# 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.

**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 ≥ 10 N/mm².

Cracked and non-cracked concrete.

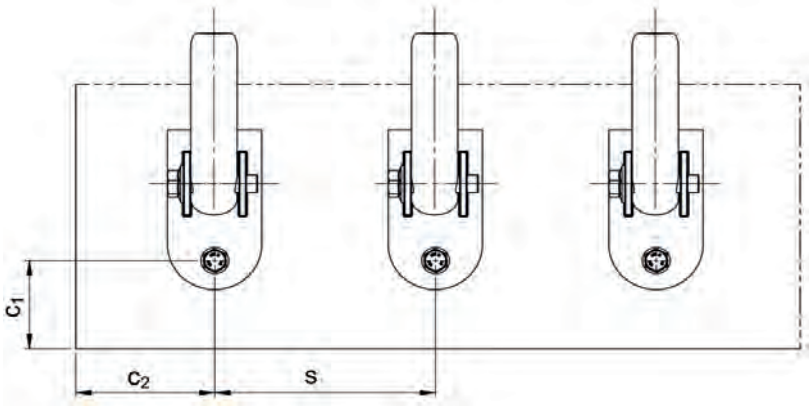
# Technical Data

## Without fire exposure, Steel

| Screw size TSM BC ST & TSM High Performance | | | TSM 10 | TSM 12 | | TSM 14 | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Embedment depth** | $h_{nom}$ | [mm] | $h_{nom,1}$ | $h_{nom,1}$ | $h_{nom,2}$ | $h_{nom,1}$ | $h_{nom,2}$ | $h_{nom,3}$ | |
| | | | **75** | **75** | **90** | **75** | **90** | **115** | |
| Diameter of drill bit | $d_0$ | [mm] | 10 | 12 | | 14 | | | |
| Depth of drill hole | $h_1$ min | [mm] | 85 | 85 | 100 | 85 | 100 | 125 | |
| Minimum base material thickness | $h_{min}$ | [mm] | 150 | 150 | 195 | 150 | 195 | 200 | 225 |
| Approved load in cracked concrete with compressive strenght $f_{ck,cube}$ 10 N/mm [1) 2)] | $N_{zul}$ | [kN] | 4,3 | 4,3 | 8,6 | 4,3 | 8,6 | 10,7 | 12,1 |
| Approved load in cracked concrete with compressive strenght $f_{ck,cube}$ 15 N/mm [1) 2)] | $N_{zul}$ | [kN] | 5,0 | 5,0 | 9,3 | 5,0 | 9,3 | 12,9 | 15,0 |
| Approved load in cracked concrete with compressive strenghtt $f_{ck,cube}$ 20 N/mm [1) 2)] | $N_{zul}$ | [kN] | 5,7 | 5,7 | 10,0 | 5,7 | 10,0 | 14,3 | 17,1 |
| Minimum edge distance in load direction [1)] | $C_1$ | [mm] | 105 | 105 | 130 | 105 | 130 | 165 | |
| Minimum edge distance crosswise to load direction [1)] | $C_2$ | [mm] | 160 | 160 | 195 | 160 | 195 | 250 | |
| Minimum centre distance | $S_{min}$ | [mm] | 320 | 320 | 390 | 320 | 390 | 500 | |
| Max. torque with impact screw driver | | [Nm] | 400 | 650 | | 650 | | | |

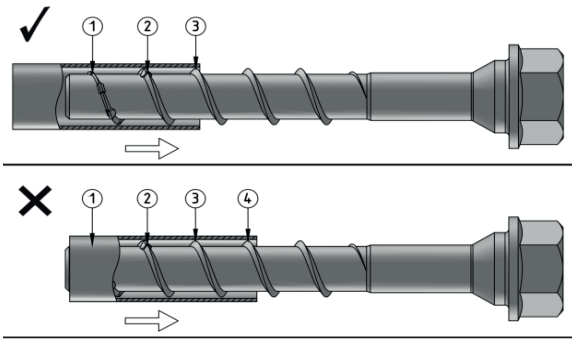
[1)] See drawing

[2)] The partial safety for load actions γF=1,4 were considered for determing the load.



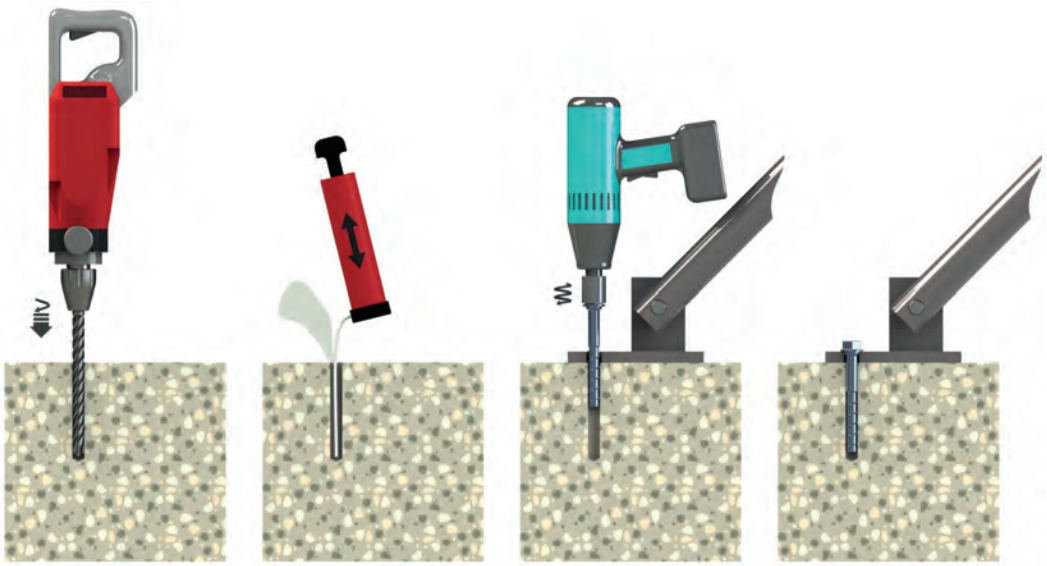
# Installation Instructions

## 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