

84, avenue Jean-Jaurès Champs-sur-Marne FR-77447 Marne-la-Vallée Cedex 2

Tél. : + 33 (0)1 64 68 82 82 Fax : + 33 (0)1 60 05 70 37 E-mail : <u>etics@cstb.fr</u> Site internet : <u>www.cstb.fr</u>





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## European Technical ETA-14/0469 - version 2 Assessment of 20/05/2020

#### **GENERAL PART**

Technical Assessment Body issuing the European Technical Assessment:

Trade name of the construction product:

Product family to which the construction product belongs:

Manufacturer:

Manufacturing plant(s):

This European Technical Assessment contains:

This European Technical Assessment is issued in accordance with regulation (EU) No 305/2011, on the basis of:

This version replaces:

Centre Scientifique et Technique du Bâtiment (CSTB)

#### PRB THERMOPATE

Product Area Code: 04 External Thermal Insulation Composite System with rendering (ETICS)

#### PRB S.A.

Rue de la Tour – CS 10018 FR – 85150 LES ACHARDS

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Rue de la Tour – CS 10018 FR – 85150 LES ACHARDS

16 pages including 3 Annexes which form an integral part of this assessment

Annex 4 contain confidential information and is not included in the European Technical Assessment when that assessment is publicly available

European Technical Approval Guideline No 004 (ETAG 004), edition 2013, used as European Assessment Document (EAD)

ETA-14/0469 valid from 15/12/2014

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

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## **SPECIFIC PART**

### 1. Technical description of the product

The External Thermal Insulation Composite System "**PRB THERMOPATE**", subject to this European Technical Assessment (hereinafter ETA) and called ETICS in the following text, is a kit designed and installed in accordance with the Manufacturer's instructions, deposited with the CSTB. The ETICS comprises the components listed in the following table, which are factory-produced by the Manufacturer or a supplier. The ETICS is made up on site from these components.

The ETICS also includes ancillary materials which are defined in clause 3.2.2.5 of the ETAG 004<sup>1</sup>. They shall be used in accordance with the Manufacturer's instructions.

The ETICS is described according to its method of fixing, as defined in clause 2.2 of the ETAG 004.

Method of fixing	Component	Coverage (kg/m²)	Thickness (mm)	
	Insulation product			
	Expanded polystyrene (EPS) boards, see Ar	nnex 1	20 to 300	
	Adhesives			
Bonded ETICS (purely bonded	<b>PRB THERMICOL</b> : powder, cement- based, to be mixed with about 25% wt. water.	2.6 to 2.8 [powder]		
or bonded with supplementary anchors)	<b>PRB FONDISOL F</b> : powder, cement- based, to be mixed with about 19% wt. water	2.6 to 2.9 [powder]		
	<b>PRB FONDISOL PE</b> : acrylic copolymer based ready to use paste	2.0 to 3.5 [ready-to-use]		
	PU010: ready-to-use foam, polyurethane	About 0.1	_	
	Supplementary anchors for insulation product			
	Plastic anchors, see Annex 2			
	Insulation product			
	Expanded polystyrene (EPS) boards, see Ar	60 to 300		
	Supplementary adhesives			
Mechanically fixed ETICS with anchors and	<b>PRB THERMICOL</b> : powder, cement- based, to be mixed with about 25% wt. water.	2.3 to 2.8 [powder]		
supplementary adhesive	<b>PRB FONDISOL F</b> : powder, cement- based, to be mixed with about 19% wt. water	2.3 to 2.9 [powder]	_	
	PRB FONDISOL PE: acrylic copolymer based ready to use paste	2.0 to 3.5 [ready-to-use]		
	PU010: ready-to-use foam, polyurethane	About 0.1		

<sup>&</sup>lt;sup>1</sup> ETAG 004 is available on the EOTA website: <u>www.eota.eu</u>.



Method of fixing	Component	Coverage (kg/m²)	Thickness (mm)	
Mechanically fixed ETICS with anchors and	Anchors for insulation product			
supplementary adhesive	Plastic anchors, see Annex 2	_	—	
	Base coat			
	<b>PRB FONDISOL PE</b> : ready-to-use paste (without cement), acrylic copolymer binder in aqueous dispersion, calcium carbonate and silica particles, specific additives	About 4.0 [ready-to-use]	Mean: 2.8 [dry] Minimal: 2.5 [dry]	
	Meshes			
	Glass fibre meshes (standard and reinforced), se	e Annex 3		
	Key coat			
	<b>PRB CRÉPIFOND G</b> : ready-to-use pigmented liquid, acrylic binder, to apply optionally before PRB CRÉPIMUR M FR, PRB CRÉPIMUR F FR, PRB CRÉPIRIB F FR, PRB CRÉPIRIB G FR, PRB CRÉPISIX M FR, PRB CRÉPOXANE M FR and PRB CRÉPILIS FR	0.25	_	
Every method of fixing	Finishing coats			
	Ready-to-use pastes, acrylic binder: - PRB CRÉPIMUR F FR (particle size 1.0 mm) - PRB CRÉPIMUR M FR (particle size 1.5 mm) - PRB CRÉPIRIB F FR (particle size 2.0 mm) - PRB CRÉPIRIB G FR (particle size 3.0 mm)	2.0 to 2.2 2.2 to 2.8 2.0 to 2.6 2.8 to 3.5		
	Ready-to-use paste – acrylic binder with siloxane: - <b>PRB CRÉPISIX M FR</b> (particles size 1.5 mm)	2.2 to 2.6	Regulated by particle size	
	Ready-to-use paste, siloxane binder: - PRB CRÉPOXANE M FR (particle size 1.5 mm)	2.2 to 2.8		
	PRB CRÉPILIS FR composed of two coats of ready-to-use pastes, acrylic-binder:			
	<ul> <li>PRB CRÉPILIS SC FR (particle size 0.7 mm)</li> <li>PRB CRÉPILIS F FR (particle size 0.2 mm)</li> </ul>	1.1 to 1.5 0.6 to 1.0		
Ancillary materials	Descriptions in accordance with § 3.2.2.5 of the ETAG 004 Remain under the ETA-Manufacturer responsibilities			

The ETICS is designed to give the walls to which it is applied satisfactory thermal insulation. The minimum thermal resistance of the ETICS shall be higher than 1.0 m<sup>2</sup>.K/W.



The components are protected from moisture during transport and storage by means of appropriate packaging, unless other measures are foreseen by the Manufacturer for this purpose.

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

This ETICS is intended to be used as thermal insulation of buildings' external walls made of masonry (bricks, blocks, stones, *etc.*) or concrete (cast on site or as prefabricated panels).

The ETICS can be installed on new or existing (retrofit) vertical walls. It can also be installed on horizontal or inclined surfaces which are not exposed to precipitation.

The ETICS is made of non-load bearing construction elements. It does not contribute directly to the stability of the walls on which it is installed, but it can contribute to durability by providing enhanced protection from the effect of weathering.

The ETICS is not intended to ensure the airtightness of the walls.

The provisions made in this ETA are based on an assumed working life of at least 25 years, provided that the construction works are subject to appropriate design, execution, maintenance and repair. 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 only be regarded as a means for choosing the appropriate products in relation to the expected economically reasonable working life of the works.

Design, execution, maintenance and repair of the construction works shall take into account principles given in chapter 7 of the ETAG 004 and shall be done in accordance with national instructions.

# 3. Performances of the product and references to the methods used for their assessment

Performances of the ETICS, related to the basic requirements for construction works (hereinafter BWR), were determined according to chapters 4, 5 and 6 of the ETAG 004.

These performances, given in the following paragraphs, are valid as long as the components are the ones described in § 1 and Annexes 1 to 3 of this ETA.

#### 3.1 Mechanical resistance and stability (BWR 1)

Not relevant.



## 3.2 Safety in case of fire (BWR 2)

Reaction to fire:

Configuration	Declared organic content <sup>(1)</sup>	Declared flame retardant content <sup>(1)</sup>	Class according to EN 13501-1
<ul> <li>Adhesives / supplementary adhesives:</li> <li>PRB THERMICOL</li> <li>PRB FONDISOL F</li> </ul>			
• Insulation product: EPS boards, reaction to fire Class E, thickness $\leq$ 300 mm, density $\leq$ 19 kg/m <sup>3</sup>			
Base coat:     PRB FONDISOL PE			
No key coat			B – s2, d0
<ul> <li>Meshes:         <ul> <li>R 131 A 101 C+</li> <li>R 131 A 102 C+</li> <li>SSA-1363 F+</li> </ul> </li> </ul>			
<ul> <li>Finishing coats:         <ul> <li>PRB CRÉPIMUR F FR / M FR</li> <li>PRB CRÉPIRIB F FR / G FR</li> <li>PRB CRÉPISIX M FR</li> <li>PRB CRÉPOXANE M FR</li> <li>PRB CRÉPILIS FR</li> </ul> </li> </ul>	Base coat: 6.2 % Key coat:	Base coat: 18.0 % Key coat:	
Adhesives / supplementary adhesives:     - PU010     - PRB FONDISOL PE	11.8%	0.0%	
• Insulation product: EPS boards, reaction to fire Class E, thickness $\leq$ 300 mm, density $\leq$ 19 kg/m <sup>3</sup>	Finishing coats: 6.6 to 7.8 %	Finishing coats: 18.0%	
Base coat:     PRB FONDISOL PE			
No key coat			E
<ul> <li>Meshes:         <ul> <li>R 131 A 101 C+</li> <li>R 131 A 102 C+</li> <li>SSA-1363 F+</li> </ul> </li> </ul>			
<ul> <li>Finishing coats:</li> <li>PRB CRÉPIMUR F FR / M FR</li> <li>PRB CRÉPIRIB F FR / G FR</li> <li>PRB CRÉPISIX M FR</li> <li>PRB CRÉPOXANE M FR</li> <li>PRB CRÉPILIS FR</li> </ul>			
Other configurations	-	_	NPD <sup>(2)</sup>

<sup>(1)</sup> Percentage declared by the Manufacturer, relative to the dried weight of the component as delivered.

<sup>(2)</sup> No performance determined

Note: a European reference fire scenario has not been laid down for façades. In some Member States, the classification of ETICS according to EN 13501-1 might not be sufficient for the use in façades. An additional assessment of ETICS according to national provisions (e.g., on the



basis of a large scale test) might be necessary to comply with Member States regulations, until the existing European classification system has been completed.

## 3.3 Hygiene, health and the environment (BWR 3)

#### 3.3.1 Water absorption – capillarity test

- 3.3.1.1 Water absorption of the base coat
  - After 1 hour: water absorption < 1 kg/m<sup>2</sup>
  - After 24 hours: water absorption < 0.5 kg/m<sup>2</sup>

#### 3.3.1.2 Water absorption of the rendering system

Rendering system:	Water absorption after 24 hours		
Base coat + finishing coat indicated below	< 0.5 kg/m²	≥ 0.5 kg/m²	
With or without PRB CRÉPIFOND G: - PRB CRÉPIMUR F FR - PRB CRÉPIMUR M FR - PRB CRÉPIRIB F FR - PRB CRÉPIRIB G FR			
With or without PRB CRÉPIFOND G: - PRB CRÉPISIX M FR	х		
With or without PRB CRÉPIFOND G: - PRB CRÉPOXANE M FR			
With or without PRB CRÉPIFOND G: - PRB CRÉPILIS FR			

#### 3.3.2 Watertightness

#### 3.3.2.1 Hygrothermal behaviour

Heat-rain and heat-cold cycles have been performed on a rig. The ETICS is assessed as resistant to hygrothermal cycles.

#### 3.3.2.2 Freeze-thaw behaviour

Water absorptions of both the base coat and the rendering systems are less than  $0.5 \text{ kg/m}^2$  after 24 hours. The ETICS is therefore assessed as resistant to freeze-thaw without further testing.



#### 3.3.3 Impact resistance

	Use category		
Rendering system: Base coat + finishing coat indicated below	Single standard mesh	Double standard mesh	Reinforced mesh + standard mesh
With or without PRB CRÉPIFOND G: - PRB CRÉPIMUR F FR - PRB CRÉPIMUR M FR - PRB CRÉPIRIB F FR - PRB CRÉPIRIB G FR			
With or without PRB CRÉPIFOND G: - PRB CRÉPISIX M FR	Category II	Category I	
With or without PRB CRÉPIFOND G: - PRB CRÉPOXANE M FR			
With or without PRB CRÉPIFOND G: - PRB CRÉPILIS FR	Category III		

#### 3.3.4 Water vapour permeability – resistance to water vapour diffusion

Rendering system: Base coat + finishing coat indicated below	Equivalent air thickness <i>s</i> d (m)
With or without PRB CRÉPIFOND G: - PRB CRÉPIMUR F FR - PRB CRÉPIMUR M FR - PRB CRÉPIRIB F FR - PRB CRÉPIRIB G FR	≤ 1.0 (Test result obtained with PRB CRÉPIMUR F FR: 0.5 PRB CRÉPIMUR M FR: 0.6 PRB CRÉPIRIB G FR: 0.6)
With or without PRB CRÉPIFOND G: - PRB CRÉPISIX M FR	$\leq$ 1.0 (Test result obtained: 0.6)
With or without PRB CRÉPIFOND G: - PRB CRÉPOXANE M FR	$\leq$ 1.0 (Test result obtained: 0.6)
With or without PRB CRÉPIFOND G: - PRB CRÉPILIS SC FR + PRB CRÉPILIS F FR	$\leq$ 1.0 (Test result obtained: 0.5)

#### 3.3.5 Release of dangerous substances

The ETICS belong to Category S/W2, according to EOTA Technical Report No 034.

A written declaration was submitted by the Manufacturer.

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

### 3.4 Safety and accessibility in use (BWR 4)



## 3.4.1 Bond strength

- 3.4.1.1 Bond strength of the base coat onto insulation product
  - Initial state: bond strength  $\ge 0.08$  MPa
  - After hygrothermal cycles: bond strength  $\ge 0.08$  MPa
  - After freeze-thaw cycles: test not required (see § 3.3.2.2 of this ETA)

## 3.4.1.2 Bond strength of adhesives onto substrate and insulation product

## PRB THERMICOL, PRB FONDISOL F and PRB FONDISOL PE

	Bond strength (MPa) after:		
	Initial state	48 h immersion water + 2 h at 23°C-50% RH	48 h immersion water + 7 days at 23°C-50% RH
Concrete	≥ 0.25	≥ 0.08	≥ 0.25
Insulation product	≥ 0.08	≥ 0.03	≥ 0.08

The ETICS can so be installed on the substrate with application of the adhesive on the following minimal surfaces:

	Tensile strength perpendicular to the faces of EPS		
	≥ 100 kPa	≥ 120 kPa	≥ 150 kPa
PRB THERMICOL	30%	25%	20%
PRB FONDISOL F	30%	25%	25%
PRB FONDISOL PE	30%	25%	20%



#### PU010 (foam adhesive)

	Bond strength (MPa) after:		
	Initial state	Maximum open time (4 min)	Modified temperature (5°C, 35°C)
Concrete and insulation product	≥ 0.08	≥0.08	≥ 0.08

The minimal bonded surface S shall exceed 40% for foam adhesive.

### 3.4.2 Fixing strength (transverse displacement)

Test not required because the ETICS fulfils the following criteria:

*E.d* < 50,000 N/mm

- *E* modulus of elasticity of the base coat without mesh (MPa)
- *d* mean dried thickness of the base coat (mm)

#### 3.4.3 Resistance to wind load

Resistance to wind load of mechanically-fixed ETICS using anchors

	Plate diameter (mm)		≥ 60		
Anchors	Plate stiffness (kN/mm)	≥ 0.3			
	Туре		EPS boards		
Insulation product	Tensile strength perpendicular to the face (kPa)	≥ 120			
	Thickness (mm)	≥ 60	≥ 80	≥ 100	
	Anchors not placed at	Minimal: 506	Minimal: 649	Minimal: 658	
Maximum load (Pull-through test)	the panel joints: <i>R</i> <sub>panel</sub> (N)	Average: 512	Average: 657	Average: 688	
	Anchors placed at the	Minimal: 429	Minimal: 554	Minimal: 611	
	panel joints: <i>R</i> <sub>joint</sub> (N)	Average: 455	Average: 570	Average: 616	



	Plate diameter (mm)		≥ 60		
Anchors	Plate stiffness (kN/mm)	≥ 0.6			
	Туре		EPS boards		
Insulation product	Tensile strength perpendicular to the face (kPa)	≥ 120			
	Thickness (mm)	≥ 60	≥ 80	≥ 100	
	Anchors not placed at	Minimal: 509	Minimal: 707	Minimal: 949	
Maximum load (Pull-through test)	the panel joints: R <sub>panel</sub> (N)	Average: 520	Average: 720	Average: 968	
	Anchors placed at the	Minimal: 433	Minimal: 610	Minimal: 806	
	panel joints: <i>R</i> <sub>joint</sub> (N)	Average: 464	Average: 617	Average: 821	

	Trade name	termoz SV II ecotwist
Anchors	Helix dimensions (mm)	Diameter: 66
		Height: 27
	Туре	EPS boards
Insulation product	Tensile strenght perpendicular to the face (kPa)	≥ 120
	Thickness (mm)	≥ 100
	Anchors not placed at the panel joints:	Minimal: 570
Maximum load (Pull-through test) $R_{panel}$ (N)Anchors $R_{joint}$ (N)	R <sub>panel</sub> (N)	Average: 590
	Anchors placed at the panel joints:	Minimal: 350
	R <sub>joint</sub> (N)	Average: 440

Anchor termoz SV II ecotwist can only be used as mounted countersunk.



	Trade name	ThermoScrew TS U8 Gecko	
Anchors	Helix dimensions (mm))	Diameter: 67	
		Height: 30	
	Туре	EPS boards	
Insulation product	Tensile strenght perpendicular to the face (kPa)	≥ 100	
	Thickness (mm)	≥ 100	
Maximum load	Anchors not placed at the panel joints: <i>R</i> <sub>panel</sub> (N)	Minimal: 633	
(Pull-through test)		Average: 656	

Anchor ThermoScrew TS U8 Gecko can only be used as mounted countersunk.

For the use of anchors mounted countersunk, the above indicated values apply for insulation thickness greater or equal to 80 mm and plate diameter equal to 60 mm.

Anchors which can be used are described in Annex 2 of this ETA.

The design wind load resistance of the ETICS fixed with anchors is determined as follows:

$$R_{\rm d} = \frac{R_{\rm panel}.\,n_{\rm panel} + R_{\rm joint}.\,n_{\rm joint}}{\gamma}$$

npanel number of anchors not placed at the panel joints, per m<sup>2</sup>

njoint number of anchors placed at the panel joints, per m<sup>2</sup>

γ national safety factor

#### 3.4.4 Width of crack – Render Strip Tensile Test

No performance was determined for the ETICS.

## 3.5 **Protection against noise (BWR 5)**

No performance was determined for the ETICS.

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

Thermal resistance and thermal transmittance are defined in clause 5.1.6 of the ETAG 004.

#### 3.7 Sustainable use of natural resources (BWR 7)

No performance was determined for the ETICS.



## 3.8 Aspects of durability and serviceability

Bond strength after ageing:

Rendering system: Base coat + finishing coat indicated below	Bond strength (MPa)	
With or without PRB CRÉPIFOND G: - PRB CRÉPIMUR F FR - PRB CRÉPIMUR M FR - PRB CRÉPIRIB F FR - PRB CRÉPIRIB G FR		
With or without PRB CRÉPIFOND G: - PRB CRÉPISIX M FR	≥ 0.08	
With or without PRB CRÉPIFOND G: - PRB CRÉPOXANE M FR		
With or without PRB CRÉPIFOND G: - PRB CRÉPILIS FR		

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

According to Decision 97/556/EC (Decision of the Commission of 14 July 1997, L 229 of 20.8.1997, p. 15), as amended by Decision 2001/596/EC (Decision of the Commission of 8 January 2001, L 209 of 2.8.2001, p. 33)<sup>2</sup>, the systems of AVCP given in the following table apply:

Product	Intended use	Levels or classes (Reaction to fire)	System
	in external walls subject to	A1 <sup>(1)</sup> , A2 <sup>(1)</sup> , B <sup>(1)</sup> or C <sup>(1)</sup>	1
External Thermal Insulation Composite Systems with rendering	fire regulation	- A1 <sup>(2)</sup> , A2 <sup>(2)</sup> , B <sup>(2)</sup> , C <sup>(2)</sup> - D, E, F - (A1 to E) <sup>(3)</sup>	2+
	in external walls not subject to fire regulation	any	2+

<sup>(1)</sup> Products/materials for which as 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).

- <sup>(2)</sup> Products/materials not covered by footnote 1.
- <sup>(3)</sup> 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).

The systems of AVCP are described in Annex V of Regulation (EU) No 305/2011, as amended by Delegated Regulation (EU) No 568/2014.

<sup>&</sup>lt;sup>2</sup> Decisions are published in the Official Journal of the European Union (OJEU), see <u>www.new.eur-lex.europa.eu/oj/direct-access.html</u>.



# 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 at the CSTB.

The control plan is given in Annex 4. As the control plan contains confidential information, Annex 4 is not included in the published parts of this ETA.

Issued in Marne-la-Vallée on 20/05/2020 by Christine GILLIOT Head of Division Coating, Waterproofing, Rendering and Mortars Department Envelope, Insulation and Flooring



Factory-prefabricated, uncoated boards made of expanded polystyrene (EPS) according to EN 13163 and having characteristics described in the following table. The surface of the boards is homogeneous and without "skin". Coverage (kg/m<sup>2</sup>) depends on both thickness of the board and density of EPS.

Reaction to fire / EN 13501-1		Class E	
Thermal resistance / EN 13163		Defined in the CE marking	
	Thickness / EN 823	± 1.0 mm [T2]	
	Length / EN 822	$\pm$ 2.0 mm [L2]	
Dimensional tolerances	Width / EN 822	± 2.0 mm [W2]	
	Squareness / EN 824	± 2% [S2]	
	Flatness / EN 825	≤ 5 mm [P5]	
Dimensional stability	Under specified temperature and humidity / EN 1604: 48 h at 70°C	≤ 1% [DS (70,-)1]	
	Under specified temperature and humidity / EN 1604: 48 h at 70°C and 90% RH	≤ 1% [DS(70,90)1]	
	Under laboratory condition / EN 1603	± 0.2% [DS(N)2]	
Water absorption (partial immersion) / EN 1609 – method A		< 1 kg/m²	
Water vapour o	liffusion resistance factor (μ) / EN 12086	20 to 60	
Tensile strength perpendicular to the faces in dry conditions / EN 1607		TR 100 [≥ 100 kPa]	
Shear strength / EN 12090		SS20 [≥ 0.02 N/mm²]	
Shear modulus / EN 12090		GM 1000 [≥ 1.0 N/mm²]	
Dynamic stiffness / EN 29052-1		No performance determined	
Air flow resistance / EN 29053		Not relevant	

ETICS PRB THERMOPATE		
Insulation product for bonded ETICS or mechanically-	ANNEX 1	
fixed ETICS with anchors	of ETA-14/0469 - version 2	



Anchors with ETA according to European Technical Approval Guideline No 014 (hereinafter ETAG 014) and European Assessment Document 330196-ED-0604 (hereinafter EAD anchors). The anchors are composed of a plastic expansion sleeve with a plate having diameter of 60 mm and a plastic or metallic nail or screw. Use categories and characteristic resistances in the substrate are given in each anchor's ETA. Validity of the anchor's ETA shall be checked before using the anchor.

Trade name	ETA reference	Mounting <sup>(1)</sup>	Plate stiffness (kN/mm)	
Ejotherm NTK-U	ETA-07/0026	а		
Fischer TERMOZ CN 8	ETA-09/0394	а		
Fischer TERMOZ PN 8	ETA-09/0171	а		
Fischer Termofix CF 8	ETA-07/0287	а	≥ 0.3	
Koelner KI-10, KI-10 M	ETA-07/0291	а		
Koelner KI-10N, KI-10 NS	ETA-07/0221	а		
Spit ISO-60	ETA-04/0076	а		
BRAVOLL <sup>®</sup> PTH-EX	ETA-13/0951	а		
BRAVOLL <sup>®</sup> PTH-S	ETA-08/0267	a, b		
BRAVOLL <sup>®</sup> PTH-X	ETA-13/0951	а		
Ejotherm STR-U, STR U 2G	ETA-04/0023	a, b	≥ 0.6	
Ejot H1 eco	ETA-11/0192	а		
Ejot H3	ETA-14/0130	а		
Ejot SDF-S plus 8 UB + Rosace TE	ETA-04/0064	а		
Koelner TFIX-8M	ETA-07/0336	а		
Koelner TFIX-8S	ETA-11/0144	а		
Koelner TFIX-8ST	ETA-11/0144	b		
Spit ISO S	ETA-13/0560	a, b		
termoz SV II ecotwist	ETA-12/0208	b	-	
ThermoScrew TS U8 Gecko ETA-04/0030 b			-	
<sup>(1)</sup> a: surface mounting ; b : countersunk mounting.				

Additionally, every anchor with an ETA according to ETAG 014 and EAD anchors and having the following characteristics can be used:

- plate diameter  $\geq$  60 mm;
- plate stiffness  $\geq$  0.3 kN/mm according to EOTA Technical Report No 026;
- load resistance of the plate ≥ 1.0 kN according to EOTA Technical Report No 026.

These characteristics, the use categories and the characteristic resistances in the substrate shall be taken from the corresponding anchor's ETA.

## ETICS PRB THERMOPATE

#### Anchors for insulation product

ANNEX 2 of ETA-14/0469 - version 2



Glass fibre meshes:

- standard meshes: with mesh size between 3 and 6 mm;
- reinforced mesh: implemented in addition to the standard mesh, to improve the impact resistance.

Trade name	Mass per unit area	Residual strength after ageing (N/mm)		Relative residual strength after ageing (%) <sup>(1)</sup>	
	(g/m²)	Warp	Weft	Warp	Weft
Standard meshes					
PRB AVN (SSA-1363 F+)	167	≥ 20	≥ 20	≥ 50	≥ 50
PRB AVN (R 131 A 101 C+)	166	≥ 20	≥ 20	≥ 50	≥ 50
PRB AVF (R 131 A 102 C+)	161	≥ 20	≥ 20	≥ 50	≥ 50
Reinforced mesh					
PRB AVR (G-WEAVE 660 L 55AB x 100CM)	710	≥ 20	≥ 20	≥ 40	≥ 40

<sup>(1)</sup> Percentage of the strength in the as-delivered state.

## ETICS PRB THERMOPATE

## Glass fibre meshes

of ETA-14/0469 - version 2