



## European Technical Assessment

## ETA-20/0252-version 1 of 23/10/2020

### GENERAL PART

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

Centre Scientifique et Technique du Bâtiment  
(CSTB)

**Trade name of the construction product:**

**ARMATERM POUDRE EG Laine Minérale**

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

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

**Manufacturer:**

**ZOLPAN S.A.S**  
17 quai Joseph Gillet  
FR – 69316 LYON Cedex 4

**Manufacturing plant(s):**

**Cromology Research & Industry**  
71 boulevard du Général Leclerc  
FR – 92583 Clichy

**This European Technical Assessment  
contains:**

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

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

**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)

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## SPECIFIC PART

### 1. Technical description of the product

The External Thermal Insulation Composite System “**ARMATERM POUDRE EG Laine Minérale**”, 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)
Mechanically fixed ETICS with anchors and supplementary adhesive	<b>Insulation products</b>		
	Insulation products, mineral wool (MW):		
	Rock wool panels		
	- ECOROCK MONO, by Rockwool, see Annex 1 (1/5)	—	50 to 160
	- ECOROCK DUO, by Rockwool, see Annex 1 (2/5)	—	50 to 240
	- ISOVER TF 36, by Saint-Gobain Isover, see Annex 1 (3/5)	—	50 to 200
	- FKD-MAX C2, by Knauf Insulation, see Annex 1 (4/5)	—	60 to 300
	Glass wool panels		
	ISOCOMPACT / ISOCOMPACT 34, by Saint-Gobain Isover, see Annex 1 (5/5)	—	60 to 280
	<b>Supplementary adhesives</b>		
	<b>ARMATERM COLLE POUDRE</b> : white cement-based powder requiring addition of about 17% wt. water.	2.6 to 3.5 [powder]	—
	<b>ARMATERM COLLE 3C+</b> : grey cement-based powder requiring addition of 21 to 22% wt. water.	2.6 to 3.5 [powder]	—
	<b>ARMATERM COLLE POUDRE EG</b> : grey cement-based powder requiring addition of about 21% wt. water.	2.6 to 3.5 [powder]	—
	<b>Anchors for insulation products</b>		
	Plastic anchors, see Annex 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)
Mechanically fixed ETICS with anchors and supplementary adhesive	<b>Base coat</b>		
	<b>ARMATERM COLLE POUDRE EG:</b> powder requiring addition of 22 to 23 % wt. water, consisting of grey cement, a vinylic micronised copolymer, calcium carbonate and silica as particles and specific additives.	About 4.5 [powder]	Mean (dry): 3.5 Minimal (dry): 3.0
	<b>Meshes</b>		
	Glass fibre meshes (standard and reinforced), see Annex 3		
	<b>Key coats</b>		
	<b>ARMAFOND:</b> ready-to-use pigmented liquid, acrylic binder, to apply optionally before <b>ARMATERM 101 FX</b> , <b>ARMATERM 201 FX</b> , <b>ARMATERM 202 FX</b> , <b>ARMATERM 301 FX</b> , <b>SILEXTRA TALOCHÉ FX</b> and <b>ZOLGRANIT</b> finishing coats.	0.15 to 0.20	—
	<b>SILENZZO FOND:</b> uncoloured liquid, silicate binder requiring addition of 100% wt. <b>SILENZZO LISSE</b> to apply mandatory before silicate finishing coats.	0.10 to 0.15 [prepared]	—
	<b>Finishing coats</b>		
	Ready-to-use pastes – acrylic binder: - <b>ARMATERM 202 FX</b> (particles size 1.0 mm) - <b>ARMATERM 201 FX</b> (particles size 1.6 mm) - <b>ARMATERM 301 FX</b> (particles size 1.6 mm) - <b>ARMATERM 101 FX</b> (particles size 2.5 mm)	1.7 to 2.2 1.8 to 2.3 1.9 to 2.6 2.5 to 3.0	Regulated by particle size
	For applications between 1 and 15°C, these pastes can be mixed with 4 to 8% wt. of <b>ARMATERM ACCÉLÉRATEUR</b> (powder made of hydraulic binder and mineral filler) to accelerate their drying.		
	Ready-to-use paste – acrylic binder with siloxane: - <b>SILEXTRA TALOCHÉ FX</b> (particles size 1.0 mm)	1.8 to 2.3	Regulated by particle size
	For applications between 1 and 15°C, this paste can be mixed with 4 to 8% wt. of <b>ARMATERM ACCÉLÉRATEUR</b> (powder made of hydraulic binder and mineral filler) to accelerate its drying.		

Method of fixing	Component	Coverage (kg/m <sup>2</sup> )	Thickness (mm)
<b>Mechanically fixed ETICS with anchors and supplementary adhesive</b>	Ready-to-use paste – silicate binder: <b>SILENZZO TALOCHÉ</b> (particles size 1.0 mm)	1.5 to 2.0	Regulated by particle size
	Ready-to-use paste – acrylic binder with coloured marble aggregates: <b>ZOLGRANIT</b> (particles size 1.8 mm)	3.5 to 4.1	Regulated by particle size
	Cement-based powder associated with a decorative paint: <b>ARMATERM COLLE POUDRE EG</b> with <b>SILENZZO LISSE</b> : - <b>ARMATERM COLLE POUDRE EG</b> : same product as base coat - <b>SILENZZO LISSE</b> : silicate-based pigmented liquid, requiring addition of about 10 to 20% wt. <b>SILENZZO FOND</b> .	About 2.0 [powder] About 0.4 [prepared]	About 1.5 —
<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 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

#### 3.2.1 Insulation product: Stone/Rock Wool boards

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>Supplementary adhesives: <ul style="list-style-type: none"> <li>- <b>ARMATERM COLLE POUDRE</b></li> <li>- <b>ARMATERM COLLE POUDRE EG</b></li> <li>- <b>ARMATERM COLLE 3C+</b></li> </ul> </li> <li>Insulation product: <ul style="list-style-type: none"> <li>MW (Stone/Rock Wool) boards</li> <li>Reaction to fire Class A1</li> <li>Thickness <math>\geq 40</math> mm,</li> <li>density <math>\leq 155</math> kg/m<sup>3</sup></li> </ul> </li> <li>Base coat: <b>ARMATERM COLLE POUDRE EG</b></li> <li>Key coat: <b>ARMAFOND</b></li> <li>Meshes: <ul style="list-style-type: none"> <li>- SSA-1363 F+</li> <li>- R 131 A 101 C+</li> <li>- R 131 A 102 C+</li> <li>- 03-1 C+</li> </ul> </li> <li>Finishing coat: <b>ZOLGRANIT</b></li> </ul>	<p>Base coat: 3.2%</p> <p>Key coat: 11.8%</p> <p>Finishing coat: 8.2%</p>	<p>Base coat: 0.0%</p> <p>Key coat: 0.0%</p> <p>Finishing coat: 0.0%</p>	B-s1, d0
<ul style="list-style-type: none"> <li>Supplementary adhesives: <ul style="list-style-type: none"> <li>- <b>ARMATERM COLLE POUDRE</b></li> <li>- <b>ARMATERM COLLE POUDRE EG</b></li> <li>- <b>ARMATERM COLLE 3C+</b></li> </ul> </li> <li>Insulation product: <ul style="list-style-type: none"> <li>MW (Stone/Rock Wool) boards</li> <li>Reaction to fire Class A1</li> <li>Thickness <math>\geq 40</math> mm ,</li> <li>density <math>\leq 155</math> kg/m<sup>3</sup></li> </ul> </li> <li>Base coat: <b>ARMATERM COLLE POUDRE EG</b></li> <li>Key coat: <b>ARMAFOND</b></li> <li>Meshes: <ul style="list-style-type: none"> <li>- SSA-1363 F+</li> <li>- R 131 A 101 C+</li> <li>- R 131 A 102 C+</li> <li>- 03-1 C+</li> </ul> </li> <li>Finishing coats: <ul style="list-style-type: none"> <li>- <b>ARMATERM 101 FX / 201 FX / 202 FX/ 301 FX</b><sup>(2)</sup></li> <li>- <b>SILEXTRA TALOCHÉ FX</b><sup>(2)</sup></li> </ul> </li> </ul>	<p>Base coat: 3.2%</p> <p>Key coat: 11.8%</p> <p>Finishing coats: 8.5 to 10.1%</p>	<p>Base coat: 0.0%</p> <p>Key coat: 0.0%</p> <p>Finishing coats: 17.4 to 18.3%</p>	A2-s2, d0

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

<sup>(2)</sup> With or without ARMATERM ACCÉLÉRATEUR.

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>Supplementary adhesives:               <ul style="list-style-type: none"> <li>- <b>ARMATERM COLLE POUDRE</b></li> <li>- <b>ARMATERM COLLE POUDRE EG</b></li> <li>- <b>ARMATERM COLLE 3C+</b></li> </ul> </li> <li>Insulation product: MW (Stone/Rock Wool) boards Reaction to fire Class A1 Thickness <math>\geq 40</math> mm, density <math>\leq 155</math> kg/m<sup>3</sup></li> <li>Base coat: <b>ARMATERM COLLE POUDRE EG</b></li> <li>Key coat: <b>SILENZZO FOND</b></li> <li>Meshes:               <ul style="list-style-type: none"> <li>- SSA-1363 F+</li> <li>- R 131 A 101 C+</li> <li>- R 131 A 102 C+</li> <li>- 03-1 C+</li> </ul> </li> <li>Finishing coats:               <ul style="list-style-type: none"> <li>- <b>SILENZZO TALOCHÉ</b></li> <li>- <b>ARMATERM COLLE POUDRE EG with SILENZZO FOND + SILENZZO LISSE</b></li> </ul> </li> </ul>	Base coat: 3.2%  Key coat: 46.9%  Finishing coats: - SILENZZO TALOCHÉ (5.8%) - ARMATERM COLLE POUDRE EG (3.2%) with SILENZZO LISSE (11.3%)	Base coat: 0.0%  Key coat: 0.0%  Finishing coats: 0.0%	A2-s1, d0

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

<sup>(2)</sup> With or without ARMATERM ACCÉLÉRATEUR.

### 3.2.2 Insulation product: Glass Wool boards

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>Supplementary adhesives:               <ul style="list-style-type: none"> <li>- <b>ARMATERM COLLE POUDRE</b></li> <li>- <b>ARMATERM COLLE POUDRE EG</b></li> <li>- <b>ARMATERM COLLE 3C+</b></li> </ul> </li> <li>Insulation product: MW (Glass Wool) boards Reaction to fire Class A2-s1, d0 Thickness <math>\geq 40</math> mm, density <math>\leq 65</math> kg/m<sup>3</sup></li> <li>Base coat: <b>ARMATERM COLLE POUDRE EG</b></li> <li>Key coat: <b>ARMAFOND</b></li> <li>Meshes:               <ul style="list-style-type: none"> <li>- SSA-1363 F+</li> <li>- R 131 A 101 C+</li> <li>- R 131 A 102 C+</li> </ul> </li> <li>Finishing coat: <b>ZOLGRANIT</b></li> </ul>	Base coat: 3.2%  Key coat: 11.8%  Finishing coat: 8.2%	Base coat: 0.0%  Key coat: 0.0%  Finishing coat: 0.0%	B-s1, d0

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

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>Supplementary adhesives: <ul style="list-style-type: none"> <li>- <b>ARMATERM COLLE POUDRE</b></li> <li>- <b>ARMATERM COLLE POUDRE EG</b></li> <li>- <b>ARMATERM COLLE 3C+</b></li> </ul> </li> <li>Insulation product: MW (Glass Wool) boards Reaction to fire Class A2-s1, d0 Thickness ≥ 40 mm, density ≤ 65 kg/m<sup>3</sup></li> <li>Base coat: <b>ARMATERM COLLE POUDRE EG</b></li> <li>Key coat: <b>ARMAFOND</b></li> <li>Meshes: <ul style="list-style-type: none"> <li>- SSA-1363 F+</li> <li>- R 131 A 101 C+</li> <li>- R 131 A 102 C+</li> </ul> </li> <li>Finishing coats: <ul style="list-style-type: none"> <li>- <b>ARMATERM 101 FX / 201 FX / 202 FX/ 301 FX<sup>(2)</sup></b></li> <li>- <b>SILEXTRA TALOCHÉ FX<sup>(2)</sup></b></li> </ul> </li> </ul>	Base coat: 3.2%  Key coat: 11.8%  Finishing coats: 8.5 to 10.1%	Base coat: 0.0%  Key coat: 0.0%  Finishing coats: 17.4 to 18.3%	A2-s1, d0
<ul style="list-style-type: none"> <li>Supplementary adhesives: <ul style="list-style-type: none"> <li>- <b>ARMATERM COLLE POUDRE</b></li> <li>- <b>ARMATERM COLLE POUDRE EG</b></li> <li>- <b>ARMATERM COLLE 3C+</b></li> </ul> </li> <li>Insulation product: MW (Glass Wool) boards Reaction to fire Class A2-s1, d0 Thickness ≥ 40 mm, density ≤ 65 kg/m<sup>3</sup></li> <li>Base coat: <b>ARMATERM COLLE POUDRE EG</b></li> <li>Key coat: <b>SILENZZO FOND</b></li> <li>Meshes: <ul style="list-style-type: none"> <li>- SSA-1363 F+</li> <li>- R 131 A 101 C+</li> <li>- R 131 A 102 C+</li> </ul> </li> <li>Finishing coats: <ul style="list-style-type: none"> <li>- <b>SILENZZO TALOCHÉ</b></li> <li>- <b>ARMATERM COLLE POUDRE EG with SILENZZO FOND + SILENZZO LISSE</b></li> </ul> </li> </ul>	Base coat: 3.2%  Key coat: 46.9%  Finishing coats: - SILENZZO TALOCHÉ (5.8%) - ARMATERM COLLE POUDRE EG (3.2%) with SILENZZO LISSE (11.3%)	Base coat: 0.0%  Key coat: 0.0%  Finishing coats: 0.0%	A2-s1, d0
Configurations with: <ul style="list-style-type: none"> <li>Mesh 03-1 C+</li> </ul>			No Performance Determined

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

<sup>(2)</sup>With or without ARMATERM ACCÉLÉRATEUR.

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: Base 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 or without ARMAFOND: - ARMATERM 202 FX <sup>(1)</sup> - ARMATERM 201 FX <sup>(1)</sup> - ARMATERM 301 FX <sup>(1)</sup> - ARMATERM 101 FX <sup>(1)</sup>	X	
With or without ARMAFOND: SILEXTRA TALOCHÉ FX <sup>(1)</sup>	X	
With SILENZZO FOND: SILENZZO TALOCHÉ	X	
With or without ARMAFOND: ZOLGRANIT	X	
ARMATERM COLLE POUDRE EG with SILENZZO FOND + SILENZZO LISSE		X

<sup>(1)</sup> With or without ARMATERM ACCÉLÉRATEUR.

### 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

Freeze-thaw behaviour of the base coat alone: the ETICS has been assessed as freeze/thaw resistant according to simulation method.

Rendering system with finishing coat "ARMATERM COLLE POUDRE EG with SILENZZO FOND and SILENZZO LISSE": the ETICS has been assessed as freeze/thaw resistant according to simulation method.

Rendering systems with the other finishing coats: water absorptions of the rendering systems are less than 0.5 kg/m<sup>2</sup> after 24 hours and the ETICS is therefore assessed as freeze/thaw resistant.

### 3.3.3 Impact resistance

Rendering system: Base coat + finishing coat indicated below	Use category		
	single standard mesh	double standard mesh	reinforced mesh + standard mesh
With or without ARMAFOND: - ARMATERM 202 FX <sup>(1)</sup> - ARMATERM 201 FX <sup>(1)</sup> - ARMATERM 301 FX <sup>(1)</sup> - ARMATERM 101 FX <sup>(1)</sup>	Category III	Category I	
With or without ARMAFOND: - ARMATERM 202 FX <sup>(2)</sup> - ARMATERM 201 FX <sup>(2)</sup> - ARMATERM 301 FX <sup>(2)</sup> - ARMATERM 101 FX <sup>(2)</sup>	Category II	Category I	
With or without ARMAFOND: SILEXTRA TALOCHÉ FX <sup>(3)</sup>	Category II	Category I	
With SILENZZO FOND: SILENZZO TALOCHÉ	Category III	Category II	Category I
With or without ARMAFOND: ZOLGRANIT	Category II	Category I	
ARMATERM COLLE POUDRE EG with SILENZZO FOND + SILENZZO LISSE	Category II	Category I	

<sup>(1)</sup> With ARMATERM ACCÉLÉRATEUR.

<sup>(2)</sup> Without ARMATERM ACCÉLÉRATEUR.

<sup>(3)</sup> With or without ARMATERM ACCÉLÉRATEUR.

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

Rendering system: Base coat + finishing coat indicated below	Equivalent air thickness $s_d$ (m)
With or without ARMAFOND: - ARMATERM 202 FX <sup>(1)</sup> - ARMATERM 201 FX <sup>(1)</sup> - ARMATERM 301 FX <sup>(1)</sup> - ARMATERM 101 FX <sup>(1)</sup>	$\leq 1.0$ (Test result obtained with: ARMATERM 101 FX: 0.7 ARMAFOND + ARMATERM 101 FX: 0.8)
With or without ARMAFOND: SILEXTRA TALOCHÉ FX <sup>(1)</sup>	$\leq 1.0$ (Test result obtained with: SILEXTRA TALOCHÉ FX: 0.4 ARMAFOND + SILEXTRA TALOCHÉ FX: 0.5)
With SILENZZO FOND: SILENZZO TALOCHÉ	$\leq 1.0$ (Test result obtained: 0.2)
With or without ARMAFOND: ZOLGRANIT	$\leq 1.0$ (Test result obtained: 0.5)
ARMATERM COLLE POUDRE EG with SILENZZO FOND + SILENZZO LISSE	$\leq 1.0$ (Test result obtained: 0.1)

<sup>(1)</sup> With or without ARMATERM ACCÉLÉRATEUR.

### 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 of the base coat onto insulation product

- Initial state: bond strength < 0.08 MPa but cohesive failure into insulation product.
- After hygrothermal cycles / conditioning: bond strength < 0.08 MPa but cohesive failure into insulation product.
- After freeze-thaw cycles: bond strength < 0.08 MPa but cohesive failure into insulation product (see § 3.3.2.2 of this ETA).

### 3.4.2 Fixing strength (transverse displacement)

Test not required because the ETICS fulfils the following criteria:

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

$E$  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>	$\geq 60$	
	<b>Plate stiffness (kN/mm)</b>	$\geq 0.4$	
<b>Insulation product</b>	<b>Type</b>	<b>ECOROCK MONO</b> (Rockwool)	
	<b>Tensile strength perpendicular to the face (kPa)</b>	$\geq 10$	
		Mono-density product	
	<b>Thickness (mm)</b>	$\geq 50$	$\geq 120$
<b>Maximum load (Pull-through test)</b>	<b>Anchors not placed at the panel joints (dry conditions): <math>R_{\text{panel}}</math> (N)</b>	Minimal: 444	Minimal: 1023
		Average: 475	Average: 1044
	<b>Anchors placed at the panel joints (dry conditions): <math>R_{\text{joint}}</math> (N)</b>	Minimal: 362	Minimal: 500
		Average: 404	Average: 679

<b>Anchors</b>	<b>Trade name</b>	termoz SV II ecotwist	
	<b>Helix dimensions</b>	Diameter: 66 Height: 27	
<b>Insulation product</b>	<b>Type</b>	<b>ECOROCK MONO</b> (Rockwool)	
	<b>Tensile strength perpendicular to the face (kPa)</b>	$\geq 10$	
		Mono-density product	
	<b>Thickness (mm)</b>	100	
<b>Maximum load (Pull-through test)</b>	<b>Anchors not placed at the panel joints (dry conditions): <math>R_{\text{panel}}</math> (N)</b>	Minimal: 687	
		Average: 752	

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

<b>Anchors</b>	<b>Plate diameter (mm)</b>	$\geq 60$		
	<b>Plate stiffness (kN/mm)</b>	$\geq 0.4$		
<b>Insulation product</b>	<b>Type</b>	<b>ECOROCK DUO (Rockwool)</b>		
	<b>Tensile strength perpendicular to the face (kPa)</b>	$\geq 7.5$		
		Dual density product		
	<b>Thickness (mm)</b>	$\geq 50$	$\geq 80$	$\geq 120$
<b>Maximum load (Pull-through test)</b>	<b>Anchors not placed at the panel joints (dry conditions): <math>R_{\text{panel}}</math> (N)</b>	Minimal: 339	Minimal: 348	Minimal: 454
		Average: 365	Average: 410	Average: 503
	<b>Anchors not placed at the panel joints (wet conditions*): <math>R_{\text{panel}}</math> (N)</b>	Minimal: 198	-	Minimal: 368
		Average: 229	-	Average: 406

\* 28 days at  $(70 \pm 2)^{\circ}\text{C}$  /  $(95 \pm 5)\%$  RH + drying period at  $(23 \pm 2)^{\circ}\text{C}$  /  $(50 \pm 5)\%$  HR until constant weight.

<b>Anchors</b>	<b>Plate diameter (mm)</b>	$\geq 90$	
	<b>Plate stiffness (kN/mm)</b>	$\geq 0.4$	
<b>Insulation product</b>	<b>Type</b>	<b>ECOROCK DUO (Rockwool)</b>	
	<b>Tensile strength perpendicular to the face (kPa)</b>	$\geq 7.5$	
		Dual density product	
	<b>Thickness (mm)</b>	$\geq 80$	$\geq 120$
<b>Maximum load (Pull-through test)</b>	<b>Anchors not placed at the panel joints (dry conditions): <math>R_{\text{panel}}</math> (N)</b>	-	Minimal: 511
		-	Average: 611
	<b>Anchors placed at the panel joints (dry conditions): <math>R_{\text{joint}}</math> (N)</b>	Minimal: 362	-
		Average: 392	-

<b>Anchors</b>	<b>Trade name</b>	Ejotherm STR U, STR U 2G + Ejotherm VT 2G
	<b>Dimensions</b>	Diameter: Ejotherm STR U, STR U 2G: 60 mm Ejotherm VT 2G: 110 mm
<b>Insulation product</b>	<b>Type</b>	<b>ECOROCK DUO</b> (Rockwool)
	<b>Tensile strength perpendicular to the face (kPa)</b>	≥ 7.5 Dual density product
	<b>Thickness (mm)</b>	≥ 120
<b>Maximum load (Pull-through test)</b>	<b>Anchors not placed at the panel joints (dry conditions): <math>R_{\text{panel}}</math> (N)</b>	Minimal: 699
		Average: 838

Anchors Ejotherm STR U or Ejotherm STR U 2G, associated with Ejotherm VT 2G can only be used as mounted countersunk.

<b>Anchors</b>	<b>Trade name</b>	termoz SV II ecotwist
	<b>Helix dimensions</b>	Diameter: 66 Height: 27
<b>Insulation product</b>	<b>Type</b>	<b>ECOROCK DUO</b> (Rockwool)
	<b>Tensile strength perpendicular to the face (kPa)</b>	≥ 7.5 Dual-density product
	<b>Thickness (mm)</b>	100
<b>Maximum load (Pull-through test)</b>	<b>Anchors not placed at the panel joints (dry conditions): <math>R_{\text{panel}}</math> (N)</b>	Minimal: 357
		Average: 413

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

<b>Anchors</b>	<b>Plate diameter (mm)</b>	$\geq 60$	
	<b>Plate stiffness (kN/mm)</b>	$\geq 0.4$	
<b>Insulation product</b>	<b>Type</b>	<b>ISOVER TF 36</b> (Saint-Gobain ISOVER)	
	<b>Tensile strength perpendicular to the face (kPa)</b>	$\geq 10$	
		Mono-density product	
<b>Maximum load (Pull-through test)</b>	<b>Anchors not placed at the panel joints (dry conditions): <math>R_{\text{panel}}</math> (N)</b>	$\geq 50$	$\geq 120$
	<b>Anchors placed at the panel joints (dry conditions): <math>R_{\text{joint}}</math> (N)</b>	Minimal: 292	Minimal: 414
		Average: 342	Average: 432
	<b>Anchors not placed at the panel joints (wet conditions*): <math>R_{\text{panel}}</math> (N)</b>	Minimal: 238	Minimal: 332
		Average: 281	Average: 398
	<b>Anchors placed at the panel joints (wet conditions*): <math>R_{\text{joint}}</math> (N)</b>	Minimal: 243	Minimal: 355
		Average: 286	Average: 375
	<b>Anchors not placed at the panel joints (dry conditions): <math>R_{\text{panel}}</math> (N)</b>	Minimal: 177	Minimal: 263
		Average: 215	Average: 301

\* 28 days at  $(70 \pm 2)^{\circ}\text{C}$  /  $(95 \pm 5)\%$  RH + drying period at  $(23 \pm 2)^{\circ}\text{C}$  /  $(50 \pm 5)\%$  HR until constant weight.

<b>Anchors</b>	<b>Trade name</b>	termoz SV II ecotwist
	<b>Helix dimensions</b>	Diameter: 66 Height: 27
<b>Insulation product</b>	<b>Type</b>	<b>ISOVER TF 36</b> (Saint-Gobain ISOVER)
	<b>Tensile strength perpendicular to the face (kPa)</b>	$\geq 10$
		Mono-density product
<b>Maximum load (Pull-through test)</b>	<b>Thickness (mm)</b>	100
	<b>Anchors not placed at the panel joints (dry conditions): <math>R_{\text{panel}}</math> (N)</b>	Minimal: 257  Average: 299

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

Anchors	Plate diameter (mm)	$\geq 60$	
	Plate stiffness (kN/mm)	$\geq 0.4$	
Insulation product	Type	<b>FKD MAX C2</b> (Knauf Insulation)	
	Tensile strength perpendicular to the face (kPa)	$\geq 7.5$	
		Mono-density product	
Maximum load (Pull-through test)	Thickness (mm)	$\geq 80$	$\geq 140$
	Anchors not placed at the panel joints (dry conditions): $R_{\text{panel}}$ (N)	Minimal: 600	Minimal: 726
		Average: 653	Average: 833
	Anchors placed at the panel joints (dry conditions): $R_{\text{joint}}$ (N)	Minimal: 462	Minimal: 519
		Average: 495	Average: 570
	Anchors not placed at the panel joints (wet conditions*): $R_{\text{panel}}$ (N)	Minimal: 372	Minimal: 526
		Average: 400	Average: 615
	Anchors placed at the panel joints (wet conditions*): $R_{\text{joint}}$ (N)	Minimal: 297	Minimal: 369
		Average: 319	Average: 398

\* 28 days at  $(70 \pm 2)^{\circ}\text{C}$  /  $(95 \pm 5)\%$  RH + drying period at  $(23 \pm 2)^{\circ}\text{C}$  /  $(50 \pm 5)\%$  HR until constant weight.

Anchors	Trade name	Ejothrm STR U, STR U 2G + Ejothrm VT 90	
	Dimensions	Diameter: Ejothrm STR U, STR U 2G: 60 mm Ejothrm VT 90: 90 mm	
Insulation product	Type	<b>FKD MAX C2</b> (Knauf Insulation)	
	Tensile strength perpendicular to the face (kPa)	$\geq 7.5$	
		Mono density product	
Maximum load (Pull-through test)	Thickness (mm)	$\geq 80$	$\geq 140$
	Anchors not placed at the panel joints (dry conditions): $R_{\text{panel}}$ (N)	Minimal: 766	Minimal: 949
		Average: 826	Average: 1010
	Anchors placed at the panel joints (dry conditions): $R_{\text{joint}}$ (N)	Minimal: 647	Minimal: 702
		Average: 692	Average: 727



<b>Anchors</b>	<b>Trade name</b>	termoz SV II ecotwist
	<b>Helix dimensions</b>	Diameter: 66 Height: 27
<b>Insulation product</b>	<b>Type</b>	<b>FKD MAX C2</b> (Knauf Insulation)
	<b>Tensile strength perpendicular to the face (kPa)</b>	≥ 7.5 Mono-density product
	<b>Thickness (mm)</b>	100
<b>Maximum load (Pull-through test)</b>	<b>Anchors not placed at the panel joints (dry conditions):</b> $R_{\text{panel}}$ (N)	Minimal: 403
		Average: 509

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

<b>Anchors</b>	<b>Plate diameter (mm)</b>	≥ 60	
	<b>Plate stiffness (kN/mm)</b>	≥ 0.6	
<b>Insulation product</b>	<b>Type</b>	<b>ISOCOMPACT / ISOCOMPACT 34</b> (Saint-Gobain ISOVER)	
	<b>Tensile strength perpendicular to the face (kPa)</b>	≥ 7.5 Mono-density product	
	<b>Thickness (mm)</b>	≥ 60	≥ 120
<b>Maximum load (Pull-through test)</b>	<b>Anchors not placed at the panel joints (dry conditions):</b> $R_{\text{panel}}$ (N)	Minimal: 556	Minimal: 621
		Average: 587	Average: 665
	<b>Anchors placed at the panel joints (dry conditions):</b> $R_{\text{joint}}$ (N)	Minimal: 364	Minimal: 381
		Average: 394	Average: 403
<b>Maximum load (Pull-through test)</b>	<b>Anchors not placed at the panel joints (wet conditions*):</b> $R_{\text{panel}}$ (N)	Minimal: 441	-
		Average: 481	-
	<b>Anchors placed at the panel joints (wet conditions*):</b> $R_{\text{joint}}$ (N)	-	Minimal: 399
		-	Average: 432

\* 28 days at (70 ± 2)°C / (95 ± 5)% RH + drying period at (23 ± 2)°C / (50 ± 5)% HR until constant weight.

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:

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

$n_{\text{panel}}$  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

### 3.4.4 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 ARMAFOND: - ARMATERM 202 FX <sup>(1)</sup> - ARMATERM 201 FX <sup>(1)</sup> - ARMATERM 301 FX <sup>(1)</sup> - ARMATERM 101 FX <sup>(1)</sup>	≥ 0.08 (tests on EPS)
With or without ARMAFOND: SILEXTRA TALOCHÉ FX <sup>(1)</sup>	
With SILENZZO FOND: SILENZZO TALOCHÉ	
With or without ARMAFOND: ZOLGRANIT	
ARMATERM COLLE POUDRE EG with SILENZZO FOND + SILENZZO LISSE	

<sup>(1)</sup> With or without ARMATERM ACCÉLÉRATEUR.

Bond strength after freeze/thaw cycles:

Rendering system: Base coat + finishing coat indicated below	Bond strength (MPa)
ARMATERM COLLE POUDRE EG with SILENZZO FOND + SILENZZO LISSE	< 0.08 MPa but cohesive failure into insulation product

#### 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 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 23/10/2020 by Christine GILLIOT

Director of Department Floors and Coverings

<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 mineral wool **ECOROCK MONO** (MW) according to EN 13162+A1 and having characteristics described in the following table. Mass per unit area ( $\text{kg/m}^2$ ) depends on both thickness of the board and density of mineral wool.

Reaction to fire / EN 13501-1		Class A1
Thermal resistance / EN 13162		Defined in the CE marking
Dimensional tolerances	Thickness / EN 823	T5 [-1 % or -1 mm / +3 mm]
Dimensional stability	Under specified temperature and humidity / EN 1604: 48 h at 70°C and 90% RH	DS(70,90) [ $\leq 1\%$ ]
Water absorption (partial immersion) / EN 1609 – method A		WS [ $\leq 1.0 \text{ kg/m}^2$ ]
Longterm water absorption (partial immersion) / EN 1609		WL(P) [ $\leq 3.0 \text{ kg/m}^2$ ]
Water vapour diffusion resistance factor ( $\mu$ ) / EN 12086		MU1
Tensile strength perpendicular to the faces in dry conditions / EN 1607		TR 10 [ $\geq 10 \text{ kPa}$ ]
Dynamic stiffness / EN 29052-1		No performance determined
Air flow resistance / EN 29053		No performance determined
Compressive strength / EN 826		CS(10)30

<b>ETICS ARMATERM POUDRE EG Laine Minérale</b>	<b>ANNEX 1 (1/5)</b> of ETA-20/0252-version 1
<b>Insulation products for mechanically-fixed ETICS with anchors</b>	

Factory-prefabricated, uncoated boards made of mineral wool **ECOROCK DUO** (MW) according to EN 13162+A1 and having characteristics described in the following table. Mass per unit area ( $\text{kg/m}^2$ ) depends on both thickness of the board and density of mineral wool.

Reaction to fire / EN 13501-1		Class A1
Thermal resistance / EN 13162		Defined in the CE marking
Dimensional tolerances	Thickness / EN 823	T5 [-1 % or -1 mm / +3 mm]
Dimensional stability	Under specified temperature and humidity / EN 1604: 48 h at 70°C and 90% RH	DS(70,90) [ $\leq 1\%$ ]
Water absorption (partial immersion) / EN 1609 – method A		WS [ $\leq 1.0 \text{ kg/m}^2$ ]
Longterm water absorption (partial immersion) / EN 1609		WL(P) [ $\leq 3.0 \text{ kg/m}^2$ ]
Water vapour diffusion resistance factor ( $\mu$ ) / EN 12086		MU1
Tensile strength perpendicular to the faces in dry conditions / EN 1607		TR 7.5 [ $\geq 7.5 \text{ kPa}$ ]
Dynamic stiffness / EN 29052-1		No performance determined
Air flow resistance / EN 29053		No performance determined
Compressive strength / EN 826		CS(10)15

**ETICS ARMATERM POUDRE EG Laine Minérale**

**Insulation products for mechanically-fixed ETICS with anchors**

**ANNEX 1 (2/5)**  
of ETA-20/0252-version 1

Factory-prefabricated, uncoated boards made of mineral wool **ISOVER TF 36** (MW) according to EN 13162+A1 and having characteristics described in the following table. Mass per unit area ( $\text{kg/m}^2$ ) depends on both thickness of the board and density of mineral wool.

Reaction to fire / EN 13501-1		Class A1
Thermal resistance / EN 13162		Defined in the CE marking
Dimensional tolerances	Thickness / EN 823	T5 [-1% or -1 mm / +3 mm]
Dimensional stability	Under specified temperature and humidity / EN 1604: 48 h at 70°C and 90% RH	DS(70,90) [ $\leq 1\%$ ]
Water absorption (partial immersion) / EN 1609 – method A		WS [ $\leq 1.0 \text{ kg/m}^2$ ]
Longterm water absorption (partial immersion) / EN 1609		WL(P) [ $\leq 3.0 \text{ kg/m}^2$ ]
Water vapour diffusion resistance factor ( $\mu$ ) / EN 12086		MU1
Tensile strength perpendicular to the faces in dry conditions / EN 1607		TR 10 [ $\geq 10 \text{ kPa}$ ]
Dynamic stiffness / EN 29052-1		No performance determined
Air flow resistance / EN 29053		AFr 43 [43 $\text{kPa.s/m}^2$ ]
Compressive strength / EN 826		CS(10/Y)30 [ $\geq 30 \text{ kPa}$ ]

**ETICS ARMATERM POUDRE EG Laine Minérale**

**Insulation products for mechanically-fixed ETICS with anchors**

**ANNEX 1 (3/5)**  
of ETA-20/0252-version 1

Factory-prefabricated, coated boards made of mineral wool **FKD-MAX C2** (MW) according to EN 13162+A1 and having characteristics described in the following table. Mass per unit area (kg/m<sup>2</sup>) depends on both thickness of the board and density of mineral wool.

Reaction to fire / EN 13501-1		Class A1
Thermal resistance / EN 13162		Defined in the CE marking
Dimensional tolerances	Thickness / EN 823	T5 [-1% or -1 mm / +3 mm]
Dimensional stability	Under specified temperature and humidity / EN 1604: 48 h at 70°C and 90% RH	DS(70,90) [≤ 1%]
Water absorption (partial immersion) / EN 1609 – method A		WS [≤ 1.0 kg/m <sup>2</sup> ]
Longterm water absorption (partial immersion) / EN 1609		WL(P) [≤ 3.0 kg/m <sup>2</sup> ]
Water vapour diffusion resistance factor (μ) / EN 12086		MU1
Tensile strength perpendicular to the faces in dry conditions / EN 1607		TR 7.5 [≥ 7.5 kPa]
Dynamic stiffness / EN 29052-1		No performance determined
Air flow resistance / EN 29053		No performance determined
Compressive strength / EN 826		CS(10)20 [≥ 20 kPa]

**ETICS ARMATERM POUDRE EG Laine Minérale**

**Insulation products for mechanically-fixed ETICS with anchors**

**ANNEX 1 (4/5)**  
of ETA-20/0252-version 1

Factory-prefabricated, uncoated boards made of mineral wool **ISOCOMPACT / ISOCOMPACT 34** (MW) according to EN 13162+A1 and having characteristics described in the following table. Mass per unit area ( $\text{kg/m}^2$ ) depends on both thickness of the board and density of mineral wool.

Reaction to fire / EN 13501-1		Class A2-s1, d0
Thermal resistance / EN 13162		Defined in the CE marking
Dimensional tolerances	Thickness / EN 823	T5 [-1% or -1 mm / +3 mm]
Dimensional stability	Under specified temperature and humidity / EN 1604: 48 h at 70°C and 90% RH	DS(70,90) [ $\leq 1\%$ ]
Water absorption (partial immersion) / EN 1609 – method A		WS [ $\leq 1.0 \text{ kg/m}^2$ ]
Longterm water absorption (partial immersion) / EN 1609		WL(P) [ $\leq 3.0 \text{ kg/m}^2$ ]
Water vapour diffusion resistance factor ( $\mu$ ) / EN 12086		MU1
Tensile strength perpendicular to the faces in dry conditions / EN 1607		TR 7.5 [ $\geq 7.5 \text{ kPa}$ ]
Dynamic stiffness / EN 29052-1		No performance determined
Air flow resistance / EN 29053		AFr 5 [ $5 \text{ kPa.s/m}^2$ ]
Compressive strength / EN 826		CS(10)20 [ $\geq 20 \text{ kPa}$ ]

**ETICS ARMATERM POUDRE EG Laine Minérale**

**Insulation products for mechanically-fixed ETICS with anchors**

**ANNEX 1 (5/5)**  
of ETA-20/0252-version 1



Anchors or powder actuated fastener with ETA according to European Technical Approval Guideline No 014 (hereinafter ETAG 014) or to European Assessment Document (EAD) 330196-ED-0604 (hereinafter EAD "anchors") and 330965-ED-0601 (for the fastener). The anchors are composed of a plastic expansion sleeve with a plate having diameter of 60 mm or a helix (spiral), and a plastic or metallic nail or screw. The powder actuated fastener is composed of a plastic expansion sleeve with a plate having diameter of 60 mm and a metallic fastener. Use categories and characteristic resistances in the substrate are given in each anchor / fastener's ETA. Validity of the anchor / fastener's ETA shall be checked before using the anchor / the fastener.

Trade name	ETA reference	Mounting <sup>(1)</sup>	Plate stiffness (kN/mm)
Fischer TERMOZ CN 8	ETA-09/0394	a	≥ 0.4
Fischer TERMOZ PN 8	ETA-09/0171	a	
Hilti XI-FV (fastener)	ETA-17/0304	a	
Koelner KI-10, KI-10M, KI-10PA	ETA-07/0291	a	
Koelner KI-10 N, KI-10 NS	ETA-07/0221	a	
Ejot SDF-S plus UB + Plate element TE	ETA-04/0064	a	≥ 0.6
Ejot H1 eco	ETA-11/0192	a	
ejotherm H2 eco	ETA-15/0740	a	
Ejot H3	ETA-14/0130	a	
Ejotherm STR U, STR U 2G	ETA-04/0023	a, b	
Koelner TFIX-8M	ETA-07/0336	a	
Rawlplug Facade Insulation Fixing R-TFIX-8M	ETA-17/0592	a	
Koelner TFIX-8S	ETA-11/0144	a	
RAWLPLUG Insulation System R-TFIX-8S	ETA-17/0161	a, b	
Koelner TFIX-8ST	ETA-11/0144	b	
Spit ISO N	ETA-13/0994	a	
Spit ISO S	ETA-13/0560	a, b	
termoz SV II ecotwist	ETA-12/0208	b	—

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

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

<b>ETICS ARMATERM POUDRE EG Laine Minérale</b>	<b>ANNEX 2</b> of ETA-20/0252-version 1
<b>Anchors for insulation product</b>	

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 (g/m <sup>2</sup> )	Residual strength after ageing (N/mm)		Relative residual strength after ageing (%) <sup>(1)</sup>	
		Warp	Weft	Warp	Weft
Standard meshes					
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
03-1C+	160	≥ 20	≥ 20	≥ 50	≥ 50
Reinforced mesh					
R 585 A 101	696	≥ 20	≥ 20	≥ 40	≥ 40

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

**ETICS ARMATERM POUDRE EG Laine Minérale**

**Glass fibre meshes**

**ANNEX 3**

of ETA-20/0252-version 1