamic-Anchor FDA

zinc-plated steel

Design values for cyclic fatigue loading ¹⁾ of a single anchor in cracked or non-cracked normal concrete of strength class C20/25 ³⁾										Minimum spacings while reducing the load	
Type	Material fixing element	Effective anchorage depth	Minimum member thickness	Installation torque	Design value of tensile load	Design value of shear load	Required edge distance (with one edge) for		Required spacing for	Min. spacing	Min. edge distance
							Max. tension load	Max. shear load			
		h_{ef} [mm]	$h_{min}^{5)}$ [mm]	T_{inst} [Nm]	$\Delta N_{Ed,max}^{2)}$ [kN]	$\Delta V_{Ed,max}^{2)8)}$ [kN]	$\Delta N_{Ed,c}^{6)7)}$ [mm]	$\Delta V_{Ed,c}^{7)}$ [mm]	Max. Load $s_{cr}^{6)}$ [mm]	$s_{min}^{5)}$ [mm]	$c_{min}^{5)}$ [mm]
FDA 12 x 100	gvz	100	130	40	11,3	5,1	200	200	300	100	200 ⁴⁾
			200				100	100 ⁴⁾			
FDA 16 x 125	gvz	125	160	60	18,8	9,1	200	200	375	100	200 ⁴⁾
			250				140	115			100

For the design the complete approval Z-21.3-2058 has to be considered.

¹⁾ The design values of the cyclic fatigue loading apply for $\geq 5 \times 10^6$ load cycles in accordance with design method I - 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 approval are considered. As a single anchor counts e.g. an anchor with a spacing $s \geq 3 \times h_{ef}$. The given load values apply for anchorages in dry and wet concrete and temperatures in the base material up to +50 °C (resp. short-term up to +80 °C) and drill hole cleaning in accordance with the approval.

²⁾ For combinations of tensile loads, shear loads, bending moments as well as reduced edge distances or spacings (anchor groups) a detailed anchor design is required.

³⁾ For higher concrete strength classes up to C50/60 higher permissible loads may be possible. - see approval. The concrete is assumed to be standard-reinforced.

⁴⁾ Without reduction of the shear load.

⁵⁾ Intermediate values for h_{min} may be applied in accordance with table 5 of the approval Z-21.3-2058 considering the influence on s_{min} and c_{min} .

⁶⁾ A splitting reinforcement, which limits the crack width to $\sim 0,3$ mm considering the splitting forces, is assumed to be available. For an actual edge distance, which is smaller than the characteristic edge distance $c_{cr,N}$, a longitudinal reinforcement of at least diameter 6 mm in the area of the anchorage depth of the anchor must be available.

⁷⁾ Values apply for predominantly non-static (dynamic) actions. For predominantly static actions differing values can be decisive.

⁸⁾ Valid for pulsating loads. For alternating loads see approval.