The dynamic push-through anchor for an economical serial installation at medium load level

Platform lifts

VERSIONS

- Zinc-plated steel

BUILDING MATERIALS

- Concrete C20/25 to C50/60, cracked and non-cracked

CERTIFICATES

Zulassung

dynamic

ADVANTAGES

- Medium load level for a variety of applications.
- Pre-assembled anchor rod for fast installation.
- Approved safety by DIBt-Approval for endless numbers of load cycles.
- Easy push-through installation leads to cost effectiveness – especially for serial installations.
- Tight assortment with the size.
- Less spacings and edge distances.
- Drill holes are sealed.

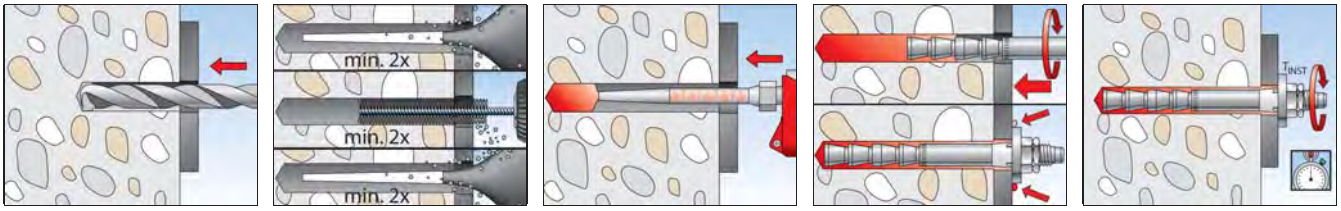
APPLICATIONS

- hydraulic ramps
- Conveyor belts
- Industrial robots
- cooperation robots and -parts
- Guide rails for elevators

FUNCTIONING

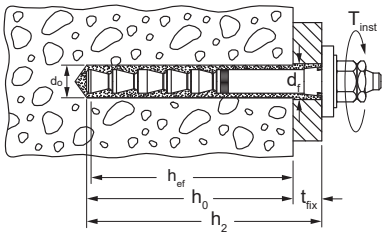
- The injection system suitable for tensile zones consists of the fischer dynamic anchor rod FDA-A dyn and the injection mortar FIS HB.
- FDA is approved push-through installation.
- Extruding the mortar causes the two components to be mixed and activated in the static mixer.
- The mortar bonds the entire surface of the anchor rod with the drill hole wall and seals the drill hole.
- The centring sleeve centres the anchor in the fixture, thus ensuring a safe load application.
- During the setting process, the injection mortar FIS HB fills the annular gap in the fixture, and ensures optimum load distribution. This allows for the absorption of dynamic alternating loads.

INSTALLATION IN CONCRETE WITH FIS HB AND FDA



TECHNICAL DATA

Dynamic-Anchor **FDA**



	Zinc-plated steel	Approval	Drill hole diameter	Drill hole diameter in fixture	Anchorage depth	Min. - max. usable length	Min. drill hole depth for through fixings	Width across nut	Sales unit
	Art.-No.	DIBt	d_0 [mm]	d_f [Ø mm]	h_{ef} [mm]	t_{fix} [mm]	h_2 [mm]	⬡ SW [mm]	[pcs]
Item	**gvz**								
FDA-A 12 x 100/25 gvz	**536943**	●	14	15	100	12 - 25	130	19	10
FDA-A 12 x 100/50 gvz	**536944**	●	14	15	100	12 - 50	155	19	10
FDA-A 16 x 125/25 gvz	**536945**	●	18	19	125	16 - 25	155	24	10
FDA-A 16 x 125/50 gvz	**536946**	●	18	19	125	16 - 50	180	24	10

LOADS

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]	ΔN_{Ed} c[6] [7] [mm]	ΔV_{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			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 ≥ 5 x 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 ≥ 3 x 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 ~ 0,3 mm considering the splitting foreces, 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 avialable.

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.