

Frame fixing SXRL

Permissible loads¹⁾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		SXRL 8			SXRL 10			SXRL 14		
Anchor diameter	[mm]	8	8	8	10	10	10	14	14	
Anchorage depth	h_{nom} [mm]	50	70	90	50	70	90	70	90	
Anchorage in concrete \geq C12/15										
Permissible tensile load N_{perm}	[kN]	1.59	1.98	1.98	2.18	2.58	2.58	3.37	3.37	
Permissible shear load V_{perm}	zinc coated screws (gvz)	[kN]	4.23	4.23	4.23	5.98	5.98	5.98	12.40	12.40
	stainless steel screw (R)	[kN]	3.93	3.93	3.93	5.98	5.98	5.98	11.63	11.63
Minimum member thickness	h_{min} [mm]	80	100	120	100	100	120	110	130	
Characteristic edge distance	$c_{cr,N}$ [mm]	85	85	85	140	140	140	140	140	
Characteristic spacing	a resp. $s_{cr,N}$ [mm]	90	105	105	120	120	120	135	135	
Minimum spacing	s_{min} [mm]	85	85	85	70	70	70	85	85	
with an edge distance	$c \geq$ [mm]	85	85	85	140	140	140	140	140	
Minimum edge distance	c_{min} [mm]	85	85	85	70	70	70	85	85	
with a spacing	$s \geq$ [mm]	85	85	85	175	175	175	175	175	
Anchorage in narrow concrete members ($h \geq 40$ mm) made of concrete \geq C12/15, e.g. weather shells of triple-skin outer wall panels										
Permissible tensile load N_{perm}	[kN]	-	-	-	0.99	-	-	-	-	
Permissible shear load V_{perm}	[kN]	-	-	-	5.98	-	-	-	-	
Anchorage in pre-stressed hollow-core concrete slabs (mirror thickness $d_b \geq 30$ mm) made of concrete \geq C45/55										
Permissible tensile load N_{perm}	[kN]	-	-	-	1.39	-	-	-	-	
Permissible shear load V_{perm}	[kN]	-	-	-	5.98	-	-	-	-	
Anchorage in masonry										
Permissible load ⁴⁾ F_{perm} in solid brick	\geq Mz 12/1.8; \geq NF	[kN]	0.57	0.71	0.71	0.57	1.14	-	0.86	0.86
	\geq Mz 20/1.8; \geq NF	[kN]	0.86	1.14	1.14	1.00	1.14	-	1.14	1.14
Permissible load ⁴⁾ F_{perm} in solid sand-lime brick	\geq KS 10/1.8; \geq NF	[kN]	0.57	0.57	0.57	-	0.71	-	0.86	0.86
	\geq KS 20/1.8; \geq NF	[kN]	0.71	0.86	0.86	-	1.00	-	1.29	1.29
Permissible load ⁴⁾ F_{perm} in lightweight concrete block	\geq Vbl 2; $\rho \geq 1.2$ kg/dm ³	[kN]	0.11	0.26	0.26	0.11	0.11	-	0.26	0.26
	\geq Vbl 6; $\rho \geq 1.6$ kg/dm ³	[kN]	0.34	0.57	0.57	0.57	1.29	-	0.57	0.57
Permissible load ⁴⁾⁵⁾ F_{perm} in vertically perforated brick	\geq HLz 10; $\rho \geq 1.2$ kg/dm ³	[kN]	0.17	0.17	0.17	-	-	-	-	-
	\geq HLz 12; $\rho \geq 1.0$ kg/dm ³	[kN]	-	-	-	-	0.21	-	0.57	0.71
Permissible load ⁴⁾ F_{perm} in perforated sand-lime brick	\geq KSL 12; $\rho \geq 1.4$ kg/dm ³	[kN]	0.34	0.43	0.43	-	0.71	-	0.43	0.71
	\geq Hbl 2; $\rho \geq 0.7$ kg/dm ³	[kN]	0.43	0.57	0.43	0.57	0.71	-	0.34	0.21
hollow lightweight concrete blocks										
Permissible load ⁴⁾⁵⁾ F_{perm} in ceilings made of vertically perforated bricks	$f_b \geq 10$ N/mm ² ; $\rho \geq 0.7$ kg/dm ³	[kN]	-	-	-	-	0.57	-	-	-
Minimum member thickness	h_{min} [mm]	115	115	115	110	110	110	115	115	
Minimum spacing (single anchor)	a_{min} [mm]	250	250	250	250	250	250	250	250	
Minimum spacing (anchor group)	s_{min} [mm]	100	100	100	100	100	100	100	100	
Minimum edge distance (anchor group)	c_{min} [mm]	100	100	100	100	100	100	100	100	
Anchorage in aerated concrete										
Permissible load ⁴⁾ F_{zul} in aerated concrete	AAC ≥ 2 N/mm ²	[kN]	-	0.14	0.21	-	0.18	0.21	0.32	0.43
	AAC ≥ 4 N/mm ²	[kN]	-	0.32	0.43	-	0.43	0.54	0.89	1.07
	AAC ≥ 6 N/mm ²	[kN]	-	0.54	0.71	-	0.71	0.89	1.43	1.79
Minimum member thickness	h_{min} [mm]	-	175	175	-	100	120	175 ^{6)/300⁷⁾}	175 ^{6)/300⁷⁾}	
Minimum spacing (single anchor)	a_{min} [mm]	-	250	250	-	250	250	250	250	
Minimum spacing (anchor group)	s_{min} [mm]	-	80 ^{8)/110⁸⁾}	80 ^{8)/110⁸⁾}	-	100 ^{8)/120⁸⁾}	100 ^{8)/120⁸⁾}	80	100 ^{8)/125⁷⁾}	
Minimum edge distance (anchor group)	c_{min} [mm]	-	90 ^{8)/110⁸⁾}	90 ^{8)/110⁸⁾}	-	120	120	120	120 ^{8)/150⁷⁾}	

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 assessment have to be taken.

²⁾ The required partial safety factors for material resistance as well as a partial safety factor for load actions $\gamma_L = 1.4$ are considered.
As a single anchor counts e.g. an anchor with a minimum spacing according to Annex B 4 of the assessment.

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 combinations of tensile loads, shear loads and bending moments see assessment.

⁵⁾ Rotary drilling.

⁶⁾ Only valid for AAC with compression strength ≥ 2 to < 4 N/mm².

⁷⁾ Only valid for AAC with compression strength ≥ 4 N/mm².

⁸⁾ Only valid for AAC with compression strength ≥ 6 N/mm².