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 passive restraint systems and traffic signs

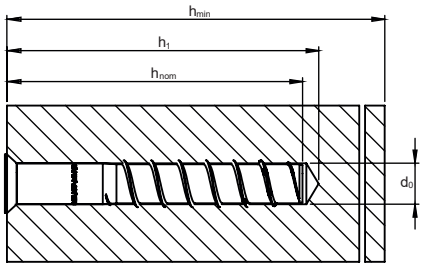
Fastening of protective devices

Fastening of impact protection systems

Product Overview

Steel - anti-corrosion coated

Version with female thread
IM 10 or IM 16



Item nr.	Designation	Bore Ø	Depth of drill hole h_0	Embedment depth of anchor h_{nom}	Packing Unit
202 161 001	TSM A 16x100 IM10 x 20 SW12 KORR	16mm	110mm	100mm	50
202 221 000	TSM A 22x100 IM16 x 30 SW12 KORR	22mm	110mm	100mm	50
202 221 551	TSM A 22x155 IM16 x 30 SW12 KORR	22mm	165mm	155mm	40
500 000 014	Metric thread reducer M16/M12				25
500 000 015	Metric thread reducer M16/M10				25
500 000 002	Screw-in tool SW12				1

Composite Mortar ATA 2004C

Chemical special mortar
Pure epoxy, suitable for asphalt screws

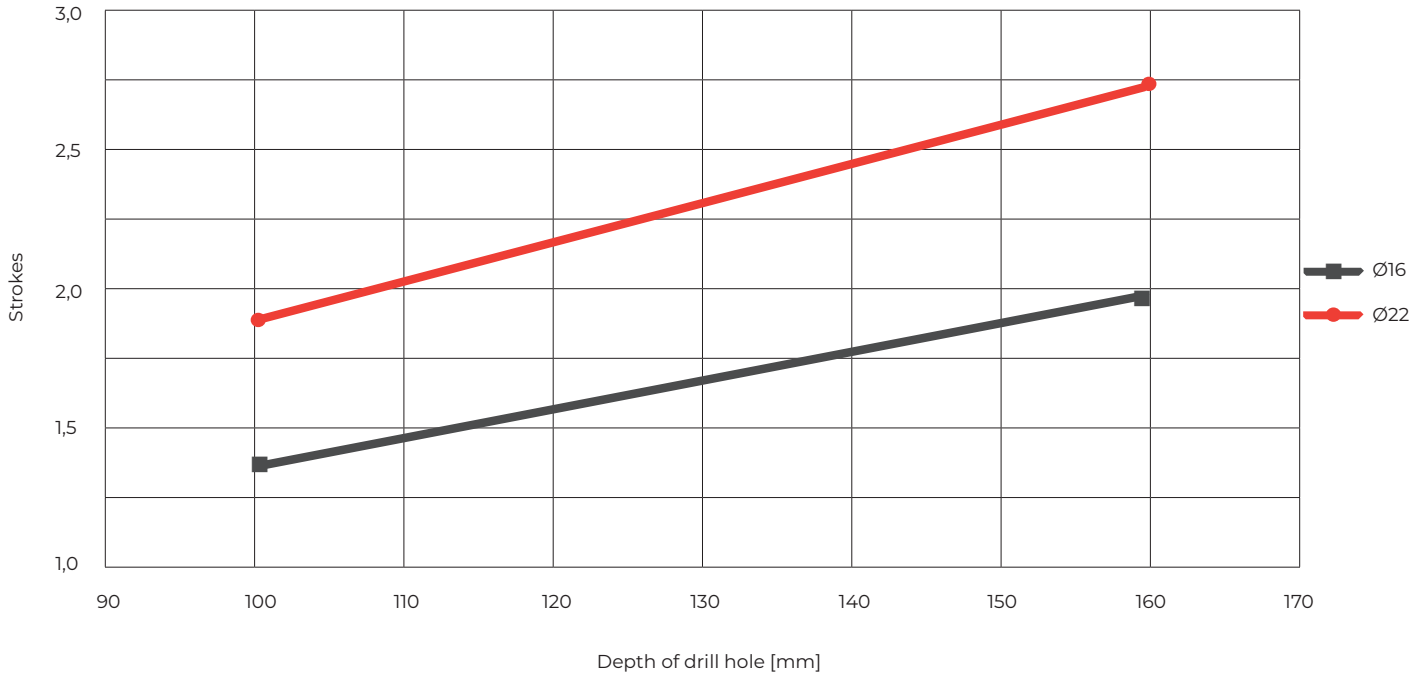
Item nr.	Designation	Packing Unit
222 222 019	Cartridge ATA 2004C 585ml	1
222 223 002	Mixing nozzle for ATA 2004C	1
222 222 014	Squeezing pistol for ATA 2004C 585ml	1

See next page for processing instructions and material consumption for composite mortar ATA 2004C.

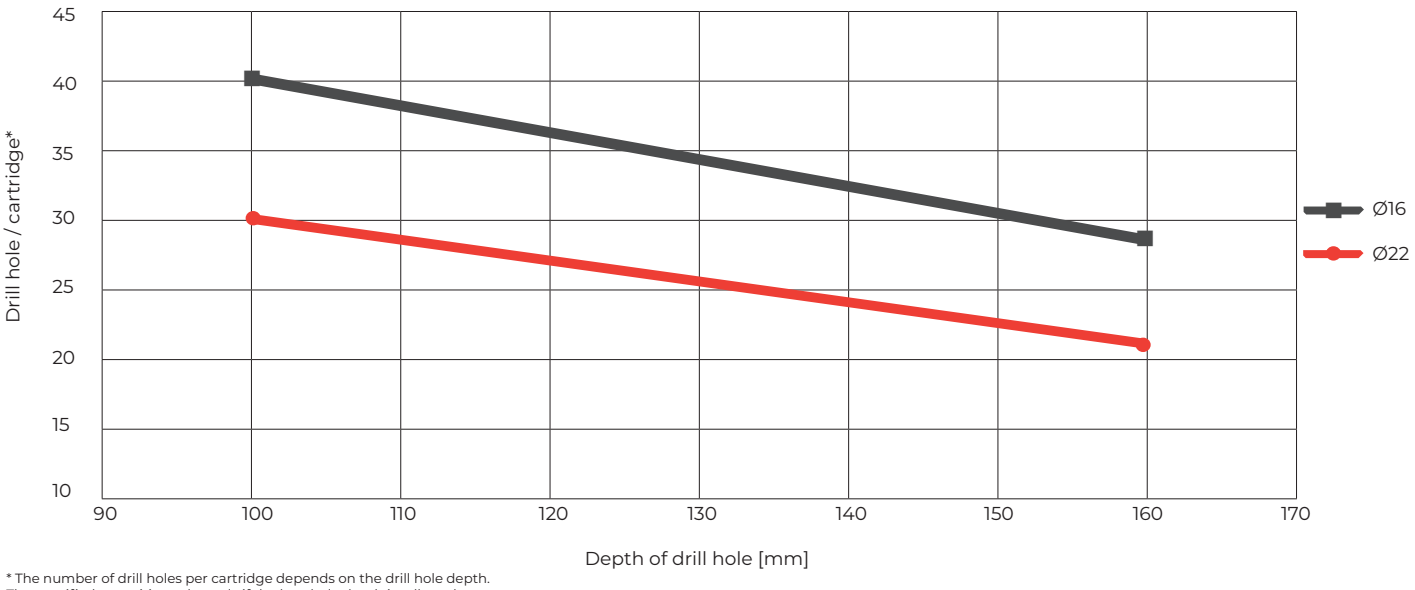
Processing instructions composite mortar

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.

Technical Data

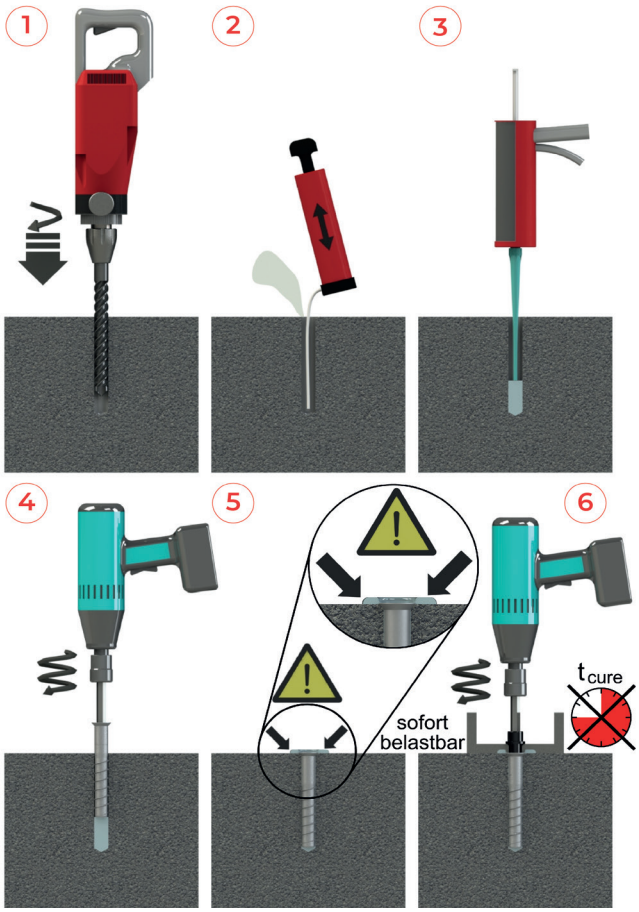
Without fire exposure, steel

Screw size TSM A			16 x 100	22 x 100	22 x 155
Drill bit diameter	d_0	[mm]	16	22	22
Depth of drill hole	h_1 min	[mm]	110	110	165
Minimum thickness of member	h_{min} ≥	[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			21	15	10
Maximum shock load	F	[kN]	40	50	80

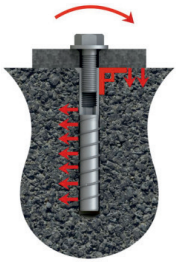
Installation Instructions

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.

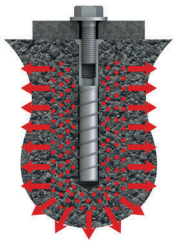


Operating principle of anchoring

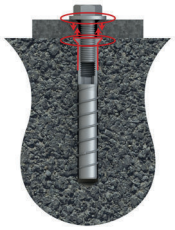


1. The 90°-Principle
The collar of the anchor is braced against the base plate at an angle of 90°. When torque is applied, the entire system is tilted, but this is prevented by the asphalt. Vertical extraction of the anchor from the substrate is not possible.

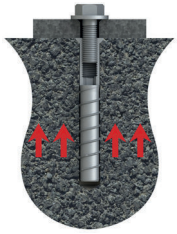
2. The Undercut
When the screw anchor is screwed in, a thread-shaped undercut is created in the substrate. This creates a positive fit between the substrate and the thread of the asphalt screw.



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.