Technical data

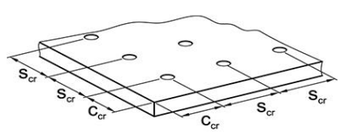
Screwbolt TSM ss

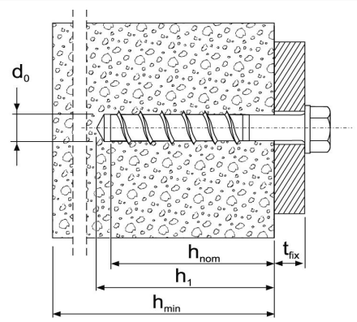
Extract from application conditions of ETA-16/0655
Admissible loads not affected by centre and edge distances.
Total safety factor respected according ETAG 001 (γ_M und γ_F).

Loads and performance date	Schraubanker TSM ss		TSM 6 ss	TSM 8 ss			TSM 10 ss		
Nominal embedment depth 1	$h_{nom\,1}$	[mm]	-	45	-	-	55	-	-
Nominal embedment depth 2	$h_{nom\,2}$	[mm]	40	-	55	-	-	75	-
Nominal embedment depth 3	$h_{nom\,3}$	[mm]	-	-	-	65	-	-	85
Approved loads, tension	cracked concrete								
	C20/25 appr. N.	[kN]	1,0	2,4	4,3	5,7	4,3	8,0	9,6
	C25/30 appr. N.	[kN]	1,0	2,6	4,7	6,3	4,7	8,7	10,5
	C30/37 appr. N.	[kN]	1,2	2,9	5,2	7,0	5,2	9,7	11,7
	C40/50 appr. N.	[kN]	1,3	3,4	6,1	8,1	6,1	11,3	13,6
	C50/60 appr. N.	[kN]	1,5	3,7	6,6	8,9	6,6	12,3	14,9
Approved loads, tension	non-cracked concrete								
	C20/25 appr. N.	[kN]	1,9	3,6	5,7	7,6	5,7	9,5	11,9
	C25/30 appr. N.	[kN]	2,1	3,9	6,3	8,3	6,3	10,4	13,0
	C30/37 appr. N.	[kN]	2,3	4,3	7,0	9,3	7,0	11,6	14,5
	C40/50 appr. N.	[kN]	2,7	5,1	8,1	10,8	8,1	13,5	16,8
	C50/60 appr. N.	[kN]	3	5,5	8,9	11,8	8,9	14,8	18,4
	cracked / non-cracked concrete								
Approved loads, shear	C20/25 appr. V.	[kN]	3,0/4,0	3,5/5,0	4,8/6,8	6,4/9,0	4,8/6,8	15,9/19,4	19,2/19,4
	≥ C25/30 appr. V.	[kN]	3,2/4,0	3,9/5,5	5,3/7,4	7,0/9,7	5,3/7,4	17,5/19,4	19,4/19,4
Approved bending moments	appr. M	[Nm]	6,2	14,9	14,9	14,9	32,0	32,0	32,0
Spacing and edge distance									
Effective anchorage depth	h_{ef}	[mm]	31	35	43	52	43	60	68
Characteristic spacing	$s_{cr,\,N}$	[mm]	93	105	129	156	129	180	204
Characteristic edge distance	$c_{cr,\,N}$	[mm]	46,5	52,5	64,5	78	64,5	90	102
Minimum thinckness of concrete slab	h_{min}	[mm]	80	80	80	80	80	90	102
Minimum spacing	s_{min}	[mm]	40	40	50	50	50	50	50
Minimum edge distance	c_{min}	[mm]	40	40	50	50	50	50	50
Installation parameters									
Drill hole diameter	d_o	[mm]	6	8	8	8	10	10	10
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	8	12	12	12	14	14	14
Depth of drill hole	$h_1 \geq$	[mm]	45	55	65	75	65	85	95
Installation torque with metric con. thread	$T_{inst} \leq$	[Nm]	10	20	20	20	40	40	40
Tangential impact screwdriver [1)]	$T_{imp,max}$	[Nm]	160	300	300	300	400	400	400

[1)] It is possible to fit with a tangential screwdriver with maximum output of $T_{imp,max}$ in accordance with the manufacturer's specifications

Approved loads with exposure to fire						
			Maximum tension load in fire tests for the fire resistance classes [kN]			
	Documents	Type	R 30 (30 min)	R 60 (60 min)	R 90 (90 min)	R 120 (120 min)
Screwbolt TSM stainless steel A4	ETA 16/0655	TSM 6 A4 h_{nom} 40	0,50	0,50	0,50	0,40
		TSM 8 A4 h_{nom} 45	1,25	1,25	1,10	0,70
		TSM 8 A4 h_{nom} 55	2,25	1,70	1,10	0,70
		TSM 8 A4 h_{nom} 65	2,40	1,70	1,10	0,70
		TSM 10 A4 h_{nom} 55	2,25	2,25	2,20	2,25
		TSM 10 A4 h_{nom} 75	4,18	3,30	2,30	1,70
		TSM 10 A4 h_{nom} 85	4,40	3,30	2,30	1,70





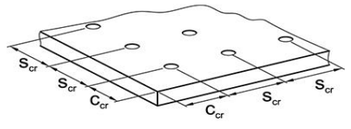
Extract from application conditions of ETA-16/0656
For multiple mounting solutions of non-load-bearings systems acc. ETAG001, part 6. Safety factor acc. ETAG 001 is included (γM und γF).
The perm. loads per fixing point for the respective countries are regulated in ETAG 001, part 6.

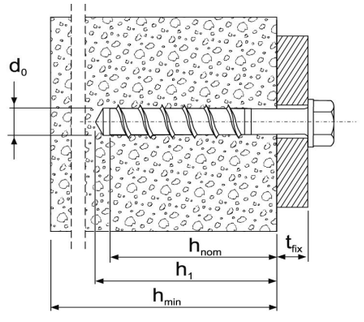
Loads and performance data	Schraubanker TSM A4		TSM 6 ss
Nominal embedment depth 1	h_{nom} 1	[mm]	35
Nominal embedment depth 2	h_{nom} 2	[mm]	-
Nominal embedment depth 3	h_{nom} 3	[mm]	-
Approved loads, tension	gerissener Beton		
	C20/25 zul. N.	[kN]	1,4
	C25/30 zul. N.	[kN]	1,6
	C30/37 zul. N.	[kN]	1,7
	C40/50 zul. N.	[kN]	2,0
	C50/60 zul. N.	[kN]	2,3
Approved loads, tension	ungerissener Beton		
	C20/25 zul. N.	[kN]	1,4
	C25/30 zul. N.	[kN]	1,6
	C30/37 zul. N.	[kN]	1,7
	C40/50 zul. N.	[kN]	2,0
	C50/60 zul. N.	[kN]	2,3
	gerissener / ungerissener Beton		
Approved loads, shear	C20/25 zul. N.	[kN]	2,0/2,8
	≥ C25/30 zul. N.	[kN]	2,2/3,1
Approved bending moments	zul. M	[Nm]	6,2
Spacing and edge distance			
Effective anchorage depth	h_{ef}	[mm]	27
Characteristic spacing	$s_{cr, N}$	[mm]	81
Characteristic edge distance	$c_{cr, N}$	[mm]	40,5
Minimum thinckness of concrete slab	h_{min}	[mm]	80
Minimum spacing	s_{min}	[mm]	35
Minimum edge distance	c_{min}	[mm]	35
Installation parameters			
Drill hole diameter	d_o	[mm]	6
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	8
Depth of drill hole	$h_1 \geq$	[mm]	40
Installation torque with metric con. thread	$T_{inst} \leq$	[Nm]	10
Tangential impact screwdriver [1)]	$T_{imp,max}$	[Nm]	160

[1)] It is possible to fit with a tangential screwdriver with maximum output of Timp,max in accordance with the manufacturer's specifications

Approved loads with exposure to fire (Multiple use for non-structural applications according to ETAG 001, Part 6; Steel, zinc plated/Steel, zinc flake coated)						
			Maximum tension load in fire tests for the fire resistance classes [kN]			
	Documents	Type	R 30 (30 min)	R 60 (60 min)	R 90 (90 min)	R 120 (120 min)
Screwbolt TSM ss	ETA-16/0656	TSM 6 h_{nom} 35	0,65	0,65	0,65	0,52

Loads and performance data	Srewbolt TSM ss		TSM 6 ss		
Precast pre-stressed hollow core slabs C30/37 bis C50/60					
Nominal embedment depth	h_{nom}	[mm]	≥ 35		
	Precast pre-stressed hollow core slabs C30/37 bis C50/60				
Flange thickness	d_b ≥	[mm]	25	30	35
	$F_{appr.}$	[kN]	0,48	0,95	1,43
Spacing and edge distance					
Minimum spacing	s_{min}	[mm]	100		
Minimum edge distance	c_{min}	[mm]	100		
Installation parameters					
Drill hole diameter	d_o	[mm]	6		
Diameter of clearance hole in the fixture	d_f	[mm]	8		
Depth of drill hole	h_1 ≥	[mm]	40		
Installation torque	T_{inst} ≤	[Nm]	10		





ETA-16/0655 — zur Verankerung im gerissenen und ungerissenen Beton

ETA-16/0656 — Europäische Technische Zulassung

SEISMIC

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