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Trade name of the construction product *Designação comercial do produto de construção*	**CANDIWALL**
Product family to which the construction product belongs *Família de produtos a que o produto de construção pertence*	Kits for external thermal insulation composite system (ETICS) with panels as thermal insulation product and discontinuous claddings as exterior skin *Kits para sistema de isolamento térmico pelo exterior (ETICS) com painéis como produto de isolamento térmico e revestimentos descontínuos como acabamento exterior*
Manufacturer *Fabricante*	CANDIGRÉS – Cerâmica de Grés da Candieira, Lda. Candieira (Avelãs de Cima) 3780-403 Avelãs de Cima Aveiro - Portugal www.candigres.com
Manufacturing plant(s) *Instalações de fabrico*	Candieira (Avelãs de Cima) 3780-403 Avelãs de Cima Aveiro
This European Technical Assessment contains *A presente Avaliação Técnica Europeia contém*	14 pages, including 1 annex which form an integral part of this assessment *14 páginas, incluindo 1 anexo que fazem parte desta avaliação*
This European Technical Assessment is issued in accordance with Regulation (EU) No. 305/2011, on the basis of *A presente Avaliação Técnica Europeia é emitida ao abrigo do Regulamento (UE) n.º 305/2011, com base no*	European Assessment Document - EAD 040287-00-0404: Kits for External Thermal Insulation Composite System (ETICS) with panels as thermal insulation product and discontinuous claddings as exterior skin *Documento de Avaliação Europeia - EAD 040287-00-0404: Sistemas compósitos de isolamento térmico exterior (ETICS) com painéis como produto de isolamento térmico e revestimentos descontínuos como acabamento exterior*

1. Technical description of the product

The External Thermal Insulation Composite System (from now on, referred to as ETICS) CANDIWALL is designed and installed in accordance with the manufacturer's design and installation instructions, deposited with LNEC [1].

CANDIWALL is a bonded system with supplementary mechanical fixings used primarily to provide stability until the adhesive has dried and increase the adherence of the system, reducing the risk of detachment.

The ETICS comprises the components identified in Table 1, which are factory produced by the manufacturer or by a supplier.

It is made up on site from these components. The manufacturer is ultimately responsible for the ETICS.

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

This ETICS is intended to be used as external thermal insulation for building walls. The walls are made of masonry (bricks or 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 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 thermal resistance of the ETICS shall be $\geq 1{,}0\ m^2K/W$.

This 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 air tightness of the building structure.

Design and installation of ETICS should take into account the principles laid down in EAD 040287-00-0404 (see 1.1) and shall be done in accordance with national instructions.

This ETA covers the application of bonded ETICS where the concrete for testing of bond strength is representative for masonry or concrete. For bonded applications onto other substrates (e.g. organic paints or ceramic tiles), testing on the job site is necessary.

The provisions made in this ETA are based on an assumed working life of at least 25 years, provided that the conditions laid down for the installation, appropriate use, maintenance and repair are met.

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.

Installation

The ETICS is installed on site. It is the responsibility of the manufacturer to guarantee that the information about design and installation of this ETICS is effectively communicated to the concerned people. This information can be given using reproductions of the respective parts of this European Technical Assessment. Besides, all the data concerning the execution shall be clearly indicated on the packaging and/or the enclosed instruction sheets using one or several illustrations.

The wall on which the ETICS is applied shall be sufficiently stable and airtight. Its stiffness shall be big enough to ensure that the ETICS is not subjected to deformations, which could lead to damage. The requirements given in EAD 040287-00-0404 (see 1.3.1) have to be considered.

[1] The technical documentation of this European Technical Assessment is deposited with Laboratório Nacional de Engenharia Civil (LNEC) and, as far as relevant for the tasks of the notified body (bodies) involved in the assessment and verification of constancy of performance procedure, is handed over to the notified body (bodies).

TABLE 1

Definition of the components

Components		Trade name		Description	Coverage (kg/m²)	Thickness (mm)
Insulation product		CANDIWALL BOARD		Extruded polystyrene insulation (XPS) Panels with 1250 mm × 550 mm with CE marking (EN 13164:2012) Panels have "grooves" along their length, which are used as "guides" where the tiles are fitted	–	40 to 120
Fixing ETICS	Base adhesive (Bonding insulation panels to the substrate	CANDIWALL ADHESIVE		Single-component cementitious adhesive, available with CE marking (EN 12004-1:2017)	3.5 to 4	–
	Supplementary mechanical fixing	CANDIWALL FASTENERS		Polypropylene anchors with galvanized steel nails, subject to ETA 16/0509 * and with CE marking	–	–
Skin	Tiles adhesive / / Basecoat (Bonding tiles to the insulation panels)	CANDIWALL ADHESIVE		Single-component cementitious adhesive, available with CE marking (EN 12004-1:2017)	3.0 to 3.5	5.0
	Tiles	CANDIWALL KLINKER	T1	Rectangular tiles with 220 mm × 65 mm × 14 mm with CE marking (EN 14411:2016)	–	14
				Corner tiles (L-shaped) 220 mm × 65 mm + 100 mm × 65 mm with CE marking.(EN 14411:2016)		
			T2	Rectangular tiles with 220 mm × 50 mm × 14 mm with CE marking (EN 14411:2016).		
				Corner tiles (L-shaped) 220 mm × 50 mm + 100 mm × 50 mm with CE marking.(EN 14411:2016)		
	Grout (filling joints mortar)	CANDIWALL GROUT		Pre-dosed coloured powdered mortar, made of mixed binders, composed of cements, siliceous aggregates, and specific additives Grout width of 10 mm	4 to 5	14
Ancillary materials		–		Description in accordance with clause 1.3.11 of EAD 040287-00-0404 Remain under the manufacturer responsibility		

* Eta based on EAD 330196-00-0604: Plastic anchors for fixing of ETICS the rendering, June 2016.

Design

The user shall comply with the national regulations particularly concerning fire and wind load resistance. Only the components described in clause 1 with characteristics according to clause 3 of this ETA can be used for this ETICS.

The works including the details (such as connections and joints) shall be designed in order to avoid water penetration behind the system.

ETICS is applied in-situ by means of bonding ETICS with supplementary mechanical fixing: The minimum surface area and the method of bonding shall comply with the characteristics of the ETICS (see 3.2.4 of this ETA) as well as the national regulations. In any case, the minimum bonded surface shall be at least 50%.

Execution

The recognition and preparation of the substrate as well as the generalities about the execution of the ETICS shall be carried out in compliance with the manufacturer prescriptions and the corresponding national regulations.

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

Use, maintenance and repair of the works

It is accepted that the finishing coats shall normally be maintained in order to fully preserve the system's performance. Maintenance will include at least:

- the repair of localized damaged areas due to accidents.
- the application of various products or paints, possibly after washing or surface 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

3.1 General

The identification tests and the assessment for the intended use of this ETICS according to the Basic Requirements were carried out in compliance with EAD 040287-00-0404 *Kits for External Thermal Insulation Composite System (ETICS) with panels as thermal insulation product and discontinuous claddings as exterior skin*.

3.2 ETICS characteristics

3.2.1 Mechanical resistance and stability (BWR 1)

Not relevant.

3.2.2 Safety in case of fire (BWR 2)

a) Reaction to fire (EAD 040287-00-0404 – clause 2.2.1)

The reaction to fire was tested according to EN 13823:2010 and EN 11925-2:2010 and classified according to EN 13501-1:2007+A1:2009.

The ETICS meets the requirements of class B-s1,d0 according to EN 13501-1:2007+A1:2009 for CANDIWALL system.

3.2.3 Hygiene, health and environment (BWR 3)

a) Water absorption (EAD 040287-00-0404 – clause 2.2.3)

The results of the water absorption test of CANDIWALL system are presented in Table 2.

TABLE 2

Water absorption (capillarity test)

System specimens	Water absorption after 1 h (kg/m^2)	Water absorption after 24 h (kg/m^2)
CANDIWALL BOARD + CANDIWALL ADHESIVE + CANDIWALL KLINKER com ladrilhos T1 (220 mm × 65 mm × 14 mm) + CANDIWALL GROUT	Min.: 0.13 Average: 0.28	Min. 0.69 Average: 1.08

b) Water vapour permeability (EAD 040287-00-0404 – clause 2.2.4)

Table 3 presents the resistance to water vapour diffusion of CANDIWALL system (without insulation product), expressed by the equivalent air thickness. In all cases, the values don't exceed 2.0 m.

TABLE 3

Equivalent air thickness

System specimens *	Equivalent air thickness (m)
CANDIWALL ADHESIVE + CANDIWALL GROUT + CANDIWALL KLINKER with tiles T1 (220 mm × 65 mm × 14 mm)**	0.23
CANDIWALL ADHESIVE+ CANDIWALL GROUT + CANDIWALL KLINKER CANDIWALL KLINKER with tiles T2 (220 mm × 50 mm × 14 mm)***	0.84

* samples without insulation product

** not waterproof

*** waterproof

c) Accelerated ageing behaviour: Hygrothermal behaviour (EAD 040287-00-0404 – clause 2.2.6)

The ETICS has been assessed on a rig.

During heat-rain and heat-cold cycles, none of the following defects occurred during testing:

- Deterioration, such as cracking or delamination of the tiles that allows water penetration to the internal layers;
- Deterioration or cracking of grout between tiles;
- Detachment of the skin;
- Irreversible deformation.

d) Accelerated ageing behaviour: Freeze-thaw behaviour (EAD 040287-00-0404 – clause 2.2.7)

No performance assessed.

3.2.4 Safety and accessibility in use (BWR 4)

a) Impact resistance (EAD 040287-00-0404 – clause 2.2.7)

- Hard body impact

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

TABLE 4

Impact resistance to hard body impacts

System	Impact	Impact diameter (mm) - Average:	Presence of cracks	Use categories [1]
CANDIWALL BOARD + CANDIWALL ADHESIVE + CANDIWALL KLINKER with tiles T1 (220 mm × 65 mm x 14 mm) + CANDIWALL GROUT	3 J and 10 J	– (No damage)	Skin not deteriorated and not perforated	I
CANDIWALL BOARD + CANDIWALL ADHESIVE + CANDIWALL KLINKER with tiles T2 (220 mm × 50 mm x 14 mm) + CANDIWALL GROUT	3 J and 10 J			

[1] Use categories:

Category I – zones readily accessible at ground level to the public and vulnerable to hard body impacts but not subjected to abnormally rough use (e.g.: Façade bases in buildings sited in public locations, such as squares, schoolyards or parks. Cleaning gondolas can be used on the façade).

- Soft body impact

No performance assessed.

b) Bond strength

– Between skin and insulation board (EAD 040287-00-0404 – clause 2.2.8)

Tests were performed on the system CANDIWALL applied on the rig, after hygrothermal cycles. The results are summarized in Table 5.

In all cases, bond strength values are higher than 0.08 MPa.

TABLE 5

Bond strength between skin and insulation board

Variants tiles elements of system (rig) [1]	Bond strength (after ageing) (MPa / Failure pattern) [2]	Requirement
CANDIWALL KLINKER tiles T1 (220 mm × 65 mm × 14 mm)	Min.: 0.10 Average: 0.16 / FP: A	≥ 0.08 MPa
CANDIWALL KLINKER tiles T2 (220 mm × 50 mm × 14 mm)	Min.: 0.11 Average: 0.17 / FP: A	≥ 0.08 MPa

[1] Rig – system applied on brick masonry with tested dimensions of 3 m x 2 m. The system is composed by the components described in Table 1 of this ETA and was subjected to hygrothermal cycles before the adhesion tests.

[2] Failure pattern: FP:A – adhesion failure (failure between tiles adhesive and insulation board)

– Between base adhesive and insulation board (EAD 040287-00-0404 – clause 2.2.8)

Tests were performed on samples of base adhesive applied on CANDIWALL BOARD. The results are summarized in Table 6. In all cases, the results are within the limits defined by EAD 040287-00-0404.

TABLE 6

Bond strength between base adhesive and insulation board

Specimen	Bond strength (MPa / Failure pattern) [1]					
	Dry conditions		After conditioning			
	Initial state	Requirement	2 d. H_2O + 2 h. drying	Requirement	2 d. H_2O + 7 d. drying	Requirement
CANDIWALL ADHESIVE + CANDIWALL BOARD	Min.: 0.17 Average: 0.17 FP:A	≥ 0.08	Min.: 0.12 Average: 0.13 FP:A	≥ 0.08	Min.: 0.13 Average: 0.15 FP:A	≥ 0.08

[1] Failure pattern: FP:A – adhesion failure (failure between base adhesive and insulation board).

– Between base adhesive and substrate (concrete) (EAD 040287-00-0404 – clause 2.2.8)

Tests were performed on samples of concrete boards faced with base adhesive. The results are summarized in Table 7. In all cases, the results are within the limits defined by EAD 040287-00-0404.

TABLE 7

Bond strength between base adhesive and substrate (concrete)

Specimen	Bond strength (MPa / Failure pattern) [1]					
	Dry conditions		After conditioning			
	Initial state	Requirement	2 d. H_2O + 2 h. drying	Requirement	2 d. H_2O + 7 d. drying	Requirement
CANDIWALL ADHESIVE + substrate (concrete)	Min.: 0.76 Média: 0.95 FP:A	≥ 0.25	Min.: 0.45 Média: 0.49 FP:B	≥ 0.08	Min.: 0.91 Média: 0.12 FP:A	≥ 0.25

[1] Failure pattern: FP:A – adhesion failure (failure between base adhesive and substrate) and FP:B – cohesion failure (failure in the base adhesive).

The minimal bonded surface S is calculated as follows, with a minimum of 40%:

$$S\ (\%) = [0.08 \times 100] / B$$

where:

B minimum mean failure resistance of the adhesive to the insulation product in dry conditions expressed in MPa (0.17 MPa);

The minimum bonded surface S calculated is therefore 47%.

The bonding surface of 50% verifies the minimum requirement.

3.2.5 Protection against noise (BWR 5)

No performance assessed.

3.2.6 Energy economy and heat retention (BWR 6)

a) Thermal resistance (EAD 040287-00-0404 – clause 2.2.15)

The additional thermal resistance R_{ETICS} provided by the ETICS to the substrate wall is calculated in accordance with EN ISO 6946 from the nominal value of the insulation product's thermal resistance R_D given accompanied to the CE marking and from the thermal resistance of the rendering system R_{render} which is about 0.02 m².K/W:

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

Thermal bridges caused by mechanical fixing devices influence the thermal transmittance of the entire wall and shall be taken into account.

The corrected thermal transmittance of the entire wall including ETICS and thermal bridges is calculated using the following expression:

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

where:

U_c corrected thermal transmittance of the entire wall including ETICS and thermal bridges (W/(m².K));

U thermal transmittance of the entire wall including ETICS without thermal bridges (W/(m².K));

n number of anchors (through insulation product) per m²;

χ_p point thermal transmittance value of an anchor (W/K). See EOTA Technical Report TR 025. If not specified in the anchor's ETA, the following values apply:

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

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

The term χ_p.n has only to be taken into account if it is greater than 0.04 W/(m².K).

The thermal transmittance of the entire wall including ETICS without thermal bridges is determined as follows:

$$U = 1 / (R_i + R_{render} + R_{substrate} + R_{se} + R_{si})$$

where:

R_i thermal resistance of the insulation product (see CE marking in reference to XPS EN 13164:2012 in m².K/W;

R_{render} thermal resistance of the render (about 0.02 m².K)/W);

$R_{substrate}$ thermal resistance of the substrate (concrete, brick,…) in m².K/W;

R_{se} external surface resistance in m².K/W;

R_{si} internal surface resistance in m².K/W.

R_i (40 mm) = e/λ = 0.04/0.033 = 1.21 m².K/W (minimum value);

$R_{min\ system} = R_i$ (40 mm) + R_{render} = 1.21 + 0.02 = 1.23 m².K/W;

and

R_i (120 mm) = e/λ = 0,12/ 0.033 = 3.64 m².K/W (maximum value);

$R_{max\ system} = R_i$ (120 mm) + R_{render} = 3.64 + 0.02 = 3.66 m².K/W.

3.3 Component characteristics

3.3.1 General

Detailed information on the chemical composition and other identifying characteristics of the components, following EAD 040287-00-0404, has been deposited with LNEC.

Further information can be observed from the product data sheets, which are part of the Technical Documentation for this ETA.

3.3.2 Insulation product

Factory–prefabricated boards CANDIWALL BOARD, made of Extruded polystyrene (XPS), having the description, characteristics and performance (as minimum) defined in Table 8 (EN 13164:2012). Panels have "grooves" along their length, which are used as "guides" where the tiles are fitted.

TABLE 8

Characteristics of insulation panels*

Component	Trade name	Characteristics		Declared values and classes
Insulation product	CANDIWALL BOARD	Reaction to fire (EN 13501-1+A1)		Euroclass E (EAD 040287-00-0404 – clause 2.2.1 Density (EN 1602): 33 kg/m^3 Thickness: 40 a 120 mm
		Thermal conductivity (EN 12667)		0.033 W/m.K
		Tolerances (EN 13164)	Thickness	T1
		Dimensional stability (normal laboratory conditions) (EN 13164) (23 °C / 90% HR)		Class DS (70.90)
		Long term water absorption (partial immersion) (NP EN 12087)		0.4%
		Tensile strength perpendicular to the faces in dry conditions (EN 1607)		596 kPa
		Compressive strength (EN 13164)		433 kPa
		Shear strength (EN 12090)		270 kPa
		Shear modulus (EN 12090)		5300 kPa
		Water vapour diffusion resistance factor (EN 12086)		$\mu = 101$

* CE marking values.

3.3.3 Tiles

CANDIWALL KLINKER, two types of tiles were tested (length and width variation) T1 and T2. The characteristics are presented in Table 9.

TABLE 9

Characteristics of the tiles

Component	Trade name	Characteristics		Declared values and classes	
				T1	T2
Tiles	CANDIWALL KLINKER	Type [1]	(EN 14411 -2:2018)	Extruded (6% > Eb ≤ 10%)	
		Designation (groups) [1]		Group A II b CE marked	
		Espessura (mm) [1] (EN ISO 10545-2:2018) [3]		14 ± 5.4 (average: 14.6)	
		Length (mm) [1] (EN ISO 10545-2:2018) [3]		220 ± 1.9% to max. of ± 3.1 mm	215 ± 1.9% to max. of ± 3.1 mm
		Water absorption (% weight) [1]		Average: 6.3	
		Chemical resistance (EN ISO 10545-13:2016)		Acids and bases: LA (no visible effect)	
		Weight per square metre [2] (kg/m^2)		≤ 32	
		Reaction to fire [3]		A1	
		Stain resistance (ISO 10545-14:2015) Stain resistance class [3]		Green chrome: 1 Iodine solution: 1 Olive oil: 1	
		Freeze resistance [1] (ISO 10545-12:1997)		Fulfils EN 14411:2016 (annex E)	
		Linear thermal expansion (20ºC-100 ºC) [1] (EN ISO 10545-8:2014) (ºC $^{-1}$)		6.06 × 10^{-6}	
		Moisture expansion [1] (mm/m) (EN ISO 10545-10:1997)		0	
		Flexural strength [1] (EN ISO 10545-4:2019) (N)		2742	
		Modulus of rupture [1] (EN ISO 10545-4:2019) (N/mm^2)		22.6 ± 0.9	

[1] Tests have been carried out at CTCV (Centro Tecnológico da Cerâmica e do Vidro).
[2] Tests have been carried out at LNEC.
[3] Results of declaration of performance.

3.3.4 Anchors

Anchors CANDIWALL FASTENERS are applied as supplementary mechanical fixing of the system; they are covered by ETA 16/0509 according to EAD 330196-00-0604 (see 2.2.1 and 2.2.2).

Their main characteristics and design data are presented in Table 10.

TABLE 10

Description and characteristics of anchors

Component	Trade name	Support	Characteristics	Declared values and design data
Anchors	CANDIWALL FASTENERS	Perforated supports (clay bricks...), concrete	Anchor type	See dimensional characteristics in Table A5 and Annex A6 ETA 16/0509
			Materials	Anchor sleeve: polypropylene Nail: galvanized steel
			Resistance to tension loads (kN)	0.40 – 0.75 (see Annex C2 of ETA 16/0509)
			Displacement at the maximum design load when applied to a concrete substrate (mm)	1.4
			Displacement at the maximum design load when applied to a masonry substrate (mm)	0.6
			Spacing (mm)	≥ 100
			Edge distance (mm)	≥ 100
			Thickness of the substrate (mm)	≥ 100

3.3.5 Mortars

a) Base adhesive / Tiles adhesive / Basecoat

CANDIWALL ADHESIVE is used for bonding insulation panels to the substrate. The identification tests are presented in Table 11.

TABLE 11

Results of identification tests on base adhesive

	Tests	Individual values	Mean values
Powder mortar	pH	12.25	12.3
		12.25	
		12.26	
	Ash content at 450 °C (%)	96.83	96.9
		96.92	
		96.97	
	Ash content at 900 °C (%)	91.44	91.6
		91.60	
		91.71	
	Density (kg/m^3)	1320	1323
		1321	
		1327	
Hardened mortar	Density (kg/m^3)	1657	1673
		1698	
		1663	
	Flexural strength (MPa)	7.28	7.4
		7.62	
		7.35	
	Compressive strength (MPa)	20.41	19.6
		18.27	
		19.06	
		20.30	
		20.68	
		19.06	
	Modulus of elasticity (MPa)	12640	12917
		13225	
		12885	

b) Grout

CANDIWALL GROUT is used for filling joints mortar. The identification tests are presented in Table 12.

TABLE 12

Results of identification tests on the grout

	Tests	Individual values	Mean values
Powder mortar	pH	12.31	12.3
		12.31	
		12.31	
	Ash content at 450 °C (%)	98.45	98.5
		98.48	
		98.45	
	Ash content at 900 °C (%)	88.18	88.3
		88.36	
		88.28	
	Density (kg/m³)	1514	1493
		1486	
		1479	
Hardened mortar	Density (kg/m³)	1657	1653
		1698	
		1663	
	Flexural strength (MPa)	7.28	2.7
		7.62	
		7.35	
	Compressive strength (MPa)	20.41	7.1
		18.27	
		19.06	
		20,30	
		20.68	
		19.06	
	Modulus of elasticity (MPa)	12640	8625
		13225	
		8651	

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 the European Commission of 14 july 1997 [2], as amended by the decision 2001/596/EC [3] of 8 January of 2001, and considering the class B for the reaction to fire of the ETICS and that no stage in the production process has been identified that could result in an improvement of the reaction to fire characteristic, the system of assessment and verification of constancy of performance (see Annex V, as amended by Commission Delegated Regulation no. 568/2014 of 18 February 2014, and article 65 paragraph 2 of Regulation (EU) No. 305/2011) given in Table 13 applies.

TABLE 13

System of assessment and verification of constancy of performance

Product(s)	Intended use(s)	Levels or classes	System(s)
CANDIWALL	External Thermal Insulation Composite System with discontinuous tiles as exterior skin	Any	2+

[2] Official Journal of the European Communities L229/14 of 20.08.1997.

[3] Official Journal of the European Communities L229/33 of 02.08.2001.

This system of assessment and verification of constancy of performance +2 is defined as follows:

System 2+: Declaration of the performance of the essential characteristics of the construction product by the manufacturer on the basis of:

a) Tasks for the manufacturer:

(1) factory production control;

(2) testing of samples taken at the factory in accordance with the prescribed test plan.

b) Tasks for the notified factory production control certification body:

(3) decision on the issuing, restriction, suspension or withdrawal of the certificate of conformity of the factory production control on the basis of the outcome of the following assessments and verifications carried out by that body:

- initial inspection of the manufacturing plant and of factory production control;
- continuous surveillance, assessment and evaluation of factory production control.

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

5.1 General

The ETA is issued on the basis of agreed data/information, deposited with LNEC, 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 the specific conditions laid down in this ETA, including its annex.

5.2 Tasks for the manufacturer

5.2.1 Factory production control

The manufacturer shall exercise permanent internal control of production. 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. 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 the factory production control carried out by the other manufacturers gives the guarantee of the components compliance with the ETA.

The factory production control shall be in accordance with the Control Plan [4], which is part of the Technical Documentation of this ETA. The Control Plan has been agreed between the manufacturer and the LNEC and is laid down in the context of the factory production control system operated by the manufacturer and deposited within LNEC. The results of factory production control shall be recorded and evaluated in accordance with the provisions of the Control plan.

5.2.2 Other tasks for the manufacturer

The manufacturer shall, on the basis of a contract, involve a body (bodies) which is (are) 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 body (bodies) involved.

For assessing 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 LNEC.

The declaration of performance of the ETICS to be drawn up by the manufacturer following the issuing of this ETA shall include its reference number and issuing date.

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

4 The Control Plan is a confidential part of this European Technical Assessment and is only handed over to the notified body or bodies involved in the procedure of assessment and verification of constancy of performance. See section 5.3.

5.3 Tasks for the notified body (bodies)

Within the scope of the initial inspection of factory and of factory production control, the notified body (bodies) 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.

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.

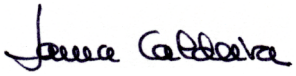
In cases where the provisions of the ETA and its control plan are no longer fulfilled, the notified certification body shall withdraw the certificate of conformity and inform LNEC without delay.

Issued in Lisbon on 16/07/2025

By

Laboratório Nacional de Engenharia Civil (LNEC)

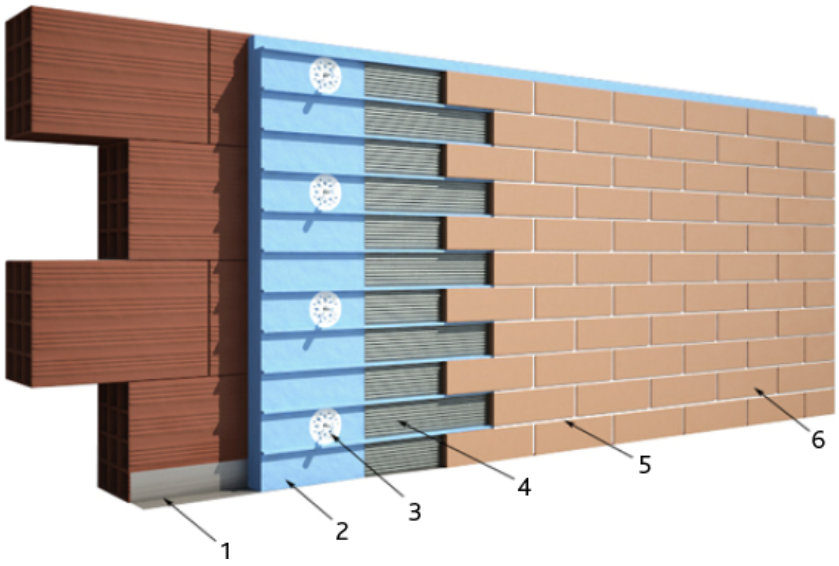
THE BOARD OF DIRECTORS



Laura Caldeira

President

Annex



1 CANDIWALL STARTER TRACK
2 CANDIWALL BOARD
3 CANDIWALL FASTENERS
4 CANDIWALL ADHESIVE
5 CANDIWALL GROUT
6 CANDIWALL KLINKER

ETICS general aspect and components

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