

Approval body for construction products  
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and  
Laender Governments



## European Technical Assessment

ETA-05/0009  
of 26 June 2018

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

ejothem NT U and ejothem NK U

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

EJOT Baubefestigungen GmbH  
In der Stockwiese 35  
57334 Bad Laasphe

Manufacturing plant

EJOT 1  
EJOT 2  
EJOT 3  
EJOT 4

This European Technical Assessment  
contains

12 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

EAD 330196-01-0604

European Technical Assessment  
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English translation prepared by DIBt

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## Specific part

### 1 Technical description of the product

The nailed-in anchor ejothem NT U with anchor plate and the nailed-in anchor ejothem NK U with a collar consist of a sleeve made of virgin polyethylene and an accompanying specific nail of stainless steel or of galvanised steel with an overmoulding of polyamide.

The anchor may in addition be combined with the anchor plates SBL 140 *plus* and VT 90.

An illustration and the description of the product are 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 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 Safety and accessibility in use (BWR 4)

Essential characteristic	Performance
Characteristic tension resistance	See Annex C 1
Edge distances and spacing	See Annex B 2
Plate stiffness	See Annex C 2
Displacements	See Annex C 2

#### 3.2 Energy economy and heat retention (BWR 6)

Essential characteristic	Performance
Point thermal transmittance	See Annex C 2

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

In accordance with EAD No. 330196-01-0604, the applicable European legal act is: [97/463/EC].

The system to be applied is: 2+

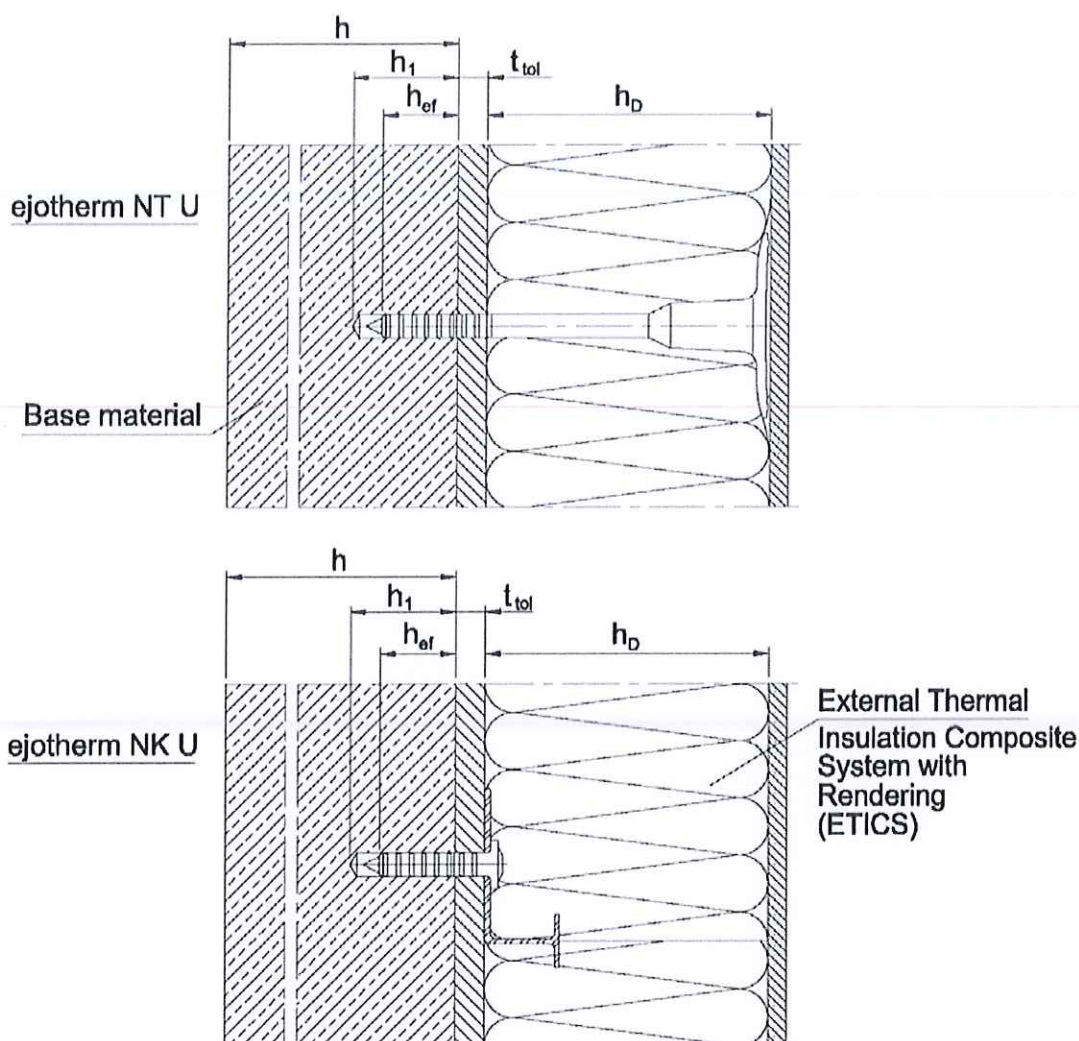
**5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD**

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

Issued in Berlin on 26 June 2018 by Deutsches Institut für Bautechnik

BD Dipl.-Ing. Andreas Kummerow  
Head of Department

*beglaubigt:*  
Ziegler



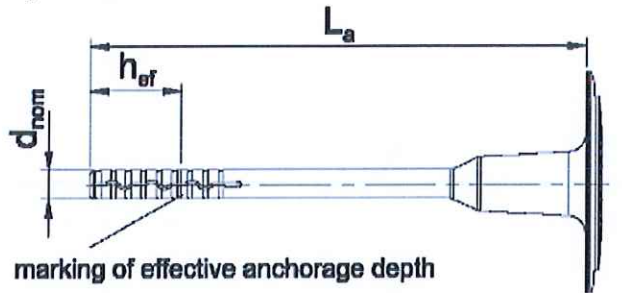
- Legend:
- $h_D$  = thickness of insulation material
  - $h_{ef}$  = effective anchorage depth
  - $h$  = thickness of member (wall)
  - $h_1$  = depth of drilled hole to deepest point
  - $t_{tol}$  = thickness of equalizing layer or non-load-bearing coating

ejothem NT U and ejothem NK U

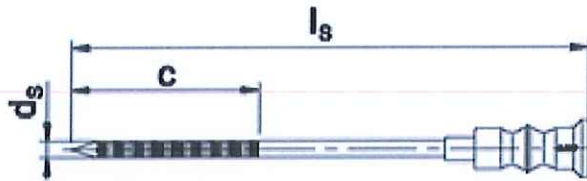
Product description  
Installed condition

Annex A 1

### ejothem NT U



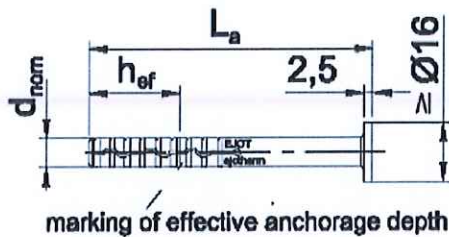
marking of effective anchorage depth



Nail with polyamide overmoulding

Marking:  
Identifying Mark: EJOT  
Anchor type: ejothem NT U  
Anchor length: e.g. 135 mm

### ejothem NK U



Marking:  
Identifying Mark: EJOT  
Anchor type: ejothem NK U  
Anchor length: e.g. 65 mm

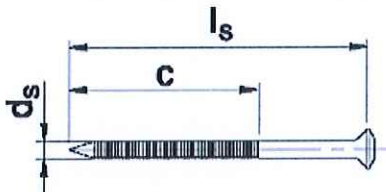


Tabelle A1: Dimensions

Anchor type	colour	Anchor sleeve				Specific nail	
		$d_{nom}$ [mm]	$h_{ef}$ [mm]	min $L_a$ [mm]	max. $L_a$ [mm]	$d_s$ [mm]	$c$ [mm]
ejothem NT U	natur	8	25	95	295	4,5	45
ejothem NK U	natur	8	25	45	105	4,5	45

Determination of maximum thickness of insulation  $h_D$  [mm] for ejothem NT U:

$$h_D = L_a - t_{tol} - h_{ef} \quad (L_a = \text{e.g. } 135; t_{tol} = 10)$$

$$h_D = 135 - 10 - 25$$

$$h_{Dmax} = 100$$

ejothem NT U and ejothem NK U

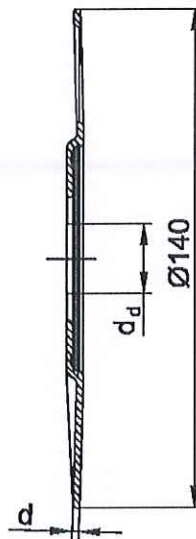
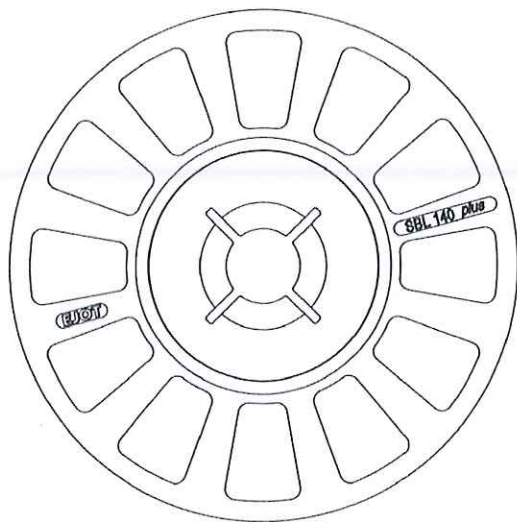
**Product description**  
Marking and dimension of the anchor sleeve, specific nail

Annex A 2

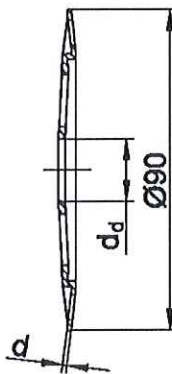
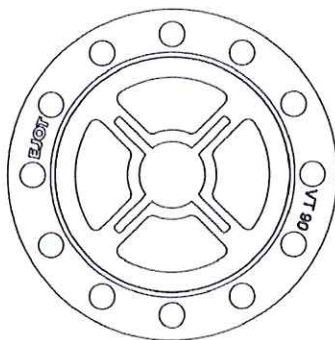
English translation prepared by DIBt

Table A2: Materials		
Name	Materials	
Anchor sleeve	Polyethylene (virgin material), PE-HD, colour: nature	
Specific nail - overmoulding	Polyamid, PA GF 50	
Specific nail	Steel, electro galvanized: ≥ 5 µm according EN ISO 4042:1999, blue passivated	Stainless steel: material number 1.4401 or 1.4571 material number 1.4301 or 1.4567

**Slip-on plates in combination with ejotherm NT U**



SBL 140 plus	
colour	nature
d <sub>d</sub> [mm]	20,0
d [mm]	2,0
Material	<sup>1) 2)</sup>



VT 90	
colour	nature
d <sub>d</sub> [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

<b>ejotherm NT U and ejotherm NK U</b>	<b>Annex A 3</b>
<b>Product description</b> Materials, Slip on plates with ejotherm NT U	

### Specifications of intended use

#### Anchorage subject to:

- The anchor 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 C 1.
- 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, C, the characteristic resistance of the anchor may be determined by job site tests according EOTA Technical Report TR 51, edition December 2016.

#### 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 under the responsibility of an engineer experienced in anchorages and masonry work with partial safety factors  $\gamma_M = 2,0$  and  $\gamma_F = 1,5$ , if there are no national regulations
- 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 C 1.
- 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  $\leq 6$  weeks

ejothem NT U and ejothem NK U

Intended use  
Specifications

Annex B 1



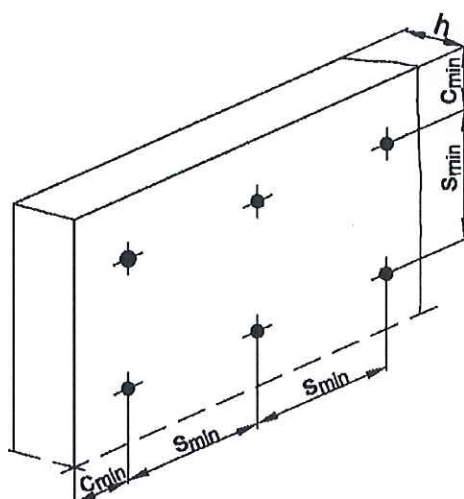
**Table B1: Installation parameters**

Anchor type	ejotherm NT U / ejotherm NK U	
	use category	
	A, B, C	
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

**Table B2: Anchor distances and dimensions of members**

Anchor type	ejotherm NT U / NK U	
Minimum allowable spacing	$s_{min} \geq$ [mm]	100
Minimum allowable edge distance	$c_{min} \geq$ [mm]	100
Minimum thickness of member	$h \geq$ [mm]	100

Scheme of distance and spacing



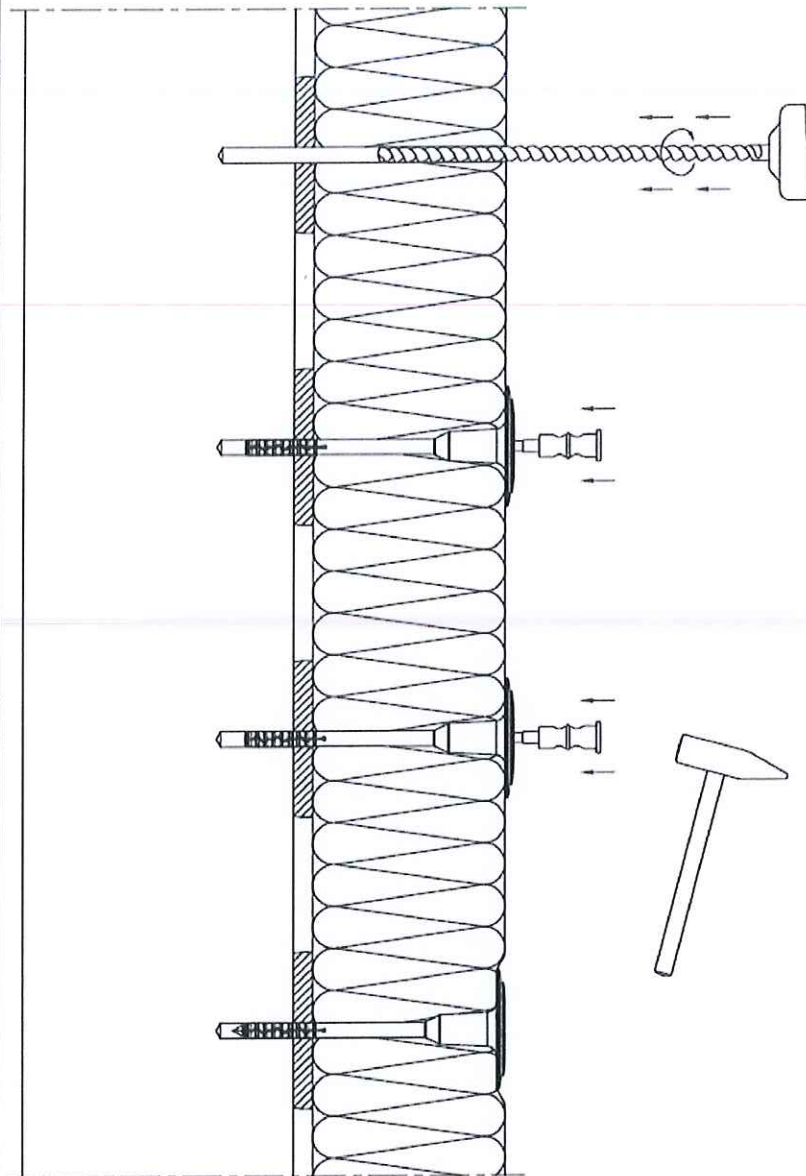
ejotherm NT U and ejotherm NK U

**Intended use**  
Installation parameters,  
Edge distances and spacing

**Annex B 2**

English translation prepared by DIBt

### Installation instructions



Install 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 conditions ejothem NT U

ejothem NT U and ejothem NK U

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					ejothem NT U and NK U
Base materials	Bulk density $\rho$ [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	1,2
Concrete C16/20 – C50/60 EN 206-1:2000				hammer	1,2
Clay bricks, Mz EN 771-1:2011	$\geq 1,8$	12	Vertically perforation up to 15 %.	hammer	1,5
Sand-lime solid bricks, KS EN 771-2:2011	$\geq 1,8$	12	Vertically perforation up to 15 %.	hammer	1,5
Vertically perforated clay bricks, HLZ EN 771-1:2011	$\geq 1,2$	12	Vertically perforation $\geq 15$ % and $\leq 50$ %. Minimum outer web thickness $\geq 11$ mm	rotary	0,9 <sup>1)</sup>
Sand-lime perforated bricks, KSL EN 771-2:2011	$\geq 1,6$	12	Vertically perforation $\geq 15$ % and $\leq 50$ %. Minimum outer web thickness $\geq 20$ mm	rotary	1,5 <sup>1)</sup>
Lightweight concrete solid blocks, V EN 771-3:2011	$\geq 0,9$	4	Proportion of hole up to 10% maximum extension of hole length 110 mm, wide 45 mm	rotary	0,5
Lightweight concrete hollow blocks, Hbl EN 771-3:2011	$\geq 0,5$	2	Vertically perforation $\geq 15$ % and $\leq 50$ %. Minimum outer web thickness $\geq 30$ mm	rotary	0,5 <sup>1)</sup>
<b>ejothem NT U and ejothem NK U</b>					<b>Annex C 1</b>
<b>Performances</b> Characteristic resistance					

<sup>1)</sup> The value applies only for the given minimum outer web thickness; otherwise the characteristic resistance shall be determined by job site pull-out tests.

**Table C2: Point thermal transmittance according EOTA Technical Report TR 025:2016-05**

anchor type	insulation thickness $h_D$ [mm]	point thermal transmittance $\chi$ [W/K]
ejotherm NT U	60 – 260	0,002

**Table C3: Plate stiffness according EOTA Technical Report TR 025:2016-05**

anchor type	diameter of the anchor plate [mm]	load resistance of the anchor plate [mm]	plate stiffness [kN/mm]
ejotherm NT U	60	2,43	0,6

**Table C4: Displacements**

Base materials	Bulk density $\rho$ [kg/dm <sup>3</sup> ]	minimum compressive strength $f_b$ [N/mm <sup>2</sup> ]	Tension load	Displacements $\delta(N)$ [kN/mm]
Concrete C12/15 EN 206-1:2000			0,4	0,3
Concrete C16/20 – C50/60 EN 206-1:2000			0,4	0,5
Clay bricks, Mz EN 771-1:2011	≥ 1,8	12	0,5	0,4
Sand-lime solid bricks, KS EN 771-2:2011	≥ 1,8	12	0,5	0,5
Vertically perforated clay bricks, HLz EN 771-1:2011	≥ 1,2	12	0,3	0,3
Sand-lime perforated bricks, KSL EN 771-2:2011	≥ 1,6	12	0,5	0,5
Lightweight concrete solid blocks, V EN 771-3:2011	≥ 0,9	4	0,25	0,4
Lightweight concrete hollow blocks, Hbl EN 771-3:2011	≥ 0,5	2	0,15	0,3

ejotherm NT U and ejotherm NK U

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

**Annex C 2**