

Technical and Test Institute for Construction Prague Prosecká 811/76a 190 00 Praha Czech Republic eota@tzus.cz

European Technical Assessment

ETA 17/1027 of 10/09/2018

I General Part

Technical Assessment Body issuing the Eu Technical and Test Institute for Construction P	Iropean Technical Assessment: rague
Trade name of the construction product	SEMPRE TERM ST
Product family to which the construction product belongs	Product area code: 4 External Thermal Insulation Composite Systems (ETICS) with rendering insulation product - expanded polystyrene (EPS)
Manufacturer	SEMPRE Farby Sp. z o.o. ul. Gen. J. Kustronia 60 43-301 Bielsko-Biała, Poland www.semprefarby.pl
Manufacturing plant(s)	SEMPRE Farby Sp. z o.o. ul. Gen. J. Kustronia 60 43-301 Bielsko-Biała, Poland
This European Technical Assessment contains	26 pages including 4 Annexes which form an integral part of this Assessment.
	Annex No. 4 Control Plan contains confidential information and is not included in the European Technical Assessment when that assessment is publicly disseminated.
This European Technical Assessment is issued in accordance with regulation (EU) No. 305/2011 on the basis of	ETAG 004 used as EAD, 2013 External thermal Insulation Composite Systems (ETICS) with rendering

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Il Specific part

1 Technical description of the product

1.1 Definition and composition of the kit

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 insulation product of expanded polystyrene (EPS) to be bonded or 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 system is applied directly to the insulating boards, 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, 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.

Composition of the ETICS

Table No. 1

	Components	Coverage (kg/m ²)	Thickness (mm)
	Bonded ETICS (fully or partially bonded) with or wit National application documents shall be taken into a	hout supplementa account.	ary anchors.
	 Insulation product: EPS according to EN 13163 see Annex No. 1 for product characteristics 	1	50 - 300
Insulation products with associated methods of fixing	 Adhesives: min. bonded surface: 40 % TESOROMONT START TS-100 to be used with white EPS only cement based powder requiring addition of water 0.18 - 0.22 l/kg TESOROMONT UNIWERSALNY TU-200 to be used with white or grey EPS cement based powder requiring addition of water 0.20 - 0.24 l/kg 	4.0 - 4.5 (dry) 4.0 - 4.5 (dry)	1

	Components	Coverage (kg/m ²)	Thickness (mm)
	Mechanically fixed ETICS with anchors and supple Annex No. 3 for possible associations EPS/anchors	mentary adhesive	(see Cl. 3.3.5 and
	National application documents shall be taken into	account.	
	Insulation product: EPS according to EN 13163		
	see Annex 1 and 2 for product characteristics	1	50 - 300
	 Supplementary adhesives: min. bonded surface: 40 % 		
	 TESOROMONT START TS-100 to be used with white EPS only cement based powder requiring addition of water 0.18 - 0.22 l/kg 	4.0 - 4.5 (dry)	
	 TESOROMONT UNIWERSALNY TU-200 to be used with white or grey EPS cement based powder requiring addition of water 0.20 - 0.24 I/kg 	4.0 - 4.5 (dry)	Τ
	 Anchors see Annex No. 3 for individual product of In addition to the following list. Other anchors car with the requirements introduced in the Annex No. 	haracteristics. h be used provided p. 3.	that they comply
	 ejotherm STR U ejotherm STR U 2G plastic screw-in anchor 	ETA-04/0023	
Insulation	- EJOT SDM-T plus plastic screw-in anchor	ETA-04/0064	A.
products with associated methods of fixing	 KOELNER KI-10 KOELNER KI-10PA KOELNER KI-10M plastic nailed-in anchor 	ETA-07/0291	
	 KI-10N KI-10NS plastic nailed-in anchor 	ETA-07/0221	
	 TFIX-8S TFIX-8ST plastic screw-in anchor 	ETA-11/0144	
	 LTX-8 LMX-8 LGX-8 LTX-10 LMX-10 LGX-10 plastic anchor plastic anchor 	ETA-16/0509	
	plastic screw-in anchor	ETA-13/0107	
	 WKTHERM S plastic screw-in anchor 	ETA-13/0724	
	 fischer termoz CN 8 plastic nailed-in anchor 	ETA-09/0394	
	 BRAVOLL®PTH-KZ 60/8 plastic nailed-in anchor 	ETA-05/0055	
	 EJOT H1 eco plastic nailed-in anchor 	ETA-11/0192	
	- KOELNER KI-10, KI-10M plastic nailed-in anchor	ETA-07/0291	

	Components	Coverage (kg/m²)	Thickness (mm)
Base coat	 TESOROMONT UNIWERSALNY TU-200 cement based powder requiring addition of water 0.20 - 0.24 l/kg 	4.0 – 5.0 dry mixture	4 - 6
Reinforcement	 Standard mesh applied in one or two layers see Annex No. 4 for product characteristics: SEMPRE 150 AKE 145 	1	I I
Key coat	 Tesoro Grunt to be voluntarily used with TESORO finishing coats ready to use liquid Azuro Grunt to be voluntarily used with AZURO finishing coats ready to use liquid Progresil Grunt to be voluntarily used with PROGRESIL finishing coats ready to use liquid Mineral Grunt to be voluntarily used with TESORO MINERAL TM-300 finishing coats ready to use liquid Multigrunt 	0.15	
	 to be voluntarily used with all types of finishing coats ready to use liquid 	0.13	
	 BORDO ART G to be voluntarily used with mineral finishing coat BORDO ART T ready to use liquid 	0.15	

	Components	Coverage (kg/m ²)	Thickness (mm)
	 Ready to use paste - acrylate binder: TESORO TESORO INVEST floated structure (particle size 1.5; 2.0; 2.5; 3.0 mm) TESORO ribbed structure (particle size 1.5; 2.0; 2.5; 3.0 mm) 	2.3 - 4.5 2.3 - 4.5	
Finishing coats	 Ready to use paste - silicone binder: AZURO AZURO Invest AZURO Premium Nanotechnology floated structure (particle size 1.5; 2.0; 2.5; 3.0 mm) AZURO AZURO Invest AZURO Premium Nanotechnology ribbed structure (particle size 1.5; 2.0; 2.5; 3.0 mm) 	2.3 - 4.5 2.3 - 4.5	Regulated by particle size
	 Ready to use paste - silicone-silicate binder: PROGRESIL floated structure (particle size 1.5; 2.0; 2.5; 3.0 mm) PROGRESIL ribbed structure (particle size 1.5; 2.0; 2.5; 3.0 mm) PROGRESIL ribbed structure (particle size 1.5; 2.0; 2.5; 3.0 mm) Powder to be mixed with water mineral binder: TESORO MINERAL TM-300 	2.3 - 4.5 2.3 - 4.5	л. "Л
	 floated structure (particle size 1.5; 2.0; 2.5; 3.0 mm) water consumption: 0.24 – 0.28 l/kg 	2.0 - 4.5	

	Components	Coverage (kg/m ²)	Thickness (mm)
Finishing coats	 TESORO MINERAL TM-300 ribbed structure (particle size 1.5; 2.0; 2.5; 3.0 mm) water consumption: 0.24 – 0.28 l/kg 	2.0 - 4.5	
	 BORDO ART T water consumption: 0.22 – 0.26 l/kg 	6.0 - 10.0	4 - 5
Protective coat Protective coa	 Ready to use liquid primer for MARESIL paint: MARESIL GRUNT F to be voluntarily used with	0.10 – 0.20 I/m²	T
	 Ready to use liquid - paint: MARESIL FARBA to be voluntarily used with TESORO MINERAL TM-300 	0.17 – 0.25 I/m²	7
	 Ready to use liquid primer for BORDO ART L paint: SEMPRE GRUNT GP to be voluntarily used with BORDO ART T 	0.20 I/m²	7
	 Ready to use liquid - paint: BORDO ART L to be voluntarily used with BORDO ART T 	0.30 I/m²	i
Ancillary materials	Remain under the manufacturer's responsibility		

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

2.1 Intended use

This ETICS is intended for use as external insulation of 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 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 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 cl. 7.2.1 of the ETAG 004) and shall be done in accordance with the national instructions.

The ETICS belong to Category S/W2, according to EOTA Technical Report No 034.

2.2 Manufacturing

The European Technical Assessment is issued for the ETICS on the basis of agreed data/information, deposited with the Technical and Test Institute Prague, which identifies the ETICS that has been assessed and judged.

2.3 Design and installation

The installation instructions including special installation techniques and provisions for the qualification of the personnel are given in the manufacturer's technical documentation.

Design, installation and execution of ETICS are to be in conformity with national documents. Such documents and the level of their implementation in Member States' legislation are different. Therefore, the assessment and declaration if performance are done taking into account general assumptions introduced in the chapters 7.1 and 7.2 of ETAG 004 used as EAD, which summarize how information introduced in the ETA and related documents is intended to be used in the construction process and gives advice to all parties interested when normative documents are missing.

2.4 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.

2.5 Use, maintenance and repair

The provisions made in this European Technical Assessment are based on an assumed working life of the ETICS of at least 25 years, provided that the requirements for the packaging, transport, storage, installation as well as appropriate use, maintenance and repair are met. The indication given on the working life cannot be interpreted as a guarantee given by the manufacturer or the Technical Assessment Body, but should only be regarded as a means for choosing the appropriate products in relation to the expected, economically reasonable working life of the works.

The finishing coat shall normally be maintained in order to fully preserve the ETICS performance. Maintenance includes at least:

- visual inspection of the ETICS,
- 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.

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

The performances of the kit as described in this chapter are valid provided that the components of the kit comply with Annexes 1 - 4.

3.1 Safety in case of fire (BWR 2)

3.1.1 Reaction to fire (ETAG 004 - clause 5.1.2.1, EN 13501-1)

Table No. 2

Configuration	Heat of combustion	Flame retardant content	Euroclass according to EN 13501-1
Adhesive	Max 0.40 MJ/kg	No flame retardant	
Boards of expanded polystyrene EPS Maximal density of 15.4 kg/m ³	1	In quantity ensuring Euroclass E according to EN 13501-1	
Base coat render	Max 0.40 MJ/kg	No flame retardant	B – s2, d0
Key coat	Max 0.54 MJ/m ²	No flame retardant	
Glass fibre mesh	Max 1.13 MJ/m ²	No flame retardant	
Finishing coats	Max 2.62 MJ/kg	No flame retardant	
Protective coats	No performance assessed for the use of protective coats		

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.

3.2 Hygiene, health and environment (BWR 3)

3.2.1 Water absorption (ETAG 004 - clause 5.1.3.1)

Base coat **TESOROMONT UNIWERSALNY TU-200:**

Water absorption after 1 hour < 1 kg/m²

Water absorption after 24 hours < 0.5 kg/m²

Rendering system:

Table No. 3

		Water absorption after 24 hours	
		< 0.5 kg/m ²	≥ 0.5 kg/m ²
Rendering system: Base coat TESOROMONT	TESORO TESORO INVEST	x	
	AZURO AZURO Invest AZURO Premium Nanotechnology	x	
UNIWERSALNY TU-200	PROGRESIL	x	
finishing coats indicated hereafter:	TESORO MINERAL TM-300	x	
	BORDO ART T	x	

3.2.2 Watertightness (ETAG 004 - clause 5.1.3.2)

3.2.2.1 Hygrothermal behaviour

Pass (without defects).

3.2.2.2 Freeze-thaw behaviour

Freeze-thaw resistant - according to the water absorption test result.

3.2.3 Impact resistance (ETAG 004 - clause 5.1.3.3)

Table No. 4

Rendering system: Base coat	Insulation product: EPS (TR100)		
reinforcement and finishing coats indicated hereafter:	Single standard mesh: AKE 145 or SEMPRE 150		
TESORO TESORO INVEST	Category III		
AZURO AZURO Invest AZURO Premium Nanotechnology	Category III		
PROGRESIL	Category III		
TESORO MINERAL TM-300	Category III		
BORDO ART T	Category II		

Table No. 5

Rendering system: base coat	Insulation product: EPS (TR80)	
reinforcement and finishing coats indicated hereafter:	Single standard mesh: AKE 145 or SEMPRE 150	
TESORO TESORO INVEST	Category III	
AZURO AZURO Invest AZURO Premium Nanotechnology	Category III	
PROGRESIL	Category III	
TESORO MINERAL TM-300	Category III	
BORDO ART T	Category III	

3.2.4 Water vapour permeability (ETAG 004 - clause 5.1.3.4)

Table No. 6

Rendering system: base coat TESOROMONT UNIWERSALNY TU-200 + reinforcement + and finishing coats indicated hereafter	Equivalent air thickness s _d
TESORO TESORO INVEST	≤ 0.85 m
AZURO AZURO Invest AZURO Premium Nanotechnology	≤ 0.72 m
PROGRESIL	≤ 0.87 m
TESORO MINERAL TM-300	≤ 0.37 m
BORDO ART T	≤ 0.52 m

3.2.5 Release of dangerous substances (ETAG 004 - clause 5.1.3.5, EOTA TR034)

Kit not assessed according to EOTA TR 034.

3.3 Safety and accessibility in use (BWR 4)

3.3.1 Bond strength between base coat and insulation product (ETAG 004 - clause 5.1.4.1.1)

- TESOROMONT UNIWERSALNY TU-200
- Initial state: bond strength ≥ 0.104 MPa and a cohesive failure in the insulation product
- After hygrothermal cycles: bond strength ≥ 0.107 MPa and cohesive failure in the insulation product
- After freeze-thaw cycles: test not required (see Cl. 3.2.2.2 of this ETA)

3.3.2 Bond strength between adhesive and substrate / insulation product (ETAG 004 - clauses 5.1.4.1.2, 5.1.4.1.3)

Table No. 7

		Initial state	48 hrs. immersion in water + 2 hrs. 23°C/50% RH	48 hrs. immersion in water + 7 days 23°C/50% RH
TESOROMONT START TS-100	Concrete	≥ 0.25 MPa	≥ 0.08 MPa	≥ 0.25 MPa
TESOROMONT UNIWERSALNY TU-200	Expanded polystyrene (EPS)	≥ 0.08 MPa	≥ 0.03 MPa	≥ 0.08 MPa

3.3.3 Bond strength after ageing (ETAG 004 - clauses 5.1.7.1)

- After ageing by hygrothermal cycles: bond strength ≥ 0.099 MPa and cohesive failure in the insulation product
- After 7 days of immersion in water and 7 days of drying : ≥ 0.117 MPa and cohesive failure in insulation product
- After freeze-thaw cycles: test not required (see Cl. 3.2.2.2 of this ETA)

3.3.4 Fixing strength (ETAG 004 - clause 5.1.4.2)

Test not required (no limitation of ETICS length).

3.3.5 Wind load resistance (ETAG 004 - clause 5.1.4.3)

Table	No	0
able	INO.	0

	Trade name		See An	nex No. 3
Anchor description	Assembly:		Surface assembly	Countersunk assembly
	Plate diameter	r (mm)	60 or more	60 or more
Se da M	Thickness (mr	m)	≥ 50	≥ 100
EPS characteristics	Tensile strengt perpendicular (kPa)	th to faces	≥ (in dry	116 condition)
Maximal load	Anchors placed at the body of the insulation product	Rpanel	min 0.1 mea 0.1	. value: 55 kN n value: 58 kN
	Anchors placed at joints of the insulation product	R _{joint}	min 0. mea 0.	. value: 44 kN n value: 47 kN

Table No. 8

	÷		See An	inex No. 3
Anchor	I rade n	ame –	Surface assembly	Countersunk assembly
description	Plate diame	ter (mm)	60 or more	60 or more
	Thickness	s (mm)	≥ 50	≥ 100
EPS characteristics	Tensile st perpendicula (kPa	rength ir to faces a)	≥ (in dry	condition)
	Anchors placed at the body of the insulation product	Rpanel	min 0. mea 0.	. value: 44 kN In value: 46 kN
Maximal load	Anchors placed at joints of the insulation product	Rjoint	min 0. mea 0.	a. value: 44 kN an value: 47 kN

3.3.6 Render strip tensile test (Cl. 5.5.4.1)

Base coat TESOROMONT UNIWERSALNY TU-200

Table No. 9

			Glass fibro (manufacture)	e mesh SEM er: SAINT-GC	PRE 150 and BAIN ADFO	AKE 145 RS CZ s.r.o.)	
			Crack w	idth W _{typ} [mr at relative e	n]/ number α elongation ε	of cracks	
Loa	d direction	ε = 0.3 %	ε = 0.5 %	ε = 0.8 %	ε = 1.0 %	ε = 1.5 %	ε = 2.0 %
		Plan	e side of the	e test specin	nen		
	Sample No. 1	≤ 0.05/8	≤ 0.05/15	≤ 0.05/23	≤ 0.05/27	Not reached	Not reached
Warp	Sample No. 2	≤ 0.05/10	≤ 0.05/20	≤ 0.05/26	≤ 0.05/29	Not reached	Not reached
	Sample No. 3	≤ 0.05/10	≤ 0.05/18	≤ 0.05/24	≤ 0.05/27	Not reached	Not reached
	Sample No. 1	≤ 0.05/14	≤ 0.05/23	≤ 0.05/25	≤ 0.05/30	≤ 0.05/31 ≤ 0.10/1	Not reached
Weft	Sample No. 2	≤ 0.05/12	≤ 0.05/22	≤ 0.05/28	≤ 0.05/30	≤ 0.05/31	Not reached
	Sample No. 3	≤ 0.05/13	≤ 0.05/23	≤ 0.05/27	≤ 0.05/29	≤ 0.05/30 ≤ 0.10/1	Not reached
		Coar	se side of th	e test speci	men		
	Sample No. 1	≤ 0.05/10	≤ 0.05/14	≤ 0.05/21	≤ 0.05/23	Not reached	Not reached
Warp	Sample No. 2	≤ 0.05/13	≤ 0.05/19	≤ 0.05/24	≤ 0.05/27	Not reached	Not reached
	Sample No. 3	≤ 0.05/12	≤ 0.05/16	≤ 0.05/22	≤ 0.05/25	Not reached	Not reached
	Sample No. 1	≤ 0.05/12	≤ 0.05/17	≤ 0.05/18 ≤ 0.10/2	≤ 0.05/16 ≤ 0.10/5	≤ 0.05/12 ≤ 0.10/11 ≤ 0.15/1	Not reached
Weft	Sample No. 2	≤ 0.05/10	≤ 0.05/14	≤ 0.05/15 ≤ 0.10/2	≤ 0.05/16 ≤ 0.10/5	≤ 0.05/12 ≤ 0.10/10 ≤ 0.15/2	Not reached
	Sample No. 3	≤ 0.05/12	≤ 0.05/16	≤ 0.05/17 ≤ 0.10/1	≤ 0.05/15 ≤ 0.10/5	≤ 0.05/13 ≤ 0.10/10 ≤ 0.15/1	Not reached

The characteristic crack width W_{rk} [mm] at a render strain value of 0.8%, determined with simple Method II pursuant to ETAG 004, cl. 5.5.4.1.

Table No. 10

	CI	Characteristic width of cracks W _{rk} [mm] at render strain value of 0.8%		
	Warp d	lirection	Weft d	irection
	Plane side	Coarse side	Plane side	Coarse side
SEMPRE 150	0.05	0.05	0.05	0.10
AKE 145	0.05	0.05	0.05	0.10

The width of cracks in reinforced base coat at 2% elongation was not measured, test specimens have failed before the 2% elongation was tested.

3.3.7 Airborne sound insulation

No performance assessed.

3.4 Energy economy and heat retention (BWR 6)

3.4.1 Thermal resistance

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

$U_c = U + \chi_p \times n$

Where:

- $\chi_p \times n$ has only to be taken into account 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 1 m²
- X_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

 $(\chi_n \times n \text{ negligible for } n < 20)$

= 0.004 W/K for anchors with a galvanized steel screw with the head covered by a plastic material $(\chi_p \times n \text{ negligible for } n < 10)$

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

U 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 rendering system (about 0.02 in (m².K)/W) or determined by test according to EN 12667 or EN 12664
- *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 manufacturer's documentation 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.

3.5 Sustainable use of natural resources (BWR 7)

No performance assessed.

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 European Commission decision 2001/596/EC, the AVCP systems 1 and 2+ are valid (further described in Annex V to Regulation (EU) No. 305/2011).

Table No. 11

Product(s)	Intended use(s)	Level(s) or class(es) (Reaction to fire)	System(s)
	In external wall	A1 ⁽¹⁾ , A2 ⁽¹⁾ , B ⁽¹⁾ , C ⁽¹⁾	1
External thermal insulation composite	subject to fire regulations	A1 ⁽²⁾ , A2 ⁽²⁾ , B ⁽²⁾ , C ⁽²⁾ , D, E, (A1 to E) ⁽³⁾ , F	2+
with rendering	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 he 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)

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) <u>ETA</u>

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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 the 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 Technical and Test Institute for Construction Prague have agreed a Control Plan which is deposited with the Technical and Test Institute for Construction Prague 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 referring to the Control Plan once again.

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 Technical and Test Construction Institute Prague without delay.



Annexes:

- Annex No. 1 Insulation product characteristics for bonded ETICS
- Annex No. 2 Insulation product characteristics for mechanically fixed ETICS
- Annex No. 3 Anchors, description of individual product characteristics contained in the ETA
- Annex No. 4 Description of glass fibre mesh

			Declared charac boards for bo	teristics of EPS onded ETICS
Descriptio	n and characteristics	Regulation	Class, level according to EN 13163	Value
Reaction to fir	e	EN 13501	E	Apparent density ≤ 15.4 kg/m ³
Thermal resist	tance	EN 12667	Defined in CE mark EN 1	in accordance with 3163
Thickness		EN 823	T(2)	± 2 mm
Length			L(2)	± 2 mm
Width		EN 822	W(2)	± 2 mm
Squareness		EN 824	S(5)	± 5 mm/m
Flatness		EN 825	P(5)	5 mm
Bending strer	nath	EN 12089	BS100	≥ 100 kPa
Surface		ETAG 004	Cut s (homogenous,	urface without coating)
Addition of gr	aphite (colour)		Allowed (g	rey or white)
Dimensional	Under defined temperature and humidity conditions	EN 1604	DS(70,-)2	2%
stability	Under constant laboratory conditions	EN 1603	DS(N)2	0.2%
Short term v	water absorption at partial	EN 1609		< 1 kg/m ²
Diffusion fact	tor (μ)	EN 13163	MU 20 – 40 MU 30 – 70	20 - 70
Tensile stree faces of insu	ngth perpendicular to the lation product	EN 1607	TR100	≥ 100 kPa
Shear streng	th	EN 40000	SS20	≥ 20 kPa
Shear modul	lus of elasticity	EN 12090	GM1000	≥ 1000 kPa

Annex No. 1 Insulation product characteristics for bonded ETICS

Note: Classes and levels for individual characteristics comply with EN 13163:2012+A1:2015. Only insulation products of the same or better declared characteristics, as stated in the table above, can be used in this ETICS.

Reaction to fire E has to be proved for every insulation product also at 10 mm products thickness.

			Declared charae boards for mecha	cteristics of EPS nically fixed ETICS
Descripti	on and characteristics	Regulation	Class, level according to EN 13163	Value
Reaction to f	ire	EN 13501	E	Apparent density ≤ 15.4 kg/m ³
Thermal resistance		EN 12667	Defined in CE mark EN 1	in accordance with 3163
Thickness		EN 823	T(2)	\pm 2 mm
Length		EN 922	L(2)	± 2 mm
Width		LIN 022	W(2)	± 2 mm
Squareness		EN 824	S(5)	± 5 mm/m
Flatness		EN 825	P(5)	5 mm
Bending stre	ngth	EN 12089	BS75	≥ 75 kPa
Surface		ETAG 004	Cut s (homogenous,	urface without coating)
Addition of gr	aphite (colour)		Allowed (grey	or white colour)
Dimensional	Under defined temperature and humidity conditions	EN 1604	DS(70,-)2	2%
Stability	Under constant laboratory conditions	EN 1603	DS(N)2	0.2%
Short term v immersion	vater absorption at partial	EN 1609		< 1 kg/m²
Diffusion fact	or (µ)	EN 13163	MU 20 – 40 MU 30 – 70	20 - 70
Tensile stren faces of insul	ngth perpendicular to the ation product	EN 1607	TR80	≥ 80 kPa

Annex No. 2 Insulation product characteristics for mechanically fixed ETICS

Note: Classes and levels for individual characteristics comply with EN 13163:2012+A1:2015. Only insulation products of the same or better declared characteristics, as stated in the table above, can be used in this ETICS.

Reaction to fire E has to be proved for every insulation product also at 10 mm products thickness.

Trade name	Plate diameter (mm)	Characteristic pull-out resistance	Plate stiffness (kN/mm)	Load at plate rupture (kN)
	Surface as	sembly		
ejotherm STR U ejotherm STR U 2G - EJOT Baubefestigungen GmbH - additional slip-on washer: SBL 140 plus VT 90	60	See ETA-04/0023	0.60	2.08
 EJOT SDM-T plus EJOT Baubefestigungen GmbH additional slip-on washer: SBL 140 plus SBL 110 plus VT 90 	60	See ETA-04/0064	0.70	2.24
KOELNER KI-10 KOELNER KI-10PA KOELNER KI-10M (values in brackets apply) - RAWLPLUG S.A. - additional slip-on washer: KWL-90 KWL-110 KWL-140	60	See ETA-07/0291	0.50 (0.40)	2.1 (2.6)
KI-10N KI-10NS - RAWLPLUG S.A. - additional slip-on washer: KWL-90 KWL-110 KWL-140	60	See ETA-07/0221	0.5	1.23
TFIX-8S - KOELNER S.A. - additional slip-on washer: KWL 90 KWL 110 KWL 140	60	See ETA-11/0144	0.6	2.04

Annex No. 3 Anchors, description of individual product characteristics contained in the ETA

Trade name	Plate diameter (mm)	Characteristic pull-out resistance	Plate stiffness (kN/mm)	Load at plate rupture (kN)
LTX-8 LMX-8 LGX-8 LTX-10 KLIMAS Sp. z o. o - additional slip-on washer: TDX-P-90/TDX-90 TDX-P-140/TDX-140	60	See ETA-16/0509	0.5	1.09 (1.02)
LTX-10 LMX-10 LGX-10 - KLIMAS Sp. z o. o - additional slip-on washer: TDX-P-90/TDX-90 TDX-P-140/TDX-140	60	See ETA-16/0509	0.5	1.02
eco-drive - Klimas Wkret-met Sp. z o. o.	60	See ETA-13/0107	0.6	2.8
 WKTHERM S Klimas Wkret-met Sp. z o. o. additional slip-on washer: TDX-90 TDX-140 	60	See ETA-13/0724	0.6	4.3
 fischer termoz CN 8 fischerwerke GmbH & Co. KG additional slip-on washer: DT 90 DT 110 DT 140 	60	See ETA-09/0394	0.6	1.7
 BRAVOLL®PTH-KZ 60/8 ITW Construction Products CZ s.r.o. additional slip-on washer: BRAVOLL® IT PTH 100 BRAVOLL® IT PTH 140 	60	See ETA-05/0055	0.7	2.1

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Trade name	Plate diameter (mm)	Characteristic pull-out resistance	Plate stiffness (kN/mm)	Load at plate rupture (kN)
Co	ountersunk	assembly		
ejotherm STR U ejotherm STR U 2G - EJOT Baubefestigungen GmbH - additional slip-on washer: SBL 140 plus VT 90	60	See ETA-04/0023	0.6	2.08
TFIX-8ST - KOELNER S.A.	60	See ETA-11/0144	0.6	2.04
LTX-8 LMX-8 LGX-8 LTX-10 KLIMAS Sp. z o. o - additional slip-on washer: TDX-P-90/TDX-90 TDX-P-140/TDX-140	60	See ETA-16/0509	0.5	1.09 (1.02)
LTX-10 LMX-10 LGX-10 - KLIMAS Sp. z o. o - additional slip-on washer: TDX-P-90/TDX-90 TDX-P-140/TDX-140	60	See ETA-16/0509	0.5	1.02

In addition to this list, anchors assessed In accordance with EAD 330196-00-0604 or ETAG 014 can be used provided that such anchors meet the following requirements:

2	Requirements		
Plate diameter	≥ 60 m	ım	
	Surface assembly:	≥ 0.5 k N /mm	
Plate sumness	Countersunk assembly:	≥ 0.5 kN/mm	
Rupture force of anchor's plate	≥ 1.02 kN and ≥ Higher of figures R _{panel} and R _{joint} in relevant table in CI, 3.3.5		
Countersunk depth	≤ 50 m	ım	

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Annex No. 4 Description of glass fibre mesh

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	Description Standard fibre mesh applied in one or two layers with aperture size	Strength after ageing	
		Absolute strength after ageing (N/mm)	Relative residual strength after ageing, of the strength in the as- delivered state (%)
SEMPRE 150	4.0 x 4.5 mm	≥ 20	≥ 50
AKE 145	4.0 x 4.5 mm		