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

Rail fixing

Air conditioning units

VERSIONS

- Zinc-plated steel

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.

CERTIFICATES

ETA-12/0456

Metal anchor for use in autoclaved aerated concrete

Fire resistance classification R 120

Anchor types see test report

M8 - M12

ADVANTAGES

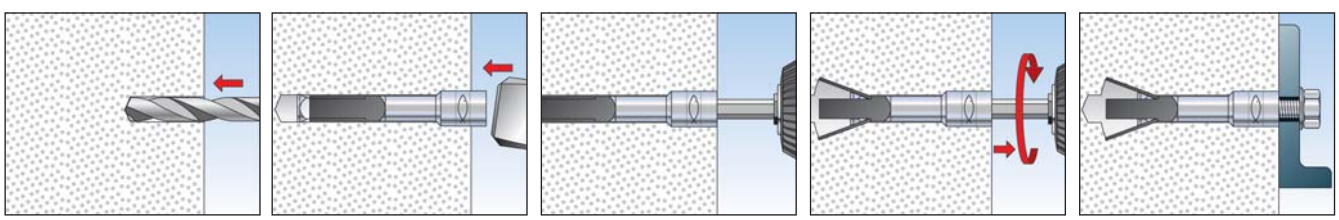
- The FPX-I enables easy tightening via the hexagon wrench using a cordless screwdriver or ratchet and therefore offers top installation comfort.
- The deformation-controlled expansion of the anchor with the hexagon wrench ensures safe, even and gentle installation.
- The unique 4-way expansion of the 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

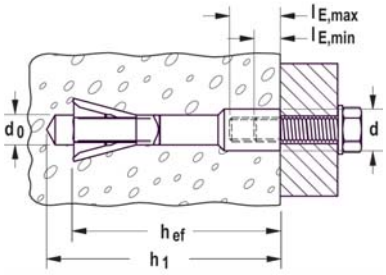
FUNCTIONING

- 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**



	Art.-No.	Approval ETA	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]	Min. bolt penetration $l_{E,min}$ [mm]	Max. bolt penetration $l_{E,max}$ [mm]	Sales unit [pcs]
Item	**gvz**								
FPX M6-I	**519021**	■	10	95	75	70	10	15	25
FPX M8-I	**519022**	■	10	95	75	70	8	15	25
FPX M10-I	**519023**	■	10	95	75	70	10	15	25
FPX M12-I	**519024**	■	10	95	75	70	12	15	25

ACCESSORIES

Setting tool **FPX M6 I**

Setting tool **FPX M8-M12 I**

Item	Art.-No.	Matching anchor type	Sales unit [pcs]
Setting tool FPX M6 I	**522517**	FPX M6-I	10
Setting tool FPX M8-M12 I	**522518**	FPX M8-I - FPX M12-I	10

LOADS

AAC anchor FPX-I

Highest permissible loads[1)5)] and required component dimensions in aerated concrete masonry.

Type			FPX-I M6 , M8 , M10 , M12	
Permissible load[1)5)] per anchor F_{perm}				
Effective anchoring depth	hef	[mm]	70	
$f_{ck} \geq 1,6$ N /mm² / ρm ≥ 0,25 kg/dm³		[kN]	0,32	
$f_{ck} \geq 2,0$ N /mm² / ρm ≥ 0,35 kg/dm³		[kN]	0,43	
$f_{ck} \geq 4,0$ N /mm² / ρm ≥ 0,50 kg/dm³		[kN]	0,89	
$f_{ck} \geq 6,0$ N /mm² / ρm ≥ 0,65 kg/dm³		[kN]	1,43	
Component dimensions				
Minimum member thickness with drill hole cleaning	h_{min}	[mm]	100	
Minimum member thickness without drill hole cleaning	h_{min}	[mm]	120	
Single anchor				
Min. spacing between single anchors	a	[mm]	375	
Min. edge distance	c1	[mm]	125	
Min. distance to joints	c_F[4)]	[mm]	75[2)] / 125	
Min. edge distance orthogonal to c_1	c2	[mm]	190	
Anchor groups[3)] with 2 or 4 Ancors				
Actions			shear + oblique tension	only axial tension
Min. spacing	smin	[mm]	100	100
Min. edge distance	c1	[mm]	250	125
Min. spacing between single anchors	a	[mm]	750	375
Min. edge distance orthogonal to c_1	c2	[mm]	375	190

For the design the complete approval ETA - 12/0456 has to be considered.

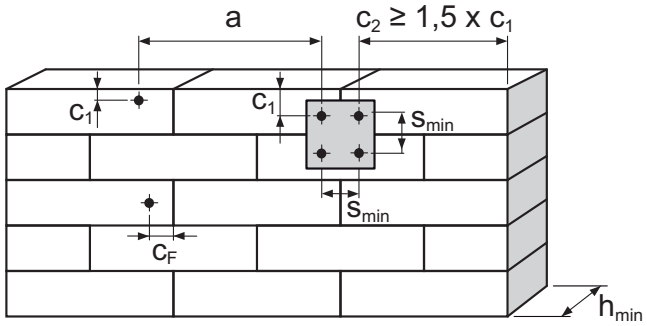
[1)] The required partial safety factors for material resistance as well as a partial safety factor for load actions of $\gamma_L = 1,4$ are considered.

[2)] c_F for tensile load and/or shear load parallel to the joint which is not filled with mortar with width ≤ 2 mm.

[3)] $F_{perm,Group} = 2 \times F_{perm,single\ anchor}$ valid in case of anchor groups with 2 or 4 anchors.

[4)] In case of non visible joints F_{perm} has to be divided in half.

[5)] Grade of the screw, resp. threaded rod ≥ 4.8.



LOADS

AAC anchor FPX-I

Highest permissible loads[1)4)] and required component dimensions in cracked and non-cracked aerated concrete wall and slab plates.

Type			FPX-I M6 , M8 , M10 , M12	
Permissible load[1)4)] per anchor F_{perm}				
Effective anchoring depth	hef	[mm]	70	
Tensile area of the AAC plate				
$f_{ck} \geq 3{,}3$ N /mm² / $\rho_m \geq 0{,}50$ kg/dm³		[kN]	0,62	
$f_{ck} \geq 4{,}4$ N /mm² / $\rho_m \geq 0{,}55$ kg/dm³		[kN]	0,83	
Compression area of the AAC plate				
$f_{ck} \geq 3{,}3$ N /mm² / $\rho_m \geq 0{,}50$ kg/dm³		[kN]	0,83	
$f_{ck} \geq 4{,}4$ N /mm² / $\rho_m \geq 0{,}55$ kg/dm³		[kN]	1,24	
Component dimensions				
Minimum member thickness with drill hole cleaning	hmin	[mm]	100	
Minimum member thickness without drill hole cleaning	hmin	[mm]	120	
Single anchor				
Min. spacing between single anchors	a	[mm]	600	
Min. edge distance	c1	[mm]	125 / 300[3)]	
Min. edge distance orthogonal to c_1	c2	[mm]	190	
Anchor groups[2)] with 2 or 4 anchors				
Actions			shear + oblique tension	only axial tension
Min. spacing	smin	[mm]	100	100
Min. edge distance	c1	[mm]	250	125 / 150[3)]
Min. spacing between single anchors	a	[mm]	750	600
Min. edge distance orthogonal to c_1	c2	[mm]	375	190

For the design the complete approval ETA - 12/0456 has to be considered.

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) $F_{perm,Group} = 2 \times F_{perm,single\ anchor}$ valid in case of anchor groups with 2 or 4 anchors.

3) In case of reinforced plates with a width ≤ 700 mm.

4) Grade of the screw, resp. threaded rod ≥ 4.8.