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European Technical Assessment

**ETA 16/0134 – version 01
of 10/06/2016**

General Part

Technical Assessment Body issuing the ETA and designated according to Article 29 of the Regulation (EU) No 305/2011: **Technický a skúšobný ústav stavebný, n. o.**

Trade name of the construction product

THERMOSAVE

Product family to which the construction product belongs

Product area code: 33
Plastic anchors for fixing of external thermal insulation composite systems with rendering in concrete and masonry

Manufacturer

Polymer Composites LLC
pr. Garazhny, 4 of. 302
Cheboksary, 428903
Chuvash Republic
Russia

Manufacturing plant

Polymer Composites LLC
pr. Kabelny, 3
Cheboksary, 428000
Chuvash Republic
Russia

This European Technical Assessment contains

11 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

ETAG 014, edition February 2011, used as European Assessment Document (EAD).

This version replaces

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Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document and should be identified as such.

Communication of this European Technical Assessment, including transmission by electronic means, shall be in full (excepted the confidential Annex(es) referred to above). However, partial reproduction may be made, with the written consent of the issuing Technical Assessment Body – Technický a skúšobný ústav stavebný, n. o. (TSÚS). Any partial reproduction has to be identified as such.

Specific part

1 Technical description of the product

1.1 General

The THERMOSAVE is a nailed-in anchor which consists of an anchoring element (plug) made from polyamide, a glass fiber reinforced polymer (GFRP) bar and restraint cap made from polypropylene.

The anchor is installed in drilled hole by hammering the GFRP bar into the plug. The expansion of the plug applies the anchorage.

The installed anchor is shown in Annex A.

2 Specification of the intended use(s) in accordance with the applicable European Assessment Document (hereinafter EAD)

2.1 Intended use

The performances given in Clause 3 are only valid if the anchor is used in compliance with the specifications and conditions given in Annex B.

The provisions made in this European Technical Assessment (ETA) are based on an assumed intended working life of at least 25 years. The indications given as to the working life cannot be interpreted as a guarantee given by the manufacturer or the Technical Assessment Body, but should be regarded only as a means for choosing the appropriate products in relation to the expected economically reasonable working life of the works.

2.2 Manufacturing

The European Technical Assessment is issued for the THERMOSAVE anchor in the basis of agreed data/information, deposited with the Technical Assessment Body Technický a skúšobný ústav stavebný, n. o., which identified the ETICS that has been assessed and judged. Changes to the anchor or production process, which could result in this deposited data/information being incorrect, shall be notified to the Technical Assessment Body Technický a skúšobný ústav stavebný, n. o. before the changes are introduced. The Technical Assessment Body Technický a skúšobný ústav stavebný, n. o. will decide whether or not such changes affect the ETA and consequently the validity of the CE marking on the basis of the ETA and if so whether further assessment or alternations to the ETA, shall be necessary.

2.4 Use, maintenance and repair

The finishing coat shall normally be maintained in order to fully preserve the anchors and the ETICS performance.

Maintenance includes at least:

- visual inspection of the ETICS;
- repairing of local damaged areas due to accidents;
- aspect maintenance with products adapted and compatible with the ETICS (possibly after washing or ad hoc preparation).

Necessary repairs should be performed as soon as the need has been identified.

It is important to be able to carry out maintenance as far as possible using readily available products and equipment, without spoiling appearance. Only products which are compatible with the ETICS shall be used.

The information on use, maintenance and repair is given in the manufacturer's technical documentation. It is responsibility of the manufacturer(s) to ensure that these provisions are easily accessible to the concerned people.

3 Performance of the product and reference to the methods used for its assessment

3.1 Mechanical resistance and stability (BWR 1)

Essential characteristic	Performance
Characteristic resistance for tension loads	See Annex C
Displacement	See Annex C
Plate stiffness	See Annex C

3.2 Safety in case of fire (BWR 2)

ETAG 004 is relevant.

3.3 Hygiene, health and environment (BWR 3)

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

3.3.5 Release of dangerous substances (ETAG 004 – Clause 5.1.3.5, EOTA TR 034)

A written declaration was submitted by the ETA-holder.

In addition to the specific clauses relating to dangerous substances contained in this European Technical Assessment, there may be other requirements applicable to the kit falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet provisions of the EU Construction Products Regulation, these requirements need also to be complied with, when and where they apply.

3.4 Safety and accessibility in use (BWR 4)

The basic work requirements for safety in use are listed in Annex C.

3.5 Protection against noise (BWR 5)

Not relevant.

3.6 Energy economy and heat retention (BWR 6)

Not relevant.

3.7 Sustainable use of natural resources (BWR 7)

No performance assessed.

3.8 General aspects relating to fitness for use

Durability and serviceability are only ensured if specifications of intended use according to Annex B are kept.

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

According to the European Commission Decision 97/463/EC of the Commission of 27 June 1997 (Official journal of the European Communities L198 of 25.07.1997, p. 31-32) (further described in Annex V to Regulation (EU) No. 305/2011) given in the following table apply.

Table 1 – Assessment and verification of constancy of performance system

Product(s)	Intended use(s)	Level(s) or class(es) (Reaction to fire)	System(s)
Plastic anchors for use in concrete and masonry	For fixing of external thermal insulation composite systems with rendering	–	2+
<p>⁽¹⁾ Products/materials for which a clearly identifiable stage in the production process results in an improvement of the reaction to fire classification (e.g. an addition of fire retardants or a limiting of organic material).</p> <p>⁽²⁾ Products/materials not covered by footnote (1).</p> <p>⁽³⁾ Products/materials that do not require to be tested for reaction to fire (e.g. Products/materials of Classes A1 according to Commission Decision 96/603/EC).</p>			

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

In order to help the Notified Body to make an evaluation of conformity, the Technical Assessment Body issuing the ETA shall supply the information detailed below. This information together with the requirements given in EC Guidance Paper B will generally form the basis on which the factory production control (FPC) is assessed by the Notified Body.

This information shall initially be prepared or collected by the Technical Assessment Body and shall be agreed with the manufacturer. The following gives guidance on the type of information required:

1) The ETA

Where confidentiality of information is required, this ETA makes reference to the manufacturer's technical documentation which contains such information.

2) Basic manufacturing process

The basic manufacturing process is described in sufficient detail to support the proposed FPC methods.

The different components of ETICS are generally manufactured using conventional techniques. Any critical process or treatment of the components which affects performance are highlighted in the manufacturer's documentation.

3) Product and materials specifications

The manufacturer's documentation includes:

- detailed drawings (possibly including manufacturing tolerances);
- incoming (raw) materials specifications and declarations;
- references to European and/or international standards;
- technical data sheets.

4) Control Plan (as a part of FPC)

The manufacturer and the Technický a skúšobný ústav stavebný, n. o. have agreed to a Control Plan which is deposited with the Technický a skúšobný ústav stavebný, n. o. in documentation which accompanies the ETA. The Control Plan specifies the type and frequency of checks/tests conducted during production and on the final product. This includes the checks conducted during manufacture on properties that cannot be inspected at a later stage and for checks on the final product.

In cases where the provisions of the European Technical Assessment and its Control Plan are no longer fulfilled, the Notified Body shall withdraw the certificate and inform Technický a skúšobný ústav stavebný, n. o. without delay.

Technický a skúšobný ústav stavebný, n. o.
Building Testing and Research Institute
Studená 3, 821 04 Bratislava, Slovak Republic

On behalf of the Technický a skúšobný ústav stavebný, n. o.
Bratislava, 10 June 2016



prof. Ing. Zuzana Sternová, PhD.
Head of Technical Assessment Body

Annexes

Annex A – Product description

Annex B – Intended use

Annex C – Performance

THERMOSAVE

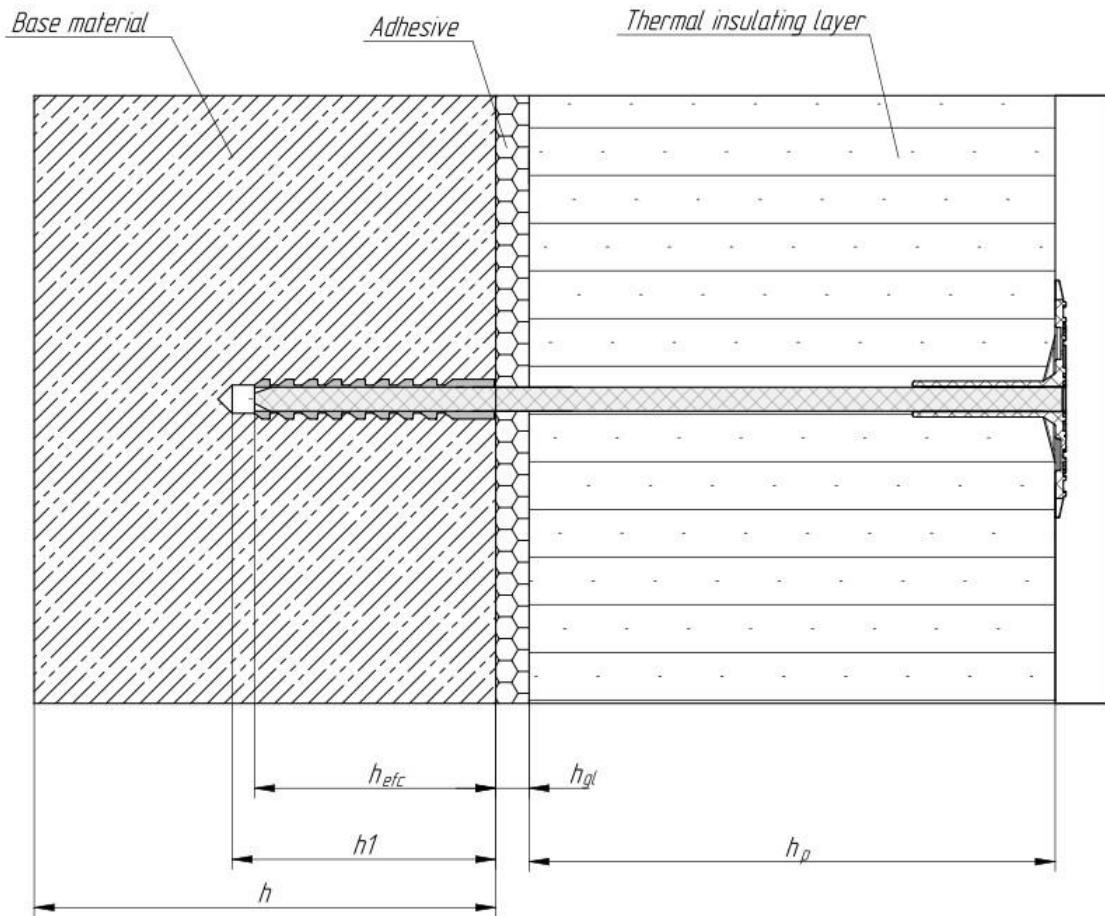


Figure A.1 – Installed conditions

Intended use:

Fixing of external thermal insulation composite systems in categories A, B and D.

Legend

- h_{efc} effective anchorage depth for normal weight concrete, solid masonry and lightweight aggregate concrete
- h_1 depth of drill hole in base material
- h thickness of base material
- h_p thickness of insulation material
- h_{gl} thickness of glue

THERMOSAVE

Product description
Installed conditions

Annex A.1

of European Technical Assessment
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THERMOSAVE

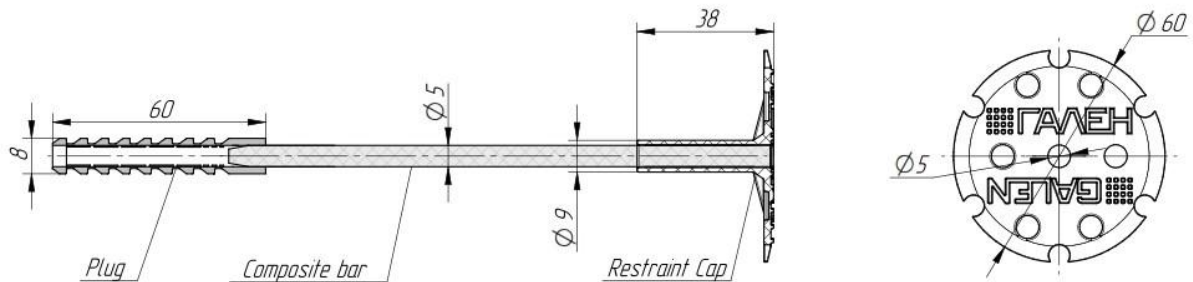


Figure A.2 – Dimensions

Legend

- Plug - made of polyamide PA6-L-U1
- Composite bar - made of glass fibre reinforced polymer
- Restraint cap - made of impact resistant polypropylene with modifying additives

Table A.1 – Dimensions

Anchor type	Composite bar		Expansion plug		
	$\varnothing d_{nom}$ (mm)	L_a^* (mm)	h_{ef} (mm)	L_p (mm)	$\varnothing d$ (mm)
THERMOSAVE	4,9	110 to 250	60	60	7,83

$L_{a,min} = 110$ mm; $L_{a,max} = 250$ mm; $h_p = L_a - h_{gl} - h_{efc}$
 * Various lengths are possible upon customer's request.

Table A.2 – Materials of anchor THERMOSAVE

Designation	Default Colour*	Material
Restraint cap	Black	Polypropylene
Composite bar	Black	Glass fiber reinforced polymer
Plug	White	Polyamide

* Various colours are possible upon customer's request.

THERMOSAVE

Product description
Dimensions and materials

Annex A.2

of European Technical Assessment
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Anchors are subjected to:

- Multiple fixing for the anchorage of external thermal insulation composite systems with rendering (ETICS).

Base materials:

- Reinforced or unreinforced normal weight concrete (Category A), according to Annex B.2.
- Solid masonry (Category B), according to Annex B.2.
- Lightweight aggregate concrete (Category D), according to Annex B.2.
- The characteristic resistance under tensile strength of the anchor can be determined by means of pull-out tests in situ, on the material actually used, if the characteristic resistance of the base material doesn't exist (for example masonry made of other solid masonry units).

Use conditions:

- The anchor may be used only for transmission of wind suction loads and shall not be used for the transmission of dead loads of the thermal insulation composite system. The dead loads have to be transmitted by the bonding of the thermal insulation composite system.

Use categories:

- A, B, and D

Design:

- The design of anchorages is carried out in compliance with ETAG 014 "Guideline for European Technical Approval of Plastic Anchors for Fixing of External Thermal insulation Composite Systems with Rendering" under the responsibility of an engineer experienced in anchorages.
- Verifiable calculation notes and drawings shall be prepared taking account of the loads to be anchored, the nature of strength of the base materials, the thickness of insulation and the dimensions of the anchorage as well as of the relevant tolerances.
- Proof of direct local application of load on the base material shall be delivered. The anchor shall be used only for the transmission of wind suction loads. All other loads such as dead load and restraints shall be transmitted by the adhesion of the relevant external thermal insulation composite system.

THERMOSAVE

Intended use
Specifications

Annex B.1

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Installation:

The fitness for use of the anchor can be only assumed if the following conditions of installation are met:

- Anchor installation is carried out by appropriately qualified workers under the supervision of the person responsible for technical matters on site.
- Use of the anchor only as supplied by the manufacturer without exchanging any components of the anchor.
- Anchor installation in accordance with the manufacturer's specifications and drawing using the tools meant for installation.
- Checks before placing the anchor to ensure that the characteristic values of the base material, in which the anchor is to be placed, is identical with the values which the characteristic loads apply for.
- Observation of the drill method.
- Layout the drill holes without damaging the reinforcement.
- Temperature during installation of the anchor $\geq 5\text{ }^{\circ}\text{C}$.
- Exposing the anchors to UV light for no more than 6 weeks.

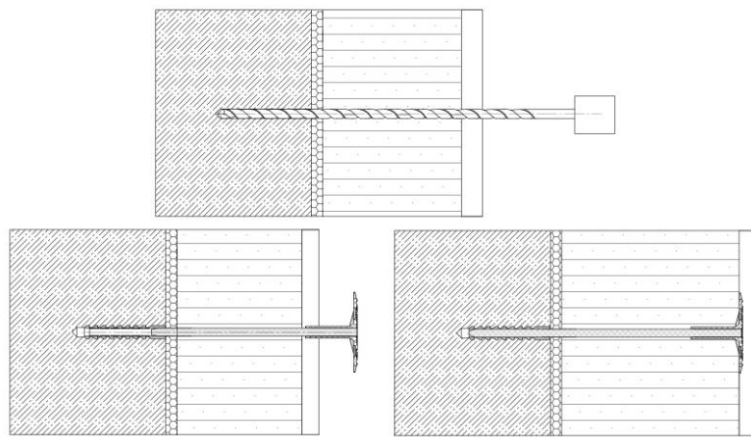


Figure B.1 – Installation

Table B.1 – Base materials

Base material	Use category	Bulk density (kg/m ³)	Min. compressive strength β (N/mm ²)	General remarks	Drilling method
Concrete C 20/25 according to EN 206-1	A	$\geq 2\ 300$			Hammer drilling
Concrete C 50/60 according to EN 206-1	A	$\geq 2\ 300$			Hammer drilling
Solid masonry according to EN 771-1	B	$\geq 1\ 650$	20		Hammer drilling
Lightweight aggregate concrete LAC 8/9 according to EN 1520	D	$\geq 1\ 200$	9		Hammer drilling

THERMOSAVE

Intended use
Installation and base materials

Annex B.2

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Installation:

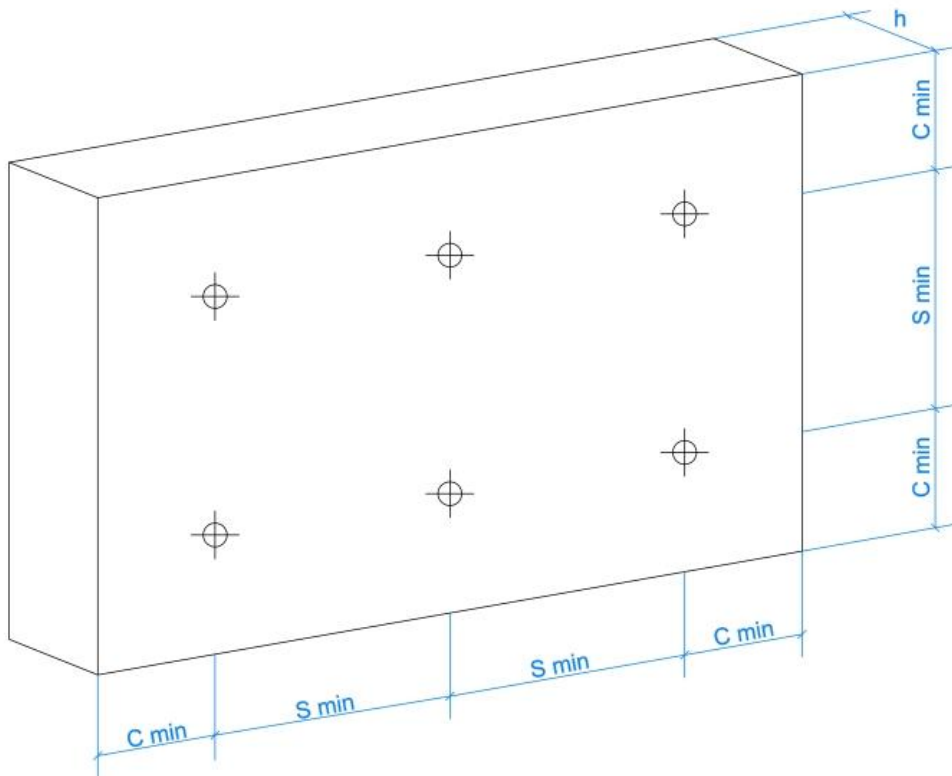
Table B.2 – Installation characteristics

Anchor type	Nominal diameter of drill bit d_0 (mm)	Cutting diameter of drill bit $d_{cut,max} \leq$ (mm)	Cutting diameter of drill bit $d_{cut,min} \geq$ (mm)	Depth of drill hole $h_1 =$ (mm)	Overall embedment depth h_{ef} (mm)
THERMOSAVE	8	8,45	8,05	$h_{ef} + 5$	60

Table B.3 – Minimum thickness of base material, edge distance and anchor spacing

Anchor type	Minimum thickness of base material h (mm)	Minimum spacing s_{min} (mm)	Minimum edge distance c_{min} (mm)
THERMOSAVE	$h_{ef} + 20$	200	100

Scheme of distance and spacing:



THERMOSAVE

Intended use
Installation characteristics, edge and axial distances

Annex B.3

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Table C.1 – Characteristic resistance in tensile strength of single anchor

Base material	Use category	Bulk density class (kg/m ³)	Min. compressive strength β (N/mm ²)	THERMOSAVE (kN)
Concrete C 25/30 to C 50/60 according to EN 206-1	A	$\geq 2\,300$		0,60
Solid masonry according to EN 771-1	B	$\geq 1\,650$	20	0,30
Lightweight aggregate concrete LAC 8/9 according to EN 1520	D	$\geq 1\,200$	9	0,75
Partial safety factor	γ_M		2,0*	

* In the absence of other national regulations.

Table C.2 – Displacement of THERMOSAVE under tension loads

Base material	Tension load N_{Sk} (kN)	Displacement Δ_{6N} (mm)
Concrete C 25/30 to C 50/60 according to EN 206-1	0,20	0,536
Solid masonry according to EN 771-1	0,10	0,536
Lightweight aggregate concrete LAC 8/9 according to EN 1520	0,25	0,652

Table C.3 – Plate stiffness

Anchor type	Diameter of the anchor plate (mm)	Load resistance of the anchor plate (kN)	Plate stiffness (kN/mm)
THERMOSAVE	60	0,78	0,22

Table C.4 – Point thermal transmittance

Anchor type	Insulation thickness h_D (mm)	Point thermal transmittance χ (W/K)
THERMOSAVE	50 to 190	0,0021

THERMOSAVE

Performances

Characteristic tension load, displacement under tension load

Annex C.1

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