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Área Anardi 5, E-20730 Azpeitia Gipuzkoa-Spain Tel: +34 946 430 850 Lab\_services@tecnalia.com www.tecnalia.com





# European Technical Assessment

ETA 25/0568 of 14/07/2025

#### **General Part**

Technical Assessment Body issuing the ETA:

Trade name of the construction product

Product family to which the construction product belongs

Manufacturer

Manufacturing plant

This European Technical Assessment contains

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

#### **TECNALIA RESEARCH & INNOVATION**

#### **Ardcoat System Stiferite**

External Thermal Insulation Composite System with rendering on polyurethane PU (PIR) for use as external thermal insulation to the wall of buildings.

Ard Raccanello S.p.A

1a Strada, 13, Zona Industriale Nord 35129 PADOVA, Italy www.ard-raccanello.it

1a Strada, 13, Zona Industriale Nord 35129 PADOVA, Italy

Via Z.I. il Castello, 650, 45020 Castelguglielmo (ROVIGO), Italy

18 pages including 1 Annex which form an integral part of this assessment.

EAD 040083-00-0404 External Thermal Insulation Composite Systems (ETICS) with Rendering

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Specific parts

#### 1. Technical description of the product

This product is an ETICS (External Thermal Insulation Composite System) with rendering – a kit comprising components which are factory-produced by the manufacturer or component suppliers. The ETICS manufacturer is ultimately responsible for all components of the ETICS specified in this ETA (European Technical Assessment).

The ETICS kit comprises a prefabricated insulation product of polyurethane PU (PIR) to be bonded and mechanically fixed onto the wall. The methods of fixing and the relevant components are specified in Table 1. The insulation product is faced with a rendering system consisting of one or more layers (site applied), one of which contains reinforcement. The rendering is applied directly to the insulating panels, without any air gap or disconnecting layer.

The ETICS may include special fittings (e.g., base profiles, corner profiles) to treat details such as connections, apertures, corners, parapets, sills, etc. Assessment and performance of these components is not addressed on this ETA; however the ETICS manufacturer is responsible for adequate compatibility and performance within the ETICS when the components are delivered as a part of the kit.

The components of the kit are:

|                 | Components   | Coverage Thickne (kg/m²) (mm) |           |  |  |  |  |  |
|-----------------|--|-------------------------------|-----------|--|--|--|--|--|
|                 | ETICS bonded with supplementary mechanical fixing. According to ETA holder's prescriptions the minimal bonded surface shall be at least 40%. National application documents shall be taken into account. |                               |           |  |  |  |  |  |
|                 | Insulation product:  |                               |           |  |  |  |  |  |
|                 | STIFERITE CLASS SK Factory prefabricated polyurethane PU (PIR) board according to EN 13165. See Annex 1.   |                               | 30-200    |  |  |  |  |  |
|                 | Adhesive:  |                               |           |  |  |  |  |  |
| Insulation      |  | 4-5                           | 3-5 (dry) |  |  |  |  |  |
| material        | Mechanical fixings   |                               |           |  |  |  |  |  |
| with associated | Nailed-in plastic anchor TER 11-22 (Dakota PP-La)  | See Annex 1                   |           |  |  |  |  |  |
| method of       | Nailed-in plastic anchor TER 11-3 SGR (SGR-8)  | See Annex 1                   |           |  |  |  |  |  |
| fixing          | Nailed-in plastic anchor FIX PLUG 8  | See Annex 1                   |           |  |  |  |  |  |
|                 | Nailed-in plastic anchor TER 11-3SGR-AP (SGR-8AP)  | See Annex 1                   |           |  |  |  |  |  |
|                 | Nailed-in plastic anchor WKTHERM Ø8  | See Ar                        | nnex 1    |  |  |  |  |  |
|                 | Screwed-in plastic anchor TER 11-3 SGR-AV (SGR-8AV)  | See Ar                        | nnex 1    |  |  |  |  |  |
|                 | Screwed-in plastic anchor WKTHERM S  | See Ai                        | nnex 1    |  |  |  |  |  |



|                  | Components   | Coverage (kg/m²) | Thickness<br>(mm)          |  |  |
|------------------|--|------------------|----------------------------|--|--|
| Base coat        | Ardcoat C8: cement based powder requiring addition of 23-27% of water. CEM 42.5 R Grainsize: 0.8 mm.   | 4-5              | 3.5 (dry)                  |  |  |
|                  | Standard mesh:   |                  |                            |  |  |
| Glass fibre mesh | • Standard mesh, applied in single layer "Rete in fibra di vetro": mesh size: 4.0 x 4.5 ± 0.5 mm. Colour: light blue or white (mass per unit 147 g/m²).  | See Ar           | nnex 1                     |  |  |
| Key coat         | <ul> <li>Rasante a pennello serie .084. rough water-based pigmented acrylic-siloxane coating.</li> <li>Dilution for brush application: 12-15% by volume.</li> <li>Dilution for roller application: 5-10% by volume.</li> </ul> | 0.42-0.49        | 0.20-0.25<br>(dry)         |  |  |
| Finishing        | • Intonaclima 1.2 mm serie 1.635. Algae-resistant fibrous acrylic-siloxane coating. Grainsize 1.2 mm.  | 2.22             | According<br>to the        |  |  |
| coat             | • Intonaclima 1.5 mm serie 1.630. Algae-resistant fibrous acrylic-siloxane coating. Grainsize 1.5 mm.  | 2.78             | grainsize                  |  |  |
| Ancillary        | Supplementary profiles:  |                  |                            |  |  |
| materials        | <ul> <li>Polyvinyl chloride (PVC) or aluminium profiles for<br/>corners.</li> </ul>  |                  | der the ETA<br>ponsibility |  |  |

Table 1: Components Ardcoat System Stiferite



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

#### 2.1. Intended use

This ETICS is intended for use as external insulation of building walls. The walls are made of masonry (bricks, block, stones...) or concrete (cast on site or as prefabricated panels). The characteristics of the walls shall be verified prior to use of the ETICS, especially regarding conditions for reaction to fire classification and for fixing of the ETICS either by bonding or mechanically. The ETICS is designed to give the wall, to which it is applied, satisfactory thermal insulation.

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

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

The ETICS is not intended to ensure the airtightness of the building structure.

The choice of the method of fixing depends on the characteristics of the substrate, which could need preparation and shall be done in accordance with the national instructions.

The provisions made in this ETA are based on an assumed working life of 25 years as minimum, provided that the conditions laid down in the sections below (manufacturing, transport, installation, use, maintenance, etc) are met. The indications given on the working life cannot be interpreted as a guarantee given by the manufacturer, 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.

#### 2.2. Manufacturing

The ETA is issued for the ETICS, on the basis of agreed data/information, deposited at Tecnalia Research & Innovation, which identifies the ETICS that has been assessed and judged. Changes to the ETICS or the components or their production process, which could result in this deposited data/information being incorrect, shall be notified to Tecnalia Research & Innovation before the changes are introduced. Tecnalia Research & Innovation will decide whether or not such changes affect the ETA and consequently the validity of the CE marking on the basis of the ETA and, if so, whether further assessment or alterations to the ETA shall be necessary.

#### 2.3. Design and installation

The ETICS is installed on site. The installation instructions, including special installation techniques and provisions for the qualification of the personnel, are given in the manufacturer's technical documentation. It is responsibility of the manufacturer to guarantee that the information about design and installation are easily accessible to the concerned people.



#### 2.4. Packaging, transport and storage

The information on packaging, transport and storage is given in the manufacturer's technical documentation. It is responsibility of the manufacturer to ensure that this information is easily accessible for the concerned people.

#### 2.5. Use, maintenance and repair

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

Maintenance includes at least:

- Visual inspections of the ETICS.
- 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 performed as soon as the need has been identified.

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

The information on use, maintenance and repair is given in the manufacturer's technical documentation. It is the responsibility of the manufacturer to ensure that this information is made know to the concerned people.



### 3. Performance of the product and references to the methods used for its assessment

The identification tests and the assessment for the intended use of this ETICS according to the Basic Work Requirements, were carried out in compliance with the EAD 040083-00-0404 External Thermal Insulation Composite Systems (ETICS) with Rendering (hereinafter referred as "EAD").

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

- 3.1 Reaction to fire (EAD 040083-00-0404, Clause 2.2.1)
- 3.1.1 Reaction to fire of ETICS (EAD 040083-00-0404, Clause 2.2.1.1)

| Components                                      | Max. organic content (%)/Max.<br>heat of combustion (MJ/kg) | Flame retardant content |
|---|---|-------------------------|
| Adhesive (Ardcoat C8)                           | ≤2.5% /   |                         |
| Insulation (STIFERITE CLASS SK)                 |   |                         |
| Adhesive (Ardcoat C8)                           | ≤2.5% /   |                         |
| Glass Fibre Mesh                                | / 6.64  |                         |
| Key coat (Rasante a pennello serie .084)        | ≤13.48% /   | No flame retardant      |
| Finishing coat (Intonaclima 1.2 mm serie 1.635) | ≤9.85% /  |                         |
| Finishing coat (Intonaclima 1.5 mm serie 1.630) | ≤9.85% /  |                         |

Table 2: Organic content, heat of combustion and flame retardant content of Ardcoat System Stiferite components

The reaction to fire according to EN 13501-1 and Commission Delegated Regulation (EU) No 2016/364 of Ardcoat System Stiferite is class B-s1,d0.

Note: A European reference fire scenario has not been laid down for facades. In some Member States, the classification of ETICS according to EN 13501-1 might not be sufficient for the use in facades. 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 State regulations, until the existing European classification system has been completed.

#### 3.1.2 Reaction to fire of thermal insulation material (EAD 040083-00-0404, Clause 2.2.1.2)

The reaction to fire of thermal insulation material STIFERITE CLASS SK, according to EN 13501-1 and Commission Delegated Regulation (EU) No 2016/364, is class E.

#### 3.1.3 Reaction to fire of PU foam adhesive (EAD 040083-00-0404, Clause 2.2.1.3)

Not relevant.

#### 3.2 Façade fire performance (EAD 040083-00-0404, Clause 2.2.2)

Performance not assessed.



#### 3.3 Propensity to undergo continuous smouldering (EAD 040083-00-0404, Clause 2.2.3)

Not relevant.

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

3.4 Content, emission and/or release of dangerous substances (EAD 040083-00-0404, Clause 2.2.4)

Performance not assessed.

#### 3.5 Water absorption (EAD 040083-00-0404, Clause 2.2.5)

#### 3.5.1 Water absorption of the base coat and the rendering system

| Base Coat  | Rendering  | Water absorption (kg/m²) |                |  |  |  |  |
|--|--|--------------------------|----------------|--|--|--|--|
|  | Kendering  | After 1 hour             | After 24 hours |  |  |  |  |
|  | Without rendering                                      | 0.083                    | 0.405          |  |  |  |  |
| Ardcoat C8   | With finishing coat Intonaclima 1.5 mm serie 1.630 (1) | 0.028                    | 0.135          |  |  |  |  |
| Notes:   |  |                          |                |  |  |  |  |
| (1) Valid result for Intonaclima 1.2 mm serie 1.635. |  |                          |                |  |  |  |  |

Table 3: Water absorption (capillarity test)

#### 3.5.2 Water absorption of the thermal insulation product.

Water absorption of the thermal insulation product has been obtained from the DoP of the thermal insulation panels according to EN 13165. See Annex 1 for declared values.

#### 3.6 <u>Hygrothermal behaviour (EAD 040083-00-0404, Clause 2.2.6)</u>

The hygrothermal performance of the ETICS was tested on the rig.

None of the following defects occurred on the assessed external renderings or the base coat during and after the hygrothermal cycles:

- Blistering or peeling of any finishing coat.
- Failure or cracking associated with joints between insulation product boards or profiles fitted with ETICS.
- Detachment of the render coat.
- Cracking allowing water penetration to the insulating layer (normally ≤ 0.2 mm).

Therefore, the ETICS is considered resistant to hygrothermal cycles.



#### 3.7 Freeze-thaw behaviour (EAD 040083-00-0404, Clause 2.2.7)

Water absorption of the base coat and all the finishing coats is lower than 0.5 kg/m<sup>2</sup> after 1 hour and 24 hours. Based on these test results, the system can be considered freeze-thaw resistant and there is no need for further testing.

#### 3.8 Impact resistance (EAD 040083-00-0404, Clause 2.2.8)

| Rendering system   | Maximum Impact dia | Category of   |     |
|--|--------------------|---|-----|
| <b>,</b>   | 3 J                | 10 J  | use |
| Base coat Ardcoat C8 + glass fibre<br>standard mesh + key coat Rasante a<br>pennello serie .084 + finishing coat<br>Intonaclima 1.2 mm serie 1.635 (1) | 10/no cracking     | 22/cracks without reaching the thermal insulation product | II  |
| Notes:   | 1                  | 1   | 1   |

#### Table 4: Impact resistance

### 3.9 <u>Water vapour permeability (resistance to water vapour diffusion) (EAD 040083-00-0404, Clause 2.2.9)</u>

#### 3.9.1 Water vapour permeability of the rendering system

(1) Valid result for Intonaclima 1.5 mm serie 1.630.

|   | Composition of the system   | Thickness<br>(m) | Equivalent<br>air thickness<br>S <sub>d</sub> (m) |  |  |
|---|---|------------------|---|--|--|
| Reinforced<br>base coat<br>+ finishing<br>coat              | Base coat Ardcoat C8 + glass fibre standard mesh + key coat Rasante a pennello serie .084 + finishing coat Intonaclima 1.5 mm serie 1.630 (1) | 0.005            | 0.5   |  |  |
| Notes:  (1) Valid result for Intonaclima 1.2 mm serie 1.635 |   |                  |   |  |  |

Table 5: Water vapour permeability of the rendering system

#### 3.9.2 Water vapour permeability of thermal insulation product

Water vapour permeability of the thermal insulation product STIFERITE CLASS SK has been obtained from the DoP of the thermal insulation panel according to EN 13165. See Annex 1 for declared value.



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

- 3.10 Bond strength
- 3.10.1 Bond strength between base coat and thermal insulation product (EAD 040083-00-0404, Clause 2.2.11.1)

| Composition            | Initial State |        | After hygrothermal cycles |        | After freeze/thaw cycles     |          |
|------------------------|---------------|--------|---------------------------|--------|------------------------------|----------|
| Composition            | Minimum       | Mean   | Minimum                   | Mean   | Minimum                      | Mean     |
|                        | value         | value  | value                     | value  | value                        | value    |
| STIFERITE CLASS SK +   |               |        |                           |        | Test not performe (system is |          |
| Base coat Ardcoat C8 + | 113 kPa       | 128kPa | 80 kPa                    | 85 kPa |                              |          |
| glass fibre mesh       | TI2 KF4       | IZOKFA | OU KPa                    | OJ KFA | considere                    | d freeze |
|                        |               |        |                           |        | thaw res                     | sistant) |

Table 6: Bond strength between base coat and insulation product

Rupture type: cohesive rupture in the insulation material

3.10.2 Bond Strength between adhesive and substrate (EAD 040083-00-0404, Clause 2.2.11.2)

| Composition  | Initial       | Initial State for 2 days |               | Immersion in water<br>for 2 days and 2h<br>drying |               | in water for<br>nd 7 days<br>ying |
|--|---------------|--------------------------|---------------|---|---------------|-----------------------------------|
|  | Minimum value | Mean<br>value            | Minimum value | Mean<br>value                                     | Minimum value | Mean<br>value                     |
| Concrete slab + adhesive Ardcoat C8 (4 mm thickness) | 317 kPa       | 503 kPa                  | 243 kPa       | 265 kPa   | 721 kPa       | 731 kPa                           |

Table 7: Bond strength between adhesive and substrate

Rupture type: cohesive rupture in the adhesive.

3.10.3 Bond Strength between adhesive and insulation product (EAD 040083-00-0404, Clause 2.2.11.3)

| Composition   | Initial          | State         | Immersion in water for 2 days and 2h drying |               | Immersion i<br>2 days an<br>dryi | d 7 days      |
|---|------------------|---------------|---|---------------|----------------------------------|---------------|
|   | Minimum<br>value | Mean<br>value | Minimum<br>value                            | Mean<br>value | Minimum<br>value                 | Mean<br>value |
| STIFERITE CLASS SK<br>+ adhesive Ardcoat<br>C8 (4 mm thickness) | 118 kPa          | 128 kPa       | 77 kPa                                      | 83 kPa        | 120 kPa                          | 127 kPa       |

Table 8: Bond strength between adhesive and insulation product

Rupture type: cohesive rupture in the insulation material



The minimal bonded surface S is calculated as follows:

$$S(\%) = [0.03 \times 100] / B$$

Where:

B= minimum mean failure resistance of the adhesive to the insulation product in dry conditions (MPa)

0.03 MPa correspond to the minimum requirements.

3.11 <u>Fixing strength (transverse displacement strength) (EAD 040083-00-0404, Clause 2.2.12)</u>

Not relevant.

- 3.12 Wind load resistance of ETICS (EAD 040083-00-0404, Clause 2.2.13)
- 3.12.1 Pull-through test (EAD 040083-00-0404, Clause 2.2.13.1)

Not relevant.

3.12.2 Static foam block test (EAD 040083-00-0404, Clause 2.2.13.2)

Not relevant.

3.12.3 Dynamic wind uplift EAD 040083-00-0404, Clause 2.2.13.3)

Not relevant.

3.13 <u>Tensile test perpendicular to the faces of thermal insulation product (EAD 040083-</u> 00-0404, Clause 2.2.14)

Tensile strength of thermal insulation product in dry conditions has been obtained from the DoP of the thermal insulation panels according to EN 13165. See Annex 1 for declared value.

Tensile strength of thermal insulation product in wet conditions is not applicable.



### 3.14 <u>Shear strength and shear modulus of elasticity test of ETICS (EAD 040083-00-0404, Clause 2.2.15)</u>

Shear strength and shear modulus of thermal insulation product have been measured. See Annex 1 for declared value.

- 3.15 Pull-through resistance of fixing from profiles (EAD 040083-00-0404, Clause 2.2.16)

  Not relevant.
- 3.16 Render strip tensile test (EAD 040083-00-0404, Clause 2.2.17)

Performance not assessed.

3.17 <u>Shear strength and shear modulus of foam adhesive (EAD 040083-00-0404, Clause 2.2.18)</u>

Not relevant.

3.18 Post expansion behaviour of foam adhesives (EAD 040083-00-0404, Clause 2.2.19)

Not relevant.

#### 3.19 Bond strength after ageing (EAD 040083-00-0404, Clause 2.2.20)

Bond strength after ageing of finishing coats tested on the rig.

|   | After hygrotherma                               | After freeze/thaw cycles |   |               |  |  |
|---|---|--------------------------|---|---------------|--|--|
| Rendering system  | Individual value<br>(kN/m²) /type of<br>failure | Mean<br>value<br>(kN/m²) | Minimum<br>value                            | Mean<br>value |  |  |
| Base coat Ardcoat C8 + glass                                | 135 / CS  |                          |   |               |  |  |
| fibre mesh + key coat                                       | 136 / CS  |                          | Test not pe<br>(system is co<br>freeze thaw | performed     |  |  |
| Rasante a pennello serie .084 + finishing coat              | 142 / CS  | 132                      |   | considered    |  |  |
| Intonaclima 1.2 mm serie                                    | 119 / CS  |                          |   | v resistant)  |  |  |
| 1.635 <sup>(1)</sup>  | 126 / CS  |                          |   |               |  |  |
| Notes: (1) Valid result for Intonaclima 1.5 mm serie 1.630. |   |                          |   |               |  |  |

Table 9: Bond strength after ageing of finishing coat tested on the rig

CS: cohesive rupture in insulation material.



### 3.20 <u>Mechanical and physical characteristics of the mesh (EAD 040083-00-0404, Clause 2.2.21)</u>

|               |      | Tensile<br>strength<br>in as<br>delivered<br>state<br>(N/mm) | Residual<br>tensile<br>strength<br>after ageing<br>(N/mm) | Relative residual strength after ageing, of the strength in the as delivered state (%) | Elongation<br>in as-<br>delivered<br>state<br>(%) | Elongation<br>after<br>ageing (%) |
|---------------|------|--|---|--|---|-----------------------------------|
| Standard mash | Warp | 45   | 23  | 51.11  | 3.7   | 2.1                               |
| Standard mesh | Weft | 47   | 28  | 59.57  | 4.2   | 2.4                               |

Table 10: Mechanical and physical characteristics of the mesh

#### Protection against noise (BWR 5)

#### 3.21 Airborne sound insulation of ETICS (EAD 040083-00-0404, Clause 2.2.22)

Performance not assessed.

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

### 3.22 <u>Thermal resistance and thermal transmittance of ETICS (EAD 040083-00-0404, Clause 2.2.23)</u>

The additional thermal resistance provided by the ETICS ( $R_{etics}$ ) to the substrate wall is calculated from the thermal resistance of the insulation product ( $R_{insulation}$ ), determined as described in the appropriate harmonized standard (EN 13165 for PIR insulation), and the tabulated  $R_{render}$  value of the render system ( $R_{render}$  is about 0.02 m<sup>2</sup>K/W).

$$R_{etics} = R_{insulation} + R_{render} [(m^2K)/W]$$

The thermal bridges caused by mechanical fixing devices influence the thermal transmittance of the entire wall and shall be taken into account using the following calculation:

$$U_c = U + \Delta U [W/(m^2K)]$$

With:

 $U_c$  = corrected thermal transmittance of the entire wall, including thermal bridges.

U = thermal transmittance of the entire wall, including ETICS, without thermal bridges.

$$U = \frac{1}{R_{etics} + R_{substrate} + R_{se} + R_{si}}$$

R<sub>etics</sub> = thermal resistance of the ETICS [(m<sup>2</sup>K)/W]

R<sub>substrate</sub>= thermal resistance of the substrate wall [(m<sup>2</sup>K)/W]



 $R_{se}$  = external surface thermal resistance [(m<sup>2</sup>K)/W]

 $R_{si}$  = internal surface thermal resistance [(m<sup>2</sup>K)/W]

 $\Delta U$  = correction term of the thermal transmittance for mechanical fixing devices.

$$\Delta U = X_p * n \text{ (for anchors)} + \Sigma \psi i * \ell i \text{ (for profiles)}$$

 $X_p$  = point thermal transmittance value of the anchor [W/K]. See Technical Report no 25. If not specified in the anchors ETA, the following values apply:

- = 0.002 W/K for anchors with a plastic screw/nail, stainless steel screw/nail with the head covered by plastic material, and for anchors with an air gap at the head of the screw/nail.
- = 0.004 W/K for anchors with a galvanized steel screw/nail with the head covered by a plastic material.
- = 0.008 W/K for all other anchors (worst case).

n = number of anchors per m<sup>2</sup>

ψi = linear thermal transmittance value of the profile [W/(mK)]

li = length of the profile per m²

Thermal resistance of ETICS is ≥ 1.0 (m<sup>2</sup>.K)/W.

The value of thermal resistance of each insulation product shall be given in the manufacturer's documentation along with the possible range of thicknesses. In addition, the point thermal conductivity of anchors shall be given when anchors are used in the ETICS.

The range value of thermal resistance of thermal insulation product is from 1.11 (m<sup>2</sup>.K)/W to 8.33 (m<sup>2</sup>.K)/W (Values obtained from the DoP issued for thermal insulation).



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

According to the European Commission Decision 1997/556/EC, amended by the European Commission Decision 2001/596/EC, system AVCP 2+ applies.

In addition, for uses subject to regulations on reaction to fire and according to the European Commission Decision 1997/556/EC, amended by the European Commission Decision 2001/596/EC, system AVCP 2+ applies.

The AVCP systems are described in Annex V of Regulation (EU) N° 305/2011, as amended by Delegated Regulation (EU) N° 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 Assessment and Verification of Constancy of Performance (AVCP) system are laid down in the control plan deposited at Tecnalia Research & Innovation.

The Control Plan is a confidential part of the ETA and is only handed over to the notified body involved in the assessment and verification of constancy of performance.

Issued in Azpeitia, on 14/07/2025

Innovation and Conformity Assessment Point

Tecnalia Research & Innovation

Miguel Mateos



#### **ANNEX 1 CHARACTERISTICS OF THE COMPONENTS**

Detailed information on the chemical composition and other identifying characteristics of the components has been deposited at Tecnalia Research & Innovation. Further information can be observed from the product data sheets, which are part of the Technical Documentation for this ETA.

#### **Insulation product**

**STIFERITE CLASS SK** Factory-made uncoated panels made of polyurethane PU (PIR), according to EN 13165 "Thermal insulation products for buildings. Factory made rigid polyurethane foam (PU)".

| Description and characteristics                                     | Standard   | Value                            | е            |
|---|------------|----------------------------------|--------------|
| Density (kg/m³)   |            | 35 ± 1                           | 5            |
| Thickness   |            | 30-200                           | mm           |
| Reaction to fire  | EN 13501-1 | Eurocla                          | ss E         |
| Thickness (mm)  | EN 823     | T2                               |              |
| Length (mm)   | EN 822     | 1200 ±                           | 7.5          |
| Width (mm)  | EN 822     | 600 ±                            | 5            |
|   |            | DS(-20,-) 2                      |              |
| Dimensional stability   | EN 1604    | 30 mm ≤ e < 50 mm                | DS (70,90) 3 |
|   |            | 50 mm ≤ e ≤ 200 mm               | DS (70,90) 4 |
| Water absorption (long term by                                      | EN 12087   | 30 mm ≤ e < 120 mm               | WL(T)2       |
| total immersion)  |            | 120 mm ≤ e ≤ 200 mm              | WL(T)1       |
| Water absorption (short term by partial immersion)                  | EN 1609    | WS(P)(                           | 0.2          |
| Water vapour permeability – diffusion factor                        | EN 12086   | 56 ±                             | 2            |
| Tensile strength perpendicular to the faces in dry conditions (kPa) | EN 1607    | TR 80                            | 0            |
| Compression CS (10) (kPa)   | EN 826     | CS (10/Y)                        | ) 150        |
| Shear Strength (kPa)  | EN 12090   | ≥ 20                             | )            |
| Shear Modulus of elasticity (kPa)                                   | EN 12090   | ≥ 100                            | 00           |
| Thermal conductivity (W/mK)   | EN 12667   | 30 mm ≤ e < 50 mm                | ≤0.027       |
|   |            | 50 mm ≤ e < 100 mm               | ≤0.026       |
|   |            | 100 mm ≤ e < 180 mm              | ≤0.025       |
|   |            | 180 mm ≤ e ≤ 200 mm              | ≤0.024       |
| Thermal resistance (m <sup>2</sup> K/W)                             |            | Defined in the declarati<br>1316 | _            |



#### **Mesh**

**Standard mesh** Alkali resistant glass fibre mesh with mass per unit area of about 147 g/m $^2$  and mesh size of about 4.0 x 4.5 mm.

| Characteristics                        | Reference          | Value             |
|--|--------------------|-------------------|
| Mass per unit area (g/m²)              | EAD 040016-01-0404 | 147 ± 5%          |
| Mesh size (mm)                         |                    | 4.0 x 4.5 (± 0,5) |
| Thickness (mm)                         |                    | 0.55 ± 0,1        |
| Organic content (%)                    |                    | 20 (± 4 %)        |
| Heat of combustion (PCS-value) (MJ/kg) |                    | 6.64              |

#### **Plastic fixings**

**TER 11-22 (Dakota PP-La)** Nailed-in plastic anchor for fixing of external thermal insulation composite systems with rendering in concrete and masonry. ETA 06/0242

| GENERAL CHARACTERISTICS                  |      |
|--|------|
| Plate diameter (mm)                      | 60   |
| Load resistance of the anchor plate (kN) | 0.99 |
| Plate stiffness (kN/mm)                  | 0.7  |

**TER 11-3 SGR (SGR-8)** Nailed-in plastic anchor for fixing of external thermal insulation composite systems with rendering in concrete and masonry. ETA 16/0375

| GENERAL CHARACTERISTICS                  |     |
|--|-----|
| Plate diameter (mm)                      | 60  |
| Load resistance of the anchor plate (kN) | 1   |
| Plate stiffness (kN/mm)                  | 0.7 |

**FIX PLUG 8** Nailed-in plastic anchor for fixing of external thermal insulation composite systems with rendering in concrete and masonry. ETA 15/0373

| GENERAL CHARACTERISTICS                  |     |
|--|-----|
| Plate diameter (mm)                      | 60  |
| Load resistance of the anchor plate (kN) | 1.4 |
| Plate stiffness (kN/mm)                  | 0.6 |

**TER 11-3SGR-AP (SGR-8AP)** Nailed-in plastic anchor for fixing of external thermal insulation composite systems with rendering in concrete and masonry. ETA 17/0140

| GENERAL CHARACTERISTICS                  |     |
|--|-----|
| Plate diameter (mm)                      | 60  |
| Load resistance of the anchor plate (kN) | 1   |
| Plate stiffness (kN/mm)                  | 0.7 |



**WKTHERM Ø8** Nailed-in plastic anchor for fixing of external thermal insulation composite systems with rendering in concrete and masonry. ETA 11/0232

| GENERAL CHARACTERISTICS                  |     |
|--|-----|
| Plate diameter (mm)                      | 60  |
| Load resistance of the anchor plate (kN) | 4.3 |
| Plate stiffness (kN/mm)                  | 0.6 |

**TER 11-3 SGR-AV (SGR-8AV)** Screwed-in plastic anchor for fixing of external thermal insulation composite systems with rendering in concrete and masonry. ETA 17/0606

| GENERAL CHARACTERISTICS                  |     |
|--|-----|
| Plate diameter (mm)                      | 60  |
| Load resistance of the anchor plate (kN) | 1   |
| Plate stiffness (kN/mm)                  | 0.7 |

**WKTHERM S** Screwed-in plastic anchor for fixing of external thermal insulation composite systems with rendering in concrete and masonry. ETA 13/0724

| GENERAL CHARACTERISTICS                  |     |
|--|-----|
| Plate diameter (mm)                      | 60  |
| Load resistance of the anchor plate (kN) | 4.3 |
| Plate stiffness (kN/mm)                  | 0.6 |