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Trade name of the construction product

Designação comercial do produto de construção

Product family to which the construction product belongs

Família de produtos a que o produto de construção pertence

Manufacturer

Fabricante

Manufacturing plant(s)

Instalações de fabrico

This European Technical Assessment contains

A presente Avaliação Técnica Europeia contém

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

This European Technical Assessment

A presente Avaliação Técnica Europeia

ISOVIT KI

External Thermal Insulation Composite System with rendering on mineral wool for use as external insulation of building walls

Sistema Compósito de Isolamento Térmico pelo Exterior com revestimento aplicado sobre isolante térmico de lã mineral destinado ao isolamento exterior de paredes de edifícios

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12 pages, including 3 annexes which form an integral part of this assessment

12 páginas, incluindo 3 anexos que fazem parte desta avaliação

European Assessment Document - EAD 040083-00-0404: External thermal insulation composite systems (ETICS) with renderings, January 2019

Documento de Avaliação Europeia - EAD 040083-00-0404: Sistemas compósitos de Isolamento Térmico pelo exterior (ETICS com revestimento, janeiro de 2019)

Replaces ETA 19/0480 issued on 30/09/2019

Substitui a ETA 19/0480 emitida em 30/09/2019

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1. Technical description of the product

The External Thermal Insulation Composite System (from now on, referred to as ETICS) ISOVIT KI is designed and installed in accordance with the ETA manufacturer's design and installation instructions, deposited with LNEC¹.

ISOVIT KI 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 $\geq 1.0 \text{ m}^2\text{K/W}$.

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 040083-00-0404 (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 040083-00-0404 (see 1.3.1) have to be considered.

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. To bond the ETICS, 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. The system is fully bonded to the support.

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 ¹	Coverage (kg/m ²)	Thickness (mm)
Insulation product	ISOVIT KI	Mineral wool (MW) Panels with 800 mm × 625 mm and bulk density of 100 kg/m ³ , with CE marking	–	60 to 80
Adhesive	ISOVIT FIBRAFLEX	Mortar based on cement, composed by fillers, mixed binders and aggregates, with CE marking	3 to 4	–
Base coat	ISOVIT FIBRAFLEX	Mortar based on cement, composed by fillers, mixed binders and aggregates, with CE marking	with standard glassfibre 5 to 5.5	3 to 3.5
			with standard and reinforced glassfibre 6 to 6.5	3.5 to 4.5
Key coat	ISOVIT AD 20	Anti-alkaline key coat based on acrylic resin and mineral fillers	0.3 to 0.4	1 to 1.5
Finishing coat	ISOVIT REV	Finishing coat based on acrylic resin	1.5 to 1.8	
Glass fibre meshes	ISOVIT REDE 160	Standard mesh, glass fibre mesh with mesh size 5 mm × 4 mm (in accordance with DH 942)	–	–
	ISOVIT REDE 343	Reinforced mesh, glass fibre mesh with mesh size 6 mm × 6 mm (in accordance with DH 942)	–	–
Anchors (supplementary mechanical fixings)	ISOVIT BUCHA	Description in accordance with ETA 16/0509 ² Remain under the manufacturer responsibility	–	–
Ancillary materials		Description in accordance with clause 1.3.13 of EAD 040083-00-0404 Remain under the manufacturer responsibility		

1 See clause 3.2 for further description, characteristics and performances of components.

2 ETA based on ETAG 014, used as EAD.

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 040083-00-0404.

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 040083-00-0404 – clause 2.2.1.1)

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

The ETICS meets the requirements of class B-s1,d0 according to EN 13501-1+A1.

3.2.3 Hygiene, health and environment (BWR 3)

a) Water absorption (EAD 040083-00-0404 – clause 2.2.5.1)

The results of the water absorption test of the base coat (system with and without finishing), presented in Table 2, verify the following condition:

- water absorption after 1 hour < 1 kg/m²

The system is therefore judged to have satisfactory performance concerning water absorption, independently of the finishing coat.

TABLE 2
Water absorption (capillarity test)

System specimens	Water absorption after 1 h (kg/m ²)	Water absorption after 24 h (kg/m ²)
MW + base coat + standard mesh	Min.: 0.21 Average: 0.29	Min.: 0.58 Average: 0.62
MW + base coat + standard mesh + key coat + finishing coat	Min.: 0.26 Average: 0.29	Min.: 0.64 Average: 0.68

b) Hygrothermal behaviour (EAD 040083-00-0404 – clause 2.2.6)

The ETICS has been assessed on a rig including the thermal insulation and all rendering system.

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

- blistering or peeling of the finishing coat, base coat or rendering system;
- failure or cracking associated with joints between insulation product boards or profiles fitted with the system;
- detachment of finishing coat, base coat or rendering system;
- cracking allowing water penetration to the insulation layer.

The ETICS is therefore assessed as resistant to hygrothermal cycles.

c) Freeze / thaw behaviour (EAD 040083-00-0404 – clause 2.2.7)

Performance not assessed.

d) Impact resistance (EAD 040083-00-0404 – clause 2.2.8)

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 3.

TABLE 3
Impact resistance to hard body impacts

System	Impact	Impact diameter (mm)	Presence of cracks	Use categories ¹
MW + base coat + standard mesh + reinforced mesh	3 J	Average: 12	no cracking	I
	10 J	Average: 21	no cracking	
MW + base coat + standard mesh + key coat + finishing coat	3 J	Average: 20	no cracking	II
	10 J	Average: 63	penetrated	
MW + base coat + standard mesh + reinforced mesh + key coat + finishing coat	3 J	Average: 17	no cracking	I
	10 J	Average: 22	no cracking	

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.

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

e) Water vapour permeability (EAD 040083-00-0404 – clause 2.2.9.1)

Table 4 presents the resistance to water vapour diffusion of the rendering system (base coat and finishing coat) expressed by the equivalent air thickness, which does not exceed 2.0 m.

TABLE 4
Equivalent air thickness

System specimens	Equivalent air thickness (m)
Base coat + standard mesh + key coat + finishing coat	0.7

f) Dangerous substances

This system complies with the provisions of Guidance Paper H². A declaration of conformity was made by the manufacturer stating that all ETICS components verify the established legal limits for products with some degree of toxicity.

In addition to the specific clauses relating to dangerous substances contained in this ETA, there may be other requirements applicable to the ETICS falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of Regulation (EU) No. 305/11, these requirements need also to be complied with, when and where apply.

3.2.4 Safety on use (BWR 4)

a) Bond strength

– Base coat onto MW board (EAD 040083-00-0404 – clause 2.2.11.1)

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

In all cases the rupture pattern is cohesive in the insulation product, so complying with the requirements of EAD 040083-00-0404.

TABLE 5
Bond strength between base coat and insulation product

System (rig) ¹	Bond strength (after ageing) (kPa / Failure pattern) ²
MW + base coat + standard mesh + reinforced mesh	Min.: 30 Average: 30 / FP:C
MW + base coat + standard mesh + key coat + finishing coat	Min.: 30 Average: 30 / FP:C
MW + base coat + standard mesh + reinforced mesh + key coat + finishing coat	Min.: 30 Average: 30 / FP:C

1 Rig - system applied on brick masonry with tested dimensions of 3 m x 2 m. The system was subjected to hygrothermal cycles before the adhesion tests.

2 Failure pattern: C – cohesion failure (failure in the insulation product).

– Adhesive onto MW board (EAD 040083-00-0404 – clause 2.2.11.3)

Tests were performed on samples of MW insulation boards faced with adhesive. The results are summarized in Table 6. In all cases, In all cases the rupture pattern is cohesive in the insulation product, so complying with the requirements of EAD 040083-00-0404.

TABLE 6
Bond strength between adhesive and insulation product

Specimen	Bond strength (kPa / Failure pattern) ¹		
	Initial state	After conditioning	
		48 h immersion in water + 2 h 23 °C/50% RH	48 h immersion in water + 7 days 23 °C/50% RH

2 Guidance Document H – A harmonized approach related to dangerous substances under the Construction Products Directive.

MW + adhesive	Min.: 30 Average: 40 / FP:C	Min.: 30 Average: 30 / FP:C	Min.: 30 Average: 30 / FP:C
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1 Failure pattern: FP:C – cohesion failure (failure in the insulation product).

– Adhesive onto concrete (EAD 040083-00-0404 – clause 2.2.11.2)

Tests were performed on samples of concrete boards faced with adhesive product. The results are summarized in Table 7. In all cases, the results are within the limits defined by EAD 040083-00-0404.

TABLE 7

Bond strength between adhesive and substrate (concrete)

Specimen	Bond strength (kPa / Failure pattern) ¹		
	Initial state	After conditioning	
		48 h immersion in water + 2 h 23 °C/50% RH	48 h immersion in water + 7 days 23 °C/50% RH
Adhesive + substrate (concrete)	Min.: 660 Average: 750 / FP:B	Min.: 330 Average: 400 / FP:A/B	Min.: 1160 Average: 1680 / FP:B

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

The minimal bonded surface S is calculated as follows, with a minimum of 20%:

$$S (\%) = [30 \times 100] / B$$

where:

B minimum mean failure resistance of the adhesive to the insulation product in dry conditions expressed in kPa (30 kPa);

30 kPa corresponds to the minimum requirement.

The calculated minimum bonded surface S value is 100%, therefore the minimum bonded surface to adopt is 100%.

b) Wind load resistance (EAD 040083-00-0404 – clause 2.2.13)

Performance not assessed.

3.2.5 Protection against noise (BWR 5)

Performance not assessed (EAD 040083-00-0404 – clause 2.2.22.1).

3.2.6 Energy economy and heat retention (BWR 6)

a) Thermal resistance (EAD 040083-00-0404 – clause 2.2.23)

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:

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

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 ($\chi_p \cdot n$ negligible for $n < 20$);

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

The term $\chi_p \cdot n$ 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:

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

where:

R_i thermal resistance of the insulation product (see CE marking for MW in reference to EN 13163) in $\text{m}^2\cdot\text{K}/\text{W}$;

R_{render} thermal resistance of the render (about $0.02 \text{ m}^2\cdot\text{K}/\text{W}$);

$R_{\text{substrate}}$ thermal resistance of the substrate (concrete, brick,...) in $\text{m}^2\cdot\text{K}/\text{W}$;

R_{se} external surface resistance in $\text{m}^2\cdot\text{K}/\text{W}$;

R_{si} internal surface resistance in $\text{m}^2\cdot\text{K}/\text{W}$.

3.2.7 Sustainable use of natural resources (BWR 7)

Performance not assessed.

3.2.8 Aspects of durability and serviceability

a) Bond strength after ageing

Results of the tests for determining the bond strength between the base coat and the insulation product presented in Table 5 show that in all cases they verify the EAD 040083-00-0404 criteria.

3.3 Component characteristics

3.3.1 General

Detailed information on the chemical composition and other identifying characteristics of the components, following EAD 040083-00-0404, 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, made of mineral wool (MW), having the description, characteristics and performance (as minimum) defined in Table 8 (EN 13163).

TABLE 8
Characteristics of insulation panels

Component	Trade name	Characteristics	Declared values and classes
Insulation product	ISOVIT KI	Reaction to fire (EN 13501-1+A1)	Euroclass A1 (EAD 040083-00-0404 – clause 2.2.1.2) Density (EN 1602) $100 \text{ kg}/\text{m}^3$ Thickness: 60 to 80 mm
		Thermal conductivity	$0.036 \text{ W}/(\text{m}\cdot\text{K})$
		Thickness (EN 13162)	T5
		Compressive strength at 10 % deformation (EN 13162)	CS (10) 30
		Dimensional stability at specified temperature (EN 13162)	DS(T+)
		Dimensional stability under specified temperature and humidity conditions (EN 13162)	DS(TH)
		Short term water absorption (partial immersion) (NP EN 1609)	WS
		Long term water absorption (partial immersion) (NP EN 1609)	WL(P)
		Tensile strength perpendicular to the faces in dry conditions (kPa) (EN 1607)	TR10
		Water vapor diffusion resistance factor (EN 12086)	MU1

3.3.3 Render

– Render strip tensile resistance (EAD 040083-00-0404 – clause 2.2.17)

Fatigue tests were performed on specimens to determine the rupture stress of the reinforced render. The results are presented in Table 9.

TABLE 9
Results of render strip tensile test

System specimen	Characteristics	Test results (mm)
Base coat + standard mesh	Characteristic crack width - warp (mm)	0.06
	Characteristic crack width- weft (mm)	0.10

3.3.4 Glass fibre meshes

The characteristics of the glass fibre meshes are presented in Table 10 (EAD 040083-00-0404 – clause 2.2.21).

TABLE 10
Results of meshes tensile test

Component	Trade name	Characteristics	Test results
Standard mesh	ISOVIT REDE 160	Tensile strength after accelerated artificial ageing (N/mm)	22 (≥ 20)
		Relative residual resistance: % (after ageing) of the strength in the as delivered state	58 (> 50)
		Mass per surface unit (g/m ²)	156 (± 10 %)
		Mesh dimensions (mm \times mm)	5 \times 4 (± 10 %)
Reinforced mesh	ISOVIT REDE 343	Tensile strength after accelerated artificial ageing (N/mm)	64 (> 20)
		Relative residual resistance: % (after ageing) of the strength in the as delivered state	81 (> 50)
		Mass per surface unit (g/m ²)	330 (± 10 %)
		Mesh dimensions (mm \times mm)	6 \times 6 (± 10 %)

3.3.5 Anchors

Anchors for expanded polystyrene panels act as supplementary fixing if required. They are covered by ETA 16/0509, according to ETAG 014, used as EAD.

Their main characteristics and design data are presented in Table 11.

TABLE 11
Description and characteristics of anchors

Component	Trade name	Characteristics	Declared values and design data
Anchor	ISOVIT BUCHA	Anchor type	See dimensional characteristics in Annexes A5 and A6 of ETA 16/0509
		Materials	Anchor (expansion sleeve): polyethylene nail: glass fiber reinforced polyamide
		Resistance to tension loads (kN)	0.30 – 0.75 kN (see ETA 16/0509)
		Spacing (mm)	≥ 100
		Edge distance (mm)	≥ 100
		Thickness of the substrate (mm)	≥ 100

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 1997³, as amended by the decision 2001/596/EC⁴ 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 12 applies.

TABLE 12

System of assessment and verification of constancy of performance

Product	Intended uses	Levels or classes	System
Isovit KI	External thermal insulation composite system with rendering for use on building walls	Any	2+

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 annexes.

5.2 Tasks for the manufacturer

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 Plan⁵, 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.

³ Official Journal of the European Communities L229/14 of 20.08.1997.

⁴ Official Journal of the European Communities L229/33 of 02.08.2001.

⁵ 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.

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.

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.

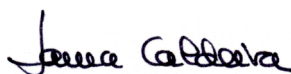
In cases where the provisions of the ETA and its Control Plan are no longer fulfilled, the notified certification body shall withdraw the certificate of conformity and inform LNEC without delay.

Issued in Lisbon on 22/03/2022

By

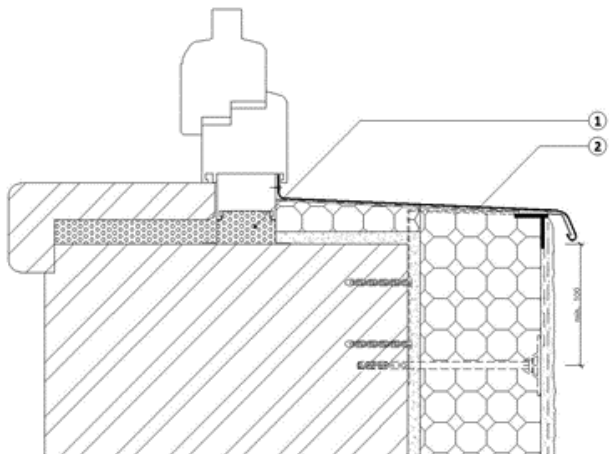
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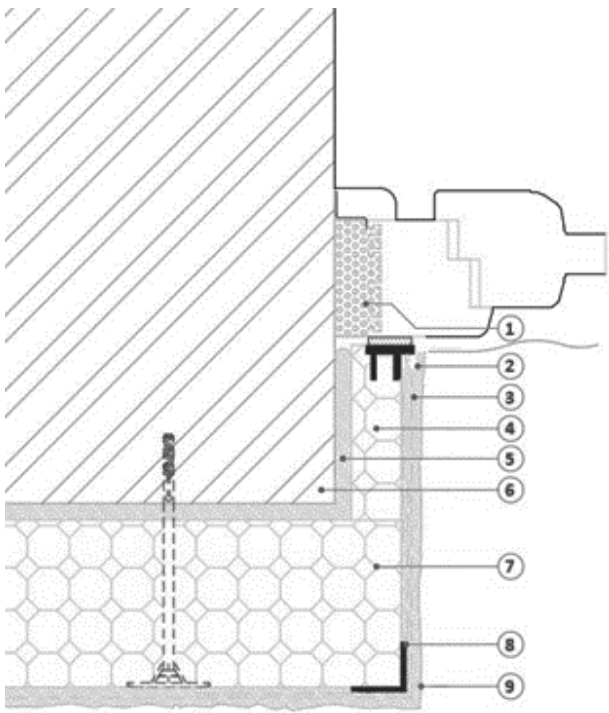
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President

Annex 1



- 1. Insulation product
- 2. Profile

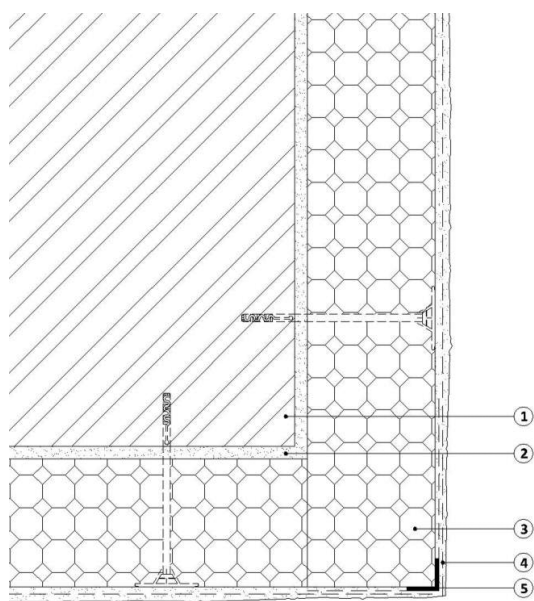
Vertical section of a window opening



- 1. Insulation product
- 2. ISOVIT PERFIL Corner profile with window
- 3. Base coat ISOVIT FIBRAFLEX
- 4. Insulation ISOVIT KI
- 5. Adhesive ISOVIT FIBRAFLEX
- 6. Substrate
- 7. Insulation ISOVIT KI
- 8. ISOVIT PERFIL Corner profile (with glass fibre mesh)
- 9. Finishing coat

Horizontal section of a window opening

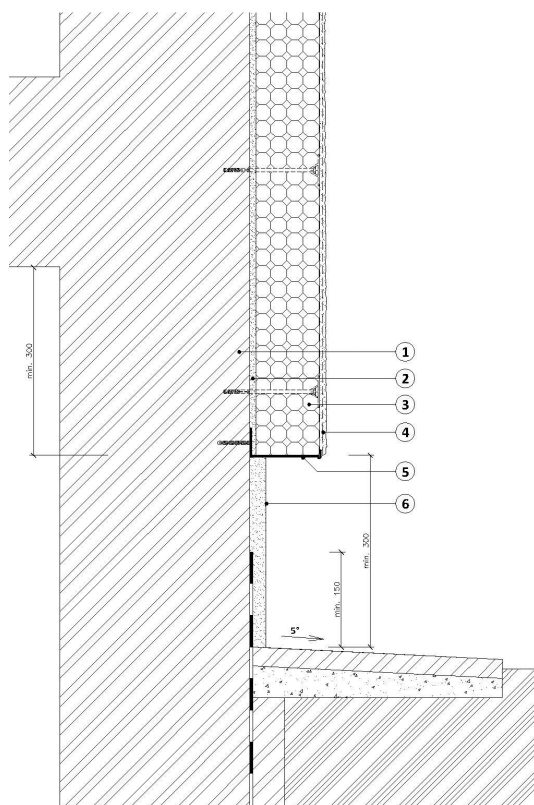
Annex 2



- 1. Substrate
- 2. Adhesive ISOVIT FIBRAFLEX
- 3. Insulation ISOVIT KI
- 4. Base coat ISOVIT FIBRAFLEX with glass fibre mesh (ISOVIT REDE 160)
- 5. ISOVIT PERFIL Corner profile (with glass fibre mesh)

Horizontal section of corner with profile

Annex 3



- 1. Substrate
- 2. Adhesive ISOVIT FIBRAFLEX
- 3. Insulation ISOVIT KI
- 4. Base coat ISOVIT FIBRAFLEX with glass fibre mesh (ISOVIT REDE 160)
- 5. ISOVIT PERFIL Endprofile
- 6. Ceramic tiles finishing

Vertical section of ETICS start



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