Loads

Frame fixing SXR

Permissible loads[1)2)3)] of a single anchor as part of a multiple fixing of non-structural systems.
For the design the complete current assessment ETA-07/0121 has to be considered.

Type			SXR 8	SXR 10
Drill hole diameter	d_0	**[mm]**	8	10
Anchorage depth	$h_{nom} \geq$	**[mm]**	50	50
Anchorage in concrete ≥ C12/15				
Permissible tensile load N_{perm}		**[kN]**	0.99	1.79
Permissible shear load V_{perm}	zinc coated screws (gvz)	**[kN]**	4.23	5.98
	stainless steel screw (R)	**[kN]**	3.93	5.98
Minimum member thickness	h_{min}	**[mm]**	100	100
Characteristic edge distance	$c_{cr,N}$	**[mm]**	70	140
Characteristic spacing	a resp. $s_{cr,N}$	**[mm]**	70	100
Minimum spacing	s_{min}	**[mm]**	70	70
with an edge distance	c ≥	**[mm]**	70	210
Minimum edge distance	c_{min}	**[mm]**	70	85
with a spacing	s ≥	**[mm]**	70	100
Anchorage in narrow concrete members (h ≥ 40 mm) made of concrete ≥ C12/15, e. g. weather shells of triple-skin outer wall panels				
Permissible tensile load N_{perm}		**[kN]**	–	1.19
Permissible shear load V_{perm}		**[kN]**	–	5.98
Anchorage in masonry[4)]				
Anchorage depth	h_{nom}	**[mm]**	50	50
Permisible load F_{perm} in solid brick Mz	≥ NF 12/1.8	**[kN]**	0.34[6)]	0.34[6)]
	≥ NF 20/1.8	**[kN]**	0.57[6)]	0.57[6)]
Permissible load F_{perm} in solid sand-lime brick KS	≥ NF 12/1.8	**[kN]**	0.43	0.43[6)]
	≥ NF 20/1.8	**[kN]**	0.71	0.71[6)]
Permissible load F_{perm} in solid sand-lime brick Vbl	≥ 2 DF 2/1.2	**[kN]**	0.14[6)]	0.21[6)]
	≥ 8 DF 6/1.4	**[kN]**	0.21[6)]	0.71[6)]
Permissible load [5)] F_{perm} in vertically perforated brick HLz	≥ 2 DF 12/1.2	**[kN]**	0.17[6)]	0.43[6)]
	≥ 2 DF 20/1.2	**[kN]**	0.34[6)]	0.71[6)]
Permissible load F_{perm} in perforated sand-lime brick KSL	≥ 2 DF 8/1.4	**[kN]**	0.26[6)]	0.34[6)]
	≥ 2 DF 12/1.4	**[kN]**	0.43[6)]	0.57[6)]
Permissible load F_{perm} in hollow lightweight concrete blocks Hbl	≥ 2/1.2	**[kN]**	0.21[6)]	0.26[6)]
	≥ 8/1.2	**[kN]**	0.71[6)]	0.71[6)]
Minimum member thickness	h_{min}	**[mm]**	100	100
Minimum spacing (single anchor)	a_{min}	**[mm]**	250	250
Minimum spacing (anchor group)	s_{min}	**[mm]**	100	100
Minimum edge distance (anchor group)	c_{min}	**[mm]**	100	100
Anchorage in aerated concrete[4)]				
Anchorage depth	$h_{nom} \geq$	**[mm]**	50	50
Permissible load F_{perm} in aerated concrete	AAC ≥ 2 N/mm²	**[kN]**	–	0.14
	AAC ≥ 4 N/mm²	**[kN]**	–	0.27
	AAC ≥ 6 N/mm²	**[kN]**	–	0.27
Minimum member thickness	h_{min}	**[mm]**	–	100
Minimum spacing (single anchor)	a_{min}	**[mm]**	–	400
Minimum spacing (anchor group)	s_{min}	**[mm]**	–	400
Minimum edge distance (anchor group)	c_{min}	**[mm]**	–	100

1) Valid for zinc coated screws (gvz) and for screws made of stainless steel (R). For exterior use of the zinc coated screws measures against incoming humidity according to ETA have to be taken.
2) 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 a single anchor counts e.g. an anchor with a minimum spacing according to ETA.
3) Valid for temperatures in the substrate up to +50 °C (resp. short term up to +80 °C). For long term temperatures up to +30 °C higher permissible loads may be possible.
4) Valid for tensile load, shear load and oblique load under any angle. For bending moments and non-visible or non-mortared masonry joints, the design specifications of the ETA must be observed. Masonry properties in min. compressive strength [N/mm²] and density [kg/dm³] e. g. for Mz as 12/1.8. The corresponding average stone compressive strengths according to EN 771 and other masonry variants and geometries can be found in the ETA.
5) Rotary drilling.
6) For axial spacing s ≥ 250 mm.