



Extract from Permissible Service Conditions of ETA-02/0030

Approved loads for single anchor without influence of spacing and edge distance.

Total safety factor as per ETAG 001 included (γ_M and γ_F). Load capacities under fire exposure see page 139.

Highload Anchor SZ

Steel, zinc plated



Loads and performance data	Highload Anchor SZ		SZ 10 M 6	SZ 12 M 8	SZ 15 M 10	SZ 18 M 12	SZ 24 M 16	SZ 24L M 16	SZ 28 M 20
cracked concrete									
Mean ultimate loads, tension	C25/30 N_{um}	[kN]	16,1	21,1	32,8	42,5	60,8	79,8	80,0
Mean ultimate loads, shear	C25/30 V_{um}	[kN]	18,0/19,0 ¹⁾	28,3/33,4 ¹⁾	42,0/58,6 ¹⁾	71,3/83,7 ¹⁾	106,0/143,7 ¹⁾	106,0/143,7 ¹⁾	151,4/198,5 ¹⁾
Approved loads, tension	C20/25 appr. N	[kN]	2,4	5,7	7,6	12,3	17,1	21,1	24,0
	C25/30 appr. N	[kN]	2,6	6,3	8,4	13,5	18,9	23,3	26,4
	C30/37 appr. N	[kN]	2,9	7,0	9,3	15,0	20,9	25,8	29,2
	C40/50 appr. N	[kN]	3,4	8,1	10,7	17,3	24,2	29,8	33,8
	C50/60 appr. N	[kN]	3,7	8,9	11,8	19,0	26,6	32,8	37,1
non-cracked concrete									
Approved loads, tension	C20/25 appr. N	[kN]	7,6	9,5	14,3	17,2	24,0	29,6	33,5
	C25/30 appr. N	[kN]	7,6	10,5	15,7	18,9	26,4	32,6	36,9
	C30/37 appr. N	[kN]	7,6	11,6	17,4	21,0	29,3	36,1	40,9
	C40/50 appr. N	[kN]	7,6	13,4	20,1	24,2	33,8	41,7	47,3
	C50/60 appr. N	[kN]	7,6	13,8	21,9	26,6	37,2	45,9	52,0
cracked concrete / non-cracked concrete									
Approved loads, shear SZ-S and SZ-SK	C20/25 appr. V	[kN]	10,3	15,9 / 17,1	20,5 / 27,4	24,5 / 34,3	34,3 / 48,0	42,3 / 59,2	47,9/67,1
	\geq C25/30 appr. V	[kN]	10,3	17,1	22,6 / 27,4	27,0 / 37,8	37,7 / 52,8	46,5 / 65,1	52,7/73,8
Approved loads, shear SZ-B	C20/25 appr. V	[kN]	9,1	14,3	20,5 / 20,6	24,5 / 34,3	34,3 / 48,0	42,3 / 52,0	47,9/67,1
	\geq C25/30 appr. V	[kN]	9,1	14,3	20,6	27,0 / 36,0	37,7 / 52,0	46,5 / 52,0	52,7/69,7
Approved bending moments	appr. M	[Nm]	6,9	17,1	34,3	60,0	152,0	152,0	296,6

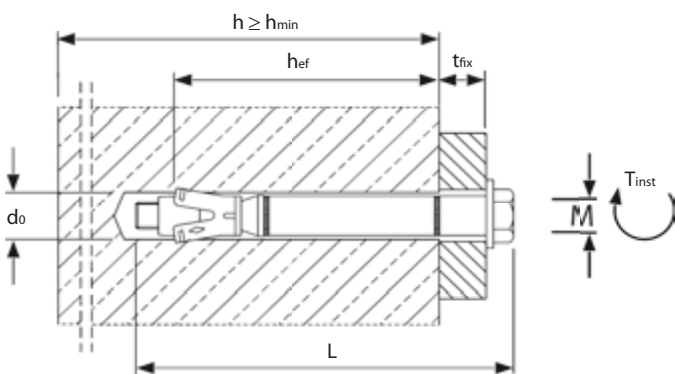
Spacing and edge distance

Effective anchorage depth	h_{ef}	[mm]	50	60	71	80	100	115	125
Characteristic spacing	$s_{cr,N}$	[mm]	150	180	213	240	300	345	375
Characteristic edge distance	$c_{cr,N}$	[mm]	75	90	106,5	120	150	172,5	187,5
Minimum spacing / for edge distance c	s_{min}/C	[mm]	50/80	60/100	70/120	80/160	100/180	100/180	125/300
Minimum edge distance / for spacing s	c_{min}/s	[mm]	50/100	60/120	70/175	80/200	100/220	100/220	180/540
Minimum thickness of concrete slab	h_{min}	[mm]	100	120	140	160	200	230	250

Installation parameters

Drill hole diameter	d_o	[mm]	10	12	15	18	24	24	28
Diameter of clearance hole in the fixture	d_f	[mm]	12	14	17	20	26	26	31
Depth of drill hole	h_1	[mm]	65	80	95	105	130	145	160
Installation torque	T_{inst}	[Nm]	15/10 ²⁾	30/25 ²⁾	50/55 ²⁾	80/70 ²⁾	160	160	280
Width across nut SZ (-S, -B)	SW	[mm]	10	13	17	19	24	24	30
Internal hexagon size SZ-SK	SWHex	[mm]	4	5	6	8	-	-	-
Minimum thickness of fixture for SZ-SK	$t_{fix} \geq$	[mm]	8/4 ³⁾	10/5 ³⁾	14/6 ³⁾	18/7 ³⁾	-	-	-

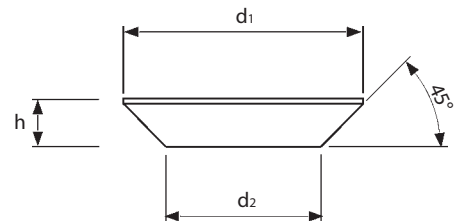
¹⁾ SZ-B / SZ-S, SZ-SK ²⁾ Installation torque for type SZ-SK (with countersunk head). ³⁾ full shear load/without shear load
For anchor designing, an easy to operate CD-ROM is available on request or can be downloaded at www.mkt.de.



Dimensions countersunk head SZ-SK [mm]

	d1	d2	h
SZ-SK 10 M 6	16,5	9,5	3,9
SZ-SK 12 M 8	20,5	11,5	5,0
SZ-SK 15 M 10	24,5	14,5	5,7
SZ-SK 18 M 12	29,5	17,5	6,7

Countersunk head (type SZ-SK).



Installation

