

Adhesive screw anchor TSM

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Material available in different versions

- corrosion protection-coated steel as per corrosiveness category C5-I medium TOGE-KORR - TSM B
- A4 stainless steel - TSM BS
- HCR high corrosion-resistant steel - TSM BSH



Base material

- suitable for C 20/25 bis C 50/60
- cracked and non-cracked concrete

Product features

- quick and safe installation
- high load capacity in cracked and non-cracked concrete
- load transmission via undercut
- drill hole sealed by chemical mortar
- can be loaded immediately, regardless of the chemical mortar curing time (see below)

Applications

- fastening of crash barriers
- railing fastening
- soundproof wall fastening



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Technical characteristics under fire exposure and individual fastening

			TSM				
			10	12	14	16	22
drill bit diameter	d_0	[mm]	10	12	14	16	22
depth of drill hole	$h_1 \geq$	[mm]	85	100	100	100	160
	\leq	[mm]	110	130	140	160	200
Depth to screw	$h_{nom} \geq$	[mm]	85	100	100	100	160
	\leq	[mm]	110	130	140	160	200
anchoring depth	$h_{ef} \geq$	[mm]	85	100	100	100	160
	\leq	[mm]	110	130	140	160	200
minimum component thickness	h_{min}	[mm]	$h_{nom} + 60$	$h_{nom} + 60$	$h_{nom} + 70$	$h_{nom} + 70$	$h_{nom} + 100$
minimum edge distance	c_{min}	[mm]	40	50	60	70	80
minimum spacing	s_{min}	[mm]	40	50	60	70	80
characterical edge distance	$c_{cr,N}$	[mm]	$1,5xh_{ef}$	$1,5xh_{ef}$	$1,5xh_{ef}$	$1,5xh_{ef}$	$1,5xh_{ef}$
characterical spacing	$s_{cr,N}$	[mm]	$3xh_{ef}$	$3xh_{ef}$	$3xh_{ef}$	$3xh_{ef}$	$3xh_{ef}$
installation torque	T_{inst}	[Nm]	40	60	80	100	200
design value of tension for cracked and non-cracked concrete C 20/25	$N_{Rd,max}$	[kN]	18,8	28,3	28,3	28,3	57,4
	$N_{Rd,min}$	[kN]	27,7	42,0	46,9	68,6	80,1
design value of transverse load for cracked and non-cracked concrete C 20/25 to C 50/60	V_{Rd}	[kN]	22,7	28,0	42,7	68,6	71,4
approved tension for cracked and non-cracked concrete C 20/25	$N_{zul,min}$	[kN]	13,4	20,2	20,2	20,2	41,0
	$N_{zul,max}$	[kN]	19,8	30,0	33,5	41,0	57,2
approved transverse load for cracked and non-cracked concrete C 20/25 to C 50/60	V_{zul}	[kN]	16,2	20,0	30,5	45,7	51,0



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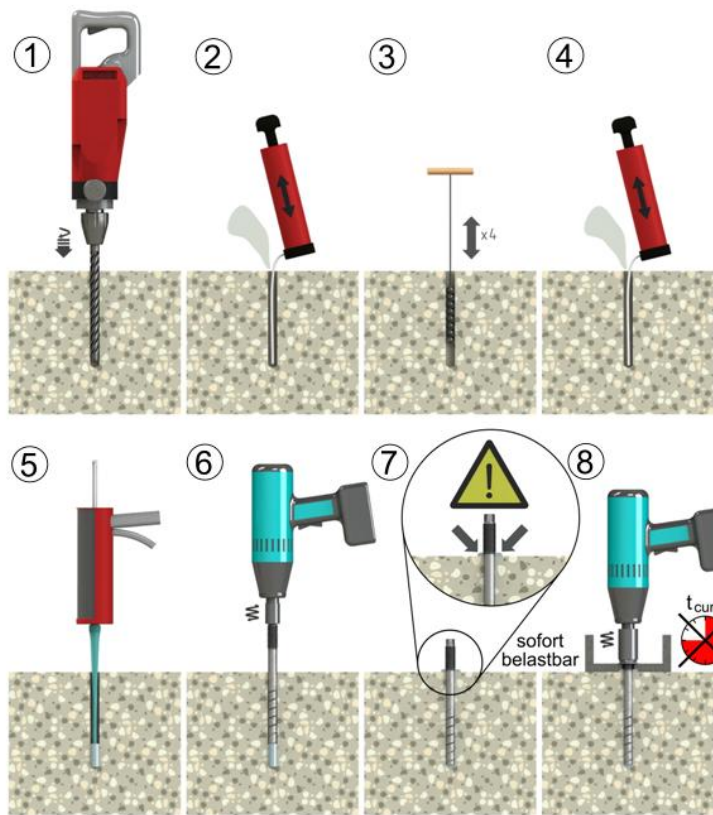
Technische Kennwerte bei Brandbeanspruchung

			TSM				
			10	12	14	16	22
fire resistance class							
R 30	permissible load $F_{fi,zul,30}$ ¹⁾	[kN]	4,0	6,3	9,8	13,9	23,8
R 60	permissible load $F_{fi,zul,60}$ ¹⁾	kN]	3,3	5,8	8,1	11,0	21,6
R 90	permissible load $F_{fi,zul,90}$ ¹⁾	[kN]	2,2	4,2	5,9	8,0	15,8
R 120	permissible load $F_{fi,zul,120}$ ¹⁾	[kN]	1,7	3,4	4,8	6,5	12,8
R 30 - R 120	spacing	S_{fi}	4 x h_{ef}				
		S_{min}	40	50	60	70	80
	edge distance	C_{fi} C_{min}	2 x h_{ef}				

- 1) The partial safety factor for material resistance from the approval $\gamma_M = 1.0$ as well a partial safety factor for load actions $\gamma_F = 1.0$ were considered for determining the load.



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Montagehinweis

- 1) Set drill hole (hammer drilling or diamond core drilling method)
- 2) Clean out drill hole from the base
- 3) Brush out drill hole four times
- 4) Clean out drill hole from the base again
- 5) Inject composite mortar
- 6) Screw in concrete screw
- 7) After reaching the screw-in depth, the composite mortar must extrude at the concrete surface
- 8) The fixture can be installed right away, as the curing time of the composite mortar need not be taken into account

Temperature of base material	Processing time	Curing time in dry drill hole	Curing time in wet drill hole
≥ -5°C	60 min	360 min	720 min
≥ 0°C	60 min	180 min	360 min
≥ 10°C	60 min	120 min	240 min
≥ 20°C	45 min	80 min	160 min
≥ 30°C	15 min	45 min	90 min
≥ 40°C	5 min	25 min	50 min

