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European Technical Assessment

ETA 18/0293 of 11/01/2019

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General Part

Technical Assessment Body issuing the ETA: Itecons - Instituto de Investigação e Desenvolvimento Tecnológico para a Construção, Energia, Ambiente e Sustentabilidade

Trade name of the construction product	PRIMETHERM EPS; PRIMETHERM ICB
Product family to which the construction product belongs	External Thermal Insulation Composite Systems
	Product area code: 4
Manufacturer Manufacturing plant(s)	Primefix – Colas e Argamassas Técnicas, Lda. Zona Industrial das Almas das Domingas 3780-244 Aguim - Anadia Portugal <u>www.primefix-technik.com</u> Zona Industrial das Almas das Domingas 3780-244 Aguim - Anadia
	Portugal
This European Technical Assessment contains	15 pages
This European Technical Assessment is issued in accordance with regulation (EU) No 305/2011, on the basis of	ETAG 004, edition 2013, used as European Assessment Document (EAD)

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Specific parts

1. Technical description of the product

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

The ETICS kit comprises of a prefabricated insulation product of expanded polystyrene (EPS) or of expanded cork agglomerate boards (ICB) to be bonded with supplementary mechanical fixings onto a wall. 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 onto the insulating panels, without any air gap or disconnecting layer.

Note: In the ETICS only one type of insulation shall be used, either EPS or ICB, but not both on the same site.

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.

Component	Description		Coverage (kg/m²)	Thickness (mm)
Insulation	Expanded polystyrene (EPS) with	n CE marking.		50
products	Expanded cork agglomerate (ICB) with CE marking.		60
Adhesive	Primetherm-Fix Fibre reinforced mortar composed by cement, mineral load, resin and specific additives, with CE marking.		3.0 to 6.0	
Base Coat	Primetherm-BR Fibre reinforced mortar composed by cement, mineral	with standard glass fibre mesh	3.5 to 5.0	
Dase Coat	oat load, low density load inerter, resin and specific additives, with CE marking.	with double standard glass fibre mesh	3.5 10 5.0	
Finishing coat	Prime-Slurry Decorative covering based in hydrophobic properties.		0.9 to 2.4	
Glass fibre meshes	Primenet Standard and reinforced mesh, 160 g/m ² (glass fibre mesh with mesh size 5.1 mm x 4.2 mm).			
Anchors (supplementary mechanical fixings)	WKRET-MET-LTX			
Ancillary components	Remain under the ETA holder responsibility			

Table 1: Components of the ETICS

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 the walls shall be verified prior to use of the ETICS, especially its conditions regarding to reaction to fire classification and the fixation of the ETICS either by bonding or mechanically.

The ETICS shall be designed and installed in accordance with the 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 the wall on which it is installed, but it can contribute to its durability by providing enhanced protection from the effect of weathering.

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

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

The 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 2.3 to 2.5 for the packaging, transport, storage, installation are met and that the installed ETICS is subject to appropriate use, maintenance and repair. The indications given on the working life cannot be interpreted as a guarantee given by the manufacturer or the Technical Assessment Body, but should only be regarded only as a means for choosing the appropriate products 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. 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 instructions including special installation techniques and provisions for the qualification of the personnel are given in the manufacturer's technical documentation.

Design, installation and execution of ETICS are to be performed in conformity with national documents. Such documents and the level of their implementation in Member States' legislation are

different. Therefore, the assessment and declaration of performance are developed taking into account general assumptions introduced in the sections 7.1 and 7.2 of ETAG 004 used as EAD, which summarizes how information introduced in the ETA and related documents is intended to be used in the construction process and gives advice to all parties interested when normative documents are missing.

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 manufacturer to ensure that this information is made known to the concerned people.

2.5 Use, maintenance and repair

The finishing coat shall 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 the appearance. Only products which are compatible with the ETICS shall be used.

The information on use, maintenance and repair is given in the manufacturer's technical documentation. It is the responsibility of the manufacturer(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 of tests and the assessment for the intended use of this ETICS according the Essential Requirements was carried out in compliance with the ETAG 004, "Guideline for European Technical Approval of External Thermal Insulation Composite Systems with Rendering" – edition February 2013 (hereinafter referred to as "ETAG 004, used 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

The reaction to fire was tested according to ISO 11925-2:2010, ISO 11925-2:2010/Cor1:2011 and EN 13823:2010+A1:2014 and classified according to EN 13501-1:2007+A1:2009 for both systems PRIMETHERM EPS and PRIMETHERM ICB.

The PRIMETHERM EPS system meets the requirements of class B-s1, d0. This classification is valid for the PRIMETHERM EPS system with EPS insulation product, standard mesh, base coat and finishing coat.

The PRIMETHERM ICB system meets the requirements of class B-s1, d0. This classification is valid for the PRIMETHERM ICB system with ICB insulation product, standard mesh, base coat and finishing coat.

Note: A European reference fire scenario has not been laid down for facades. In some Member States, the classification of ETICS according to EN 13501-1:2007+A1:2009 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.

3.1.3 Hygiene, health and environment (BWR 3)

3.1.3.1 Water absorption (capillarity test)

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

- Water absorption after 1 hour < 1 kg/m²
- Water absorption after 24 hours < 0.5 kg/m²

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

The results of the water absorption test of the system Primetherm ICB (system without finishing) presented in Table 2, do not verify the condition:

• Water absorption after 24 hours < 0.5 kg/m²

The system needed therefore to be tested to its freeze/thaw resistance.

System specimens	Water absorption after 24 h	
System specimens	< 0.5 kg/m ²	≥ 0.5 kg/m ²
EPS + base coat + standard mesh	х	
EPS + base coat + standard mesh + finishing coat	х	
ICB + base coat + standard mesh		х
ICB + base coat + standard mesh + finishing coat	х	

Table 2: Water absorption	(capillary test)
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3.1.3.2 Watertightness

3.1.3.2.1 Hygrothermal behaviour

Hygrothermal cycles were performed on a rig. None of the following defects occurred during the testing:

- blistering or peeling of any finishing;

- failure or cracking associated with joints between insulation product boards or profiles used in the system;
- detachment of render;
- cracking allowing water penetration to the insulation layer.

This ETICS is therefore assessed resistant to hygrothermal cycles.

3.1.3.2.2 Freeze-thaw behaviour

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

- Water absorption after 1 hour < 1 kg/m²
- Water absorption after 24 hours < 0.5 kg/m²

This system (with EPS) is therefore assessed as freeze/thaw resistant without further testing.

Once the results of water absorption test of the system with ICB did not verify the condition "Water absorption after 24 hours < 0.5 kg/m^2 ", the system was further tested to its freeze/thaw resistance. After the freeze/thaw resistance test none of the following defects were observed:

- blistering or peeling of any finishing;
- failure or cracking associated with joints between insulation product boards or profiles used in the system;
- detachment of render;
- cracking allowing water penetration to the insulation layer.

This ETICS is therefore assessed resistant to freeze-thaw behaviour.

3.1.3.3 Impact resistance

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

System specimens	Use categories ¹
EPS + base coat + standard mesh + finishing coat	Ш
EPS + base coat + standard mesh + reinforced mesh + finishing coat	П
ICB + base coat + standard mesh + finishing coat	П
ICB + base coat + standard mesh + reinforced mesh + finishing coat	П

Table 3: Impact resistance to hard body impacts

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.

3.1.3.4 Water vapour permeability

Table 4 presents the resistance to water vapour diffusion of rendering system (base coat and finishing coat) for the system configuration, expressed by the equivalent air thickness.

System specimens	Equivalent air thickness (m)
Base coat + standard mesh + finishing coat	0.2

Table 4: Equivalent air thickness

3.1.3.5 Release of dangerous substances

A written declaration was submitted by the ETA holder stating that all ETICS components do not contain dangerous substances.

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 the Regulation (EU) No 305/2011, these requirements need also to be complied with, when and where they apply.

3.1.4 Safety in use (BWR 4)

3.1.4.1 Bond strength

3.1.4.1.1 Base coat onto insulation products

Tests were performed on the systems PRIMETHERM EPS and PRIMETHERM ICB, after performing the hygrothermal cycles. The results are summarized in Table 5.

	Bond strength	
System	After hygrothermal cycles	After freeze/thaw resistance test
EPS + base coat + standard mesh + finishing coat	≥ 0.08 MPa	
EPS + base coat + standard mesh + reinforced mesh + finishing coat	≥ 0.08 MPa	
ICB + base coat + standard mesh		< 0.08 MPa (100% rupture in the insulation product)
ICB + base coat + standard mesh + finishing coat	≥ 0.08 MPa	< 0.08 MPa (100% rupture in the insulation product)
ICB + base coat + standard mesh + reinforced mesh + finishing coat	≥ 0.08 MPa	

3.1.4.1.2 Adhesive onto insulation products

Tests were performance on samples of insulation products with base coat. The results are summarized in Table 6.

	Bond strength		
Specimen	After conditioning		
	Initial state	48 h immersion in water + 2 h 23 °C/50% RH	48 h immersion in water + 7 days 23 °C/50% RH
EPS + adhesive	≥ 0.08 MPa	≥ 0.03 MPa	≥ 0.08 MPa
ICB + adhesive	< 0.08 MPa (100% rupture in the insulation product)	≥ 0.03 MPa	< 0.08 MPa (100% rupture in the insulation product)

Table 6: Bond strength between adhesive and insulation product

3.1.4.1.3 Adhesive onto substrate

Tests were performance on samples of substrate (concrete) faced with adhesive product. The results are summarized in Table 7.

0			
	Bond strength		
Specimen	After conditioning		ditioning
Initial state	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)	≥ 0.25 MPa	≥ 0.08 MPa	≥ 0.25 MPa

Table 7: Bond strength between adhesive and substrate

3.1.5 Protection against noise (BWR 5)

Table 8 presents the test results, the ETICS configuration tested and the substrate characteristics for which the values are valid.

Insulation product	Rendering system	ETICS fixing	Substrate	ETICS performance
Insulation type: Expanded polystyrene (EPS) Thickness: 50 mm Maximum dynamic stiffness: NPD Air flow resistance: NPD	Minimum mass of the rendering system: 4.4 kg/m ²	Bonding by adhesive maximum bonded surface area: 100%	Type: Masonry bricks	$\Delta R_w = -2 \text{ dB}$ $\Delta R_w + C = -3 \text{ dB}$ $\Delta R_w + C_{tr} = -1 \text{ dB}$
Insulation type: Expanded cork (ICB) Thickness: 60 mm Maximum dynamic stiffness: NPD Air flow resistance: NPD	Minimum mass of the rendering system: 4.4 kg/m ²	Bonding by adhesive maximum bonded surface area: 100%	Type: Masonry bricks	$\Delta R_w = -1 \text{ dB}$ $\Delta R_w + C = 0 \text{ dB}$ $\Delta R_w + C_{tr} = -1 \text{ dB}$

Table 8: Airborne sound insulation

3.1.6 Energy economy and heat retention (BWR 6)

3.1.6.1 Thermal Resistance

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 products thermal resistance R_i given accompanied to the CE marking and from the thermal resistance of the rendering system R_{render} which is about 0.02 m²K/W.

$$R_{ETICS} = R_i + R_{render} [m^2 K/W]$$

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

$$U_{\rm C} = U + \Delta U \left[W/(m^2.K) \right]$$

 U_c : corrected thermal transmittance (W/m²K) of the entire wall, including thermal bridges.

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

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

R_i: thermal resistance of the insulation product;

R_{render}: thermal resistance of the render [about 0.02 m².K/W];

R_{substrate}: thermal resistance of the substrate wall (concrete, brick...) [m².K/W];

R_{se}: external surface thermal resistance [m².K/W];

R_{si}: internal surface thermal resistance [m².K/W].

 Δ U: correction term of the thermal transmittance for mechanical fixing devices

$$\Delta U = X_p * n$$

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

 X_p : point thermal transmittance value of the anchor (0.00 W/K)¹.

¹The thermal bridge effect of the anchor is smaller than 0.0005 W/K and can therefore be neglected in the calculation.

The value of thermal resistance of the render system (R_{render}) was considered as equal to 0.02 m².K/W according clause 5.6.4.1 of the ETAG 004.

Table 9 presents the values of thermal resistance calculation for PRIMETHERM EPS and PRIMETHERM ICB systems with thicknesses equal to 40 mm, 50 mm, 60 mm, 80 mm and 100 mm.

Table 9: Thermal resistance values for PRIMETHERM system

	Insulation thickness (mm)	RETICS [m ² .K/W]
	40	1.10
	50	1.40
PRIMETHERM EPS	60	1.65
	80	2.20
	100	2.80

	Insulation thickness (mm)	R _{ETICS} [m ² .K/W]
PRIMETHERM ICB	40	1.00
	50	1.25
	60	1.50
	80	2.00
	100	2.50

3.1.7 Sustainable use of natural resources (BWR 7)

No performance determined.

3.1.8 Aspect of durability and serviceability

3.1.8.1 Bond strength after ageing

Results of the tests to determine the bond strength between the base coat and the insulation product present in Table 5 show that in the case of EPS boards, the failure resistance values are higher than 0.08 MPa. Rupture occurred between the base coat and the insulation product.

Results of the tests to determine the bond strength between the base coat and the insulation product present in Table 5, show that in the case of ICB boards the failure resistance values are higher than 0.08 MPa when tested after hygrothermal cycles (with finishing coat). After the freeze/thaw resistance test, the bond strength between the base coat and the insulation product was lower than 0.08 MPa, but rupture occurred in the insulation product.

All the test results are therefore valid.

3.2 Characteristics of the components

3.2.1 Insulation products

3.2.1.1 Expanded polystyrene (EPS)

Factory-prefabricated uncoated panels made of expanded polystyrene (EPS) complying with the requirements of EN 13163.

Component	Characteristics	Declared values and classes
Insulation product	Reaction to Fire / EN 13501-1	E
	Thermal conductivity (W/m.°C) / EN 12667	0.036
	Thickness (mm) / EN 823	20 to 170 mm
	Density (kg/m ³) / EN 1602	20
	Compression stress at 10% deformation (kPa) / EN 826	100
	Bending strength (kPa) / EN 12089	150

Table 10: EPS characteristics

Component	Characteristics	Declared values and classes		
	Water absorption by immersion / EN 12087	< 2%		
	Water vapour diffusion resistance factor / EN 12086	$\mu = 30 - 70$		
	Linear thermal expansion coefficient (°C)			
	Form stability at a temperature (°C)	85		

3.2.1.2 Expanded cork (ICB)

Factory-prefabricated uncoated panels made of expanded cork (ICB) complying with the requirements of EN 13170.

Component	Characteristics	Declared values and classes	
	Reaction to Fire / EN 13501-1	E	
	Density (kg/m ³) / EN 1602	< 130	
	Thermal conductivity coefficient (W/m.K) / EN 12667	0.037 to 0.040	
	Bending strength (Kgf/cm ²) / EN 12089	1.4 to 2.0	
Insulation product	Compression stress at 10% deformation (kPa) / EN 826	≥ 100	
	Water vapour permeability (ng/Pa.sm ²) / EN 12086	386	
	Operating temperature (°C)	-180 to +120	
	Thickness (mm) / EN 823	10 to 300	
	Dimensions (mm) / EN 822	1000 × 500	

Table 11: ICB characteristics

3.2.2 Glass fibre meshes

The characteristics of the glass fibre meshes are presented in Table 12.

Component	Trade Name	Characteristics		Results
Standard and reinforced mesh	Primenet	Mass per unit area (g/m ²)		165
		Ash content (%)		81.3
		Heat combustion (MJ/kg)		6.41
		Residual strength after ageing (N/mm)	Warp	26
			Weft	29
		Relative residual	Warp	2.3

Table 12: Glass fibre mesh characteristics

Component	Trade Name	Characteristics		Results
		strength after ageing (%)	Weft	2.3
		Mesh size (mm)		5.1 x 4.2
		Mesh opening (mm)	4.0 x 3.9

3.2.3 Anchors

3.2.3.1 Characteristic resistance

Anchors for insulation product act as a supplementary fixing, if required. The characteristic resistance of anchors was evaluated according to ETAG 014, clause 5.4.2. The test results are presented in Table 13.

Trade name	Plate diameter (mm)	Characteristic resistances in the substrate
LTX-10	60	See ETA-16/0509

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 (see Table 15).

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+

Table 15: AVCP Systems

⁽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, kept 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 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 the 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 is carried out by the other manufacturers, giving 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 inspection of factory and of factory production control

The Notified Body shall ascertain that, in accordance with the Control Plan, that 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 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.

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Βу

Technical Assessment Unit of

Itecons – Instituto de Investigação e Desenvolvimento Tecnológico para a Construção, Energia, Ambiente e Sustentabilidade

Aministader

(António Tadeu, President of the Board))