

Approval body for construction products
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and
Laender Governments



European Technical Assessment

ETA-21/0530
of 30 September 2021

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

Cover.fix Ecotwist

Product family
to which the construction product belongs

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

Manufacturer

Vimark srl
Strada Spartafino 2
12016 PEVERAGNO CUNEO CN
ITALIEN

Manufacturing plant

Vimark

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, Edition 10/2017

**European Technical Assessment
ETA-21/0530**

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Specific part**1 Technical description of the product**

The screwed-in anchor Cover.fix Ecotwist consist of an anchor sleeve and a screw plate in different colours, both made of polyamide (virgin material) and an accompanying specific screw of galvanised steel.

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

The verifications 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 load bearing capacity <ul style="list-style-type: none"> - Characteristic resistance under tension load - Minimum edge distance and spacing 	See Annex C1 See Annex B2
Displacements	See Annex C2
Plate stiffness	No performance assessed

3.2 Energy economy and heat retention (BWR 6)

Essential characteristic	Performance
Point thermal transmittance	See Annex C2

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 European Assessment Document

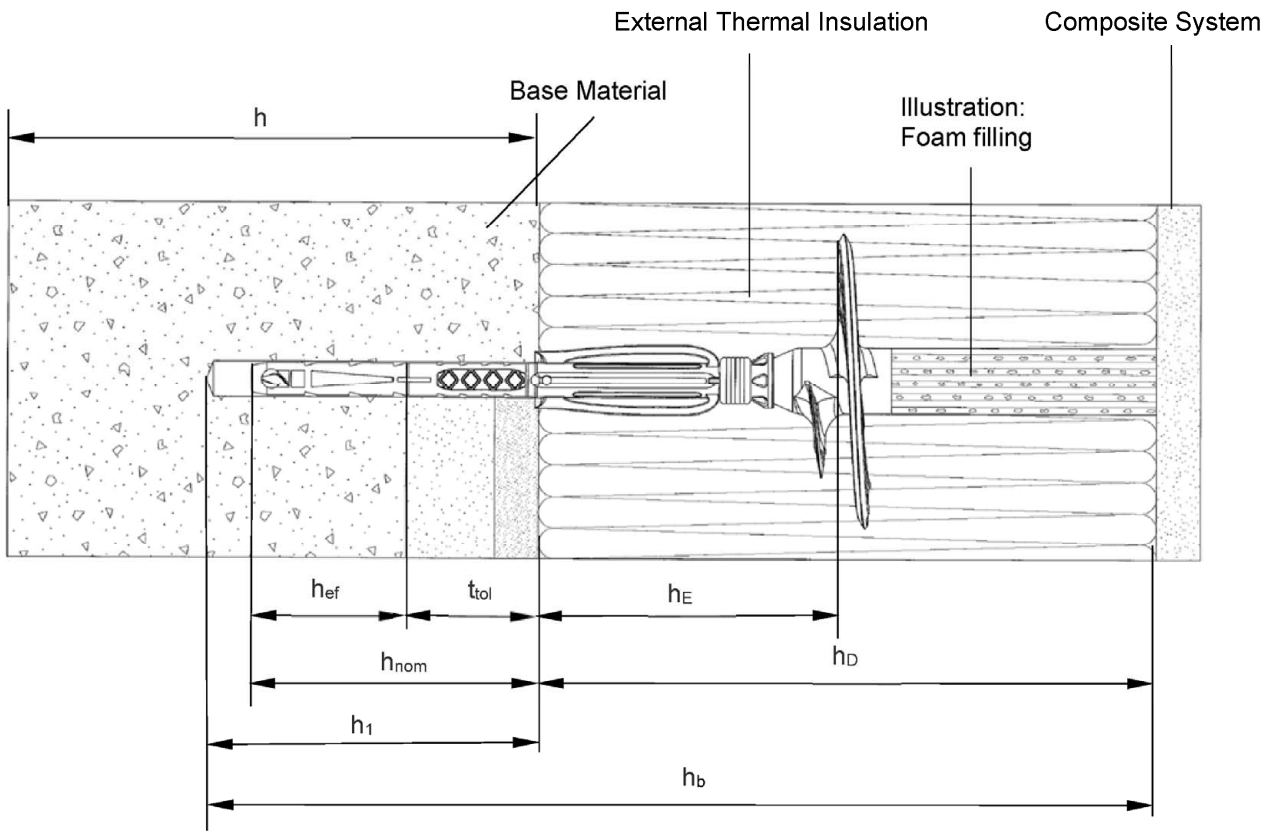
Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with Deutsches Institut für Bautechnik.

Issued in Berlin on 30 September 2021 by Deutsches Institut für Bautechnik

Dipl.-Ing. Beatrix Wittstock
Head of Section

beglaubigt:
Ziegler

Installed anchor: Cover.fix Ecotwist



Intended use

- Fixing of external thermal insulation composite systems (ETICS) in concrete and masonry
- Fixing of external thermal insulation composite systems (ETICS) in autoclaved aerated concrete and lightweight aggregated concrete

Legend

- h_{nom} = Overall plastic anchor embedment depth in the base material with non-load bearing coating (t_{tol})
- h_1 = Depth of drilled hole to deepest point in the base material
- h = Thickness of base material (wall)
- h_D = Thickness of insulation material
- t_{tol} = Thickness of equalizing layer and / or non-load bearing coating
- h_E = Embedment depth
- h_b = Total bore hole depth
- h_{ef} = Effective anchor embedment depth in the base material

Figures not to scale.

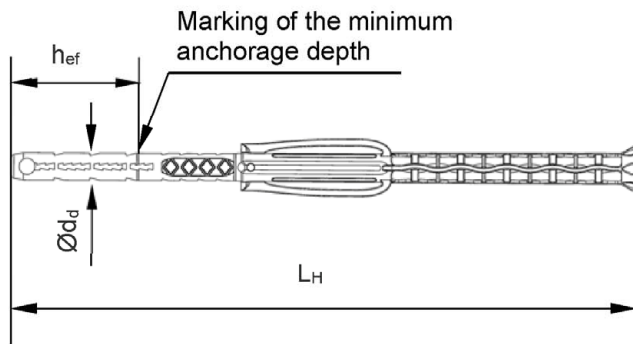
Cover.fix Ecotwist

Product description
Installed anchor

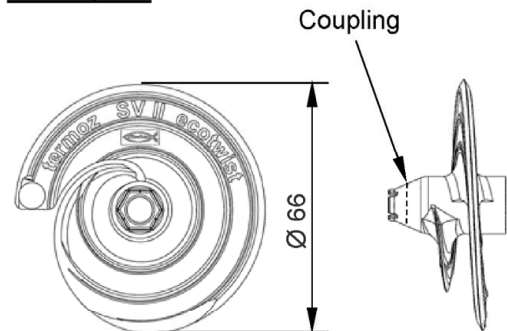
Annex A1

Parts: Cover.fix Ecotwist

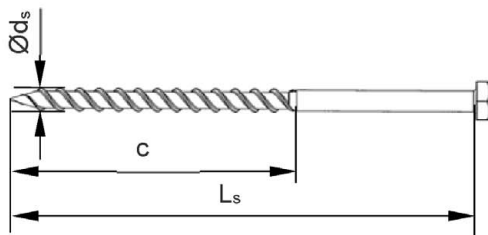
Anchor sleeve



Screw plate

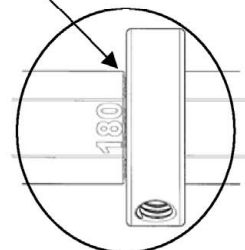
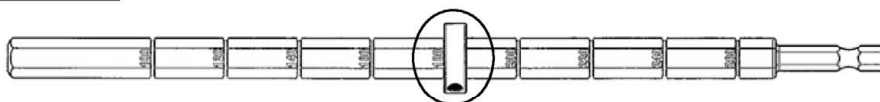


Special screw

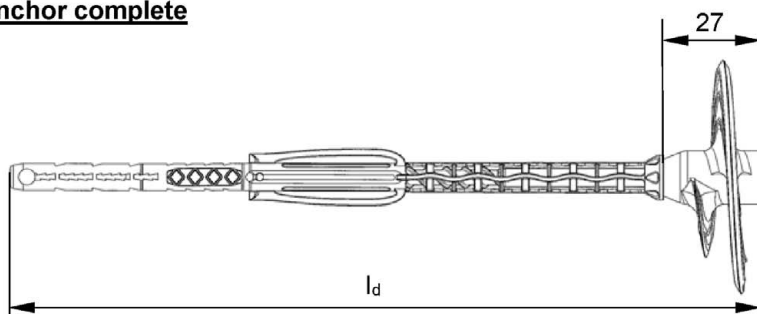


Adjustment of the ring depends of the insulation material thickness, e.g. $h_D = 180$ mm
→ adjust value 180 at the setting tool

Setting tool



Anchor complete



Figures not to scale.

Cover.fix Ecotwist

Product description
Anchor type and parts

Annex A2

Table A3.1: Dimensions

Anchor type	Anchor sleeve					Special screw		
Cover.fix Ecotwist	$\varnothing d_d$	$h_{ef}^{1)}$	$h_E^{1)}$	l_d	L_H	$\varnothing d_s$	L_s	c
	[mm]							
t_{tol} 0-10 mm	8	35	70	162	135	6	100	74
t_{tol} 0-30 mm				202	175		120	
t_{tol} 30-60 mm				232	205		150	

¹⁾ see Annex A1

Table A3.2: Marking on the plate


	Marking
Anchor type	termoz SV II ecotwist
Works symbol	

Table A3.3: Marking on the anchor sleeve

	Marking
Cover.fix Ecotwist t_{tol} 0-10 mm	t_{tol} 0-10
Cover.fix Ecotwist t_{tol} 0-30 mm	t_{tol} 0-30
Cover.fix Ecotwist t_{tol} 30-60 mm	t_{tol} 30-60

Table A3.4: Material

Designation	Material
Anchor sleeve	PA6 (virgin material), colour: grey
Screw plate	PA6 (virgin material) GF, colour: grey, yellow, red, orange, green, blue
Special screw	Galvanized steel gvz with Zn5/Ag or Zn5/An in accordance with EN ISO 4042:2018

Cover.fix Ecotwist

Product description

Anchor types, marking on the anchor plate/sleeve, dimensions and material

Annex A3

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 external thermal insulation composite system (ETICS).

Base materials:

- Compacted normal weight concrete without fibres (base material group A), according to Annex C1
- Solid masonry (base material group B), according to Annex C1
- Hollow or perforated masonry (base material group C), according to Annex C1
- Lightweight aggregate concrete (base material group D), according to Annex C1
- Autoclaved aerated concrete (base material group E), according to Annex C1
- For other base materials of the base material groups A, B, C, D and E the characteristic resistance of the anchor may be determined by job site tests acc. to EOTA Technical Report TR 051 Edition April 2018.

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 the partial safety factors $\gamma_M = 2,0$ and $\gamma_F = 1,5$ in absence of other national regulations.
- Verifiable calculation notes and drawings are prepared taking account of the loads to be anchored. The position of the anchors is indicated on the design drawings.
- Fasteners are only to be used for multiple fixings of ETICS.

Installation:

- Drill method according to Annex C1
- Anchor installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters on 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

Cover.fix Ecotwist

Intended use
Specifications

Annex B1

Table B2.1: Installation parameters

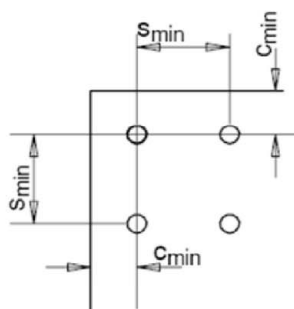
				Cover.fix Ecotwist
Drill hole diameter	d_0	=	[mm]	8
Cutting diameter of drill bit	d_{cut}	≤		8,45
Depth of drill hole to deepest point	h_1	≥		55/75/105
Total bore hole depth at Cover.fix Ecotwist t_{tol} 0-10 mm				$h_D + 55$
Total bore hole depth at Cover.fix Ecotwist t_{tol} 0-30 mm	h_b	≥		$h_D + 75$
Total bore hole depth at Cover.fix Ecotwist t_{tol} 30-60 mm				$h_D + 105$
Overall plastic anchor embedment depth in the base material (see Annex A1) at Cover.fix Ecotwist t_{tol} 0-10 mm				45
Overall plastic anchor embedment depth in the base material (see Annex A1) at Cover.fix Ecotwist t_{tol} 0-30 mm	h_{nom}	=		65
Overall plastic anchor embedment depth in the base material (see Annex A1) at Cover.fix Ecotwist t_{tol} 30-60 mm				95

Table B2.2: Minimum distances and spacings

				Cover.fix Ecotwist
Minimum thickness of member	h_{min}			100 ¹⁾
Minimum spacing	s_{min}	=	[mm]	100
Minimum edge distance	c_{min}			100

¹⁾ For weather resistant external wall panels: $h_{min}=40$ mm

Scheme of distances and spacing



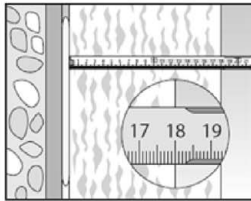
Cover.fix Ecotwist

Intended use

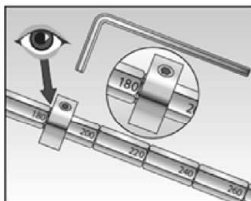
Installation parameters
Minimum thickness of member, distances and spacing

Annex B2

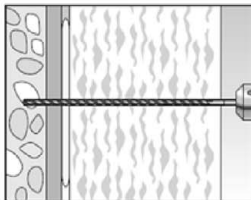
Installation instructions



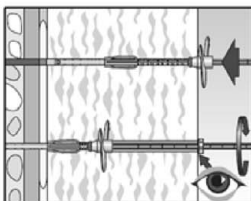
1. Measure insulation thickness h_D (example: 18 cm = 180 mm).



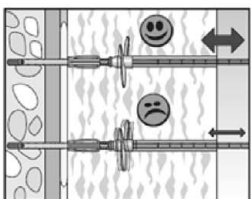
2. Adjust the setting tool ring corresponding to the insulation material thickness h_D in mm.
Number is legible.
Additionally to the setting tool ring a thin plastic plate (maximum 1 mm thickness) can be used as a stop unit for easier mounting.



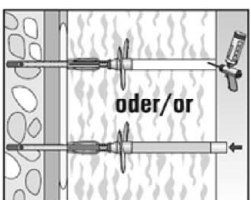
3. Drill bore hole. Total drill hole depth must be at
 $t_{tol} 0-10 \text{ mm} \rightarrow h_D + 55 \text{ mm}$
 $t_{tol} 0-30 \text{ mm} \rightarrow h_D + 75 \text{ mm}$
 $t_{tol} 30-60 \text{ mm} \rightarrow h_D + 105 \text{ mm}$.
Note: bore holes in Hfz and autoclaved aerated concrete only by rotary drilling



4. Press the anchor with the screw plate tight against the surface of the insulation material, then start screwing-in the anchor. Setting is finished when the surface of the ring is flush with the surface of the insulation material.



5. When step 4 is completed, press the adjustment tool tight against the installed anchor.
If there is no axial movement of the anchor, remove the setting tool. In case of axial movement, a new anchor has to be set in a new drill hole.



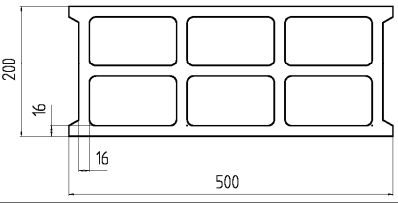
5. The hole in the insulation material must be filled with a suitable foam (illustrated in Annex A1) or must be closed with an appropriate insulation cylinder.

Cover.fix Ecotwist

Intended use
Installation instructions

Annex B3

Table C1.1: Characteristic resistance under tension load N_{Rk}

Base material	Group ¹⁾	Bulk density ρ [kg/dm ³]	Minimum compress. strength f_b [N/mm ²]	Remarks	Drill method ²⁾	N_{Rk} [kN]
Weather resistant skin of external wall panels, concrete C20/25 – C50/60	-	-	-	Concrete without fibres C20/25 – C50/60 as per EN 206:2013 Thickness of concrete panels 40 mm \leq h < 100 mm	H	0,9
Weather resistant skin of external wall panels, concrete C20/25 – C50/60	-	-	-	Concrete without fibres C20/25 – C50/60 as per EN 206:2013 Thickness of concrete panels 40 mm \leq h < 100 mm	R	1,5
Concrete C12/15- C50/60	A	-	-	Concrete without fibres C12/15 - C50/60 as per EN 206:2013	H	1,5
Sand-lime solid bricks, KS as per EN 771-2:2011	B	$\geq 2,0$	20 12	Vertically perforation ³⁾ $\leq 15\%$	H	1,5 1,2
Clay bricks, Mz as per EN 771-1:2011	B	$\geq 1,8$	12	Vertically perforation ³⁾ $\leq 15\%$	H	1,2
Solid concrete block, Vbn as per EN 771-3:2011	B	$\geq 2,0$	20 12	Vertically perforation ³⁾ $\leq 10\%$	H	1,5 1,2
Lightweight concrete solid blocks, Vbl as per EN 771-3:2011	B	$\geq 1,4$	8	Vertically perforation ³⁾ $\leq 15\%$, exterior web thickness ≥ 35 mm	H	0,6
Vertically perforated sand-lime bricks, KSL as per EN 771-2:2011	C	$\geq 1,4$	20 12	Vertically perforation ³⁾ $> 15\%$, Exterior web thickness ≥ 23 mm	H	1,2 0,75
Vertically perforated clay bricks, Hlz as per EN 771-1:2011	C	$\geq 1,0$	12	Vertically perforation ³⁾ $> 15\%$ and $\leq 50\%$, Exterior web ≥ 12 mm	R	0,75
Lightweight concrete hollow blocks, Hbl as per EN 771-3:2011	C	$\geq 1,2$	10 8 6 4	Vertically perforation ³⁾ $> 15\%$ and $\leq 50\%$, Exterior web ≥ 38 mm	H	1,2 0,9 0,75 0,6
Lightweight concrete hollow blocks, Hbl4 as per EN 771-3:2011	C	$\geq 0,9$	4		H	0,5
Lightweight aggregate concrete, LAC as per EN 1520:2011 / EN 771-3:2011	D	$\geq 0,9$	6	-	H	0,75
Autoclaved aerated concrete blocks, AAC as per EN 771-4:2011	E	$\geq 0,5$	4	-	R	0,4

¹⁾ Base material group, see Annex B1

²⁾ R = Rotary drilling | H = Hammer drilling

³⁾ Cross section reduced by perforation vertically to the resting area

Figures not to scale.

Cover.fix Ecotwist

Performance
Characteristic resistance

Annex C1

Table C2.1: Point thermal transmittance acc. to EOTA Technical TR 025: 2016-05

Anchor type	Thickness of insulation material h_D [mm]	Point thermal transmittance χ [W/K]
Cover.fix Ecotwist EPS-plug and air void $t_{tol} = 0 - 10$ mm	100 - 240	0,001
	> 240	0
Cover.fix Ecotwist PU-foam filled hole $t_{tol} = 0 - 10$ mm	100 - 150	0,001
	> 150	0
Cover.fix Ecotwist EPS-plug and air void $t_{tol} = 0 - 30$ mm	100 - 240	0,001
	> 240	0
Cover.fix Ecotwist PU-foam filled hole $t_{tol} = 0 - 30$ mm	100 - 150	0,001
	> 150	0
Cover.fix Ecotwist EPS-plug and air void $t_{tol} = 30 - 60$ mm	100	0,002
	120 - 240	0,001
	> 240	0
Cover.fix Ecotwist PU-foam filled hole $t_{tol} = 30 - 60$ mm	100	0,002
	120 - 150	0,001
	> 150	0

Table C2.2: Displacements

Base material	Minimum compressive strength f_b [N/mm ²]	Tension load N [kN]	Displace- ments $\Delta\delta_N$ [mm]
Concrete thin members \geq C20/25 as per EN 206:2013 (hammer drilling)	-	0,3	< 0,3
Concrete thin members \geq C20/25 as per EN 206:2013 (rotary drilling)	-	0,5	< 0,3
Concrete C16/20 - C50/60 as per EN 206:2013	-	0,5	< 0,3
Sand-lime solid bricks, KS as per EN 771-2:2011	20	0,5	< 0,3
	12	0,4	
Clay bricks, Mz as per EN 771-1:2011	12	0,4	< 0,3
Solid concrete block, Vbn as per EN 771-3:2011	20	0,5	< 0,3
	12	0,4	
Lightweight concrete solid blocks, Vbl as per EN 771-3:2011	8	0,2	< 0,2
Vertically perforated sand-lime bricks, KSL as per EN 771-2:2011	20	0,4	< 0,2
	12	0,25	
Vertically perforated clay bricks, Hlz as per EN 771-1:2011	12	0,25	< 0,3
Lightweight concrete hollow blocks, Hbl as per EN 771-3:2011	10	0,4	< 0,3
	8	0,3	
	6	0,25	
	4	0,2	
Lightweight concrete hollow blocks, Hbl4 as per EN 771-3:2011	4	0,15	< 0,4
Lightweight aggregate concrete, LAC as per EN 1520:2011 / EN 771-3:2011	6	0,25	< 0,2
Autoclaved aerated concrete blocks, AAC as per EN 771-4:2011	4	0,15	< 0,1

Cover.fix Ecotwist

Performance

Point thermal transmittance, displacements

Annex C2