



**The Catalonia
Institute of Construction
Technology**

Wellington 19
ES-08018 Barcelona
Tel. +34 93 309 34 04
qualprod@itec.cat
www.itec.cat



www.eota.eu

European Technical Assessment

ETA 14/0365
of 28.07.2020



General part

Technical Assessment Organism issuing the ETA: ITeC

ITeC has been designed in agreement with Article 29 of the Regulation (UE) No 305/2011 and it is a member of EOTA (European Organisation for Technical Assessment).

Trade name of the construction product

webertherm etics

Product family to which the construction product belongs

Product Area Code: 04
External Thermal Insulation Composite Systems (ETICS) with rendering on EPS for the use as external insulation of building walls.

Manufacturer

Saint-Gobain Weber Cemarsa SA

Ctra. C-17 km. 2
ES-08110 Montcada i Reixac (Barcelona)
Spain
www.es.weber

Manufacturing plant(s)

According to Annex N kept by ITeC.

This European Technical Assessment contains

16 pages including 3 annexes which form an integral part of this assessment
and
Annex N, which contains confidential information and is not included in the European Technical Assessment when that assessment is publicly available.

This European Technical Assessment is issued in accordance with Regulation (EU) 305/2011, on the basis of

ETAG 004, edition 2000, amended August 2011, amended February 2013, used as European Assessment Document (EAD).

This ETA replaces

ETA 14/0365 issued on 06.03.2019.

General comments

Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document and should be identified as such.

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Specific parts of the European Technical Assessment

1 Technical description of the product

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

The ETICS kit comprises a prefabricated insulation product of expanded polystyrene (EPS) to be bonded onto a wall with supplementary mechanical fixings. The methods of fixing and the relevant components are specified in the table below. The insulation product is faced with a rendering system consisting of several layers (site applied), one of which contains reinforcement. The rendering is applied directly to the insulating panels, without any air gap or disconnecting layer.

The ETICS includes 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.

Composition of the ETICS:

	Components	Coverage (kg/m ²)	Thickness (mm)
Insulation material with associated method of fixing	Bonded ETICS with supplementary mechanical fixings (pursuant to ETA holder's instructions, the minimal bonded surface shall be 40%. National application documents shall be taken into account.)		
	<u>Adhesive:</u> webertherm base (cement base powder requiring addition of 21 % – 25 % water, 5,25 l - 6,25 l of water per 25 kg).	1,5 (powder)	4 to 10
	<u>Insulation product:</u> webertherm placa EPS . Panels of expanded polystyrene (EPS). See Annex 1 for product characteristics.	--	40 to 200
Base coat	webertherm base (cement base powder requiring addition of 21-25% water, 5,25-6,25 l of water per 25 kg). Identical with the equally named adhesive above.	1,5 (powder)	4 to 5
Glass fibre mesh	webertherm malla 160 : standard glass fibre mesh. See Annex 3 for product characteristics.	--	--
Key coat	webertene primer : ready to use water based alkali resistant dispersion of synthetic resins. This product has to be applied before the finishing coats:		
	<ul style="list-style-type: none"> - webertene classic XL - webertene classic L - webertene advance M - webertene advance S - webertene advance XS - webertene extraclean active 	0,5 (prepa- red)	--

	Components	Coverage (kg/m ²)	Thickness (mm)
Finishing coats	webertene classic XL: acrylic binder ready to use paste (particle size max 1,8 mm). Floated finishing aspect.	3,3	2,0
	webertene classic L: acrylic binder ready to use paste (particle size max 1,5 mm). Floated finishing aspect.	2,7	1,8
	webertene advance M: siloxane binder ready to use paste (particle size max. 1,2 mm). Floated finishing aspect.	1,95	1,5
	webertene advance S: siloxane binder ready to use paste (particle size max. 0,8 mm). Floated finishing aspect.	1,75	1,2
	webertene advance XS: siloxane binder ready to use paste (particle size max. 0,5 mm). Floated finishing aspect.	1,50	0,8
	webertene extraclean active: silicate binder ready to use paste (particle size max. 1,5 mm). Floated finishing aspect.	2,0 to 3,0	2,0 to 3,0
	webercal flexible: marble, organic resin powder with lime, pigments and additives. It requires the addition of 40-45 % water. Particle size max. 0,25 mm. Smooth finishing aspect.	0,8 to 1,0	1,0 to 1,5
Ancillary components	Supplementary fixings: - See Annex 2.		
	Other components: - webertherm perfil arranque: aluminium profile and its fixing device for its use in the base of the façade. - webertherm perfil goterón: PVC profile with an alkali resistant mesh for its use in corner, tops and sills of windows. - weberflex P100: polyurethane sealant, type F, class 25 HM (ISO 11600).		Remain under the ETA holder responsibility.

Table 1: Components of the ETICS **webertherm etics**.

2 Specification of the intended use(s) in accordance with the applicable EAD

This ETICS is intended for use as external insulation of buildings' walls. The walls are made of masonry (bricks, blocks, stones ...) or concrete (cast on site or as prefabricated panels). The characteristics of the walls shall be verified prior to use of the ETICS, especially regarding conditions for reaction to fire classification and for fixing of the ETICS either by bonding or mechanically. The ETICS is designed to give the wall to which it is applied satisfactory thermal insulation.

The ETICS is made of non load-bearing construction components. 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 choice of the method of fixing depends on the characteristics of the substrate, which may need preparation (see section 7.2.1 of the ETAG 004¹) and shall be done in accordance with the national instructions.

The provisions made in this ETA are based on an assumed working life of at least 25 years for **webertherm etics** system. These provisions are based upon the current state of the art and the available knowledge and experience.

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 mean for choosing the right products in relation to the expected economically reasonable working life of the works.

3 Performance of the product and reference to the methods used for its assessment

Performance of the system **webertherm etics** related to the basic requirements for construction works (hereinafter BWR) were determined according to ETAG 004 for *External Thermal Insulation Composite Systems (ETICS) with Rendering*¹ used as EAD. Essential characteristics of **webertherm etics** are indicated in the following sections.

3.1 Mechanical resistance and stability (BWR 1)

Not relevant.

3.2 Safety in case of fire (BWR 2)

3.2.1 Reaction to fire

ETAG 004, clause 5.1.2.1.

The reaction to fire of the system **webertherm etics** according to EN 13501-1 is defined in table 2.

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 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.

¹ ETAG 004 for *External Thermal Insulation Composite Systems (ETICS) with Rendering* (edition 2000, amended August 2011, amended February 2013).

Configuration	Max. organic content (% weight)	Max. heat of combustion (MJ/kg)	Flame retardant content	Reaction to fire class according to EN 13501-1
Configuration 1:				
• Adhesive	2,9	0,59		
• Insulation	(*)	(*)		
• Base coat	2,9	0,59		
• Key coat	13	6,68		
• Finishing coat:				
- webertene classic XL	7,5	2,38	No flame retardant	B-s1,d0
- webertene classic L	7,5	2,49		
- webertene advance M	7,5	2,68		
- webertene advance S	7,5	2,14		
- webertene advance XS	7,5	2,13		
- webertene extraclean active	4,5	2,24		
• Glass fibre mesh	20	4,49		
Configuration 2:				
• Adhesive	2,9	0,59	No flame retardant	B-s2,d0
• Insulation	(*)	(*)		
• Base coat	2,9	0,59		
• Finishing coat (webercal flexible)	22,0	4,61		
• Glass fibre mesh	20,0	4,49		

(*) In quantity ensuring Euroclass E according to EN 13501-1.

Table 2: Configuration, maximum organic content, maximum heat of combustion, flame retardant content and reaction to fire class according to EN 13501-1.

3.3 Hygiene, health and environment (BWR 3)

3.3.1 Water absorption

ETAG 004, clause 5.1.3.1.

Base coat **webertherm base:**

- Water absorption after 1 hour < 1 kg/m²
- Water absorption after 24 hours < 0,5 kg/m²

Rendering system Base coat + key coat (if necessary) + finishing coats, indicated hereafter:	Water absorption after 24 hours (kg/m ²)
webertherm base + webertene primer + webertene classic XL	< 0,5
webertherm base + webertene primer + webertene classic L	< 0,5
webertherm base + webertene primer + webertene advance M	< 0,5
webertherm base + webertene primer + webertene advance S	< 0,5
webertherm base + webertene primer + webertene advance XS	< 0,5
webertherm base + webertene primer + webertene extraclean active	< 0,5
webertherm base + webercal flexible	< 0,5

Table 3: Water absorption test results (mean values).

3.3.2 Watertightness

3.3.2.1 Hygrothermal behaviour

ETAG 004, clause 5.1.3.2.1.

Pass (without defects).

3.3.2.2 Freeze-thaw behaviour

ETAG 004, clause 5.1.3.2.2.

According to the water absorption test results, all combinations are freeze-thaw resistant.

3.3.3 Impact resistance

ETAG 004, clause 5.1.3.3.

Rendering system Base coat + key coat (if necessary) + finishing coats, indicated hereafter:	Characteristics	Category of use
webertherm base + webertene primer + webertene classic XL	Particle size max. 1,8 mm. Floated finishing aspect.	I
webertherm base + webertene primer + webertene classic L	Particle size max. 1,5 mm. Floated finishing aspect.	I
webertherm base + webertene primer + webertene advance M	Particle size max. 1,2 mm. Floated finishing aspect.	I
webertherm base + webertene primer + webertene advance S	Particle size max. 0,8 mm. Floated finishing aspect.	II
webertherm base + webertene primer + webertene advance XS	Particle size max. 0,5 mm. Floated finishing aspect.	III
webertherm base + webertene primer + webertene extraclean active	Particle size max. 1,5 mm. Floated finishing aspect.	III
webertherm base + webercal flexible	Particle size max. 0,25 mm. Smooth finishing aspect.	II

Table 4: Category of use according impact resistance test results.

3.3.4 Water vapour permeability

ETAG 004, clause 5.1.3.4.

Rendering system Base coat + key coat (if necessary) + finishing coats, indicated hereafter:	Characteristics	Equivalent air thickness S_d (m)
webertherm base + webertene primer + webertene classic XL	Particle size max. 1,8 mm. Floated finishing aspect.	≤ 1,0
webertherm base + webertene primer + webertene classic L	Particle size max. 1,5 mm. Floated finishing aspect.	≤ 1,0
webertherm base + webertene primer + webertene advance M	Particle size max. 1,2 mm. Floated finishing aspect.	≤ 1,0
webertherm base + webertene primer + webertene advance S	Particle size max. 0,8 mm. Floated finishing aspect.	≤ 1,0

Rendering system Base coat + key coat (if necessary) + finishing coats, indicated hereafter:	Characteristics	Equivalent air thickness S_d (m)
webertherm base + webertene primer + webertene advance XS	Particle size max. 0,5 mm. Floated finishing aspect.	$\leq 1,0$
webertherm base + webertene primer + webertene extraclean active	Particle size max. 1,5 mm. Floated finishing aspect.	$\leq 1,0$
webertherm base + webercal flexible	Particle size max. 0,25 mm. Smooth finishing aspect.	$\leq 1,0$

Table 5: Water vapour permeability test results.

3.3.5 Release of dangerous substances

ETAG 004, clause 5.1.3.5.

Not assessed.

3.4 Safety and accessibility in use (BWR 4)

3.4.1 Bond strength between base coat and insulation product

ETAG 004, clause 5.1.4.1.1.

Bond strength between base coat and insulation product: > 0,08 MPa (cohesive rupture in the insulation).

3.4.2 Bond strength between adhesive and substrate / insulation product

ETAG 004, clauses 5.1.4.1.2 and 5.1.4.1.3.

Adhesive	Substrate / Insulation	Bond strength (MPa)		
		Initial state	Conditionings: 48 h immersion in water + 2 h 23 °C and 50% RH	48 h immersion in water + 7 days 23 °C and 50% RH
webertherm base	Concrete	$\geq 0,25$	$\geq 0,08$	$\geq 0,25$
	EPS	$\geq 0,08$	$\geq 0,03^*$	$\geq 0,08$

Note: Cohesive rupture in the insulation product in all cases with the exception of case indicated with an asterisk in which some samples had adhesive ruptures and other samples had mixt ruptures (partially adhesive and partially cohesive in the insulation product).

Table 6: Bond strength between adhesive and substrate/insulation product test results.

3.4.3 Fixing strength*ETAG 004, clause 5.1.4.2.*

Test not required (no limitation of ETICS length).

3.4.4 Wind load resistance*ETAG 004, clause 5.1.4.3.*

Not relevant (bonded system).

3.4.5 Render strip tensile test*ETAG 004, clause 5.5.4.1.*

Not assessed.

3.5 Protection against noise (BWR 5)*ETAG 004, clause 5.1.5.*

Not assessed.

3.6 Energy economy and heat retention (BWR 6)*ETAG 004, clause 5.1.6.*

The thermal resistance of the ETICS is calculated as follows (see table below):

Insulation product	Thermal conductivity (W/m·K)	Thickness ¹ (mm)	Thermal resistance (m ² ·K/W) ⁽²⁾		
			R _{insulation}	R _{render}	R _{ETICS}
webertherm placa EPS	0,037	40	1,08	0,02	1,10
		200	5,41		5,43

(1) Minimum and maximum thickness considered in the ETA.

(2) R_{insulation}: thermal resistance of the insulation panel (in accordance with the Declaration of Performance of the insulation panels).R_{render}: thermal resistance of the render (base coat + key coat + finishing coat). See section 5.1.6.1 of ETAG 004.R_{ETICS}: thermal resistance of the ETICS (R_{ETICS} = R_{insulation} + R_{render}).**Table 7:** Thermal resistance of the ETICS.

The thermal transmittance of the substrate wall covered by the ETICS is calculated in accordance with the standard EN ISO 6946:

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

- Where: $\chi_p^* n$: has to be taken into account only if it is greater than 0,04 W/(m²·K).
 U_c : global (corrected) thermal transmittance of the covered wall W/(m²·K).
 n : number of anchors (through insulation product) per m².
 χ_p : local influence of thermal bridge caused by anchor. The values listed below can be taken into account if not specified in the anchor's ETA:
 = 0,002 W/K for anchors with a stainless steel screw covered by plastic material and for anchors with an air gap at the head of the screw ($\chi_p^* n$ negligible for $n < 20$).
 = 0,004 W/K for anchors with a galvanized steel screw with the head covered by a plastic material ($\chi_p^* n$ negligible for $n < 10$).
 = 0,008 W/K for all other anchors (worst case).
 The influence of thermal bridges can also be calculated as described in EN ISO 10211.
- U : thermal transmittance of the normal part of the covered wall (excluding thermal bridges) (W/(m²·K)) determined as follows:

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

Where:

- R_i : thermal resistance of the insulation product (according to declaration of performance) in (m²·K)/W.
 R_{render} : thermal resistance of the render (about 0,02 (m²·K)/W).
 $R_{\text{substrate}}$: thermal resistance of the substrate of the building (concrete, brick...) in (m²·K)/W.
 R_{se} : external surface thermal resistance in (m²·K)/W.
 R_{si} : internal surface thermal resistance in (m²·K)/W.

3.7 Aspects of durability and serviceability

Bond strength after ageing (ETAG 004, clauses 5.1.7.1.1 and 5.1.7.1.2).

Rendering system tested	Bond strength (MPa)
<i>Base coat</i>	
webertherm base	≥ 0,08
<i>Base coat + key coat (if necessary) + finishing coats, indicated hereafter:</i>	
webertherm base + webertene primer + webertene classic XL	≥ 0,08
webertherm base + webertene primer + webertene classic L	≥ 0,08

Rendering system tested	Bond strength (MPa)
webertherm base + webertene primer + webertene advance M	≥ 0,08
webertherm base + webertene primer + webertene advance S	≥ 0,08
webertherm base + webertene primer + webertene advance XS	≥ 0,08
webertherm base + webertene primer + webertene extraclean active	≥ 0,08
webertherm base + webercal flexible	≥ 0,08

Note: cohesive rupture in the insulation for all cases.

Table 8: Bond strength test results (mean values).

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 amended by Decision 2001/596/EC, as amended of the European Commission², the systems of AVCP (see EC delegated regulation (EU) No 568/2014 amending Annex V to Regulation (EU) 305/2011) given in the table 9 applies.

Trade name of the system	Intended use(s)	Level(s) or class(es) (Reaction to fire)	AVCP system
webertherm etics	External thermal insulation composite system/kits (ETICS) with rendering in external walls subject to fire regulations.	A1 ⁽²⁾ , A2 ⁽²⁾ , B ⁽²⁾ , C ⁽²⁾ , D, E, F or A1 ⁽³⁾ to E ⁽³⁾	2+
	External thermal insulation composite system/kits (ETICS) with rendering in external walls not subject to fire regulations.	Any	2+

Note:

- (1) Products/material 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 require to be tested for reaction to fire (e.g. products/materials of classes A1 according to Commission Decision 96/603/EC).

Table 9: Applicable AVPC system.

² Official Journal of the European Union (OJEU) L229/15 of 20/08/1997.

Official Journal of the European Union (OJEU) L209/33 of 02/08/2011.

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

All the necessary technical details for the implementation of the AVCP system are laid down in the *Control Plan* deposited with the ITeC³, with which the factory production control shall be in accordance.

Products not manufactured by the kit manufacturer shall also be controlled according to the Control Plan.

Where materials/components are not manufactured and tested by the supplier in accordance with agreed methods, then they shall be subject to suitable checks/tests by the kit manufacturer before acceptance.

Any change in the manufacturing procedure which may affect the properties of the product shall be notified and the necessary type-testing revised according to the *Control Plan*.

Issued in Barcelona on 28 July 2020

by the Catalonia Institute of Construction Technology.



Ferran Bermejo Nualart
Technical Director, ITeC

³ The *Control Plan* is a confidential part of the ETA and is only handed over to the notified certification body involved in the assessment and verification of constancy of performance.

ANNEX 1: Insulation product characteristics

Description and characteristics		EPS panels
Trade name	webertherm placa EPS	
Description	Factory-prefabricated uncoated boards for bonded ETICS, made of expanded polystyrene (EPS) according to EN 13163	
Reaction to fire EN 13501-1	E [Density: 15-20 kg/m ³]	
Thermal resistance ((m ² ·K)/W)	acc. to the Declaration of Performance	
Thermal conductivity (W/(m·K))	0,037	
Thickness EN 823	T2	
Length EN 822	L2	
Width EN 822	W2	
Squareness EN 824	S2	
Flatness EN 825	P5	
Dimensional stability under:	specified temperature and humidity EN 1604	DS(70,-)1, DS(70,90)1
	laboratory conditions EN 1603	DS(N)2
Tensile strength (kPa) EN 1607	≥ 150 (TR150)	
Compression strength (kPa) EN 826	< 60 CS(10)60	
Water absorption (total immersion) EN 12087	WL(T)5	
Water vapour diffusion resistance factor (μ) EN 12086	MU60	
Shear strength (N/mm ²) EN 12090	≥ 0,02	
Shear modulus (N/mm ²) EN 12090	≥ 1,0	

Table 10: Characteristics of insulation product (EPS panels).

ANNEX 2: Anchor characteristics

Trade name	ETA reference	Mounting ⁽¹⁾	Plate stiffness (kN/mm)
webertherm espiga H3	ETA 14/0130	Surface assembly	≥ 0,6
webertherm espiga SLD 5	ETA 17/0077	Surface assembly	≥ 0,6
webertherm espiga SRD 5	ETA 17/0077	Surface assembly	≥ 0,6
webertherm espiga STR U 2G	ETA 04/0023	Surface assembly	≥ 0,6

Notes:

Anchors with an ETA according to ETAG 014 used as EAD or according to EAD 330335-00-0604.

The anchors are composed of a plastic expansion sleeve with a plate with a diameter of 60 mm, and a plastic or metallic nail or screw.

Use categories and characteristic resistances in the substrate are given in each anchor's ETA.

Table 11: Characteristics of anchors for insulation products.

ANNEX 3: Glass fibre mesh characteristics

Trade name and description	Residual resistance after ageing in alkaline solution (N/mm)		Relative residual resistance: % of the strength value after ageing in alkaline solution in relation to the as-delivered state	
	Warp	Weft	Warp	Weft
webertherm malla 160 Standard glass fibre mesh applied in one layer. Mesh size 3,5 mm x 3,8 mm	≥ 20	≥ 20	≥ 50	≥ 50

Table 12: Glass fibre mesh characteristics.