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Designated according to Article 29 of Regulation (EU) No 305/2011

Member of EOTA
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European Technical Assessment ETA 23/0581 of 25/08/2023

English version prepared by Itecons

General Part

Technical Assessment Body issuing the European Technical Assessment: Itecons - Instituto de Investigação e Desenvolvimento Tecnológico para a Construção, Energia, Ambiente e Sustentabilidade	
Trade name of the construction product	SikaTherm Cork
Product family to which the construction product belongs	External Thermal Insulation Composite Systems Product area code:4
Manufacturer	Sika Portugal, Produtos de Construção e Indústria, S.A. Rua de Santarém, 113 4400-292 Vila Nova de Gaia PORTUGAL
Manufacturing plant(s)	Sika Portugal, Produtos de Construção e Indústria, S.A. Rua João Oliveira Ramos 3880-009 Ovar PORTUGAL
This European Technical Assessment contains	16 pages
This European Technical Assessment is issued in accordance with regulation (EU) No 305/2011, on the basis of	EAD 040083-00-0404 *External Thermal Insulation Composite Systems (ETICS) with renderings*

This ETA is corrigendum 1 of ETA 23/0581, issued on 14/09/2023.

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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 manufacturer or component suppliers. The ETICS manufacturer is ultimately responsible for all components of ETICS specified in this ETA.

The ETICS kit comprises a prefabricated insulation product of expanded insulation cork board (ICB) to be bonded with supplementary mechanical fixings onto a wall. The bonded area of insulation bords should be greater than 51 %. The methods of fixing and the relevant components of the ETICS are specified in Table 1. The insulation product is faced with a rendering system consisting of one or two layers (site applied), one of which contains reinforcement. The rendering is applied directly to the insulation panels, without any air gap or disconnecting layer.

The ETICS may include special fittings (e.g. base profiles, corner profiles…) to treat details of ETICS (connections, apertures, corners, parapets, sills…). The assessment and performance of these components is not addressed in 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.

Table 1: Components of the ETICS.

Component	Description		Coverage (kg/m²)	Thickness (mm)
Insulation product	Aglomerado de Cortiça Expandida - ICB Expanded insulation cork board (ICB) with CE marking.		---	40 to 100
Adhesive	Coteterm M Flex (SikaWall-1070 M Flex) Cementitious mortar, monocomponent, pre-dosed, with aggregates, resins and additives, with CE marking.		3.7 to 4.5	2.0 to 3.0
Base Coat	Coteterm M Flex (SikaWall-1070 M Flex) Cementitious mortar, monocomponent, pre-dosed, with aggregates, resins and additives, with CE marking.	with standard glass fibre mesh	4.2 to 5.5	3.0 to 4.0
		with double glass fibre mesh		4.0 to 5.0
Key coat	Sika Thermocoat-5 ES TI (SikaWall-45 Primer) Pigmented acrylic based primer.		0.2 to 0.3	---
Finishing coat 1	Coteterm Aquasol (SikaWall-6550 Aquasol SF) Organic coating containing a silicone-resin (medium grain).		1.6 to 2.1	1.5
	Coteterm Aquasol Smooth (SikaWall-6551 Aquasol SM) Organic coating containing a silicone-resin (fine-grained).		1.4 to 1.6	1.0
Finishing coat 2	Sika Thermocoat-5 PT TM (SikaWall-6400 TM) Based on mineral acrylic in watery dispersions (medium grain)		1.6 to 2.5	1.0 to 2.5
	Sika Thermocoat-5 ES TF (SikaWall-6400 TF) Based on mineral acrylic in watery dispersions (fine-grained)		2.0 to 3.0	1.0 to 2.5
Glass fibre mesh	Sika Thermocoat-4 (167) (SikaWall 9167) Standard mesh (glass fibre mesh with mesh size 5.0 mm x 4.0 mm)		---	---
Anchors (supplementary mechanical fixings)	Sika Thermocoat-8 ES (According to ETA 07/0291)		---	---
Ancillary components	Remain under the ETA holder responsibility			

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 and blocks) or concrete (cast on site or as prefabricated panels) with a reaction to fire classification A1 to A2-s2,d0 according to EN 13501-1 or A1 according to the EC decision 96/603/EC as amended. The ETICS is designed to give the wall to which it is applied satisfactory thermal insulation. The characteristics of 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 shall be designed and installed in accordance with ETA holder´s installation instructions and this ETA. The kit consists of components defined by the ETA holder and manufactured either by the ETA holder or his supplier(s).

The ETICS is made of non-loadbearing construction elements. It does not contribute directly to the stability of wall on which it is installed, but it can contribute to 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 provisions made in this European Technical Assessment (ETA) are based on an assumed intended working life of at least 25 years, provided that the conditions laid down in the following sections 2.2 to 2.5 for the packing, transport, storage, installation are met and that the installed ETICS is subjected to an appropriate use, maintenance and repair as well. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right product in relation to the expected economically reasonable working life of the works.

2.2. Manufacturing

The European Technical Assessment is issued for the ETICS on the basis of agreed data/information, deposited with the Itecons - Instituto de Investigação e Desenvolvimento Tecnológico para a Construção, Energia, Ambiente e Sustentabilidade, which identifies the ETICS that has been assessed and judged. Changes to the ETICS or production process, which could result in the deposited data/information being incorrect should be notified to Itecons before changes are introduced. The Itecons 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 installation instruction including special installation techniques and provisions for the qualification of the personnel are given in the manufacturer’s technical documentation.

2.4. Packing, transport and storage

The information on packing, transport and storage 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.

2.5. Use, maintenance and repair

The finishing coat shall be normally maintained in order to fully preserve the ETICS performance. Maintenance includes at least:

- visual inspection of the ETICS;
- the repairing of localized damaged areas due to accidents;
- the aspect maintenance with products adapted and compatible with the ETICS (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 manufacturer(s) 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 the Essential Requirements were carried out in compliance with the with the EAD 040083-00-0404, "External Thermal Insulation Composite Systems (ETICS) with Renderings" – edition January 2019 (hereinafter referred to as "EAD").

3.1. ETICS characteristics

3.1.1. Mechanical resistance and stability (BWR 1)

Not relevant.

3.1.2. Safety in case of fire (BWR 2)

3.1.2.1. Reaction to fire

3.1.2.1.1. Reaction to fire of ETICS

The reaction to fire was tested according to ISO 11925-2:2020 and EN 13823:2020+A1:2022 and classified according to EN 13501-1:2018.

The system satisfies the requirements of classes indicated in Table 2.

Table 2: Reaction to fire class of ETICS.

System specimens	Reaction to fire class
System with finishing coat 1	B-s1, d0
System with finishing coat 2	C-s2, 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 13501-1:2018 might not be sufficient for the use in facades. An additional assessment of ETICS according to national provisions (e.g. on the basis of large scale test) might be necessary to comply with Member State regulations, until the existing European classification system has been completed.

3.1.2.2. Reaction to fire of thermal insulation material

The reaction to fire classification of thermal insulation product ICB is class E, according to EN 13501-1.

3.1.2.3. Facade fire performance

No performance assessed.

3.1.2.4. Propensity to undergo continuous smouldering of ETICS

No performance assessed.

3.1.3. Hygiene, health and environment (BWR 3)

3.1.3.1. Content, emission and/or release of dangerous substances – Leachable substances

No performance assessed.

3.1.3.2. Water absorption

3.1.3.3. Water absorption of the base coat and the rendering system

The results of the water absorption test of the base coat (system without finishing) and the rendering system, presented in Table 3, and verify the following conditions:

- Water absorption after 1 hour < 1 kg/m^2;
- Water absorption after 24 hours < 0.5 kg/m^2.

The system is therefore judged to have satisfactory performance concerning water absorption.

Table 3: Water absorption of the base coat and the rendering system (capillary test).

System specimens	Water absorption after 1 h (mean value) [kg/m^2]	Water absorption after 24 h (mean value) [kg/m^2]
ICB + base coat + standard mesh	0.02	0.33
ICB + base coat + standard mesh + key coat + finishing coat 1 (Coteterm Aquasol)	0.01	0.21
ICB + base coat + standard mesh + key coat + finishing coat 2 (Sika Thermocoat-5 PT TM)	0.06	0.27

3.1.3.4. Water absorption of thermal insulation product

The maximum value of water absorption of thermal insulation product, determined by partial immersion according to ISO 29767:2019, method A, is 0.41 kg/m^2.

3.1.3.5. Watertightness of the ETICS: hygrothermal behaviour

Hygrothermal cycles have been performed on a rig.

The ETICS is assessed resistant to hygrothermal cycles, it means ETICS passed the test without defects.

3.1.3.6. Watertightness of the ETICS: Freeze-thaw behaviour

The ETICS is freeze-thaw resistant if the water absorption of both reinforced base coat and the rendering system are less than 0.5 kg/m^2 after 24 hours (see 3.1.3.3).

3.1.3.7. Impact resistance

The resistance to hard body impact (3 and 10 Joules) tests carried out on samples of system composition led to the use categories presented in Table 4.

Table 4: Impact resistance to hard body impacts.

System specimens	Hard body impact	Impact zone – diameter (maximum value) [mm]	Use categories[1]
Test specimens tested on the rig			
ICB + base coat + standard mesh + key coat	10 J	36.62 Superficial damage without cracks formation	III
	3 J	27.02 Cracks without reaching the insulation product	
ICB + base coat + standard mesh + key coat + finishing coat 1 (Coteterm Aquasol)	10 J	36.81 Cracks without reaching the insulation product	II
	3 J	27.97 Superficial damage without cracks formation	
ICB + base coat + double mesh + key coat + finishing coat 1 (Coteterm Aquasol)	10 J	24.56 Superficial damage without cracks formation	I
	3 J	20.92 Superficial damage without cracks formation	
ICB + base coat + standard mesh + key coat + finishing coat 2 (Sika Thermocoat-5 PT TM)	10 J	41.84 Cracks without reaching the insulation product	II
	3 J	20.49 Superficial damage without cracks formation	
ICB + base coat + double mesh + key coat + finishing coat 2 (Sika Thermocoat-5 PT TM)	10 J	31.06 Superficial damage without cracks formation	I
	3 J	5.5 Superficial damage without cracks formation	

[1] Use categories:

Category I – zones readily accessible at ground level to the public and vulnerable to hard impacts but not subjected to abnormally rough use;

Category II – zones liable to impacts from thrown or kicked objects, but in public locations where the height of system will limit the size of impact; or at lower levels where access to the building is primarily to those with some incentive to exercise care;

Category III – zones not likely to be damaged by normal impacts caused by people or by thrown or kicked objects.

3.1.3.8. Water vapour permeability

3.1.3.8.1. Water vapour permeability of rendering system

Table 5 presents de resistance to water vapour diffusion of rendering system (base coat and finishing coat) for the system configuration, expressed by the equivalent air thickness and verify the condition $S_d \leq 2$.

Table 5: Equivalent air thickness of rendering system.

System specimens	Thickness of the rendering system (mean value) [mm]	Water vapour diffusion resistance factor (mean value) μ [-]	Equivalent air thickness (mean value) *Sd* [m]
Base coat + standard mesh + key coat + finishing coat 1 (Coteterm Aquasol)	2.6	119.8	0.3
Base coat + standard mesh + key coat + finishing coat 2 (Sika Thermocoat-5 PT TM)	3.0	129.3	0.7

3.1.3.8.2. Water vapour permeability of thermal insulation product

The declared μ-value of the thermal insulation product is 7 – 14, according to EN 12086.

3.1.4. Safety and accessibility in use (BWR 4)

3.1.4.1. Bond strength

3.1.4.1.1. Bond strength between the base coat and the thermal insulation products

Tests were performed on the system, at initial state and after hygrothermal cycles. The results are summarized in Table 6 and Table 7 and fulfil the condition that, after each conditioning, the rupture occurs in the thermal insulation product (cohesive rupture) if the failure resistance is lower than 80 kPa.

Table 6: Bond strength between base coat and insulation product at initial state.

System	Bond strength - Initial state	
	Minimum value [kPa] (Failure pattern)	Mean value [kPa]
ICB + base coat + standard mesh	75 (cohesive rupture - 100% rupture in the insulation product)	74

Table 7: Bond strength between base coat and insulation product after hygrothermal cycles.

System	Bond strength - After ageing	
	Minimum value [kPa] (Failure pattern)	Mean value [kPa]
ICB + base coat + standard mesh	50 (cohesive rupture - 100% rupture in the insulation product)	74

3.1.4.1.2. Bond strength between the adhesive and the substrate

Tests were performance on samples of substrate (concrete) faced with adhesive product. The results are summarized in Table 8 and verify the following conditions:

- Bond strength in dry condition ≥ 250 kPa;
- Bond strength after 2 hours after removing the samples from water ≥ 80 kPa;
- Bond strength 7 days after removing the samples from water ≥ 250 kPa.

Table 8: Bond strength between adhesive and substrate.

Conditioning	Bond strength		
	Tested adhesive thickness [mm]	Minimum value [kPa]	Mean value [kPa]
	Adhesive + substrate (concrete)		
Initial state	2.6	1049 (rupture in the support)	-
After conditioning 48 h immersion in water + 2 h at (23±2) ºC and (50±5) % RH	1.8	375 (rupture in the adhesive)	465
After conditioning 48 h immersion in water + 7 days at (23±2) ºC and (50±5) % RH	1.8	469 (rupture in the support)	748

3.1.4.1.3. Bond strength between the adhesive and the thermal insulation product

Tests were performed on samples of insulation products with base coat. The results are summarized in Table 9 and verify the following conditions:

- Bond strength in dry condition ≥ 30 kPa with cohesion rupture in insulation or ≥ 80 kPa with adhesive rupture or cohesive rupture in adhesive;
- Bond strength after 2 hours after removing the samples from water: no requirement with cohesion rupture in insulation or ≥ 30 kPa with adhesive rupture or cohesive rupture in adhesive;
- Bond strength 7 days after removing the samples from water: no requirement with cohesion rupture in insulation or ≥ 80 kPa with adhesive rupture or cohesive rupture in adhesive.

Table 9: Bond strength between adhesive and insulation product.

Conditioning	Bond strength		
	Tested adhesive thickness [mm]	Minimum value [kPa]	Mean value [kPa]
	ICB + Adhesive		
Initial state	1.9	59 (rupture in the thermal insulation product)	-
After conditioning 48 h immersion in water + 2 h at (23±2) ºC and (50±5) % RH	1.5	52 (rupture in the thermal insulation product)	55
After conditioning 48 h immersion in water + 7 days at (23±2) ºC and (50±5) % RH	1.4	63 (rupture in the thermal insulation product)	66

3.1.4.1.3.1. Minimal bonded area S for bonded ETICS

The minimal bonded area, *S*, for bonded ETICS for SikaTherm Cork System is 51 % and is calculated as follows:

$$S = (30 \times 100) \div B, \text{in } \%$$

where:

- *S* minimal bonded area, expressed in %;
- *B* minimum single failure resistance of the adhesive to the thermal insulation product in dry condition for all failure modes, expressed in kPa;
- 30 bond strength between adhesive and thermal insulation product in kPa corresponding to minimal requirement on bonded ETICS.

3.1.4.1.4. Bond strength of foam adhesives

Not applicable.

3.1.4.2. Fixing strength

Not applicable.

3.1.4.3. Wind load resistance of ETICS

3.1.4.3.1. Dynamic wind uplift test

The dynamic wind uplift test was carried out according to section 2.2.13.3 of EAD 040083-00-0404.

None of the following defects occurred during the testing:

- insulation panels break;
- delamination in the insulation product or between the insulation product and its facing;
- detachment of the rendering system;
- insulation panel pulled off a fastener;
- mechanical fastener torn out of the substrate;
- detachment of the insulation panel from the supporting structure.

So, no failure was observed at the maximum test suction of 8 kPa. The admissible value of the characteristic resistance is determined according the following equation:

$$R_k = Q_1 \times C_s \times C_a$$

where:

- Q_1 is the $W_{100\%}$ load cycle preceding that in which the test specimen fails;
- C_s is the statistical correction factor given in section 2.2.13.3 of EAD 040083-00-0404, $C_s = 1$;
- C_a is the geometric factor allowing for the difference between the deformation of the ETICS in the test and the real deformation of the ETICS on a complete wall. This factor is used in other fields for very deformable skins. In the field of ETICS $C_a = 1$.

Therefore, the admissible value of the characteristic resistance, R_k, is 8.0 kPa.

3.1.4.4. Tensile test perpendicular to the faces of thermal insulation product

3.1.4.4.1. Tensile test perpendicular to the faces of thermal insulation product in dry conditions

The results of tensile strength perpendicular to the faces of thermal insulation product in dry conditions are summarized in Table 10.

Table 10: Tensile strength perpendicular to the faces of thermal insulation product in dry conditions.

Specimen	Tensile strength perpendicular to the faces of thermal insulation product in dry conditions		
	Minimum value [kPa]	Mean value [kPa]	Thickness [mm]
ICB	36	48	60.0
ICB	59	69	100.0

3.1.4.4.2. Tensile test perpendicular to the faces of thermal insulation product in wet conditions

Not applicable.

3.1.4.5. Shear strength and shear modulus of elasticity test of ETICS

The results of shear strength and shear modulus of elasticity of thermal insulation product are summarized in Table 11.

Table 11: Shear strength and shear modulus of elasticity of thermal insulation product.

Specimen	Shear strength of thermal insulation product		Shear modulus of thermal insulation product
	Minimum value [kPa]	Mean value [kPa]	Mean value [MPa]
ICB	60	64	2.8

3.1.4.6. Pull-through resistance of fixings from profiles

Not applicable.

3.1.4.7. Render strip tensile test

No performance assessed.

3.1.4.8. Shear strength and shear modulus of foam adhesive

Not applicable.

3.1.4.9. Post expansion behaviour of foam adhesive

Not applicable.

3.1.4.10. Bond strength after ageing

3.1.4.10.1. Bond strength after ageing of finishing coat tested on the rig

The bond strength tests were carried out on the rig after the hygrothermal cycles. The results are summarized in Table 12.

Table 12: Bond strength between base coat and insulation product after hygrothermal cycles.

System	Bond strength between base coat and insulation product (kN/m²) / Failure pattern[2]						
	1	2	3	4	5	Mean value	Criteria
ICB + base coat + standard mesh + key coat + finishing coat 1 (Coteterm Aquasol)	63 FC: C	89 FC: A	93 FC: C	98 FC: C	91 FC: A	87	Positive ≥80 kPa or < 80 kPa but the rupture in the insulation product
ICB + base coat + double mesh + key coat + finishing coat 1 (Coteterm Aquasol)	55 FP: C	76 FP: C	53 FP: C	52 FP: C	82 FP: C	64	Positive ≥80 kPa or < 80 kPa but the rupture in the insulation product
ICB + base coat + standard mesh + key coat + finishing coat 2 (Sika Thermocoat-5 PT TM)	117 FP: C	69 FP: C	74 FP: C	59 FP: C	104 FP: C	84	Positive ≥80 kPa or < 80 kPa but the rupture in the insulation product
ICB + base coat + double mesh + key coat + finishing coat 2 (Sika Thermocoat-5 PT TM)	87 FP: A	75 FP: C	59 FP: C	92 FP: C	57 FP: C	74	Positive ≥80 kPa or < 80 kPa but the rupture in the insulation product

[2]Failure pattern:

A – adhesion failure (failure between base coat and insulation product)

B – cohesion failure (failure in the base coat)

C – cohesion failure (failure in the insulation product)

3.1.4.11. Mechanical and physical characteristics of the mesh

3.1.4.11.1. Tensile strength and elongation of the glass fibre mesh in the as-delivered state

The tensile strength and elongation of the glass fibre mesh at initial state is presented in Table 13.

3.1.4.11.2. Tensile strength and elongation of the glass fibre mesh after ageing

The tensile strength and elongation of the glass fibre mesh after ageing (alkali conditioning) is presented in Table 13.

After ageing, the mean value of residual strength of the standard mesh, in both directions, is greater than 50% and 20 N/mm.

Table 13: Tensile strength and elongation of the glass fibre.

System	Tensile strength of the glass fibre (N/mm)[22]		Elongation of the glass fibre (%)[22]	
	Weft	Warp	Weft	Warp
Standard mesh in the as-delivered state	38.2	37.6	3.8	3.8
Standard mesh after ageing	20.9	23.6	2.5	2.9
Relative residual resistance after ageing and in the as-delivered state	54 %	63 %	-	-

3.1.5. Protection against noise (BWR 5)

3.1.5.1. Airborne sound insulation of ETICS

No performance assessed.

3.1.6. Energy economy and heat retention (BWR 6)

3.1.6.1. Thermal resistance and thermal transmittance of ETICS

The additional thermal resistance R_{ETICS} provided by the ETICS to the substrate wall is calculated in accordance with EN ISO 6946:2017 from the nominal value of the insulation products thermal resistance, $R_{insulation}$, given accompanied to the CE marking and from the thermal resistance of the rendering system R_{render}.

$$R_{ETICS} = R_{insulation} + R_{render}$$

The value of thermal resistance of the render system (R_{render}) was considered as equal to 0.02 (m^2.K)/W according to clause 2.2.23 of the EAD 040083-00-0404.

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:

$$U_C = U + \Delta U \ (W/m^2K)$$

where:

U_C is the corrected thermal transmittance (W/m^2K) of the entire wall, including thermal bridges;

U: thermal transmittance of the entire wall, including ETICS, without thermal bridges (W/m^2K):

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

Where:

$R_{insulation}$ is the thermal resistance of the insulation product;

R_{render} is the thermal resistance of the render [about 0.02 (m^2.K)/W];

$R_{substrate}$ is the thermal resistance of the substrate of the building (concrete, brick...) [(m^2.K)/W];

R_{se} is the external superficial thermal resistance [(m^2.K)/W];

R_{si} is the internal superficial thermal resistance [(m^2.K)/W];

ΔU is the correction term of the thermal transmittance for mechanical fixing devices

$$\Delta U = X_p \times n$$

where:

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

X_p is point thermal transmittance value of the anchor (0.002 W/K) (was neglected in calculation).

Table 14 presents the values of thermal resistance calculation for SikaTherm Cork with ICB thickness equal to 40 mm, 50 mm, 60 mm, 70 mm, 80 mm, 90 mm and 100 mm.

Table 14: Thermal resistance values for SikaTherm Cork System.

ICB thickness [mm]	$R_{insulation}$ [(m².K)/W]	R_{ETICS} [(m².K)/W]
40	1.00	1.02
50	1.25	1.27
60	1.50	1.52
80	2.00	2.02
100	2.50	2.52

3.1.7. Sustainable use of natural resources (BWR 7)

No performance assessed.

3.2. Characteristics of the components

3.2.1. Insulation product

Uncoated factory made panels of expanded insulation cork board (ICB) complying with the requirements of EN 13170:2012+A1:2015.

Table 15: ICB characteristics.

Component	Trade name	Characteristics	Declared values and classes
Insulation product	Aglomerado de Cortiça Expandida - ICB	Reaction to Fire / EN 13501-1	E (Thickness: 10 to 300 mm; Density: 100-120 kg/m³)
		Thermal conductivity (W/m.°C) / EN 12667	0.040
		Compressive stress at 10% deformation (kPa) / EN 826	≥100
		Bending strength (kPa) / EN 12089	≥130
		Water absorption by partial immersion (kg/m²) / EN ISO 29767	0.34
		Shear strength (kPa) / EN 12090	$\tau_{(min.\ value)}$ = 60 $\tau_{(mean\ value)}$ = 64
		Shear modulus (kPa) / EN 12090	$G_{(min.\ value)}$ = 2.6
		Water vapour diffusion resistance factor (-) / EN 13163	μ = 7 to 14

3.2.2. Glass fibre mesh

The characteristics of the glass fibre mesh are presented in Table 16.

Table 16: Glass fibre mesh characteristics.

Component	Trade Name	Characteristics		Results	
Standard mesh	Sika Thermocoat-4 (167) (SikaWall 9167) - Viplás 167	Mass per unit area (g/m^2)		154g/m^2 ± 10%	
		Organic content (%)		-	
		Ash content at 625 °C (%)		81.3	
		Loss on ignition at 625 °C (%)		-	
		Tensile strength and elongation		Warp direction	Weft direction
		In the as-delivered state	Tensile strength (N/mm)	38.1	38.5
			Elongation ε (%)	3.9	3.9
		After alkalis conditioning	Tensile strength (N/mm)	23.6	20.9
			Elongation ε (%)	2.9	2.5
		The mean value of the tensile strength after alkalis conditioning complies with the following requirements: – ≥ 20 N/mm – ≥ 50 % of the strength in the as-delivered state			
		Nominal mesh size (mm)		5.0 x 4.0	
		Mesh opening (mm)		5.2 x 4.5±10%	

3.2.3. Anchors

Anchors for insulation product act as a supplementary fixing if required. The characteristic resistances of anchors were evaluated according EAD 330196-00-0604. The test results are presented in Table 17.

Table 17: Anchors description of individual product characteristics contained in the ETA

Trade name	Plate diameter (mm)	Characteristic resistances in the substrate
Sika Thermocoat-8 ES	60	See ETA-07/0291

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

According to the Decision 97/556/EC of European Commission as amended by the European Commission Decision 2001/596/EC, the AVCP systems (further described in Annex V Regulation (EU) No 305/2011) 1 and 2+ apply.

Table 18: AVCP Systems

Product(s)	Intended use(s)	Levels(s) or class(es) (Reaction to fire)	System(s)
External thermal insulation composite systems/kits with rendering (ETICS)	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+

(1) 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).

(2) Products/materials not covered by footnote 1.

(3) Products/materials that do not required to be tested for reaction to fire (e.g. products/materials of Classes A1 according to Commission Decision 96/603/EC).

5. Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

The ETA is issued on the basis of agreed data/information, deposited at Itecons, which identifies the product that has been assessed and judged. It is the manufacturer's responsibility to make sure that all those who use the kit are appropriately informed of specific conditions laid down in this ETA.

Changes to the ETICS or the components or their production process should be notified to the Itecons before the changes are introduced. Itecons will decide whether or not such changes affect the ETA and if so whether further assessment or alterations to the ETA shall be necessary.

5.1. Tasks of the manufacturer

5.1.1. Factory production control

The manufacturer shall exercise permanent internal control of production of concerned product. All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic manner in the form of written policies and procedures, including records of results performed. This production control system shall ensure that the product is in conformity with this ETA.

The manufacturer may only use components stated in the technical documentation of this ETA including Control Plan. The incoming raw materials are subjected to verifications by the manufacturer before acceptance.

For the components of the ETICS which the manufacturer does not manufacture by himself, he shall make sure that factory production control carried out by the other manufacturers gives the guarantee of the component's compliance with the ETA.

The factory production control shall be in accordance with the Control Plan which is a part of technical documentation of this European Technical Assessment. The control plan has been agreed between the manufacturer and Itecons and is laid down in context of the factory production control system operated by the manufacturer and deposited within Itecons. The results of factory production control shall be recorded and evaluated in accordance with the provisions of the control plan.

5.1.2. Other tasks for the manufacturer

The manufacturer shall, on the basis of a contract, involve a body which is notified for the tasks

referred to in section 4 in the field of ETICS in order to undertake the actions laid down in this clause. For this purpose, the control plan shall be handed over by the manufacturer to the notified bodies involved.

For initial type-testing of the ETICS and the components the results of the tests performed as part of the assessment for the ETA shall be used unless there are changes in the production line or plant. In such cases the necessary testing has to be agreed with Itecons.

The manufacturer shall make a declaration of performance, stating that the ETICS is in conformity with the provisions of this ETA.

Changes to the ETICS or the components or their production process should be notified to Itecons before the changes are introduced. Itecons will decide whether or not such changes affect the ETA and if so whether further assessment or alterations to the ETA shall be necessary.

5.2. Tasks for the Notified Body (bodies)

5.2.1. Initial inspections of factory and of factory production control

The Notified Body shall ascertain that, in accordance with the Control Plan, the factory (in particular the employees and the equipment) and the factory production control are suitable to ensure continuous and orderly manufacturing of the components according to the specifications mentioned in this ETA.

5.2.2. Continuous surveillance, assessment and evaluation of factory production control

Within the scope of continuous surveillance, assessment and evaluation of factory production control, the Notified Body (bodies) shall visit the factory at least once a year for surveillance. It has to be verified that the factory production control is maintained in suitable conditions.

These tasks shall be performed in accordance with the provisions laid down in the control plan.

The Notified Body (bodies) shall retain the essential points of its (their) actions referred to above and state the results obtained and conclusions drawn in a written report. The Notified Body involved by the manufacturer shall issue a certificate of conformity of the factory production control stating the conformity with the provisions of this ETA.

In cases where the provisions of the ETA and its control plan are no longer fulfilled, the Notified Body shall withdraw the certificate of conformity and inform Itecons without delay.

Issued in Coimbra on 25.08.2023

By

Technical Assessment Unit of

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Validated document

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