TOGE TSM L

Concrete screw for interior and drywall construction

Fast Installation

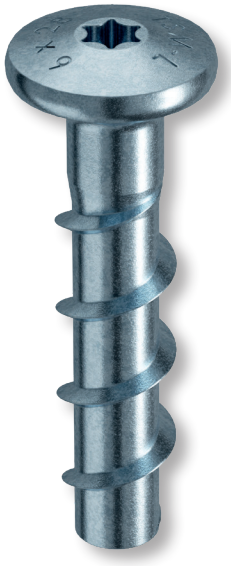
A small drilling diameter of just 6 mm ensures fast and easy drilling progress – even in high-strength concrete.

No more reinforcement hits

The low embedment depths of 25 mm and 35 mm allow particularly user-friendly processing completely WITHOUT reinforcement hits.

Particulary near the edge

Small edge distances and spacing allow very closed-edge and closely spaced installation.



Demountable

If required, the TOGE TSM L can be quickly and easily demounted again. This means that drywall can be removed and reinstalled afterwards.

Easy Installation

The patented special thread of the TOGE TSM L allows installation with a standard cordless screwdriver without the need for additional special tools.

Variable

Two different embedment depths of 25 mm or 35 mm allow variable load absorption – tailored to your individual application requirements.

Approval

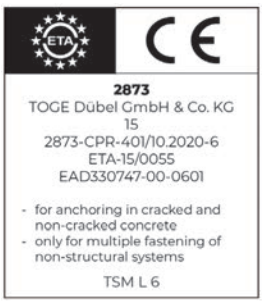
Approval

European technical assesment ETA-15/0055.

Basements

Approved for concrete strength classes from C20/25 bis C50/60.

Cracked and non-cracked concrete.



Technical characteristics

Multiple fastening without fire exposure, Steel

Screw size TSM L			6	
Nominal embedment depth	h_{nom}	[mm]	$h_{nom,1}$	$h_{nom,2}$
			25	**35**
Nominal diameter of drill bit	d_0	[mm]	6	
Depth of drill hole	h_1 min	[mm]	28	38
Effective anchorage depth	h_{ef}	[mm]	19	27
Diameter of clearance hole in the fixture	d_f max	[mm]	8	
Approved tension load in cracked concrete [1) 2)]	N_{zul}	[kN]	0,4	1,0
Approved shear load in cracked concrete [1) 2)]	V_{zul}	[kN]	1,4	2,3
Approved tension load in non-cracked concrete [1) 2)]	N_{zul}	[kN]	1,0	1,9
Approved shear load in non-cracked concrete [1) 2)]	V_{zul}	[kN]	1,9	3,3
Approved bending resistance	M_{zul}	[kN]	6,3	
Minimum egde distance	C_{min}	[mm]	30	
Minimum spacing	S_{min}	[mm]	30	
Minimum base material thickness	h_{min}	[mm]	80	
Installation torque (with metric connection thread)	T_{inst}	[Nm]	10	

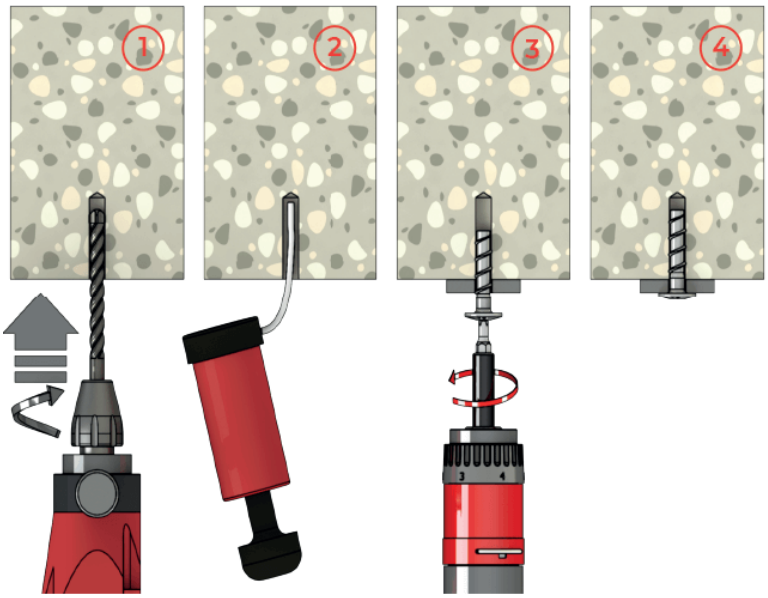
[1)] For the determination of the approved loads, the partial safety factor from the approval γM=1,0 was taken into account for material resistance and a partial safety factor γF=1,4 for load actions.

[2)] These values apply without influence of the space and edge distancing.

Multiple fastening under fire exposure, Steel

Screw size TSM L				6	
Nominal embedment depth		h_{nom}	[mm]	$h_{nom,1}$	$h_{nom,2}$
				25	**35**
Approved load under tensile and shear use ($F_{zul,fi}$ = $N_{zul,fi}$ = $V_{zul,fi}$)					
Fire resistance class					
R 30	Approved load	$F_{zul,fi\ 30}$	[kN]	0,23	0,27
R 60		$F_{zul,fi\ 60}$	[kN]	0,23	0,27
R 90		$F_{zul,fi\ 90}$	[kN]	0,22	
R 120		$F_{zul,fi\ 120}$	[kN]	0,17	
R 30		$M_{zul,fi\ 30}$	[Nm]	0,22	
R 60		$M_{zul,fi\ 60}$	[Nm]	0,22	
R 90		$M_{zul,fi\ 90}$	[Nm]	0,18	
R 120		$M_{zul,fi\ 120}$	[Nm]	0,14	
Fire resistance class					
R 30 toR 120		$C_{cr,fi}$	[mm]	2 x h_{ef}	
The edge distance must be at least 300 mm if the fire load attacks from more than one side.					
Spacing					
R 30 to R 120		$S_{cr,fi}$	[mm]	4 x h_{ef}	
Concrete pry-out failure					
R 30 to R 120		k	[-]	1,0	
In wet concrete, the embedment depth must be increased by at least 30 mm.					

Installation Instructions



1) Create borehole.

2) Thoroughly clean borehole.

3) Srew in the TOGE TSM L with a standrd cordless screwdriver - without special tools.

4) The screwhead must rest completely on the attachment.