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European Technical Assessment

ETA-09/0393

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GENERAL PART

**Organ za tehnično ocenjevanje, ki je izdal
ETA**

Technical Assessment Body issuing the ETA

ZAG Ljubljana

Komercialno ime gradbenega proizvoda

Trade name of the construction product

JUBIZOL EPS

Družina proizvoda

*Product family to which the construction product
belongs*

**04: Zunanji toplotnoizolacijski sestavljeni
sistemi z ometom, namenjeni za izolacijo
zunanjih zidov zgradb**

*04: External Thermal Insulation Composite
Systems with rendering for the use as external
insulation to the walls of buildings*

Proizvajalec

Manufacturer

JUB d.o.o.

Dol pri Ljubljani 28

SI-1262 Dol pri Ljubljani

Slovenija

www.jub.si

Proizvodni obrat:

Manufacturing plant

Plant 1

Plant 2

Plant 3

Plant 4

Plant 5

Ta Evropska tehnična ocena vsebuje:

This European Technical Assessment contains

**51 strani vključno s 6-imi prilogami, ki so sestavni
del te ocene**

*51 pages including 6 annexes which form an integral part of
the document*

**Ta Evropska tehnična ocena je izdana na
podlagi Uredbe (EU) št. 305/2011 na osnovi**

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

**Smernice za evropska tehnična soglasja
ETAG 004, izdaja februar 2013, ki se uporablja
kot EAD**

*Guideline for European Technical Assessment ETAG 004,
edition February 2013, used as EAD*

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II SPECIFIC PART

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 insulation product of expanded polystyrene (EPS) to be:

- **purely bonded,**
- **bonded with supplementary mechanical fittings or**
- **mechanically fixed with supplementary adhesive.**

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

The ETICS comprises the following: adhesive or mechanical fixings (anchors), insulation core, base coat reinforced with glass fibre mesh, key coat applied on the base coat, finishing coat and ancillary materials. The definition of the product and description of the components are as follows:



	Components (see § 3.3, § 3.4 for further description, characteristics and performances of the components)	Coverage (kg/m ²)	Thickness (mm)
Insulation materials with associated methods of fixing	<p>Bonded (partially or fully) and mechanically fixed ETICS with anchors and supplementary adhesive (see § 3.4.4) for possible associations EPS/anchors)</p> <ul style="list-style-type: none"> Insulation products (currently used EPS insulation) <ul style="list-style-type: none"> a) JUBIZOL EPS F – W, b) JUBIZOL EPS F – W 035, c) JUBIZOL EPS F – G0 SunStop, d) JUBIZOL EPS F Graphite – G, e) JUBIZOL EPS F –two layer insulate plate, f) JUBIZOL EPS F Strong - S0 premium, g) JUBIZOL EPS F Strong - S0 GRAPHITE, h) JUBHome WALL EPS system elements. <p>EPS-es denotated as a), b), c), d) and e) are coded as: EPS-EN 13163-T1-L2-W2-S2-P5-DS(N)2-DS(70,-)1-TR150-BS100. EPS-es denotated as f) and g) are coded as: EPS-EN 13163-L2-W2-T1-S2-P5-CS(10)100-TR150-BS150-DS(N)2-DS(70,-)1-WL(T)1-WD(V)1. EPS denotated as h) is coded as: EPS EN 13163-T(1)-L(2)-W(2)-S(2)-P(5)-BS200-DS(N)5-DS(70,-)1-TR400-CS(10)150-WL(T)3,5.</p> <ul style="list-style-type: none"> Adhesive <ul style="list-style-type: none"> a) JUBIZOL ADHESIVE MORTAR– dry mix cement based adhesive requiring addition of ~20 % water b) JUBIZOL STRONG FIX – dry mix cement based adhesive requiring addition of ~20 % water c) JUBIZOL ADHESIVE – dry mix cement based adhesive requiring addition of ~20 % water d) JUBIZOL EPS ADHESIVE MORTAR – powdered high-elasticity cement-based mortar, refined with polymer binder, requiring addition of 20 % water e) JUBIZOL MICROAIR FIX – dry mix cement based adhesive requiring addition of ~20 % water f) JUBIZOL ULTRALIGHT FIX - dry mix cement-based mortar with EPS beads, refined with polymer binder, requiring addition of ~24% water. g) JUBIZOL UNIWOOL ADHESIVE - dry mix cement-based mortar, refined with polymer binder, requiring addition of ~23% water Anchors Ejotherm STR U***, STR U 2G*, SDM-T plus*, SDF-K plus*, Ejotherm NT-U*, Ejotherm NK-U*, Ejotherm NTK-U*, Ejotherm H1 Eco* ***, Ejotherm H3** ***, Hilti SX-FV*, SD-FV 8**, XI-FV*, D-FV * and D-FV T*, Fischer Termoz 8U**, Termoz 8N**, Termoz KS8** Kosmatin UD PK ***, Leskovec PP**, PSK***, PSV***, PPV ***, Ranit IsoFux NDT8LZ*, ND8LZ*, ND8LZ K*, NDS8Z*, NDM8Z*, NDS90Z*, NDM90Z*, IsoFux*, WKRET MET LFN-8*, MET LFM-8*, MET LFM-10*, MET LTX-10*, MET LMX-10*. 	<p>/</p> <p>3.5 - 5.0 (powder)</p> <p>3.5 - 5.0 (powder)</p> <p>3.5 - 5.0 (powder)</p> <p>3.5 - 5.0 (powder)</p> <p>3.5 - 5.0 (powder)</p> <p>4,8 – 9,6 (powder)</p> <p>4,2 – 8,4 (powder)</p> <p>* to be used with EPS ≥ 60 mm ** to be used with EPS ≥ 50 mm *** to be used with EPS ≥ 80 mm</p>	<p>to 300</p>
Base coat	<ul style="list-style-type: none"> a) JUBIZOL ADHESIVE MORTAR – dry mix cement base coat powder requiring addition of ~20 % water. It consists of aggregates, cement, dispersion powder, special additives. b) JUBIZOL STRONG FIX – dry mix cement base coat powder requiring addition of ~20 % water. It consists of aggregates, cement, dispersion powder, special additives. c) JUBIZOL Cement-free base coat – polymer based adhesive, paste form. It consists of aggregates, polymer, binders, special additives. d) JUBIZOL EPS ADHESIVE MORTAR – powdered high-elasticity cement-based mortar, refined with polymer binder, requiring addition of 20 % water. e) JUBIZOL EPS adhesive mortar consists of aggregates, cement, polymer binders, special additives. f) JUBIZOL MICROAIR FIX – dry mix cement base coat powder requiring addition of ~20 % water. It consists of aggregates, cement, dispersion powder, special additives g) JUBIZOL ULTRALIGHT FIX - dry mix cement-based mortar with EPS beads, refined with polymer binder, requiring addition of ~24% water. h) JUBIZOL UNIWOOL ADHESIVE - dry mix cement-based mortar, refined with polymer binder, requiring addition of ~23% water 	<p>4.2 – 8.4 (powder)</p> <p>4.2 – 8.4 (powder)</p> <p>3.8 – 4.5 (paste)</p> <p>4.2 – 5.6 (powder)</p> <p>4.2 – 5.6 (powder)</p> <p>4,8 – 9,6 (powder)</p> <p>4,2 – 8,4 (powder)</p>	<p>Max. dry: 6 Min. dry: 3</p> <p>Max. dry: 6 Min. dry: 3</p> <p>Max. dry: 3 Min. dry: 2,5</p> <p>Max. dry: 4 Min. dry: 3</p> <p>Max. dry: 4 Min. dry: 3</p> <p>Max. dry: 6 Min. dry: 3</p> <p>Max. dry: 6 Min. dry: 3</p>

	Components (see § 3.3, § 3.4 for further description, characteristics and performances of the components)	Coverage (kg/m ²)	Thickness (mm)
Glass fibres meshes	Standard meshes (glass fibres meshes with mesh size between 3.5 and 4.7 mm): <ul style="list-style-type: none"> • JUBIZOL glass fibre mesh - where JUBIZOL glass fibre mesh denote ETA-holder own designation 	/	/
Key coat	<ul style="list-style-type: none"> • JUBIZOL Unigrund – liquid, water based acrylic slurry primer intended as a key coat for all finishing coats (except mineral based finishing coats Mineral Trowelled Render, Mineral Smooth Render and Nivellin D + Revitalcolor AG) • Acryl emulsion - liquid, water based acrylic primer intended as a key coat for the acrylic and mineral based finishing coats • Acrycolor - liquid exterior acrylic waterborne facade paint as a key coat for the acrylic and mineral based finishing coats • SILICATEprimer - liquid, water based silicate primer intended as a key coat for the silicate based finishing coats • SILICONEprimer - liquid, water based silicone primer intended as a key coat for the silicone based finishing coats 	0.15 - 0.20 about 0.1 about 0.1 l/m ² about 0.1 l/m ² about 0.1 l/m ²	/ / / /
Finishing coats	<ul style="list-style-type: none"> • JUBIZOL MINERAL finish T 2.0/2.5 – ready-mixed lime-cement based mortar requiring addition of water 20-23 %, based on lime, cement, aggregates, additives (in combination with all base coats except JUBIZOL Cement-free base coat) • JUBIZOL MINERAL finish S 1.5/2.0/2.5 – ready-mixed lime-cement based mortar requiring addition of water 20-23 %, based on lime, cement, aggregates, additives (in combination with all base coats except JUBIZOL Cement-free base coat) • Ready to use paste – JUBIZOL SILICATE finish T 2.0/2.5 - based on potassium silicate and water-based acrylic binder, aggregates, additives. (in combination with all base coats except JUBIZOL Cement-free base coat) • Ready to use paste – JUBIZOL SILICATE finish S 1.5/2.0/2.5 - based on potassium silicate and water-based acrylic binder, aggregates, additives (in combination with all base coats except JUBIZOL Cement-free base coat) • Ready to use paste – JUBIZOL SILICONE finish T 2.0/2.5 - based on silicone emulsion and water-based acrylic binder, aggregates, additives (in combination with all base coats) • Ready to use paste – JUBIZOL SILICONE finish S 1.5/2.0/2.5 - based on silicone emulsion and water-based acrylic binder, aggregates, additives (in combination with all base coats) • Ready to use paste – JUBIZOL ACRYL finish T 2.0/2.5 - based on water-based acrylic binder, aggregates, additives (in comb. with all base coats) • Ready to use paste – JUBIZOL ACRYL finish S 1.5/2.0/2.5 - based on water-based acrylic binder, aggregates, additives (in combination with all base coats) • NIVELIN D + façade paints* – ready-mixed polymer based mortar requiring addition of water ~ 30 %, based on polymer, lime, cement, aggregates, additives + liquid exterior micro reinforced acrylic waterborne anti-mildew paint (only in combination with JUBIZOL ADHESIVE MORTAR and JUBIZOL STRONG FIX) • Ready to use paste – JUBIZOL UNIXIL finish S 1.0/ 1.5/2.0/2.5 - based on water-based acrylic binders, mineral fillers, special additives (in combination with all base coats) • Ready to use paste – JUBIZOL UNIXIL Winter finish S 1.0/ 1.5/2.0/2.5 - based on water-based acrylic binders, mineral fillers, special additives (in combination with all base coats) • Ready to use paste – JUBIZOL UNIXIL finish T 2.0/2.5 - based on water-based acrylic binders, mineral fillers, special additives (in combination with all base coats) • Ready to use paste – JUBIZOL NANO finish S 1.5/2.0/2.5 - based on water-based silicone and acrylic binders, nano structures, mineral fillers and special additives (in combination with all base coats) 	2.6 to 3.1 (powder) 2.6 to 3.6 (powder) 2.5 to 3.2 (paste) 3.0 to 5.5 (paste) 2.8 to 3.5 (paste) 2.4 to 4.7 (paste) 2.5 to 3.2 (paste) 2.5 to 5.0 (paste) 3.5 to 4.5 l/m ² (powder + liq.) 2.1 to 5.0 (paste) 2.1 to 5.0 (paste) 2.5 to 3.2 (paste) 2.6 to 4.7 (paste)	Regulated by particles size



	Components (see § 3.3, § 3.4 for further description, characteristics and performances of the components)	Coverage (kg/m ²)	Thickness (mm)
Finishing coats	<ul style="list-style-type: none"> • Ready to use paste – JUBIZOL Kulirplast 2.0 - based on water-based acrylic binders, marble fillers, special additives (in combination with all base coats, except JUBIZOL ULTRA LIGHT FIX and JUBIZOL Cement-free base coat). • Ready to use paste – JUBIZOL Kulirplast 1.8 premium - based on water-based acrylic binders, mineral fillers, special additives (in combination with all base coats, except JUBIZOL ULTRA LIGHT FIX and JUBIZOL Cement-free base coat). 	4,0 to 4,5 (paste) 4,0 to 4,5 (paste)	
Façade paints	<ul style="list-style-type: none"> • Acrylcolor – based on water-based acrylic binders, special additives (in combination with all finishing coats, except JUBIZOL Kulirplast 2.0 and JUBIZOL Kulirplast 1.8 premium). • Revitalcolour AG - based on water-based acrylic binders, special additives, micro-reinforcing fibers (in combination with all finishing coats, except JUBIZOL Kulirplast 2.0 and JUBIZOL Kulirplast 1.8 premium). • Jubosilcolor Silicone - based on water-based silicon binders, special additives (in combination with all finishing coats, except JUBIZOL Kulirplast 2.0 and JUBIZOL Kulirplast 1.8 premium). • Nanoxilcolor - based on water-based silicone binders, special additives, special fillers, micro-reinforcing fibers (in combination with all finishing coats, except JUBIZOL Kulirplast 2.0 and JUBIZOL Kulirplast 1.8 premium). • Revitalcolor Silicone - based on water-based silicone binders, special additives, micro-reinforcing fibers (in combination with all finishing coats, except JUBIZOL Kulirplast 2.0 and JUBIZOL Kulirplast 1.8 premium). • Jubosilcolor Silicate - based on water-based potassium silicate binder, special additives (in combination with all finishing coats, except JUBIZOL Kulirplast 2.0 and JUBIZOL Kulirplast 1.8 premium). • Revitalcolor Silicate - based on water-based potassium silicate binder, special additives, micro-reinforcing fibers (in combination with all finishing coats, except JUBIZOL Kulirplast 2.0 and JUBIZOL Kulirplast 1.8 premium). • Décor Antique - based on water-based potassium silicate binder, special additives (in combination with all finishing coats, except JUBIZOL Kulirplast 2.0 and JUBIZOL Kulirplast 1.8 premium). 	200 ml/m ² (solution) 270 ml/m ² (solution) 200 ml/m ² (solution) 270 ml/m ² (solution) 270 ml/m ² (solution) 200 ml/m ² (solution) 270 ml/m ² (solution) 180 ml/m ² (solution)	
Ancillary materials	Descriptions in accordance with § 3.2.2.5 of the ETAG 004. Remain under the ETA-holder responsibilities		

* Note: Finishing coat **NIVELIN D** + **façade paints** are applied without key coats.



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) with a reaction to fire classification A1 or A2-s1,d0 according to SIST EN 13501-1 and a minimum density of 820 kg/m³ or A1 according to the EC decision 96/603/EC as amended. 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 air-tightness of the building structure.

The choice of the method of fixing depends on the characteristics of the substrate, which could need preparation (see § 7.2.1 of the ETAG no. 004) and shall be done in accordance with national instructions.

The provisions made in this European Technical Assessment (ETA) are based on an assumed intended working life of at least 25 years, provided that the conditions laid down in sections 4.2, 5.1 and 5.2 for the packaging, transport, storage and installation as well as appropriate use, maintenance and repair are met. The indications given as to the working life cannot be interpreted as a guarantee given by the manufacturer or the 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.

2.2 Manufacturing

The European Technical Assessment is issued for the ETICS on the basis of agreed data/information, deposited with the Zavod za gradbeništvo Slovenije (ZAG Ljubljana), which identifies the ETICS that has been assessed and judged. Changes to the ETICS or production process, which could result in the deposited data/information being incorrect should be notified to the ZAG Ljubljana before the changes are introduced. The ZAG Ljubljana 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.

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 of performance are done taking into account general assumptions introduced in the chapter 7 of ETAG 004 used as EAD, 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.

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 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 localised 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 identification tests and the assessment for the intended use of this ETICS according to the Essential Requirements were carried out in compliance with the ETA Guidance n. 004: External Thermal Insulation Composite Systems with Rendering- edition June 2013, used as EAD (called "ETAG 004, used as EAD", in this ETA).

3.1 Mechanical resistance and stability (BWR 1)

Not relevant.



3.2 Safety in case of fire (BWR 2)

3.2.1 Reaction to fire

Configuration	Maximum declared organic content of the finishing coat	Declared flame retardant content of the rendering system	Thickness (mm)	Euroclass according to SIST EN 13501-1
ETICS JUBIZOL EPS* in combination with EPS-es coded as: EPS-EN 13163-T1-L2-W2-S2-P5-DS(N)2-DS(70,-)1-TR150-BS100 EPS-EN 13163-L2-W2-T1-S2-P5-CS(10)100-TR150-BS150-DS(N)2-DS(70,-)1-WL(T)1-WD(V)1 and all base coats, finishing coats and façade paints in this ETA	14,2 %	0 %	≤ 300	B - s1, d0
ETICS JUBIZOL EPS* in combination with EPS** coded as: EPS EN 13163-T(1)-L(2)-W(2)-S(2)-P(5)-BS200-DS(N)5-DS(70,-)1-TR400-CS(10)150-WL(T)3,5 and all base coats, finishing coats and façade paints in this ETA	14,2 %	0 %	≤ 300	B - s2, d0

Note: an 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.*

*Note**: EPS coded as EPS EN 13163-T(1)-L(2)-W(2)-S(2)-P(5)-BS200-DS(N)5-DS(70,-)1-TR400-CS(10)150-WL(T)3,5 is used also as interior thermal insulation as a part of the JUBHome WALL system. If on the interior side the layers over insulation are having the same or greater thickness with the same or lower total organic content as tested, it can be concluded that also the internal system shall be classified as B - s2, d0 according to SIST EN 13501-1.*

Mounting and fixing

The assessment of reaction to fire is based on two tests (SIST EN 13823 and SIST EN ISO 1716). The SBI test (SIST EN 13823) is done on a sample with insulation layer thickness 180 mm, (overall ETICS thickness 200 mm) and with EPS insulation material according to EN 13163. Selected rendering system is the one including finishing coat with maximum organic content, established.

For the SBI test this ETICS is mounted directly to a calcium silicate substrate (A2-s1, d0) with a minimum density of 820 kg/m³.

The installation of the ETICS was carried out by the manufacturer, following the manufacturer's specifications (instruction sheet) using a single layer of the glass fibre mesh all over the test specimen (no overlapping glass fibre mesh).

The test specimens were prefabricated and did not include any joints. The panel edges were rendered. Anchors were not included in the tested ETICS as they have no influence on the test result.

Please note that in some member states the classification on the basis of SBI test is not accepted. Additional tests might be required e.g. large scale tests to demonstrate compliance with a member state's fire regulation.



3.3 Hygiene, health and environment (BWR 3)

3.3.1 Water absorption (capillarity test)

a) ETICS in combination with base coat **JUBIZOL ADHESIVE MORTAR**:

Water absorption after 1 hour < 1 kg/m²

Water absorption after 24 hours < 0.5 kg/m²

- Rendering systems:

Base coat	Finishing coats (including key coat and façade paint acc. to clause 1.1)	Water absorption after 24 hours	
		< 0.5 kg/m ²	≥ 0.5 kg/m ²
JUBIZOL ADHESIVE MORTAR	JUBIZOL MINERAL FINISH T	X	
	JUBIZOL MINERAL FINISH S		
	JUBIZOL SILICATE FINISH T	X	
	JUBIZOL SILICATE FINISH S		
	JUBIZOL SILICONE FINISH T	X	
	JUBIZOL SILICONE FINISH S		
	JUBIZOL ACRYL FINISH T	X	
	JUBIZOL ACRYL FINISH S		
	NIVELIN D + façade paints	X Result obtained for system NIVELIN D + Revitalcolor AG	
	JUBIZOL UNIXIL FINISH S	X	
	JUBIZOL UNIXIL WINTER FINISH S	X	
	JUBIZOL UNIXIL FINISH T	X	
	JUBIZOL NANO FINISH S	X	
	JUBIZOL Kulirplast 1.8 premium	X	
	JUBIZOL Kulirplast 2.0		X



b) ETICS in combination with base coat JUBIZOL STRONG FIX:Water absorption after 1 hour < 1 kg/m²Water absorption after 24 hours < 0.5 kg/m²

- Rendering systems:

Base coat	Finishing coats (including key coat and façade paint acc. to clause 1.1)	Water absorption after 24 hours	
		< 0.5 kg/m ²	≥ 0.5 kg/m ²
JUBIZOL STRONG FIX	JUBIZOL MINERAL finish T	X	
	JUBIZOL MINERAL finish S		
	JUBIZOL SILICATE finish T	X	
	JUBIZOL SILICATE finish S		
	JUBIZOL SILICONE finish T	X	
	JUBIZOL SILICONE finish S		
	JUBIZOL ACRYL finish T	X	
	JUBIZOL ACRYL finish S		
	NIVELIN D + façade paints	X Result obtained for system NIVELIN D + Revitalcolor AG	
	JUBIZOL UNIXIL finish S	X	
	JUBIZOL UNIXIL Winter finish S	X	
	JUBIZOL UNIXIL finish T	X	
	JUBIZOL NANO finish S	X	
	JUBIZOL Kulirplast 1.8 premium	X	
	JUBIZOL Kulirplast 2.0		X

c) ETICS in combination with base coat JUBIZOL Cement-free base coat:

- Water absorption after 1 hour < 1 kg/m²
- Water absorption after 24 hours < 0.5 kg/m²

- Rendering systems:

Base coat	Finishing coats (including key coat and façade paint acc. to clause 1.1)	Water absorption after 24 hours	
		< 0.5 kg/m ²	≥ 0.5 kg/m ²
JUBIZOL Cement-free base coat	JUBIZOL SILICONE finish T	X	
	JUBIZOL SILICONE finish S		
	JUBIZOL ACRYL finish T	X	
	JUBIZOL ACRYL finish S		
	JUBIZOL UNIXIL finish S	X	
	JUBIZOL UNIXIL Winter finish S		
	JUBIZOL UNIXIL finish T		
	JUBIZOL NANO finish S	X	



d) ETICS in combination with base coat JUBIZOL EPS ADHESIVE MORTAR

- Water absorption after 1 hour < 1 kg/m²
- Water absorption after 24 hours < 0.5 kg/m²

- Rendering systems:

Base coat	Finishing coats (including key coat and façade paint acc. to clause 1.1)	Water absorption after 24 hours	
		< 0.5 kg/m ²	≥ 0.5 kg/m ²
JUBIZOL EPS ADHESIVE MORTAR	JUBIZOL MINERAL FINISH T	X	
	JUBIZOL MINERAL FINISH S		
	JUBIZOL SILICATE finish T	X	
	JUBIZOL SILICATE finish S		
	JUBIZOL SILICONE finish T	X	
	JUBIZOL SILICONE finish S		
	JUBIZOL ACRYL finish T	X	
	JUBIZOL ACRYL finish S		
	JUBIZOL UNIXIL finish S	X	
	JUBIZOL UNIXIL Winter finish S		
	JUBIZOL UNIXIL finish T		
	JUBIZOL NANO finish S	X	
	JUBIZOL Kulirplast 1.8 premium	X	
	JUBIZOL Kulirplast 2.0		X

e) ETICS in combination with base coat JUBIZOL MICROAIR FIX

- Water absorption after 1 hour < 1 kg/m²
- Water absorption after 24 hours < 0.5 kg/m²

- Rendering systems:

Base coat	Finishing coats (including key coat and façade paint acc. to clause 1.1)	Water absorption after 24 hours	
		< 0.5 kg/m ²	≥ 0.5 kg/m ²
JUBIZOL MICROAIR FIX	JUBIZOL MINERAL FINISH T	X	
	JUBIZOL MINERAL FINISH S		
	JUBIZOL SILICATE finish T	X	
	JUBIZOL SILICATE finish S		
	JUBIZOL SILICONE finish T	X	
	JUBIZOL SILICONE finish S		
	JUBIZOL ACRYL finish T	X	
	JUBIZOL ACRYL finish S		
	JUBIZOL UNIXIL finish S	X	
	JUBIZOL UNIXIL Winter finish S		
	JUBIZOL UNIXIL finish T		
	JUBIZOL NANO finish S	X	
	JUBIZOL Kulirplast 1.8 premium	X	
	JUBIZOL Kulirplast 2.0		X



f) ETICS in combination with base coat JUBIZOL ULTRALIGHT FIX:Water absorption after 1 hour < 1 kg/m²Water absorption after 24 hours < 0.5 kg/m²

- Rendering systems:

Base coat	Finishing coats (including key coat and façade paint acc. to clause 1.1)	Water absorption after 24 hours	
		< 0.5 kg/m ²	≥ 0.5 kg/m ²
JUBIZOL ULTRALIGHT FIX	JUBIZOL MINERAL FINISH T	X	
	JUBIZOL MINERAL FINISH S		
	JUBIZOL SILICATE finish T	X	
	JUBIZOL SILICATE finish S		
	JUBIZOL SILICONE finish T	X	
	JUBIZOL SILICONE finish S		
	JUBIZOL ACRYL finish T	X	
	JUBIZOL ACRYL finish S		
	JUBIZOL UNIXIL finish S	X	
	JUBIZOL UNIXIL Winter finish S		
	JUBIZOL UNIXIL finish T		
	JUBIZOL NANO finish S	X	

g) ETICS in combination with base coat JUBIZOL UNIWOOL ADHESIVE:- Water absorption after 1 hour < 1 kg/m²- Water absorption after 24 hours < 0.5 kg/m²

- Rendering systems:

Base coat	Finishing coats (including key coat and façade paint acc. to clause 1.1)	Water absorption after 24 hours	
		< 0.5 kg/m ²	≥ 0.5 kg/m ²
JUBIZOL UNIWOOL ADHESIVE	JUBIZOL MINERAL FINISH T	X	
	JUBIZOL MINERAL FINISH S		
	JUBIZOL SILICATE finish T	X	
	JUBIZOL SILICATE finish S		
	JUBIZOL SILICONE finish T	X	
	JUBIZOL SILICONE finish S		
	JUBIZOL ACRYL finish T	X	
	JUBIZOL ACRYL finish S		
	JUBIZOL UNIXIL finish S	X	
	JUBIZOL UNIXIL Winter finish S		
	JUBIZOL UNIXIL finish T		
	JUBIZOL NANO finish S	X	
	JUBIZOL Kulirplast 1.8 premium	X	
	JUBIZOL Kulirplast 2.0	X	



3.3.2 Watertightness

3.3.2.1 Hygrothermal behaviour

Hygrothermal cycles have been performed on a rig in hygrothermal chamber. None of the following defects occur during the testing:

- blistering or peeling of any finishing,
- failure or cracking associated with joints between insulation product boards or profiles fitted with system,
- detachment of render,
- cracking allowing water penetration to the insulation layer.

The ETICS is so assessed resistant to hygrothermal cycles.

3.3.2.2 Freeze / thaw behaviour

For some of the rendering systems mentioned in this ETA the water absorption of both, base coat and the rendering systems is more than 0.5 kg/m² after 24 hours (See chapter 3.4.2.), although all configurations of the ETICS are assessed as freeze/thaw resistant.

3.3.3 Impact resistance

The resistance to hard body impacts (3 Joules and 10 Joules) lead to the following use categories:



a) ETICS in combination with base coat JUBIZOL ADHESIVE MORTAR:

Base coat	Finishing coats (including key coat and façade paint acc. to clause 1.1)	Single standard mesh	Double standard mesh
JUBIZOL ADHESIVE MORTAR	JUBIZOL MINERAL FINISH (all granulations)	Category II	-
	NIVELIN D + façade paints	-	Category II Result obtained for system NIVELIN D + Revitalcolor AG
	JUBIZOL SILICATE finish (granulation 1.5 mm)	Category II	-
	JUBIZOL SILICATE finish (granulations 2.0 and 2.5 mm)	Category I	
	JUBIZOL SILICATE finish (all granulations)	-	Category I
	JUBIZOL SILICONE finish (granulation 1.5 mm)	Category II	-
	JUBIZOL SILICONE finish (granulations 2.0 and 2.5 mm)	Category I	
	JUBIZOL SILICONE finish (all granulations)	-	Category I
	JUBIZOL ACRYL finish (granulation 1.5 mm)	Category II	-
	JUBIZOL ACRYL finish (granulations 2.0 and 2.5 mm)	Category I	-
	JUBIZOL ACRYL finish (all granulations)	-	Category I
	JUBIZOL UNIXIL finish (granulation 1.0)	Category II	Category I
	JUBIZOL UNIXIL finish (granulation 1.5)	Category II	
	JUBIZOL UNIXIL finish (granulation 2,0 and 2,5)	Category I	
	JUBIZOL UNIXIL finish (all granulations)		Category I
	JUBIZOL UNIXIL Winter finish (granulation 1.0/1,5)	Category II	
	JUBIZOL UNIXIL Winter finish (granulation 2,0 and 2,5)	Category I	
	JUBIZOL UNIXIL Winter finish (all granulations)		Category I
	JUBIZOL NANO finish (granulation 1.5 mm)	Category II	Category I
	JUBIZOL NANO finish (granulation 2,0 mm)	Category I	
	JUBIZOL NANO finish (all granulations)		Category I
	JUBIZOL Kulirplast 1.8 premium (granulation 18 mm)	Category I	Category I
	JUBIZOL Kulirplast 2.0 (granulation 2.0 mm)	Category I	Category I



b) ETICS in combination with base coat JUBIZOL STRONG FIX:

Base coat	Finishing coats (including key coat and façade paint acc. to clause 1.1)	Single standard mesh	Double standard mesh
JUBIZOL STRONG FIX	JUBIZOL MINERAL FINISH (all granulations)	Category II	-
	NIVELIN D + façade paints	-	Category II Result obtained for system Nivelin D + Revitalcolor AG
	JUBIZOL SILICATE finish (granulation 1.5 mm)	Category II	-
	JUBIZOL SILICATE finish (granulations 2.0 and 2.5 mm)	Category I	
	JUBIZOL SILICATE finish (all granulations)	-	Category I
	JUBIZOL SILICONE finish (granulation 1.5 mm)	Category II	-
	JUBIZOL SILICONE finish (granulations 2.0 and 2.5 mm)	Category I	
	JUBIZOL SILICONE finish (all granulations)	-	Category I
	JUBIZOL ACRYL finish (granulation 1.5 mm)	Category II	-
	JUBIZOL ACRYL finish (granulations 2.0 and 2.5 mm)	Category I	-
	JUBIZOL ACRYL finish (all granulations)	-	Category I
	JUBIZOL UNIXIL finish (granulation 1.0)	Category II	Category I
	JUBIZOL UNIXIL finish (granulation 1.5)	Category II	
	JUBIZOL UNIXIL finish (granulation 2,0 and 2,5)	Category I	
	JUBIZOL UNIXIL finish (all granulations)		Category I
	JUBIZOL UNIXIL WINTER finish (granulation 1,0/1,5 mm)	Category II	
	JUBIZOL UNIXIL Winter finish (granulation 2,0 and 2,5)	Category I	
	JUBIZOL UNIXIL Winter finish (all granulations)		Category I
	JUBIZOL NANO finish (granulation 1.5 mm)	Category II	Category I
	JUBIZOL NANO finish (granulation 2,0 mm)	Category I	
	JUBIZOL NANO finish (all granulations)		Category I
	JUBIZOL Kulirplast 1.8 premium (granulation 1.8 mm)	Category I	Category I
	JUBIZOL Kulirplast 2.0 (granulation 2,0 mm)	Category I	Category I



c) ETICS in combination with base coat **JUBIZOL Cement-free base coat**:

Base coat	Finishing coats (including key coat and façade paint acc. to clause 1.1)	Single standard mesh
JUBIZOL Cement-free base coat	JUBIZOL SILICONE finish	Category I
	JUBIZOL ACRYL finish	Category I
	JUBIZOL UNIXIL finish	Category I
	JUBIZOL UNIXIL Winter finish	Category I
	JUBIZOL NANO finish	Category I

d) ETICS in combination with base coat **JUBIZOL EPS ADHESIVE MORTAR**:

Base coat	Finishing coats (including key coat and façade paint acc. to clause 1.1)	Single standard mesh	Double standard mesh
JUBIZOL EPS ADHESIVE MORTAR	JUBIZOL MINERAL FINISH	Category III	Category II
	JUBIZOL SILICATE finish	Category II	Category II
	JUBIZOL SILICONE finish	Category II	Category II
	JUBIZOL ACRYL finish	Category II	Category II
	JUBIZOL UNIXIL finish	Category II	Category II
	JUBIZOL UNIXIL Winter finish	Category II	Category II
	JUBIZOL NANO finish	Category II	Category II
	JUBIZOL Kulirplast 1.8 premium	Category I	Category I
	JUBIZOL Kulirplast 2.0	Category I	Category I

e) ETICS in combination with base coat **JUBIZOL MICROAIR FIX**:

Base coat	Finishing coats (including key coat and façade paint acc. to clause 1.1)	Single standard mesh	Double standard mesh
JUBIZOL MICROAIR FIX	JUBIZOL MINERAL FINISH	Category III	Category II
	JUBIZOL SILICATE finish	Category II	Category II
	JUBIZOL SILICONE finish	Category II	Category II
	JUBIZOL ACRYL finish	Category II	Category II
	JUBIZOL UNIXIL finish	Category II	Category II
	JUBIZOL UNIXIL Winter finish	Category II	Category II
	JUBIZOL NANO finish	Category II	Category II
	JUBIZOL Kulirplast 1.8 premium	Category I	Category I
	JUBIZOL Kulirplast 2.0	Category I	Category I



f) ETICS in combination with base coat JUBIZOL ULTRALIGHT FIX:

Base coat	Finishing coats (including key coat and façade paint acc. to clause 1.1)	Single layer	Double layer
JUBIZOL ULTRALIGHT FIX	JUBIZOL MINERAL FINISH	-	Category II
	JUBIZOL SILICATE finish	-	Category II
	JUBIZOL SILICONE finish	Category I	Category I
	JUBIZOL ACRYL finish	Category I	Category I
	JUBIZOL UNIXIL finish (granulation: 1,0 mm)	Category II	Category I
	JUBIZOL UNIXIL finish (granulation: 1,5 mm)	Category II	
	JUBIZOL UNIXIL finish (granulations 2,0/2,5 mm)	Category I	
	JUBIZOL UNIXIL finish (all granulations)		Category I
	JUBIZOL UNIXIL Winter finish (granulation: 1,0/1,5 mm)	Category II	Category I
	JUBIZOL UNIXIL Winter finish (granulation: 2,0/2,5 mm)	Category I	
	JUBIZOL UNIXIL Winter finish (all granulations)		Category I
	JUBIZOL NANO finish S (all granulations)	-	Category I

g) ETICS in combination with base coat JUBIZOL UNIWOOL ADHESIVE:

Base coat	Finishing coats (including key coat and façade paint acc. to clause 1.1)	Single layer	Double layer
JUBIZOL UNIWOOL ADHESIVE	JUBIZOL MINERAL FINISH	Category II	Category II
	JUBIZOL SILICATE finish	-	Category II
	JUBIZOL SILICONE finish S 1,5	Category II	Category I
	JUBIZOL ACRYL finish	-	Category I
	NIVELIN D + façade paint	-	Category II Result obtained for system Nivelin D + Revitalcolor AG
	JUBIZOL UNIXIL finish	Category II	Category II
	JUBIZOL UNIXIL Winter finish	Category II	Category II
	JUBIZOL NANO finish S	Category I	Category II
	JUBIZOL Kulirplast 1.8 premium	Category I	Category I
	JUBIZOL Kulirplast 2,0	Category I	Category I



3.3.4 Water vapour permeability

a) ETICS in combination with base coat JUBIZOL ADHESIVE MORTAR:

Base coat	Finishing coats (including key coat and façade paint acc. to clause 1.1)	Equivalent air thickness s_d (m)
JUBIZOL ADHESIVE MORTAR	JUBIZOL MINERAL FINISH T	≤ 2.0 (Test result obtained with finishing coat JUBIZOL MINERAL finish T of particle size of 1.5 mm: 0.1)
	JUBIZOL MINERAL FINISH S	
	JUBIZOL SILICATE finish T	≤ 2.0 (Test result obtained with finishing coat JUBIZOL SILICATE finish T of particle size of 2.0 mm: 0.1)
	JUBIZOL SILICATE finish S	
	JUBIZOL SILICONE finish T	≤ 2.0 (Test result obtained with finishing coat JUBIZOL SILICONE finish T of particle size of 2.0 mm: 0.2)
	JUBIZOL SILICONE finish S	
	JUBIZOL ACRYL finish T	≤ 2.0 (Test result obtained with finishing coat JUBIZOL ACRYL finish T of particle size of 2.0 mm: 0.3)
	JUBIZOL ACRYL finish S	
	NIVELIN D + façade paint	≤ 2.0 (Test result obtained with finishing coat Nivelin D + Revitalcolor AG: 0.1)
	JUBIZOL UNIXIL Winter finish S	≤ 2.0 (Test result obtained with finishing coat JUBIZOL UNIXIL finish T of particle size of 2.0 mm: 0.4)
	JUBIZOL UNIXIL finish S	
	JUBIZOL UNIXIL finish T	
	JUBIZOL NANO finish S	≤ 2.0 (Test result obtained with finishing coat JUBIZOL NANO finish S of particle size of 2.0 mm: 0.3)
	JUBIZOL Kulirplast 1.8 premium	≤ 2.0 (Test result obtained with finishing coat JUBIZOL Kulirplast 1.8 premium of particle size of 1.8 mm: 0.5)
	JUBIZOL Kulirplast 2.0	≤ 2.0 (Test result obtained with finishing coat JUBIZOL Kulirplast 2.0 of particle size of 1.8 mm: 0.4)



b) ETICS in combination with base coat JUBIZOL STRONG FIX:

Base coat	Finishing coats (including key coat and façade paint acc. to clause 1.1)	Equivalent air thickness s_d (m)
JUBIZOL STRONG FIX	JUBIZOL MINERAL FINISH T	≤ 2.0 (Test result obtained with finishing coat JUBIZOL MINERAL finish T of particle size of 1.5 mm: 0.1)
	JUBIZOL MINERAL FINISH S	
	JUBIZOL SILICATE finish T	≤ 2.0 (Test result obtained with finishing coat JUBIZOL SILICATE finish T of particle size of 2.0 mm: 0.1)
	JUBIZOL SILICATE finish S	
	JUBIZOL SILICONE finish T	≤ 2.0 (Test result obtained with finishing coat JUBIZOL SILICONE finish T of particle size of 2.0 mm: 0.2)
	JUBIZOL SILICONE finish S	
	JUBIZOL ACRYL finish T	≤ 2.0 (Test result obtained with finishing coat JUBIZOL ACRYL finish T of particle size of 2.0 mm: 0.3)
	JUBIZOL ACRYL finish S	
	NIVELIN D + façade paint	≤ 2.0 (Test result obtained with finishing coat Nivelin D + Revitalcolor AG: 0.1)
	JUBIZOL UNIXIL finish S	≤ 2.0 (Test result obtained with finishing coat JUBIZOL UNIXIL finish T of particle size of 2.0 mm: 0.4)
	JUBIZOL UNIXIL Winter finish S	
	JUBIZOL UNIXIL finish T	
	JUBIZOL NANO finish S	≤ 2.0 (Test result obtained with finishing coat JUBIZOL NANO finish S of particle size of 2.0 mm: 0.3)
	JUBIZOL Kulirplast 1.8 premium	≤ 2.0 (Test result obtained with finishing coat JUBIZOL Kulirplast 1.8 premium of particle size of 1.8 mm: 0.5)
	JUBIZOL Kulirplast 2.0	≤ 2.0 (Test result obtained with finishing coat JUBIZOL Kulirplast 2.0 of particle size of 1.8 mm: 0.4)

c) ETICS in combination with base coat JUBIZOL Cement-free base coat:

Base coat	Finishing coats (including key coat and façade paint acc. to clause 1.1)	Equivalent air thickness s_d (m)
JUBIZOL Cement-free base coat	JUBIZOL SILICONE finish T	≤ 2.0 (Test result obtained with finishing coat JUBIZOL SILICONE finish S of particle size of 2.0 mm: 0.7)
	JUBIZOL SILICONE finish S	
	JUBIZOL ACRYL finish T	≤ 2.0 (Test result obtained with finishing coat JUBIZOL ACRYL finish S of particle size of 2.0 mm: 0.6)
	JUBIZOL ACRYL finish S	
	JUBIZOL UNIXIL finish S	≤ 2.0 (Test result obtained with finishing coat JUBIZOL UNIXIL finish S, particle size 2.0 mm: 0.9)
	JUBIZOL UNIXIL Winter finish S	
	JUBIZOL UNIXIL finish T	
	JUBIZOL NANO finish S	≤ 2.0 (Test result obtained with finishing coat JUBIZOL NANO finish S of particle size of 2.0 mm: 0.8)



d) ETICS in combination with base coat JUBIZOL EPS ADHESIVE MORTAR:

Base coat	Finishing coats (including key coat and façade paint acc. to clause 1.1)	Equivalent air thickness s_d (m)
JUBIZOL EPS ADHESIVE MORTAR	JUBIZOL MINERAL FINISH T	≤ 2.0 (Test result obtained with finishing coat JUBIZOL MINERAL finish S of particle size of 1.5 mm: 0.1)
	JUBIZOL MINERAL FINISH S	
	JUBIZOL SILICATE finish T	≤ 2.0 (Test result obtained with finishing coat JUBIZOL SILICATE finish S of particle size of 2.0 mm: 0.2)
	JUBIZOL SILICATE finish S	
	JUBIZOL SILICONE finish T	≤ 2.0 (Test result obtained with finishing coat JUBIZOL SILICONE finish S particle size 2.0 mm: 0.3)
	JUBIZOL SILICONE finish S	
	JUBIZOL ACRYL finish T	≤ 2.0 (Test result obtained with finishing coat JUBIZOL ACRYL finish S, particle size 2.0 mm: 0.4)
	JUBIZOL ACRYL finish S	
	JUBIZOL UNIXIL finish S	≤ 2.0 (Test result obtained with finishing coat JUBIZOL UNIXIL finish S of particle size of 2.0 mm: 0.4)
	JUBIZOL UNIXIL Winter finish S	
	JUBIZOL UNIXIL finish T	
	JUBIZOL NANO finish S	≤ 2.0 (Test result obtained with finishing coat JUBIZOL NANO finish S of particle size of 2.0 mm: 0.3)
	JUBIZOL Kulirplast 1.8 premium	≤ 2.0 (Test result obtained with finishing coat JUBIZOL Kulirplast 1.8 premium of particle size of 1.8 mm: 0.6)
	JUBIZOL Kulirplast 2.0	≤ 2.0 (Test result obtained with finishing coat JUBIZOL Kulirplast 2.0 of particle size of 2.0 mm: 0.4)



e) ETICS in combination with base coat JUBIZOL MICROAIR FIX:

Base coat	Finishing coats (including key coat and façade paint acc. to clause 1.1)	Equivalent air thickness s_d (m)
JUBIZOL MICROAIR FIX	JUBIZOL MINERAL FINISH T	≤ 2.0 (Test result obtained with finishing coat JUBIZOL MINERAL FINISH S of particle size of 1.5 mm: 0.1)
	JUBIZOL MINERAL FINISH S	
	JUBIZOL SILICATE finish T	≤ 2.0 (Test result obtained with finishing coat JUBIZOL SILICATE finish S of particle size of 2.0 mm: 0.2)
	JUBIZOL SILICATE finish S	
	JUBIZOL SILICONE finish T	≤ 2.0 (Test result obtained with finishing coat JUBIZOL SILICONE finish S particle size 2.0 mm: 0.3)
	JUBIZOL SILICONE finish S	
	JUBIZOL ACRYL finish T	≤ 2.0 (Test result obtained with finishing coat JUBIZOL ACRYL FINISH S, particle size 2.0 mm: 0.4)
	JUBIZOL ACRYL finish S	
	JUBIZOL UNIXIL finish S	≤ 2.0 (Test result obtained with finishing coat of particle size of 2.0 mm: 0.4)
	JUBIZOL UNIXIL Winter finish S	
	JUBIZOL UNIXIL finish T	
	JUBIZOL NANO finish S	≤ 2.0 (Test result obtained with finishing coat of particle size of 2.0 mm: 0.3)
	JUBIZOL Kulirplast 1.8 premium	≤ 2.0 (Test result obtained with finishing coat of particle size of 1.8 mm: 0.6)
	JUBIZOL Kulirplast 2.0	≤ 2.0 (Test result obtained with finishing coat of particle size of 2.0 mm: 0.4)

f) ETICS in combination with base coat JUBIZOL ULTRALIGHT FIX:

Base coat	Finishing coats (including key coat and façade paint acc. to clause 1.1)	Equivalent air thickness s_d (m)
JUBIZOL ULTRALIGHT FIX	JUBIZOL MINERAL FINISH S	Test result obtained with finishing coat of particle size 1,5 mm ≤ 2.0
	JUBIZOL SILICATE finish S	Test result obtained with finishing coat of particle size 1,5 mm ≤ 2.0
	JUBIZOL SILICONE finish T	Test result obtained with finishing coat of particle size 1,5 mm ≤ 2.0
	JUBIZOL ACRYL finish S	Test result obtained with finishing coat of particle size 1,5 mm ≤ 2.0
	JUBIZOL UNIXIL finish S	Test result obtained with finishing coat of particle size of 1,5 mm ≤ 2.0
	JUBIZOL UNIXIL Winter finish S	
	JUBIZOL UNIXIL finish T	
	JUBIZOL NANO finish S	Test result obtained with finishing coat of particle size 1,5 mm ≤ 2.0



g) ETICS in combination with base coat JUBIZOL UNIWOOL ADHESIVE:

Base coat	Finishing coats (including key coat and façade paint acc. to clause 1.1)	Equivalent air thickness s_d (m)
JUBIZOL UNIWOOL ADHESIVE	JUBIZOL MINERAL FINISH S	Test result obtained with finishing coat of particle size 1,5 mm \leq 2.0
	JUBIZOL SILICATE finish S	Test result obtained with finishing coat of particle size 1,5 mm \leq 2.0
	JUBIZOL SILICONE finish S	Test result obtained with finishing coat of particle size 1,5 mm \leq 2.0
	JUBIZOL ACRYL finish S	Test result obtained with finishing coat of particle size 1,5 mm \leq 2.0
	NIVELIN D + façade paint	Test result obtained with finishing coat Nivelin D + Revitalcolor AG of particle size 1,5 mm \leq 2.0
	JUBIZOL UNIXIL finish S	Test result obtained with finishing coat of particle size 1,5 mm \leq 2.0
	JUBIZOL UNIXIL Winter finish S	
	JUBIZOL UNIXIL finish T	
	JUBIZOL NANO finish S	Test result obtained with finishing coat of particle size 1,5 mm \leq 2.0
	JUBIZOL Kulirplast 1.8 premium	\leq 2.0 (Test result obtained with finishing coat of particle size of 2.0 mm: 0.4)
	JUBIZOL Kulirplast 2.0	\leq 2.0 (Test result obtained with finishing coat of particle size of 2.0 mm: 0.2)

3.3.5 Dangerous substances

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



3.4 Safety in use (BWR 4)

3.4.1 Bond strength

- Base coat onto expanded polystyrene:

Conditionings		
Initial state	After the hygrothermal cycles (on the rig)	After the freeze/thaw cycles (on samples)
Base coat: JUBIZOL ADHESIVE MORTAR		
≥ 0.08 MPa	≥ 0.08 MPa	Test not required because freeze/thaw cycles not necessary
Base coat: JUBIZOL STRONG FIX		
≥ 0.08 MPa	≥ 0.08 MPa	Test not required because freeze/thaw cycles not necessary
Base coat: JUBIZOL Cement-free base coat		
	≥ 0.08 MPa	≥ 0.08 MPa
Base coat: JUBIZOL EPS ADHESIVE MORTAR		
≥ 0.08 MPa	≥ 0.08 MPa	Test not required because freeze/thaw cycles not necessary
Base coat: JUBIZOL MICROAIR FIX		
≥ 0.08 MPa	≥ 0.08 MPa	≥ 0.08 MPa
Base coat: JUBIZOL ULTRALIGHT FIX		
≥ 0.08 MPa	≥ 0.08 MPa	Test not required because freeze/thaw cycles not necessary
Base coat: JUBIZOL UNIWOOL ADHESIVE		
≥ 0.08 MPa	≥ 0.08 MPa	Test not required because freeze/thaw cycles not necessary



- Adhesive onto substrate and expanded polystyrene (safety in use of the bonded ETICS)

	Conditionings		
	Initial state	48 h immersion in water + 2 h 23°C/50% RH	48 h immersion in water + 7 days 23°C/50% RH
Adhesive: JUBIZOL ADHESIVE MORTAR			
Concrete	≥ 0.25 MPa	≥ 0.08 MPa	≥ 0.25 MPa
Expanded polystyrene	≥ 0.08 MPa	≥ 0.03 MPa	≥ 0.08 MPa
Adhesive: JUBIZOL STRONG FIX			
Concrete	≥ 0.25 MPa	≥ 0.08 MPa	≥ 0.25 MPa
Expanded polystyrene	≥ 0.08 MPa	≥ 0.03 MPa	≥ 0.08 MPa
Adhesive: JUBIZOL ADHESIVE			
Concrete	≥ 0.25 MPa	≥ 0.08 MPa	≥ 0.25 MPa
Expanded polystyrene	≥ 0.08 MPa	≥ 0.03 MPa	≥ 0.08 MPa
Adhesive: JUBIZOL EPS ADHESIVE MORTAR			
Concrete	≥ 0.25 MPa	≥ 0.08 MPa	≥ 0.25 MPa
Expanded polystyrene	≥ 0.08 MPa	≥ 0.03 MPa	≥ 0.08 MPa
Adhesive: JUBIZOL MICROAIR FIX			
Concrete	≥ 0.25 MPa	≥ 0.08 MPa	≥ 0.25 MPa
Expanded polystyrene	≥ 0.08 MPa	≥ 0.03 MPa	≥ 0.08 MPa
Adhesive: JUBIZOL ULTRALIGHT FIX			
Concrete	≥ 0.25 MPa	≥ 0.08 MPa	≥ 0.25 MPa
Expanded polystyrene	≥ 0.08 MPa	≥ 0.03 MPa	≥ 0.08 MPa
Adhesive: JUBIZOL UNIWOOL ADHESIVE			
Concrete	≥ 0.25 MPa	≥ 0.08 MPa	≥ 0.25 MPa
Expanded polystyrene	≥ 0.08 MPa	≥ 0.03 MPa	≥ 0.08 MPa

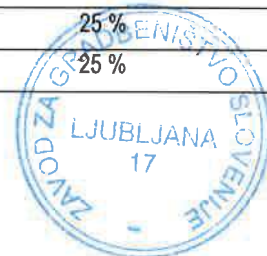
The minimal bonded surface S, which must exceed 20%, is calculated as follows:

$$S (\%) = [0.03 \text{ (MPa)} \times 100] / B$$

Where: B means minimum mean failure resistance of the adhesive to the insulation product in dry conditions and 0.03 MPa correspond to the minimum requirements.

The ETICS can so be installed on the substrate with application of the adhesive on the following minimal surfaces:

Adhesive	Tensile strength perpendicular to the face of the insulation product
	≥ 150 kPa
JUBIZOL ADHESIVE MORTAR	20 %
JUBIZOL STRONG FIX	20 %
JUBIZOL ADHESIVE	27 %
JUBIZOL EPS ADHESIVE MORTAR	30 %
JUBIZOL MICROAIR FIX	30 %
JUBIZOL ULTRALIGHT FIX	25 %
JUBIZOL UNIWOOL ADHESIVE	25 %

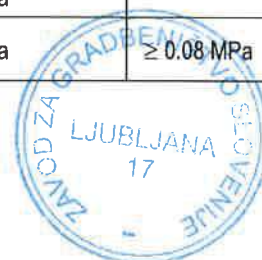


3.4.2 Bond strength after ageing**a) ETICS in combination with base coat JUBIZOL ADHESIVE MORTAR.**

Base coat	Finishing coats (including key coat and façade paint acc. to clause 1.1)	After hygrothermal cycles (on the rig) or after 7 days immersion in water + 7 days 23 °C / 50 % RH (on samples)	After freeze / thaw cycles (on samples)
JUBIZOL ADHESIVE MORTAR	JUBIZOL MINERAL FINISH T	≥ 0.08 MPa	Test not required because freeze / thaw cycles not necessary
	JUBIZOL MINERAL FINISH S		
	JUBIZOL SILICATE finish T	≥ 0.08 MPa	
	JUBIZOL SILICATE finish S		
	JUBIZOL SILICONE finish T	≥ 0.08 MPa	
	JUBIZOL SILICONE finish S		
	JUBIZOL ACRYL finish T	≥ 0.08 MPa	
	JUBIZOL ACRYL finish S		
	NIVELIN D + façade paint	≥ 0.08 MPa The result was obtained for system Nivelin D + Revitalcolor AG	
	JUBIZOL UNIXIL finish S	≥ 0.08 MPa	
	JUBIZOL UNIXIL Winter finish S		
	JUBIZOL UNIXIL finish T		
	JUBIZOL NANO finish S	≥ 0.08 MPa	
	JUBIZOL Kulirplast 2.0	≥ 0.08 MPa	

b) ETICS in combination with base coat JUBIZOL STRONG FIX

Base coat	Finishing coats (including key coat and façade paint acc. to clause 1.1)	After hygrothermal cycles (on the rig) or after 7 days immersion in water + 7 days 23 °C / 50 % RH (on samples)	After freeze / thaw cycles (on samples)
JUBIZOL STRONG FIX	JUBIZOL MINERAL FINISH T	≥ 0.08 MPa	Test not required because freeze / thaw cycles not necessary
	JUBIZOL MINERAL FINISH S		
	JUBIZOL SILICATE finish T	≥ 0.08 MPa	
	JUBIZOL SILICATE finish S		
	JUBIZOL SILICONE finish T	≥ 0.08 MPa	
	JUBIZOL SILICONE finish S		
	JUBIZOL ACRYL finish T	≥ 0.08 MPa	
	JUBIZOL ACRYL finish S		
	NIVELIN D + façade paint	≥ 0.08 MPa The result was obtained for system Nivelin D + Revitalcolor AG	
	JUBIZOL UNIXIL finish S	≥ 0.08 MPa	
	JUBIZOL UNIXIL Winter finish S		
	JUBIZOL UNIXIL finish T		
	JUBIZOL NANO finish S	≥ 0.08 MPa	
	JUBIZOL Kulirplast 2.0	≥ 0.08 MPa	



c) ETICS in combination with base coat JUBIZOL Cement-free base coat:

Base coat	Finishing coats (including key coat and façade paint acc. to clause 1.1)	After hygrothermal cycles (on the rig) or after 7 days immersion in water + 7 days 23 °C / 50 % RH (on samples)	After freeze / thaw cycles (on samples)
JUBIZOL Cement-free base coat	JUBIZOL SILICONE finish T	≥ 0.08	Test not required because freeze / thaw cycles not necessary
	JUBIZOL SILICONE finish S		
	JUBIZOL ACRYL finish T	≥ 0.08	
	JUBIZOL ACRYL finish S		
	JUBIZOL UNIXIL finish S	≥ 0.08	
	JUBIZOL UNIXIL Winter finish S		
	JUBIZOL UNIXIL finish T		
	JUBIZOL NANO finish S	≥ 0.08	

d) ETICS in combination with base coat JUBIZOL EPS ADHESIVE MORTAR:

Base coat	Finishing coats (including key coat and façade paint acc. to clause 1.1)	After hygrothermal cycles (on the rig) or after 7 days immersion in water + 7 days 23 °C / 50 % RH (on samples)	After freeze / thaw cycles (on samples)
JUBIZOL EPS ADHESIVE MORTAR	JUBIZOL MINERAL FINISH T	≥ 0.08	Test not required because freeze / thaw cycles not necessary
	JUBIZOL MINERAL FINISH S		
	JUBIZOL SILICATE finish T	≥ 0.08	
	JUBIZOL SILICATE finish S		
	JUBIZOL SILICONE finish T	≥ 0.08	
	JUBIZOL SILICONE finish S		
	JUBIZOL ACRYL finish T	≥ 0.08	
	JUBIZOL ACRYL finish S		
	JUBIZOL UNIXIL finish S	≥ 0.08	
	JUBIZOL UNIXIL Winter finish S		
	JUBIZOL UNIXIL finish T		
	JUBIZOL NANO finish S	≥ 0.08	
	JUBIZOL Kulirplast 1.8 premium	≥ 0.08	
	JUBIZOL Kulirplast 2.0	≥ 0.08	



e) ETICS in combination with base coat JUBIZOL MICROAIR FIX:

Base coat	Finishing coats (including key coat and façade paint acc. to clause 1.1)	After hygrothermal cycles (on the rig) or after 7 days immersion in water + 7 days 23 °C / 50 % RH (on samples)	After freeze / thaw cycles (on samples)
JUBIZOL MICROAIR FIX	JUBIZOL MINERAL FINISH T	≥ 0.08	Test not required because freeze / thaw cycles not necessary
	JUBIZOL MINERAL FINISH S		
	JUBIZOL SILICATE finish T	≥ 0.08	
	JUBIZOL SILICATE finish S		
	JUBIZOL SILICONE finish T	≥ 0.08	
	JUBIZOL SILICONE finish S		
	JUBIZOL ACRYL finish T	≥ 0.08	
	JUBIZOL ACRYL finish S		
	JUBIZOL UNIXIL finish S	≥ 0.08	
	JUBIZOL UNIXIL Winter finish S		
	JUBIZOL UNIXIL finish T	≥ 0.08	
	JUBIZOL NANO finish S		
	JUBIZOL Kulirplast 1.8 premium	≥ 0.08	
	JUBIZOL Kulirplast 2.0	≥ 0.08	

f) ETICS in combination with base coat JUBIZOL ULTRALIGHT FIX:

Base coat	Finishing coats (including key coat acc. to clause 1.1)	After hygrothermal cycles (on the rig) or after 7 days immersion in water + 7 days 23 °C / 50 % RH (on samples)	After freeze / thaw cycles (on samples)
JUBIZOL ULTRALIGHT FIX	JUBIZOL MINERAL FINISH T	≥ 0.08	Test not required because freeze / thaw cycles not necessary
	JUBIZOL MINERAL FINISH S		
	JUBIZOL SILICATE finish T	≥ 0.08	
	JUBIZOL SILICATE finish S		
	JUBIZOL SILICONE finish T	≥ 0.08	
	JUBIZOL SILICONE finish S		
	JUBIZOL ACRYL finish T	≥ 0.08	
	JUBIZOL ACRYL finish S		
	JUBIZOL UNIXIL finish S	≥ 0.08	
	JUBIZOL UNIXIL Winter finish S		
	JUBIZOL UNIXIL finish T		
	JUBIZOL NANO finish S	≥ 0.08	



g) ETICS in combination with base coat JUBIZOL UNIWOOL ADHESIVE:

Base coat	Finishing coats (including key coat acc. to clause 1.1)	After hygrothermal cycles (on the rig) or after 7 days immersion in water + 7 days 23 °C / 50 % RH (on samples)	After freeze / thaw cycles (on samples)
JUBIZOL UNIWOOL ADHESIVE	JUBIZOL MINERAL FINISH T	≥ 0.08	Test not required because freeze / thaw cycles not necessary
	JUBIZOL MINERAL FINISH S		
	JUBIZOL SILICATE finish T	≥ 0.08	
	JUBIZOL SILICATE finish S		
	JUBIZOL SILICONE finish T	≥ 0.08	
	JUBIZOL SILICONE finish S		
	JUBIZOL ACRYL finish T	≥ 0.08	
	JUBIZOL ACRYL finish S		
	JUBIZOL UNIXIL finish S	≥ 0.08	
	JUBIZOL UNIXIL Winter finish S		
	JUBIZOL UNIXIL finish T		
	JUBIZOL NANO finish S	≥ 0.08	

The ETICS fulfils the acceptance criteria given in ETAG 004, used as EAD.

3.4.3 Fixing strength (displacement test)

Test not required because the ETICS fulfils the following criteria: $E \times d < 50000 \text{ N/mm}$.

(E: modulus of elasticity of the base coat - d: mean dried thickness of the base coat).

3.4.4 Wind load resistance

a) Safety in use of mechanically fixed ETICS **using anchors**.

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



Anchors for which the following failure loads apply	Trade name	Fischer TERMOZ 8 N (ETA-03/0019) Fischer TERMOZ 8 U (ETA-02/0019) Fischer TERMOZ KS 8 (ETA-04/0114)	
	Plate diameter (mm)	≥ 60	
Characteristics of the EPS panels for which the following failure loads apply	Thickness (mm)	≥ 50	
	Tensile strength perpendicular to the face (kPa)	≥ 150	
Failure loads (N)	Anchors not placed at the panel joints (Static Foam Block Test)	R_{panel}	Minimal: 440 Mean: 460
	Anchors placed at the panel joints (Pull Through Test)	R_{joint}	Minimal: 400 Mean: 410

Anchors for which the following failure loads apply	Trade name	EJOT SDM-T plus (ETA-04/0064) EJOT SDF-K plus (ETA-04/0064) EJOT Ejotharm NT-U (ETA-05/0009) EJOT Ejotharm NK-U (ETA-05/0009) EJOT Ejotharm NTK-U (ETA-07/0026) Hilti SX-FV (ETA-03/0005) Hilti SD-FV 8 (ETA-03/0028) Hilti XI-FV (ETA-03/0004) Hilti D-FV, (ETA-05/0039) Hilti D-FV T (ETA-05/0039)	
	Plate diameter (mm)	≥ 60	
Characteristics of the EPS panels for which the following failure loads apply	Thickness (mm)	≥ 60	
	Tensile strength perpendicular to the face (kPa)	≥ 100	
Failure loads (N)	Anchors not placed at the panel joints (Static Foam Block Test)	R_{panel}	Minimal: 510 Mean: 520
	Anchors placed at the panel joints (Pull Through Test)	R_{joint}	Minimal: 400 Mean: 430

Anchors for which the following failure loads apply	Trade name	EJOT Ejotharm H1 Eco (ETA- 11/0192)	
	Plate diameter (mm)	≥ 60	
Characteristics of the EPS panels for which the following failure loads apply	Thickness (mm)	≥ 60	
	Tensile strength perpendicular to the face (kPa)	≥ 150	
Failure loads (N)	Anchors not placed at the panel joints (Pull Through Test)	R_{panel}	Minimal: 632 Mean: 636
	Anchors placed at the panel joints (Pull Through Test)	R_{joint}	Minimal: 560 Mean: 597

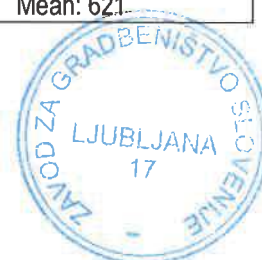


Anchors for which the following failure loads apply	Trade name	EJOT Ejotharm H1 Eco (ETA- 11/0192)		
	Plate diameter (mm)	≥ 60		
	Thickness (mm)	≥ 110		
	Tensile strength perpendicular to the face (kPa)	≥ 150		
Failure loads (N)	Anchors not placed at the panel joints (Pull Through Test)	R_{panel}	Minimal: 738 Mean: 748	
	Anchors placed at the panel joints (Pull Through Test)	R_{joint}	Minimal: 660 Mean: 687	

Anchors for which the following failure loads apply	Trade name	EJOT Ejotharm H1 Eco (ETA- 11/0192)		
	Plate diameter (mm)	≥ 60		
	Thickness (mm)	≥ 120		
	Tensile strength perpendicular to the face (kPa)	≥ 150		
Failure loads (N)	Anchors not placed at the panel joints (Pull Through Test)	R_{panel}	Minimal: 725 Mean: 759	
	Anchors placed at the panel joints (Pull Through Test)	R_{joint}	Minimal: 588 Mean: 612	

Anchors for which the following failure loads apply	Trade name	EJOT Ejotharm H3 (ETA- 11/0192)		
	Plate diameter (mm)	≥ 60		
	Thickness (mm)	≥ 60		
	Tensile strength perpendicular to the face (kPa)	≥ 150		
Failure loads (N)	Anchors not placed at the panel joints (Pull Through Test)	R_{panel}	Minimal: 497 Mean: 574	
	Anchors placed at the panel joints (Pull Through Test)	R_{joint}	Minimal: 510 Mean: 536	

Anchors for which the following failure loads apply	Trade name	EJOT Ejotharm STR U 2G (ETA- 04/0023)		
	Plate diameter (mm)	≥ 60		
	Thickness (mm)	≥ 60		
	Tensile strength perpendicular to the face (kPa)	≥ 150		
Failure loads (N)	Anchors not placed at the panel joints (Pull Through Test)	R_{panel}	Minimal: 666 Mean: 678	
	Anchors placed at the panel joints (Pull Through Test)	R_{joint}	Minimal: 600 Mean: 621	

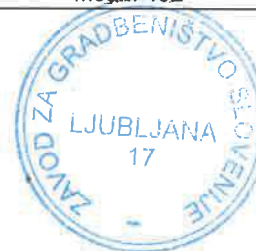


Anchors for which the following failure loads apply	Trade name	EJOT Ejotharm STR U 2G (ETA- 04/0023)	
	Plate diameter (mm)	≥ 60	
Characteristics of the EPS panels for which the following failure loads apply	Thickness (mm)	≥ 120	
	Tensile strength perpendicular to the face (kPa)	≥ 150	
Failure loads (N)	Anchors not placed at the panel joints (Pull Through Test)	R_{panel}	Minimal: 1050 Mean: 1100
	Anchors placed at the panel joints (Pull Through Test)	R_{joint}	Minimal: 823 Mean: 833

Anchors for which the following failure loads apply	Trade name	EJOT Ejoterm STR U (ETA-04/0023)	
	Plate diameter (mm)	≥ 60	
Characteristics of the EPS panels for which the following failure loads apply	Thickness (mm)	≥ 80	
	Tensile strength perpendicular to the face (kPa)	≥ 100	
Failure loads (N)	Anchors not placed at the panel joints (Pull Through Test)	R_{panel}	Minimal: 550 Mean: 560
	Anchors placed at the panel joints (Pull Through Test)	R_{joint}	Minimal: 480 Mean: 500

Anchors for which the following failure loads apply	Trade name	WKRET MET LFN-8 (ETA-06/0080)	
	Plate diameter (mm)	≥ 60	
Characteristics of the EPS panels for which the following failure loads apply	Thickness (mm)	≥ 50	
	Tensile strength perpendicular to the face (kPa)	≥ 100	
Failure loads (N)	Anchors not placed at the panel joints (Pull Through Test)	R_{panel}	Minimal: 670 Mean: 704
	Anchors placed at the panel joints (Pull Through Test)	R_{joint}	Minimal: 432 Mean: 446

Anchors for which the following failure loads apply	Trade name	WKRET MET LFM-8 (ETA-06/0080)	
	Plate diameter (mm)	≥ 60	
Characteristics of the EPS panels for which the following failure loads apply	Thickness (mm)	≥ 50	
	Tensile strength perpendicular to the face (kPa)	≥ 100	
Failure loads (N)	Anchors not placed at the panel joints (Pull Through Test)	R_{panel}	Minimal: 665 Mean: 706
	Anchors placed at the panel joints (Pull Through Test)	R_{joint}	Minimal: 441 Mean: 452



Anchors for which the following failure loads apply	Trade name	WKRET MET LTX-10 (ETA-08/0172)	
	Plate diameter (mm)	≥ 60	
	Thickness (mm)	≥ 50	
	Tensile strength perpendicular to the face (kPa)	≥ 100	
Failure loads (N)	Anchors not placed at the panel joints (Pull Through Test)	R_{panel}	Minimal: 520 Mean: 570
	Anchors placed at the panel joints (Pull Through Test)	R_{joint}	Minimal: 480 Mean: 510

Anchors for which the following failure loads apply	Trade name	WKRET MET LTX-10 (ETA-08/0172)	
	Plate diameter (mm)	≥ 60	
	Thickness (mm)	≥ 130	
	Tensile strength perpendicular to the face (kPa)	≥ 150	
Failure loads (N)	Anchors not placed at the panel joints (Pull Through Test)	R_{panel}	Minimal: 758 Mean: 772
	Anchors placed at the panel joints (Pull Through Test)	R_{joint}	Minimal: 616 Mean: 624

Anchors for which the following failure loads apply	Trade name	WKRET MET LFM-10 (ETA-06/0080)	
	Plate diameter (mm)	≥ 60	
	Thickness (mm)	≥ 130	
	Tensile strength perpendicular to the face (kPa)	≥ 150	
Failure loads (N)	Anchors not placed at the panel joints (Pull Through Test)	R_{panel}	Minimal: 634 Mean: 679
	Anchors placed at the panel joints (Pull Through Test)	R_{joint}	Minimal: 514 Mean: 551

Anchors for which the following failure loads apply	Trade name	WKRET MET LFM-10 (ETA-06/0080)	
	Plate diameter (mm)	≥ 60	
	Thickness (mm)	≥ 60	
	Tensile strength perpendicular to the face (kPa)	≥ 150	
Failure loads (N)	Anchors not placed at the panel joints (Pull Through Test)	R_{panel}	Minimal: 568 Mean: 580
	Anchors placed at the panel joints (Pull Through Test)	R_{joint}	Minimal: 499 Mean: 504



Anchors for which the following failure loads apply	Trade name	WKRET MET LFM-10 (ETA-06/0080)	
	Plate diameter (mm)	≥ 60	
Characteristics of the EPS panels for which the following failure loads apply	Thickness (mm)	≥ 130	
	Tensile strength perpendicular to the face (kPa)	≥ 150	
Failure loads (N)	Anchors not placed at the panel joints (Pull Through Test)	R_{panel}	Minimal: 621 Mean: 685
	Anchors placed at the panel joints (Pull Through Test)	R_{joint}	Minimal: 558 Mean: 598

Anchors for which the following failure loads apply	Trade name	WKRET MET LMX-10 (ETA-08/0172)	
	Plate diameter (mm)	≥ 60	
Characteristics of the EPS panels for which the following failure loads apply	Thickness (mm)	≥ 50	
	Tensile strength perpendicular to the face (kPa)	≥ 100	
Failure loads (N)	Anchors not placed at the panel joints (Pull Through Test)	R_{panel}	Minimal: 520 Mean: 570
	Anchors placed at the panel joints (Pull Through Test)	R_{joint}	Minimal: 460 Mean: 490

Anchors for which the following failure loads apply	Trade name	Leskovec PP (ETA-05/0149)	
	Plate diameter (mm)	≥ 60	
Characteristics of the EPS panels for which the following failure loads apply	Thickness (mm)	≥ 50	
	Tensile strength perpendicular to the face (kPa)	≥ 150	
Failure loads (N)	Anchors not placed at the panel joints (Pull Through Test)	R_{panel}	Minimal: 450 Mean: 470
	Anchors placed at the panel joints (Pull Through Test)	R_{joint}	Minimal: 380 Mean: 400

Anchors for which the following failure loads apply	Trade name	Leskovec pritrdilno sidro PSK (ETA-05/0148)	
	Plate diameter (mm)	≥ 60	
Characteristics of the EPS panels for which the following failure loads apply	Thickness (mm)	≥ 110	
	Tensile strength perpendicular to the face (kPa)	≥ 150	
Failure loads (N)	Anchors not placed at the panel joints (Pull Through Test)	R_{panel}	Minimal: 842 Mean: 863
	Anchors placed at the panel joints (Pull Through Test)	R_{joint}	Minimal: 707 Mean: 730



Anchors for which the following failure loads apply	Trade name	Leskovec pritrdilno sidro PSK (ETA-05/0148)	
	Plate diameter (mm)	≥ 60	
Characteristics of the EPS panels for which the following failure loads apply	Thickness (mm)	≥ 60	
	Tensile strength perpendicular to the face (kPa)	≥ 150	
Failure loads (N)	Anchors not placed at the panel joints (Pull Through Test)	R_{panel}	Minimal: 560 Mean: 590
	Anchors placed at the panel joints (Pull Through Test)	R_{joint}	Minimal: 490 Mean: 520

Anchors for which the following failure loads apply	Trade name	Leskovec PPV (ETA-12/0331)	
	Plate diameter (mm)	≥ 60	
Characteristics of the EPS panels for which the following failure loads apply	Thickness (mm)	≥ 60	
	Tensile strength perpendicular to the face (kPa)	≥ 100	
Failure loads (N)	Anchors not placed at the panel joints (Pull Through Test)	R_{panel}	Minimal: 450 Mean: 487
	Anchors placed at the panel joints (Pull Through Test)	R_{joint}	Minimal: 404 Mean: 411

Anchors for which the following failure loads apply	Trade name	Leskovec PPV (ETA-12/0331)	
	Plate diameter (mm)	≥ 60	
Characteristics of the EPS panels for which the following failure loads apply	Thickness (mm)	≥ 110	
	Tensile strength perpendicular to the face (kPa)	≥ 150	
Failure loads (N)	Anchors not placed at the panel joints (Pull Through Test)	R_{panel}	Minimal: 832 Mean: 888
	Anchors placed at the panel joints (Pull Through Test)	R_{joint}	Minimal: 669 Mean: 688

Anchors for which the following failure loads apply	Trade name	Leskovec PPV (ETA-12/0331)	
	Plate diameter (mm)	≥ 60	
Characteristics of the EPS panels for which the following failure loads apply	Thickness (mm)	≥ 180	
	Tensile strength perpendicular to the face (kPa)	≥ 150	
Failure loads (N)	Anchors not placed at the panel joints (Pull Through Test)	R_{panel}	Minimal: 683 Mean: 710
	Anchors placed at the panel joints (Pull Through Test)	R_{joint}	Minimal: 913 Mean: 914



Anchors for which the following failure loads apply	Trade name	Leskovec PSV (ETA-15/0233)	
	Plate diameter (mm)	≥ 60	
Characteristics of the EPS panels for which the following failure loads apply	Thickness (mm)	≥ 110	
	Tensile strength perpendicular to the face (kPa)	≥ 150	
Failure loads (N)	Anchors not placed at the panel joints (Pull Through Test)	R_{panel}	Minimal :535 Mean: 563
	Anchors placed at the panel joints (Pull Through Test)	R_{joint}	Minimal: 436 Mean: 477

Anchors for which the following failure loads apply	Trade name	Kosmatin UD PK (ETA-10/0368)	
	Plate diameter (mm)	≥ 60	
Characteristics of the EPS panels for which the following failure loads apply	Thickness (mm)	≥ 60	
	Tensile strength perpendicular to the face (kPa)	≥ 150	
Failure loads (N)	Anchors not placed at the panel joints (Pull Through Test)	R_{panel}	Minimal: 476 Mean: 505
	Anchors placed at the panel joints (Pull Through Test)	R_{joint}	Minimal: 376 Mean: 442

Anchors for which the following failure loads apply	Trade name	Kosmatin UD PK (ETA-10/0368)	
	Plate diameter (mm)	≥ 60	
Characteristics of the EPS panels for which the following failure loads apply	Thickness (mm)	≥ 180	
	Tensile strength perpendicular to the face (kPa)	≥ 150	
Failure loads (N)	Anchors not placed at the panel joints (Pull Through Test)	R_{panel}	Minimal: 555 Mean: 583
	Anchors placed at the panel joints (Pull Through Test)	R_{joint}	Minimal: 448 Mean: 501

Anchors for which the following failure loads apply	Trade name	Ranit IsoFux NDT8LZ, ND8LZ, ND8LZ K (ETA - 05/0080) Ranit IsoFux NDS8Z, NDM8Z, NDS90Z, NDM90Z (ETA 07/0129) Ranit IsoFux (ETA - 04/0032)	
	Plate diameter (mm)	≥ 60	
Characteristics of the EPS panels for which the following failure loads apply	Thickness (mm)	≥ 80	
	Tensile strength perpendicular to the face (kPa)	≥ 100	
Failure loads (N)	Anchors not placed at the panel joints (Static Foam Block Test)	R_{panel}	Minimal: 503 Mean: 513
	Anchors placed at the panel joints (Pull Through Test)	R_{joint}	Minimal: 520 Mean: 540

*Note: according to results of various research activities head plate diameter is the most influential parameter (assuming similar plate stiffness). Failure loads for larger plates are therefore expected to be higher, thus the given values are on the "safe side".



For calculation the following formula shall be used:

$$R_d = \frac{R_{\text{panel}} \times n_{\text{panel}} + R_{\text{joint}} \times n_{\text{joint}}}{\gamma}$$

n_{panel} - number (per m²) of anchors not placed at the panel joints, n_{joint} - number (per m²) of anchors placed at the panel joint, γ - safety factor

3.4.5 Render strip tensile test

a) JUBIZOL ADHESIVE MORTAR

The mean value of the crack width of the base coat with the glass fibre mesh, measured at a render strain value of **0.8 %** is about **0.2 mm** in warp direction and is about **0.1 mm** in weft direction.

b) JUBIZOL STRONG FIX:

The mean value of the crack width of the base coat with the glass fibre mesh, measured at a render strain value of **0.8 %** is about **0.2 mm** in warp direction and is about **0.1 mm** in weft direction.

c) JUBIZOL CEMENT-FREE BASE COAT

There are **no cracks** of the base coat with the glass fibre mesh, measured at a render strain value of **0.3 %**, **0.5 %**, **0.8 %**, **1.0 %**, **1.5 %** and **2.0 %** in warp and weft direction.

d) JUBIZOL EPS ADHESIVE MORTAR:

There are **no cracks** of the base coat with the glass fibres mesh, measured at a render strain value of **0.3 %**, while at all subsequent required render strain values: **0.5 %**; **0.8%**; **1.0%**; **1.5%**; **2.0%** the mean value of the crack width of the reinforced base coat, measured in warp and weft direction is about **0.1 mm**.

e) JUBIZOL MICROAIR FIX:

There are **no cracks** of the base coat with the glass fibres mesh, measured at a render strain value of **0.3 %**, while at all subsequent required render strain values: **0.5 %**; **0.8%**; **1.0%**; **1.5%**; **2.0%** the mean value of the crack width of the reinforced base coat, measured in warp and weft direction is about **0.1 mm**.

e) JUBIZOL ULTRALIGHT FIX:

In warp direction of the width of cracks reached up to **0.40 mm** at strain value of **2.0 %**, while in the weft direction the cracks was thinner with widths up to **0.30 mm**.

f) JUBIZOL UNIWOOL ADHESIVE:

In warp and weft directions, at strain value of **2.0 %**, the width of cracks reached up to **0.15 mm**.

3.5 Protection against noise (BWR 5)

3.5.1 Airborne sound insulation

No performance assessed.



3.6 Energy economy and heat retention (BWR 6)

3.6.1 Thermal resistance

The additional thermal resistance provided by the ETICS (R_{ETICS}) to the substrate wall is calculated from the thermal resistance of the insulation product (R_D) and from the tabulated R_{render} value of the render system (R_{render} is about $0.02 \text{ m}^2 \cdot \text{K/W}$),

$$R_{ETICS} = R_D + R_{render} \text{ [(m}^2 \cdot \text{K)/W]}]$$

as described in:

- SIST EN ISO 6946 «Building components and building elements - Thermal resistance and thermal transmittance - Calculation method»
- EN 12524 “Building materials and products – Hygrothermal properties – Tabulated design values”

If the thermal resistance can not be calculated, it can be measured on the complete ETICS as described in:

SIST EN 1934 “Thermal performance of buildings - Determination of thermal resistance by hot box method using heat flow meter”

The thermal bridges caused by mechanical fixing devices influence the thermal transmittance of the entire wall and shall be taken into account using the following calculation:

$$U_c = U + \Delta U \text{ [W/(m}^2 \cdot \text{K)]}$$

With: U_c corrected thermal transmittance of the entire wall, including thermal bridges

U thermal transmittance of the entire wall, including ETICS, without thermal bridges

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

$R_{substrate}$ thermal resistance of the substrate wall [(m²·K)/W]

R_{se} external surface thermal resistance [(m²·K)/W]

R_{si} internal surface thermal resistance [(m²·K)/W]

ΔU correction term of the thermal transmittance for mechanical fixing devices =

$\chi_p \cdot n$ (for anchors) + $\sum \psi_l \cdot l_i$ (for profiles)

χ_p point thermal transmittance value of the anchor [W/K]. See Technical Report no. 25. If not specified in the anchor's ETA, the following values apply:
 = 0.002 W/K for anchors with a stainless steel screw with the head covered by plastic material, and for anchors with an air gap at the head of the screw.

= 0.004 W/K for anchors with a galvanized steel screw with the head covered by a plastic material.

= 0.008 W/K for all other anchors (worst case)

n number of anchors per m²

ψ_l linear thermal transmittance value of the profile [W/(m·K)]

l_i length of the profile per m²

The influence of thermal bridges can also be calculated as described in:

EN ISO 10211-1 “Thermal bridges in buildings – Heat flows and surface temperatures – Part 1: General calculation methods”

It should be calculated according to this standard if there are more than 16 anchors per m² foreseen. The χ_p values given by the manufacturer do not apply in this case.

3.7 Sustainable use of natural resources (BWR 7)

No performance assessed.



3.8 Characteristics of the components

3.8.1 Insulation product

Expanded polystyrene panels for bonded for bonded ETICS or mechanically fixed ETICS with anchors.

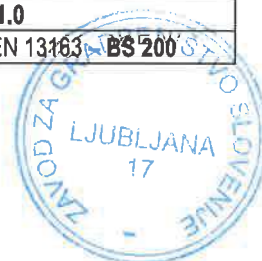
Factory–prefabricated, uncoated boards with right edges, made of expanded polystyrene (EPS) according to SIST EN 13163 and having the description and characteristics defined in the tables below.

Description and characteristics of the EPS coded as: EPS-EN 13163-T1-L2-W2-S2-P5-DS(N)2-DS(70,-)1-TR150-BS100		EPS panels for bonded ETICS and for mechanically fixed ETICS with anchors
Reaction to fire / SIST EN 13501-1		E (all thicknesses)
Thermal resistance ((m ² .K)/W)		Defined in reference to EN 13163
Thickness (mm) / SIST EN 823		EPS-EN 13163 – T1
Length (mm) / SIST EN 822		EPS-EN 13163 – L2
Width (mm) / SIST EN 822		EPS-EN 13163 – W2
Squareness (mm) / SIST EN 824		EPS-EN 13163 – S2
Flatness (mm) / SIST EN 825		EPS-EN 13163 – P5
Surface condition		Cut surface (homogeneous and without "skin")
Dimensional stability under:	specified temperature and humidity / SIST EN 1604	EPS-EN 13163-DS (70,-)1
	laboratory condition / SIST EN 1603	EPS-EN 13163-DS(N)2
Water absorption (partial immersion) / SIST EN 1609		< 0.5 kg/m ²
Water vapour diffusion resistance factor (μ) / SIST EN 12086 – SIST EN 13163		< 60
Tensile strength perpendicular to the faces in dry conditions / SIST EN 1607		≥ 150 kPa; EPS-EN 13163 - TR 150
Shear strength (N/mm ²) / SIST EN 12090		≥ 0.02
Shear modulus (N/mm ²) / SIST EN 12090		≥ 1.0
Bending strength / SIST EN 12089		≥ 100 kPa; EPS-EN 13163 – BS 100



Description and characteristics of the EPS coded as: EPS-EN 13163-L2-W2-T1-S2-P5-CS(10)100-TR150-DS(N)2-DS(70,-)1-WL(T)1-WD(V)1		EPS panels for bonded ETICS and for mechanically fixed ETICS with anchors
Reaction to fire / SIST EN 13501-1		E (all thicknesses)
Thermal resistance ((m ² .K)/W)		Defined in reference to EN 13163
Thickness (mm) / SIST EN 823		EPS-EN 13163 – T1
Length (mm) / SIST EN 822		EPS-EN 13163 – L2
Width (mm) / SIST EN 822		EPS-EN 13163 – W2
Squareness (mm) / SIST EN 824		EPS-EN 13163 – S2
Flatness (mm) / SIST EN 825		EPS-EN 13163 – P5
Surface condition		Cut surface (homogeneous and without "skin")
Dimensional stability under:	specified temperature and humidity / SIST EN 1604	EPS-EN 13163-DS (70,-)1
	laboratory condition / SIST EN 1603	EPS-EN 13163-DS(N)2
Water absorption (partial immersion) / SIST EN 1609		< 0.5 kg/m ²
Water vapour diffusion resistance factor (μ) / SIST EN 12086 – SIST EN 13163		< 60
Compressive strength / SIST EN 826		≥ 100 kPa; EPS-EN 13163 – CS10(100)
Tensile strength perpendicular to the faces in dry conditions / SIST EN 1607		≥ 150 kPa; EPS-EN 13163 - TR 150
Shear strength (N/mm ²) / SIST EN 12090		≥ 0.02
Shear modulus (N/mm ²) / SIST EN 12090		≥ 1.0
Bending strength / SIST EN 12089		≥ 150 kPa; EPS-EN 13163 – BS 150
Long term water adsorption (total immersion) / SIST EN 12087		≤ 1 %; EPS-EN 13163 – WL(T)1
Long term water absorption by diffusion / SIST EN 12088		≤ 1 %; EPS-EN 13163 – WD(V)1

Description and characteristics of the EPS coded as: EPS EN 13163-T(1)-L(2)-W(2)-S(2)-P(5)-BS200-DS(N)5-DS(70,-)1-TR400-CS(10)150-WL(T)3,5		EPS panels for JUBHome WALL system
Reaction to fire / SIST EN 13501-1		E (all thicknesses)
Thermal resistance ((m ² .K)/W)		Defined in reference to EN 13163
Thickness (mm) / SIST EN 823		EPS-EN 13163 – T1
Length (mm) / SIST EN 822		EPS-EN 13163 – L2
Width (mm) / SIST EN 822		EPS-EN 13163 – W2
Squareness (mm) / SIST EN 824		EPS-EN 13163 - S2
Flatness (mm) / SIST EN 825		EPS-EN 13163 – P5
Surface condition		Cut surface (homogeneous and without "skin")
Compressive stress at 10 % deformation SIST EN 826		≥ 150 kPa; EPS-EN 13163-CS(10)150
Dimensional stability under:	specified temperature and humidity / SIST EN 1604	EPS-EN 13163-DS (70,-)1
	laboratory condition / SIST EN 1603	EPS-EN 13163-DS(N)5
Water absorption (partial immersion) / SIST EN 1609		< 0.5 kg/m ²
Water vapour diffusion resistance factor (μ) / SIST EN 12086 – SIST EN 13163		< 60
Long-term water adsorption at total immersion SIST EN 12087		≤ 3,5 vol. %; EPS-EN 13163-WL(T)3,5
Tensile strength perpendicular to the faces in dry conditions / SIST EN 1607		≥ 400 kPa; EPS-EN 13163 - TR 400
Shear strength (N/mm ²) / SIST EN 12090		≥ 0.02
Shear modulus (N/mm ²) / SIST EN 12090		≥ 1.0
Bending strength / SIST EN 12089		≥ 200 kPa; EPS-EN 13163 - BS 200



3.8.2 Anchors

Anchors for insulation product (used as an ancillary component without contribution to resistance to windload resistance or as a fixing device in mechanically fixed systems):

Trade name	Plate diameter (mm)	Characteristic pull-out strength of anchor
EJOT Ejotharm STR U	60	See ETA - 04/0023
EJOT SDM-T plus, SDF-K plus	60	See ETA - 04/0064
EJOT Ejotharm NT-U, Ejotharm NK-U	60	See ETA - 05/0009
EJOT Ejotharm NTK-U	60	See ETA - 07/0026
EJOT Ejotharm H1 Eco	60	See ETA - 11/0192
EJOT Ejotharm H3	60	See ETA - 11/0192
EJOT Ejotharm STR U 2G	60	See ETA - 04/0023
Hilti SX-FV	60	See ETA - 03/0005
Hilti SD-FV 8	60	See ETA - 03/0028
Hilti XI-FV	60	See ETA - 03/0004
Hilti D-FV, D-FV T	60	See ETA - 05/0039
Fischer TERMOZ 8 N	60	See ETA - 03/0019
Fischer TERMOZ 8 U	60	See ETA - 02/0019
Fischer TERMOZ KS 8	60	See ETA - 04/0114
Leskovec PP	60	See ETA - 05/0149
Leskovec pritrdilno sidro PSK	60	See ETA - 05/0148
Leskovec PPV	60	See ETA - 12/0331
Leskovec PSV	60	See ETA - 15/0233
Ranit IsoFux NDT8LZ, ND8LZ and ND8LZ K	60	See ETA - 05/0080
Ranit IsoFux NDS8Z, NDM8Z, NDS90Z and NDM90Z	60	See ETA - 07/0129
Ranit IsoFux	60	See ETA - 04/0032
WKRET MET LFN-8	60	See ETA - 06/0080
WKRET MET LFM-8	60	See ETA - 06/0080
WKRET MET LFM-10	60	See ETA - 06/0080
WKRET MET LTX-10	60	See ETA - 08/0172
WKRET MET LMX-10	60	See ETA - 08/0172
Kosmatin UD PK	60	See ETA - 10/0368

3.8.3 Glass fibres mesh

Glass fibre mesh with 3.5 mm to 4.7 mm wide grid of fibres.

Alkalies resistance	JUBIZOL glass fibre mesh	
	Warp	Weft
Residual strength after ageing (N/mm) - mean value	≥ 21	≥ 25
Relative residual resistance after ageing of the strength in the as delivered state (%)	≥ 54	≥ 53



4 Assessment and verification of constancy of performance (AVCP)

According to the decision 97/556/EC of the European Commission¹ 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.

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

Technical details necessary for the implementation of the AVCP system are laid down in the Control plan ⁽²⁾ deposited at the Slovenian national Building and Civil Engineering Institute (ZAG).

Issued in Ljubljana on 18. 11. 2016

Signed by:

Franc Capuder, M.Sc.

Head of Service of TAB

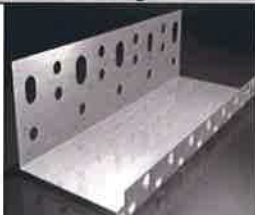







¹

Official Journal of the European Communities L 254 of 8.10.1996




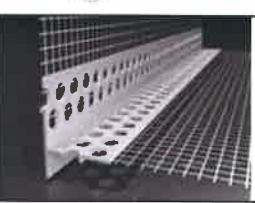





²

The Control plan is a confidential part of the technical documentation of this European Technical Assessment, but not published together with the ETA, and handed over only to the approved body or bodies involved in the procedure of attestation of conformity.



The ETA holder recommends the ancillary materials presented in below table to be used for ETICS JUBIZOL EPS preparation		
Finishing components		
Trade names	Descriptions	Images
JUBIZOL ALU BASE PROFILE	The ALU base profile is used for horizontal set-up of thermal insulating plates in the contact insulation system. It enables a perfect structural and visual finish and closure of the system. The base profile protects the system against mechanical damage and drains rainwater off the system.	
JUBIZOL CORNER PVC PROFILE	The corner profile is used for reinforcing all window or door corners, edges and jambs in the contact insulation system.	
JUBIZOL DRIP PROFILE PRO	The drip profile with an exposed drip ledge for finishing plaster and water drain-off at the top jambs of building openings in the contact insulation system. The guide rail on this profile enables the installation of this profile on openings wider than 2,5m.	
JUBIZOL WINDOW PROFILE STANDARD	Profile enabling a flexible junction of the window or door frame with plaster/render in the contact insulation system. The profile is completely hidden and can be used for windows and door frames of any colors. May be installed before or after the insulation boards are installed.	
JUBIZOL WINDOW PROFILE 2D	Profile enabling a flexible junction of the window or door frame with plaster/render in the contact insulation system. This profile creates a flexible joint in two directions. The protective lamella (soft PVC) shields from weather influences and dirt. May be installed before or after the insulation boards are installed.	
JUBIZOL WINDOW PROFILE 3D	Profile enabling a flexible junction of the window or door frame with plaster/render in the contact insulation system. This profile creates a flexible joint in three directions. The protective membrane (soft PVC) shields the expansion tape from weather influences and dirt. May only be installed before the insulation boards are installed.	
JUBIZOL FLEX CORNER PROFILE	This corner profile has a variable angle for reinforcing all window or door corners, edges and jambs in the contact insulation system.	
Note*: Descriptions in accordance with § 3.2.2.5 of the ETAG 004 remain under the ETA-holder responsibilities		
JUBIZOL EPS	Annex 1/1	
ancillary materials - finishing profiles		

The ETA holder recommends the ancillary materials presented in below table to be used for ETICS JUBIZOL EPS preparation

Finishing components		
Trade names	Trade names	Trade names
JUBIZOL DILETATION E PROFILE	Dilatation profile for movement joints in even, plane walls. The movement joint is resistant to all weather influences. The profile prevents penetration of moisture under the insulating material.	
JUBIZOL DILETATION V PROFILE	Dilatation profile for movement joints in inner corners of walls. The movement joint is resistant to all weather influences. The profile prevents penetration of moisture under the insulating material.	
JUBIZOL SNAP-ON PROFILE	Profile mounted directly on the ALU base profile. It extends the drip ledge of the ALU base profile, bridges over joints between ALU base profiles and prevents the occurrence of cracks from the ALU base profile upwards.	
JUBIZOL DRIP PROFILE LIGHT	Drip profile with an exposed drip ledge, which is hidden under the plaster or render. The profile is used for the creation of drip edges at the top of openings and overhangs up to 2,5m.	
JUBIZOL PRACTIC PVC PROFILE	The profile is inserted between the base and facade layers of insulation. Its drip ledge provides a perfect water drain-off from the system and eliminates capillarity rise under the insulating material.	
JUBIZOL SHUTTER PROFILE	The shutter profile enables flexible joints between "exterior furnishing" and ETICS. The profile prevents hairline cracks and enables attachment of protective foil for windows during ETICS installation.	
JUBIZOL STOP PROFILE	The stop profile is used for closing up of the plaster in places of transition to a different color or grain size or a transition to a different surface.	
JUBIZOL METAL ROOF-EDGE JOINT	This joint profile is used for flexible junction of plumber's elements and facade in the point of connection to sheet metal in the contact insulation system. It ensures perfect water drain-off from the system and eliminates capillarity rise under the insulating material.	
JUBIZOL BALCONY PROFILE	The balcony profile is installed at the edge of balconies. It prevents the formation of smudges created by rainwater on the facade underneath balcony edges.	

Note*: Descriptions in accordance with § 3.2.2.5 of the ETAG 004 remain under the ETA-holder responsibilities.

JUBIZOL EPS

ancillary materials - finishing profiles

Annex 1/2



Composition of JUBHome WALL system

The JUBHome WALL system consists of **INTERIOR** and **EXTERIOR** parts as it can be seen on a figure below. Only the **EXTERIOR** part - facade system of the JUBHome WALL system is evaluated in the scope of presented ETA 09/0393.

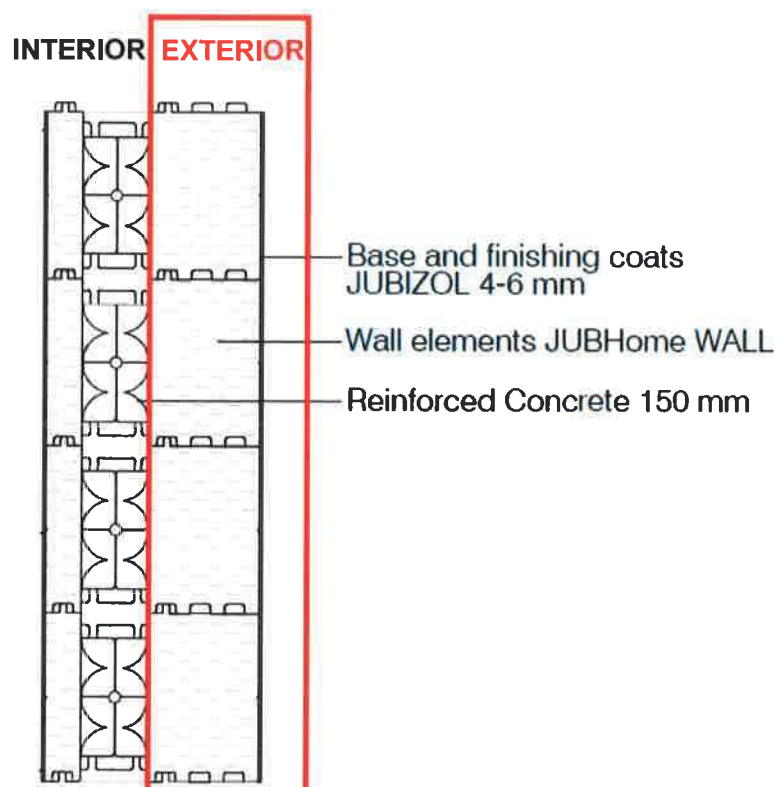


Figure: Composition of JUBHome WALL system.

JUBIZOL EPS

Composition of JUBHome WALL system

Annex 2



Use ETICS																																											
Base coat + Glass fibre mesh																																											
HIDROZOL SUPERFLEX 2K of thicknesses 3 mm and 5 mm + single JUBIZOL GLASS FIBRE MESH																																											
Key coat																																											
JUBIZOL Unigrund																																											
Finishing coat																																											
JUBIZOL UNIXIL finish S 1,0 JUBIZOL UNIXIL finish S 1,5 JUBIZOL UNIXIL finish S 1,0 JUBIZOL UNIXIL Winter finish S 1,5 JUBIZOL Kulirplast premium 1.8 JUBIZOL Kulirplast 2.0 JUBIZOL ACRYL finish S 1.5																																											
<p>The ETA holder recommends the renderings listed in above table to be used for the protection of the lower part "plinth" of the façades.</p> <p>The resistance to hard body impacts (3 Joules and 10 Joules) according to the ETAG 004, clause 5.1.3.3.</p> <table><tr><th>Base coat</th><th>Finishing coats</th><th>Thickness of the base coat (mm)</th><th>Single standard mesh</th></tr><tr><td rowspan="14">HIDROZOL SUPERFLEX 2K</td><td rowspan="2">JUBIZOL UNIXIL finish S 1.0</td><td>3</td><td>Category I</td></tr><tr><td>5</td><td>Category I</td></tr><tr><td rowspan="2">JUBIZOL UNIXIL finish S 1.5</td><td>3</td><td>Category I</td></tr><tr><td>5</td><td>Category I</td></tr><tr><td rowspan="2">JUBIZOL UNIXIL finish S 1.0</td><td>3</td><td>Category I</td></tr><tr><td>5</td><td>Category I</td></tr><tr><td rowspan="2">JUBIZOL UNIXIL Winter finish S 1.5</td><td>3</td><td>Category I</td></tr><tr><td>5</td><td>Category I</td></tr><tr><td rowspan="2">JUBIZOL ACRYL finish S 1.5</td><td>3</td><td>Category I</td></tr><tr><td>5</td><td>Category I</td></tr><tr><td rowspan="2">JUBIZOL Kulirplast premium 1.8</td><td>3</td><td>Category I</td></tr><tr><td>5</td><td>Category I</td></tr><tr><td rowspan="2">JUBIZOL Kulirplast 2.0</td><td>3</td><td>Category I</td></tr><tr><td>5</td><td>Category I</td></tr></table> <p>Note*: The only property determined for proposed plinth protection renderings according to ETAG 004 were impact resistances (clause 5.1.3.3.) while other properties were not determined.</p>				Base coat	Finishing coats	Thickness of the base coat (mm)	Single standard mesh	HIDROZOL SUPERFLEX 2K	JUBIZOL UNIXIL finish S 1.0	3	Category I	5	Category I	JUBIZOL UNIXIL finish S 1.5	3	Category I	5	Category I	JUBIZOL UNIXIL finish S 1.0	3	Category I	5	Category I	JUBIZOL UNIXIL Winter finish S 1.5	3	Category I	5	Category I	JUBIZOL ACRYL finish S 1.5	3	Category I	5	Category I	JUBIZOL Kulirplast premium 1.8	3	Category I	5	Category I	JUBIZOL Kulirplast 2.0	3	Category I	5	Category I
Base coat	Finishing coats	Thickness of the base coat (mm)	Single standard mesh																																								
HIDROZOL SUPERFLEX 2K	JUBIZOL UNIXIL finish S 1.0	3	Category I																																								
		5	Category I																																								
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	JUBIZOL ACRYL finish S 1.5	3	Category I																																								
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	JUBIZOL Kulirplast premium 1.8	3	Category I																																								
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	JUBIZOL Kulirplast 2.0	3	Category I																																								
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JUBIZOL EPS		Annex 3																																									
rendering systems for the protection of the façade plinths																																											




Use ETICS				
Base coat				
JUBIZOL ADHESIVE MORTAR, JUBIZOL STRONG FIX				
Base coat thickness				
to 6,0 mm				
JUBIZOL glass fibre mesh				
1 x 145 g/m ² to 2 x 160 g/m ²				
Key coat				
JUBIZOL Unigrund				
Finishing coat				
JUBIZOL ACRYL finish S 2.0	JUBIZOL UNIXIL finish S 1.5	JUBIZOL UNIXIL Winter finish S 1.5	JUBIZOL SILICONE finish S 1.5	JUBIZOL MINERAL finish S 1.5

Hail protection class according to: Test Standard for Impact Testing Resistance of Rigid Roofing Materials to Impacting with Freezer Ice Balls (Class number 4473, July 2005)

Base coat	Base coat thickness (mm)	JUBIZOL glass fibre mesh (no. of meshes x g/m ²)	Finishing coat	Hail protection class
JUBIZOL ADHESIVE MORTAR	2,5	1 x 145	JUBIZOL ACRYL finish S 2,0	2
	3,0	1 x 160		1
	6,0	1 x 160		2
	6,0	2 x160		4
	6,0	2 x 160	JUBIZOL UNIXIL finish S 1,5	4
	6,0	2 x 160	JUBIZOL UNIXIL Winter finish S 1,5	4
	5,0	2 x 160	JUBIZOL SILICONE finish S 1,5	4
	6,0	2 x 160	JUBIZOL MINERAL FINISH S 1,5	3
	6,0	2 x 160	JUBIZOL SILICONE finish S 1,5	4

Base coat	Base coat thickness (mm)	JUBIZOL glass fibre mesh (no. of meshes x g/m ²)	Finishing coat	Hail protection class
JUBIZOL STRONG FIX	2,5	1 x 145	JUBIZOL ACRYL finish S 2,0	2
	3,0	1 x 160		1
	6,0	1 x 160		2
	6,0	2 x160		4
	6,0	2 x 160	JUBIZOL UNIXIL finish S 1,5	4
	6,0	2 x 160	JUBIZOL UNIXIL Winter finish S 1,5	4
	5,0	2 x 160	JUBIZOL SILICONE finish S 1,5	4
	6,0	2 x 160	JUBIZOL MINERAL FINISH S 1,5	3
	6,0	2 x 160	JUBIZOL SILICONE finish S 1,5	4

JUBIZOL EPS	Annex 4
rendering systems for hail protection	



Use ETICS						
Adhesive						
JUBIZOL ADHESIVE MORTAR	JUBIZOL STRONG FIX	JUBIZOL EPS ADHESIVE MORTAR	JUBIZOL MICROAIR FIX	JUBIZOL UNIWOOL ADHESIVE	JUBIZOL ULTRALIGHT FIX	JUBIZOL ADHESIVE
Insulation						
EPS-EN 13163-T1-L2-W2-S2-P5-DS(N)2-DS(70,-)1-TR150-BS100 EPS-EN 13163-L2-W2-T1-S2-P5-CS(10)100-TR150-BS150-DS(N)2-DS(70,-)1-WL(T)1-WD(V)1 EPS EN 13163-T(1)-L(2)-W(2)-S(2)-P(5)-BS200-DS(N)5-DS(70,-)1-TR400-CS(10)150-WL(T)3,5						
Base coat						
JUBIZOL ADHESIVE MORTAR	JUBIZOL STRONG FIX	JUBIZOL EPS ADHESIVE MORTAR	JUBIZOL MICROAIR FIX	JUBIZOL UNIWOOL ADHESIVE	JUBIZOL ULTRALIGHT FIX	JUBIZOL CEMENT-FREE BASE COAT
Glass fibre mesh JUBIZOL glass fibre mesh						
Keycoat + Finishing coat						
Acrycolor, Acryl emulsion + JUBIZOL MINERAL FINISH T 2.0/2.5 Acrycolor, Acryl emulsion + JUBIZOL MINERAL FINISH S 1.5/2.0/2.5 JUBIZOL Unigrund, SILICATEprimer + JUBIZOL SILICATE finish T 2.0/2.5 JUBIZOL Unigrund, SILICATEprimer + JUBIZOL SILICATE finish S 1.5/2.0/2.5 JUBIZOL Unigrund, SILICONEprimer + JUBIZOL SILICONE finish T 2.0/2.5 JUBIZOL Unigrund, SILICONEprimer + JUBIZOL SILICONE finish S 1.5/2.0/2.5 JUBIZOL Unigrund, Acrycolor, Acryl emulsion + JUBIZOL ACRYL finish T 2.0/2.5 JUBIZOL Unigrund, Acrycolor, Acryl emulsion + JUBIZOL ACRYL finish S 1.5/2.0/2.5 JUBIZOL Unigrund, Acrycolor, Acryl emulsion + JUBIZOL UNIXIL finish S 1.0/1.5/2.0/2.5 JUBIZOL Unigrund, Acrycolor, Acryl emulsion + JUBIZOL UNIXIL Winter finish S 1.0/1.5/2.0/2.5 JUBIZOL Unigrund, Acrycolor, Acryl emulsion + JUBIZOL UNIXIL finish T 2.0/2.5 JUBIZOL Unigrund, SILICONEprimer + JUBIZOL NANO finish S 1.5/2.0/2.5 JUBIZOL Unigrund + JUBIZOL Kulirplast 1.8 premium JUBIZOL Unigrund + JUBIZOL Kulirplast 2.0 Nivelin D + Revitalcolor AG Nivelin D + Acrycolor Nivelin D + Jubosilcolor Silicone Nivelin D + Revitalcolor Silicone Nivelin D + Jubosilcolor Silicate Nivelin D + Revitalcolor Silicate Nivelin D + Nanoxilcolor Nivelin D + Décor Antique						
Finishing coats + façade paints						
<u>JUBIZOL MINERAL FINISH T 2.0/2.5, JUBIZOL MINERAL FINISH S 1.5/2.0/2.5, JUBIZOL SILICATE finish T 2.0/2.5,</u> <u>JUBIZOL SILICATE finish S 1.5/2.0/2.5, JUBIZOL SILICONE finish T 2.0/2.5, JUBIZOL SILICONE finish S 1.5/2.0/2.5,</u> <u>JUBIZOL ACRYL finish T 2.0/2.5, JUBIZOL ACRYL finish S 1.5/2.0/2.5,</u> <u>JUBIZOL UNIXIL finish S 1.0/1.5/2.0/2.5, JUBIZOL UNIXIL Winter finish S 1.0/1.5/2.0/2.5, JUBIZOL UNIXIL finish T 2.0/2.5, JUBIZOL</u> <u>NANO finish S 1.5/2.0/2.5</u> Acrycolor, Revitalcolour AG, Jubosilcor Silicone, Revitalcolor Silicone, Jubosilcolor Silicate, Revitalcolor Silicate, Nanoxilcolor, Décor Antique						
Anchors						
EJOT Ejothem, STR U, NT-U, NK-U, NTK-U, SDM-T plus, SDF-K plus, Ejothem H1 Eco, STR U 2G, Ejothem H3, Hilti SX-FV, SD-FV 8, XI-FV, D-FV and D-FV T, Fischer Termoz 8 U, 8 N, KS 8, Leskovec PP, PPV, PSV, PSK, Kosmatin UD PK, Ranit IsoFux, IsoFux NDT8LZ, ND8LZ, ND8LZ K, NDS8Z, NDM8Z, NDS90Z, NDM90Z, WKRET MET LFN-8, MET LFM-8, MET LFM-10, MET LTX-10, MET LMX-10						
JUBIZOL EPS				Annex 5		
Trade names of the components						

