Deutsches Institut für Bautechnik

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Approval body for construction products and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and Laender Governments

Designated according to Article 29 of Regulation (EU) No 305/2011 and member of EOTA (European Organisation for Technical Assessment)

European Technical Assessment ETA-11/0290 of 30 September 2016

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the European Technical Assessment:	Deutsches Institut für Bautechnik
Trade name of the construction product	TOGE Spring Anchor TS-6
Product family to which the construction product belongs	Deformation controlled expansion anchor made of galvanised steel for multiple use for non-structural applications in concrete
Manufacturer	TOGE Dübel GmbH & Co. KG Illesheimer Straße 10 90431 Nürnberg DEUTSCHLAND
Manufacturing plant	TOGE Dübel GmbH & Co. KG
This European Technical Assessment contains	9 pages including 3 annexes which form an integral part of this assessment
This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of	Guideline for European technical approval of "Metal anchors for use in concrete", ETAG 001 Part 6: "Anchors for multiple use for non-structural applications", August 2010, used as European Assessment Document (EAD) according to Article 66 Paragraph 3 of Regulation (EU) No 305/2011.

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Specific Part

1 Technical description of the product

The TOGE Spring Anchor TS-6 is an anchor made of galvanized steel which is placed into a drilled hole and anchored by deformation-controlled expansion.

Product and product description is given in Annex A.

2 Specification of the intended use in accordance with the applicable European Assessment Document

The performances given in Section 3 are only valid if the anchor is used in compliance with the specifications and conditions given in Annex B.

The verifications and assessment methods on which this European Technical Assessment is based lead to the assumption of a working life of the anchor of at least 50 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

3 Performance of the product and references to the methods used for its assessment

3.1 Mechanical resistance and stability (BWR 1)

The essential characteristics regarding mechanical resistance and stability are included under the Basic Works Requirement Safety in use.

3.2 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	Anchorages satisfy requirements for Class A1
Resistance to fire	No performance assessed

3.3 Safety in use (BWR 4)

Essential characteristic	Performance
Characteristic resistance for tension and shear loads	See Annex C 1

4 Assessment and verification of constancy of performance (AVCP) system applied, with reference to its legal base

In accordance with guideline for European technical approval ETAG 001, April 2013 used as European Assessment Document (EAD) according to Article 66 Paragraph 3 of Regulation (EU) No 305/2011 the applicable European legal act is: [97/161/EC].

The system to be applied is: 2+

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable European Assessment Document

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited at Deutsches Institut für Bautechnik.

Issued in Berlin on 30 September 2016 by Deutsches Institut für Bautechnik

Andreas Kummerow
p. p. Head of Department

beglaubigt:
Tempel

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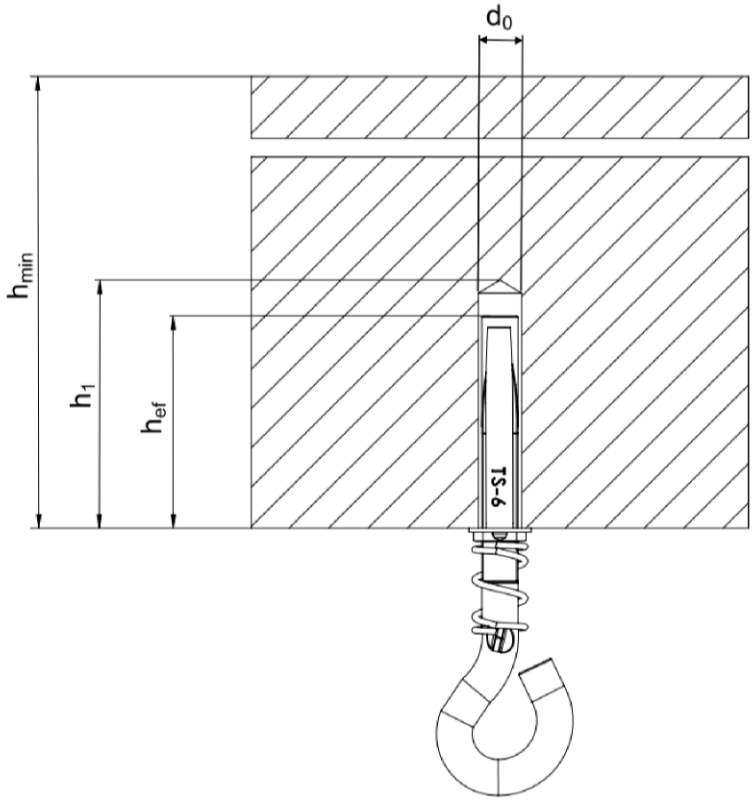
product and installation condition

installed anchor



h_{ef}	=	effective anchorage depth
h_1	=	depth of the drill hole
h_{min}	=	thickness of member

TOGE Spring Anchor TS-6

Product description

Installation conditions

Annex A 1

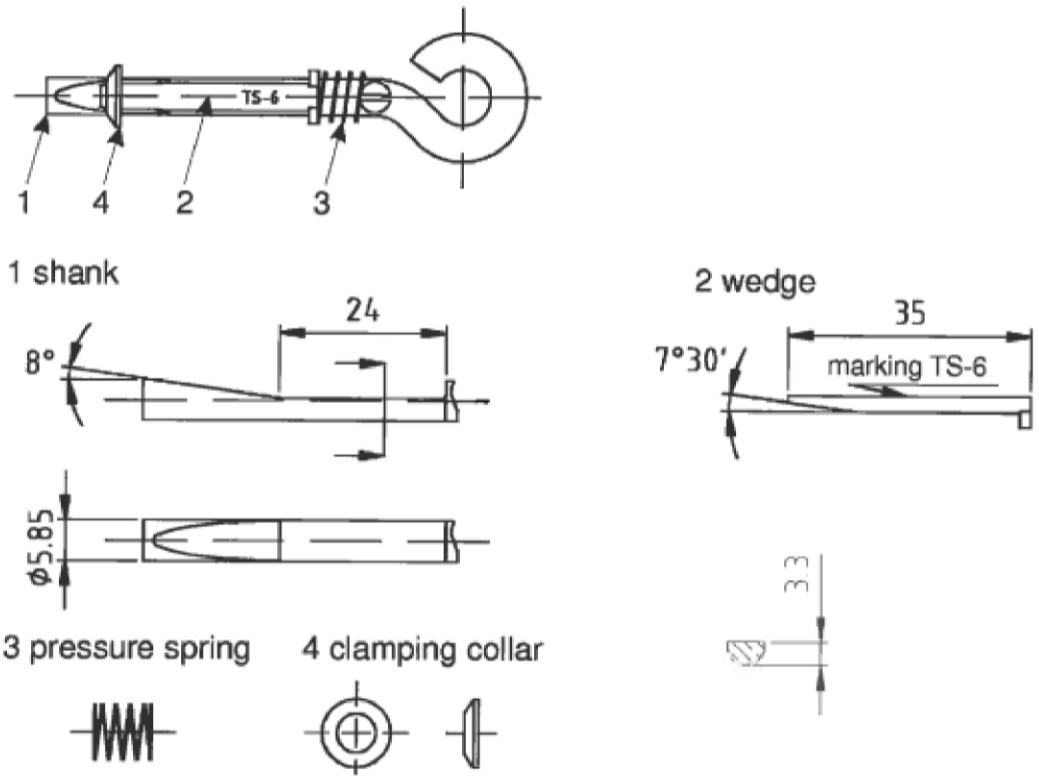


Table A 1: Materials

Material			
Steel EN 10263-2 galvanized according EN ISO 4042			
nominal characteristic steel yield strength	f_{yk}	[N/mm²]	150
nominal characteristic steel ultimate strength	f_{uk}	[N/mm²]	300

Table A 2: Dimensions

Anchorsize		TS-6
Length of the wedge	[mm]	35
Length of the shaft	[mm]	85

TOGE Spring Anchor TS-6

Product description

Material and variants

Annex A 2

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Intended use

Anchorages subject to:

- static and quasi static loads

Base materials:

- reinforced and unreinforced concrete according to EN 206-1:2000
- strength classes C20/25 to C50/60 according to EN 206-1:2000
- cracked and uncracked concrete
- only for multiple use of non structural applications

Use conditions (Environmental conditions):

- anchorage subject to dry internal conditions

Design:

- Anchorages are designed under the responsibility of an engineer experienced in anchorages and concrete work.
- Verifiable calculation notes and drawings are prepared taking account of the loads to be anchored. The position of the anchor is indicated on the design drawings (e.g. position of the anchor relative to reinforcement or to supports, etc.).
- Anchorages under static or quasi-static actions are designed for design method C in accordance with:
  - ETAG 001, Annex C, Edition August 2010
  - CEN/TS 1992-4:2009.

Installation:

- Hammer drilling only.
- Anchor installation carried out by appropriately qualified personal and under the supervision of the person responsible for technical matters of the site.

TOGE Spring Anchor TS-6	Annex B 1
Intended use Specifications	

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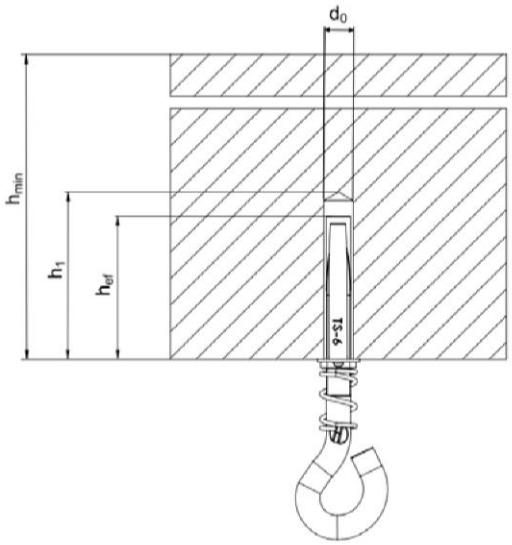
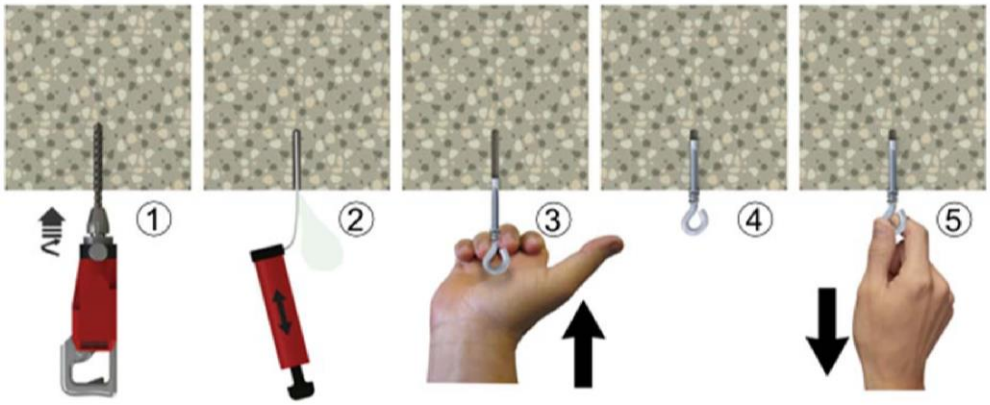
Table B 1: Installation parameters

Anchorsize				TS-6
nominal drill bit diameter	d_0		[mm]	6,0
cutting diameter of drill bit	d_{cut}	≤	[mm]	6,40
depth of drill hole	h_1	≥	[mm]	40
effective anchorage depth	h_{ef}	≥	[mm]	33
Minimum thickness of member	h_{min}		[mm]	80
Minimum edge distance	c_{min}		[mm]	100
Minimum spacing	s_{min}		[mm]	200



Installation Instructions



TOGE Spring Anchor TS-6

Intended use

Installation parameters

Annex B 2

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Table C 1: Characteristic values for design method C according ETAG 001 Annex C or for design method C according CEN/TS 1992-4

Anchorsize			**TS-6**
For all load directions and for all failures			
Characteristic resistance in cracked and uncracked concrete C20/25 to C50/60	F_{Rk}	[kN]	1,1
Edge distance	$c_{cr,N} = c_{min} \geq$	[mm]	100
Spacing	$s_{cr,N} = s_{min} \geq$	[mm]	200
Partial safety factor	γ_2 [1] = γ_{inst} [2]	[-]	1,0

[1] Parameter relevant only for design according to ETAG 001, Annex C

[2] Parameter relevant only for design according to CEN/TS 1992-4:2009

TOGE Spring Anchor TS-6

Performances
Characteristic values for design method C according to ETAG 001 or design method C according to CEN/TS 1992-4

Annex C 1