

The internally threaded anchor with low anchoring depth for individual fixings in cracked concrete



Emergency exit signs in tunnels



Air conditioning units

VERSIONS

- Zinc-plated steel
- Stainless steel
- Highly corrosion-resistant steel

BUILDING MATERIALS

Approved for:

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

Also suitable for:

- Concrete C12/15
- Natural stone with dense structure

CERTIFICATES



ADVANTAGES

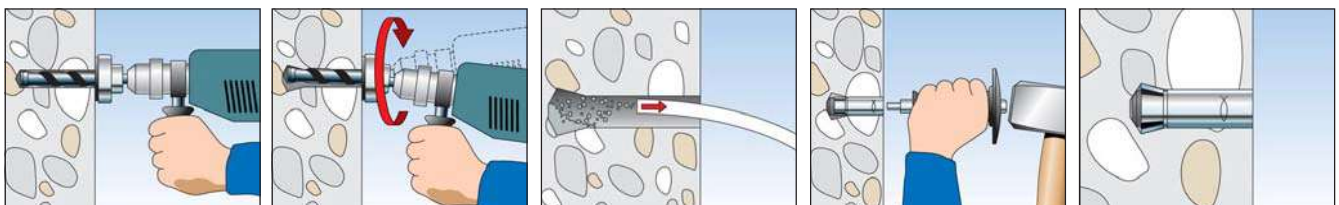
- Hammerset anchor with Zykon undercut technology for individual fixings in cracked and non-cracked concrete.
- The combination of hammerset and ZYKON undercut anchor allows for individual fixings in cracked concrete.
- The special ZYKON undercut technology reduces the energy required for installation.
- The FZUB special drill allows for a fast installation by creating the undercut without having to change tools.
- The embossing that is applied when expanding the anchor secures the simple control of the anchoring.
- The almost expansion-free installation of the anchor allows small edge distances and axial spacing, thereby enabling flexible use.

APPLICATIONS

- Pipelines
- Ventilation systems
- Sprinkler systems
- Cable trays
- Suspended ceilings

FUNCTIONING

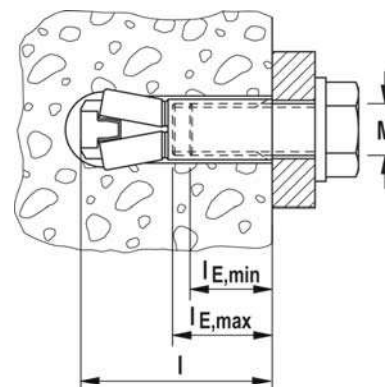
- The FZEA II is suitable for pre-positioned installation.
- The undercut drill hole is created using the special FZUB drill.
- Once the anchor has been placed in the drill hole, the expansion sleeve is expanded by the driving in of the internal expansion pin with the FZED Plus setting tool, and the undercut drill hole is filled with a positive fit.



TECHNICAL DATA



Zykon-Hammerset anchor **FZEA II**



	Zinc-plated steel	Stainless steel	Highly corrosion resistant steel	Approval	Required drill bit FZUB	Required setting tool FZED plus	Length l [mm]	Internal thread A1	Max. bolt penetration l _{E,max} [mm]	Min. bolt penetration l _{E,min} [mm]	Sales unit [pcs]
Item	Art.-No.	Art.-No.	Art.-No.	ETA							
	gvz	A4	C								
FZEA II 10 x 40 M 8	047303	047306	047309 1)	■	10 x 40	FZED 10 plus	43	M 8	17	11	100
FZEA II 12 x 40 M10	047304	047307	047310 1)	■	12 x 40	FZED 12 plus	43	M 10	19	13	100
FZEA II 14 x 40 M12	047305	047308	—	■	14 x 40	FZED 14 plus	43	M 12	21	15	50

1) Delivery on request.

ACCESSORIES



Drill bit **FZUB**

Item	Art.-No.	Matching anchor type	Sales unit [pcs]
FZUB 10 x 40	060622	FZEA II 10 x 40, FZA 10 x 40 M6	1
FZUB 12 x 40	060623	FZEA II 12 x 40, FZA 12 x 40 M8	1
FZUB 14 x 40	060624	FZEA II 14 x 40, FZA 14 x 40	1

ACCESSORIES



Setting tool **FZED plus**

Item	Art.-No.	Matching anchor type	Sales unit [pcs]
FZED 10 plus	044642	FZEA II 10 x 40 M8	1
FZED 12 plus	044643	FZEA II 12 x 40 M10	1
FZED 14 plus	044644	FZEA II 14 x 40 M12	1

LOADS

ZYKON Hammer set Anchor FZEA II

zinc plated steel / stainless steel / high corrosion resistant steel

Permissible loads of a single anchor in cracked normal concrete (concrete tension zone) of strength class C20/25 (~B25) ^{1) 2) 3) 8)}										Minimum spacings while reducing the load			
Type	Screw material resp. screw surface	Minimum member thickness h_{min} [mm]	Effective anchorage depth h_{ef} [mm]	Maximum installation torque T_{max} [Nm]	Permissible tensile load $N_{perm}^{4)}$ [kN]	Permissible shear load $V_{perm}^{4)}$ [kN]	Required edge distance (with one edge) for		Required spacing for Max. Load s [mm]	Min. spacing $s_{min}^{5) 6)}$ [mm]	Min. edge distance $c_{min}^{5) 6)}$ [mm]		
							Max. tension load c [mm]	Max. shear load c [mm]					
FZEA II 10 x 40 M8	5.6	80	40	10	1,6	3,7	40	85	120	40	40		
	5.8												
	8.8			15								4,7	115
	A4-70												
	C-70												
FZEA II 12 x 40 M10	5.6	80	40	15	3,0	5,6	65	135	120	45	45		
	5.8												
	8.8			20								65	135
	A4-70												
	C-70												
FZEA II 14 x 40 M12	5.6	80	40	20	3,6	5,6	85	130	120	50	50		
	5.8												
	8.8			40								85	130
	A4-70												
	C-70												

For the design the complete assessment ETA-06/0271 has to be considered.⁷⁾

¹⁾ The partial safety factors for material resistance as regulated in the ETA-06/0271 as well as a partial safety factor for load actions of $\gamma_F = 1,4$ are considered. As an 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-06/0271.

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

³⁾ Drill method hammer drilling.

⁴⁾ For combinations of tensile loads, shear loads, bending moments as well as reduced edge distances or spacings (anchor groups) see ETA-06/0271.

⁵⁾ Minimum possible axial spacings resp. edge distance while reducing the permissible load.

⁶⁾ Minimum possible spacing resp. edge distance while reducing the permissible load for the required minimum member thickness. The combination of minimum edge distance and minimum spacing is not possible. One of both values has to be increased acc. ETA-06/0271.

⁷⁾ The given loads refer to the European Technical Assessment ETA-06/0271, issue date 30/11/2016. Design of the loads according ETAG 001, Annex C, Method A (for static resp. quasi-static loads).

⁸⁾ 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 $w_k \sim 0,3\text{mm}$.

LOADS

ZYKON Hammer set Anchor FZEA II

zinc plated steel / stainless steel / high corrosion resistant steel

Permissible loads of a single anchor in non-cracked normal concrete (concrete compression zone) of strength class C20/25 (~B25) ^{1) 2) 3)}										Minimum spacings while reducing the load	
Type	Screw material resp. screw surface	Minimum member thickness h_{min} [mm]	Effective anchorage depth h_{ef} [mm]	Maximum installation torque T_{max} [Nm]	Permissible tensile load $N_{perm}^{4)}$ [kN]	Permissible shear load $V_{perm}^{4)}$ [kN]	Required edge distance (with one edge) for		Required spacing for Max. Load s [mm]	Min. spacing $s_{min}^{5) 6)}$ [mm]	Min. edge distance $c_{min}^{5) 6)}$ [mm]
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	5.8										
	8.8										
	A4-70										
	C-70										
FZEA II 12 x 40 M10	5.6	80	40	15	3,6	6,1	55	100	120	45	45
	5.8										
	8.8										
	A4-70										
	C-70										
FZEA II 14 x 40 M12	5.6	80	40	20	3,6	7,9	55	130	120	50	50
	5.8										
	8.8										
	A4-70										
	C-70										

For the design the complete assessment ETA-06/0271 has to be considered.⁷⁾

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