

TOGE TSM A

Asphalt screw for fastening directly into asphalt - without concrete foundation

Simple Fastening

Simple fastening directly into the asphalt - without additional concrete foundation.

Frost proof

Sealing the borehole prevents water penetration and frost damage in winter.



Flush with surface

Surface flush installation, also suitable for temporary installation.

Approval

Base Materials

Application in all common asphalt types.



Headshapes & Materials



Steel,
zinc-plated

Steel,
anti-corrosion
coated

Steel,
stainless A4



TSM A



TOGE KORR as per
corrosiveness category
C5-I medium



Composite mortar and
accessories

Application Examples



Fastening of e-charging columns



Fastening passive restraint systems and impact protection



Fastening of shopping cart enclosures



Fastening of impact protection systems



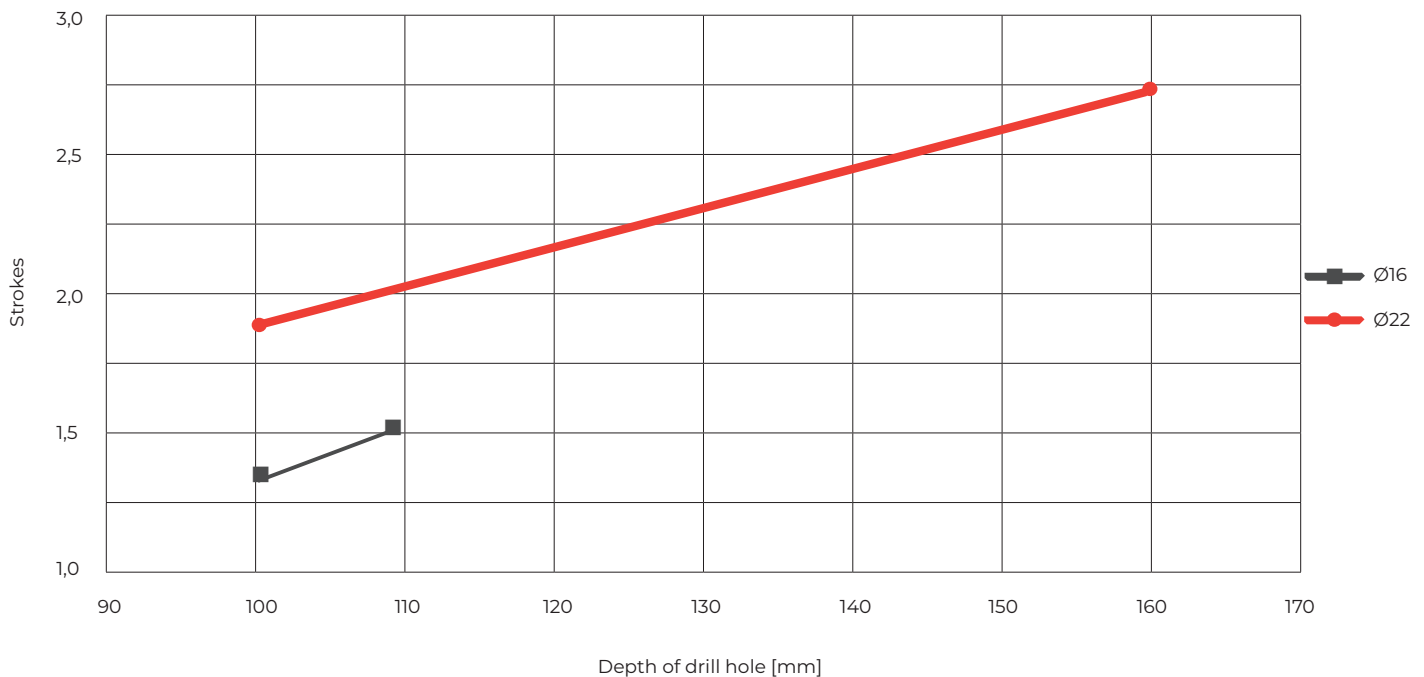
Fastening of speed bumps



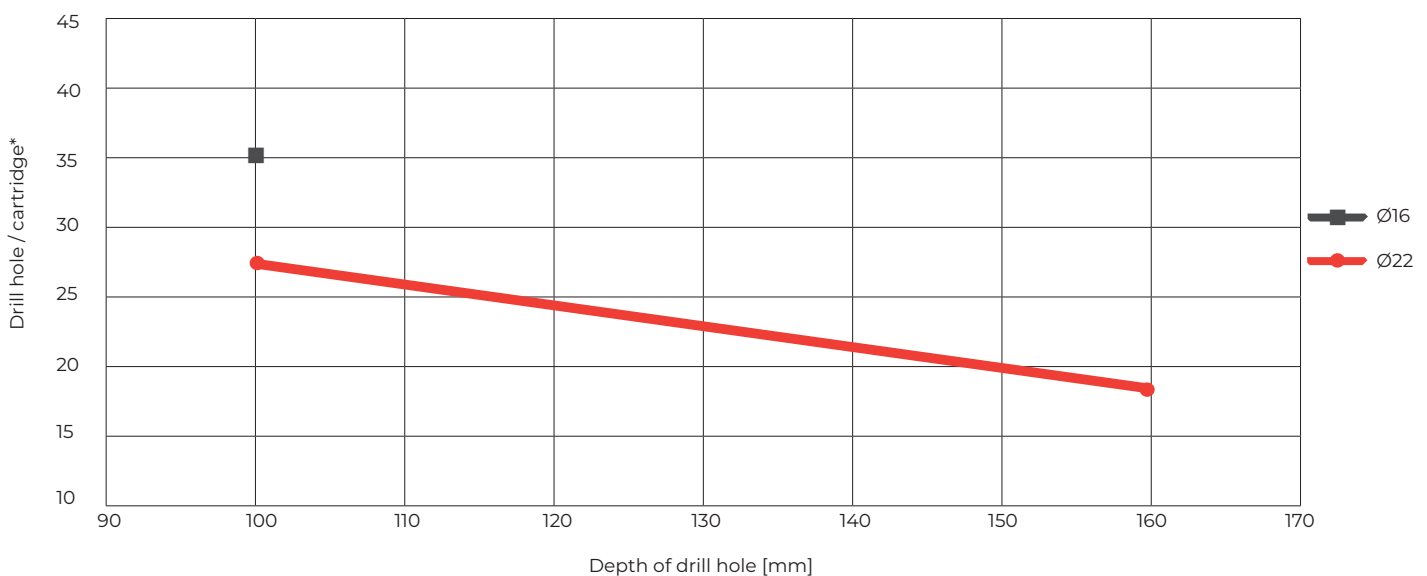
Processing instructions composite mortar

Temperature in ground	Processing time	Min. curing time
0°C	90 min	144 h
6°C	80 min	48 h
10°C	60 min	28 h
15°C	40 min	18 h
20°C	30 min	12 h
25°C	12 min	9 h
35° C	8 min	6 h
40° C	8 min	4 h

Strokes ATA 2004C / Depth of drill hole and Ø



Cartridge coverage ATA 2004C



* The number of drill holes per cartridge depends on the drill hole depth. The specified quantities only apply if the borehole depth is adhered to.

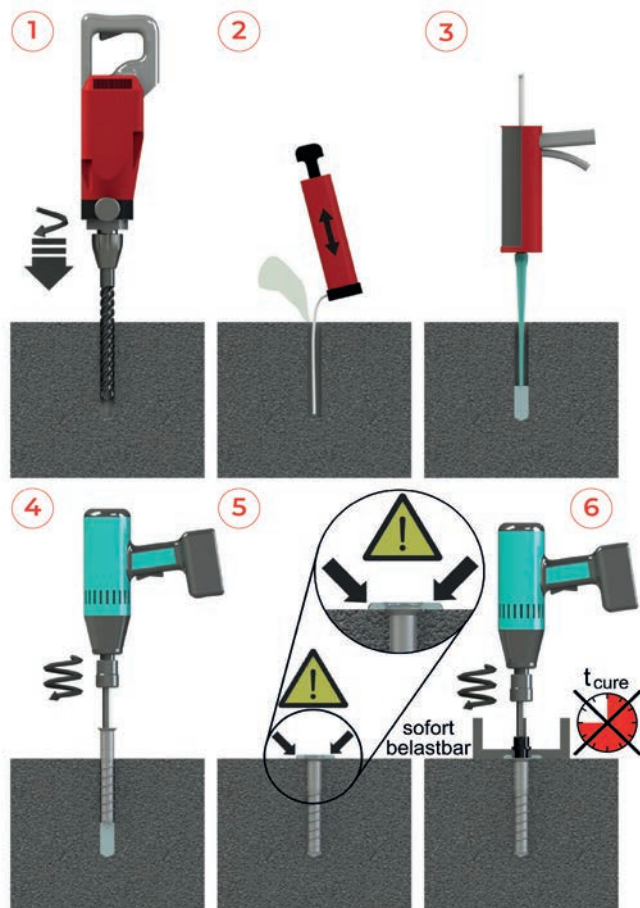
Without fire exposure, steel

Screw size TSM A			16 x 100	22 x 100	22 x 155
Drill bit diameter	d_b	[mm]	16	22	22
Depth of drill hole	h_{min}	[mm]	110	110	165
Minimum thickness of member	$h_{min} \geq$	[mm]	150	150	200
Embedment depth of anchor	h_{nom}	[mm]	100	100	155
Fastening screw used			M 10 x 30	M 16 x 40	M 16 x 40
Strokes ATA 2004			1 bis 2	1 bis 2	2 bis 3
Cartridge is sufficient for drill holes			35	27	21
Maximum shock load	F	[kN]	40	50	80

Installation Instructions

Installation

- 1) Create borehole.
- 2) Clean the borehole thoroughly.
- 3) Inject composite mortar.
- 4) Screw in the asphalt screw.
- 5) After reaching the screw-in depth, the composite mortar must emerge at the asphalt surface.
- 6) The attachment can be installed immediately – there is no need to observe the curing time of the composite mortar.



Operating principle of anchoring



1. The 90°-Principle

The collar of the anchor is braced against the base plate at an angle of 90°. When torque is applied, the entire system is tilted, but this is prevented by the asphalt. Vertical extraction of the anchor from the substrate is not possible.



2. The Undercut

When the screw anchor is screwed in, a thread-shaped undercut is created in the substrate. This creates a positive fit between the substrate and the thread of the asphalt screw.



3. The chemical mortar

The air voids present in the asphalt are compressed by the final turning process of the TSM A as if by a hydraulic cylinder with the composite mortar. This results in a firmer and more homogeneous base in the force application area.



4. Preloaded free anchoring

The collar of the TSM A is larger than the clearance hole in the fixture to be connected. The base plate is clamped between the collar and the head of the fastening screw. This way the TSM A remains unencumbered.



5. Large surface

In the case of shock load, a limited excavation does not occur as in concrete. A much larger area is activated.

6. No overhanging loads

The anchoring system is not suitable for permanent tensile loading.

