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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-21/0150 of 2021/02/10

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:

TAB H and TAB F Concrete screws

Product family to which the above construction product belongs:

Mechanical fasteners for use in non-cracked concrete

Manufacturer:

Trutek Fasteners Polska Sp z o.o.
Al. Krakowska 38
Janki
PL-05-090 Raszyn
Tel. +48 22 701 93 24
Fax +48 22 100 58 82
Internet www.trutek.com.pl

Manufacturing plant:

Trutek Fasteners Polska Sp z o.o.
Factory Plant no 8

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:

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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

TAB H and TAB F Concrete screws are concrete screws made of galvanized steel. The anchor is installed in a drilled hole and anchored by deformation-controlled expansion.

An illustration of the product is given in Annex A.

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 B, 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 B.

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):

The essential characteristics are detailed in the Annex from C3.

Hygiene, health and the environment (BWR3):

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

4 Assessment and verification of constancy of performance (AVCP)

4.1 AVCP system

According to the decision 96/582/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 foreseen 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

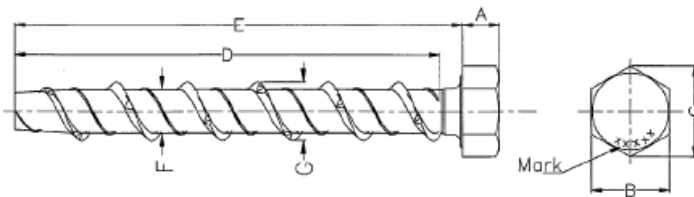
Issued in Copenhagen on 2021-02-10 by



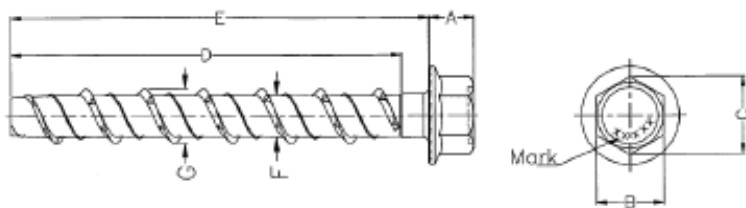
Thomas Bruun
Managing Director, ETA-Danmark

Figure A1 TAB H and TAB F Concrete screws concrete screw and head types

TAB H - Anchor type with hexagon head



TAB F - Anchor type with washer and hexagon head

**Table A1. Dimensions of the anchor TAB H**

Diameter [mm]	A h [mm]	B l ₁ [mm]	C l ₂ [mm]	D L _{cut} [mm]		E L _s [mm]	F d _k [mm]	G d _{cut} / d _s [mm]
				< 100	N / A			
Ø 6	4,46 ± 0,24	9,88 ± 0,125	11,20 ± 0,20	< 100	N / A	≤ 120,00 ± 2,00	5,45 ± 0,20	7,50 ± 0,15
				≥ 100	95,00 ± 2,00			
Ø 8	5,30 ± 0,24	14,90 ± 0,15	16,90 ± 0,20	< 100	N / A	≤ 310,00 ± 2,00	7,45 ± 0,25	9,70 ± 0,15
				≥ 100	95,00 ± 2,00			
Ø 10	6,00 ± 0,29	16,90 ± 0,15	19,30 ± 0,20	< 100	N / A	≤ 320,00 ± 2,00	9,50 ± 0,20	11,80 ± 0,15
				≥ 100	95,00 ± 2,00			
Ø 12	7,50 ± 0,18	18,90 ± 0,15	21,60 ± 0,20	< 100	N / A	≤ 310,00 ± 2,00	11,50 ± 0,20	14,25 ± 0,15
				≥ 100	95,00 ± 2,00			

Table A2. Dimensions of the anchor TAB F

Diameter [mm]	A h [mm]	B l ₁ [mm]	C l ₂ [mm]	D L _{cut} [mm]		E L _s [mm]	F d _k [mm]	G d _{cut} / d _s [mm]
				< 100	N / A			
Ø 6	6,00 Max	9,80 + 0,20 - 0,00	11,05 Min	< 100	N / A	≤ 120,00 ± 2,00	5,45 ± 0,20	7,50 ± 0,15
				≥ 100	95,00 ± 2,00			
Ø 8	8,00 Max	11,75 + 0,25 - 0,00	13,25 Min	< 100	N / A	≤ 310,00 ± 2,00	7,45 ± 0,25	9,70 ± 0,15
				≥ 100	95,00 ± 2,00			
Ø 10	10,00 Max	13,75 + 0,25 - 0,00	15,50 Min	< 100	N / A	≤ 320,00 ± 2,00	9,50 ± 0,20	11,80 ± 0,15
				≥ 100	95,00 ± 2,00			
Ø 12	11,50 Max	16,75 + 0,25 - 0,00	18,90 Min	< 100	N / A	≤ 310,00 ± 2,00	11,50 ± 0,20	14,25 ± 0,15
				≥ 100	95,00 ± 2,00			

TAB H and TAB F Concrete screwsProduct description
Characteristics of the product**Annex A1**
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Figure A2 TAB H and TAB F Concrete screws Installed anchor

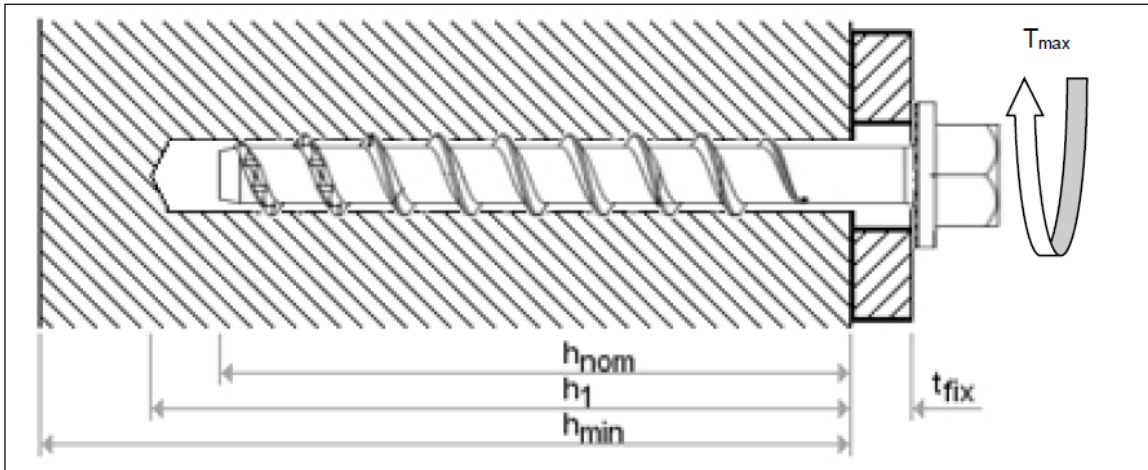


Table A3. Materials

Member	Material
All sizes	Coldformed steel grade 20MnB4 in accordance with table 3 in EN 10263-4 or coldformed steel grade 1022 in accordance with table 3 in ASTM A510. Galvanized

TAB H and TAB F Concrete screws

Product description
Materials

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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.

Anchors subject to:

- Static and quasi-static loads: sizes M6, M8, M10, M12.

Base materials:

- 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 M6, M8, M10, M12.

Temperature range:

The anchors may be used in the following temperature range:

- Normal internal temperature ranges

Use conditions (Environmental conditions):

- The anchors may be used in structures subject to dry internal conditions only.

Installation:

- The anchors may be installed in:
 - Dry concrete: sizes M6, M8, M10, M12.
- Anchor installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site.
- Anchor installation in accordance with the manufacturer's specifications and drawings and using the appropriate tools.
- Check before placing the anchor to ensure that the strength class of the concrete, in which the anchor 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.
- The sequence of the installation is according to the following setting-through installation:
 - o Placing the fixture on the surface of the concrete member.
 - o Make a drill hole by means of hammer drill through the prepared holes of the fixture. The position of drill hole has to be coordinated with reinforcement in order to avoid damaging it. The drill hole must be drilled perpendicular to the surface of the concrete.
 - o The drilled hole must be cleaned from dust.
 - o The installation of the concrete screw has to be carried out automatically.

Proposed design methods:

- 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 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 EOTA Technical Report 055, design method A.

TAB H and TAB F Concrete screws	Annex B1 of European Technical Assessment ETA-21/0150
Intended use – Specification	

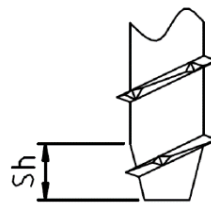
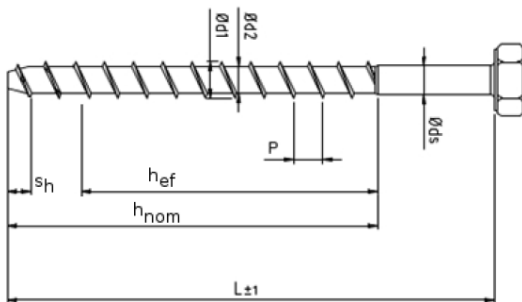
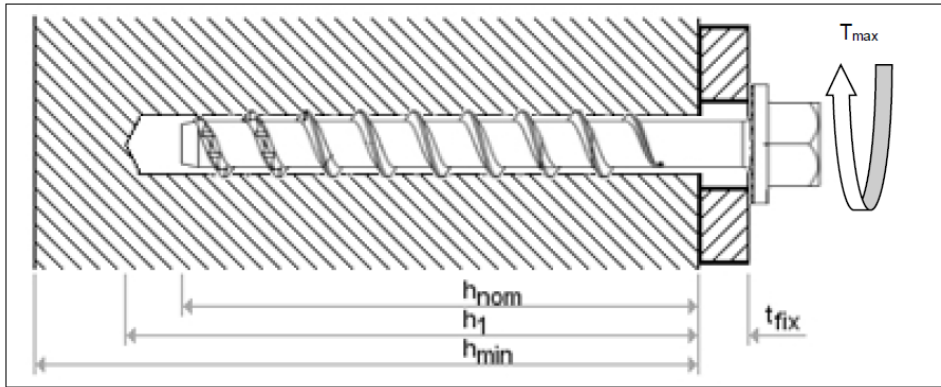


Table B1. Installation parameters

Installation parameters		Ø 6	Ø 8	Ø 10	Ø 12
Nom. drill hole diameter	Ø d ₀ [mm] =	6	8	10	12
Max. Cutting diameter of drill bit	Ø d _{cut} [mm] ≤	6,40	8,45	10,45	12,50
Depth of drill hole	h ₁ [mm] ≥	40	50	60	70
Nominal anchorage depth	h _{nom} [mm] ≥	30	40	50	55
Diameter of clearance hole in the fixture	d _f [mm] ≤	9	12	14	16
Thickness of fixture	t _{fix} [mm] ≤	90	270	270	255
Installation moment	T _{inst} [Nm] =	SIW 22-A (1/2 with 200 Nm) ¹⁾			

¹⁾ Installation with other impact screw driver of equivalent power is possible

		Ø 6	Ø 8	Ø 10	Ø 12
Minimum thickness of member	h _{min} [mm] =	120	120	130	140
Minimum edge distance	c _{min} [mm] =	50	50	100	100
Minimum spacing	s _{min} [mm] =	45	50	60	70

TAB H and TAB F Concrete screws

Intended use – installation parameters

Annex B2

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Table C1: Design method A, characteristic tension load values

			$\varnothing 6$	$\varnothing 8$	$\varnothing 10$	$\varnothing 12$
<i>Steel failure</i>						
Resistance to steel failure	$N_{Rk,s}$	[kN]	24,26	45,33	73,72	108,02
Partial safety factor under tension load	γ_{Ms}	[-]	1.40	1.40	1.40	1.40
<i>Pull-out failure</i>						
Resistance to pull-out failure in non-cracked concrete C20/25	$N_{Rk,ucr}$	[kN]	3.5	5.0	6.5	12.0
Increase factors for cracked and non-cracked concrete	ψ_c		1.48	1.17	1.37	1.52
<i>Concrete cone failure</i>						
Partial safety factor in non-cracked concrete	$k_{ucr,N}$	[-]	11.0			
Effective embedment depth	h_{ef}	[mm]	18	25	31	32
Edge distance	$c_{cr,N}$	[mm]	1.5xh _{ef}			
Spacing	$s_{cr,N}$	[mm]	3xh _{ef}			
Partial safety factor	$\gamma_{Mp} = \gamma_{Mc}$	[-]	1.8			
<i>Robustness</i>						
Installation safety factor	γ_{inst}	[-]	1.2			
<i>Minimum edge distance and spacing</i>						
Minimum edge distance	c_{min}	[mm]	50	50	100	100
Minimum spacing distance	s_{min}	[mm]	45	50	60	70
Min. thickness of the concrete member	h_{min}	[mm]	120	120	130	140
<i>Edge distance to prevent splitting under load</i>						
	$N^0_{Rk,sp}$	[kN]	3.5	5.0	6.5	12.0
Appropriate edge distance	$c_{cr,sp}$	[mm]	50	50	100	100
<i>Displacements under static and quasi-static loading</i>						
Short time tension displacement	δ_{N0}	[mm]	0.26	0.21	0.26	0.43
Long-time tension displacement	$\delta_{N\infty}$	[mm]	0.43	0.29	0.19	0.20

TAB H and TAB F Concrete screws

Performance for static and quasi-static loads: Resistances

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Table C2: Design method A, Characteristic shear load values

			$\phi 6$	$\phi 8$	$\phi 10$	$\phi 12$
<i>Resistance to steel failure under shear load</i>						
Resistance to shear load without lever arm	$V_{Rk,s}^0$	[kN]	7.5	10.0	17.0	30.0
Resistance to shear load with lever arm	$M_{Rk,s}^0$	[Nm]	19.0	50.0	100.0	185.0
Factor for group fasteners	k_7	[-]	1.0	1.0	1.0	1.0
<i>Resistance to pry-out failure</i>						
Factor for pry-out failure	k_8	[-]	1.0	1.0	1.0	1.0
<i>Resistance to concrete edge failure</i>						
Outside diameter of the fastener relevant for shear loading	d_{nom}	[mm]	6	8	10	12
Effective length of the fastener for transfer of shear load	l_e	[mm]	18	25	31	32
<i>Displacements under static and quasi-static loading</i>						
Short time shear displacement	δ_{V0}	[mm]	2.20	3.65	4.17	5.26
Long-time shear displacement	$\delta_{V\infty}$	[mm]	3.30	5.48	6.26	7.89

TAB H and TAB F Concrete screws

Performance for static and quasi-static loads: Resistances and Displacements

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Table C3: Resistance to fire

No performance assessed

Table C4: Reaction to fire

The screws are made from steel classified as class A1 in accordance with EN 13501-1 and Commission Delegated Regulation 2016/364

TAB H and TAB F Concrete screws	Annex C3 of European Technical Assessment ETA-21/0150
Performance for exposure to fire	