

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

ejotherm NT U and ejotherm 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

ETA-05/0009

English translation prepared by DIBt

Page 2 of 12 | 26 June 2018

The 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 shall be identified as such.

Communication of this European Technical Assessment, including transmission by electronic means, shall be in full. However, partial reproduction may only be made with the written consent of the issuing Technical Assessment Body. Any partial reproduction shall be identified as such.

This European Technical Assessment may be withdrawn by the issuing Technical Assessment Body, in particular pursuant to information by the Commission in accordance with Article 25(3) of Regulation (EU) No 305/2011.

Specific part

1 Technical description of the product

The nailed-in anchor ejotherm NT U with anchor plate and the nailed-in anchor ejotherm 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+

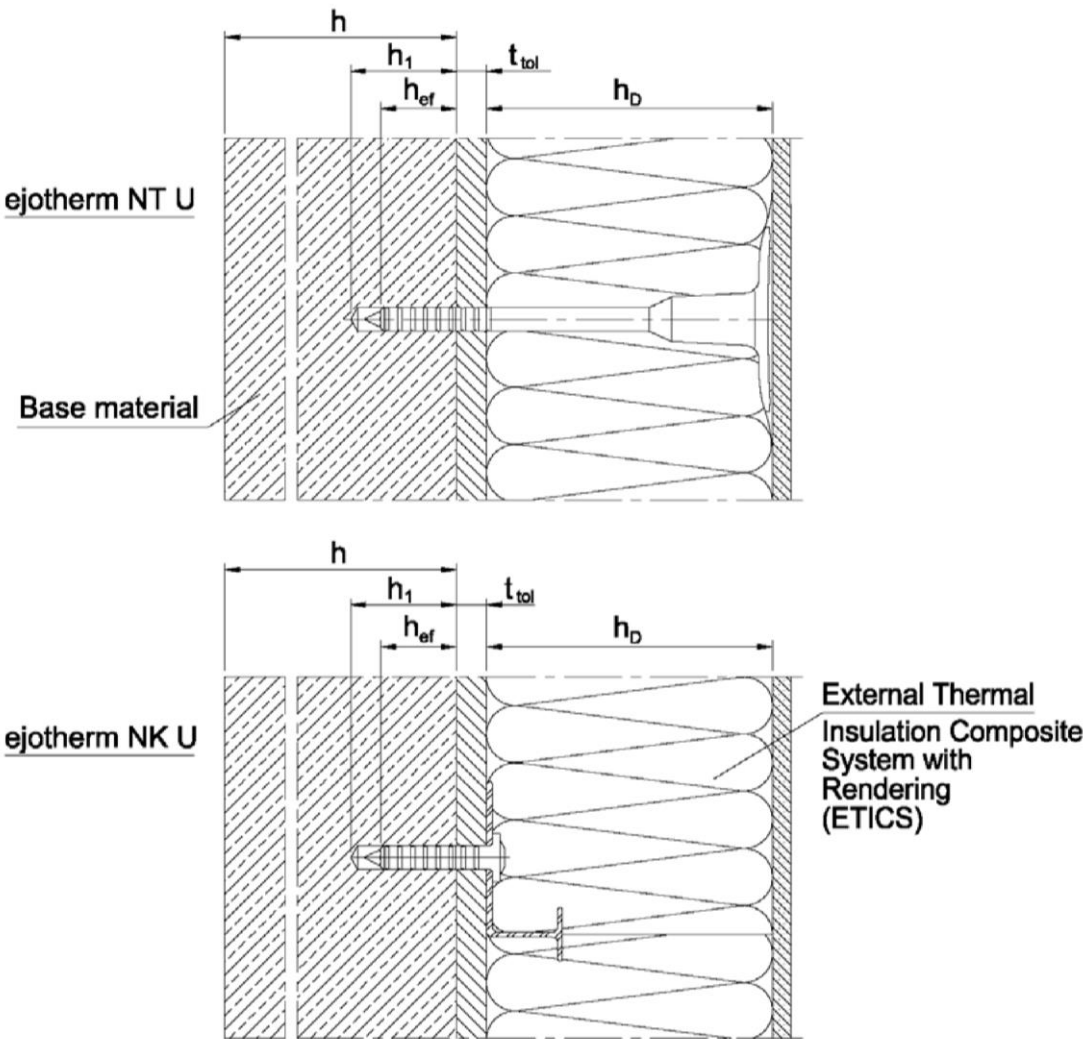
5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

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

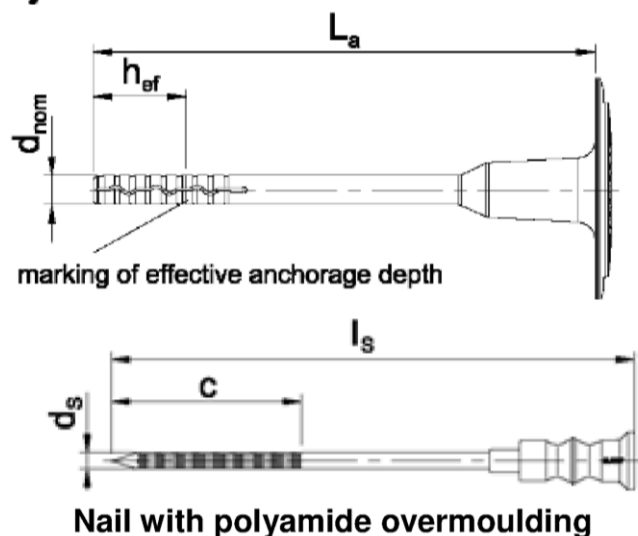
beglaubigt:
Ziegler



- 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

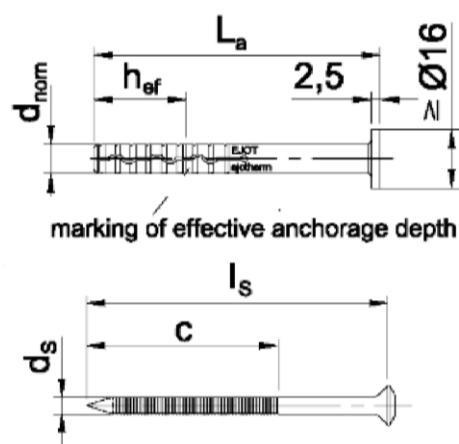
ejotherm NT U and ejotherm NK U	
Product description Installed condition	Annex A 1

ejotherm NT U



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

ejotherm NK U



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

Tabelle A1: Dimensions

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

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

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

$$h_D = 135 - 10 - 25$$

$$h_{Dmax} = 100$$

ejotherm NT U and ejotherm NK U

Product description

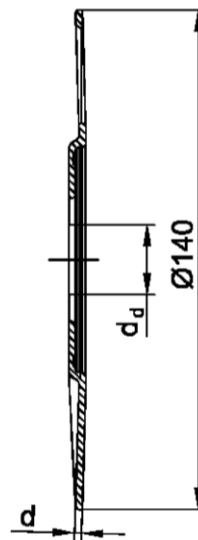
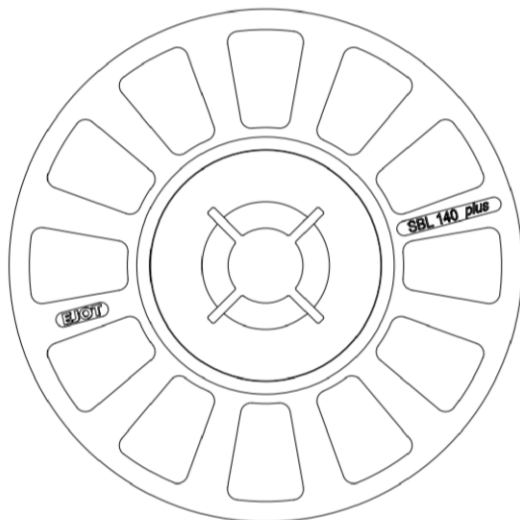
Marking and dimension of the anchor sleeve, specific nail

Annex A 2

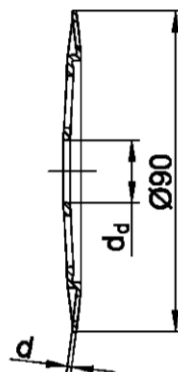
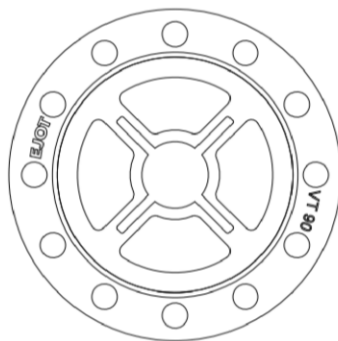
Table A2: Materials

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 _d [mm]	20,0
d [mm]	2,0
Material	1) 2)



VT 90	
colour	nature
d _d [mm]	17,5
d [mm]	1,2
Material	1) 2)

- 1) polyamide, PA 6
2) polyamide, PA GF 50

ejotherm NT U and ejotherm NK U

Product description

Materials,
Slip on plates with ejotherm NT U

Annex A 3

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 ≤ 6 weeks

ejotherm NT U and ejotherm NK U

Intended use
Specifications

Annex B 1

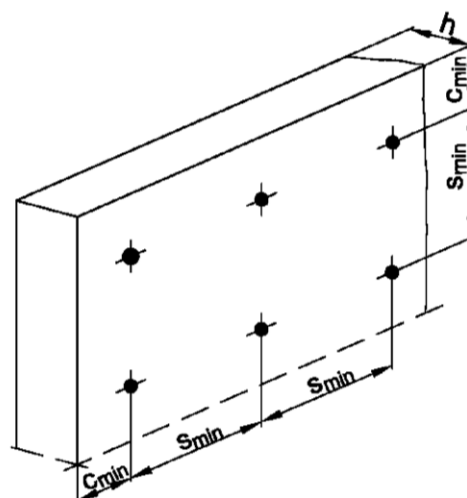
Table B1: Installation parameters

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



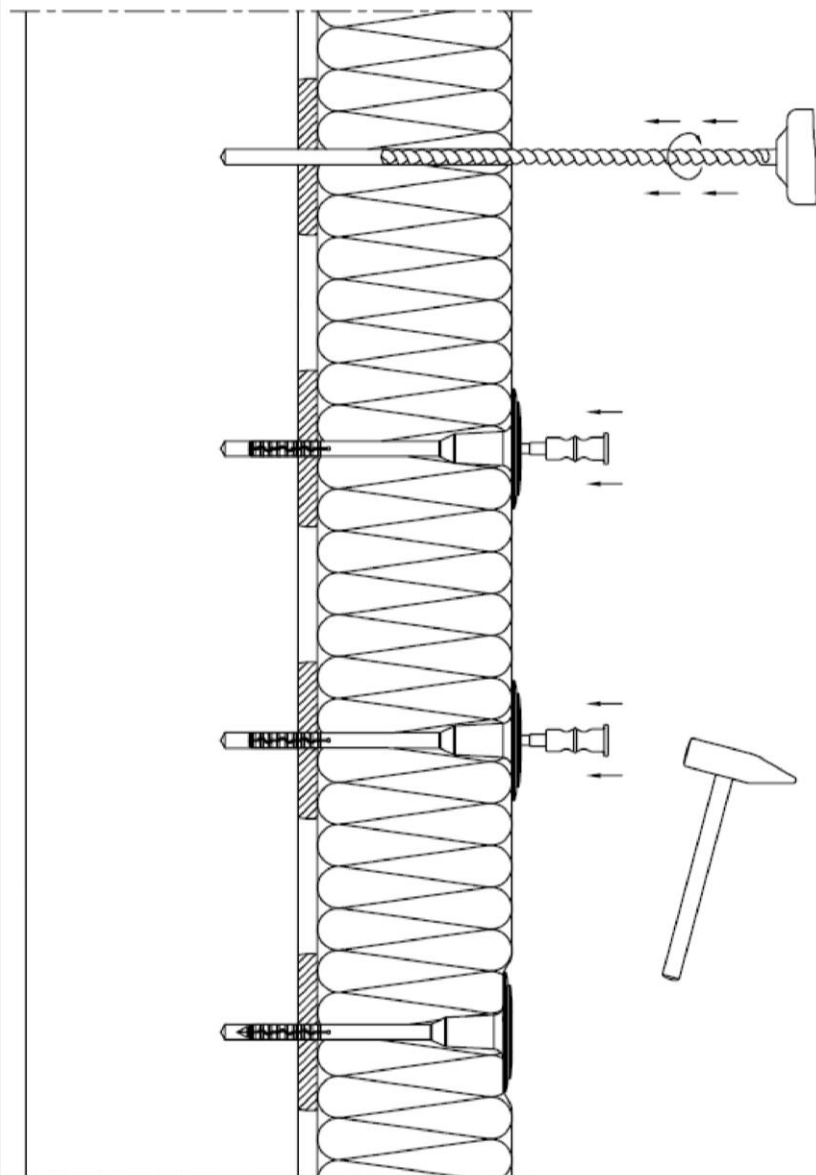
ejotherm NT U and ejotherm NK U

Intended use

Installation parameters,
Edge distances and spacing

Annex B 2

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 ejotherm NT U

ejotherm NT U and ejotherm 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 ρ [kg/dm ³]	minimum compressive strength f_b [N/mm ²]	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 ≥ 15 % and ≤ 50 %. Minimum outer web thickness ≥ 11 mm	rotary	0,9 ¹⁾
Sand-lime perforated bricks, KSL EN 771-2:2011	$\geq 1,6$	12	Vertically perforation ≥ 15 % and ≤ 50 %. Minimum outer web thickness ≥ 20 mm	rotary	1,5 ¹⁾
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 ≥ 15 % and ≤ 50 %. Minimum outer web thickness ≥ 30 mm	rotary	0,5 ¹⁾

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

ejothem NT U and ejotherm NK U

Performances
Characteristic resistance

Annex C 1

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

anchor type	insulation thickness h_D [mm]	point thermal transmittance χ [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 ρ [kg/dm ³]	minimum compressive strength f_b [N/mm ²]	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	$\geq 1,8$	12	0,5	0,4
Sand-lime solid bricks, KS EN 771-2:2011	$\geq 1,8$	12	0,5	0,5
Vertically perforated clay bricks, HLz EN 771-1:2011	$\geq 1,2$	12	0,3	0,3
Sand-lime perforated bricks, KSL EN 771-2:2011	$\geq 1,6$	12	0,5	0,5
Lightweight concrete solid blocks, V EN 771-3:2011	$\geq 0,9$	4	0,25	0,4
Lightweight concrete hollow blocks, Hbl EN 771-3:2011	$\geq 0,5$	2	0,15	0,3

ejotherm NT U and ejotherm NK U

Performances

Point thermal transmittance, plate stiffness, displacements

Annex C 2