



Austrian Institute of Construction Engineering
Schenkenstrasse 4 | T+43 1 533 65 50
1010 Vienna | Austria | F+43 1 533 64 23
www.oib.or.at | mail@oib.or.at



European Technical Assessment

ETA-15/0731
of 20.02.2020

General part

Technical Assessment Body issuing the European Technical Assessment:

Österreichisches Institut für Bautechnik (OIB)
Austrian Institute of Construction Engineering

Trade name:

best wood SCHNEIDER®
Wärmedämmverbundsystem

Product family to which the construction product belongs:

External Thermal Insulation Composite Systems with rendering on wood fibre (WF) for the use as external insulation to walls of buildings.

Manufacturer:

Holzwerk Gebrüder Schneider GmbH
Kappel 28
88436 Eberhardzell
Germany

Manufacturing plant:

Holzwerk Gebrüder Schneider GmbH
Kappel 28
88436 Eberhardzell
Germany

This European Technical Assessment contains:

20 pages

This European Technical Assessment is issued in accordance with regulation (EU) No 305/2011, on the basis of:

Guideline for Technical Approval (ETAG) 004 "External Thermal Insulation Composite Systems with Rendering", edition 2013, used as European Assessment Document (EAD)

This European Technical Assessment replaces:

European Technical Assessment ETA-15/0731 issued on 17.02.2017

This European Technical Assessment is not to be transferred to manufacturers or agents of manufacturer other than those indicated on page 1, or manufacturing plants other than those laid down in the context of this European Technical Assessment.

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

Communication of this European Technical Assessment, including transmission by electronic means, shall be in full. However, partial reproduction can be made with the written consent of the Österreichisches Institut für Bautechnik. In this case, partial reproduction has to be designated as such.

This European Technical Assessment may be withdrawn by the Österreichisches Institut für Bautechnik, in particular pursuant to information by the Commission according to Article 25 (3) of Regulation (EU) No 305/2011.

electronic copy
electronic copy
electronic copy
electronic copy
electronic copy
electronic copy
electronic copy

1.2 Composition of the kit

1.2.1 Composition of the ETICS

	Components	Coverage (kg/m ²)	Thickness (mm)
Insulation materials with associated methods of fixing	Mechanically fixed ETICS with anchors and supplementary adhesive		
	➤ Insulation product: best wood WALL 180/WALL 180 D best wood WALL 140 best wood WALL 110	-	20 to 180 20 to 240 60 to 240
	➤ Adhesives: Aggregates, cement, sand, synthetic resin dispersion powder, additives		
	- best wood Klebe- und Armierungsmörtel (UP)	2,0 to 10,0 (Powder)	/
	- FIXIT 439 [IA 680]	2,0 to 10,0 (Powder)	/
	- HASIT Dieplast 860 Light [IA 680]		
	- KREISEL IA 680		
	- RÖFIX Unistar LIGHT [IA 680]		
	- FIXIT 435 [IA 710]	3,0 to 12,0 (Powder)	/
	- HASIT Dieplast 804 [IA 710]		
	- KREISEL IA 710		
	- RÖFIX Polystar [IA 710]		
	- FIXIT 435 [IA 720]	3,0 to 12,0 (Powder)	/
- HASIT Dieplast 804 [IA 720]			
- KREISEL IA 720			
- RÖFIX Polystar [IA 720]			
- SCHWENK Spachtelkleber SK leicht	3,5 to 6,0 (powder)	/	
- weber.therm family KS grob	ca. 5 (powder)	/	
- weber.therm freestyle KS	ca. 5 (pow- der)	/	
- weber.therm prestige KS	ca. 5 (pow- der)	/	
- weber.therm 301	3,5 to 6,0 (powder)	/	
- villerit InnoTherm Klebe- und Armierungsmörtel	3,5 to 6,0 (powder)	/	

	Components	Coverage (kg/m²)	Thickness (mm)
Base coat	- Baunit multiContact MC 55W	3,5 to 6,0 (powder)	5,0 to 8,0
	- Baunit Dickschicht Klebespachtel	3,5 to 6,0 (powder)	5,0 to 8,0
	- Baunit KlebeSpachtel light	3,5 to 6,0 (powder)	5,0 to 8,0
Glass fibre mesh	➤ Standard glass fibre mesh: Mesh size between 3 mm and 6 mm:		
	- best wood Armierungsgewebe	/	/
	- villerit Armierungsgewebe fein	/	/
	- FIXIT Armierungsgewebe	/	/
	- HASIT Armierungsgewebe	/	/
	- KREISEL Armierungsgewebe	/	/
	- RÖFIX Armierungsgewebe	/	/
	- SCHWENK Armierungsgewebe	/	/
	- Weber.therm 311	/	/
	- weber.therm Textilglasgittergewebe	/	/
	- armature trame G2	/	/
- Baunit StarTex Fein	/	/	
- Baunit TextilglasGitter	/	/	
Key coat	Organic based with mineral fillers and pigments:		
	- FIXIT Putzgrund [SP 300]	0,25 (liquid)	/
	- HASIT Putzgrund [SP 300]		
	- KREISEL Putzgrund [SP 300]		
	- RÖFIX Putzgrund [SP 300]		
	- FIXIT Putzgrund PREMIUM [SP 310]	0,25 (liquid)	/
	- HASIT Putzgrund PREMIUM [SP 310]		
	- KREISEL Putzgrund PREMIUM [SP 310]		
	- RÖFIX Putzgrund PREMIUM [SP 310]		
	- SCHWENK Grund	0,30 (liquid)	/
- Baunit PremiumPrimer DG 27	0,25 (liquid)	/	
- Baunit UniPrimer	0,25 (liquid)	/	
- Baunit PremiumPrimer	0,25 (liquid)	/	

	Components	Coverage (kg/m ²)	Thickness (mm)
Finishing paint	<ul style="list-style-type: none"> ➤ Ready to use finishing paint Silicon emulsion and water based acrylic binder, aggregates, additives: <ul style="list-style-type: none"> - FIXIT PE 429 - HASIT PE 429 - KREISEL PE 429 - RÖFIX PE 429 	0,2 to 0,4 l (liquid)	/
	<ul style="list-style-type: none"> ➤ Silicate emulsion and water based acrylic binder, aggregates, additives: <ul style="list-style-type: none"> - FIXIT PE 228, FIXIT PE 229 - HASIT PE 228, HASIT PE 229 - KREISEL PE 228, KREISEL PE 229 - RÖFIX PE 229 	0,2 to 0,4 l (liquid)	/
	<ul style="list-style-type: none"> ➤ Silicate emulsion, silicon resin emulsion, water based acrylic binder, aggregates, additives: <ul style="list-style-type: none"> - FIXIT PE 516, FIXIT PE 519 - HASIT PE 516, HASIT PE 519 - KREISEL PE 516, KREISEL PE 519 - RÖFIX PE 516, RÖFIX PE 519 	0,2 to 0,4 l (liquid)	/
	<ul style="list-style-type: none"> ➤ Silicate emulsion, silicon resin emulsion, water based acrylic binder, aggregates, additives: <ul style="list-style-type: none"> - FIXIT PE 319 - HASIT PE 319 - KREISEL PE 319 - RÖFIX PE 319 	0,2 to 0,4 l (liquid)	/
	<ul style="list-style-type: none"> ➤ Ready to use finishing paint – silicon resin: <ul style="list-style-type: none"> - SCHWENK Silikonharzfinish - best wood Silikonharzfarbe - Villerit Siliconharzfarbe 	0,2 to 0,4 l (liquid)	/
Ancillary materials	Descriptions in accordance with § 3.2.2.5 of the ETAG 004 used as EAD Remain under the ETA-holder responsibilities		

1.2.2 Characteristics of the insulation product

Descriptions and characteristics	best wood WALL 180/ best wood WALL 180 D
Reaction to fire / EN 13501-1	Euroclass E - Thickness: 20 mm to 180 mm - density: 180 kg/m ³
Thermal resistance ((m ² .K)/W)	Defined in the CE marking in ref. to EN 13171 "Thermal insulation products for buildings" -Factory made wood fibre (WF) products
Designation Code	WF-EN13171-T4-CS(10\Y)150-TR30-WS1,0-AF100-MU3
Water absorption (partial immersion) / EN 1609	≤ 1,0 kg/m ²
Water vapour diffusion resistance factor (μ) / EN 12086	≤ 3

Descriptions and characteristics	best wood WALL 140
Reaction to fire / EN 13501-1	Euroclass E - Thickness: 20 mm to 240 mm - density: 140 kg/m ³
Thermal resistance ((m ² .K)/W)	Defined in the CE marking in ref. to EN 13171 "Thermal insulation products for buildings" -Factory made wood fibre (WF) products
Designation Code	WF-EN13171-T4-CS(10\Y)100-TR20-WS1,0-AF75-MU3
Water absorption (partial immersion) / EN 1609	≤ 1,0 kg/m ²
Water vapour diffusion resistance factor (μ) / EN 12086	≤ 3

Descriptions and characteristics	best wood WALL 110
Reaction to fire / EN 13501-1	Euroclass E - Thickness: 60 mm to 240 mm - density: 110 kg/m ³
Thermal resistance ((m ² .K)/W)	Defined in the CE marking in ref. to EN 13171 "Thermal insulation products for buildings" -Factory made wood fibre (WF) products
Designation Code	WF-EN13171-T4-CS(10\Y)50-TR15-WS1,0-AF50-MU3
Water absorption (partial immersion) / EN 1609	≤ 1,0 kg/m ²
Water vapour diffusion resistance factor (μ) / EN 12086	≤ 3

1.2.3 Anchors

Anchors used with valid ETA according to ETAG 014 "Plastic Anchors For Fixing Of External Thermal Insulation Composite Systems With Rendering" shown in the control plan and the declaration of performance.

1.2.4 Render

The average value of the crack width of the base coat with the glass fibre mesh, measured at a render strain value of 50% is about 0,1 mm.

1.2.5 Glass fibres meshes

	Alkalis resistance			
	Residual resistance after ageing (N/mm)		Relative residual resistance: % (after ageing) of the strength in the as delivered state	
	Warp	Weft	Warp	Weft
Glass fibre meshes acc. to clause 1.2.1 with mesh size between 3 mm and 6 mm	≥ 20	≥ 20	≥ 50	≥ 50

1.3 Manufacturing

The European Technical Assessment is issued for ETICS on the basis of agreed data / information, deposited with the Österreichisches Institut für Bautechnik, which identifies the ETICS that has been assessed and judged. Changes to the ETICS or production process, which could result in this deposited data/information being incorrect, shall be notified to the Österreichisches Institut für Bautechnik before the changes are introduced. The Österreichisches Institut für Bautechnik 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.

1.4 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 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 done taking into account general assumptions introduced in the ETAG 004, 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.

1.5 Packaging, transport and storage

The information on packaging, transport and storage 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.

1.6 Use, maintenance and repair

The finishing coat shall normally be 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 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.

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

This ETICS is intended for use as external insulation of buildings' walls. The walls are made of masonry (bricks, blocks, stones,...), concrete (cast on site or as prefabricated panels) or cement-bonded panels. The characteristics of 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 bonded and mechanically. The ETICS is designed to give the wall to which it is applied satisfactory thermal insulation.

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 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 durability by providing enhanced protection from the effect of weathering.

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 § 7.2.1 of the ETAG 004) and shall be done in accordance with the national instructions.

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

3.1 Reaction to fire

Configuration according to clause 1.2.1	Maximum declared organic content of the rendering system	Minimum declared flame retardant content of the rendering system	Euroclass according to EN 13501-1 : 2002
Schneider Wärmedämmverbundsystem mit best wood Putzsystem	Base coat: 3,1 % Finishing coat: 4,8 %	Base coat: 0 % Finishing coat: 0 %	B – s1, d0
Schneider Wärmedämmverbundsystem mit FIXIT Putzsystem HASIT Putzsystem KREISEL Putzsystem RÖFIX Putzsystem	Base coat: 4,9 % Finishing coat: 4,9 %	Base coat: 0 % Finishing coat: 0 %	B – s1, d0
Schneider Wärmedämmverbundsystem mit SCHWENK Putzsystem	Base coat: 4,6 % Finishing coat: 6,5 %	Base coat: 0 % Finishing coat: 0 %	B – s1, d0
Schneider Wärmedämmverbundsystem mit weber-Putzsystem	Base coat: ≤ 2,3% Finishing coat: ≤ 1,7 bzw ≤ 8,7%	Base coat: 0 % Finishing coat: 0 %	B – s1, d0
Schneider Wärmedämmverbundsystem mit villerit-Putzsystem	Base coat: 3,1 % Finishing coat: 4,8 %	Base coat: 0 % Finishing coat: 0 %	B – s1, d0
Schneider Wärmedämmverbundsystem mit Baumit-Putzsystem	Base coat: 3,5 % Finishing coat: 9,7 %	Base coat: 0 % Finishing coat: 0 %	B – s1, 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.

3.2 Water absorption (capillarity test)

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

➤ Rendering system:

		Water absorption after 24 hours	
		< 0,5 kg/m ²	≥ 0,5 kg/m ²
Rendering systems: base coat (incl. key coat acc. to cl. 1.2.1) + finishing coats indicated hereafter:	All finishing coats (paste) used in this system according to clause 1.2.1 of this ETA	X	
	All finishing coats (powder) used in this system according to clause 1.2.1 of this ETA	X	

3.3 Watertightness

Passed without defects.

3.4 Impact resistance

		Single layer	Double layer
Rendering systems: base coat (incl. key coat acc. to cl. 1.2.1) + finishing coats indicated hereafter:	All finishing coats (paste) used in this system according to clause 1.2.1 of this ETA	Category II	Category I
	All finishing coats (powder) used in this system according to clause 1.2.1 of this ETA	Category II	Category I

3.5 Water vapour permeability

		Equivalent air thickness (m)
Rendering systems: base coat (incl. key coat acc. to cl. 1.2.1) + finishing coats indicated hereafter:	best wood Mineralischer Oberputz (MOP) Kratzputzstruktur	$\leq 1,0$ m (test result obtained with particle size 3,0 mm: 0,1 m)
	best wood Mineralischer Oberputz (MOP) Rillenputzstruktur	$\leq 1,0$ m (test result obtained with particle size 3,0 mm: 0,1 m)
	best wood Mineralischer Oberputz (MOP) Modellierputzstruktur	$\leq 1,0$ m (test result obtained with particle size 3,0 mm: 0,1 m)
	best wood Mineralischer Oberputz (SOP) Siliconharz Oberputz	$\leq 1,0$ m (test result obtained with particle size 2,0 mm: 0,4 m)

		Equivalent air thickness (m)
Rendering systems: base coat (incl. key coat acc. to cl. 1.2.1) + finishing coats indicated hereafter:	FIXIT 714, FIXIT 715, FIXIT 716, FIXIT 777, HASIT 252, HASIT 704 [SE 714], HASIT 705, HASIT 709 [SE 716], HASIT 715 [SE 715], HASIT 725, KREISEL 714, KREISEL 715, KREISEL 716, RÖFIX SE 714, RÖFIX 715 [SE 715], RÖFIX SE 716, RÖFIX 772	$\leq 1,0$ m (test result obtained with particle size 2,0 mm: 0,1 m)

3.6 Dangerous substances

According to the manufacturer's declaration this system does not contain dangerous substances detailed in Council Directive 67/548/EEC and Regulation (EC) no 1272/2008 as well as EOTA TR 034 (General ER 3 Checklist for ETAGs/CUAPs/ETAs- Content and/or release of dangerous substances in products/kits), edition March 2012.

A written declaration in this respect was submitted by the ETA-holder.

In addition to the specific clauses relating to dangerous substances contained in this European Technical Assessment, there may be other requirements applicable to the products 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 Products Regulation, these requirements need also to be complied with, when and where they apply.

3.7 Bond strength between all base coat and insulation product

Conditionings	
Initial state	After the hygrothermal cycles (on the rig)
$\leq 0,08 \text{ MPa}$ (Failure in insulation product)	$\leq 0,08 \text{ MPa}$ (Failure in insulation product)

3.8 Adhesives onto substrate and insulation product (safety in use of the bonded ETICS)

		Initial state	After the hygrothermal cycles (on the rig)	After the freeze/thaw cycles (on samples)
All adhesives used in this system acc. to clause 1.2.1 of this ETA of FIXIT, HASIT, KREISEL, RÖFIX	concrete	$\geq 0,25 \text{ MPa}$	$\geq 0,08 \text{ MPa}$	$\geq 0,25 \text{ MPa}$
	Insulation product 1, 2, 3	$< 0,08 \text{ MPa}$ but failure into insulation product	$< 0,03 \text{ MPa}$ but failure into insulation product	$< 0,08 \text{ MPa}$ but failure into insulation product
SCHWENK Spachtelkleber SK leicht	concrete	$\geq 0,25 \text{ MPa}$	$\geq 0,08 \text{ MPa}$	$\geq 0,25 \text{ MPa}$
	Insulation product 1, 2, 3	$< 0,08 \text{ MPa}$ but failure into insulation product	$< 0,03 \text{ MPa}$ but failure into insulation product	$< 0,08 \text{ MPa}$ but failure into insulation product
All adhesives used in this system acc. to clause 1.2.1 of this ETA of Weber	concrete	$\geq 0,25 \text{ MPa}$	$\geq 0,08 \text{ MPa}$	$\geq 0,25 \text{ MPa}$
	Insulation product 1, 2, 3	$< 0,08 \text{ MPa}$ but failure into insulation product	$< 0,03 \text{ MPa}$ but failure into insulation product	$< 0,08 \text{ MPa}$ but failure into insulation product
villerit InnoTherm Klebe- und Armierungsmörtel	concrete	$\geq 0,25 \text{ MPa}$	$\geq 0,08 \text{ MPa}$	$\geq 0,25 \text{ MPa}$
	Insulation product 1, 2, 3	$< 0,08 \text{ MPa}$ but failure into insulation product	$< 0,03 \text{ MPa}$ but failure into insulation product	$< 0,08 \text{ MPa}$ but failure into insulation product
All adhesives used in this system acc. to clause 1.2.1 of Baunit	concrete	$\geq 0,25 \text{ MPa}$	$\geq 0,08 \text{ MPa}$	$\geq 0,25 \text{ MPa}$
	Insulation product 1, 2, 3	$< 0,08 \text{ MPa}$ but failure into insulation product	$< 0,03 \text{ MPa}$ but failure into insulation product	$< 0,08 \text{ MPa}$ but failure into insulation product

3.9 Fixing strength (displacement test)

U_e (displacement corresponding to the elasticity limit) = 2,5 mm

3.10 Wind load resistance

3.10.1 Safety in use of mechanically fixed ETICS using anchors

3.10.1.1 Dynamic wind uplift test

Anchors for which the following failure loads apply	All anchors according to clause 1.2.3	
	Plate diameter (mm)	≥ 60
Characteristics of the insulation product panels for which the following failure loads apply	Thickness (mm)	60
	Tensile strength perpendicular to the face (kPa)	≥ 10

For all calculations the following formula shall be used:

$$R_d = \frac{2}{m}$$

$$R_d \geq S_d$$

where:

R_d: design resistance

S_d: wind load suction

m: national safety factor of resistance for normal materials (partial safety factor to be chosen in function of the type of failure which occurred and the ageing of material properties concerned).

The above given loads apply for all anchors if they meet the following criteria:

- valid ETA according to ETAG 014
- plate stiffness of anchors ≥ 0,3 kN/mm
- load resistance of anchor plate ≥ 1,0 kN
- anchors mounted on the insulation panel surface or with the minimal residual thickness of the insulation product as stated above

3.10.1.2 Wind load resistance of mechanically fixed ETICS

Apply to all anchors listed in the clause 3.10.1 mounted on the insulation panels surface			
Characteristics of best wood Wall 110	Thickness		≥ 60 mm
	Tensile strength perpendicular to the faces		≥ 15 kPa
Plate diameter of anchor			∅ 60 mm
Failure loads [N]	Anchors placed not at the panel joint of the insulation (Static Foam Block test in conjunction with Displacement Test)	R _{panel,DT}	Minimal: 368 Average: 397
	Anchors placed not at the panel joint of the insulation product (Pull-through test)	R _{panel,PT}	Minimal: 554 Average: 564
<i>Anchors not placed at the panel joints.</i>			

Apply to all anchors listed in the clause 3.10.1 mounted on the insulation panels surface			
Characteristics of best wood Wall 140	Thickness		≥ 60 mm
	Tensile strength perpendicular to the faces		≥ 20 kPa
Characteristics of best wood Wall 180	Thickness		≥ 40 mm
	Tensile strength perpendicular to the faces		≥ 30 kPa
Plate diameter of anchor			∅ 60 mm
Failure loads [N]	Anchors placed not at the panel joints of the insulation (Static Foam Block Test in conjunction with Displacement Test)	R _{panel,DT}	Minimal: 566 Average: 607
	Anchors placed not at the panel joints of the insulation (Pull-through test)	R _{panel,PT}	Minimal: 762 Average: 813
	Anchors placed at the panel joints (Pull-through test)	R _{joint,PT}	Minimal: 567 Average: 573

3.11 Thermal resistance

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

$$U = U_c + \chi_{p,n}$$

Where: $\chi_{p,n}$ has only to be taken into account if it is greater than 0,04 W/(m²·K)

U: global 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 an 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 anchors 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)

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

U_c: thermal transmittance of the current part of the covered wall (excluding thermal bridges) (W/ (m²·K)) determined as follows:

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

Where: R_i: thermal resistance of the insulation product (according to declaration in reference to EN 13163) in (m²·K)/W

R_{render}: thermal resistance of the render (about 0.02 in (m²·K)/W)

R_{substrate}: thermal resistance of the substrate of the building (concrete, brick ...) in (m²·K)/W

R_{se}: external superficial thermal resistance in (m²·K)/W

R_{si}: internal superficial thermal resistance in (m²·K)/W

The value of thermal resistance of each insulation product shall be given in the Declaration of performance along with the possible range of thicknesses. In addition, the point thermal conductivity of anchors shall be given when anchors are used in the ETICS.

3.12 Airborne sound insulation

Single improvement values determined by testing, ETICS configuration and substrate characteristics for which the values are valid:

Insulation product	Rendering system	ETICS fixing	Substrate description	ETICS performance
Insulation type: WF Range of thickness: 20 to 240 mm maximum dynamic stiffness: NPD air flow resistance: NPD	minimum mass of the rendering system: depending on ETICS-thickness	mechanical fixing type: anchors acc. to clause 1.2 maximum number per m ² : depending on calculation	type: heavy wall - mass per unit: depending on wall construction	ΔR_w = No performance assessed $\Delta R_w + C$ = No performance assessed $\Delta R_w + C_{tr}$ = No performance assessed

3.13 Bond strength after ageing

		after hygrothermal cycles (on the rig) or after 7 days immersion in water + 7 days 23°C/50% RH
Rendering systems: Base coats + finishing coats indicated hereafter:	All finishing coats (powder) used in this system according to clause 1.2.1 of this ETA	< 0,08 MPa but failure into insulation product
	All finishing coats (paste) used in this system according to clause 1.2.1 of this ETA	< 0,08 MPa but failure into insulation product

4. Assessment and verification of constancy of performance (hereinafter AVCP) system applied, with reference to its legal base

According to the European Commission decision 97/556/EC amended by the the European Commission decision 2001/596/EC, the AVCP systems (further described in Annex V to Regulation (EU) No 305/2011) 1 and 2+ apply.

Product(s)	Intended use(s)	Level(s) or class(es) (Reaction to fire)	System(s)
External thermal insulation composite systems/kits (ETICS) with rendering	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+

⁽¹⁾ Products/materials for which a 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)

