

Approval body for construction products
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and
Laender Governments



European Technical Assessment

ETA-07/0026
of 1 December 2016

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 NTK 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
DEUTSCHLAND

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

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

This version replaces

ETA-07/0026 issued on 19 January 2012

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Specific part

1 Technical description of the product

The nailed-in anchor NTK U consists of an anchor sleeve with spreading zone and an insulation plate made of polyethylene and an accompanying specific nail of polyamide.

The serrated expanding part of the anchor sleeve is slotted.

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 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 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.

3.3 Safety in use (BWR 4)

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

English translation prepared by DIBt

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

In accordance with guideline for European technical approval ETAG 014, February 2011 used as European Assessment Document (EAD) according to Article 66 Paragraph 3 of Regulation (EU) No 305/2011 the applicable European legal act is: 97/463/EC.

The system to be applied is: 2+

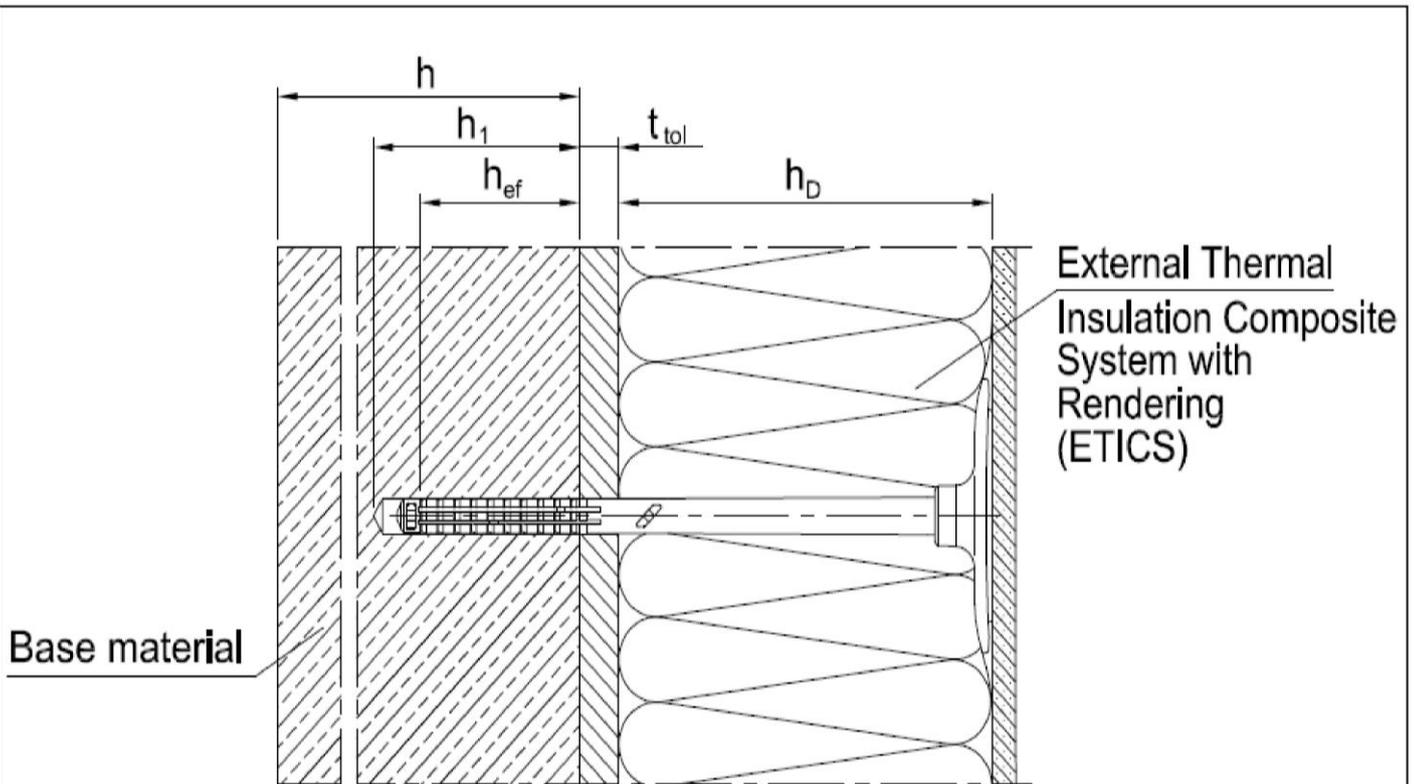
5 Technical details necessary for the implementation of the AVCP system, as provided in the applicable EAD

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 1 December 2016 by Deutsches Institut für Bautechnik

Uwe Bender
Head of Department

beglaubigt:
Ziegler

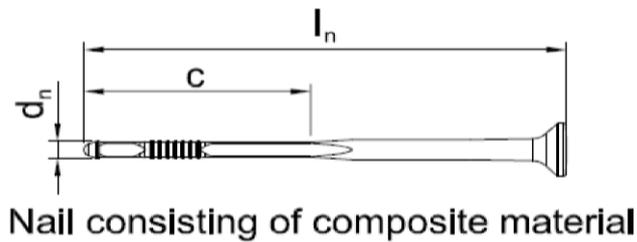
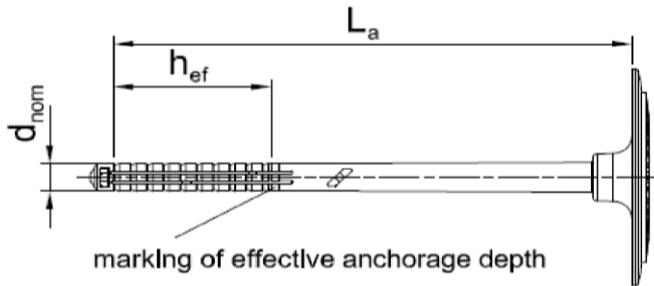


Intended use
Anchorage of ETICS in concrete and masonry

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 NTK U	Annex A 1
Product description Installed condition	

ejothem NTK U



Marking:
Identifying mark (EJOT)
Anchor type (ejothem NTK U)
Length of anchor (e.g. 110)
Use category (A, B, C)

Table A1: Dimensions

Anchor Type	Colour	Anchor sleeve			Specific nail		
		d_{nom} [mm]	h_{ef} [mm]	min L_a max L_a [mm]	d_n [mm]	c [mm]	min l_n max l_n [mm]
ejothem NTK U	nature	8	40	70 230	4,9	55	70 230

Determination of maximum thickness of insulation h_D [mm] for Carbon Fix:

$$h_D = L_a - t_{tol} - h_{ef} \quad (L_a = \text{z.B. } 110; t_{tol} = 10)$$

e.g. $h_D = 110 - 10 - 40 = 60$
 $h_{Dmax} = 60$

ejothem NTK U

Product description

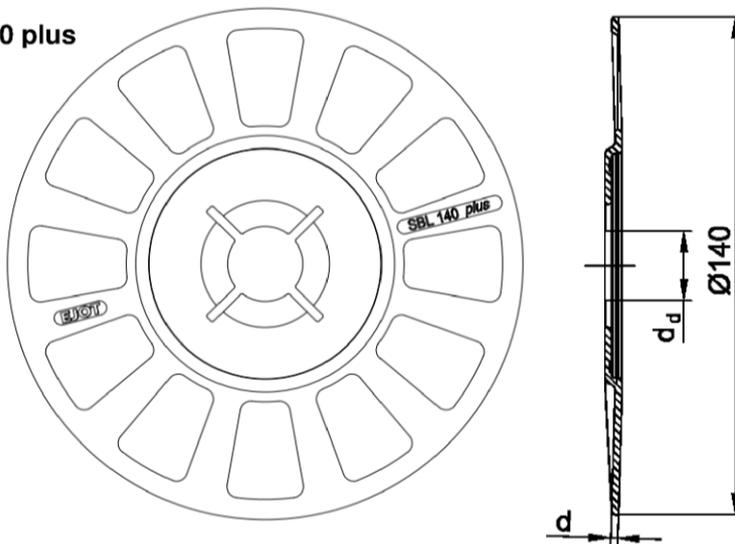
Marking of the anchor sleeve, specific nail, dimensions

Annex A 2

Table A2: Materials

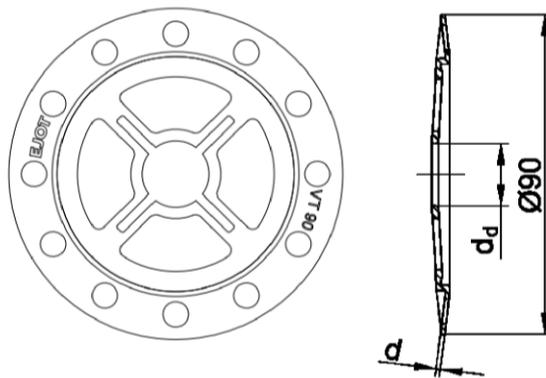
Name	Materials
Anchor sleeve	Polyethylene, PE-HD
Specific nail	Polyamide, PA GF 50

SBL 140 plus



SBL 140 plus	
colour	nature
d_d [mm]	20,0
d [mm]	2,0
Material	^{1) 2)}

VT 90



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 NTK U

Product description

Materials, anchor plates in combination with ejotherm NTK 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 or C the characteristic resistance of the anchor 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, according to ETAG 014 Edition February 2011.

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

ejotherm NTK U

Intended use
Specifications

Annex B 1

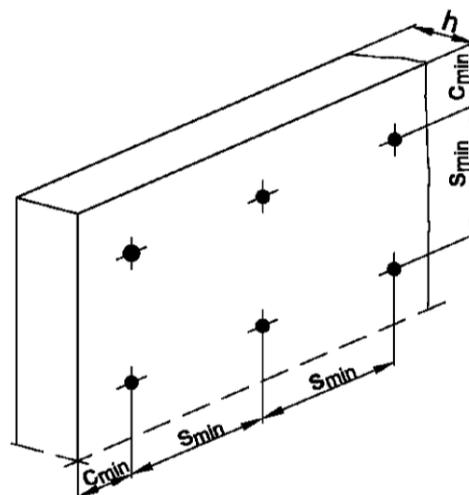
Table B1: Installation parameters

Anchor type		ejothem NTK 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] ≥	50
Effective anchorage depth	h_{ef} [mm] ≥	40

Table B2: Anchor distances and dimensions of members

Anchor type		ejothem NTK 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



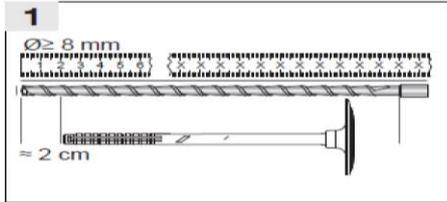
ejothem NTK U

Intended use

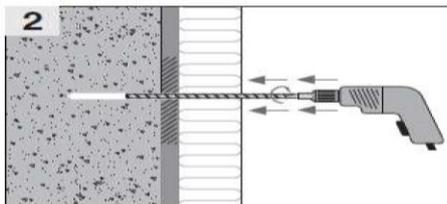
Installations parameters,
Minimum thickness of member, edge distances and spacing

Annex B 2

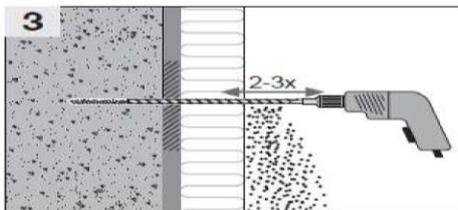
Installation instructions



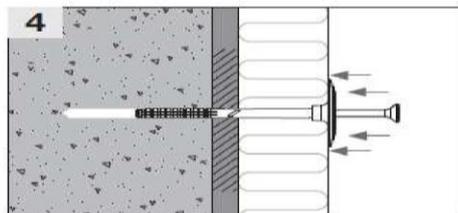
Define the drill length.



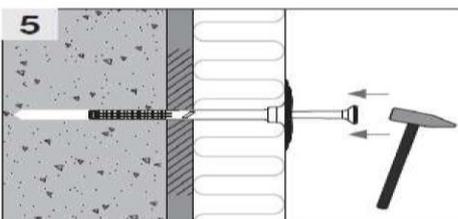
Drill the hole perpendicular to the substrate surface.



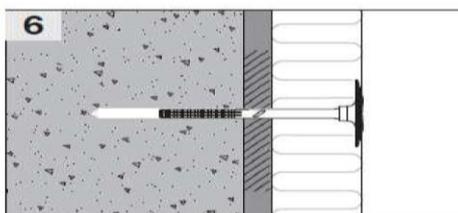
Clean the drill hole 2-3 x.



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 ejotherm NTK U.

ejotherm NTK 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 NTK U
Base materials	Bulk density class 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	0,6
Concrete C16/20 – C50/60			EN 206-1:2000	hammer	0,9
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	0,9
Sand-lime solid bricks, KS e.g. according to DIN 106:2015-06 / EN 771-2:2011	$\geq 1,8$	12	Vertically perforation up to 15 %.	hammer	0,9
Vertically perforated clay bricks, HLz e.g. according to DIN 105-100:2012-01 / EN 771-1:2011	$\geq 1,0$	6	Vertically perforation more than 15 % and less than 50 %.	rotary	0,6 ¹⁾
Sand-lime perforated bricks, KSL e.g. according to DIN 106:2015-06 / EN 771-2:2011	$\geq 1,4$	12	Vertically perforation more than 15 %.	rotary	0,9 ²⁾

1) The value applies only for outer web thickness ≥ 14 mm; otherwise the characteristic resistance shall be determined by job site pull-out tests.

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

ejothem NTK U	Annex C 1
Performances Characteristic resistance	

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

anchor type	insulation thickness h_D [mm]	point thermal transmittance χ [W/K]
ejothem NTK U	50 - 180	0,000

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 [mm]	plate stiffness [kN/mm]
ejothem NTK U	60	1,44	0,5

Table C4: Displacements

Base materials	Bulk density class ρ [kg/dm ³]	Minimum Compressive strength f_b [N/mm ²]	Tension load N [kN]	Displacements $\delta(N)$ [kN/mm]
Concrete C12/15 (EN 206-1:2000)			0,2	0,3
Concrete C20/25 – C50/60 (EN 206-1:2000)			0,3	0,3
Clay bricks, Mz (DIN 105-100:2012-01 / EN 771-1:2011)	≥ 1,8	12	0,3	0,4
Sand-lime solid bricks, KS (DIN 106:2015-06 / EN 771-2:2011)	≥ 1,8	12	0,3	0,4
Vertically perforated clay bricks, HLz (DIN 105-100:2012-01 / EN 771-1:2011)	≥ 1,0	6	0,2	0,3
Sand-lime perforated bricks, KSL (DIN 106:2015-06 / EN 771-2:2011)	≥ 1,4	12	0,3	0,4

ejothem NTK U

Performances

Point thermal transmittance, plate stiffness,
displacements

Annex C 2