



## European Technical Assessment

## ETA-13/0532-version 1 of 11/06/2018

### GENERAL PART

**Technical Assessment Body issuing the European Technical Assessment:**

Centre Scientifique et Technique du Bâtiment (CSTB)

**Trade name of the construction product:**

**FASSATHERM CLASSIC F**

**Product family to which the construction product belongs:**

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

**Manufacturer:**

**FASSA S.r.l.**  
**via Lazzaris, 3**  
**IT – 31027 SPRESIANO (TV)**

**Manufacturing plant(s):**

**FASSA S.p.A**  
**Via Fornaci, 8**  
**IT – 31027 SPRESIANO (TV)**

**This European Technical Assessment contains:**

19 pages including 4 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:**

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

**This version replaces:**

ETA-13/0532 valid from 26/06/2013 to 25/06/2018.

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 referred to above). However, partial reproduction may be made, with the written consent of the CSTB. Any partial reproduction has to be identified as such.

**SPECIFIC PART**

**1. Technical description of the product**

The External Thermal Insulation Composite System “**FASSATHERM CLASSIC F**”, 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/m <sup>2</sup> )	Thickness (mm)
<b>Bonded ETICS</b> (purely bonded or bonded with supplementary anchors)	<b>Insulation product</b>		
	Expanded polystyrene (EPS) boards, see Annex 1 (1/2)		20 to 300
	<b>Adhesives</b>		
	A 50 (cement-based powder requiring addition of 23% wt. water)	2.5 to 3.5 [powder]	—
	A 96 (cement-based powder requiring addition of 26% wt. water)	2.5 to 3.5 [powder]	—
	AL 88 (cement-based powder requiring addition of about 33% wt. water)	2.5 to 3.5 [powder]	—
	<b>Supplementary anchors for insulation product</b>		
	Plastic anchors, see Annex 2 (1/2)	—	—
<b>Mechanically fixed ETICS</b> with anchors and supplementary adhesive	<b>Insulation product</b>		
	Expanded polystyrene (EPS) boards, see Annex 1 (1/2)		60 to 300
	<b>Supplementary adhesives</b>		
	A 50 (cement-based powder requiring addition of 23% wt. water)	2.5 to 3.5 [powder]	—
	A 96 (cement-based powder requiring addition of 26% wt. water)	2.5 to 3.5 [powder]	—
	AL 88 (cement-based powder requiring addition of about 33% wt. water)	2.5 to 3.5 [powder]	—
	<b>Anchors for insulation product</b>		
	Plastic anchors, see Annex 2 (1/2)	—	—

<sup>1</sup> ETAG 004 is available on the EOTA website: [www.eota.eu](http://www.eota.eu).

Method of fixing	Component	Coverage (kg/m <sup>2</sup> )	Thickness (mm)
<b>Mechanically fixed ETICS with profiles</b>	<b>Insulation product</b>		
	Expanded polystyrene (EPS) boards, Annex 1 (2/2)		60 to 200
	<b>Profiles for insulation product</b>		
	Polyvinyl chloride (PVC) profiles, see Annex 4	—	—
	<b>Anchors for profiles</b>		
	Plastic anchors, see Annex 2 (2/2)	—	—
<b>Every method of fixing</b>	<b>Base coat</b>		
	FLEXYTHERM 11: ready-to-use paste consisting of an acrylic copolymer in aqueous dispersion, silica particles, fibres and specific additives.	About 5.0	Mean: 3.0 [dry] Minimal: 2.5 [dry]
	<b>Meshes</b>		
	Glass fibre meshes (standard and reinforced), see Annex 3		
	<b>Key coats</b>		
	FA 249: pigmented liquid, acrylic binder, requiring addition of 600% wt. water to be mandatory applied before the finishing coats RTA 549 and RTA 549 I.	About 0.1 [prepared]	—
	FX 526: pigmented liquid, acrylic binder, requiring addition of 5% wt. water to be mandatory applied before the finishing coats RX 561 and RX 561 I.	About 0.2 [prepared]	—
	<b>Finishing coats</b>		
	Ready-to-use pastes, acrylic binder: - RTA 549 (particles size 1.0 mm) - RTA 549 (particles size 1.5 mm) - RTA 549 (particles size 2.0 mm) - RTA 549 (particles size 3.0 mm)	1.8 to 2.2 2.5 to 3.0 3.0 to 3.5 3.5 to 4.5	Regulated by particle size
	Ready-to-use pastes – acrylic binder: - RTA 549 I (particles size 1.0 mm) - RTA 549 I (particles size 1.5 mm) - RTA 549 I (particles size 2.0 mm) - RTA 549 I (particles size 3.0 mm)	1.8 to 2.2 2.5 to 3.0 3.0 to 3.5 3.5 to 4.5	Regulated by particle size
	Ready-to-use pastes – acrylic siloxane binder: - RX 561 (particles size 1.0 mm) - RX 561 (particles size 1.5 mm) - RX 561 (particles size 2.0 mm) - RX 561 (particles size 3.0 mm)	1.8 to 2.2 2.5 to 3.0 3.0 to 3.5 3.5 to 4.5	Regulated by particle size

Method of fixing	Component	Coverage (kg/m <sup>2</sup> )	Thickness (mm)
<b>Every method of fixing</b>	Ready-to-use pastes – acrylic siloxane binder:		Regulated by particle size
	- RX 561 I (particles size 1.0 mm)	1.8 to 2.2	
	- RX 561 I (particles size 1.5 mm)	2.5 to 3.0	
	- RX 561 I (particles size 2.0 mm)	3.0 to 3.5	
	- RX 561 I (particles size 3.0 mm)	3.5 to 4.5	
<b>Ancillary materials</b>	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 4 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 style="list-style-type: none"> <li>• Adhesives / supplementary adhesives:               <ul style="list-style-type: none"> <li>- A 50</li> <li>- A 96</li> <li>- AL 88</li> </ul> </li> <li>• Insulation product:               <ul style="list-style-type: none"> <li>EPS boards, reaction to fire Class E, thickness ≤ 200 mm, density ≤ 16 kg/m<sup>3</sup></li> </ul> </li> <li>• Base coat:               <ul style="list-style-type: none"> <li>FLEXYTHERM 11</li> </ul> </li> <li>• Meshes:               <ul style="list-style-type: none"> <li>- R 131 A 101 C+</li> <li>- R 131 A 102 C+</li> <li>- FASSANET-160 (0161-CA)</li> <li>- SSA 1363 F+</li> </ul> </li> <li>• Finishing coats:               <ul style="list-style-type: none"> <li>- RTA 549</li> <li>- RTA 549 I</li> <li>- RX 561</li> <li>- RX 561 I</li> </ul> </li> </ul>	<p>Base coat: 9.4%</p> <p>Finishing coats: 9.6 to 10.3%</p>	<p>Base coat: 20.0%</p> <p>Finishing coats: 0.0%</p>	B – s2, d0
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 FLEXYTHERM 11

- 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: Base coat + key coat + finishing coat indicated below	Water absorption after 24 hours	
	< 0.5 kg/m <sup>2</sup>	≥ 0.5 kg/m <sup>2</sup>
With FA 249: - RTA 549 (1.0 mm) - RTA 549 (1.5 mm) - RTA 549 (2.0 mm) - RTA 549 (3.0 mm)	X	
With FA 249: - RTA 549 I (1.0 mm) - RTA 549 I (1.5 mm) - RTA 549 I (2.0 mm) - RTA 549 I (3.0 mm)		
With FX 526: - RX 561 (1.0 mm) - RX 561 (1.5 mm) - RX 561 (2.0 mm) - RX 561 (3.0 mm)		
With FX 526: - RX 561 I (1.0 mm) - RX 561 I (1.5 mm) - RX 561 I (2.0 mm) - RX 561 I (3.0 mm)		

### 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 kg/m<sup>2</sup> after 24 hours. The ETICS is therefore assessed as resistant to freeze-thaw.

### 3.3.3 Impact resistance

<b>Rendering system: Base coat + key coat + finishing coat indicated below</b>	<b>Use category</b>		
	<b>single standard mesh</b>	<b>double standard mesh</b>	<b>reinforced mesh + standard mesh</b>
With FA 249: - RTA 549 (1.0 mm) - RTA 549 (1.5 mm) - RTA 549 (2.0 mm) - RTA 549 (3.0 mm)	Category I		
With FA 249: - RTA 549 I (1.0 mm) - RTA 549 I (1.5 mm) - RTA 549 I (2.0 mm) - RTA 549 I (3.0 mm)	Category I		
With FX 526: - RX 561 (1.0 mm) - RX 561 (1.5 mm) - RX 561 (2.0 mm) - RX 561 (3.0 mm)	Category III	Category I	
With FX 526: - RX 561 I (1.0 mm) - RX 561 I (1.5 mm) - RX 561 I (2.0 mm) - RX 561 I (3.0 mm)	Category II	Category I	

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

Rendering system: Base coat + key coat + finishing coat indicated below	Equivalent air thickness $s_d$ (m)
With FA 249: - RTA 549 (1.0 mm) - RTA 549 (1.5 mm) - RTA 549 (2.0 mm) - RTA 549 (3.0 mm)	$\leq 1.0$  (Test result obtained with RTA 549 (3.0 mm): 0.7)
With FA 249: - RTA 549 I (1.0 mm) - RTA 549 I (1.5 mm) - RTA 549 I (2.0 mm) - RTA 549 I (3.0 mm)	$\leq 1.0$  (Test result obtained with RTA 549 I (3.0 mm): 0.6)
With FX 526: - RX 561 (1.0 mm) - RX 561 (1.5 mm) - RX 561 (2.0 mm) - RX 561 (3.0 mm)	$\leq 1.0$  (Test result obtained with RX 561 (3.0 mm): 0.7)
With FX 526: - RX 561 I (1.0 mm) - RX 561 I (1.5 mm) - RX 561 I (2.0 mm) - RX 561 I (3.0 mm)	$\leq 1.0$  (Test result obtained with RX 561 I (3.0 mm): 0.6)

### 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  $\geq 0.08$  MPa
- After hygrothermal cycles: bond strength  $\geq 0.08$  MPa
- After freeze-thaw cycles: test not required (see § 3.3.2.2 of this ETA)

### 3.4.1.2 Bond strength of the adhesive onto substrate and insulation product

A 50, A 96, AL 88:

	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 be so installed on the substrate with application of the adhesives using the following minimal surfaces:

	Tensile strength perpendicular to the faces of EPS		
	≥ 100 kPa	≥ 120 kPa	≥ 150 kPa
<b>A 50</b>	30%	25%	25%
<b>A 96</b>	30%	25%	25%
<b>AL 88</b>	30%	30%	30%

### 3.4.2 Fixing strength (transverse displacement)

Test not required because the ETICS fulfils the following criteria:

$$E \cdot d < 50,000 \text{ N/mm}$$

*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

#### 3.4.3.1 Resistance to wind load of mechanically-fixed ETICS using anchors

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

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

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 (1/2) of this ETA.

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

$$R_d = \frac{R_{\text{panel}} \cdot n_{\text{panel}} + R_{\text{joint}} \cdot n_{\text{joint}}}{\gamma}$$

$n_{\text{panel}}$  number of anchors not placed at the panel joints, per m<sup>2</sup>

$n_{\text{joint}}$  number of anchors placed at the panel joints, per m<sup>2</sup>

$\gamma$  national safety factor

### 3.4.3.2 Resistance to wind load of mechanically-fixed ETICS using profiles

Insulation product	Type		EPS boards	
	Thickness (mm)		≥ 60	
	Tensile strength perpendicular to the face (kPa)		≥ 150	≥ 180
	Shear strength (N/mm <sup>2</sup> )		≥ 0.02	≥ 0.05
	Shear modulus (N/mm <sup>2</sup> )		≥ 1.0	≥ 1.5
Maximum load (Static Foam Block Test)	500 × 500 mm boards: R (N/panel)	a + b <sup>(1)</sup>	Minimal: 950	Minimal: 1250
			Average: 1010	Average: 1320
		a + c	Minimal: 1060	Minimal: 1440
			Average: 1260	Average: 1710
		a + d	Minimal: 1430	Minimal: 1850
			Average: 1470	Average: 1890
1000 × 500 mm boards: R (N/panel)	a + b	—	Minimal: 1320	
		—	Average: 1470	
1000 × 600 mm boards: R (N/panel)	a + d	—	Minimal: 1810	
		—	Average: 2310	

- <sup>(1)</sup> a: horizontal profiles fixed every 30 cm;  
b: 43 to 47 cm-long connection profiles;  
c: 20 cm-long vertical profiles fixed with one anchor in the middle;  
d: 40 to 43 cm-long vertical profiles fixed with two anchors at 30 cm interval.

Profiles and anchors which can be used are described respectively in Annex 4 and Annex 2 (2/2) of this ETA.

**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 + key coat + finishing coat indicated below	Bond strength (MPa)
With FA 249: - RTA 549 (1.0 mm) - RTA 549 (1.5 mm) - RTA 549 (2.0 mm) - RTA 549 (3.0 mm)	$\geq 0.08$
With FA 249: - RTA 549 I (1.0 mm) - RTA 549 I (1.5 mm) - RTA 549 I (2.0 mm) - RTA 549 I (3.0 mm)	
With FX 526: - RX 561 (1.0 mm) - RX 561 (1.5 mm) - RX 561 (2.0 mm) - RX 561 (3.0 mm)	
With FX 526: - RX 561 I (1.0 mm) - RX 561 I (1.5 mm) - RX 561 I (2.0 mm) - RX 561 I (3.0 mm)	

**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
External Thermal Insulation Composite Systems with rendering	in external walls subject to fire regulation	A1 <sup>(1)</sup> , A2 <sup>(1)</sup> , B <sup>(1)</sup> or C <sup>(1)</sup>	1
		- 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.

**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 5. As the control plan contains confidential information, Annex 5 is not included in the published parts of this ETA.

Issued in Marne-la-Vallée on 11/06/2018

by

Charles BALOCHE, Technical Manager of the CSTB

<sup>2</sup> Decisions are published in the *Official Journal of the European Union (OJEU)*, see [www.new.eu-lex.europa.eu/oj/direct-access.html](http://www.new.eu-lex.europa.eu/oj/direct-access.html).

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.

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

**ETICS FASSATHERM CLASSIC F**

**Insulation product for bonded ETICS or mechanically-fixed ETICS with anchors**

**ANNEX 1 (1/2)**

of ETA-13/0532-version 1

Factory-prefabricated, uncoated boards with grooved edges, 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.

<b>Reaction to fire / EN 13501-1</b>		Class E
<b>Thermal resistance / EN 13163</b>		Defined in the CE marking
<b>Dimensional tolerances</b>	<b>Thickness / EN 823</b>	± 1.5 mm
	<b>Length / EN 822</b>	± 1.0 mm
	<b>Width / EN 822</b>	± 1.0 mm [W1]
	<b>Squareness / EN 824</b>	± 2% [S2]
	<b>Flatness / EN 825</b>	≤ 5 mm [P5]
<b>Dimensional stability</b>	<b>Under specified temperature and humidity / EN 1604: 48 h at 70°C 500 × 500 mm panels</b>	≤ 0.30% and no individual value > 0.35%
	<b>Under specified temperature and humidity / EN 1604: 48 h at 70°C 1000 × 500 and 1000 × 600 mm panels</b>	≤ 0.25%
	<b>Under laboratory condition / EN 1603</b>	≤ 0.15%
<b>Water absorption (partial immersion) / EN 1609 – method A</b>		< 1 kg/m <sup>2</sup>
<b>Water vapour diffusion resistance factor (μ) / EN 12086</b>		20 to 60
<b>Tensile strength perpendicular to the faces in dry conditions / EN 1607</b>		≥ 150 kPa
<b>Shear strength / EN 12090</b>		≥ 0.02 N/mm <sup>2</sup>
<b>Shear modulus / EN 12090</b>		≥ 1.0 N/mm <sup>2</sup>
<b>Dynamic stiffness / EN 29052-1</b>		No performance determined
<b>Air flow resistance / EN 29053</b>		Not relevant

**ETICS FASSATHERM CLASSIC F**

**Insulation product for mechanically-fixed ETICS with profiles**

**ANNEX 1 (2/2)**  
of ETA-13/0532-version 1

Anchors with ETA according to European Technical Approval Guideline 014 (hereinafter ETAG 014) or EAD 330196-ED-0604 (hereafter 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)
FASSA TOP FIX, TOP FIX 2G (Ejothem STR U, STR U 2G)	ETA-04/0023	a, b	≥ 0.6
FASSA COMBI FIX (Ejot H1 eco)	ETA-11/0192	a	

<sup>(1)</sup> a: surface mounting; b: countersunk mounting.

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

- plate diameter ≥ 60 mm;
- plate stiffness ≥ 0.3 kN/mm according to EOTA Technical Report 026;
- load resistance of the plate ≥ 1.0 kN according to EOTA Technical Report 026.

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

<b>ETICS FASSATHERM CLASSIC F</b>	<b>ANNEX 2 (1/2)</b> of ETA-13/0532-version 1
<b>Anchors for insulation product</b>	

Anchors with ETA according to European Technical Approval Guideline 014 or EAD “anchors”. The anchors are composed of a plastic expansion sleeve with a collar and a metallic nail or screw with flat head having dimensions adapted to the diameter of the profile’s perforation (see Annex 4).

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
Ejothem NK U	ETA-05/0009
Ejothem SDK U	ETA-04/0023

**ETICS FASSATHERM CLASSIC F**

**Anchors for profiles**

**ANNEX 2 (2/2)**  
of ETA-13/0532-version 1

Glass fibre meshes:

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

Trade name	Mass per unit area (g/m <sup>2</sup> )	Residual strength after ageing (N/mm)		Relative residual strength after ageing (%) <sup>(1)</sup>	
		Warp	Weft	Warp	Weft
<b>Standard meshes</b>					
SSA-1363 F+	167	≥ 20	≥ 20	≥ 50	≥ 50
R 131 A 101 C+	167	≥ 20	≥ 20	≥ 50	≥ 50
R 131 A 102 C+	161	≥ 20	≥ 20	≥ 50	≥ 50
FASSANET-160 0161-CA	156	≥ 20	≥ 20	≥ 50	≥ 50
<b>Reinforced meshes</b>					
FASSANET-370 (0370-A)	368	≥ 20	≥ 20	≥ 40	≥ 40
R 585 A 101	696	≥ 20	≥ 20	≥ 40	≥ 40

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

**ETICS FASSATHERM CLASSIC F**

**Glass fibre meshes**

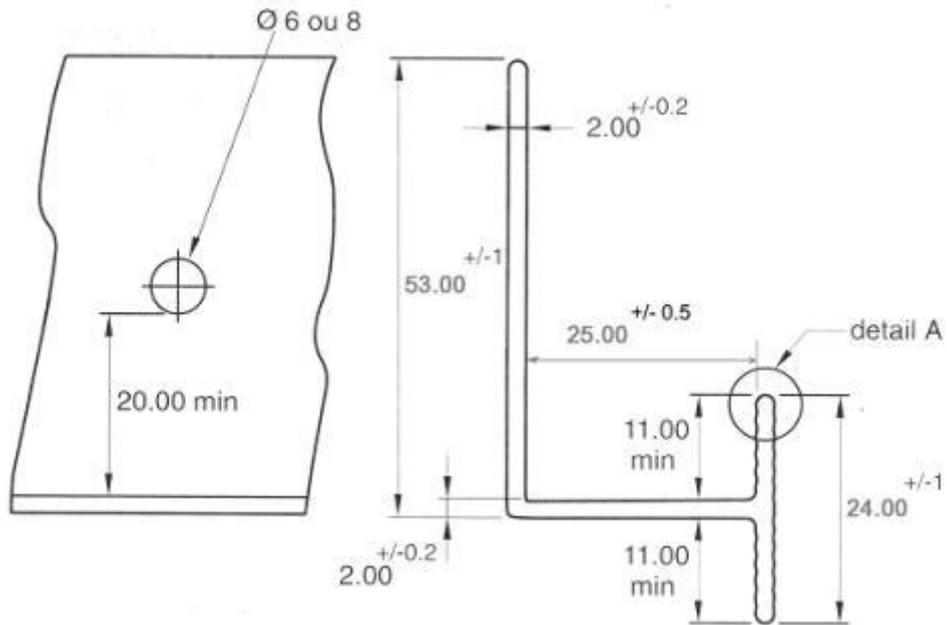
**ANNEX 3**

of ETA-13/0532-version 1

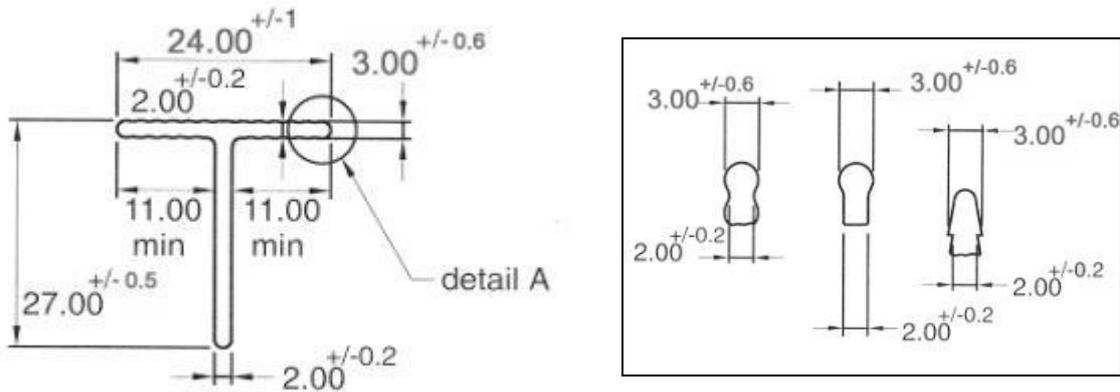
Polyvinyl chloride (PVC) profiles:

- horizontal fixed profiles;
- vertical fixed profiles: length 0.20 m or 0.40 to 0.43 m;
- connection profiles: length 0.43 to 0.47 m.

Pull-through resistance of fixings from profile  $\geq 500$  N.



Horizontal and vertical fixed profiles



Connection profiles

Detail A

**ETICS FASSATHERM CLASSIC F**

**PVC profiles for insulation product (dimensions in mm)**

**ANNEX 4**

of ETA-13/0532-version 1