LOADS

Frame fixing SXRL[3)]

Highest recommended loads[1)] for a single anchor as part of a multiple fixing of non-structural systems.
The given loads are valid for wood screws with the specified diameter.

Type			SXRL 8		
Anchorage depth	h_{ef}	[mm]	50	70	90
Diameter of the wood screw	Ø	[mm]	6,0	6,0	6,0
Min. edge distance concrete	a_r	[mm]	60	80	100
Recommended loads in the respective base material F_{rec}[2)]					
Concrete	≥ C20/25	[kN]	0,60	1,00	1,00
Solid brick	≥ Mz 12	[kN]	0,45	0,60	0,60
Solid sand-lime brick	≥ KS 12	[kN]	0,40	0,50	0,50
Vertically perforated brick	≥ Hlz 12 (ρ ≥ 1,0 kg/dm³)	[kN]	0,15	0,15	0,15
Perforated sand-lime brick	≥ KSL 12	[kN]	0,10	0,40	0,40
Aerated concrete	AAC 2	[kN]	-	0,10	0,10
Aerated concrete	AAC 4	[kN]	-	0,15	0,20

[1)] Required safety factors are considered.

[2)] Valid for tensile load, shear load and oblique load under any angle.

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

Frame fixing SXRL[4)]

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

Product			SXRL							
Anchor diameter		[mm]	Ø 8			Ø 10			Ø 14	
Anchorage depth	h_{nom}	[mm]	50	70	90	50	70	90	70	90
Anchorage in concrete ≥ C12/15										
Permissible tensile load		[kN]	1,59	1,98		1,98	2,58		3,37	
Permissible shear load	Zinc-plated steel	[kN]	4,23			5,98			12,40	
	Stainless steel A4	[kN]	3,93			5,98			11,63	
Minimum member thickness	h_{min}	[mm]	80	100	120	100		120	110	130
Characteristic edge distance	$c_{cr,N}$	[mm]	85			140			140	
Characteristic spacing	a resp. $s_{cr,N}$	[mm]	90	105		120			135	
Minimum spacing	s_{min}	[mm]	85			70			85	
with an edge distance	c ≥	[mm]	85			140			140	
Minimum edge distance	c_{min}	[mm]	85			70			85	
with a spacing	s ≥	[mm]	85			175			175	
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		[kN]	-			0,99	-		-	
Permissible shear load		[kN]	-			5,98	-		-	
Permissible tensile load		[kN]	-			1,39	-		-	
Permissible shear load		[kN]	-			5,98	-		-	
Anchorage in masonry										
Permisible load[3)] in solid brick	≥ Mz 12 a. ≥ NF	[kN]	0,57	0,71		0,57	1,14	-	0,86	
	≥ Mz 20 a. ≥ NF	[kN]	0,86	1,14		1,00	1,14	-	1,14	
Permissible load[3)] in solid sand-lime brick	≥ KS 10 a. ≥ NF	[kN]	0,57			0,57	0,71	-	0,86	
	≥ KS 20 a. ≥ NF	[kN]	0,71	0,86		1,00		-	1,29	
Permissible load[3)] in lightweight concrete block	≥ V 2; ρ ≥ 1,2 kg/dm³	[kN]	0,11	0,26		0,11		-	0,26	
	≥ V 6; ρ ≥ 1,6 kg/dm³	[kN]	0,34	0,57		0,57	1,29	-	0,57	
Permissible load[3)5)] in vertically perforated brick (e.g. Poroton)	≥ HLz 10; ρ ≥1,0 kg/dm³	[kN]	0,17			-	0,21	-	0,57	0,71
Permissible load[3)] in perforated sand-lime brick	≥ KSL 6	[kN]	-			-	0,21	-	0,26	0,34
	≥ KSL 12	[kN]	0,34	0,43		-	0,71	-	0,43	0,71
Permissible load in[3)5)] hollow lightweight concrete blocks	≥ HBL 2	[kN]	0,43	0,57	0,43	0,57	0,71	-	0,34	0,21
	≥ HBL 6	[kN]	0,43	0,71	0,43	0,71	0,43	-	0,57	-
Permissible load[3)5)] in ceilings made of vertically perforated bricks	f_b ≥ 10 N/mm²; ρ ≥ 0,7 kg/dm³	[kN]	-			-	0,57	-	-	
Minimum member thickness	h_{min}	[mm]	115			110			115	
Minimum spacing (single anchor)	a_{min}	[mm]	250			250			250	
Minimum spacing (anchor group)	s_{min}	[mm]	100			100			100	
Minimum edge distance (anchor group)	c_{min}	[mm]	100			100			100	
Anchorage in aerated concrete										
Permissible load[3)] in aerated concrete	2 N/mm²	[kN]	-	0,14	0,21	-	0,18	0,21	0,32	0,43
	4 N/mm²	[kN]	-	0,32	0,43	-	0,43	0,54	0,89	1,07
	6 N/mm²	[kN]	-	0,54	0,71	-	0,71	0,89	1,43	1,79
Minimum member thickness	h_{min}	[mm]	-	175		-	100	120	175[6)]/300[7)]	
Minimum spacing (single anchor)	a_{min}	[mm]	-	250		-	250		250	
Minimum spacing (anchor group)	s_{min}	[mm]	-	80[6)]/ 110[8)]		-	100[6)]/ 120[8)]		80	100[6)]/125[7)]
Minimum edge distance (anchor group)	c_{min}	[mm]	-	90[6)]/110[8)]		-	120		120	120[6)]/150[7)]

[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 a single anchor counts e.g. an anchor with a minimum spacing a according to table B4.1 resp. table B4.2 of the assessment.

[2)] 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.

[3)] Valid for tensile load, shear load and oblique load under any angle. For combinations of tensile loads, shear loads and bending moments see assessment.

[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 to assessment have to be taken.

[5)] Rotary drilling.