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.