European Technical Assessment

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European Technical Assessment

ETA-17/0520 of 14/10/2019

General Part

Technical Assessment Body issuing the European Technical Assessment: ŁUKASIEWICZ – ICiMB	
Trade name of the construction product	BOLIX S-PRO
Product family to which the construction product belongs	External Thermal Insulation Composite Systems (ETICS) with rendering
Manufacturer	BOLIX SA Stolarska 8 34-300 Żywiec, POLAND
Manufacturing plant	BOLIX SA Stolarska 8 34-300 Żywiec, POLAND
This European Technical Assessment contains	20 pages including 3 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
This ETA replaces	ETA 17/0520, version 1, issued on 17/08/2017

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Specific parts

1. Technical description of the product

This product BOLIX S-PRO 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 method of fixing and the relevant components are specified in Table 1. 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.

Table 1.

	Components	Coverage (kg/m^2)	Thickness (mm)
	Bonded ETICS or bonded ETICS with supplementary mechanical fixings. National application documents shall be taken into account.		
insulation materials with associated methods of fixing	• **Insulation product** boards of expanded polystyrene (EPS) according to EN 13163 *Product characteristics - see Annex No 1*	-	20 to 400
	• **Adhesives**		
	- **BOLIX Z** cement based powder requiring addition of 0,19-0,21 l/kg of water	about 4,0 (powder)	-
	- **BOLIX U** cement based powder requiring addition of 0,20-0,22 l/kg of water	about 4,0 (powder)	-
	- **BOLIX UWM** cement based powder requiring addition of 0,20-0,24 l/kg of water	about 4,0 (powder)	-
	- **BOLIX ZP** ready to use polyurethane foam	about 90 ml/m^2	-
	• **Supplementary mechanical fixings** Plastic anchors covered by relevant ETA	-	-

Table 1. cont.

	Components	Coverage (kg/m²)	Thickness (mm)
	Mechanically fixed ETICS with supplementary adhesive. National application documents shall be taken into account.		
Insulation materials with associated methods of fixing	• **Insulation product** boards of expanded polystyrene (EPS) according to EN 13163 *Product characteristics - see Annex No 1*	-	50 to 400
	• **Anchors** *Products characteristics - see Annex No 2*	-	-
	• **Supplementary adhesives** - **BOLIX Z** cement based powder requiring addition of 0,19-0,21 l/kg of water	about 4,0 (powder)	-
	- **BOLIX U** cement based powder requiring addition of 0,20-0,22 l/kg of water	about 4,0 (powder)	-
	- **BOLIX UWM** cement based powder requiring addition of 0,20-0,24 l/kg of water	about 4,0 (powder)	-
	- **BOLIX ZP** ready to use polyurethane foam	about 90 ml/m²	-
Base coats	• **BOLIX U** cement based powder requiring addition of 0,20-0,22 l/kg of water	4,0 to 6,0* (powder)	3,0 to 5,0 or 4,0 to 6,0*
	• **BOLIX UWM** cement based powder requiring addition of 0,20-0,24 l/kg of water	4,0 to 6,0* (powder)	
Reinforce-ment	• **Standard glass fibre meshes** applied in one or two layers		
	- **BOLIX HD 145/S**	-	-
	- **BOLIX HD 158/S**	-	-
	- **BOLIX HD 160/S**	-	-
	- **BOLIX HD 174/S**	-	-
	• **Reinforced glass fibre mesh** to be used with standard glass fibre meshes		
	- **BOLIX HD 335/P** *Products characteristics - see Annex No 3*	-	-

*depending on number of applied layers of glass fibre meshes

Table 1. cont.

	Components	Coverage (kg/m²)	Thickness (mm)
Key coats	• **BOLIX OP** ready to use liquid to be used with finishing coats: BOLIX MP, BOLIX, BOLIX TR, BOLIX DECO, BOLIX TM and BOLIX TM DECO	0,25 to 0,40	-
	• **BOLIX SIG KOLOR** ready to use liquid to be used with finishing coats: BOLIX SIT / BOLIX SIT Complex, BOLIX SIT-P and BOLIX SI-SIT	0,25 to 0,40	-
	• **BOLIX SG KOLOR** ready to use liquid to be used with finishing coat BOLIX S	0,25 to 0,40	-
	• **BOLIX N** ready to use liquid to be used with decorative coat BOLIX AZ / BOLIX AZ Complex	0,10 to 0,20	-
	• **BOLIX SIG** ready to use liquid to be used with decorative coats: BOLIX SIL / BOLIX SIL Complex and BOLIX SIL-P	0,10 to 0,20	-
	• **BOLIX SG** ready to use liquid to be used with decorative coat BOLIX SZ	0,10 to 0,20	-
Finishing coats	• Mineral finishing coat **BOLIX MP** dry cement based powders requiring addition of 0,17-0,24 l/kg of water floated structure max. particles size: 1,0; 1,5; 2,0; 3,0 mm ribbed structure max. particles size: 2,5 mm	1,4 to 4,0 (powder)	Regulated by particles size
	• Silicate finishing coat **BOLIX S** ready to use pastes – silicate and acrylic binder floated structure max. particles size: 1,0; 1,5; 2,0 mm ribbed structure max. particles size: 2,5 mm	2,0 to 3,5	

Table 1. cont.

	Components	Coverage (kg/m²)	Thickness (mm)
Finishing coats	• Silicone finishing coat **BOLIX SIT / BOLIX SIT Complex** ready to use pastes – silicone and acrylic binder floated structure max. particles size: 1,0; 1,5; 2,0 mm ribbed structure max. particles size: 2,5 mm	1,7 to 3,4	
	• Silicone finishing coat **BOLIX SIT-P** ready to use pastes – silicone and acrylic binder floated structure max. particles size: 1,5; 2,0 mm	2,2 to 3,4	Regulated by particles size
	• Silicate-silicone finishing coat **BOLIX SI-SIT** ready to use pastes – silicate, silicone and acrylic binder floated structure max. particles size: 1,5; 2,0; 3,0** mm	2,2 to 4,8	
	• Acrylic finishing coat **BOLIX** ready to use pastes – acrylic binder floated structure max. particles size: 1,0; 1,5; 2,0 mm ribbed structure max. particles size: 2,5 mm	1,7 to 3,5	
	• Acrylic finishing coat **BOLIX TR** ready to use paste – acrylic binder applied in one layer applied in two layers modelled structure max. particles size: 0,5 mm	2,6 to 3,5 3,5 to 7,0	1,5 to 2,0 2,0 to 4,0
	• Acrylic finishing coat **BOLIX DECO** ready to use pastes – acrylic binder mosaic or modelled structure max. particles size: 0,5 ÷ 1,0; 0,5 ÷ 2,0 mm	2,5 to 3,5	1,5 to 3,0
	• Acrylic finishing coat **BOLIX TM** ready to use pastes – acrylic binder mosaic structure max. particles size: 0,8; 1,6 mm	2,0 to 4,0	Regulated by particles size

**BOLIX SI-SIT floated 3,0 mm is used only with BOLIX UWM base coat

Table 1. cont.

	Components	Coverage (kg/m²)	Thickness (mm)
Finishing coats	• Acrylic finishing coat **BOLIX TM DECO** ready to use paste – acrylic binder spread structure max. particles size: 0,8 mm	2,9 to 3,5	2,0 to 3,0
Decorative coats (paints)	• **BOLIX SIL / BOLIX SIL Complex** ready to use pigmented liquid to be used optionally with following finishing coats: - BOLIX MP - BOLIX SIT / BOLIX SIT Complex - BOLIX SIT-P - BOLIX SI-SIT	0,18 to 0,40 l/m²	-
	• **BOLIX SIL-P** ready to use pigmented liquid to be used optionally with following finishing coats: - BOLIX MP - BOLIX SIT / BOLIX SIT Complex - BOLIX SIT-P - BOLIX SI-SIT	0,18 to 0,40 l/m²	
	• **BOLIX SZ** ready to use pigmented liquid to be used optionally with following finishing coats: - BOLIX MP - BOLIX S	0,18 to 0,40 l/m²	
	• **BOLIX AZ / BOLIX AZ Complex** ready to use pigmented liquid to be used optionally with finishing coat BOLIX	0,18 to 0,40 l/m²	
Ancillary materials	Remain under the manufacturer's responsibility		

2. Specification of the intended use 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) or concrete (cast on site or as prefabricated panels).

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 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.

Design, installation, maintenance and repair of ETICS shall be done in accordance with principles introduced in chapter 7 of ETAG 004, used as EAD, and shall be in conformity with Member States' legislation requirements.

The instructions regarding packaging, transport, storage and installation of ETICS are specified in the manufacturer's technical documentation.

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 No 1÷3.

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 2.

Configuration	Max. heat of combustion MJ/kg	Flame retardant content	Euroclass acc. to EN 13501-1
Adhesive (excluding BOLIX ZP)	0,32	No flame retardant	B-s1, d0
EPS boards* density ≤ 24 kg/m³	-		
Base coat	0,32		
Glass fibre mesh - standard - reinforced	8,61 6,70		
Key coat	5,68		
Finishing coat (excluding BOLIX TR applied in two layers)	3,53		
Key coat	26,94		
Decorative coat	4,60		
Configuration including BOLIX TR applied in two layers	3,53	No flame retardant	B-s2, d0
Configuration including BOLIX ZP	-	-	No performance assessed
*flame retardant content in quantity ensuring Euroclass E according to EN 13501-1			

Note: 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 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 BOLIX U:
  - Water absorption after 1 hour < 1 kg/m²;
  - Water absorption after 24 hours < 0,5 kg/m².

- Base coat BOLIX UWM:
  - Water absorption after 1 hour < 1 kg/m²;
  - Water absorption after 24 hours < 0,5 kg/m².
- Rendering systems: Table 3.

Table 3.

		Water absorption after 24 hours	
		<0,5 kg/m²	≥0,5 kg/m²
Rendering system: Base coat BOLIX U + relevant key coat + finishing coat indicated hereafter:	BOLIX MP	x	-
	BOLIX S	x	-
	BOLIX SIT / BOLIX SIT Complex	x	-
	BOLIX SIT-P	x	-
	BOLIX SI-SIT	x	-
	BOLIX	x	-
	BOLIX TR	x	-
	BOLIX DECO	x	-
	BOLIX TM	x	-
	BOLIX TM DECO	x	-
Rendering system: Base coat BOLIX UWM + relevant key coat + finishing coat indicated hereafter:	BOLIX MP	x	-
	BOLIX S	x	-
	BOLIX SIT / BOLIX SIT Complex	x	-
	BOLIX SIT-P	x	-
	BOLIX SI-SIT	x	-
	BOLIX	x	-
	BOLIX TR	x	-
	BOLIX DECO	x	-
	BOLIX TM	x	-
	BOLIX TM DECO	x	-

3.2.2. Watertightness (ETAG 004: clause 5.1.3.2)

3.2.2.1. Hygrothermal behaviour (ETAG 004: clause 5.1.3.2.1)

Pass (without defects).

3.2.2.2. Freeze-thaw behaviour (ETAG 004: clause 5.1.3.2.2)

ETICS is frost resistant according to water absorption test.

3.2.3. Impact resistance (ETAG 004: clause 5.1.3.3)

Table 4.

		Single layer of standard mesh
Rendering system: Base coat BOLIX U + relevant key coat + finishing coat indicated hereafter:	BOLIX MP	Category II
	BOLIX S	Category I
	BOLIX SIT / BOLIX SIT Complex	Category I
	BOLIX SIT-P	Category II
	BOLIX SI-SIT	Category II
	BOLIX	Category II
	BOLIX TR	Category II
	BOLIX DECO	Category II
	BOLIX TM	Category II
	BOLIX TM DECO	Category II
Rendering system: Base coat BOLIX UWM + relevant key coat + finishing coat indicated hereafter:	BOLIX MP	Category II
	BOLIX S	Category II
	BOLIX SIT / BOLIX SIT Complex	Category I
	BOLIX SIT-P	Category III
	BOLIX SI-SIT	Category III
	BOLIX	Category III
	BOLIX TR	Category I
	BOLIX DECO	No performance assessed
	BOLIX TM	Category II
	BOLIX TM DECO	Category II

Table 5.

		Double layer of standard mesh
Rendering system: Base coat BOLIX U + relevant key coat + finishing coat indicated hereafter:	BOLIX S	Category I
	BOLIX SIT / BOLIX SIT Complex	Category I
	BOLIX SIT-P	Category I
	BOLIX SI-SIT	Category I
	BOLIX	Category I

3.2.4. Water vapour permeability (ETAG 004: clause 5.1.3.4)

Table 6.

		Average equivalent air thickness s_d
Rendering system: Base coat BOLIX U or BOLIX UWM + relevant key coat + finishing coat indicated hereafter + relevant key coat + decorative coat indicated hereafter (if relevant):	BOLIX MP	≤ 2 m, results:
	+ BOLIX SIL / BOLIX SIL Complex	0,20 m
	+ BOLIX SIL-P	0,10 m
	+ BOLIX SZ	0,19 m
	BOLIX S + BOLIX SZ	≤ 2 m, result: 0,10 m
	BOLIX SIT / BOLIX SIT Complex	≤ 2 m, results:
	+ BOLIX SIL / BOLIX SIL Complex	0,30 m
	+ BOLIX SIL-P	0,30 m
	BOLIX SIT-P	≤ 2 m, results:
	+ BOLIX SIL / BOLIX SIL Complex	0,40 m
	+ BOLIX SIL-P	0,30 m
	BOLIX SI-SIT	≤ 2 m, results:
	+ BOLIX SIL / BOLIX SIL Complex	0,30 m
	+ BOLIX SIL-P	0,40 m
	BOLIX + BOLIX AZ	≤ 2 m, result: 0,30 m
	BOLIX TR	≤ 2 m, result: 0,50 m
	BOLIX DECO	≤ 2 m, result: 0,30 m
	BOLIX TM	≤ 2 m, result: 0,50 m
	BOLIX TM DECO	≤ 2 m, result: 0,30 m

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

No performance assessed.

Note: There may be requirements applicable to the ETICS falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the Regulation (EU) No 305/2011, these requirements need to be complied with, when and where they apply.

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)

Base coat: BOLIX U

- Initial state and after hygrothermal cycles:
  ≥ 0,10 MPa

Base coat: BOLIX UWM

- Initial state and after hygrothermal cycles:
  ≥ 0,10 MPa

3.3.2. Bond strength between adhesive and substrate (ETAG 004: clause 5.1.4.1.2)

Table 7.

	Initial state	48 h immersion in water + 2 hours 23°C/50% RH	48 h immersion in water + 7 days 23°C/50% RH
BOLIX Z	≥ 0,80 MPa	≥ 0,60 MPa	≥ 0,80 MPa
BOLIX U	≥ 0,80 MPa	≥ 0,60 MPa	≥ 0,80 MPa
BOLIX UWM	≥ 0,80 MPa	≥ 0,60 MPa	≥ 0,80 MPa

3.3.3. Bond strength between adhesive and insulation product (ETAG 004: clause 5.1.4.1.3)

Table 8.

	Initial state	48 h immersion in water + 2 hours 23°C/50% RH	48 h immersion in water + 7 days 23°C/50% RH
BOLIX Z	≥ 0,08 MPa	≥ 0,03 MPa	≥ 0,08 MPa
BOLIX U	≥ 0,10 MPa	≥ 0,05 MPa	≥ 0,10 MPa
BOLIX UWM	≥ 0,10 MPa	≥ 0,05 MPa	≥ 0,10 MPa

3.3.4. Bond strength of foam adhesive (ETAG 004: clause 5.1.4.1.4)

- Bond strength between BOLIX ZP:
  All applications conditions according to EOTA TR046 ≥ 0,08 MPa

  Minimal bonded surface area S: 40 %

3.3.5. Bond strength after ageing (ETAG 004: clause 5.1.7.1)

Table 9.

		After hygrothermal cycles
Rendering system: Base coat BOLIX U + relevant key coat + finishing coat indicated hereafter:	BOLIX MP	≥ 0,08 MPa
	BOLIX S	≥ 0,10 MPa
	BOLIX SIT / BOLIX SIT Complex	≥ 0,10 MPa
	BOLIX SIT-P	≥ 0,12 MPa
	BOLIX SI-SIT	≥ 0,12 MPa
	BOLIX	≥ 0,12 MPa
	BOLIX TR	≥ 0,10 MPa
	BOLIX DECO	≥ 0,10 MPa
	BOLIX TM	≥ 0,10 MPa
	BOLIX TM DECO	≥ 0,10 MPa
Rendering system: Base coat BOLIX UWM + relevant key coat + finishing coat indicated hereafter:	BOLIX MP	≥ 0,10 MPa
	BOLIX S	≥ 0,10 MPa
	BOLIX SIT / BOLIX SIT Complex	≥ 0,12 MPa
	BOLIX SIT-P	≥ 0,08 MPa
	BOLIX SI-SIT	≥ 0,08 MPa
	BOLIX	≥ 0,08 MPa
	BOLIX TR	≥ 0,10 MPa
	BOLIX DECO	≥ 0,10 MPa
	BOLIX TM	≥ 0,10 MPa
	BOLIX TM DECO	≥ 0,10 MPa

3.3.6. Fixing strength (ETAG 004, clause 5.1.4.2)

Test not required. ETICS fulfils the criteria $E \cdot d \leq 50\,000$ N/mm.

3.3.7. Wind load resistance (ETAG 004, clause 5.1.4.3)

Table 10.

Anchors for which the following failure loads apply		Anchors according to Annex No 2	
		Plate diameter (mm)	≥ 60
Characteristics of the **EPS boards** for which the following failure loads apply		Thickness (mm)	≥ 50
		Tensile strength perpendicular to the faces (kPa)	≥ 100
Failure loads (N)	Anchors not placed at the panel joints (*Pull-through test*) dry conditions	R_{panel}	Minimum: 442 Average: 460
	Anchors placed at the panel joints (*Pull-through test*) dry conditions	R_{joint}	Minimum: 423 Average: 450

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

$$R_d = \frac{R_{panel} x\, n_{panel} + R_{joint}\, x\, n_{joint}}{\gamma m}$$

where:

n_{panel}: number (per m^2) of anchors not placed at the panel joints
n_{joint}: number (per m^2) of anchors placed at the panel joints
γm: national safety factor

3.3.8. Render strip tensile test (ETAG 004: clause 5.5.4.1)

No performance assessed.

3.3.9. Shear strength and shear modulus of foam adhesive (ETAG 004: clause 5.7.4.1)

Table 11.

	Shear strength (kPa)	Shear modulus (kPa)
BOLIX ZP	≥ 78,4	≥ 525

3.3.10. Post expansion behaviour of foam adhesive (ETAG 004: clause 5.7.4.2)

Table 12.

	Expansion (mm) after -initial thickness 8 mm-					
	5 min.	10 min.	20 min.	40 min.	60 min.	24 hours
BOLIX ZP	0,80	0,46	0,14	0,12	0,17	0,26

3.4. Protection against noise (BWR 5)

3.4.1. Airborne sound insulation (ETAG 004: clause 5.1.5.1)

No performance assessed.

3.5. Energy economy and heat retention (BWR 6)

3.5.1. Thermal resistance (ETAG 004: clause 5.1.6.1)

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

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

where:

$\chi_p \cdot n$ 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

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 ($\chi_p \cdot n$ negligible for n < 20)

= 0,004 W/K for anchors with a galvanized steel screw with the head covered by a plastic material ($\chi_p \cdot n$ 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:

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

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 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.

3.6. 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 (further described in Annex V to Regulation (EU) No 305/2011) 1 and 2+ apply.

Table 13.

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

The manufacturer shall exercise permanent control of production. All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic manner in the form of written policies and procedures. The production control system shall ensure performance constancy of the product covered by this European Technical Assessment.

The manufacturer may only use materials stated in the technical documentation of this European Technical Assessment. The factory production control shall be performed in accordance with the Control Plan which is a confidential part of the European Technical Assessment. The Control Plan was developed as a part of factory production control system.

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

issued in Krakow on 14.10.2019

By

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Annexes:

Annex No 1 – Insulation product characteristics

Annex No 2 – Anchors characteristics for mechanically fixed ETICS with supplementary adhesive

Annex No 3 – Glass fibre meshes characteristics

Annex No 1 – Insulation product characteristics

		Boards of expanded polystyrene EPS	
		Bonded ETICS	**Mechanically fixed ETICS with supplementary adhesive**
Reaction to fire / EN 13501-1		Euroclass – E max. density: 24 kg/m^3	
Thermal resistance		Defined in the CE marking in reference to EN 13163 (m^2·K)/W	
Thickness / EN 823		± 2 mm [EN 13163 - T(2)]	
Length / EN 822		± 2 mm [EN 13163 - L(2)]	
Width / EN 822		± 2 mm [EN 13163 - W(2)]	
Squareness / EN 824		± 5 mm/m [EN 13163 - S(5)]	
Flatness / EN 825		5 mm [EN 13163 - P(5)]	
Dimensional stability under specified conditions	EN 1603	± 0,2 % [EN 13163 - DS(N)2]	
	EN 1604	2 % [EN 13163 - DS(70,-)2]	
Bending strength / EN 12089		≥ 75 kPa [EN 13163 - BS75]	
Water vapour permeability, diffusion factor (μ) / EN 12086 - EN 13163		20 to 40	
Tensile strength perpendicular to the faces in dry conditions / EN 1607		≥ 80 kPa [EN 13163 - TR80]	≥ 100 kPa [EN 13163 - TR100]
Shear strength / EN 12090 - EN 13163		≥ 35 kPa	

Annex No 2 – Anchors characteristics for mechanically fixed ETICS with supplementary adhesive

Anchor trade name	Plate stiffness (kN/mm) / diameter (mm)	Characteristic resistance in the substrate
EJOT H1 eco EJOT H4 eco	0,6 / 60	ETA-11/0192
ejotherm STR U 2G	0,6 / 60	ETA-04/0023
KOELNER KI-10M	0,4 / 60	ETA-07/0291
KI-10N KI-10NS	0,5 / 60	ETA-07/0221
RAWLPLUG Insulation System R-TFIX-8S	0,6 / 60	ETA 17/0161
Rawlplug Façade Insulation Fixing R-TFIX-8M	1,0 / 60	ETA 17/0592
fischer TERMOZ 8 U fischer TERMOZ 8 UZ	0,5 / 60	ETA-02/0019
fischer termoz CN 8 fischer termoz CN 8 R	0,6 / 60	ETA-09/0394
fischer termoz CS 8	0,6 / 60	ETA-14/0372
TERMOFIX CF 8	0,5 / 60	ETA-07/0287
WKTHERMø8	0,6 / 60	ETA-11/0232
WKTHERM S	0,6 / 60	ETA-13/0724
eco-drive	0,6 / 60	ETA-13/0107

Additionally, other anchors covered by relevant ETA can be used, provided that they meet the following requirements:

	Requirement
Plate diameter	≥ 60 mm
Plate stiffness	≥ 0,4 kN/mm

Annex No 3 – Glass fibre meshes characteristics

Mesh trade name		Description	Alkalis resistance	
			Residual resistance after ageing (N/mm)	Relative residual resistance: % (after ageing) of the strength in the as delivered state
BOLIX HD 145/S	R 117 A101*	Mass per unit area: 152 g/m² Mesh size: 4,0 x 4,5 mm	≥ 20	≥ 50
	SSA-1363-145**	Mass per unit area: 151 g/m² Mesh size: 4,5 x 3,8 mm	≥ 20	≥ 50
BOLIX HD 158/S	ST 2924-100/7 KM	Mass per unit area: 155 g/m² Mesh size: 4,8 x 3,7 mm	≥ 20	≥ 50
BOLIX HD 160/S	03-1	Mass per unit area: 160 g/m² Mesh size: 3,5 x 3,8 mm	≥ 20	≥ 50
	SSA-1363-160**	Mass per unit area: 165 g/m² Mesh size: 4,0 x 3,9 mm	≥ 20	≥ 50
BOLIX HD 174/S	ST 112-100/7KM	Mass per unit area: 170 g/m² Mesh size: 4,0 x 3,7 mm	≥ 20	≥ 50
BOLIX HD 335/P	REDNET E335	Mass per unit area: 335 g/m² Mesh size: 6,0 x 9,0 mm	≥ 20	≥ 50

*mesh covered by ETA 13/0392; **mesh covered by ETA 16/0526

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Annex No 4 to **ETA-17/0520 of 14/10/2019**

Control Plan of BOLIX S-PRO

Control plan has been prepared by Technical Assessment Body: ŁUKASIEWICZ Research Network – Institute of Ceramics and Building Materials (ŁUKASIEWICZ – ICiMB TAB) in agreement with manufacturer BOLIX SA. This document is a confidential part of the ETA-17/0520 and can be shared only with Notified Body participating in the procedure of assessment and verification of constancy of performance.

The manufacturer is obliged to notify ŁUKASIEWICZ – ICiMB TAB of every changes of the product, production process or the way of use of BOLIX S-PRO which may lead to errors in the control plan. ŁUKASIEWICZ – ICiMB TAB will decide if such changes affect the validity of the ETA-17/0520, thus validity of product CE marking and necessity of again technical assessment or changes in the ETA-17/0520. On request of ŁUKASIEWICZ – ICiMB TAB the manufacturer is obliged to present the results confirming that requirements of control plan are met.

CONTROL PLAN OF BOLIX S-PRO

Adhesive: **BOLIX Z**			
Examination	**Method**	**Requirement**	**Frequency of testing**
Appearance	Instruction I/8/31/ZSZ* cl. 4.1.3.1	powder of uniform color without lumps and mechanical impurities	Out of every batch, at intervals of an hour
Sieve residue - 1,4 mm	Instruction I/8/31/ZSZ* cl. 4.1.3.3	0,0 g	
Consistency	PN-85/B-04500	7,5 ÷ 9,5 cm	Out of every batch
Density	ETAG 004** cl. C.1.1.1 (powders)	1485 ÷ 1815 kg/m^3	
Bond strength to EPS after curing in dry condition	ETAG 004** cl. 5.1.4.1.3	≥ 0,08 MPa	At least once per 1 month
Ash content at 450 °C	ETAG 004** cl. C.1.1.3	95,2 ÷ 97,2 %	At least once per 12 months
Water retention capability	ETAG 004** cl. C.1.2.1	≥ 95,0 %	
Bond strength to substrate after curing in dry condition	ETAG 004** cl. 5.1.4.1.2	≥ 0,80 MPa	

Adhesive / base coat: **BOLIX U**			
Examination	**Method**	**Requirement**	**Frequency of testing**
Appearance	Instruction I/8/25/ZSZ* cl. 4.1.3.1	powder of uniform color without lumps and mechanical impurities	Out of every batch, at intervals of an hour
Sieve residue - 0,63 mm Sieve residue - 0,80 mm	Instruction I/8/25/ZSZ* cl. 4.1.3.3	0,5 g 0,0 g	
Consistency	PN-85/B-04500	7,5 ÷ 9,5 cm	Out of every batch
Density	ETAG 004** cl. C.1.1.1 (powders)	1458 ÷ 1782 kg/m^3	
Bond strength between base coat and EPS after curing in dry condition	ETAG 004** cl. 5.1.4.1.1	≥ 0,10 MPa	At least once per 1 month
Ash content at 450 °C	ETAG 004** cl. C.1.1.3	95,0 ÷ 97,0 %	At least once per 12 months
Water retention capability	ETAG 004** cl. C.1.2.1	≥ 95,0 %	
Water absorption of base coat	ETAG 004** cl. 5.1.3.1	< 1 kg/m^2 after 1 h < 0,5 kg/m^2 after 24 h	
Bond strength to substrate after curing in dry condition	ETAG 004** cl. 5.1.4.1.2	≥ 0,80 MPa	

Adhesive / base coat: **BOLIX UWM**			
Examination	**Method**	**Requirement**	**Frequency of testing**
Appearance	Instruction I/8/71/ZSZ* cl. 4.1.3.1	powder of uniform color without lumps and mechanical impurities	Out of every batch, at intervals of an hour
Sieve residue - 0,63 mm Sieve residue - 0,80 mm	Instruction I/8/71/ZSZ* cl. 4.1.3.3	0,5 g 0,0 g	
Consistency	PN-85/B-04500	7,5 ÷ 9,5 cm	Out of every batch
Density	ETAG 004** cl. C.1.1.1 (powders)	1395 ÷ 1705 kg/m^3	
Bond strength between base coat and EPS after curing in dry condition	ETAG 004** cl. 5.1.4.1.1	≥ 0,10 MPa	At least once per 1 month
Ash content at 450 °C	ETAG 004** cl. C.1.1.3	96,0 ÷ 99,0 %	At least once per 12 months
Water retention capability	ETAG 004** cl. C.1.2.1	≥ 95,0 %	
Water absorption of base coat	ETAG 004** cl. 5.1.3.1	< 1 kg/m^2 after 1 h < 0,5 kg/m^2 after 24 h	
Bond strength to substrate after curing in dry condition	ETAG 004** cl. 5.1.4.1.2	≥ 0,80 MPa	

Polyurethane foam: **BOLIX ZP**			
Examination	**Method**	**Requirement**	**Frequency of testing**
Density	EOTA TR046*** cl. 3.1	17,7 ÷ 21,7 kg/m^3	Every batch
Cutting time	EOTA TR046*** cl. 3.3	≤ 41 minutes	Every batch
Bond strength to EPS after curing in standard conditions	EOTA TR046*** cl. 4.1	≥ 0,08 MPa	At least once per 12 months
Post expansion behaviour: - after 20 minutes - after 60 minutes	EOTA TR046*** cl. 4.2	≤ 0,2 mm ≤ 0,3 mm	At least once per 24 months

Key coat: **BOLIX OP**			
Examination	**Method**	**Requirement**	**Frequency of testing**
Appearance	Instruction I/8/8/ZSZ* cl. 4.1.2.1	homogeneous liquid, can contain a filler	Every batch of mixer (8000 kg)
Density	ETAG 004** cl. C.1.1.1 (pastes and liquids)	1278 ÷ 1562 kg/m^3	
Dry extract	ETAG 004** cl. C.1.1.2	51,4 ÷ 59,6 %	At least once per 12 months
Ash content - at 450 °C - at 900 °C	ETAG 004** cl. C.1.1.3	41,7 ÷ 52,3 % 31,8 ÷ 44,2 %	

Key coat: **BOLIX SIG KOLOR**			
Examination	**Method**	**Requirement**	**Frequency of testing**
Appearance	Instruction I/8/8/ZSZ* cl. 4.1.2.1	homogeneous liquid, can contain a filler	Every batch of mixer (8000 kg)
Density	ETAG 004** cl. C.1.1.1 (pastes and liquids)	1242 ÷ 1518 kg/m^3	
Dry extract	ETAG 004** cl. C.1.1.2	52,7 ÷ 61,1 %	At least once per 12 months
Ash content - at 450 °C - at 900 °C	ETAG 004** cl. C.1.1.3	36,9 ÷ 48,3 % 34,8 ÷ 46,6 %	

Key coat: **BOLIX SG KOLOR**			
Examination	**Method**	**Requirement**	**Frequency of testing**
Appearance	Instruction I/8/8/ZSZ* cl. 4.1.2.1	homogeneous liquid, can contain a filler	Every batch of mixer (8000 kg)
Density	ETAG 004** cl. C.1.1.1 (pastes and liquids)	1278 ÷ 1562 kg/m^3	
Dry extract	ETAG 004** cl. C.1.1.2	52,2 ÷ 60,5 %	At least once per 12 months
Ash content - at 450 °C - at 900 °C	ETAG 004** cl. C.1.1.3	36,9 ÷ 48,3 % 34,8 ÷ 46,6 %	

Key coat: **BOLIX N**			
Examination	**Method**	**Requirement**	**Frequency of testing**
Appearance	Instruction I/8/8/ZSZ* cl. 4.1.2.1	homogeneous liquid, can contain a filler	Every batch of mixer (8000 kg)
Density	ETAG 004** cl. C.1.1.1 (pastes and liquids)	900 ÷ 1100 kg/m^3	
Dry extract	ETAG 004** cl. C.1.1.2	5,5 ÷ 6,4 %	At least once per 12 months
Ash content - at 450 °C - at 900 °C	ETAG 004** cl. C.1.1.3	3,9 ÷ 4,3 % 0 %	

Key coat: **BOLIX SIG**			
Examination	**Method**	**Requirement**	**Frequency of testing**
Appearance	Instruction I/8/8/ZSZ* cl. 4.1.2.1	homogeneous liquid, can contain a filler	Every batch of mixer (8000 kg)
Density	ETAG 004** cl. C.1.1.1 (pastes and liquids)	900 ÷ 1100 kg/m^3	
Dry extract	ETAG 004** cl. C.1.1.2	6,8 ÷ 8,3 %	At least once per 12 months
Ash content - at 450 °C - at 900 °C	ETAG 004** cl. C.1.1.3	4,8 ÷ 5,9 % 0 %	

Key coat: **BOLIX SG**			
Examination	**Method**	**Requirement**	**Frequency of testing**
Appearance	Instruction I/8/8/ZSZ* cl. 4.1.2.1	homogeneous liquid, can contain a filler	Every batch of mixer (8000 kg)
Density	ETAG 004** cl. C.1.1.1 (pastes and liquids)	945 ÷ 1155 kg/m^3	
Dry extract	ETAG 004** cl. C.1.1.2	8,8 ÷ 10,2 %	At least once per 12 months
Ash content - at 450 °C - at 900 °C	ETAG 004** cl. C.1.1.3	5,1 ÷ 5,7 % 0 %	

Mineral finishing coat: **BOLIX MP**			
Examination	**Method**	**Requirement**	**Frequency of testing**
Appearance	Instruction I/8/19/ZSZ* cl. 4.1.3.1	powder of uniform color without lumps and mechanical impurities	Out of every batch with one hour frequency
Residue on suitable sieve	Instruction* I/8/19/ZSZ cl. 4.1.3.3	0,0 g	
Density	ETAG 004** cl. C.1.1.1 (powders)	1395 ÷ 1705 kg/m^3	Out of every batch
Ash content at 450 °C	ETAG 004** cl. C.1.1.3	97,0 ÷ 99,0 %	At least once per 12 months
Water absorption (with BOLIX U)	ETAG 004** cl. 5.1.3.1	< 0,5 kg/m^2 after 24 h	
Water absorption (with BOLIX UWM)			
Bond strength after ageing (with BOLIX U)	ETAG 004** cl. 5.1.7.1.2	≥ 0,08 MPa	
Bond strength after ageing (with BOLIX UWM)		≥ 0,10 MPa	

Silicate finishing coat: **BOLIX S**			
Examination	**Method**	**Requirement**	**Frequency of testing**
Appearance	Instruction I/8/10/ZSZ* cl. 4.1.2.1	homogeneous paste of uniform color, not foamy, without lumps and mechanical impurities	Every batch of mixer (8000 kg)
Density	ETAG 004** cl. C.1.1.1 (pastes and liquids)	1710 ÷ 2090 kg/m^3	
Dry extract	ETAG 004** cl. C.1.1.2	80,7 ÷ 93,4 %	At least once per 12 months
Ash content - at 450 °C - at 900 °C	ETAG 004** cl. C.1.1.3	73,9 ÷ 78,5 % 45,0 ÷ 53,7 %	
Water absorption (with BOLIX U)	ETAG 004** cl. 5.1.3.1	< 0,5 kg/m^2 after 24 h	
Water absorption (with BOLIX UWM)			
Bond strength after ageing (with BOLIX U)	ETAG 004** cl. 5.1.7.1.2	≥ 0,10 MPa	
Bond strength after ageing (with BOLIX UWM)			

Silicone finishing coat: **BOLIX SIT / BOLIX SIT Complex**			
Examination	**Method**	**Requirement**	**Frequency of testing**
Appearance	Instruction I/8/37/ZSZ* cl. 4.1.2.1	homogeneous paste of uniform color, not foamy, without lumps and mechanical impurities	Every batch of mixer (8000 kg)
Density	ETAG 004** cl. C.1.1.1 (pastes and liquids)	1728 ÷ 2112 kg/m^3	
Dry extract	ETAG 004** cl. C.1.1.2	77,8 ÷ 90,1 %	At least once per 12 months
Ash content - at 450 °C - at 900 °C	ETAG 004** cl. C.1.1.3	67,5 ÷ 77,5 % 47,7 ÷ 57,3 %	
Water absorption (with BOLIX U)	ETAG 004** cl. 5.1.3.1	< 0,5 kg/m^2 after 24 h	
Water absorption (with BOLIX UWM)			
Bond strength after ageing (with BOLIX U)	ETAG 004** cl. 5.1.7.1.2	≥ 0,10 MPa	
Bond strength after ageing (with BOLIX UWM)		≥ 0,12 MPa	

Silicone finishing coat: **BOLIX SIT-P**			
Examination	**Method**	**Requirement**	**Frequency of testing**
Appearance	Instruction I/8/54/ZSZ* cl. 4.1.2.1	homogeneous paste of uniform color, not foamy, without lumps and mechanical impurities	Every batch of mixer (8000 kg)
Density	ETAG 004** cl. C.1.1.1 (pastes and liquids)	1755 ÷ 2145 kg/m^3	
Dry extract	ETAG 004** cl. C.1.1.2	83,7 ÷ 96,9 %	At least once per 12 months
Ash content - at 450 °C - at 900 °C	ETAG 004** cl. C.1.1.3	78,2 ÷ 83,0 % 47,1 ÷ 52,1 %	
Water absorption (with BOLIX U)	ETAG 004** cl. 5.1.3.1	< 0,5 kg/m^2 after 24 h	
Water absorption (with BOLIX UWM)			
Bond strength after ageing (with BOLIX U)	ETAG 004** cl. 5.1.7.1.2	≥ 0,12 MPa	
Bond strength after ageing (with BOLIX UWM)		≥ 0,08 MPa	

Silicate-silicone finishing coat: **BOLIX SI-SiT**			
Examination	**Method**	**Requirement**	**Frequency of testing**
Appearance	Instruction I/8/37/ZSZ* cl. 4.1.2.1	homogeneous paste of uniform color, not foamy, without lumps and mechanical impurities	Every batch of mixer (8000 kg)
Density	ETAG 004** cl. C.1.1.1 (pastes and liquids)	1719 ÷ 2101 kg/m^3	
Dry extract	ETAG 004** cl. C.1.1.2	78,3 ÷ 90,6 %	At least once per 12 months
Ash content - at 450 °C - at 900 °C	ETAG 004** cl. C.1.1.3	69,1 ÷ 76,5 % 47,4 ÷ 57,0 %	
Water absorption (with BOLIX U)	ETAG 004** cl. 5.1.3.1	< 0,5 kg/m^2 after 24 h	
Water absorption (with BOLIX UWM)			
Bond strength after ageing (with BOLIX U)	ETAG 004** cl. 5.1.7.1.2	≥ 0,12 MPa	
Bond strength after ageing (with BOLIX UWM)		≥ 0,08 MPa	

Acrylic finishing coat: **BOLIX**			
Examination	**Method**	**Requirement**	**Frequency of testing**
Appearance	Instruction I/8/9/ZSZ* cl. 4.1.2.1	homogeneous paste of uniform color, not foamy, without lumps and mechanical impurities	Every batch of mixer (8000 kg)
Density	ETAG 004** cl. C.1.1.1 (pastes and liquids)	1728 ÷ 2112 kg/m^3	
Dry extract	ETAG 004** cl. C.1.1.2	81,2 ÷ 94,1 %	At least once per 12 months
Ash content - at 450 °C - at 900 °C	ETAG 004** cl. C.1.1.3	74,0 ÷ 78,6 % 59,0 ÷ 63,0 %	
Water absorption (with BOLIX U)	ETAG 004** cl. 5.1.3.1	< 0,5 kg/m^2 after 24 h	
Water absorption (with BOLIX UWM)			
Bond strength after ageing (with BOLIX U)	ETAG 004** cl. 5.1.7.1.2	≥ 0,12 MPa	
Bond strength after ageing (with BOLIX UWM)		≥ 0,08 MPa	

Acrylic finishing coat: **BOLIX TR**			
Examination	**Method**	**Requirement**	**Frequency of testing**
Appearance	Instruction I/8/48/ZSZ* cl. 4.1.2.1	homogeneous paste of uniform color, not foamy, without lumps and mechanical impurities	Every batch of mixer (8000 kg)
Density	ETAG 004** cl. C.1.1.1 (pastes and liquids)	1620 ÷ 1980 kg/m^3	
Dry extract	ETAG 004** cl. C.1.1.2	72,9 ÷ 89,1 %	At least once per 12 months
Ash content - at 450 °C - at 900 °C	ETAG 004** cl. C.1.1.3	79,2 ÷ 96,8 % 75,6 ÷ 92,4 %	
Water absorption (with BOLIX U)	ETAG 004** cl. 5.1.3.1	< 0,5 kg/m^2 after 24 h	
Water absorption (with BOLIX UWM)			
Bond strength after ageing (with BOLIX U)	ETAG 004** cl. 5.1.7.1.2	≥ 0,10 MPa	
Bond strength after ageing (with BOLIX UWM)			

Acrylic finishing coat: **BOLIX DECO**			
Examination	**Method**	**Requirement**	**Frequency of testing**
Appearance	Instruction I/8/53/ZSZ* cl. 4.1.2.1	homogeneous paste of uniform color, not foamy, without lumps and mechanical impurities	Every batch of mixer (8000 kg)
Density	ETAG 004** cl. C.1.1.1 (pastes and liquids)	1548 ÷ 1892 kg/m^3	
Dry extract	ETAG 004** cl. C.1.1.2	77,0 ÷ 94,1 %	At least once per 12 months
Ash content - at 450 °C - at 900 °C	ETAG 004** cl. C.1.1.3	74,8 ÷ 91,4 % 74,7 ÷ 91,3 %	
Water absorption (with BOLIX U)	ETAG 004** cl. 5.1.3.1	< 0,5 kg/m^2 after 24 h	
Water absorption (with BOLIX UWM)			
Bond strength after ageing (with BOLIX U)	ETAG 004** cl. 5.1.7.1.2	≥ 0,10 MPa	
Bond strength after ageing (with BOLIX UWM)			

Acrylic finishing coat: **BOLIX TM**			
Examination	**Method**	**Requirement**	**Frequency of testing**
Appearance	Instruction I/8/53/ZSZ* cl. 4.1.2.1	homogeneous paste of uniform color, not foamy, without lumps and mechanical impurities	Every batch of mixer (8000 kg)
Density	ETAG 004** cl. C.1.1.1 (pastes and liquids)	1602 ÷ 1958 kg/m^3	
Dry extract	ETAG 004** cl. C.1.1.2	75,9 ÷ 92,7 %	At least once per 12 months
Ash content - at 450 °C - at 900 °C	ETAG 004** cl. C.1.1.3	75,0 ÷ 91,6 % 74,8 ÷ 91,4 %	
Water absorption (with BOLIX U)	ETAG 004** cl. 5.1.3.1	< 0,5 kg/m^2 after 24 h	
Water absorption (with BOLIX UWM)			
Bond strength after ageing (with BOLIX U)	ETAG 004** cl. 5.1.7.1.2	≥ 0,10 MPa	
Bond strength after ageing (with BOLIX UWM)			

Acrylic finishing coat: **BOLIX TM DECO**			
Examination	**Method**	**Requirement**	**Frequency of testing**
Appearance	Instruction I/8/53/ZSZ* cl. 4.1.2.1	homogeneous paste of uniform color, not foamy, without lumps and mechanical impurities	Every batch of mixer (8000 kg)
Density	ETAG 004** cl. C.1.1.1 (pastes and liquids)	1602 ÷ 1958 kg/m^3	
Dry extract	ETAG 004** cl. C.1.1.2	75,8 ÷ 92,6 %	At least once per 12 months
Ash content - at 450 °C - at 900 °C	ETAG 004** cl. C.1.1.3	75,7 ÷ 92,5 % 75,5 ÷ 92,3 %	
Water absorption (with BOLIX U)	ETAG 004** cl. 5.1.3.1	< 0,5 kg/m^2 after 24 h	
Water absorption (with BOLIX UWM)			
Bond strength after ageing (with BOLIX U)	ETAG 004** cl. 5.1.7.1.2	≥ 0,10 MPa	
Bond strength after ageing (with BOLIX UWM)			

Decorative coat: **BOLIX SIL / BOLIX SIL Complex**			
Examination	**Method**	**Requirement**	**Frequency of testing**
Appearance	Instruction I/8/4/ZSZ* cl. 4.1.2.5	homogeneous liquid, can contain a filler	Every batch of mixer (8000 kg)
Density	ETAG 004** cl. C.1.1.1 (pastes and liquids)	1332 ÷ 1628 kg/m^3	
Dry extract	ETAG 004** cl. C.1.1.2	57,7 ÷ 66,8 %	At least once per 12 months
Ash content - at 450 °C - at 900 °C	ETAG 004** cl. C.1.1.3	46,8 ÷ 56,4 % 46,5 ÷ 56,3 %	

Decorative coat: **BOLIX SIL-P**			
Examination	**Method**	**Requirement**	**Frequency of testing**
Appearance	Instruction I/8/4/ZSZ* cl. 4.1.2.5	homogeneous liquid, can contain a filler	Every batch of mixer (8000 kg)
Density	ETAG 004** cl. C.1.1.1 (pastes and liquids)	1341 ÷ 1639 kg/m^3	
Dry extract	ETAG 004** cl. C.1.1.2	57,1 ÷ 66,1 %	At least once per 12 months
Ash content - at 450 °C - at 900 °C	ETAG 004** cl. C.1.1.3	46,6 ÷ 57,0 % 46,5 ÷ 56,9 %	

Decorative coat: **BOLIX SZ**			
Examination	**Method**	**Requirement**	**Frequency of testing**
Appearance	Instruction I/8/1/ZSZ* cl. 4.1.2.3	homogeneous liquid, can contain a filler	Every batch of mixer (8000 kg)
Density	ETAG 004** cl. C.1.1.1 (pastes and liquids)	1341 ÷ 1639 kg/m^3	
Dry extract	ETAG 004** cl. C.1.1.2	57,5 ÷ 66,5 %	At least once per 12 months
Ash content - at 450 °C - at 900 °C	ETAG 004** cl. C.1.1.3	46,0 ÷ 50,8 % 36,6 ÷ 40,4 %	

Decorative coat: **BOLIX AZ / BOLIX AZ Complex**			
Examination	**Method**	**Requirement**	**Frequency of testing**
Appearance	Instruction I/8/3/ZSZ* cl. 4.1.2.4	homogeneous liquid, can contain a filler	Every batch of mixer (8000 kg)
Density	ETAG 004** cl. C.1.1.1 (pastes and liquids)	1242 ÷ 1518 kg/m^3	
Dry extract	ETAG 004** cl. C.1.1.2	57,4 ÷ 66,4 %	At least once per 12 months
Ash content - at 450 °C - at 900 °C	ETAG 004** cl. C.1.1.3	38,1 ÷ 49,3 % 37,8 ÷ 49,0 %	

Glass fibre meshes: **all specified in Annex No 3 to ETA-17/0520**			
Examination	**Method**	**Requirement**	**Frequency of testing**
Residual resistance after ageing	ETAG 004** cl. 5.6.7.1	≥ 20 N/mm	At least once per 24 months
Relative residual resistance after ageing		≥ 50 %	

*Instruction included in the BOLIX SA factory production control system.
**ETAG 004 – Guideline for European Technical Approval used as European Assessment Document, actual version.
***EOTA TR046 – EOTA Technical Report "Test methods for foam adhesives for ETICS", actual version.

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