

Building Product Information Sheet

Class 1

Product Name:

TOGE TSM Screw bolt - Hex Head

Date of Report:

04 / 10 / 2023

Product Line:

TOGE TSM - Threaded Rod Hanger and Concrete Screwbolts Range

Product Description and its intended use:

Toge Dubel is one of the leading innovative screw manufacturers in the world, specialising in concrete screw anchor technology. Screw anchors give a positive connection that is free of expansion pressure in most base materials lending them great close-to-edge fixing characteristics. Available in zinc and stainless steel, various head styles and configurations with fire rating, seismic approval (C1) (only applicable to sizes greater than 6mm diameter) and ETA cracked concrete approval.

The Toge TSM range features quick and safe installation, high load capacities in both cracked and non-cracked concrete with undercut load transmission. The TSM can be easily removed and does not leave residue or metal components in the drilled hole that can cause corrosion. Loads can be achieved immediately upon installation

Key technical specifications:

- Product type: Screw-Bolt Anchor
- Finish options: Carbon steel zinc clear, Stainless steel 316 A4.
- Head options: Flush Hex head
- Material specifications: drill diameter, minimum drill depth and other values varies based on part. Refer to document 'Toge TSM

Technical Information' for specific values per part:

https://sestofasteners.co.nz/products/chemselect-cis-threaded-inserts?_pzs=1&_sid=0bab8d314&_ss=r

Product Identifier

TOGE TSM Threaded Rod Hanger and Concrete Screwbolts

Place of Manufacture:

Overseas

Manufacturer:

TOGE Dübel GmbH & Co. KG

Importer:

Sesto Fasteners Limited

Address: 5e Piermark Drive
Rosedale, Auckland
Postcode: 0632
Website: www.sestofasteners.co.nz
Email: orders@sestofasteners.co.nz
Phone: +64 94158564
NZBN: 9429041704103

Relevant Building Code Clauses:

- B1 Structure: Performance clauses B1.1, B1.2, B1.3.1, B1.3.2, B1.3.3, B1.3.4
- B2 Durability: Performance clauses B2.2
- C2 Prevention of Fire: Performance clause C2.1
- F2 Hazardous Building Materials: Performance clause F2.3.1

Statement on how the building product is expected to contribute to compliance:

- B1 Structure: clauses B1.1, B1.2, B1.3.1, B1.3.2, B1.3.3, B1.3.4:
 - TOGE TSM IM Bolts are compliant with the requirements referenced in National Construction Code (NCC), AS 5216:2018 and European Assessment (ETA) Documents and Guidelines (ETA) Documents and Guidelines (ETA-15/0514 of 28 May 2019). AS 5216 (Design of post-installed and cast-in fastenings in concrete) outlines the minimum requirements for the selection, design and assessment of cast-in anchor channel and post installed fasteners.
 - C1 Seismic Approval available for carbon steel and stainless steel finishes.
 - C2 Seismic Approval available for carbon steel only.
 - C1 Seismic assessment (Carbon steel and stainless steel) only valid for the following embedment depths: TSM06 - 40mm + 55mm / TSM08 - 65mm / TSM10 - 55mm + 85mm / TSM12 - 100mm / TSM14 - 115mm.
 - C2 Seismic assessment (Carbon steel) only valid for the following embedment depths: TSM08 - 65mm / TSM10 - 85mm / TSM12 - 100mm / TSM14 - 115mm
 - Refer to document 'Toge TSM Technical Information' for Seismic approvals available per part, available in the link below: https://sestofasteners.co.nz/products/screwbolt-hex-stainless-steel-1?_pos=3&_sid=b0d13ac43&_ss=r
 - TOGE TSM range features quick and safe installation and high load capacities in both cracked and non-cracked concrete with undercut load transmission. The TSM can be easily removed and does not leave residue or metal components in the drilled hole. Loads can be achieved immediately upon installation.
 - Made in Germany.
 - TOGE TSM Bolts have been ETA assessed (ETA-15/0514 of 28 May 2019) for use in cracked and non-cracked concrete.
 - Screw anchors give a positive connection that is free of expansion pressure in most base materials lending them great close-to-edge fixing characteristics.
 - Suitable for non-structural fastening of services including electrical, plumbing, HVAC and fire.
 - Seismic performance at shallow embedment - no risk of drilling through reinforcing mesh or pre-tensioned wires.
 - Compatible with ICCONS Design PRO and DesignFIX engineering software.
 - Proprietary sizes are available for suspended ceiling applications: compliant with the latest updated Suspended Ceiling Standard (AS/NZA 2785:2020). Refer to document 'AS2785-2020 Suspended Ceiling Update' for more information regarding the new Suspended Ceilings Standard, available in the link above.
 - AS/NZS2785:2020 was released to update standard AS/NZS2785:2000, and aligns with standard AS5216:2018 Design of post-installed and cast-in fastenings in concrete.
 - B2 Durability: Performance clauses B2.2
 - Available in carbon steel zinc clear finish, and stainless steel 316 A4.
 - Designed for medium duty load performance.
 - Shallow anchor embedment does not hit rebar.
 - New notches at the screw tip for easier setting, reduced torque and reduced concrete spalling.
 - TOGE TSM IM Threaded Rod Hanger Screws have been ETA tested for performance capacities in 32 MPA concrete. Values for tensile design resistance and shear design resistance in cracked and non-cracked concrete varies based on part dimensions and other factors. Refer to document 'Toge TSM Technical Information' for a summary of this data (page 8), available in the link below: https://sestofasteners.co.nz/products/screwbolt-hex-stainless-steel-1?_pos=3&_sid=b0d13ac43&_ss=r
 - Refer to document 'Toge TSM ETA Approval - Seismic Approval' for the full ETA-15/0514 report, available in the link above.
 - C2 Prevention of Fire: Performance clause C2.1
 - TOGE TSM IM Bolts are fire rated to R20 - R120 Fire resistance.
 - F2 Hazardous Building Materials: Performance clause F2.3.1
 - TOGE TSM Bolts are safe when handled.
 - Done and Dustless certified: suitable for use with HELLER Set-Safe DR Hollow Drill Bit (see page 8, document 'Toge TSM Technical Information' in the link as above).
 - Good judgment, protective equipment and care is required when drilling into concrete to mitigate the risk of silicosis.
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Limitations on the use of the building product:

- Impact screwdriver maximum torque capacity, excessive torque during installation may damage the anchor. Training, expertise and good judgment is required. Always adhere to anchor installation torque guidelines. Refer to document 'Toge TSM Technical Information' for torque values, available in the link below:
https://sestofasteners.co.nz/products/screwbolt-hex-stainless-steel-1?_pos=3&_sid=b0d13ac43&_ss=r
- C1 Seismic assessment (Carbon steel and stainless steel) only valid for the following embedment depths: TSM06 - 40mm + 55mm / TSM08 - 65mm / TSM10 - 55mm + 85mm / TSM12 - 100mm / TSM14 - 115mm. C2 Seismic assessment (Carbon steel) only valid for the following embedment depths: TSM08 - 65mm / TSM10 - 85mm / TSM12 - 100mm / TSM14 - 115mm
- Note for TOGE TSM Performance values: The TSM high performance anchor may be used in applications subject to static or quasi-static loading in reinforced or unreinforced normal weight concrete of strength classes C20/25 - C50/60. The TSM high performance anchor may be used in cracked or non-cracked concrete. For specific design information including minimum edge and anchor spacing information please refer to ETA-15/0514.C1 and C2 Seismic design loads have been derived using AS 5216:2021 / EN 1992-4:2018 & TR049 ($agap= 1.0$). Performance data in the above table has been calculated using the relevant published ETA and based on single anchor installation at characteristic spacing and edge distance parameters. * C1 valid for carbon steel and stainless steel TSM. *C2 valid for carbon steel TSM ONLY.

Design requirements that would support the use of the building product:

TOGE TSM Screw-bolts have been designed for use in the following applications:

- Structural fixings in cracked and uncracked concrete
- Tunnel fit out
- Cable tray support systems
- Seismic bracing of MEP systems
- Fastening steel strut channel and support straps for MEP
- Facade structures
- Guard rails
- Bollards and protective barriers
- Machinery and plant equipment
- Stadium and theatre seating
- Acoustic barriers
- Balustrades and hand rails
- Scaffolding ties
- Formwork
- Plumbing and fire services
- Steel frame construction
- Timber frame construction
- Glazing, windows and storefronts
- Racking and shelving
- Fixings wood structures in concrete

Features that support use:

- National Code Compliant (NCC)
 - ETA Approved
 - Cracked Concrete Approval
 - Seismic C1 Approval (only applicable to sizes greater than 6mm diameter)
 - Fire Rated
 - CE Certification
 - High load performance
 - Suitable for overhead applications
 - Removable
 - Available in Hex, countersunk and pan head variations
 - Available in Zinc clear and 316 stainless steel variants
 - Ideal for close-to-edge applications due to minimal expansion force.
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Installation requirements:

Installation steps:

- 1a. With the correct diameter drill bit, drill a hole to a depth of at least one anchor diameter deeper than required embedment OR
- 1b. Alternatively, use a Heller Set-Safe DE Hollow Drill Bit which vacuums out the dust.
2. Clean dust and other material from the hole.
3. Install with either a socket or cordless impact driver. Apply pressure against the fixing and rotate to engage the first thread.
4. Continue to tighten the anchor until flanged head is firmly seated against fixture. Be sure not to over torque the anchor.
5. Installation complete!

Maintenance requirements:

N/A, no on-going maintenance required.

Is the building product subject to warning or ban under section 26?:

No

