LOADS

Universal frame fixing FUR [4)]

Highest permissible loads[1) 6)] for a single anchor for multiple fixings of non-structural applications in normal concrete ≥ C12/15 resp. ≥ B15. For the design the complete approval ETA-13/0235 has to be considered.

			Cracked or Non-cracked concrete			
Type	**min. anchorage depth h_{nom} [mm]**	**min. member thickness h_{min} [mm]**	**permissible tensile load N_{perm}[3)] [kN]**	**permissible shear load V_{perm}[3)] [kN]**	**min. spacing s_{min}[2)] [mm]**	**min. edge distance c_{min}[2)] [mm]**
FUR 10	70	110	1,8	5,4 (5,0)[5)]	50	50

1) The required partial safety factors for material resistance as well as a partial safety factor for load actions γ_L = 1,4 are considered. As an single anchor counts e.g. an anchor with a spacing $s \geq s_{cr,N}$ and an edge distance $c \geq c_{cr,N}$ according table 8 of the approval.

2) Minimum possible axial spacings (anchor group) resp. edge distance for concrete ≥ C16/20 while reducing the permissible load. The combination of the given min. spacing and min. edge distance is not possible. One of them has to be increased according approval. Values for concrete C12/15 see approval.

3) For combinations of tensile loads, shear loads, bending moments as well as reduced edge distances or spacings (anchor groups) see approval.

4) Valid for zinc coated screws and for screws made of stainless steel. For exterior use of the zinc coated screws measures against incoming humidity according approval have to be taken.

5) Value in bracket applies for screws made of stainless steel.

6) Valid for temperatures in the substrate up to +50 °C (resp. short term up to 80 °C).

Universal frame fixing FUR [4]

Highest permissible loads [1) 6)] for a single anchor for multiple fixings of non-structural applications in masonry.
For the design the complete approval ETA-13/0235 has to be considered.

						Solid brick masonry and perforated brick masonry		
Type	**Compressive brick strength** f_b [N/mm²]	**Bulk density** ρ [kg/dm³]	**Min. brick format** (L x W x H) [mm]	**Min. anchorage depth** [8)] h_{nom} [mm]	**Min. member thickness** [9)] h_{min} [mm]	**Permissible load** F_{perm} [3)] [kN]	**Min. spacing** s_{min} [2)] [mm]	**Min. edge distance** c_{min} [2)] [mm]
Solid brick Mz acc. DIN 105-100 resp. DIN EN 771-1								
FUR 10	≥ 8	≥ 1,8	NF (240x113x71)	70	110 (113)	0,57	100	100
FUR 10	≥ 10					0,71	100	100
FUR 10	≥ 12					0,86	100	100
Calcium silicate solid brick KS acc. DIN V 106 resp. DIN EN 771-2								
FUR 10	≥ 8	≥ 1,8	NF (240x113x71)	70	110 (113)	0,43	100	100
FUR 10	≥ 10					0,57	100	100
FUR 10	≥ 20					0,71	100	100
FUR 10	≥ 8	≥ 1,8	500x175x235	70	110 (175)	0,71	100	100
FUR 10	≥ 10					0,86	100	100
FUR 10	≥ 12					1,00	100	100
Lightweight solid brick KLB V acc. DIN V 18152-100 resp. DIN EN 771-3								
FUR 10	≥ 6	≥ 1,6	250x240x245	70	110 (240)	0,57	100	100
FUR 10	≥ 8					0,86	100	100
Vertical perforated brick Hlz acc. DIN 105-100 resp. DIN EN 771-1								
FUR 10	≥ 10	≥ 1,4	Form B	70	110 (175)	0,29 [5)]	100	100
FUR 10	≥ 12					0,37 [5)]	100	100
FUR 10	≥ 16					0,49 [5)]	100	100
FUR 10	≥ 20					0,57 [5)]	100	100
Calcium silicate hollow brick KSL acc. DIN V 106 resp. DIN EN 771-2								
FUR 10	≥ 10	≥ 1,6	2 DF (240x115x113)	70	110 (115)	0,43	100	100
FUR 10	≥ 12					0,57	100	100
FUR 10	≥ 16					0,71	100	100

1) The required partial safety factors for material resistance as well as a partial safety factor for load actions γ_F = 1,4 are considered. As an single anchor counts e.g. an anchor with a minimum spacing s_{min} according table 10 of the approval.

2) Minimum possible axial spacings (anchor group) while reducing the permissible load. The combination of the given min. spacing and min. edge distance is not possible. One of them has to be increased according approval.

3) Valid for tensile load, shear load and oblique load under any angle. For combinations of tensile loads, shear loads and bending moments see approval. If the joints are not visible the permissible load has to be halved.

4) Valid for zinc coated screws and for screws made of stainless steel. For exterior use of the zinc coated screws measures against incoming humidity according approval have to be taken.

5) Erection of the drill hole by rotary drilling (without impact).

6) Valid for temperatures in the substrate up to +50 °C (resp. short term up to 80 °C).

8) If the embedment depth h_{nom} is higher than 70 mm (only for hollow and perforated masonry), job site tests have to be carried out acc. approval.

9) Values in brackets derived from minimum brick format.