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European Technical Assessment

ETA-20/0526 of 23/06/2020

General Part

Technical Assessment Body issuing the European Technical Assessment	Instytut Techniki Budowlanej
Trade name of the construction product	TMH Ceiling Anchor
Product family to which the construction product belongs	Deformation-controlled expansion anchor for multiple use for non-structural applications in concrete
Manufacturer	Trutek Fasteners Polska Sp. z o.o. Al. Krakowska 38 05-090 Raszyn Poland
Manufacturing plant	Factory Plant No 7
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	European Assessment Document (EAD) 330747-00-0601 "Fasteners for use in concrete for redundant non-structural systems"

This European Technical Assessment is issued by the Technical Assessment Body in its official language. Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document and should be identified as such.

Specific Part

1 Technical description of the product

The TMH Ceiling Anchor size Ø6 is deformation-controlled expansion anchor. The TMH Ceiling Anchor is made of galvanized steel.

The anchor is installed in a drilled hole and anchored by deformation-controlled expansion.

The description of the product is given in Annex A.

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

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

The performances given in this European Technical Assessment are based on an assumed 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 the Technical 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 Performance of the product

3.1.1 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	Anchors satisfy requirements for Class A1
Resistance to fire	See Annex C2

3.1.2 Hygiene, health and the environment (BWR 3)

No performance assessed.

3.1.3 Safety and accessibility in use (BWR 4)

Essential characteristic	Performance
Characteristic resistance in concrete	See Annex C1
Edge distance and spacing	See Annex C1

3.2 Methods used for the assessment

The assessment of the product has been made in accordance with EAD 330747-00-0601.

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

According to Decision 97/161/EC of the European Commission the system 2+ of assessment and verification of constancy of performance applies (see Annex V to Regulation (EU) No 305/2011).

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

Technical details necessary for the implementation of the AVCP system are laid down in the control plan which is deposited at Instytut Techniki Budowlanej.

For type testing the results of the tests performed as part of the assessment for the European Technical Assessment shall be used unless there are changes in the production line or plant. In such cases the necessary type testing has to be agreed between Instytut Techniki Budowlanej and the notified body.

Issued in Warsaw on 23/06/2020 by Instytut Techniki Budowlanej

Anna Panek, MSc.
Deputy Director of ITB

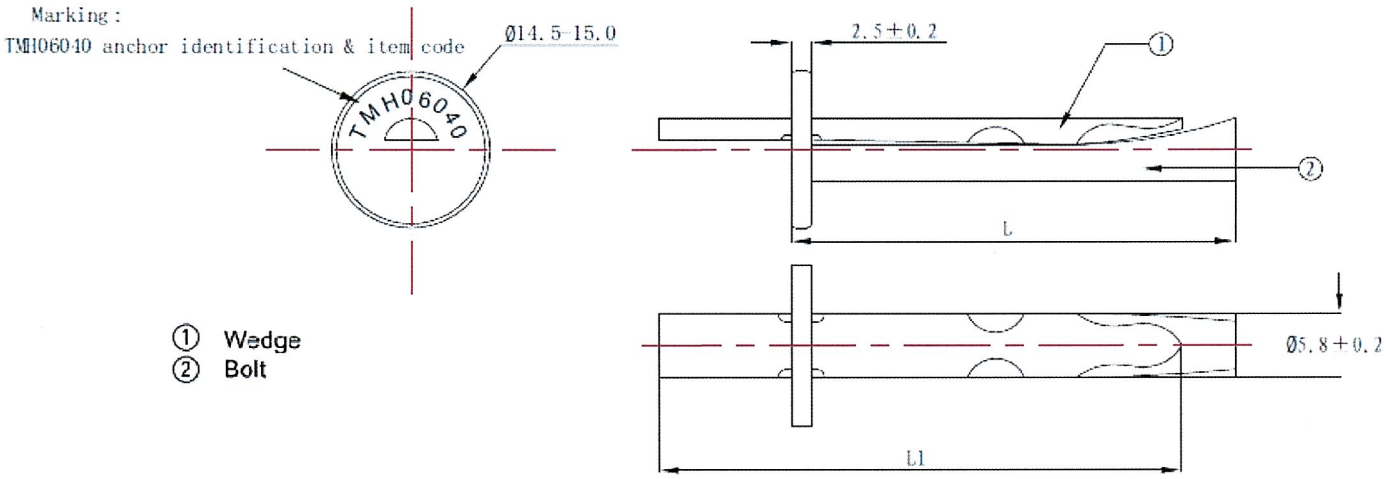


Table A1: Dimensions and material

TMH Ceiling Anchor				**TMH 6×40**	**TMH 6×70**
Anchor size				6	
Anchor diameter		d	mm	5,8 ± 0,2	
Head diameter		D	mm	14,5 - 15,0	
Length of bolt		L	mm	40 ± 1	70 ± 1
Length of wedge		L1	mm	43 ± 1	73 ± 1
Material: Carbon steel	Wedge	f_{uk}	N/mm^2	500	
		f_{yk}	N/mm^2	300	
	Bolt	f_{uk}	N/mm^2	400	
		f_{yk}	N/mm^2	270	
Coating				Zinc coat (≥ 5 µm) acc. to EN ISO 4042	

TMH Ceiling Anchor	**Annex A1** of European Technical Assessment ETA-20/0526
Product description Characteristic of the product	

Specification of intended use

Anchorages subject to:

- Multiple use for non-structural applications.
- Static and quasi-static loads.
- Anchorages with requirements related to resistance to fire.

Base material:

- Reinforced or unreinforced normal weight concrete of strength class C20/25 at minimum to C50/60 at maximum according to EN 206.
- Non-cracked and cracked concrete.

Use conditions (environmental conditions):

- Structures subject to dry internal conditions.

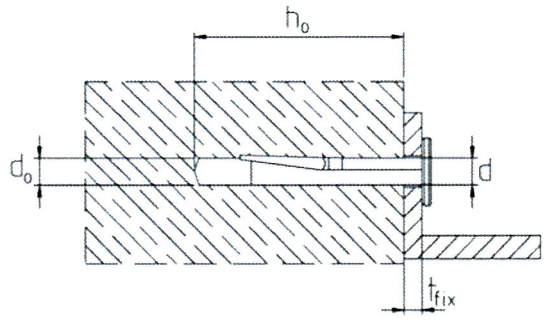
Design:

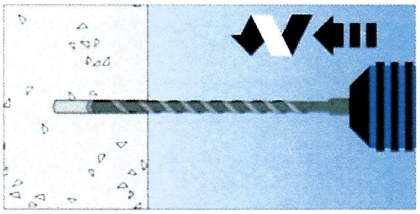
- Anchorages are designed under the responsibility of an engineer experienced in anchorages and concrete work.
- Verifiable calculation notes and drawings are prepared taking account of the loads to be transmitted. The position of the anchor is indicated on the design drawings (e.g. position of the anchor relative to reinforcement or to supports, etc.).
- Anchorages under static and quasi-static loads and under fire exposure are designed in accordance with EN 1992-4:2018.

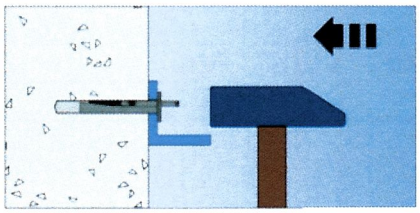
Installation:

- Anchor installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site.
- Use of the anchor only as supplied by the manufacturer without exchanging the components of an anchor.
- Anchor installation in accordance with the manufacturer's specifications and drawings and using the appropriate tools.
- Checks before placing the anchor to ensure that the strength class of the concrete in which the anchor is to be placed is in the range given and is not lower than that of the concrete to 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.
- Anchor installation such that the effective anchorage depth is complied with.
- After installation further turning of the anchor is not possible.
- The head of the anchor is supported on the fixture and is not damaged.
- 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 clean.
- Anchor installation such that the effective setting depth is complied with. This compliance is ensured, if the thickness of the fixture is not larger than the maximum values marked on the anchor
- Anchor expansion by impact on the wedge of the anchor. The anchor is properly set if the wedge is fully dropped in.

TMH Ceiling Anchor	**Annex B1** of European Technical Assessment ETA-20/0526
Intended use Specification	







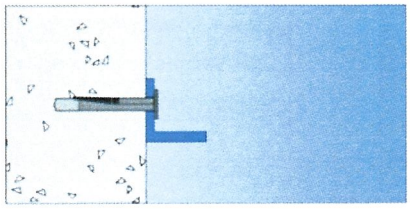


Table B1: Installation parameters

TMH Ceiling Anchor			**TMH 6×40**	**TMH 6×70**
Nominal diameter of drill hole	d_0	mm	6	
Depth of drill hole	$h_0 \geq$	mm	40	
Nominal embedment depth	h_{nom}	mm	30	
Effective embedment depth	h_{ef}	mm	30	
Thickness of the fixture, max.	t_{fix}	mm	5	35
Minimum thickness of member	h_{min}	mm	80	
Minimum edge distance	c_{min}	mm	200	
Minimum spacing	s_{min}	mm	150	

TMH Ceiling Anchor	**Annex B2** of European Technical Assessment ETA-20/0526
Intended use Installation parameters – concrete	

Table C1: Characteristic resistance in concrete class C20/25 to C50/60 acc. to EN 206

TMH Ceiling Anchor			**TMH 6×40** **TMH 6×70**
All load directions			
Characteristic resistance	F^0_{Rk}	[kN]	3,0
Installation safety factor	γ_{inst}	[-]	1,4
Minimum member thickness	h_{min}	[mm]	80
Spacing	s_{cr}	[mm]	200
Edge distance	c_{cr}	[mm]	150
Shear load with lever arm			
Characteristic bending moment	$M^0_{Rk,s}$	[Nm]	6,6
Partial safety factor	$\gamma_{M,s}$	[-]	1,7

Table C2: Characteristic resistance under fire exposure in non-cracked concrete class C20/25 to C50/60 acc. to EN 206

TMH Ceiling Anchor			**TMH 6×40** **TMH 6×70**
Effective embedment depth h_{ef}		[mm]	30
All load directions			
Characteristic resistance $F_{Rk,fi}$ [1)]	R30	[kN]	0,75
	R60	[kN]	0,75
	R90	[kN]	0,75
	R120	[kN]	0,60
Spacing	$s_{cr,fi}$	[mm]	4 x h_{ef}
	s_{min}	[mm]	150
Edge distance	$c_{cr,fi}$	[mm]	2 x h_{ef}
	c_{min}	[mm]	200
The design method covers anchors with a fire attack from one side only. In case of fire attack from more than one side, the edge distance shall be ≥ 300 mm.			

[1)] in the absence of other national regulations a partial safety factor $\gamma_{M,fi}$ = 1,0 is recommended