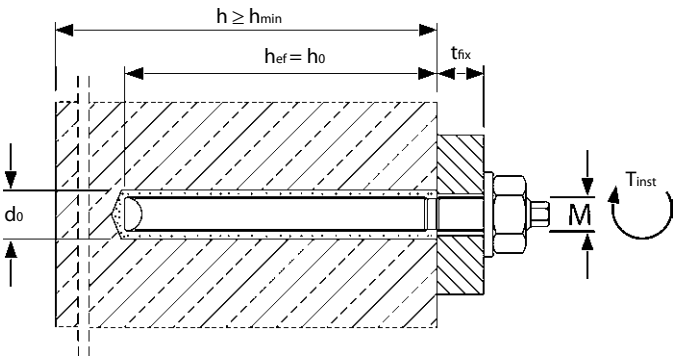
Extract from Permissible Service Conditions of ETA-05/0231

Approved loads for single anchor without influence of spacing and edge distance for temperature range -40 °C to +80 °C[2].
Total safety factor as per ETAG 001 included (γ_M and γ_F).

Loads and performance data	Chemical Anchor V, steel, zinc plated / hot dip galvanized			M 8	M 10	M 12	M 14[1]	M 16	M 20	M 24	M 30[1]
							non-cracked concrete				
Mean ultimate loads, tension (steel 5.8) C25/30		N_{um}	[kN]	18,3	29,0	42,1	57,7	78,3	123,0	177,0	280,3
Mean ultimate loads, shear (steel 5.8) C25/30		V_{um}	[kN]	11,0	17,4	25,3	34,6	47,0	73,8	106,2	168,2
Mean ultimate loads, tension (steel 8.8) C25/30		N_{um}	[kN]	27,0	38,6	58,2	73,5	104,3	169,8	250,2	442,9
Mean ultimate loads, shear (steel 8.8) C25/30		V_{um}	[kN]	15,0	23,2	33,7	46,2	63,0	98,0	141,0	224,3
Recommended loads, tension	C12/15[1]	rec. N	[kN]	3,0	5,0	7,0	8,0	10,0	19,0	26,0	42,0
Approved loads, tension	≥ C20/25	appr. N	[kN]	7,9	11,9	15,9	12,0	19,8	29,8	35,7	60,0
Recommended loads, shear	C12/15[1]	rec. V	[kN]	3,0	5,0	7,0	8,0	10,0	19,0	26,0	42,0
Approved loads, shear	≥ C20/25	appr. V	[kN]	5,1	8,0	12,0	12,0	22,3	34,9	50,3	60,0
Approved loads, shear (steel, grade 8.8)	≥ C20/25	appr. V	[kN]	8,6	13,1	18,9	-	36,0	56,0	80,6	-
Approved bending moments(steel, grade 5.8)		appr. M	[Nm]	10,9	21,1	37,1	59,4	94,9	185,7	320,6	642,0
Approved bending moments (steel, grade 8.8)		appr. M	[Nm]	17,1	34,3	60,0	-	152,0	296,6	513,1	-
	Chemical Anchor V, stainless steel A4 / HCR			M 8	M 10	M 12	M 14[1]	M 16	M 20	M 24	M 30[1]
							non-cracked concrete				
Mean ultimate loads, tension	C25/30	N_{um}	[kN]	26,0	38,6	58,2	73,5	104,3	169,8	247,0	280,3
Mean ultimate loads, shear	C25/30	V_{um}	[kN]	13,0	20,3	29,5	40,4	55,0	86,0	124,0	140,2
Recommended loads, tension	C12/15[1]	rec. N	[kN]	3,0	5,0	7,0	8,0	10,0	19,0	26,0	42,0
Approved loads, tension	≥ C20/25	appr. N	[kN]	7,9	11,9	15,9	12,0	19,8	29,8	35,7	60,0
Recommended loads, shear	C12/15[1]	rec. V	[kN]	3,0	5,0	7,0	8,0	10,0	19,0	26,0	42,0
Approved loads, shear	≥ C20/25	appr. V	[kN]	6,0	9,2	13,3	12,0	25,2	39,4	56,8	60,0
Approved bending moments		appr. M	[Nm]	11,9	23,8	42,1	66,9	106,7	207,9	359,4	402,0
Spacing and edge distance											
Effective anchorage depth		h_{ef}	[mm]	80	90	110	120	125	170	210	280
Spacing		$s_{cr,N}$	[mm]	240	180	220	300	250	340	420	700
Edge distance		$c_{cr,N}$	[mm]	120	90	110	150	125	170	210	350
Minimum spacing		s_{min}	[mm]	40	45	55	120	65	85	105	280
Minimum edge distance		c_{min}	[mm]	40	45	55	60	65	85	105	140
Minimum thickness of concrete slab		h_{min}	[mm]	110	120	140	170	160	220	260	330
Installation parameters											
Drill hole diameter		d_0	[mm]	10	12	14	16	18	25	28	35
Clearance hole in the fixture		d_f	[mm]	9	12	14	16	18	22	26	33
Depth of drill hole		h_0	[mm]	80	90	110	120	125	170	210	280
Installation torque		T_{inst}	[Nm]	10	20	40	60	80	120	180	400
Width across nut		SW	[mm]	13	17	19	22	24	30	36	46
Width across nut (Threaded Stud)		SW	[mm]	5	6	8	10	12	14	17	-

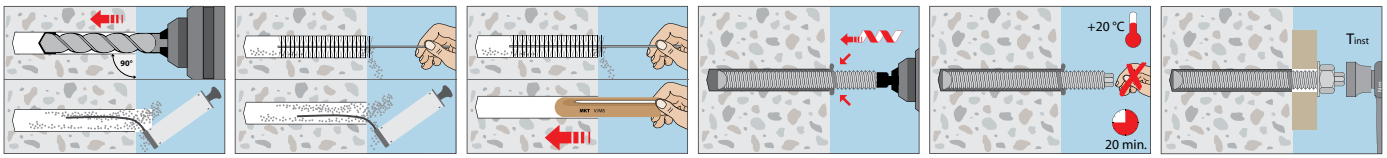
[1] Not part of approval. Recommended loads for size M 14 and M 30 and in concrete C12/15.
[2] max long te rm temperature +50 °C / max short term temperature +80 °C

For anchor designing an easy to operate CD-ROM is available on request or can be downloaded at www.mkt.de.



Curing time Chemical Anchor V

→ Cartridge temperature when installing min. +5°C

Temperature (°C) of base material	curing time	
	dry base material	wet base material
-5°C	5:00 h	10:00 h
0°C	5:00 h	10:00 h
+5°C	1:00 h	2:00 h
+10°C	1:00 h	2:00 h
+20°C	20 min	40 min
+30°C	10 min	20 min
+35°C	10 min	20 min

Installation