

Expandet MFA with countersunk head

Expandet MFA with countersunk head is a multi facade/ frame anchor that is suitable for fixing of facades, doors, windows, gates, cable trays, metal bracket etc. in concrete, solid brick, hollow brick and aerated concrete.

MFA is CE-marked for fixing of lightweight facades.

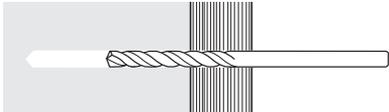


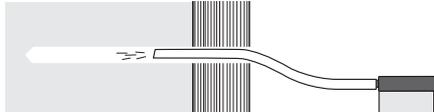
ADVANTAGES

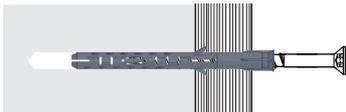
- Through fixing
- High load capacities
- All-round use.
- Resistant to vibrations
- No thermal bridge
- Fire classified R90.
- The extensive range allows a wide range of applications



INSTALLATION:

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1] Drill a 10 mm hole through fixture and into the wall in correct depth in the base material. avoid using hammerdrill in porous material.
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2] Clean the drilled hole thoroughly
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3] Insert MFA as through fixing
- 

4] Tighten the screw
- 

5] The installation is finished



Expandet MFA with countersunk head



EXPANDET MFA with countersunk head (Technical Sheet No. 322)

TYPE DIMENSION	DRILL DIA. MM	DRILL DEPTH MM	THICKNESS OF FIXTURE (MAX.) MM	EXPANDET ARTICLE NO.	PCS. PER BOX	EAN 13 PER BOX
ZINK PLATED						
10 x 85	10	95	20	582085	50	5708620059846
10 x 100	10	110	35	582100	50	5708620059853
10 x 115	10	125	50	582115	50	5708620059860
10 x 135	10	145	70	582135	50	5708620059877
10 x 160	10	170	95	582160	50	5708620059884
HOT DIP GALVANIZED						
10 x 85	10	95	20			
10 x 100	10	110	35	583100	50	5708620059891
10 x 115	10	125	50	583115	50	5708620059907
10 x 135	10	145	70	583135	50	5708620059914
10 x 160	10	170	95	583160	50	5708620059921

Type DIMENSION	Load capacities							
	Aerated concrete PP4	Aerated concrete PP2	Hollow brick 228x108x54 mm 28N/mm²	Solid brick 19N/mm²	Concrete C12/15		Concrete ≥ C16/20	
	Design load capacities (kN) ▽ F _{Rd}	Design load capacities (kN) ▽ F _{Rd}	Design load capacities (kN) ♦ F _{Rd}	Recommended load capacities for kN ♦ F _{Rd}	Tension load Design load capacities (kN) ◊ N _{Rd}	Shear load Design load capacities (kN) ◊ V _{Rd}	Tension load Design load capacities (kN) ◊ N _{Rd}	Shear load Design load capacities (kN) ◊ V _{Rd}
10 x 85	0,30	0,15	0,60	1,0	1,67	3,13	2,22	3,61
10 x 100	0,30	0,15	0,60	1,0	1,67	3,13	2,22	3,61
10 x 115	0,30	0,15	0,60	1,0	1,67	3,13	2,22	3,61
10 x 135	0,30	0,15	0,60	1,0	1,67	3,13	2,22	3,61
10 x 160	0,30	0,15	0,60	1,0	1,67	3,13	2,22	3,61

The design load capacity F_{Rd} is valid for tension load, shear load or tension combined with shear load.

- ▽ Design resistance F_{Rd} in aerated concrete PP2 and PP4 is valid for a single anchor not influenced by edge distance and/or spacing:
For one anchor: Minimum edge distance ≥ 100 mm and minimum spacing ≥ 250 mm. For anchor group: Minimum edge distance ≥ 100 mm and minimum spacing perpendicular to the edge ≥ 400 mm and minimum spacing parallel to the edge ≥ 200
- ♦ Design resistance F_{Rd} in hollow brick with min. compressive strength 28 N/mm² is valid for a single anchor not influenced by edge distance and/or spacing:
For one anchor: Minimum edge distance ≥ 110 mm and minimum spacing ≥ 250 mm. For anchor group: Minimum edge distance ≥ 110 mm and minimum spacing perpendicular to the edge ≥ 440 mm and minimum spacing parallel to the edge ≥ 220
- ◊ Design resistance F_{Rd} in solid brick with min. compressive strength 19 N/mm² is valid for a single anchor not influenced by edge distance and/or spacing:
For one anchor: Minimum edge distance ≥ 110 mm and minimum spacing ≥ 250 mm. For anchor group: Minimum edge distance ≥ 110 mm and minimum spacing perpendicular to the edge ≥ 440 mm and minimum spacing parallel to the edge ≥ 220
- ◊ Design resistance in concrete 12/15 is valid for a single anchor not influenced by edge distance and/or spacing:
For one anchor: Minimum edge distance ≥ 70 mm and minimum spacing ≥ 70 mm. For anchor group: Minimum edge distance ≥ 70 mm and minimum spacing perpendicular to the edge ≥ 70 mm and minimum spacing parallel to the edge ≥ 70
- ◊ Design resistance in concrete ≥ C16/20 is valid for a single anchor not influenced by edge distance and/or spacing:
For one anchor: Minimum edge distance ≥ 50 mm and minimum spacing ≥ 50 mm. For anchor group: Minimum edge distance ≥ 50 mm and minimum spacing perpendicular to the edge ≥ 50 mm and minimum spacing parallel to the edge ≥ 50

Combined resistance shall be verified if both tension and shear actions are applied :

$$\left(\frac{N_{sd}}{N_{Rd}} \right) + \left(\frac{V_{sd}}{V_{Rd}} \right) \leq 1,2$$

Partial safety factor (γ_m) is included.

Partial safety factor for actions (γ_f) must be applied according to national building code.

Max. recommended permissible resistance: N_{Rd}, V_{Rd} og F_{Rd}. If no guidance for γ_f exists Expandet recommend a partial safety factor for actions of minimum 1,5.

DIMENSION	Aerated concrete PP4	Aerated concrete PP2	Hollow brick 228x108x54 mm 28N/mm²	Solid brick 19N/mm²	Concrete C12/15	Concrete ≥ C16/20
Minimum thickness of material h _{min}	100	100	108	108	100	100
Minimum spacing, one anchor S _{min}	250	250	250	250	70	50
Minimum edge distance, one anchor C _{min}	100	100	110	110	70	50
Minimum spacing, anchor group perpendicular to edge S1 _{min}	400	400	440	440	70	50
Minimum spacing, anchor group parallel to edge S2 _{min}	200	200	220	220	70	50
Minimum edge distance, anchor group C _{min}	100	100	110	110	70	50

Expandet MFA with Flange head

Expandet MFA with Flange head is a multi facade/frame anchor that is suitable for fixing of facades, gates, cable trays, metal bracket etc. in concrete, solid brick, hollow brick and aerated concrete.

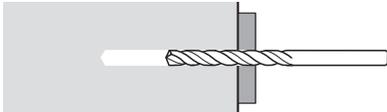
MFA is CE-marked for fixing of lightweight facades.

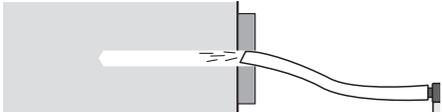


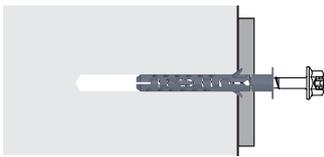
ADVANTAGES

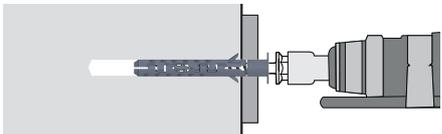
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- High load capacities
- All-round use.
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INSTALLATION:

- 

1] Drill a 10 mm hole through fixture and into the wall in correct depth in the base material. avoid using hammerdrill in porous material.
- 

2] Clean the drilled hole thoroughly
- 

3] Insert MFA as through fixing
- 

4] Tighten the screw
- 

5] The installation is finished



Expandet MFA with Flangehead



EXPANDET MFA, with flange (Technical Sheet No. 322)

TYPE DIMENSION	DRILL DIA. MM	DRILL DEPTH MM	THICKNESS OF FIXTURE (MAX.) MM	EXPANDET ARTICLE NO.	PCS. PER BOX	EAN 13 PER BOX
ZINC-PLATED						
10 x 70	10	80	5	584070	50	5708620059938
10 x 85	10	95	20	584085	50	5708620059945
10 x 100	10	110	35	584100	50	5708620059952
10 x 115	10	125	50	584115	50	5708620059969
10 x 135	10	145	70			
10 x 160	10	170	95			
HOT DIP GALVANIZED						
10 x 70	10	80	5	585070	50	5708620059976
10 x 85	10	95	20	585085	50	5708620059983
10 x 100	10	110	35			
10 x 115	10	125	50			
10 x 135	10	145	70			
10 x 160	10	170	95			

Type DIMENSION	Load capacities							
	Aerated concrete PP4	Aerated concrete PP2	Hollow brick 228x108x54 mm 28N/mm ²	Solid brick 19N/mm ²	Beton C12/15		Beton ≥ C16/20	
	Design load capacities (kN) ▽ F _{Rd}	Design load capacities (kN) ▽ F _{Rd}	Design load capacities (kN) ♦ F _{Rd}	Design load capacities (kN) ♦ F _{Rd}	Tension load Design load capacities (kN) ▽ N _{Rd}	Shear load Design load capacities (kN) ▽ V _{Rd}	Tension load Design load capacities (kN) ▽ N _{Rd}	Shear load Design load capacities (kN) ▽ V _{Rd}
10 x 70	0,30	0,15	0,60	1,0	1,67	3,13	2,22	3,61
10 x 85	0,30	0,15	0,60	1,0	1,67	3,13	2,22	3,61
10 x 100	0,30	0,15	0,60	1,0	1,67	3,13	2,22	3,61
10 x 115	0,30	0,15	0,60	1,0	1,67	3,13	2,22	3,61
10 x 135	0,30	0,15	0,60	1,0	1,67	3,13	2,22	3,61
10 x 160	0,30	0,15	0,60	1,0	1,67	3,13	2,22	3,61

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- ♦ Design resistance F_{Rd} in hollow brick with min. compressive strength 28 N/mm² is valid for a single anchor not influenced by edge distance and/or spacing:
For one anchor: Minimum edge distance ≥ 110 mm and minimum spacing ≥ 250 mm. For anchor group: Minimum edge distance ≥ 110 mm and minimum spacing perpendicular to the edge ≥ 440 mm and minimum spacing parallel to the edge ≥ 220
- ◇ Design resistance F_{Rd} in solid brick with min. compressive strength 19 N/mm² is valid for a single anchor not influenced by edge distance and/or spacing:
For one anchor: Minimum edge distance ≥ 110 mm and minimum spacing ≥ 250 mm. For anchor group: Minimum edge distance ≥ 110 mm and minimum spacing perpendicular to the edge ≥ 440 mm and minimum spacing parallel to the edge ≥ 220
- ◇ Design resistance in concrete 12/15 is valid for a single anchor not influenced by edge distance and/or spacing:
For one anchor: Minimum edge distance ≥ 70 mm and minimum spacing ≥ 70 mm. For anchor group: Minimum edge distance ≥ 70 mm and minimum spacing perpendicular to the edge ≥ 70 mm and minimum spacing parallel to the edge ≥ 70
- ◇ Design resistance in concrete ≥ C16/20 is valid for a single anchor not influenced by edge distance and/or spacing:
For one anchor: Minimum edge distance ≥ 50 mm and minimum spacing ≥ 50 mm. For anchor group: Minimum edge distance ≥ 50 mm and minimum spacing perpendicular to the edge ≥ 50 mm and minimum spacing parallel to the edge ≥ 50

Combined resistance shall be verified if both tension and shear actions are applied :

$$\left(\frac{N_{sd}}{N_{Rd}} \right) + \left(\frac{V_{sd}}{V_{Rd}} \right) \leq 1,2$$

Partial safety factor (γ_m) is included.

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DIMENSION	Aerated concrete PP4	Aerated concrete PP2	Hollow brick 228x108x54 mm 28N/mm ²	Solid brick 19N/mm ²	Beton C12/15	Beton ≥ C16/20
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