



**Istituto per le Tecnologie
della Costruzione
Consiglio Nazionale delle Ricerche**

Via Lombardia 49 - 20098 San Giuliano Milanese - Italy
tel: +39-02-9806.1 - Telefax: +39-02-98280088

e-mail: info@itc.cnr.it



Membro EOTA



www.eota.eu

European Organisation for
Technical Assessment
Organisation Européenne pour
l'évaluation technique

European Technical Assessment

ETA 09/0060 of 16/07/15

(English language translation prepared by ITC CNR; original version in Italian)

GENERAL PART

Trade name of the construction product

**"TERMOK8 SLIM STIFERITE CLASS S K"
"TERMOK8 SLIM STIFERITE VV"**

Product family to which the construction
product belongs

**External Thermal Insulation Composite System
with renderings on EPS for the use as external
insulation to the walls of buildings**

Sistema Composito di Isolamento Termico Esterno di
facciata con intonaco su EPS destinato all'isolamento
termico esterno delle murature degli edifici

Manufacturer

**Stiferite S.r.l.
viale Navigazione Interna, 54
I - 35129 Padova (PD)**

Manufacturing plant(s)

**Stiferite S.r.l.
viale Navigazione Interna, 54
I - 35129 Padova (PD)**

This European Technical Assessment
contains

10 pages

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

**ETAG 004 Edition 2013, used as EAD (European
Assessment Document)**

This ETA replaces

**European Technical Approval N° 09/0060 issued
on 10.06.2013**

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SPECIFIC PARTS

1. TECHNICAL DESCRIPTION OF THE PRODUCT

The kits "TERMOK8 SLIM STIFERITE CLASS S K" and "TERMOK8 SLIM STIFERITE VV" (difference between the two alternatives consisting in the insulation product) are designed and installed in accordance with the ETA Holder design and installation instructions, deposited at ITC-CNR.

According to categories envisaged by § 2.2 of ETAG 004 Edition March 2013 (ETAG 004 in the following text), the kits "TERMOK8 SLIM STIFERITE CLASS S K" and "TERMOK8 SLIM STIFERITE VV" are bonded systems (required bonded surface: at least 40%) with supplementary mechanical fixings (the fixings are used to provide stability until the adhesive has dried and act as a temporary connection; they comprises the components described in the following Table 1 which are factory-made by the ETA Holder or by his suppliers. The ETA Holder is ultimately responsible for the kits.

Component	Trade name	Installation information	
		Coverage	Thickness
Adhesive (cement ¹ based powder paste requiring addition of 22-24 % of water); particle size: 0.6 mm	"Klebocem" ²	2.5 - 3.5	//
Insulation product 1 (PU panels) (see further description at § 4.1)	"Stiferite Class S K" ³	//	min: 20 mm max: 200 mm
Insulation product 2 (PU panels) (see further description at § 4.2)	"Stiferite VV" ⁴	//	min: 20 mm max: 200 mm
Base coat (cement ⁵ based powder paste requiring addition of 22-24 % of water); particle size: 0.6 mm	"Klebocem" ⁶	2.5 - 3.5	2.5 - 3.5 mm
Reinforcement (glass fibre mesh) (mesh size: 4 x 5 mm)	"Armatex C1" ⁷	//	//
Finishing coat (ready to use paste based on acrylic resin)	"Rivatone Plus" ⁸	2.5 - 3.5 (prepared product)	1.5 ± 0.1 mm
Ancillary materials:			
Base profiles in aluminium: U profiles (length 250 cm - different sections)	"Profilo di base" ⁹	//	1
Corner profiles in aluminium: L-Profiles (length 250 cm - different sections)	"Paraspigolo" ¹⁰	//	1

¹ CEM II AL 42.5 R

² Manufacturer: Gruppo IVAS S.p.A.

³ Manufacturer: Stiferite S.r.l.

⁴ Manufacturer: Stiferite S.r.l.

⁵ CEM II AL 42.5 R

⁶ Manufacturer: Gruppo IVAS S.p.A.

⁷ Manufacturer: Ningbo Shanquan Fiberglass CO, China.

⁸ Manufacturer Gruppo IVAS S.p.A.

⁹ Manufacturer: Edilferro S.r.l.

¹⁰ Manufacturer: Edilferro S.r.l.

Anchors in plastic: (one-piece plastic anchors consisting of a collar and a nail) different lengths in relation with thickness of insulation	H1 Eco (ETA 11/0192), H3 (ETA 13/0130), STRU 2G (ETA 04/0024), NTK U (ETA 07/0026) ¹¹	4-6/m ²	Ø of the collar: 6 cm Ø of the nail: 0.8 cm
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Tab. 1: Components of the kits

2. SPECIFICATION OF THE INTENDED USE IN ACCORDANCE WITH ETAG 004 USED AS EUROPEAN ASSESSMENT DOCUMENT

"TERMOK8 SLIM STIFERITE CLASS S K" and "TERMOK8 SLIM STIFERITE VV" are intended for use as external thermal insulation composite system of buildings' walls and in particular for new and existing buildings whose facades can be made of masonry (bricks, concrete, stones, ...), in concrete cast on site or in prefabricated panels, or can be rendered and coated or uncoated; the substrate may need preparation as described in § 7.2.1 of ETAG 004.

The kits can be used on vertical walls. They can also be used on horizontal or inclined surfaces which are not exposed to precipitation. They are made of non load-bearing construction elements and the installed system does not contribute directly to the stability of the wall on which it is installed, but it can contribute to durability by providing enhanced protection from the effects of weathering. The installed system is not intended to ensure the air tightness of the building structure. For what concerns the impact resistance, the kit results in Use Category II (see § 3.2.4 of this ETA).

The provisions made in this ETA are based on an assumed intended working life of at least 25 years, provided that the conditions laid down in section 2.2, 2.3, 2.4 of this ETA for the packaging, transport, storage, installation as well as appropriate use, maintenance and repair are met. The indications given on the working life cannot be interpreted as a guarantee given by the manufacturer or by the Assessment Body, but should only be regarded as a mean for choosing the appropriate products in relation to the expected economically reasonable working life of the works.

2.1 Manufacturing

The components of "TERMOK8 SLIM STIFERITE CLASS S K" and "TERMOK8 SLIM STIFERITE VV" shall correspond, as far as their composition and manufacturing process is concerned, to the products subject to the assessment tests. Manufacturing process scheme is deposited with ITC-CNR.

2.2 Installation

2.2.1. General

It is the responsibility of the ETA Holder to guarantee that the information about design and installation of the systems "TERMOK8 SLIM STIFERITE CLASS S K" and "TERMOK8 SLIM STIFERITE VV" are effectively communicated to the concerned people. These information can be given using reproductions of the respective parts of this European Technical Assessment. Besides, all the data concerning the execution shall be indicated clearly on the packaging and/or the enclosed instruction sheets using one or several illustrations. In any case, it is suitable to comply with national regulations and particularly concerning fire.

Only the components described in clause 1.1 with characteristics in accordance with clause 2 of this ETA can be used for the systems "TERMOK8 SLIM STIFERITE CLASS S K" and "TERMOK8 SLIM STIFERITE VV". The requirements given in ETAG 004, chapter 7, have to be considered.

¹¹ Manufacturer: Ejot

2.2.2. Design

To bond the systems, the minimal bonded surface area and the method of bonding shall comply with characteristics of the systems "TERMOK8 SLIM STIFERITE CLASS S K" and "TERMOK8 SLIM STIFERITE VV" as well as the national regulations. In any case, the minimal bonded surface shall be at least 40%.

2.2.3. Execution

The recognition and preparation of the substrate as well as the generalities about the execution of the systems "TERMOK8 SLIM STIFERITE CLASS S K" and "TERMOK8 SLIM STIFERITE VV", which are fully described in the current version of the ETA Holder Catalogue, shall be carried out in compliance with:

- chapter 7 of the ETAG 004,
- national regulations in effect, if any.

The particularities in execution linked to the method of bonding and the application of the rendering system shall be handled in accordance with ETA Holder prescriptions. In particular it is suitable to comply with the quantities of rendering applied, the thickness regularity and the drying period between 2 layers.

2.3 **Packaging, transport and storage**

Packaging of the components has to be such that the products are protected from moisture during transport and storage, unless other measures are foreseen by the manufacturer for this purpose and, in case, by ETA Holder specifications. The components have to be protected against damage.

2.4 **Maintenance and repair of the works**

It is accepted that the finishing coat shall normally be maintained in order to fully preserve the system's performances.

Maintenance, which is clearly described in the current version of the ETA Holder Catalogue, includes:

- the repairing of localised damaged areas due to accidents,
 - the application of various products or paints, possibly after washing or *ad hoc* preparation.
- Necessary repairs should be done rapidly. It is important to be able to carry out maintenance as far as possible using readily available products and equipment, without spoiling appearance.

3. **PERFORMANCE OF THE PRODUCT AND REFERENCES TO THE METHODS USED FOR ITS ASSESSMENT**

The tests for the assessment of the performances of "TERMOK8 SLIM STIFERITE CLASS S K" and "TERMOK8 SLIM STIFERITE VV" were carried out according to the tests mentioned in ETAG 004, used as EAD; the performances are valid only if the kit's components are exactly the ones mentioned at § 1 of this ETA¹².

3.1 **Safety in case of fire**

3.1.1 Reaction to fire

The reaction to fire has been determined according with § 5.1.2.1 of ETAG 004. The system, as defined under clause 1.1, reached the following classification: Euroclass according to EN 13501-1:

¹² The ETA Holder could change, under his own responsibility, some of the suppliers of a component, but only provided that the characteristics and the performances of the new components and the final performances of the system do not change at all. These changes must be fully recorded within the Factory Production Control documents in order to grant full traceability.

	Organic content of the rendering system (%)	Flame retardant content of the rendering system (%)	Maximum thickness (mm)	Class
"TERMOK8 SLIM STIFERITE CLASS S K"	base coat: 3.1% finishing coat: 9.4%	0	200	B – s1, d0

Tab. 2: Reaction to fire

Mounting and fixing

(for all end use applications given in 1.2 of this ETA)

The assessment of reaction to fire is based on tests with a maximum insulation layer thickness of SBI / 200 mm, EN 11925-2 / 60 mm and a maximum insulation material (PU) density of 34.00 kg/m³, as well as a rendering system with a maximum organic content of 12.5% and a thickness of 5 mm. For the SBI test the system was mounted directly to a calcium silicate substrate (A2-s1, d0) with a minimum density of 815 kg/m³.

The mounting of the specimen was carried out at ITC-CNR Laboratory by the Manufacturer following the specifications given in his ETA Technical Dossier and in his Recommendations, using a single layer of the glass fibre mesh all over the specimen (without overlapping the mesh). The specimen didn't include any joints nor anchors (anchors have no influence on the test results); the panel edges were rendered, excluding the bottom edge and the top of the specimen.

Extended application

The test results cover arrangements with insulation materials (PU) of a lower thickness and density, as well as with rendering systems (binder types) with a lower organic content.

3.1.2 Reaction to fire of "TERMOK8 SLIM STIFERITE VV"

No Performance Determined

3.2 Hygiene, health and the environment

3.2.1 Water absorption (capillarity test)

The water absorption has been determined in accordance with § 5.1.3.1 of ETAG 004, used as EAD.

Water absorption	after 1 hour		after 24 hours	
	< 1.0 kg/m ²	≥ 1.0 kg/m ²	< 0.5 kg/m ²	≥ 0.5 kg/m ²
Base coat "Klebozem"	X	not applicable	X	
Rendering system made of: - base coat "Klebozem" - finishing coat "Rivatone Plus"	X	not applicable	X	

Tab. 3: Water absorption

3.2.2 Hygrothermal behaviour (heat-rain and heat-cold cycles)

In accordance with the method envisaged in 5.1.3.2.1 ETAG 004, the kit has been applied on rig and the hygrothermal behaviour of 2 significant alternatives has been assessed.

None of the following defects occurred:

- blistering or peeling of any paint finishing,
- failure or cracking associated with joints between insulation products boards or profiles fitted with the system,
- detachment of the render,
- cracking allowing water penetration to the insulation layer.

Assessment: the systems "TERMOK8 SLIM STIFERITE CLASS S K" and "TERMOK8 SLIM STIFERITE VV" are resistant to hygrothermal cycles.

3.2.3 Freeze thaw behaviour

As shown in Table 3 of this ETA, the water absorption of the base coat and of rendering systems is less than 0.5 kg/m^2 after 24 hours and so the system can be assessed as freeze/thaw resistant without any further testing.

3.2.4 Impact resistance

The tests have been performed on the rig on the 2 alternatives after the hygrothermal cycles, in accordance with § 5.1.3.3 of ETAG 004. The systems were made with one single standard mesh. The resistance of the systems to hard body impacts (3 Joules and 10 Joules) and to perforation (Perfotest) leads to the following use category:

"TERMOK8 SLIM STIFERITE CLASS S K" and "TERMOK8 SLIM STIFERITE VV" with Single standard mesh	Use Category II
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Tab. 4: Category of impact resistance of "TERMOK8 SLIM STIFERITE CLASS S K" and "TERMOK8 SLIM STIFERITE VV"

3.2.5 Water vapour permeability (Resistance to water vapour diffusion)

The water vapour permeability has been determined in accordance with § 5.1.3.4 of ETAG 004.

Water vapour permeability	Acceptance criteria (m)	Equivalent air thickness (m)	Pass
Rendering system made of: - insulation "Stiferite CLASS S K" - base coat "Klebocem" (3.0 mm) - finishing coat "Rivatone Plus" (1.5 mm)	≤ 2.0	0.674	X
Rendering system made of: - insulation "Stiferite VV" - base coat "Klebocem" (3.0 mm) - finishing coat "Rivatone Plus" (1.5 mm)	≤ 2.0	0.928	X

Tab. 5: Water vapour permeability

3.2.6 Release of dangerous substances

(in accordance with § 5.1.3.5 of ETAG 004, and with EOTA TR 034)

The external thermal insulation composite system neither contains nor releases the dangerous substances specified in EOTA TR 034 (March 2012).

A written declaration in this respect was made by the manufacturer. In addition to the specific clauses relating to dangerous substances contained in this European Technical Assessment, there may be other requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the EU Construction Products regulation 305/2011, these requirements need also to be complied with, when and where they apply.

3.2 Safety in use

3.3.1 Bond strength

The bond strength has been determined in accordance with § 5.1.4.1 of ETAG 004.

Bond strength between:	Acceptance criteria	Pass
base coat "Klebocem" and insulation product "Stiferite CLASS S K" (§ 5.1.4.1.1): - under dry conditions	$\geq 0.08 \text{ MPa}$	X

base coat "Klebocem" and insulation product "Stiferite VV" (§ 5.1.4.1.1): - under dry conditions	$\geq 0.08 \text{ MPa}$	X
adhesive "Klebocem" and substrate (concrete) (§ 5.1.4.1.2): - under dry conditions - 2 days of water immersion + 2 hours drying - 2 days of water immersion + 7 days drying	$\geq 0.25 \text{ MPa}$ $\geq 0.08 \text{ MPa}$ $\geq 0.25 \text{ MPa}$	X X X
adhesive "Klebocem" and substrate (clay bricks) (§ 5.1.4.1.2): - under dry conditions - 2 days of water immersion + 2 hours drying - 2 days of water immersion + 7 days drying	$\geq 0.25 \text{ MPa}$ $\geq 0.08 \text{ MPa}$ $\geq 0.25 \text{ MPa}$	X X X
adhesive "Klebocem" and insulation product "Stiferite CLASS S K" (§ 5.1.4.1.3): - under dry conditions - 2 days of water immersion + 2 hours drying - 2 days of water immersion + 7 days drying	$\geq 0.08 \text{ MPa}$ $\geq 0.03 \text{ MPa}$ $\geq 0.08 \text{ MPa}$	X X X
adhesive "Klebocem" and insulation product "Stiferite VV" (§ 5.1.4.1.3): - under dry conditions - 2 days of water immersion + 2 hours drying - 2 days of water immersion + 7 days drying	$\geq 0.08 \text{ MPa}$ $\geq 0.03 \text{ MPa}$ $\geq 0.08 \text{ MPa}$	X X X

Tab. 6: Bond strength between "Klebocem" and different substrates

3.3.2 Fixing strength

In accordance with what envisaged in Table 3 and in § 5.1.4.2 of ETAG 004, being "TERMOK8 SLIM STIFERITE CLASS S K" and "TERMOK8 SLIM STIFERITE VV" a bonded system, the Fixing strength (Displacement test) and Wind load resistance performances were not determined.

3.4 Protection against noise

3.4.1 Airborne sound insulation (ETAG 004, § 5.1.5)

No Performance Determined.

3.5 Energy economy and heat retention

3.5.1 Thermal resistance

The thermal transmittance of the substrate wall covered by the ETICS is calculated in accordance with the standard EN ISO 6946:

$$U = U_c + \chi_p \cdot n$$

Where: $\chi_p \cdot n$ has only to be taken into account if it is greater than $0.04 \text{ W}/(\text{m}^2 \cdot \text{K})$;

U: global thermal transmittance of the covered wall ($\text{W}/(\text{m}^2 \cdot \text{K})$);

n: number of anchors (through insulation product) per m^2 ;

χ_p : local influence of thermal bridge caused by an anchor. The value listed below can be taken into account if not specified in the eventual anchor's ETA:

= 0.002 W/K for anchors with a stainless steel screw with the head covered by a plastic material and for anchors with an air gap at the head of the screw ($\chi_p \cdot n$ negligible for $n < 20$);

= 0.004 W/K for anchors with a galvanized steel screw with the head covered by a plastic material ($\chi_p \cdot n$ negligible for $n < 10$);

= negligible for anchors with plastic nails (reinforced or not with glass fibres ...).

U_c: thermal transmittance of the current part of the covered wall (excluding thermal bridges) (W/ (m².K)) determined as follows:

$$U_c = \frac{1}{R_i + R_{render} + R_{substrate} + R_{se} + R_{si}}$$

Where: R_i: thermal resistance of the insulation product;
R_{render}: thermal resistance of the render (about 0.02 (m².K)/W);
R_{substrate}: thermal resistance of the substrate of the building (concrete, brick ...) ((m².K)/W);
R_{se}: external superficial thermal resistance ((m².K)/W);
R_{si}: internal superficial thermal resistance ((m².K)/W).

3.6 Sustainable use of natural resources

No performance determined.

3.7 Aspects of durability and serviceability.

3.7.1 Bond strength after ageing

The bond strength of the system after ageing has been determined following the method envisaged in § 5.1.7.1.1 of ETAG 004.

Bond strength after ageing on the rig	Acceptance criteria	Pass
Bond strength between base coat "Klebocem" + finishing coat "Rivatone Plus" and insulation "Stiferite CLASS S K"	≥ 0.08 MPa	X
Bond strength between base coat "Klebocem" + finishing coat "Rivatone Plus" and insulation "Stiferite VV"	≥ 0.08 MPa	X

Tab. 7: Bond strength after ageing

4. Component's characteristics and parameters

The tests on components have been carried out in accordance with § 5.2 and to Annex C of ETAG 004 in order to verify the declared values; the results were positive; where the declared values were not given by the Applicant, the ETAG 004 values have been adopted.

4.1 Insulation product "Stiferite CLASS S K"

PU panels with right edges covered with saturated glass felt. Their characteristics are given in the following table.

Characteristic (test method)	Declared value (classification, standard, reference)	Minimum/maximum value (when envisaged from ETAG 004)	Pass/fail or statement of the value (when envisaged from ETAG 004)
Reaction to fire (EN 11925-2) thickness: 20 -120 mm density: 35 kg/m ³	Euroclass E (EN 13501-1)	-	-
Water absorption by partial immersion (EN 1609) thickness: 100 mm density: 35 kg/m ³	-	≤ 1 kg/m ²	pass
Water vapour permeability (μ) (EN 12086) thickness: 100 mm	56.00 ± 2	-	56.00

Tensile strength (KPa) (EN 1607)	150	-	-
Compression CS(10) KPa (EN 826)	150	-	-
Shear strength (EN 12090)	-	$\geq 0.02 \text{ N/mm}^2$	pass
Shear modulus of elasticity (EN 12090)	-	$\geq 1.00 \text{ N/mm}^2$	pass
Conductivity (λ_D) (EN 12667) thickness < 80 mm	$\leq 0.028 \text{ W/mK}$	-	-
Conductivity (λ_D) (EN 12667) $80 \leq \text{thickness} \leq 110$ mm	$\leq 0.026 \text{ W/mK}$	-	-
Conductivity (λ_D) (EN 12667) thickness > 110 mm	$\leq 0.025 \text{ W/mK}$	-	-
Thermal resistance for the minimum thickness (20 mm) (EN 12667)	-	-	$0.71 \text{ m}^2\text{KW}$
Thickness (EN 823)	T2 (EN 13165)	-	-
Length (EN 822)	$1200 \pm 7.5 \text{ mm}$ (EN 13165)	-	-
Width (EN 822)	$600 \pm 5 \text{ mm}$ (EN 13165)	-	-
Squareness (EN 824)	$\leq 6\text{mm/m}$ (EN 13165)	-	-
Flatness (EN 825)	$\leq 5 \text{ mm}$ (EN 13165)	-	-
Surface conditions	Cut surface	-	-
Density (EN 1602)	$35 \pm 2 \text{ kg/m}^3$	-	-
Dimensional stability ($23^\circ \pm 2^\circ\text{C}$, $50 \pm 5\%$ RH) (EN 1603)	//	$\leq 0.2 \%$	-
Dimensional stability ($70^\circ \pm 2^\circ\text{C}$, $90 \pm 5\%$ RH for 48 hours) (EN 1604)	≤ 1	$\leq 0.5 \%$	-

Tab. 8: Characteristics of Insulation product "Stiferite CLASS S K"

4.2 Insulation product "Stiferite VV"

PU panels with right edges covered with mineral glass felt. Their characteristics are given in the following table.

Characteristic (test method)	Declared value (classification, standard, reference)	Minimum/maximum value (when envisaged from ETAG 004)	Pass/fail or statement of the value (when envisaged from ETAG 004)
Reaction to fire (EN 11925-2) thickness: 20 -120 mm density: 44 kg/m^3	Euroclass E (EN 13501-1)	-	-

Water absorption by partial immersion (EN 1609) thickness: 40 mm density: 44 kg/m ³	-	$\leq 1 \text{ kg/m}^2$	pass
Water vapour permeability (μ) (EN 12086) thickness: 100 mm	56.00 ± 2	-	56.00
Tensile strength (KPa) (EN 1607)	200	-	-
Compression CS(10) KPa (EN 826)	150	-	-
Shear strength (EN 12090)	-	$\geq 0.02 \text{ N/mm}^2$	pass
Shear modulus of elasticity (EN 12090)	-	$\geq 1.00 \text{ N/mm}^2$	pass
Conductivity (λ_D) (EN 12667) thickness < 80 mm	$\leq 0.028 \text{ W/mK}$	-	-
Conductivity (λ_D) (EN 12667) 80 \leq thickness \leq 110 mm	$\leq 0.026 \text{ W/mK}$	-	-
Conductivity (λ_D) (EN 12667) thickness > 110 mm	$\leq 0.025 \text{ W/mK}$	-	-
Thermal resistance for the minimum thickness (20 mm) (EN 12667)	-	-	0.71 m ² K/W
Thickness (EN 823)	T2 (EN 13165)	-	-
Length (EN 822)	1200 \pm 7.5 mm (EN 13165)	-	-
Width (EN 822)	600 \pm 5 mm (EN 13165)	-	-
Squareness (EN 824)	$\leq 6 \text{ mm/m}$ (EN 13165)	-	-
Flatness (EN 825)	$\leq 5 \text{ mm}$ (EN 13165)	-	-
Surface conditions	Cut surface	-	-
Density (EN 1602)	44 \pm 2 kg/m ³	-	-
Dimensional stability (23° \pm 2°C, 50 \pm 5% RH) (EN 1603)	//	$\leq 0.2 \%$	-
Dimensional stability (70° \pm 2°C, 90 \pm 5% RH for 48 hours) (EN 1604)	≤ 1	$\leq 0.5 \%$	-

Tab. 9: Characteristics of Insulation product "Stiferite Class VV"

4.3 Rendering system (base coat + reinforcement)

4.3.1 Rendering system strip tensile test

The test has been carried out in accordance with § 5.5.4.1 of ETAG 004.

Rendering system strain value	mean value of cracks in warp direction (mm)	mean value of cracks in weft direction (mm)
0.3 %	$0.15 < w \leq 0.20$	$w \leq 0.05$
0.5 %	$0.15 < w \leq 0.20$	$0.15 < w \leq 0.20$
0.8 %	$w \geq 0.25$	$0.15 < w \leq 0.20$
1.0 %	$0.20 < w \leq 0.25$	$0.15 < w \leq 0.20$
1.5 %	$0.20 < w \leq 0.25$	$0.15 < w \leq 0.20$
2.0 %	$0.20 < w \leq 0.25$	$0.15 < w \leq 0.20$
n° of cracks	50 (mean value)	47 (mean value)

Tab. 10: Rendering system strip tensile test results (w = crack's width)

4.4 Reinforcement (glass fibre mesh)

The reinforcement is a glass fibre mesh and its characteristics have been verified through the Identification methods envisaged in Annex C of ETAG 004.

4.4.1 Residual strength of reinforcement after ageing:

Strength after ageing	Results	Acceptance criteria
Residual strength after ageing	≥ 20 N/mm	≥ 20 N/mm
Relative residual resistance (% after ageing) of strength in the as delivered state	≥ 50 % of the value at as delivered state	≥ 50 % of the value at as delivered state

Tab. 11: Residual strength after ageing

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

According to Decision 97/556/EC¹³ of the European Commission amended by the Decision 001/596/EC, the system of assessment and verification of constancy of performance (see Annex V to Regulation (EU) 305/2011) given in the following table applies.

Product	Intended use	Level or class (reaction to fire)	System
External thermal insulation composite systems/kits (ETICS) with rendering	in external wall subject to fire regulations	A1 ⁽¹⁾ , A2 ⁽¹⁾ , B ⁽¹⁾ , C ⁽¹⁾	1
		A1 ⁽²⁾ , A2 ⁽²⁾ , B ⁽²⁾ , C ⁽²⁾ , D, E, (A1 to E) ⁽³⁾ , F	2+
	in external wall not subject to fire regulations	any	2+

Tab. 12: AVCP system

- (1) Product/materials for which a clearly identifiable stage in the production process results in an improvement of the reaction to fire classification (e.g. an addition of fire retardants or a limiting of organic material)
- (2) Product/materials not covered by footnote (1)
- (3) Product/materials that do not require to be tested for reaction to fire (e.g. Product/materials of class A1 according to Commission Decision 96/603/EC)

6. Technical details necessary for the implementation of the AVCP system, as provided for in ETAG 004 used EAD

Technical details necessary for the implementation of the AVCP system are laid down in the Control Plan which is deposited at ITC CNR.

¹³ Official Journal of the European Communities L 254 of 8.10.1996

For type testing the results of the tests performed as part of the assessment for the European Technical Assessment shall be used unless there are changes in the production line or plant. In such cases the necessary type testing has to be agreed between ITC CNR and the Notified Body.

Issued in San Giuliano Milanese, Italy on 16/07/2015
From ITC – CNR

Prof. ing Antonio Occhiuzzi
Head of Institute ITC – CNR

