

Approval body for construction products  
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and  
Laender Governments



## European Technical Assessment

**ETA-12/0032**  
**of 30 April 2014**

### General Part

Technical Assessment Body issuing the  
European Technical Assessment:

Deutsches Institut für Bautechnik

Trade name of the construction product

CAPATECT Type 041

Product family  
to which the construction product belongs

Nailed-in plastic anchor for fixing of external thermal  
insulation composite systems with rendering in concrete  
and masonry

Manufacturer

DAW SE  
Roßdörfer Straße 50  
64372 Ober-Ramstadt  
DEUTSCHLAND

Manufacturing plant

DAW Herstellwerk 10183

This European Technical Assessment  
contains

13 pages including 9 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 "Plastic  
anchors for fixing of external thermal insulation composite  
systems with rendering", ETAG 014, Edition February  
2011,  
used as European Assessment Document (EAD)  
according to Article 66 Paragraph 3 of Regulation (EU)  
No 305/2011.

This version replaces

ETA-12/0032 issued on 8 January 2014

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## Specific Part

### 1 Technical description of the product

The nailed-in anchor CAPATECT Type 041 consists of an anchor sleeve with an enlarged shaft spreading zone subsequently, an insulation plate made of polyethylene, an accompanying specific nail of galvanised steel with a mounting plug made of polyamide or an overmoulding of polyamide. The serrated expanding part of the anchor sleeve is slotted.

The anchor may in addition be combined with the anchor plates T 140 and T 90.

The description of the product 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 anchors is used in compliance with the specifications and conditions given in Annex B.

The verification 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 25 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)

Not applicable.

#### 3.3 Hygiene, health and the environment (BWR 3)

Regarding dangerous substances there may be requirements (e.g. transposed European legislation and national laws, regulations and administrative provisions) applicable to the products falling within the scope of this European Technical Assessment. In order to meet the provisions of Regulation (EU) No 305/2011, these requirements need also to be complied with, when and where they apply.

#### 3.4 Safety in use (BWR 4)

Essential characteristic	Performance
Characteristic resistance	See Annex C 1
Anchor distances and dimensions of members	See Annex B 2
Point thermal transmittance	See Annex C 2
Plate stiffness	See Annex C 2
Displacements	See Annex C 2

**3.5 Protection against noise (BWR 5)**

Not applicable.

**3.6 Energy economy and heat retention (BWR 6)**

Not applicable.

**3.7 Sustainable use of natural resources (BWR 7)**

The sustainable use of natural resources was not investigated.

**3.8 General aspects**

The verification of durability is part of testing the essential characteristics. Durability is only ensured if the specifications of intended use according to Annex B are taken into account.

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

According to Decision 97/463/EC of the Commission of 27 June 1997 (Official Journal of the European Communities L 198 of 25.07.1997, p. 31–32) the system of assessment and verification of constancy of performance (AVCP) (see Annex V and Article 65 Paragraph 2 to Regulation (EU) No 305/2011) given in the following table applies.

Product	Intended use	Level or class	System
Plastic anchors for use in concrete and masonry	For use in systems, such as façade systems, for fixing or supporting elements which contribute to the stability of the systems	—	2+

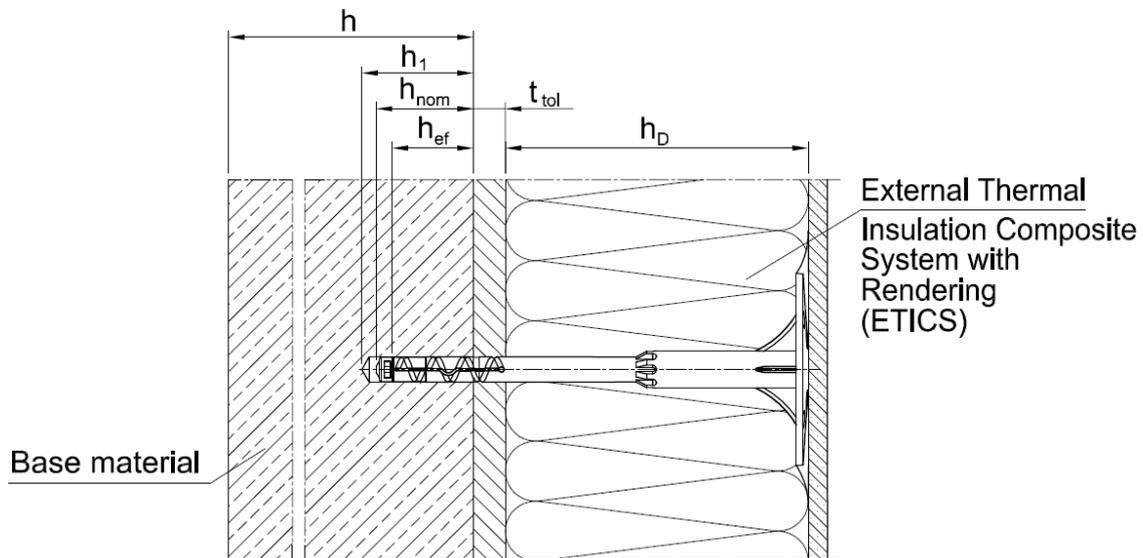
**5 Technical details necessary for the implementation of the AVCP system, as provided in the applicable European Assessment Document**

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 april 2014 by Deutsches Institut für Bautechnik

Dr.-Ing. Karsten Kathage  
Vice-President

*beglaubigt:*  
Aksünger



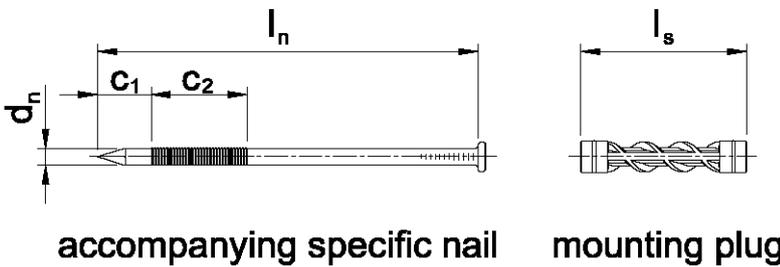
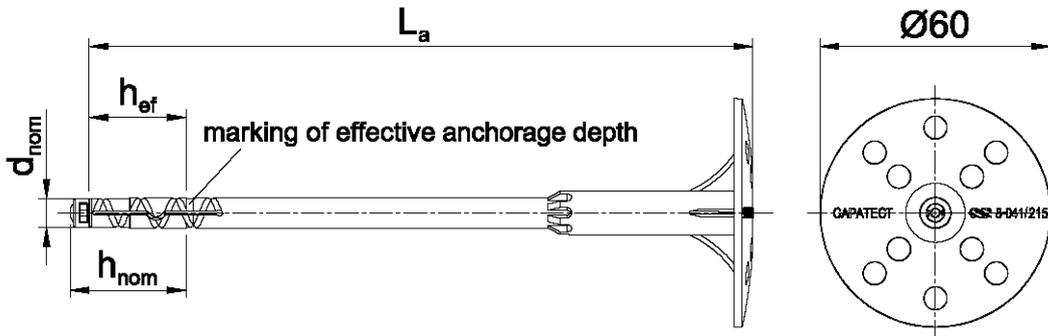
- Legend:
- $h_D$  = thickness of insulation material
  - $h_{ef}$  = effective anchorage depth
  - $h_{nom}$  = overall plastic anchor embedment depth in the base material
  - $h$  = thickness of member (wall)
  - $h_1$  = depth of drilled hole to deepest point
  - $t_{tol}$  = thickness of equalizing layer or non-load-bearing coating

CAPATECT Type 041

**Product description**  
Installed condition

Annex A 1

### CAPATECT 8-041



Marking:  
Identifying mark (CAPATECT)  
Anchor type (8-041)  
Length of anchor (e.g. 175)

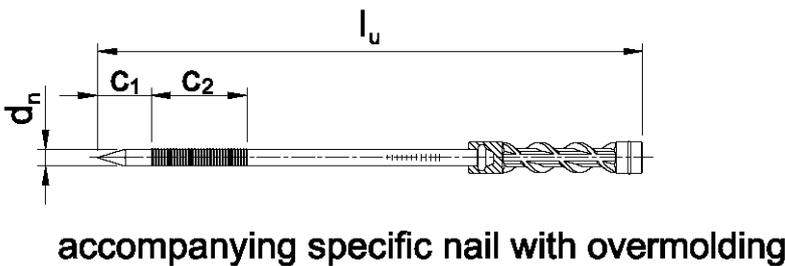


Table A1: Dimensions

Anchor Type	Colour	Anchor sleeve			Mounting plug	Specific nail				
		$d_{nom}$ [mm]	$h_{ef}$ $h_{nom}$ [mm]	min $L_a$ max $L_a$ [mm]		$l_s$ [mm]	$d_n$ [mm]	$c_1$ [mm]	$c_2$ [mm]	min $l_n$ max $l_n$ [mm]
CAPATECT Type 041	orange	8	25 29	95 295	45	4,5	14	25	53 256	99 299

Determination of maximum thickness of insulation  $h_D$  [mm] for CAPATECT Type 041:

$$h_D = L_a - t_{tol} - h_{ef} \quad (L_a = \text{e.g. } 95; t_{tol} = 10)$$

e.g.  $h_D = 95 - 10 - 25 = 60$   
 $h_{Dmax} = 60$

CAPATECT Type 041

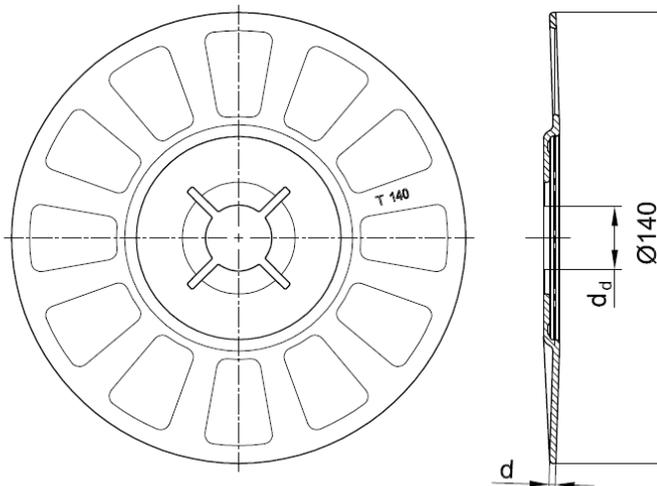
**Product description**  
Marking and dimension of the anchor sleeve  
Expansion element

Annex A 2

**Table A2: Materials**

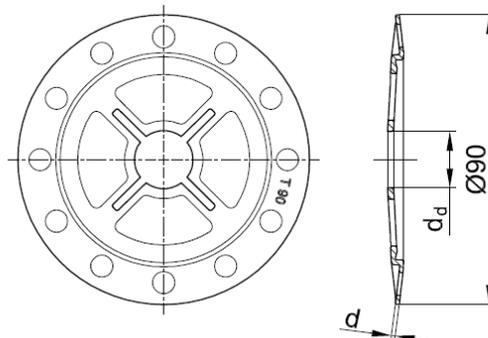
Name	Materials
Anchor sleeve	Polyethylene, PE-HD
Mounting plug / overmoulding	Polyamide, PA GF 50
Specific nail	Steel, electro galvanized $\geq 5 \mu\text{m}$ according to EN ISO 4042:2001-01, blue passivated, $f_{uk} \geq 670 \text{ N/mm}^2$

T 140



T 140	
colour	nature
$d_d$ [mm]	20,0
$d$ [mm]	2,0
Material	<sup>1) 2)</sup>

T 90



T 90	
colour	nature
$d_d$ [mm]	17,5
$d$ [mm]	1,2
Material	<sup>1) 2)</sup>

- <sup>1)</sup> Polyamide, PA 6  
<sup>2)</sup> Polyamide, PA GF 50

CAPATECT Type 041

**Product description**

Materials,  
Slip on plates combined with CAPATECT Type 041

Annex A 3

### Specifications of intended use

**Anchorage subject to:**

- The anchors may only be used for transmission of wind suction loads and shall not be used for the transmission of dead loads of the thermal insulation composite system.

**Base materials:**

- Normal weight concrete (use category A) according to Annex C1.
- Solid masonry (use category B), according to Annex C 1.
- Hollow or perforated masonry (use category C), according to Annex C 1
- For other base materials of the use categories A, B or C the characteristic resistance of the anchors may be determined by job site tests according to ETAG 014 Edition February 2011, Annex D.

**Temperature Range:**

- 0°C to +40°C (max. short term temperature +40°C and max. long term temperature +24°C)

**Design:**

- The anchorages are designed in accordance with the ETAG 014 Edition February 2011 under the responsibility of an engineer experienced in anchorages and masonry 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.
- Fasteners are only to be used for multiple fixings of thermal insulation composite systems.

**Installation:**

- Hole drilling by the drill modes according to Annex C1.
- Anchor installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site.
- Installation temperature from 0°C to +40°C
- Exposure to UV due to solar radiation of the anchor not protected by rendering ≤ 6 weeks

CAPATECT Type 041

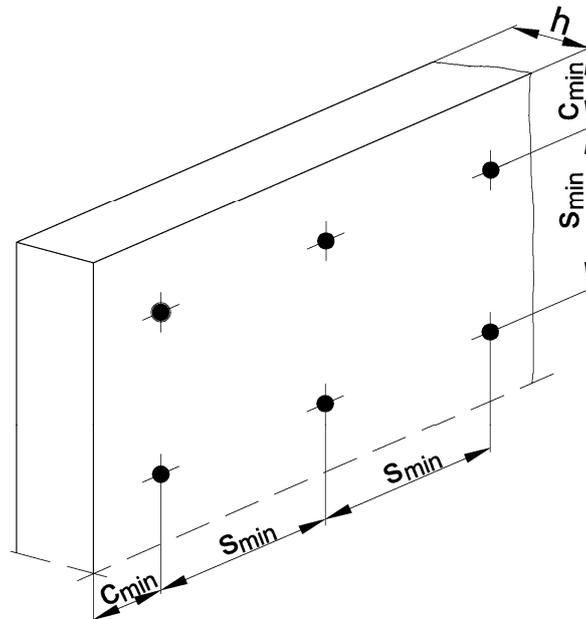
**Intended use**  
Specifications

Annex B 1

Table B1: Installation parameters			
Anchor type			CAPATECT Type 041
Drill hole diameter	$d_0$ [mm]	=	8
Cutting diameter of drill bit	$d_{cut}$ [mm]	≤	8,45
Depth of drilled hole to deepest point	$h_1$ [mm]	≥	35
Effective anchorage depth	$h_{ef}$ [mm]	≥	25
Overall plastic anchor embedment depth in the base material	$h_{nom}$ [mm]	≥	29

Table B2: Anchor distances and dimensions of members			
Anchor type			CAPATECT Type 041
Minimum allowable spacing	$s_{min}$	= [mm]	100
Minimum allowable edge distance	$c_{min}$	= [mm]	100
Thickness of member	$h$	≥ [mm]	100

Scheme of anchor distances

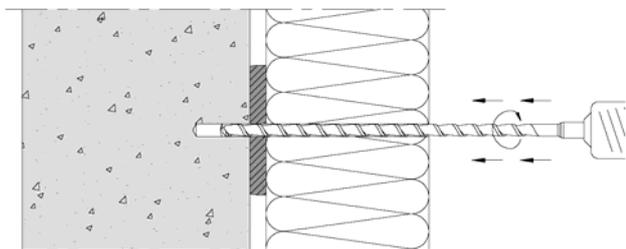


CAPATECT Type 041

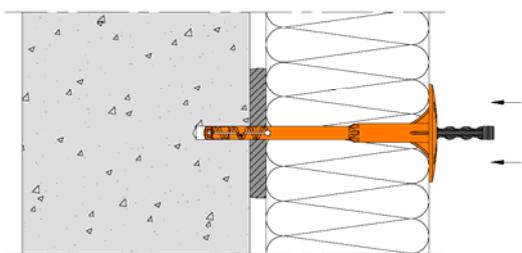
**Intended use**  
Installation parameters,  
Anchor distances and dimensions of members

Annex B 2

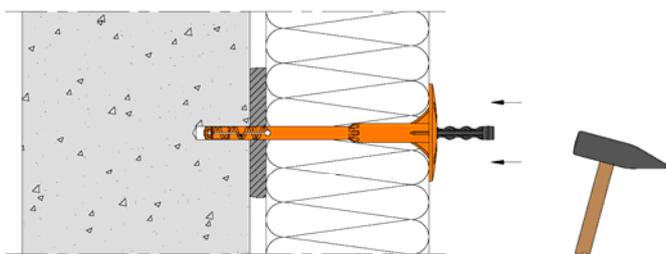
### Installation instructions



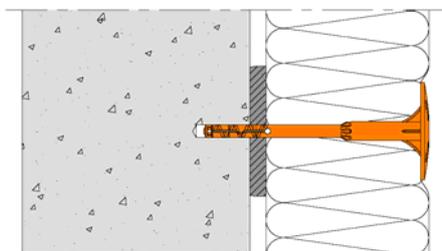
Drill the hole perpendicular to the substrate surface.  
Clean the drill hole 3x



Place the anchor into the drill hole.  
The bottom side of the plate must be flush with the ETICS.



Drive in the specific nail with the hammer.



Installed condition of CAPATECT Type 041

CAPATECT Type 041

**Intended use**  
Installation instructions

Annex B 3

**Table C1: Characteristic resistance to tension loads  $N_{Rk}$  in concrete and masonry for a single anchor in kN**

Anchor type					CAPATECT Type 041
Base materials	Bulk density class $\rho$ [kg/dm <sup>3</sup> ]	minimum compressive strength $f_b$ [N/mm <sup>2</sup> ]	General remarks	Drill method	$N_{Rk}$ [kN]
Concrete C12/15			EN 206-1:2000	hammer	0,75
Concrete C20/25 – C50/60			EN 206-1:2000	hammer	0,90
Thin concrete members, e.g. weather resistant skins of external wall panels C20/25 – C50/60			EN 206-1:2000	hammer	0,90
Clay bricks, Mz e.g. according to DIN 105-100:2012-01/ EN 771-1:2011	$\geq 1,8$	12	Vertically perforation up to 15 %	hammer	0,90
Sand-lime solid bricks, KS e.g. according to DIN V 106:2005-10 / EN 771-2:2011	$\geq 1,8$	12	Vertically perforation up to 15 %	hammer	0,90
Concrete masonry units, Vbn e.g. according to DIN V 18153-100:2005-10 / EN 771-3:2011	$\geq 2,0$	12		hammer	0,90
Lightweight concrete solid blocks, Vbl e.g. acc. to DIN V 18152-100:2005-10 / EN 771-3:2011	$\geq 0,65$	2	Proportion of hole up to 10%	rotary	0,50
Vertically perforated clay bricks, HLz e.g. according to DIN 105-100:2012-01/ EN 771-1:2011	$\geq 0,9$	12	Vertically perforation more than 15 % and less than 50 %	rotary	0,60 <sup>1)</sup>
Sand-lime perforated bricks, KSL e.g. according to DIN V 106:2005-10 / EN 771-2:2011	$\geq 1,4$	12	Vertically perforation more than 15 %	rotary	0,60 <sup>2)</sup>
Lightweight concrete hollow block, Hbl e.g. acc. to DIN V 18151-100:2005-10 / EN 771-3:2011	$\geq 1,0$	2	See Annex C 3	rotary	0,60

- 1) The value applies only for outer web thickness  $\geq 11$  mm; otherwise the characteristic resistance shall be determined by job site pull-out tests.
- 2) The value applies only for outer web thickness  $\geq 20$  mm; otherwise the characteristic resistance shall be determined by job site pull-out tests.

CAPATECT Type 041

**Performances**  
Characteristic resistance

Annex C 1

**Table C2: Point thermal transmittance according EOTA Technical Report TR 025:2007-06**

anchor type	insulation thickness $h_D$ [mm]	point thermal transmittance $\chi$ [W/K]
CAPATECT Type 041	60 – 260	0,002

**Table C3: Plate stiffness according EOTA Technical Report TR 026:2007-06**

anchor type	diameter of the anchor plate [mm]	load resistance of the anchor plate [kN]	plate stiffness [kN/mm]
CAPATECT Type 041	60	1,4	0,5

**Table C4: Displacements**

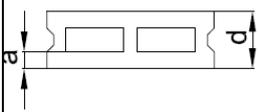
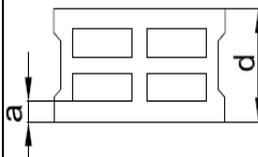
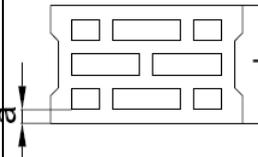
Base material	Bulk density class $\rho$ [kg/dm <sup>3</sup> ]	Minimum Compressive strength $f_b$ [N/mm <sup>2</sup> ]	Tension load <b>N</b> [kN]	Displacements $\delta_m(N)$ [mm]
Concrete C12/15 (EN 206-1:2000)			0,25	0,4
Concrete C20/25 – C50/60 (EN 206-1:2000)			0,3	0,5
Concrete C20/25 - C50/60 thin members 100 mm > h ≥ 40 mm (EN 206-1:2000)			0,3	0,5
Clay bricks, Mz (DIN 105-100:2012-01/ EN 771-1:2011)	≥ 1,8	12	0,3	0,5
Sand-lime solid bricks, KS (DIN V 106:2005-10 / EN 771-2:2011)	≥ 1,8	12	0,3	0,5
Concrete masonry units, Vbn (DIN V 18153-100:2005-10 / EN 771-3:2011)	≥ 2,0	12	0,3	0,5
Lightweight concrete solid blocks, Vbl (DIN V 18152-100:2005-10 / EN 771-3:2011)	≥ 0,65	2	0,2	0,5
Vertically perforated clay bricks, HLz (DIN 105-100:2012-01/ EN 771-1:2011)	≥ 0,9	12	0,2	0,5
Sand-lime perforated bricks, KSL (DIN V 106:2005-10 / EN 771-2:2011)	≥ 1,4	12	0,2	0,5
Lightweight concrete hollow blocks, Hbl (DIN V 18151-100:2005-10 / EN 771-3:2011)	≥ 1,0	2	0,2	0,5

CAPATECT Type 041

**Performances**  
Point thermal transmittance, plate stiffness and displacements

Annex C 2

**Table C5: Assignment type of anchor and geometry of bricks for lightweight-concrete hollow blocks according to DIN V 18151-100:2005-10**

Geometry	Thickness d [mm]	Outer web in longitudinal direction a [mm]
	175	50
	240 300	50
	175	35
	240 300 365	35
	240 300 365	30

The anchor shall be placed in the brick in such way, that the spreading part of the expansion sleeve is located in the outer web.

CAPATECT Type 041

**Performances**  
Assignment type of anchor for lightweight concrete hollow blocks

Annex C 3