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Authorised and notified according
to Article 29 of the Regulation (EU)
No 305/2011 of the European
Parliament and of the Council of 9
March 2011

MEMBER OF EOTA



European Technical Assessment ETA-20/0537 of 2024/02/29

I General Part

Technical Assessment Body issuing the ETA and designated according to Article 29 of the Regulation (EU) No 305/2011: ETA-Danmark A/S

Trade name of the construction product:

TB-7 Anchor

Product family to which the above construction product belongs:

Mechanical fasteners for use in non-cracked concrete sizes M8 to M16

Manufacturer:

SCCELL-IT
28, Rue Paul Dubrule
FR-59810 Lesquin
Internet www.scellit.com

Manufacturing plant:

SCCELL-IT
Manufacturing plant 12

This European Technical Assessment contains:

12 pages including 7 annexes which form an integral part of the document

This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of:

EAD 330232-00-0601; Mechanical fasteners for use in concrete

This version replaces:

The ETA with the same number issued on 2021-05-03

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II SPECIFIC PART OF THE EUROPEAN TECHNICAL ASSESSMENT

1 Technical description of product and intended use

Technical description of the product

The TB-7 Anchor is a torque-controlled expansion anchor made of galvanized steel. The anchor is installed in a drilled hole and anchored by torque-controlled expansion.

An illustration of the product is given in Annex A1.

The characteristic material values, dimensions and tolerances of the anchors not indicated in Annexes shall correspond to the respective values laid down in the technical documentation of this European Technical Assessment.

The anchors are intended to be used with embedment depth given in Annex B2, Table B1. The intended use specifications of the product are detailed in the Annex B1.

2 Specification of the intended use in accordance with the applicable European Assessment Document (hereinafter EAD)

The performances given in Section 3 are only valid if the anchor is used in compliance with the specifications and conditions given in Annex B1.

The provisions made in this European Technical Assessment are based on an assumed intended working life of the anchor of 50 years.

The indications given on the working life cannot be interpreted as a guarantee given by the producer or Assessment Body, 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 Characteristics of product

Mechanical resistance and stability (BWR 1):

The essential characteristics are detailed in the Annex from C1 to C2.

Safety in case of fire (BWR 2):

No performance assessed

Safety in use (BWR4):

For basic requirement Safety in use the same criteria are valid for Basic Requirement Mechanical resistance and stability (BWR1).

Other Basic Requirements are not relevant.

3.2 Methods of assessment

The assessment of fitness of the anchor for the intended use in relation to the requirements for mechanical resistance and stability and safety in use in the sense of the Basic Works Requirements 1 and 4 has been made in accordance with EAD 330232-01-0601; Mechanical fasteners for use in concrete.

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

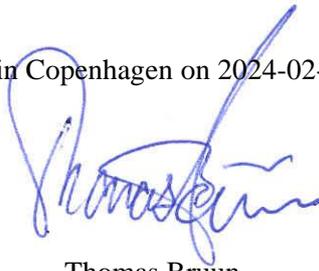
4.1 AVCP system

According to the decision 1996/582/EC of the European Commission, the system(s) of assessment and verification of constancy of performance (see Annex V to Regulation (EU) No 305/2011) is 1.

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

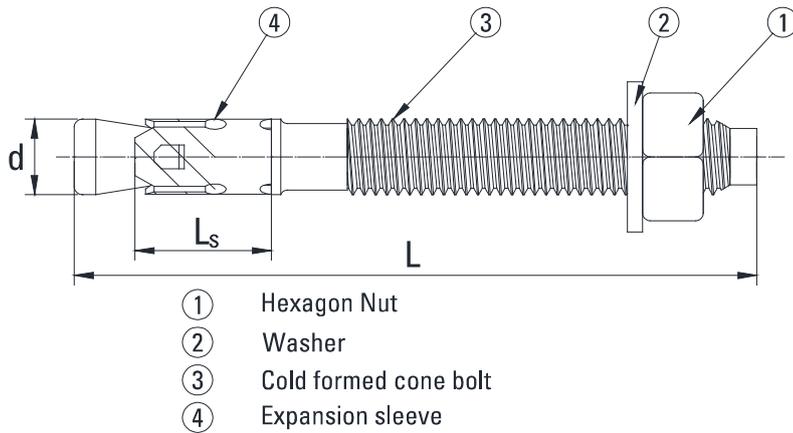
Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited at ETA-Danmark prior to CE marking.

Issued in Copenhagen on 2024-02-29 by

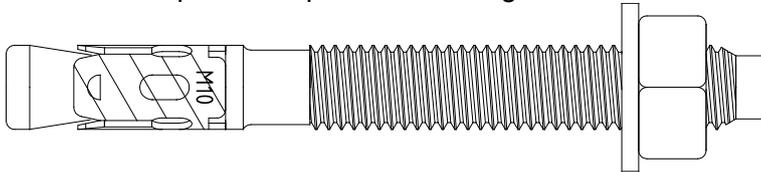


Thomas Bruun
Managing Director, ETA-Danmark

Figure A1 TB-7 Anchor



Example of the product marking:



Marking on expansion sleeve
 M10 thread size

TB-7 Anchor	Annex A1
Product description Characteristics of the product	of European Technical Assessment ETA-20/0537

Table A1: Dimensions

Anchor size			M8	M10	M12	M16
Anchor diameter	d	mm	8	10	12	16
Length of anchor	min. L	mm	65	75	90	115
	max. L	mm	130	150	180	220
Fixture thickness	min. t _{fix}	mm	5	5	5	5
	max. t _{fix}	mm	L-60	L-70	L-95	L-110
Length of clip	L _s	mm	15,4	18,4	21,5	25,3
Wrench across flat	DIN SW	mm	13	17	19	24
	ISO SW	mm	13	16	18	24

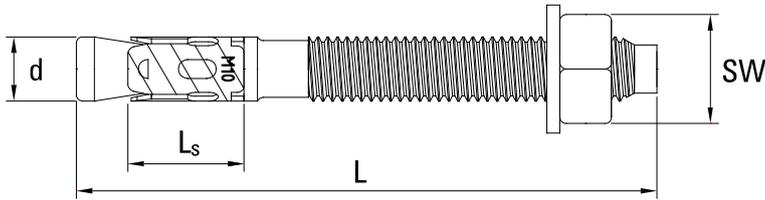


Table A2: Materials

Designation	Material	Protection
Threaded bolt	Cold form steel	Galvanized ISO 4042 A2
Expansion sleeve	Carbon steel strips	Galvanized ISO 4042 A2
Hexagonal nut	Carbon Steel Class 6 min. DIN 267-4 or Class 6 min. ISO 898-2	Galvanized ISO 4042 A2
Washer	Carbon steel strips	Galvanized ISO 4042 A2

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Product description Materials	

Use:

The anchors are intended to be used for anchorages for which requirements for mechanical resistance and stability and safety in use in the sense of the Basic Requirements 1 and 4 of Regulation 305/2011 (EU) shall be fulfilled and failure of anchorages made with these products would compromise the stability of the works, cause risk to human life and/or lead to considerable economic consequences.

Anchorage subject to:

Static and quasi-static loads.

Base material:

- Reinforced or unreinforced normal weight concrete of strength class C20/25 at minimum to C50/60 at maximum according to EN 206-1.
- Non-cracked concrete: sizes from M8 to M16.

Use conditions (environmental conditions):

- Dry internal conditions.

Design:

- Anchorages are designed under the responsibility of an engineer experienced in anchorages and concrete works.
- Verifiable calculation notes and drawings are prepared taking account of the loads to be transmitted. 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 and quasi-static loads are designed in accordance with EN 1994-4.

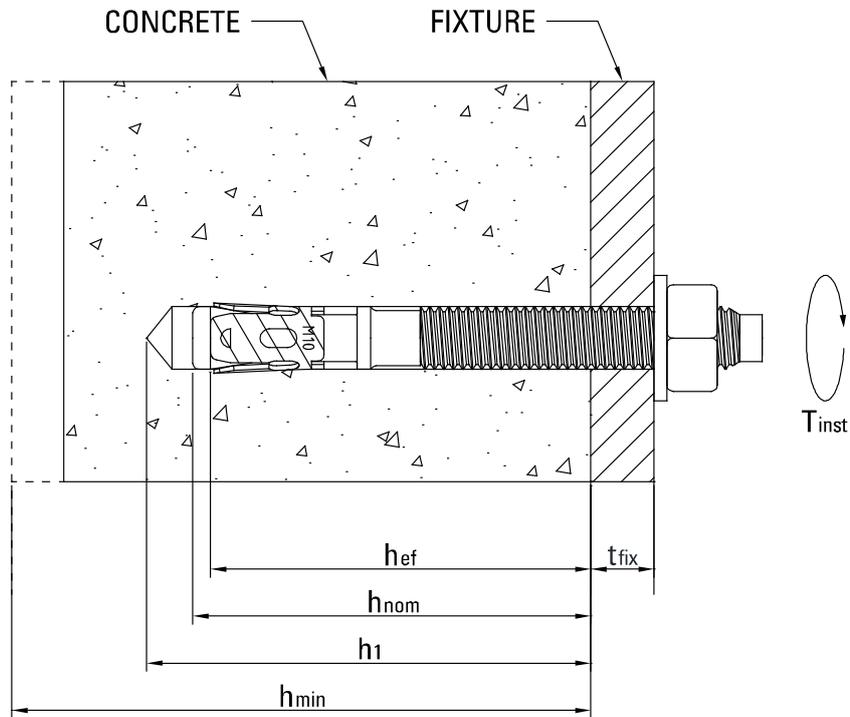
Installation:

- Fastener installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site.
- Fastener installation in accordance with the manufacturer's specifications and drawings and using the appropriate tools.
- Check before placing the fastener to ensure that the strength class of the concrete, in which the fastener is to be placed, is identical with the values which the characteristic loads apply.
- Check of concrete being well compacted, e.g. without significant voids.
- Edge distances and spacings not less than the specified values without minus tolerances.
- Positioning of the drill holes without damaging the reinforcement.
- In case of aborted hole: new drilling at a minimum distance away of twice the depth of the aborted hole or smaller distance if the aborted drill hole is filled with high strength mortar and if under shear or oblique tension load it is not in the direction of load application.
- Hole shall be clear.
- Fastener installation such that the effective anchorage depth is complied with: the compliance is ensured if the thickness of the fixture is not larger than the maximum values given in Annex B2.
- Application of the torque moment given in Annex B1 using a calibrated torque wrench.
- Anchorages under static and quasi-static loads are designed in accordance with EN 1992-4

TB-7 Anchor	Annex B1 of European Technical Assessment ETA-20/0537
Intended use – Specification	

Table B1: Installation parameters

Anchor size			M8	M10	M12	M16
Nominal drill hole diameter	$\varnothing d_o$	mm	8	10	12	16
Depth of drill hole	$h_1 \geq$	mm	55	70	85	105
Embedment depth in concrete	h_{nom}	mm	48	59	76	90
Effective anchorage depth	h_{ef}	mm	40	50	65	80
Diameter of clearance hole in the fixture	$\varnothing d_f$	mm	9	12	14	18
Installation torque moment	T_{inst}	Nm	15	25	50	100
Minimum thickness of base material	h_{min}	mm	100	100	120	200
Minimum spacing	s_{min}	mm	35	70	90	160
Minimum edge distance	c_{min}	mm	35	70	80	160



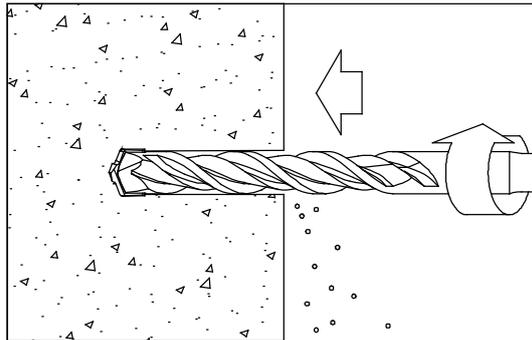
TB-7 Anchor

Intended use – installation parameters

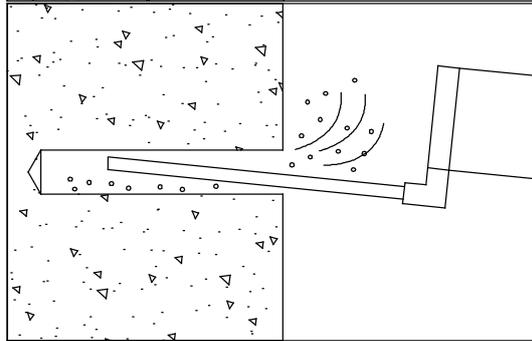
Annex B2

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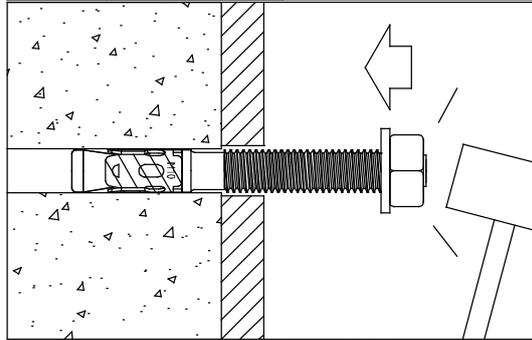
Step 1



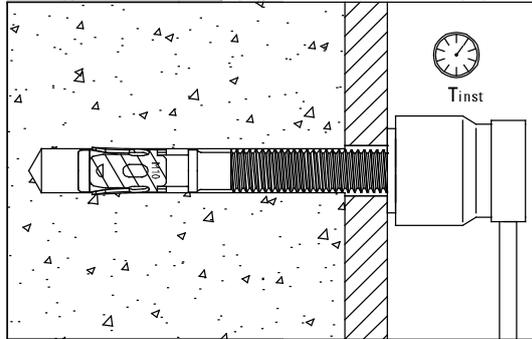
Step 2



Step 3



Step 4



TB-7 Anchor

Installation instruction

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Table C1: Design method A, characteristic tension load values

Anchor size		M8	M10	M12	M16	
Steel failure						
Characteristic resistance	$N_{Rk,s}$ [kN]	12,2	19,3	26,1	54,7	
Modulus of elasticity	E_s [N/mm ²]	210000				
Partial safety factor	$\gamma_{Ms}^{1)}$	1,4				
Pullout failure						
Characteristic resistance in non-cracked concrete C20/25	$N_{Rk,p}$ [kN]	11	14	24	34 ³⁾	
Installation safety factor	$\gamma_{inst}^{2)}$	1,0				
Increasing factors for $N_{Rk,p}$	Ψ_c	C30/37	1,08	1,18	1,08	1,22
		C40/50	1,15	1,32	1,15	1,41
		C50/60	1,20	1,44	1,20	1,55
Concrete cone failure and splitting failure						
Effective anchorage depth	h_{ef} [mm]	40	50	65	80	
Factor for non-cracked concrete	$k_l^{2)}$	11,0				
Spacing	$s_{cr,N}$ [mm]	120	150	195	240	
Edge distance	$c_{cr,N}$ [mm]	60	75	98	120	
Spacing	$s_{cr,sp}$ [mm]	140	160	230	320	
Edge distance	$c_{cr,sp}$ [mm]	70	80	115	160	
Installation safety factor	$\gamma_{inst}^{2)}$	1,0				
¹⁾ in absence of other national regulations ²⁾ parameter for design according to EN 1992-4 ³⁾ the pullout failure is not decisive. The value reported is determined by limiting the pullout resistance by the characteristic resistance of a fastener in case of concrete cone failure, evaluated in accordance with EN 1992-4 and then rounded down.						

Table C2: Displacements under tension loads

Anchor size		M8	M10	M12	M16
Tension load	N [kN]	5,2	6,7	11,4	16,2
Displacement	δ_{NO} [mm]	0,3	0,5	0,3	1,4
	$\delta_{N\infty}$ [mm]	1,3	2,1	1,5	6,1

TB-7 Anchor

Characteristic resistance under tension loads. Displacements

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Table C3: Design method A, Characteristic shear load values

Anchor size		M8	M10	M12	M16
Steel failure without lever arm					
Characteristic resistance	$V_{Rk,s}^{2)}$ [kN]	8,3	12,6	18,0	38,8
Ductility factor	$k_7^{2)}$	0,8	0,8	0,8	0,8
Partial safety factor	$\gamma_{Ms}^{1)}$	1,5			
Steel failure with lever arm					
Characteristic bending resistance	$M_{Rk,s}^0$ [Nm]	16	34	53	153
Partial safety factor	$\gamma_{Ms}^{1)}$	1,5			
Concrete pry-out failure					
Concrete pry-out failure factor	$k_8^{2)}$	1,0			2,0
Partial safety factor	$\gamma_{Mc}^{1)}$	1,5			
Concrete edge failure					
Effective length of anchor under shear loading	l_f [mm]	40	50	65	80
Effective diameter of anchor	d_{nom} [mm]	8	10	12	16
Partial safety factor	$\gamma_{Mc}^{1)}$	1,5			

¹⁾ in the absence of other national regulations

²⁾ parameter for design according to EN 1992-4

Table C4: Displacements under shear loads

Anchor size		M8	M10	M12	M16
Shear load	V [kN]	3,95	5,99	8,55	18,5
Displacement	δ_{v0} [mm]	1,35	2,05	1,24	3,3
	$\delta_{v\infty}$ [mm]	2,02	3,08	1,87	5,0

TB-7 Anchor

Characteristic resistance under shear. Displacements

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