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European Technical Assessment

ETA-16/0997
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:	European Assessment Document (EAD) EAD 040089-00-0404 “ETICS with renderings for the use on timber frame buildings”
This European Technical Assessment replaces	European Technical Assessment ETA-16/0997 issued on 17.10.2017

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Specific parts

1. Technical description of the product

1.1 General

This product 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 wood fibre insulation product (uncoated and factory-provided pre-coated boards) to be mechanically fixed onto a wall. 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 one or more 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 may include special fittings (e.g. base profiles, corner profiles,...) to treat details of ETICS (connections, apertures, corners, parapets, sills,...). 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.

1.2 Composition of the kit

1.2.1 Composition of the ETICS

	Components	Coverage (kg/m²)	Thickness (mm)
Insulation materials with associated methods of fixing	**Mechanically fixed ETICS with anchors or clips**		
	➢ Insulation product: best wood Wall 180/best wood Wall 180 D best wood Wall 140 best wood Wall 110	/ / /	20 to 180 20 to 240 60 to 240
	➢ Fixings: - tested in support with EN 1382 "Withdrawal capacity of timber fasteners" - Clips	/	/
Base coat	Aggregates, cement, sand, synthetic resin dispersion powder, additives: - **best wood Klebe- und Armierungsmörtel (UP)**	4,5 to 10,0 (powder)	5,0 to 8,0
	- **FIXIT 439 [IA 680]** - **HASIT Dieplast 860 Light [IA 680]** - **KREISEL IA 680** - **RÖFIX Unistar LIGHT [IA 680]**	4,5 to 10,0 (powder)	5,0 to 8,0
	- **FIXIT 435 [IA 710]** - **HASIT Dieplast 804 [IA 710]** - **KREISEL IA 710** - **RÖFIX Polystar [IA 710]**	3,5 to 6,0 (powder)	5,0 to 8,0
	- **FIXIT 435 [IA 720]** - **HASIT Dieplast 804 [IA 720]** - **KREISEL IA 720** - **RÖFIX Polystar [IA 720]**	3,5 to 6,0 (powder)	5,0 to 8,0
	- **SCHWENK Spachtelkleber SK leicht**	4,5 to 7,4 (powder)	5,0 to 8,0
	- **weber.therm family KS grob**	ca. 7,00 (powder)	4,0 to 7,0
	- **weber.therm freestyle KS**	ca. 7,0 (powder)	4,0 to 7,0
	- **weber.therm prestige KS**	ca. 7,0 (powder)	4,0 to 7,0
	- **weber.therm 301**	3,5 to 6,0 (powder)	4,0 to 7,0
	- **villerit InnoTherm Klebe- und Armierungsmörtel**	4,5 to 10,0 (powder)	5,0 to 8,0

	Components	Coverage (kg/m²)	Thickness (mm)
Base coat	- **Baumit multiContact MC 55W**	3,5 to 6,0 (powder)	5,0 to 8,0
	- **Baumit Dickschicht Klebespachtel**	3,5 to 6,0 (powder)	5,0 to 8,0
	- **Baumit 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** - **Baumit StarTex Fein** - **Baumit TextilglasGitter**	 / / / / / / / / / / / / /	 / / / / / / / / / / / / /
Key coat	Organic based with mineral fillers and pigments: - **FIXIT Putzgrund [SP 300]** - **HASIT Putzgrund [SP 300]** - **KREISEL Putzgrund [SP 300]** - **RÖFIX Putzgrund [SP 300]**	0,25 (liquid)	/
	- **FIXIT Putzgrund PREMIUM [SP 310]** - **HASIT Putzgrund PREMIUM [SP 310]** - **KREISEL Putzgrund PREMIUM [SP 310]** - **RÖFIX Putzgrund PREMIUM [SP 310]**	0,25 (liquid)	/
	- **SCHWENK Grund**	0,30 (liquid)	/
	- **Baumit PremiumPrimer DG 27**	0,25 (liquid)	/
	- **Baumit UniPrimer**	0,25 (liquid)	/
	- **Baumit PremiumPrimer**	0,25 (liquid)	/

	Components	Coverage (kg/m²)	Thickness (mm)
Finishing coat	➢ Mineral powder - cement based: particle size 1,5-6,0mm mm - **best wood Mineralischer Oberputz (MOP) Kratzputzstruktur** - **villerit Stockputz** - **villerit Rauhputz** particle size 2,0/3,0/5,0 mm: - **best wood Mineralischer Oberputz (MOP) Rillenputzstruktur** - **best wood Mineralischer Oberputz (MOP) Modellierputzstruktur**	2,2 to 6,6 (powder) 2,2 to 6,6 (powder) 2,2 to 6,6 (powder) 2,2 to 6,6 (powder) 2,5 to 3,5 (powder)	Regulated by particle size
	➢ Ready to use paste – silicon resin: particle size 2,0/3,0 mm: - **best wood Siliconharz Oberputz (SOP)**	2,5 to 3,8 (paste)	
	➢ Mineral powder – cement based: particle size 1,5 to 3,0mm - **villerit Rustikalputz**	2,5 to 5,0 (powder)	
	➢ Ready to use paste – silicon resin: particle size 1,5 to 4,0mm - **villerit Siliconit K/R**	2,2 to 5,0 (paste)	
	➢ Lime-cement based powder requirering addition of 20 to 36 % water: particle size 0,7/1,0/1,5/2,0/3,0/4,0/7,0 mm - **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**	1,8 to 24,0 (powder)	
	➢ Ready to use paste – silicate binder: Particle size 1,0/1,5/2,0/3,0/6,0 mm - **FIXIT Silikatputz [SE 210]** - **HASIT Silikatputz [SE 210]** - **KREISEL Silikatputz [SE 210]** - **RÖFIX Silikatputz [SE 210]**	2,4 to 5,5 (paste)	

	Components	Coverage (kg/m²)	Thickness (mm)
Finishing coat	➢ Ready to use paste – acryl and silicon resin: particle size 1,0/1,5/2,0/3,0 mm - **FIXIT Silikonharzputz [SE 410]** - **HASIT Silikonharzputz [SE 410]** - **KREISEL Silikonharzputz [SE 410]** - **RÖFIX Silikonharzputz [SE 410]**	2,4 to 4,0 (paste)	Regulated by particle size
	➢ Ready to use paste – silicate binder/silicon resin: Particle size 1,0/1,5/2,0/3,0/4,0/6,0mm - **FIXIT SiSi-Putz [SE 510]** - **HASIT SiSi-Putz [SE 510]** - **KREISEL SiSi-Putz [SE 510]** - **RÖFIX SiSi-Putz [SE 510]**	2,4 to 5,5 (paste)	
	➢ Ready to use paste – silicate binder/silicon resin: Particle size 0,7 mm - **FIXIT SE 520** - **HASIT SE 520** - **KREISEL SE 520** - **RÖFIX Anticofino [SE 520]**	2,4 (paste)	
	Particle size 0,4 mm - **FIXIT SE 530** - **HASIT SE 530** - **KREISEL SE 530** - **RÖFIX Decofino [SE 530]**	2,4 (paste)	
	➢ Ready to use paste – cement-synthetic binder: Particle size 1,0/2,0/3,0/4,0 mm - **FIXIT SE 773** - **HASIT SE 773** - **KREISEL SE 773** - **RÖFIX 773 [SE 773]**	11,0 to 18,0 (paste)	
	➢ Mineral powder - cement based: particle size 2,0/3,0 mm: - **SCHWENK Edelputz – VarioStar**	2,5 to 5,0 (powder)	
	particle size 2,0/3,0/5,0 mm: - **SCHWENK Edelputz – Rustikalputz**	2,5 to 7,0 (powder)	
	- **SCHWENK Edelputz – Scheibenputz**	2,5 to 7,0 (powder)	
	- **SCHWENK Edelputz – Münchner Rauputz**	2,5 to 7,0 (powder)	
	➢ Ready to use paste – silicon resin: particle size 2,0/3,0 mm: - **SCHWENK Silikonharzputz**	2,5 to 3,8 (paste)	

	Components	Coverage (kg/m²)	Thickness (mm)
Finishing coat	➢ Mineral powder - cement based: particle size 2,0/3,0 mm: - **weber.star 220**	2,5 to 4,0 (powder)	Regulated by particle size
	➢ Ready to use paste – silicon resin: particle size 2,0/3,0 mm: - **weber.pas 481 top**	2,0 to 4,0 (paste)	
	- **weber.pas 481 AquaBalance**	2,0 to 4,0 (paste)	
	- **weber.pas Silikonharzputz**	2,0 to 4,0 (paste)	
	➢ Mineral powder - cement based: particle size 2,0/3,0 mm: - **villlerit Stockputz**	2,5 to 5,0 (powder)	
	- **Baumit Fascina**	3,1 to 3,7 (powder)	
	➢ Ready to use paste – silicon resin: particle size 2,0/3,0 mm: - **villerit Siliconharzoberputz**	2,5 to 3,8 (paste)	
	particle size 1,0/2,0/3,0 mm: - **Baumit SilikonTop**	2,5 to 4,2 (paste)	
	particle size S-Fine 0,1 mm, Fine 1,0 mm, Trend 3,0 mm, Max 4,0 mm: - **Baumit CreativTop**	2,5 to 4,2 (paste)	
	➢ Ready to use paste – silicate binder: particle size 2,0/3,0 mm: - **Baumit SilikatTop**	2,5 to 4,2 (paste)	
	➢ Mineral powder - cement based: particle size 2,0/3,0/5,0 mm: - **Baumit ScheibenPutz SEP**	2,5 to 4,0 (powder)	

	Components	Coverage (kg/m²)	Thickness (mm)
Finishing paint	➢ Ready to use finishing paint Silicon emulsion and water based acrylic binder, aggregates, additives: - **FIXIT PE 429** - **HASIT PE 429** - **KREISEL PE 429** - **RÖFIX PE 429**	0,2 to 0,4 l (liquid)	
	➢ Silicate emulsion and water based acrylic binder, aggregates, additives: - **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)	/
	➢ Silicate emulsion, silicon resin emulsion, water based acrylic binder, aggregates, additives: - **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)	/
	➢ Silicate emulsion, silicon resin emulsion, water based acrylic binder, aggregates, additives: - **FIXIT PE 319** - **HASIT PE 319** - **KREISEL PE 319** - **RÖFIX PE 319**	0,2 to 0,4 l (liquid)	/
	➢ Ready to use finishing paint – silicon resin: - **SCHWENK Silikonharzfinish** - **best wood Silikonharzfarbe** - **Villerit Siliconharzfarbe** - **weber.ton 411 Siliconharzfarbe** - **weber.ton 412 Kunstharzfarbe**	0,2 to 0,4 l (liquid) 0,2 to 0,4 l (liquid) 0,25 to 0,4 l (liquid) 0,25 to 0,4 l (liquid) 0,25 to 0,4 l (liquid)	/

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/m³
Thermal resistance ((m².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/m²
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/m³
Thermal resistance ((m².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/m²
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/m³
Thermal resistance ((m².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/m²
Water vapour diffusion resistance factor (μ) / EN 12086	≤ 3

1.2.3 Fixings

1.2.3.1 Anchors for insulation products:

Product	Plate diameter (mm)	characteristic resistances in the wooden substrate (solid wood)
Anchor	≥ 60	0,133 kN

If the insulation product is installed on a substrate according to clause 2, the mechanically fixation shall be done through this substrate into the wooden frame construction (solid) with a depth of anchoring of at least 35 mm.

1.2.3.2 Clips for insulation products:

Product	Clips width (mm)	characteristic resistances in the wooden substrate (solid wood)
Clips	27	0,05 kN

If the insulation product is installed on a substrate according to clause 2, the mechanically fixation shall be done through this substrate into the wooden frame construction (solid) with a depth of anchoring of at least 30 mm.

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 EAD 040089-00-0404, 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)

The ETICS are designed to give the timber frame building wall to which they are applied additional thermal insulation and protection from effects of weathering.

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

The surface for the application of ETICS can be a board substrate (wood based panels, solid wood panels, plasterboards, gypsum bonded boards, cement bonded boards, etc. according to Annex 1).
The substrate has to be strong, dry and free of loose material. It may be necessary to protect the substrate against wetting and weathering before the application of the ETICS.

The thickness of the panels has to be superior or equal to 10 mm. The board substrate must be suitable for humid conditions as specified in EN 13986.

If the insulation layer of the ETICS is WF according to EN 13171, the insulation product can also be mounted direct to the timber frame, but it must be guaranteed that penetrating humidity has no effect on the timber frame/second insulation layer.

ETICS are non load-bearing construction elements. They do not contribute directly to the stability of the timber frame building wall on which they are installed. The verification of the structural capacities of the wall and their suitability for the application of ETICS shall be in accordance with ETAG 007 (and its conversion into EAD), clause 5.1 using calculation methods (EN 1995-1-1, Eurocode 5 Part 1-1, etc.) as well as verifications by testing (EN 380, EN 594, EN 595, EN 596, etc.) where the load bearing capacity is unable to calculate.

The ETICS can contribute to the durability of a timber frame building by providing enhanced protection from the effects of weathering.

ETICS are not intended to ensure the air tightness of the timber frame building structure. The timber frame building wall as such has therefore to be airtight to:
a) reduce the thermal transmittance of the wall
b) avoid interstitial condensation due to convection.

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

3.1 Reaction to fire

Configuration of SCHNEIDER Wärmedämmverbundsystem 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
best wood Putzsystem	Base coat: 3,1 % Finishing coat: 9,9 %	Base coat: 0 % Finishing coat: 0 %	B – s1, d0
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
SCHWENK Putzsystem	Base coat: 4,6 % Finishing coat: 6,5 %	Base coat: 0 % Finishing coat: 0 %	B – s1, d0
weber-Putzsystem	Base coat: ≤ 2,3% Finishing coat: ≤ 1,7 bzw ≤ 8,7%	Base coat: 0 % Finishing coat: 0 %	B – s1, d0
villerit-Putzsystem	Base coat: 3,1 % Finishing coat 9,9 %	Base coat: 0 % Finishing coat: 0 %	B – s1, d0
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/m²	**≥ 0,5 kg/m²**
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

3.3.1 Moisture content and gradient

moisture content (% by mass): < 20 (< 15)
moisture gradient (% by mass): < 3

3.3.2 Hygrothermal behaviour

The hygrothermal performance has been 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:	**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**	**≤ 1,0 m** (test result obtained with particle size 2,0 mm: 0,1 m)
	FIXIT / HASIT / KREISEL / RÖFIX Silikatputz [SE 210]	**≤ 1,0 m** (test result obtained with particle size 2,0 mm: 0,3 m)
	FIXIT / HASIT / KREISEL / RÖFIX Silikonharzputz [SE 410]	**≤ 1,0 m** (test result obtained with particle size 2,0 mm: 0,4 m)
	FIXIT / HASIT / KREISEL / RÖFIX SiSi-Putz [SE 510]	**≤ 1,0 m** (test result obtained with particle size 2,0 mm: 0,3 m)
	SCHWENK Edelputz – VarioStar	**≤ 1,0 m** (test result obtained with particle size 3,0 mm: 0,1 m)
	SCHWENK Edelputz – Rustikalputz **SCHWENK Edelputz – Scheibenputz** **SCHWENK Edelputz – Münchner Rauputz**	**≤ 1,0 m** (test result obtained with particle size 3,0 mm: 0,1 m)
	SCHWENK Silikonharzputz	**≤ 1,0 m** (test result obtained with particle size 3,0 mm: 0,1 m)
	weber.star 220	**≤ 1,0 m** (test result obtained with particle size 3,0 mm: 0,1 m)
	weber.pas 481 top **weber.pas 481 AquaBalance**	**≤ 1,0 m** (test result obtained with particle size 2,0 mm: 0,4 m)
	weber.pas Silikonharzputz	**≤ 1,0 m** (test result obtained with particle size 2,0 mm: 0,4 m)
	villlerit Stockputz	**≤ 1,0 m** (test result obtained with particle size 2,0 mm: 0,3 m)
	villerit Rauhputz	**≤ 1,0 m** (test result obtained with particle size 2,0 mm: 0,4 m)
	villerit Rustikalputz	**≤ 1,0 m** (test result obtained with particle size 2,0 mm: 0,3 m)

		Equivalent air thickness (m)
Rendering systems: base coat (incl. key coat acc. to cl. 1.2.1) + finishing coats indicated hereafter:	**villerit Siliconit K/R**	**≤ 1,0 m** (test result obtained with particle size 2,0 mm: 0,1 m)
	villerit Siliconharzoberputz	**≤ 1,0 m** (test result obtained with particle size 2,0 mm: 0,2 m)
	best wood Mineralischer Oberputz (MOP) Rillenputzstruktur	**≤ 1,0 m** (test result obtained with particle size 3,0 mm: 0,4 m)
	best wood Mineralischer Oberputz (MOP) Modellierputzstruktur	**≤ 1,0 m** (test result obtained with particle size 3,0 mm: 0,1 m)
	best wood (SOP) Siliconharz Oberputz	**≤ 1,0 m** (test result obtained with particle size 3,0 mm: 0,2 m)
	Baumit Fascina	**≤ 1,0 m** (test result obtained with particle size 2,0 mm: 0,2 m)
	Baumit SilikonTop	**≤ 1,0 m** (test result obtained with particle size 2,0 mm: 0,1 m)
	Baumit CreativTop	**≤ 1,0 m** (test result obtained with particle size 2,0 mm: 0,3 m)
	Baumit SilikatTop	**≤ 1,0 m** (test result obtained with particle size 2,0 mm: 0,3 m)
	Baumit ScheibenPutz SEP	**≤ 1,0 m** (test result obtained with particle size 2,0 mm: 0,4 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)**
≤ 0,08 MPa (Failure in insulation product)	**≤ 0,08 MPa** (Failure in insulation product)

3.8 Fixing strength (displacement test)

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

3.9 Wind load resistance

3.9.1 Safety in use of mechanically fixed ETICS using anchors

3.9.1.1 Dynamic wind uplift test

The following values only apply for the combination (anchor plate characteristics) / (insulation product characteristics) mentioned in this table. All anchors which shall be used are shown in the control plan and the declaration of performance.

Anchors for which the following failure loads apply	Trade name	**Anchors**
	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)	≥ 7,5

The wind load resistance of the ETICS R_d is calculated as follow:

$$\mathbf{R_d = \frac{Q1 \times Cs \times Ca}{m} = \frac{2{,}0\ kPa}{m}}$$

$$\mathbf{R_d \geq S_d}$$

Where:

R_d design resistance
S_d wind load suction
Q_1 test result
C_s statical correction factor
C_a geometric factor
m national safety factor of resistance for normal materials (partial safety factor to be chosen in function of the type of failure which occured and the ageing of material properties concerned).

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

- plate diameter of anchor ≥ 60 mm
- plate stiffness of anchor ≥ 0,5 kN/mm
- load resistance of anchor plate ≥ 1,0 kN

3.9.1.2 Wind load resistance of mechanically fixed ETICS

Apply to all anchors listed in the clause 3.9.1.1 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
Anchors not placed at the panel joints.			

Apply to all anchors listed in the clause 3.9.1.1 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

3.9.2 Safety in use of mechanically fixed ETICS using clips

3.9.2.1 Dynamic wind uplift test

The following values only apply for the combination (anchor's trade name) / (insulation panel's characteristics) mentioned in the first lines of each table.

Anchors for which the following failure loads apply	Trade name	**Clips**
	Clips width (mm)	≥ 27
Characteristics of the insulation product panels for which the following failure loads apply	Thickness (mm)	≥ 40
	Tensile strength perpendicular to the face (kPa)	≥ 15

For all calculations the following formula shall be used:

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

$$\mathbf{R_d \geq S_d}$$

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 following values only apply for the combination (clips) / (insulation product characteristics) mentioned in the first lines of each table.

- dimension of clips e.g. in accordance to national documents
- Pull-out strength of mechanical fixings in support to EN 1382 ≥ 70 N

3.9.2.2 Wind load resistance of mechanically fixed ETICS

Apply to all clips listed in the clause 3.9.2.1			
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**
Clips width			27 mm
Failure loads [N]	Clips placed not at the panel joint of the insulation with a clip distance of 120 mm (Pull-through test)	$R_{panel,120}$	Minimal: 313 Average: 333
	Clips placed not at the panel joint of the insulation with a clip distance of 70 mm (Pull-through test)	$R_{panel,70}$	Minimal: 209 Average: 224
	Clips placed at the panel joints with a clip distance of 120 mm (Pull-through test)	$R_{joint,120}$	Minimal: 198 Average: 216

3.10 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:

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

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 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.

3.11 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 and clips 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

3.12 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 coat (incl. key coat acc. to cl. 1.2.1) + 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)

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

In order to help the Notified Body to make an evaluation of conformity, the Technical Assessment Body issuing the ETA shall supply the information detailed below. This information together with the requirements given in EC Guidance Paper B will generally form the basis on which the factory production control (FPC) is assessed by the Notified Body.
This information shall initially be prepared or collected by the Technical Assessment Body and shall be agreed with the manufacturer. The following gives guidance on the type of information required:

1) The ETA
Where confidentiality of information is required, this ETA makes reference to the manufacturer's technical documentation which contains such information.

2) Basic manufacturing process
The basic manufacturing process is described in sufficient detail to support the proposed FPC methods.

The different components of ETICS are generally manufactured using conventional techniques. Any critical process or treatment of the components which affects performance are highlighted in the manufacturer's documentation.

3) Product and materials specifications
The manufacturer's documentation includes:
- detailed drawings (possibly including manufacturing tolerances),
- incoming (raw) materials specifications and declarations,
- references to European and/or international standards,
- technical data sheets.

4) Control Plan (as a part of FPC)
The manufacturer and the Österreichisches Institut für Bautechnik have agreed a Control Plan which is deposited with the Österreichisches Institut für Bautechnik in documentation which accompanies the ETA. The Control Plan specifies the type and frequency of checks/tests conducted during production and on the final product. This includes the checks conducted during manufacture on properties that cannot be inspected at a later stage and for checks on the final product.

Products not manufactured by the ETICS manufacturer shall also be tested according to the Control Plan. It must be demonstrated to the Notified Body that the FPC system contains elements securing that the ETICS manufacturer takes products conforming to the Control Plan from his supplier(s).

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

In cases where the provisions of the European Technical Assessment and its Control Plan are no longer fulfilled, the Notified Body shall withdraw the certificate and inform the Österreichisches Institut für Bautechnik without delay.

Issued in Vienna, on 20.02.2020

The original document is signed by

Rainer Mikulits
Managing Director