

# TOGE TSM BC ST

Concrete screw for construction site safety and temporary fixation



### Fast and safe installation

The optimized thread enables a fast and safe installation process.

### High loads

High load bearing capacity in cracked and non-cracked concrete.

### Special approval

Anchoring of site equipment in fresh concrete.

### Temporary fastening

For temporary fastening also in outdoor areas.

### Easily demountable

Residual disassembly and therefore reusable.

## Approval

### Approval

General design approval Z-21.8.2115 for temporary fastening.

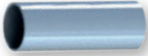
### Base Materials

Application in concrete with a compressive strength of  $\geq 10 \text{ N/mm}^2$ .

Cracked and non-cracked concrete.



# Headshapes & Materials

		Steel, zinc plated	Steel, zinc flake-coated	Steel, stainless A4
	Hexagonal head with collar	✓		
	Hexagonal head with pressed on washer	✓	✓	
	Sleeve gauge	✓		

## Application Examples



Fastening of guardrails, scaffolding or formwork props

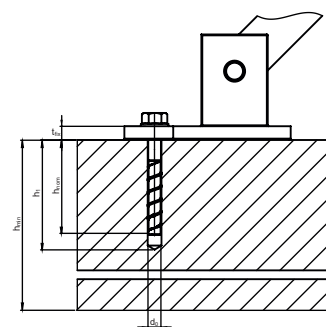
# Product Overview

## Steel - zinc plated

Version with hexagonal head and collar



Size      Disc-Ø  
14        32,0 mm



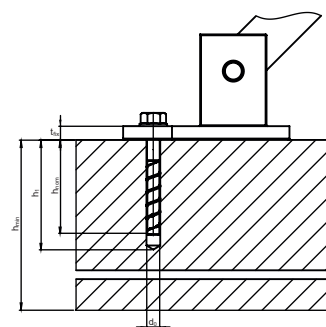
Item nr.	Designation	Depth of drill hole $h_{01} / h_{02} / h_{03}$	Embedment depth of anchor $h_{nom1} / h_{nom2} / h_{nom3}$	Max. thickness of fixture $t_{fix1} / t_{fix2} / t_{fix3}$	Packing Unit
377 014 134*	TSM BC ST 14 x 130 SW24	85 mm / 100 mm / 125 mm	75 mm / 90 mm / 115 mm	55 mm / 40 mm / 15 mm	25

\* Sleeve gauge already included

Version with hexagonal head and pressed on washer



Size      Disc-Ø  
10        20,0 mm  
12        23,5 mm  
14        28,0 mm



Item nr.	Designation	Depth of drill hole $h_{01} / h_{02} / h_{03}$	Embedment depth of anchor $h_{nom1} / h_{nom2} / h_{nom3}$	Max. thickness of fixture $t_{fix1} / t_{fix2} / t_{fix3}$	Packing Unit
300 010 090	TSM 10x90 SW15	85mm	75mm	15mm	50
300 010 100	TSM 10x100 SW15	85mm	75mm	25mm	50
300 010 120	TSM 10x120 SW15	85mm	75mm	45mm	50
300 010 140	TSM 10x140 SW15	85mm	75mm	65mm	50
300 010 150	TSM 10x150 SW15	85mm	75mm	75mm	50
300 010 160	TSM 10x160 SW15	85mm	75mm	85mm	50
300 010 180	TSM 10x180 SW15	85mm	75mm	105mm	25
300 010 200	TSM 10x200 SW15	85mm	75mm	125mm	25
300 010 240	TSM 10x240 SW15	85mm	75mm	165mm	25
300 010 280	TSM 10x280 SW15	85mm	75mm	205mm	25
300 012 110	TSM 12x110 SW17	85mm / 100mm / -	75mm / 90mm / -	35mm / 20mm / -	25
300 012 130	TSM 12x130 SW17	85mm / 100mm / -	75mm / 90mm / -	55mm / 40mm / -	25
300 012 150	TSM 12x150 SW17	85mm / 100mm / -	75mm / 90mm / -	75mm / 60mm / -	25
300 014 110	TSM 14x110 SW21	85mm / 100mm / -	75mm / 90mm / -	35mm / 20mm / -	25
300 014 130	TSM 14x130 SW21	85mm / 100mm / 125mm	75mm / 90mm / 115mm	55mm / 40mm / 15mm	25
300 014 150	TSM 14x150 SW21	85mm / 100mm / 125mm	75mm / 90mm / 115mm	75mm / 60mm / 35mm	25

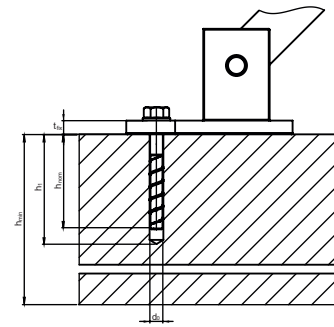


## Steel - zinc flake-coated

Version with hexagonal head and pressed on washer



Size	Disc-Ø
10	20,0 mm
12	23,5 mm
14	28,0 mm



Item nr.	Designation	Depth of drill hole $h_{01} / h_{02} / h_{03}$	Embedment depth of anchor $h_{nom1} / h_{nom2} / h_{nom3}$	Max. thickness of fixture $t_{fix1} / t_{fix2} / t_{fix3}$	Packing Unit
400 010 090	TSM 10x90 SW15 ZFC	85mm	75mm	15mm	50
400 010 100	TSM 10x100 SW15 ZFC	85mm	75mm	25mm	50
400 010 120	TSM 10x120 SW15 ZFC	85mm	75mm	45mm	50
400 010 140	TSM 10x140 SW15 ZFC	85mm	75mm	65mm	50
400 010 150	TSM 10x150 SW15 ZFC	85mm	75mm	75mm	50
400 010 160	TSM 10x160 SW15 ZFC	85mm	75mm	85mm	50
400 010 180	TSM 10x180 SW15 ZFC	85mm	75mm	105mm	25
400 010 200	TSM 10x200 SW15 ZFC	85mm	75mm	125mm	25
400 010 240	TSM 10x240 SW15 ZFC	85mm	75mm	165mm	25
400 010 280	TSM 10x280 SW15 ZFC	85mm	75mm	205mm	25
400 012 110	TSM 12x110 SW17 ZFC	85mm/100mm/-	75mm/90mm/-	35mm/20mm/-	25
400 012 130	TSM 12x130 SW17 ZFC	85mm/100mm/-	75mm/90mm/-	55mm/40mm/-	25
400 012 150	TSM 12x150 SW17 ZFC	85mm/100mm/-	75mm/90mm/-	75mm/60mm/-	25
400 014 110	TSM 14x110 SW21 ZFC	85mm/100mm/-	75mm/90mm/-	35mm/20mm/-	25
400 014 130	TSM 14x130 SW21 ZFC	85mm/100mm/125mm	75mm/90mm/115mm	55mm/40mm/15mm	25
400 014 150	TSM 14x150 SW21 ZFC	85mm/100mm/125mm	75mm/90mm/115mm	75mm/60mm/35mm	25

## Accessoires

Sleeve gauge  
(please order separately)



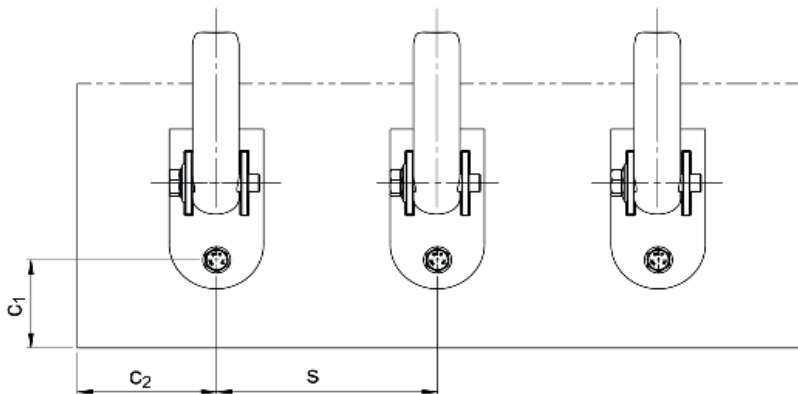
Item nr.	Designation	Packing Unit
377010001	Sleeve gauge for concrete screw size 10	10
377012001	Sleeve gauge for concrete screw size 12	10
377014001	Sleeve gauge for concrete screw size 14	10

## Without fire exposure, Steel

Screw size TSM BC ST & TSM High Performance			TSM 10	TSM 12		TSM 14		
Embedment depth	h <sub>nom</sub>	[mm]	h <sub>nom,1</sub>	h <sub>nom,1</sub>	h <sub>nom,2</sub>	h <sub>nom,1</sub>	h <sub>nom,2</sub>	h <sub>nom,3</sub>
			75	75	90	75	90	115
Diameter of drill bit	d <sub>0</sub>	[mm]	10	12		14		
Depth of drill hole	h <sub>1 min</sub>	[mm]	85	85	100	85	100	125
Minimum base material thickness	h <sub>min</sub>	[mm]	150	150	195	150	195	200 225
Approved load in cracked concrete with compressive strength f <sub>ck,cube</sub> 10 N/mm <sup>1) 2)</sup>	N <sub>zul</sub>	[kN]	4,3	4,3	8,6	4,3	8,6	10,7 12,1
Approved load in cracked concrete with compressive strength f <sub>ck,cube</sub> 15 N/mm <sup>1) 2)</sup>	N <sub>zul</sub>	[kN]	5,0	5,0	9,3	5,0	9,3	12,9 15,0
Approved load in cracked concrete with compressive strength f <sub>ck,cube</sub> 20 N/mm <sup>1) 2)</sup>	N <sub>zul</sub>	[kN]	5,7	5,7	10,0	5,7	10,0	14,3 17,1
Minimum edge distance in load direction <sup>1)</sup>	C <sub>1</sub>	[mm]	105	105	130	105	130	165
Minimum edge distance crosswise to load direction <sup>1)</sup>	C <sub>2</sub>	[mm]	160	160	195	160	195	250
Minimum centre distance	S <sub>min</sub>	[mm]	320	320	390	320	390	500
Max. torque with impact screw driver		[Nm]	400	650		650		

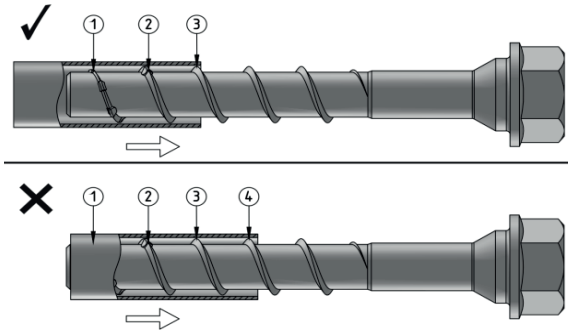
<sup>1)</sup> See drawing

<sup>2)</sup> The partial safety for load actions γ<sub>F</sub>=1,4 were considered for determining the load.



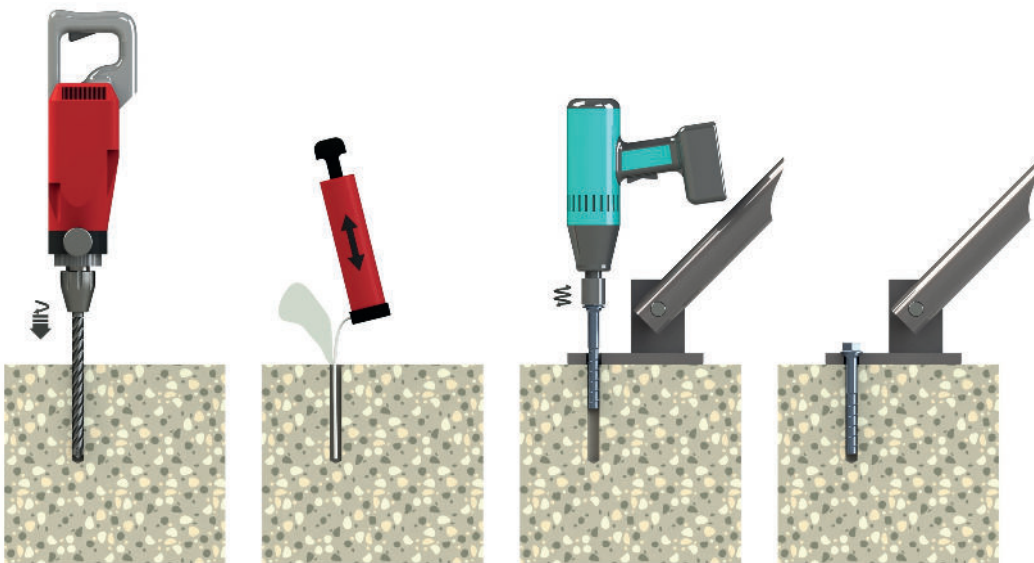
## Installation Instructions

### Important notice before installation



- Before each reuse, the degree of wear on the thread must be checked with an appropriate ring gauge.
- The concrete screw may only be reused if no more than 3 turns of the thread can enter into the ring gauge.
- Screws with visible damage, e.g. caused by corrosion wear, must not be reused as a rule.

### Installation



- 1) Create borehole.
- 2) Thoroughly clean borehole.
- 3) Screw in concrete screw.
- 4) The screw head must fully contact the fixture