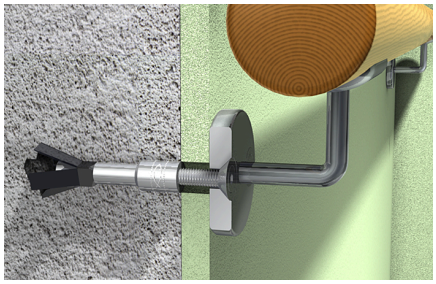
The strong internally threaded anchor with unique 4-way expansion for fixings in aerated concrete



VERSIONS

- Zinc-plated steel

APPROVALS

BUILDING MATERIALS

Approved for:

- Aerated concrete with compressive strength 2 to 7 N/mm²
- Aerated concrete wall or ceiling boards with compressive strength 3.3 to 4.4 N/mm²
- Planked aerated concrete masonry, e.g. plastered, tiled, papered etc.

ADVANTAGES

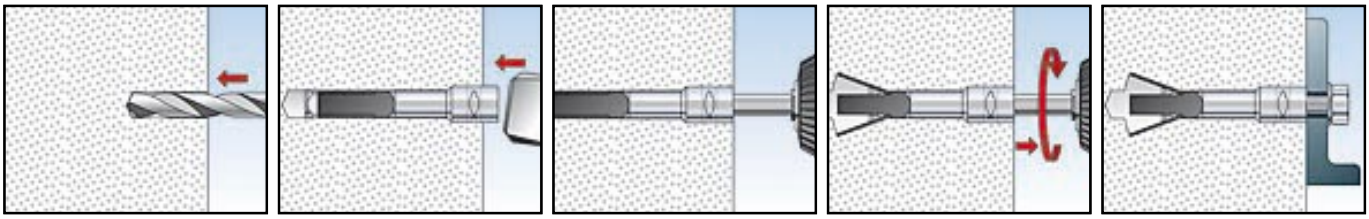
- The FPX-I enables easy tightening via the hexagon wrench using a cordless screwdriver or ratchet and therefore offers top installation comfort.
- The deformation-controlled expansion of the anchor with the hexagon wrench ensures safe, even and gentle installation.
- The unique 4-way expansion of the FPX-I with a square expansion sleeve prevents the rotation of the anchor in the drill hole and ensures high tension and shear loads, which means fewer fixing points.
- The releasing of the hexagonal wrench guarantees an automatical setting control for each installation process.
- The first steel anchor with an ETA-Approval and fire protection certificate for fixings in aerated concrete enables use for safety-relevant fixings, too.

APPLICATIONS

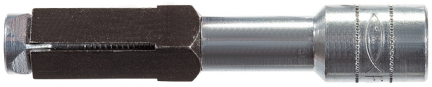
- Suspended ceilings
- Cable trays
- Pipelines
- Ventilation ducts
- Guard rails/hand rails
- TV consoles
- Kitchen cupboards
- Stand-off installations

FUNCTIONING

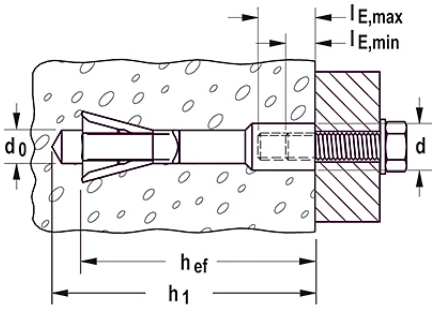
- The FPX-I with internal thread is suitable for pre-positioned installation.
- Pre-drilling enables easy hammering in, even in high-strength aerated concrete. There is no need to clean the drill hole.
- When the anchor is tightened with the hexagon wrench, the internal thread sleeve starts to rotate and the cone is pulled into the square expansion sleeve. The aerated concrete is compressed on the four sides and generates an undercut in the drill hole.
- When reached the optimum expansion, the hexagon wrench is released automatically from the anchor.



TECHNICAL DATA



Aircrete anchor FPX-I



Type	Art.-No.	ETA-approval	Drill diameter d_0 [mm]	Min. drill hole depth for pre-positioned installation h_1 [mm]	Anchor length l [mm]	Effect. anchorage depth h_{ef} [mm]
FPX M6-I	**519021**	■	10	95	75	70
FPX M8-I	**519022**	■	10	95	75	70
FPX M10-I	**519023**	■	10	95	75	70
FPX M12-I	**519024**	■	10	95	75	70

LOADS

AAC anchor X-Pansion internal thread FPX-I (minimum screw property class 4.8)
Highest permissible loads[1)] in aerated concrete
For the design the complete approval ETA - 12/0456 has to be considered.

Type				M6	M8	M10	M12
Minimum member thickness with drill hole cleaning		h_{min}	[mm]	100			
Minimum member thickness without drill hole cleaning		h_{min}	[mm]	120			
Effective anchorage depth		h_{ef}	[mm]	70			
Maximum fastening torque for fixing screw		T_{max}	[Nm]	3,0[5)]			
Permissible load for single anchors F_{perm}[3)]							
Min. distance to joints for single anchors		c_F	[mm]	0[9)] / 75[13)] / 125[14)]			
Min. edge distance[2)]		c_1	[mm]	125[11)]			
Min. spacing[2)] orthogonal c_1		c_2	[mm]	188			
Min. spacing[15)]		a	[mm]	375 (600)[12)]			
AAC masonry[4) 7)]	$f_{ck} \geq 1,6$ N /mm² $\rho_m \geq 0,25$ kg/dm³	F_{perm}[3)]	[kN]	0,3			
	$f_{ck} \geq 2,0$ N /mm² $\rho_m \geq 0,35$ kg/dm³	F_{perm}[3)]	[kN]	0,4			
	$f_{ck} \geq 4,0$ N /mm² $\rho_m \geq 0,50$ kg/dm³	F_{perm}[3)]	[kN]	0,9			
	$f_{ck} \geq 6,0$ N /mm² $\rho_m \geq 0,65$ kg/dm³	F_{perm}[3)]	[kN]	1,4			
AAC slabs[4)], cracked	$f_{ck} \geq 3,3$ N /mm² $\rho_m \geq 0,50$ kg/dm³	F_{perm}[3)]	[kN]	0,6			
	$f_{ck} \geq 4,4$ N /mm² $\rho_m \geq 0,55$ kg/dm³	F_{perm}[3)]	[kN]	0,8			
AAC slabs[4)], non-cracked	$f_{ck} \geq 3,3$ N /mm² $\rho_m \geq 0,50$ kg/dm³	F_{perm}[3)]	[kN]	0,8			
	$f_{ck} \geq 4,4$ N /mm² $\rho_m \geq 0,55$ kg/dm³	F_{perm}[3)]	[kN]	1,2			
Permissible load for anchor groups with 2 or 4 anchors $F_{perm,n}$[3) 6) 8)]							
Min. spacing[2)] within a anchor group and 2 single anchors[15)]		s_{min}	[mm]	100			
Min. edge distance[2)]		c_1	[mm]	250			
Min. spacing[2)] orthogonal c_1		c_2	[mm]	375			
Min. spacing		a	[mm]	750			
AAC masonry[4) 7) 10)]	$f_{ck} \geq 1,6$ N /mm² $\rho_m \geq 0,25$ kg/dm³	F_{perm}[3)]	[kN]	0,6			
	$f_{ck} \geq 2,0$ N /mm² $\rho_m \geq 0,35$ kg/dm³	F_{perm}[3)]	[kN]	0,8			
	$f_{ck} \geq 4,0$ N /mm² $\rho_m \geq 0,50$ kg/dm³	F_{perm}[3)]	[kN]	1,8			
	$f_{ck} \geq 6,0$ N /mm² $\rho_m \geq 0,65$ kg/dm³	F_{perm}[3)]	[kN]	2,8			
AAC slabs[4) 10)], cracked	$f_{ck} \geq 3,3$ N /mm² $\rho_m \geq 0,50$ kg/dm³	F_{perm}[3)]	[kN]	1,2			
	$f_{ck} \geq 4,4$ N /mm² $\rho_m \geq 0,55$ kg/dm³	F_{perm}[3)]	[kN]	1,6			
AAC slabs[4) 10)], non-cracked	$f_{ck} \geq 3,3$ N /mm² $\rho_m \geq 0,50$ kg/dm³	F_{perm}[3)]	[kN]	1,6			
	$f_{ck} \geq 4,4$ N /mm² $\rho_m \geq 0,55$ kg/dm³	F_{perm}[3)]	[kN]	2,4			

1) The required partial safety factors for material resistance as well as a partial safety factor for load actions of $\gamma_L = 1,4$ are considered.
2) Minimum possible axial spacing resp. edge distance without reducing the permissible load.
3) Valid for tensile load, shear load and oblique load under any angle.
4) Strength class f_{ck} and dry density ρ_m according EN 771-4 resp. EN 12602.
5) If the anchor cannot support against the fixture no installation torque must be applied (T_{max} =0).
6) While using 4 anchors they have to be arranged rectangularly.
7) For masoned joints a proof against pull-out of the block is required.
8) Permissible total load of the anchor group.
9) For joints completely filled with mortar with a joint width ≤ 12mm and a compressive strength according to EN 998-2 ≥ f_{ck} AAC no distances to joints is required.
10) For not visible joints the permissible total load of the anchor group has to be halved and must be designed for multiple use according ETAG 001, Part 6.
11) For reinforced AAC slabs with width ≤ 700 mm: $c_1 \geq 150$ mm.
12) Value in brackets valid for AAC slabs.
13) c_F for tensile load and/or shear load parallel to the joint which is not filled with mortar with width ≤ 2 mm.
14) $c_F = c_1$ for shear load or oblique load orthogonal to the joint which is not filled with mortar with width ≥ 0 mm.
15) For 2 single anchors with a spacing ≤ 375 mm (≥ s_{min}) the spacings and edge distances for anchor groups are valid.