European Technical Approval ETA 13/0360

Trade Name:	GRANOL'THERM EPS G/W
Holder of the approval:	Cantillana nv Pontstraat 82 BE - 9831 DEURLE Belgium
Website:	www.cantillana.com
Generic type and use of construction product:	External Thermal Insulation Composite Systems with rendering on polystyrene for use as external insulation to the walls of buildings
Validity from:	2013-06-27
To:	2018-06-26
Manufacturing plant(s):	Cantillana nv Pontstraat 82 BE - 9831 DEURLE Belgium
This European Technical Approval contains:	13 pages including 1 annex which forms an integral part of the document

EOTA
European Organisation for Technical Approvals
Organisation Européenne pour l'Agrément Technique
Europäische Organisation für Technische Zulassungen

I. LEGAL BASES AND GENERAL CONDITIONS

1. This European Technical Approval is issued by UBAtc in accordance with:
   - Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of Member States relating to construction products[1], modified by Council Directive 93/68/EEC[2] and Regulation (EC) N° 1882/2003 of the European Parliament and of the Council[3],
   - Belgian law of 25 March 1996 concerning the adaptation of legislative and administrative provisions of Member States to the Construction Products Directive (89/106/EEC) for construction products[4] and Belgian Royal Decree of 18 August 1998 concerning construction products[5],
   - Common Procedural Rules for Requesting, Preparing and the Granting of European Technical Approvals set out in the Annex to Commission Decision 94/23/EC[6].
2. The UBAtc is authorised to check whether the provisions of this European Technical Approval are met. Checking may take place in the manufacturing plant(s). Nevertheless, the responsibility for the conformity of the products to the European Technical Approval and for their fitness for the intended use remains with the holder of the European Technical Approval.
3. This European Technical Approval is not to be transferred to manufacturers or agents of manufacturers other than those indicated on page 1, or manufacturing plants other than those laid down in the context of this European Technical Approval.
4. This European Technical Approval may be withdrawn by UBAtc, in particular pursuant to information by the Commission according to Article 5(1) of Council Directive 89/106/EEC.
5. Reproduction of this European Technical Approval including transmission by electronic means shall be in full. However, partial reproduction can be made with the written consent of UBAtc. In this case partial reproduction has to be designated as such. Texts and drawings of advertising brochures shall not contradict or misuse the European Technical Approval.
6. Subject to the application introduced, this European Technical Approval is issued by the approval body in its official languages. These versions correspond fully to the version circulated in EOTA. Translations into other languages have to be designated as such.
7. The ETA holder confirms to guarantee that the product(-s) to which this approval relates, is/are produced and marketed in accordance with and comply with all applicable legal and regulatory provisions, including, without limitation, national and European legislation on the safety of products and services. The ETA-holder shall notify the UBAtc immediately in writing of any circumstance affecting the aforementioned guarantee. This approval is issued under the condition that the aforementioned guarantee by the ETA holder is continuously observed.

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[1] Official Journal of the European Communities N° L 40, 11.2.1989, p. 12
[2] Official Journal of the European Communities N° L 220, 30.8.1993, p. 1
[3] Official Journal of the European Union N° L 284, 31.10.2003, p. 1
[4] Belgian Law Gazette, 21.05.1996
[5] Belgian Law Gazette, 11.09.1998
[6] Official Journal of the European Communities N° L 17, 20.1.1994, p. 34

II. SPECIFIC CONDITIONS OF THE EUROPEAN TECHNICAL APPROVAL

1 Definition of product and intended use

The External Thermal Insulation Composite System, Granol'Therm EPS G/W, called ETICS in the following text, is designed and installed in accordance with the ETA-holder design and installation instructions, deposited with the UBAtc. The ETICS comprises the following components, which are factory-produced by the ETA-holder or a supplier.

1.1 Definition of the construction product (kit)

	Components (see §2.3 for further description, characteristics and performances of the components)	**Coverage (kg/m²)**	**Thickness (mm)**
Insulation materials with associated methods of fixing	**BONDED ETICS (partially or fully bonded. National application documents shall be taken into account)** • Insulation product: Factory prefabricated expanded polystyrene (EPS) according to EN 13163 - standard EPS - elasticised EPS • Adhesives: - Granol'Therm G /W (*) (CEM I cement based powder requiring addition of 30% water) - Granol'Therm KB (CEM I cement based powder requiring addition of 23 – 26% water)	5 - 8 (powder) 5 – 8 (powder)	≤ 400 ≤ 200
Insulation materials with associated methods of fixing	**MECHANICALLY FIXED ETICS WITH PROFILES** • Insulation product: Factory prefabricated expanded polystyrene (EPS) according to EN 13163 - standard EPS • Supplementary adhesives: (see bonded ETICS) • Profiles (Halteleiste – Verbindungsleiste PVC) Polyvinyl chloride (PVC) profiles • Anchors for profiles: - Granol'Therm NK U - Granol'Therm SDK U		60 to 200
Insulation materials with associated methods of fixing	**MECHANICALLY FIXED ETICS WITH ANCHORS AND SUPPLEMENTARY ADHESIVE (see § 2.2.8.3.b for possible associations EPS/anchors)** • Insulation product: Factory prefabricated expanded polystyrene (EPS) according to EN 13163 - standard EPS - elasticised EPS • Supplementary adhesives (see bonded ETICS) • Anchors for EPS - Granol'Therm NK U - Granol'Therm SDK U - Granol'Therm NTK U		60 to 400 80 to 200
Base coat	Granol'Therm G /W (CEM I cement based powder requiring addition of 30% water)	About 5	Mean: 4 Minimal: 3
Glass fibres meshes	Standard mesh Granol'Therm AGF Glass fibre mesh with mesh size of 4 x 4 mm Reinforced mesh: Granol'Therm PZG (implemented in addition to the standard mesh to improve the impact resistance) Glass fibre mesh 7 x 7 mm	165 g/m² 540 g/m²	
Key coat	Granol'Plus STG: ready to use pigmented liquid (**) Granosil'Plus STF: ready to use pigmented liquid (***) Granokat'Plus STP: ready to use pigmented liquid (****)		

	Components (see §2.3 for further description, characteristics and performances of the components)	**Coverage (kg/m²)**	**Thickness (mm)**
Finishing coats	• Ready to use paste – acrylic binder: - Granol KR, RP (1 – 5 mm) • Ready to use paste – acrylosiloxane binder: - Granosil KR, RP (particle size 1 – 4 mm) • Cement based powder requiring the addition of water: - Granomin KR, RP (addition of 24 - 27 % water - particle size 1,5 - 4 mm) • Ready to use paste – silicate binder - Granokat KR, RP (particle size 1 – 3 mm)	2,7 – 5,7 2,3 – 3,7	Regulated by the particle size
Ancillary materials	Description in accordance with § 3.2.2.5 of the ETAG 004 Remains under the ETA-holder responsibilities.		
(*) Granol'Therm G: based on grey cement – Granol'Therm W: based on white cement (**) to be used with Granol and Granomin (***) to be used with Granosil (****) to be used with Granokat			

1.2 Intended use of the product

This ETICS is intended for use as external insulation of building walls. The walls are made of masonry (bricks, blocks, stones …) or concrete (cast on site or as prefabricated panels) with a reaction to fire classification A1 or A2-s2,d0 according to EN 13501-1 and a minimum density of 820 kg/m³ 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 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 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 that are not exposed to precipitation.

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

The choice of the method of fixing depends on the characteristics of the substrate, which could need preparation (see § 7.3.1 of the ETAG no. 004) and shall be done in accordance with the national instructions.

The provisions made in this European Technical Approval (ETA) are based on an assumed intended working life of at least 25 years, provide that the conditions laid down in sections 4.2, 5.1 and 5.2 for packaging, transport, storage and installation as well as appropriate use, maintenance and repair are met. The indications given as to the working life cannot be interpreted as a guarantee given by the manufacturer or the Approval Body, but should only be regarded as a means for choosing the appropriate products in relation to the expected economically reasonable working life of the works.

2 Characteristics of product and methods of verification

2.1 General

The identification tests and the assessment of the fitness for use of this ETICS according to the Essential Requirements were carried out in compliance with the "ETA Guidance no. 004" concerning External Thermal Insulation Composite Systems with rendering – edition March 2000, amendment June 2008 (called ETAG 004 in this ETA).

2.2 ETICS characteristics

2.2.1 Reaction to fire

Configuration: EPS with a maximum weight of 35 kg/m³ and the base coat with key coat and finishing coats indicated hereafter	**Maximum declared organic content**	**Euroclass according to EN 13501-1**
Granol'Plus STG + Granol Granol'Plus STG + Granomin Granosil'Plus STF + Granosil Granokat'Plus STP + Granokat	Base coat: ≤ 2,85% Key coat: < 10,3% Finishing coat: ≤ 8,5%	**B-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: 2002 might not be sufficient for the use in facades. An additional assessment of ETICS according to national provisions (e.g. on the basis of a large scale test) might be necessary to comply with Member State regulations, until the existing European classification system has been completed.

2.2.2 Water absorption (capillarity test)

- Base coat
  - Water absorption after 1 hour: < 1 kg/m²;
  - Water absorption after 24 hours: < 0.5 kg/m².

- Rendering systems:

		Water absorption after 24 hours	
		< 0.5 kg/m²	≥ 0.5 kg/m²
Rendering system: Granol'Therm G/W + Finishing coats: indicated here after	Granol KR, RP	x	
	Granosil KR, RP		x
	Granomin KR, RP	x	
	Granokat KR, RP	x	

2.2.3 Hygrothermal behaviour

Hygrothermal cycles have been performed on a rig.

None of the following defects occur during the testing:

- Blistering or peeling of any finishing;
- Failure or cracking associated with joints between insulation product boards or profiles fitted with ETICS;
- Detachment of render;
- Cracking allowing water penetration to the insulation layer.

The ETICS is so assessed resistant to hygrothermal cycles.

2.2.4 Freeze / thaw behaviour

The water absorption of both base coat with the finishing coats Granol, Granomin and Granokat are less than 0,5 kg/m² after 24 hours and so the ETICS is assessed as freeze/thaw resistant.

Rendering systems with the finishing Granosil have been assessed as freeze/thaw resistant according to the simulated method.

2.2.5 Impact resistance

The resistance to hard body impact (3 Joules and 10 Joules) and to perforation leads to the following categories.

Rendering systems:		Granol'Therm AGF	Granol'Therm AGF + Granol'Therm PZG
Granol'Therm G/W + Finishing coats Indicated hereafter	Granol KR/RP	Category III	Category I
	Granosil KR/RP	Category III	Category I
	Granomin KR/RP	Category III	NPD
	Granokat KR/RP	Category II	NPD

2.2.6 Water vapour permeability

		Equivalent air thickness (m)
Rendering system: Granol'Therm G/W + finishing coats indicated hereafter:	Granol KR/RP	≤ 2,0 m (Test result obtained with particle size 4 mm: 0,3 m)
	Key coat + Granol KR/RP	≤ 2,0 m (Test result obtained with particle size 4 mm: 0,4 m)
	Granosil KR/RP	≤ 2,0 m (Test result obtained with a thickness of 4 mm: 0,2 m)
	Key coat + Granosil KR/RP	≤ 2,0 m (Test result obtained with particle size 4 mm: 0,2 m)
	Granomin KR/RP	≤ 2,0 m (Test result obtained with particle size 4 mm: 0,1 m)
	Key coat + Granomin KR/RP	≤ 2,0 m (Test result obtained with particle size 4 mm: 0,1 m)
	Granokat KR/RP	≤ 2,0 m (Test result obtained with particle size 3 mm: 0,1 m)
	Key coat + Granokat KR/RP	≤ 2,0 m (Test result obtained with particle size 3 mm: 0,1 m)

2.2.7 Dangerous substances

A written declaration was submitted by the ETA-holder.

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 Construction Product Directive, these requirements need also to be complied with, when and where they apply.

2.2.8 Safety in use

2.2.8.1 Bond strength

- Base coat onto expanded polystyrene

Conditionings		
Initial state	**After the hygrothermal cycles (on the rig)**	**After freeze/thaw cycles**
≥ 0,08 MPa	< 0.08 MPa but failure in insulation product	Test not required because freeze/thaw cycles not necessary

- Adhesives onto substrate and expanded polystyrene (safety in use for bonded ETICS)

		Conditionings		
		Initial	**48 h immersion in water + 2 h 23°C/50% RH**	**48 h immersion in water + 7 days 23°C/50% RH**
Granol'Therm G/W	Concrete	≥ 0.25 MPa	≥ 0.08 MPa	≥ 0.25 MPa
	Insulation product	≥ 0.08 MPa	≥ 0.03 MPa	≥ 0.08 MPa
Granol'Therm KB	Concrete	≥ 0.25 MPa	≥ 0.08 MPa	≥ 0.25 MPa
	Insulation product	≥ 0.08 MPa	≥ 0.03 MPa	≥ 0.08 MPa

The minimal bonded surface S, which must exceed 20%, is calculated as follows:

$$S(\%) = [0{,}03\ (MPa)*100]/B$$

Where:

- B: minimum mean failure resistance of the adhesive to the insulation product in dry conditions;
- 0,03 MPa corresponds to the minimum requirements.

The ETICS can so be installed on the substrate with application of the adhesive on the following minimal surfaces:

	Tensile strength perpendicular to the face of the insulation product	
	≥ 80 kPa	**≥ 100 kPa**
Granol'Therm G/W	40%	30%
Granol'Therm KB	40%	30%

2.2.8.2 *Fixing strength (displacement test)*

Test not required because the ETICS fulfils the following criteria:

- E x d < 50.000 N/mm (E: modulus of the base coat without mesh - d: mean dry thickness of the base coat).

2.2.8.3 *Wind load resistance:*

a) Safety in use of mechanically fixed ETICS using profiles

Characteristics of the insulation product for which the following failure loads apply	Thickness (mm)		≥ 60
	Tensile strength perpendicular to the face (kPa)		≥ 150
	Shear strength (N/mm²)		≥ 0,02
	Shear modulus (MPa)		≥ 1,5
Failure loads (N) (Static Foam Block Test)	Horizontal profiles fixed every 30 cm + vertical connection profiles	(500 x 500) mm² panels	Minimal: 826 Mean: 860

b) Safety in use of mechanically fixed ETICS using anchors

The following values apply only for the combination of the anchors and panels mentioned in the first lines of each table:

Anchors for which the following failure loads apply	Plate diameter		> 60
Characteristics of the insulation product for which the following failure loads apply	Thickness (mm)		≥ 80
	Tensile strength perpendicular to the face of the EPS (kPa)		≥ 80
Failure loads (N)	Anchors not placed at the panel joints	R_{panel}	Minimal: 350 Mean: 360
	Anchors placed at the panel joints	R_{joint}	Minimal: 300 Mean: 310

Anchors for which the following failure loads apply	Plate diameter		> 60
Characteristics of the insulation product for which the following failure loads apply	Thickness (mm)		≥ 60
	Tensile strength perpendicular to the face of the EPS (kPa)		≥ 100
Failure loads (N)	Anchors not placed at the panel joints (Static Foam Block Test)	R_{panel}	Minimal: 510 Mean: 520
	Anchors placed at the panel joints (Pull-through Test)	R_{joint}	Minimal: 400 Mean: 430

The wind load resistance of the ETICS is calculated as follows:

$$Rd = \frac{R_{panel} \times n_{panel} + R_{joint} \times n_{joint}}{\gamma}$$

n_{panel}: number (per m²) of anchors not placed at the panel joints

n_{joint}: number (per m²) of anchors placed at the panel joint

γ: national safety factor

2.2.9 Thermal resistance

The additional thermal resistance provided by the ETICS (R_{ETICS}) to the substrate wall is calculated from the thermal resistance of the insulation product (R_D), determined in accordance with 5.2.6.1, and from the tabulated R_{render} value of the render system (R_{render} is about 0,02 m²K/W).

$$R_{ETICS} = R_D + R_{render}\ [(m^2.K)/W]$$

As described in EN ISO 6946-1 and EN ISO 10456.

If the thermal resistance cannot be calculated, it can be measured on the complete ETICS as described in EN 1934.

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:

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

With:

U_c: corrected thermal transmittance of the entire wall, including thermal bridges

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

$$U_c = (R_{ETICS} + R_{substrate} + R_{se} + R_{si})^{-1}$$

R_{se}: external superficial thermal resistance [(m².K)/W]

R_{si}: internal superficial thermal resistance [(m².K)/W]

ΔU: correction of the thermal transmittance for mechanical fixing devices

$= \chi_p . n$ for anchors

$= \Psi . l$: for profiles

χ_p: point thermal transmittance value of the anchor (W/K)(see Technical Report n° 25). If not specified in the ETA of the anchors, 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

= 0.004 W/K for anchors with a galvanized steel screw with the head covered by a plastic material

= 0,008 W/K for all other anchors (worst case)

N: number of anchors per m²

Ψ: linear thermal transmittance value of the profile [W/(m.K)]

L: length of the profile per m²

The influence of thermal bridges can also be calculated as described in EN ISO 10211-1.

It should be calculated according to this standard if there are more than 16 anchors per m² foreseen. The χ_p -values given by the manufacturer do not apply in this case.

2.2.10 Aspect of durability and serviceability: Bond strength after ageing

2.2.10.1 Bond strength after ageing

Rendering system: Granol'Therm G/W + finishing coats indicated hereafter:	Finishing coat	Bond strength
	Granol KR, RP	≥ 0,08 MPa
	Granosil KR, RP	≥ 0,08 MPa
	Granomin KR, RP	≥ 0,08 MPa
	Granokat KR, RP	≥ 0,08 MPa

2.3 Components' characteristics

2.3.1 Insulation product

Factory prefabricated, uncoated panels made of expanded polystyrene (EPS) to EN 13163 and having the description and characteristics defined in the table below.

2.3.2 Anchor

The characteristic pull-out strength of anchor is determined according to ETAG 004 clause 5.3.4.1.

- Anchors for profiles:

Trade name	Characteristic resistance in the substrate
Granol'Therm NK U	ETA 05/0009
Granol'Therm SDK U	ETA 04/0023

- Anchors for insulation product

Trade name	Plate diameter (mm)	Characteristic resistance in the substrate
Granol'Therm NK U	≥ 60	ETA 05/0009
Granol'Therm SDK U	≥ 60	ETA 04/0023
Granol'Therm NTK U	≥ 60	ETA 07/0026

2.3.3 Profiles

- Polyvinyl chloride (PVC) profiles: PVC-U, E P, 082-25-28 (EN ISO 1163-1:1999) (see Annex 1)
  - Horizontal fixed profiles each 30 cm;
  - Vertical connection profiles: 49,4 cm.
- Pull-through resistance of fixings from profile: ≥ 500 N.

2.3.4 Render

The mean value of the crack width of the base coat with the glass fibre mesh, measured at a render strain value of 1% is about 0,8 mm.

2.3.5 Glass fibres meshes

	Alkali resistance			
	Residual resistance after ageing (N/mm)		Relative residual resistance: % (after ageing) of the strength in the as delivered state	
	Warp	Weft	Warp	Weft
Granol'Therm AGF	≥ 30	≥ 30	≥ 60	≥ 60
Granol'Therm PZG	≥ 60	≥ 100	≥ 60	≥ 60

Descriptions and characteristics		EPS panels		
		For bonded ETICS	For mechanically fixed ETICS	
			With anchors and additional bonding	With profiles and additional bonding
Reaction to fire / EN 13501-1		Defined in the CE marking in reference to EN 13163 "Thermal insulation products for buildings" – Factory made products of expanded polystyrene"		
Thermal resistance [(m².K)/W]		Defined in the CE marking in reference to EN 13163 "Thermal insulation products for buildings" – Factory made products of expanded polystyrene"		
Thickness (mm) / EN 823		EPS-EN 13163 -T2	EPS-EN 13163 – T2	± 1,0
Length (mm) / EN 822		EPS-EN 13163 – L2		± 1,0
Width (mm) / EN 822		EPS-EN 13163 – W2		± 1,0
Squareness (mm) / EN 824		EPS-EN 13163 – S2		
Flatness (mm) / EN 825		EPS-EN 13163 – P4		
Surface condition		Cut surface (homogeneous and without "skin")		
Dimensional stability under:	Specified temperature and humidity / EN 1604	EPS-EN 13163 DS (70,-)		48h/70°C 500 x 500 mm panels: < 0,30% and no value > 0,35%
	Laboratory conditions / EN 1603	EPS-EN 13163-DS(N)2		≤ 0,15%
Water absorption (partial immersion) / EN 1609 – EN 12087		EPS-EN 13163 WL(T)1		
Water vapour diffusion resistance factor (μ) / EN 12086 – EN 13163		20 to 60		
Tensile strength perpendicular to the faces in dry conditions / (kPa)/EN 1607				
- standard EPS		≥ 80 EPS-EN-13163 –TR 80, TR 100, TR 150		≥ 150 EPS EN 13163 TR 150
- elasticised EPS		≥ 80 EPS-EN-13163 – TR 80		Not used
Shear strength (MPa) / EN 12090		≥ 0,05		≥ 0,05
Shear modulus (MPa) / EN 12090				
- standard EPS		≥ 1,0		≥ 1,5
- elasticised EPS (*)		≥ 0,3		Not used
(*) Elasticised EPS is standard EPS, which is put for a short time under high pressure in order to reduce the dynamic stiffness. As a result the sound insulation of the wall with elasticised EPS is better than a wall with standard EPS.				

3 Evaluation of Conformity and CE-marking

3.1 System of attestation of conformity

According to the decision 97/556/EC of the European Commission the system 2+ of attestation of conformity applies.

In addition, according to the decision 2001/596/EC of the European Commission, the system 1 of attestation of conformity applies with regard to the reaction of fire.

Considering the Euroclass B and C for the reaction to fire, the system of attestation of conformity, regarding other characteristics than reaction to fire, is system 2+. This system is described in the Council Directive 89/106/EEC Annex III, 2(ii), first possibility as follows:

Declaration of conformity of the ETICS by the manufacturer on the basis of:

a) Tasks for the manufacturer:
   - Initial-type-testing of the ETICS and the components;
   - Factory Production Control;
   - Testing of samples taken at the factory in accordance with a prescribed Control Plan.

b) Tasks for the Notified Body:

   Certification of the factory production control on the basis of:
   - Initial inspection of factory and of factory production control;
   - Continuous surveillance, assessment and approval of factory production control.

Considering the Euroclass B for the reaction to fire, the system of attestation of conformity, regarding reaction to fire characteristic, is system 1. This system 1 is described in the Council Directive 89/106/EEC annex III, 2(i), as follows:

a) Tasks for the manufacturer:
   - Factory Production Control;
   - Testing of samples taken at the factory by the manufacturer in accordance with a prescribed test plan.

b) Tasks for the Notified Body:
   - Initial type-testing of the ETICS and the components;
   - Initial inspection of the factory and the factory production control;
   - Continuous surveillance, assessment and approval of the factory production control.

3.2 Responsibilities

3.2.1 Tasks of the manufacturer

3.2.1.1 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 insure that the product is in conformity with this European Technical approval.

The manufacturer may only use components stated in the technical documentation of this European Technical Approval, including the Control Plan.

For the components of the ETICS, which the ETA-holder does not manufacture by himself, he shall make sure that factory production control carried out by the other manufacturers gives the guaranty of the components compliance with the European Technical Approval.

The factory production control and the provisions taken by the ETA-holder for the components not produced by himself shall be in accordance with the "Control Plan1 relating to this European Technical Approval which is part of the technical documentation of this European Technical Approval. The "Control Plan" is laid down in the context of the factory production control system operated by the manufacturer and deposited at the UBAtc.

The results of the factory production control shall be recorded and evaluated in accordance with the provisions of the "Control Plan".

3.2.1.2 Other tasks of the manufacturer

The manufacturer shall, on the basis of a contract, involve bodies which are notified for the tasks referred to in section 3.1 in the field of ETICS in order to undertake the actions laid down in section 3.3 For this purpose, the "Control Plan" referred to in the sections 3.2.1.1 and 3.2.2 shall be handed over by the manufacturer to the notified bodies involved.

For initial type testing (in the case of system 2+), the results of the tests performed as part of the assessment for the European Technical Approval can be used unless there are changes in the production line or plant. In such cases, the necessary initial type testing has to be agreed between the UBAtc and the notified bodies involved.

The manufacturer shall make a declaration of conformity, stating that the construction product is in conformity with the provisions of the European Technical Approval. The initial type-testing mentioned above could be taken over by the manufacturer for this declaration.

3.2.2 Tasks of approved bodies

The notified bodies shall perform the:

- Initial type-testing of the product (for system 1)
  The results of the tests performed as part of the assessment for the European Technical Approval can be used unless there are changes in the production line or plant. In such cases, the necessary initial type testing has to be agreed between the UBAtc and the Notified Bodies involved.

- 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 clause 2 of this ETA.

- Continuous surveillance, assessment and approval of factory production control
  The Notified Body (Bodies) shall visit the factory at least once a year for surveillance of this manufacturer having an FPC system complying with ISO 9001 covering the manufacturing of the ETICS components.

  It has to be verified that the system of factory production control and the specified automated manufacturing process are maintained taking into account the Control Plan.

The Control Plan is a confidential part of the European Technical Approval and only handed over to the notified bodies involved in the procedure of attestation of conformity. See section 3.2.2.

These tasks shall be performed in accordance with the provisions laid down in the Control Plan of this European Technical Approval.

The Notified Body (Bodies) shall retain essential points of its (their) actions referred to above and state the results obtained and conclusions drawn in (a) written report(s).

- In the case of Attestation of Conformity system 1:
  The Notified Body (Bodies) involved by the manufacturer shall issue an EC certificate of conformity of the product stating the conformity with the provisions of this European Technical Approval.

- In the case of Attestation of Conformity system 2+:
  The Notified Body (Bodies) involved by the manufacturer shall issue an EC certificate of conformity of factory production control stating the conformity with the provisions of this European Technical Approval.

In cases where the provisions of the European Technical Approval and its "Control Plan" are no longer fulfilled, the Notified Body shall withdraw the certificate of conformity and inform the UBAtc without delay.

3.3 CE-Marking

The CE marking shall be affixed either on the product itself, on a label attached to it, on its packaging or on the commercial documents accompanying the components of the ETICS. The letters « CE » shall be followed by the identification number of the Notified Body involved and shall be accompanied by the following additional information:

- The name or identifying mark and address of the ETA-holder;
- The last two digits of the year in which the CE marking was affixed;
- The number of the EC certificate of conformity;
- The number of the European Technical Approval;
- The ETICS trade name;
- The number of the ETAG.

4 Assumptions under which the fitness of the product for the intended use was favourably assessed

4.1 Manufacturing

The European Technical Approval is issued for the ETICS on the basis of agreed data/information, deposited with the UBAtc, 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 the UBAtc before the changes are introduced. The UBAtc 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.

4.2 Installation

4.2.1 General

It is the responsibility of the ETA-holder to guarantee that the information about design and installation of this ETICS are easily accessible to the concerned people. This information can be given using reproductions of the respective parts of the European Technical Approval. 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.

In any case, the user shall to comply with the national regulations and particularly concerning fires and wind load resistance.

Only the components described in clause 1.1 with characteristics according to clause 2 of this ETA can be used for the ETICS.

The requirements given in ETAG 004, chapter 7, as well as the information of paragraphs 4.2.2 and 4.2.3 have to be considered.

4.2.2 Design

To bond the ETICS, the minimal bonded surface and the method of bonding shall comply with characteristics of the ETICS (see § 2.1.8.1 of this ETA) as well as the national regulations. In any case, the minimal bonded surface shall at least be 20%.

To mechanically fix the ETICS, the choice and the rate of the fixings shall be determined considering:

– The design wind load suction and the national regulations (taking into account the national safety factors, the design rules, …);
– The characteristic resistance of the anchors into the considered substrate (see installation parameters – effective anchorage depth, characteristic resistance ... – in the ETA of the anchor;
– The safety in use of the ETICS (cf. § 2.2.8), according to the method of fixing.

4.2.3 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:

– Chapter 7 of the ETAG 004 with, in the case of bonded ETICS, imperative removal of any existing organic finishes;
– National regulations in effect.

The particularities in execution linked to the different methods of fixing and the application of the rendering system shall be handled in accordance with ETA-holder prescriptions. In particular it is suitable to comply with the quantities of rendering applied, the thickness regularity and the drying periods between two layers.

5 Indication to the manufacturers

5.1 Packaging, transport and storage

Packaging of the components has to be such that the products are protected from moisture during transport and storage, unless other measures are foreseen by the manufacturer for this purpose.

The components have to be protected against damage.

It is the responsibility of the manufacturer to ensure that these provisions are easily accessible to the concerned people.

5.2 Use, maintenance and repair

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

Maintenance includes at least:

- the repairing of localised damaged areas due to accidents;
- the aspect maintenance with products adapted and compatible with the ETICS (possibly after washing and ad hoc reparation).

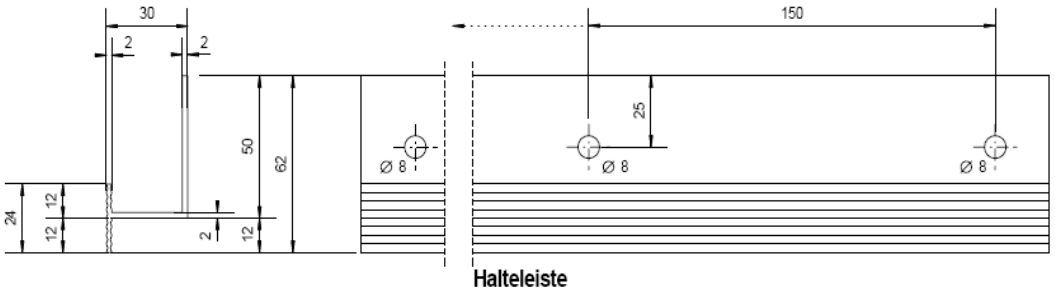
Necessary repairs should be done rapidly.

It is important to be able to carry out maintenance as far as possible using readily available products and equipment, without spoiling appearance.

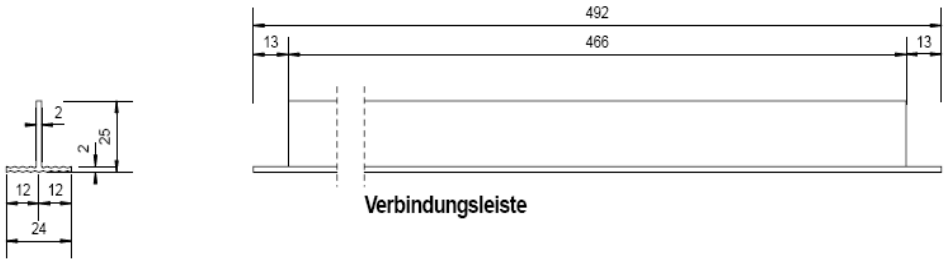
It is the responsibility of the manufacturer to ensure that these provisions are easily accessible to the concerned people.

PVC - Profile

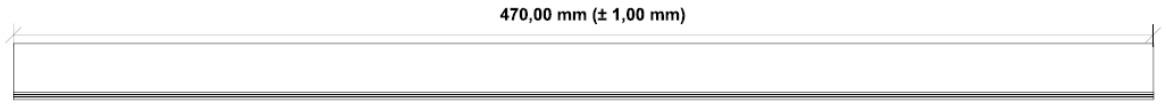
Werkstoff:
PVC-hart nach DIN 7748 (PVC-U; E D L P; 080-25-28)



Halteleiste



Verbindungsleiste



ETICS Granol'Therm EPS G/W	Annex 1 Of the European Technical Approval ETA 13/0360
Horizontal and vertical PVC profiles	