Designated according to The Construction Products (Amendment etc.) (EU Exit) Regulations 2020

UK Technical Assessment	UKTA-0836-22/6173 of 11/08/2022
Technical Assessment Body issuing the UK Technical Assessment:	British Board of Agrément
Trade name of the construction product:	JUBIZOL EPS
Product family to which the construction product belongs:	04:External Thermal Insulation Composite Systems with rendering (EWIS) for the use as external insulation to walls of buildings
Manufacturer:	JUB Kemicna Industrija, d.o.o Dol pri Ljubljani 28 SI-1262 Dol pri Ljubljani Slovenia
Manufacturing plant(s):	PLANT 1: JUB d.o.o., Dol pri Ljubljani 28, 1262 Dol pri Ljubljani, Slovenia PLANT 2: JUB d.o.o., plant Videm, Dol pri Ljubljani 28, 1262 Dol pri Ljubljani, Slovenia PLANT 5: Hugh King & Co, Hullerhill Sand Quarry, Kilwinning, KA13 7QN
This UK Technical Assessment contains:	40 pages including 6 annexes which form an integral part of this assessment
This UK Technical Assessment is issued in accordance with The Construction Products (Amendment etc.) (EU Exit) Regulations 2020 on the basis of:	UKTA 040083-00-0404 *External thermal insulation composite systems (ETICS) with renderings*

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1 Technical description of the product

1.1 General

JUBIZOL EPS is an EWIS (External Wall Insulation System) with rendering - a kit comprising components which are factory-produced by the manufacturer or component suppliers. The EWIS manufacturer is ultimately responsible for all components of the EWIS specified in this UKTA.

The EWIS 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.

Presented EWIS include special fittings (e.g. base profiles, corner profiles) to treat details of EWIS connections, apertures, corners, parapets, sills. Assessment and performance of these components is not addressed in this UKTA. The EWIS manufacturer is responsible for adequate compatibility and performance within the EWIS when the components are delivered as a part of the kit.

1.2 Composition of the kit

1.2.1 Composition of the EWIS

The JUBIZOL EPS EWIS 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 description of the components is presented in Tables 1 to 8 and the compatibility list of the components in Table 9. Please note, the ancillary materials in accordance with UKAD 040083-00-0404 remain under the UKTA-holder responsibilities

Table 1: EWIS components - adhesives.

Adhesive	Coverage (kg/m^2)
JUBIZOL ADHESIVE MORTAR - dry cement-based adhesive requiring addition of ≃ 20 % water.	3.5 – 5.0 (powder)
JUBIZOL STRONG FIX - dry cement-based adhesive requiring addition of ≃ 20 % water.	3.5 – 5.0 (powder)
JUBIZOL EPS ADHESIVE MORTAR - dry mix cement-based adhesive requiring addition of ≃ 20 % water.	3.5 – 5.0 (powder)
JUBIZOL MICROAIR FIX - dry mix cement-based adhesive requiring addition of ≃ 20 % water.	3.5 – 5.0 (powder)
JUBIZOL ADHESIVE - dry mix cement-based adhesive requiring addition of ≃ 20 % water	3.5 – 5.0 (powder)
JUBIZOL ULTRALIGHT FIX - dry mix cement-based mortar with EPS beads, refined with polymer binder, requiring addition of ~24% water.	4.8 – 9.6 (powder)
JUBIZOL UNIWOOL ADHESIVE - dry mix cement-based mortar, refined with polymer binder, requiring addition of ~23% water	4.2 – 8.4 (powder)

Table 2: EWIS components - insulation products.

Insulation products	Designation code of the Insulation product	Thickness (mm)
JUBIZOL EPS F – W	EPS-EN 13163-T1-L2-W2-S2-P5-DS(N)2-DS(70,-)1-TR150-BS100	≤ 300
JUBIZOL EPS F – W 035	EPS-EN 13163-T1-L2-W2-S2-P5-DS(N)2-DS(70,-)1-TR150-BS100	≤ 300
JUBIZOL EPS F – G0 SunStop	EPS-EN 13163-T1-L2-W2-S2-P5-DS(N)2-DS(70,-)1-TR150-BS100	≤ 300
JUBIZOL EPS F Graphite – G	EPS-EN 13163-T1-L2-W2-S2-P5-DS(N)2-DS(70,-)1-TR150-BS100	≤ 300
JUBIZOL EPS F Strong - S0 premium	EPS-EN 13163-T1-L2-W2-S2-P5-DS(N)2-DS(70,-)1-TR150-BS100	≤ 300
JUBIZOL EPS F Strong - S0 GRAPHITE	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	≤ 300
JUBHome WALL EPS system elements	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.	≤ 300

Table 3: EWIS components – anchors used onto EPS insulation.

Anchors
Ejot Ejotherm STR U, STR U 2G, Ejotherm NT-U, Ejotherm NK-U, Ejotherm H1 Eco
Fischer Termoz 8U
Hilti T-Save HTS-P, T-Save HTS-M, HTR-P, HTR-M, D8-FV
Leskovec Pritrdilno sidro PPV, Pritrdilo PSV
Ranit IsoFux NDS8Z, NDM8Z, NDS90Z, NDM90Z
WKRET MET WKTHERM S, LFM-8, LFM-10, LFN-10, LFMG-10

Table 4: EWIS components – base coats

Base coats	Coverage (kg/m^2)	Thickness (mm)
JUBIZOL ADHESIVE MORTAR - dry mix cement base coat powder requiring addition of 20 % water. It consists of aggregates, cement, dispersion powder, special additives.	4.2 – 8.4 (powder)	max (dry): 6 min (dry): 3
JUBIZOL STRONG FIX - dry mix cement base coat powder requiring addition of 20 % water. It consists of aggregates, cement, dispersion powder, special additives.	4.2 – 8.4 (powder)	max (dry): 6 min (dry): 3
JUBIZOL EPS ADHESIVE MORTAR - powdered high-elasticity cement-based mortar, refined with polymer binder, requiring addition of 20 % water. EPS Adhesive mortar consists of aggregates, cement, polymer binders, special additives	4.2 – 5.6 (powder)	max (dry): 4 min (dry): 3
JUBIZOL MICROAIR FIX powdered high-elasticity cement-based mortar, refined with polymer binder, requiring addition of 20 % water. EPS Adhesive mortar consists of aggregates, cement, polymer binders, special additives	4.2 – 5.6 (powder)	max (dry): 4 min (dry): 3
JUBIZOL CEMENT FREE BASE COAT - polymer based adhesive, paste form. It consists of aggregates, polymer, binders, special additives.	3.8 – 4.5 (powder)	max (dry): 3 min (dry): 2.5
JUBIZOL ULTRALIGHT FIX - dry mix cement-based mortar with EPS beads, refined with polymer binder, requiring addition of ~24% water.	4.8 – 9.6 (powder)	max (dry): 6 min (dry): 3
JUBIZOL UNIWOOL ADHESIVE - dry mix cement-based mortar, refined with polymer binder, requiring addition of ~23% water	4.2 – 8.4 (powder)	max (dry): 6 min (dry): 3

Table 5: EWIS components – reinforcement

Reinforcement
JUBIZOL glass fibre mesh – where JUBIZOL glass fibre mesh denotate UKTA-holder own designation

Table 6: EWIS components – key coat

Key coat	Coverage (l/m^2)
JUBIZOL Unigrund – liquid, water based acrylic slurry primer	~ 0.15
Acryl emulsion - liquid, water based acrylic primer intended as a key coat	~ 0.1
Acrylcolor - liquid exterior acrylic waterborne facade paint as a key coat	~ 0.1
SILICATEprimer - liquid, water-based silicate primer intended as a key coat.	~ 0.1
SILICONEprimer - liquid, water-based silicone primer intended as a key coat.	~ 0.1

Table 7: EWIS components – finishing coats.

Finishing coats	Coverage (kg/m^2)	Thickness (mm)
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.	2.6 – 3.1 (powder)	Regulated by particle size distribution
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	2.6 – 3.6 (powder)	
JUBIZOL SILICATE finish T 2.0/2.5 Ready to use paste based on potassium silicate and water-based acrylic binder, aggregates, additives.	2.5 – 3.2 (paste)	
JUBIZOL SILICATE finish S 1.5/2.0/2.5 Ready to use paste based on potassium silicate and water-based acrylic binder, aggregates, additives	3.0 – 5.5 (paste)	
JUBIZOL SILICONE finish T 2.0/2.5/3.0 Ready to use paste based on silicone emulsion and water-based acrylic binder, aggregates, additives.	2.8 – 3.5 (paste)	
JUBIZOL SILICONE finish S 1.5/2.0/2.5/3.0 Ready to use paste based on silicone emulsion and water-based acrylic binder, aggregates, additives.	2.4 – 4.7 (paste)	
JUBIZOL ACRYL finish T 2.0/2.5 Ready to use paste based on water-based acrylic binder, aggregates, additives	2.5 – 3.2 (paste)	
JUBIZOL ACRYL finish S 1.5/2.0/2.5 Ready to use paste based on water-based acrylic binder, aggregates, additives	2.5 – 5.0 (paste)	
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.	3.5 – 4.5 (powder + liq.)	
JUBIZOL UNIXIL finish S 0.7/1.0/1.5/2.0/2.5 Ready to use paste based on water-based acrylic binders, mineral fillers, special additives	2.1 – 5.0 (paste)	
JUBIZOL UNIXIL Winter finish S 0.7/1.0/1.5/2.0/2.5 Ready to use paste based on water-based acrylic binders, mineral fillers, special additives.	2.1 – 5.0 (paste)	
JUBIZOL UNIXIL finish T 2.0/2.5 Ready to use paste based on water-based acrylic binders, mineral fillers, special additives.	2.5 – 3.2 (paste)	
JUBIZOL NANO finish S 1.5/2.0/2.5 Ready to use paste based on water-based silicone and acrylic binders, nano structures, mineral fillers and special additives.	2.6 – 4.7 (paste)	
JUBIZOL Kulirplast 2.0 Ready to use paste based on water-based acrylic binders, marble fillers, special additives	4.0 – 4.5 (paste)	
JUBIZOL Kulirplast 1.8 premium Ready to use paste based on	4.0 – 4.5	

water-based acrylic binders, mineral fillers, special additives.	(paste)
JUBIZOL AEROGEL finish S 1.5/2.0 Ready to use paste based on silicone emulsion and water-based acrylic binder, aggregates, additives.	2.4 – 4.7 (paste)
JUBIZOL CARBON STRONG finish S 1.5/2.0 Ready to use paste based on silicone emulsion and water-based acrylic binder, aggregates, additives.	2.4 – 4.7 (paste)

Table 8: EWIS components – façade paints.

Façade paints	Coverage (kg/m²)
Acrylcolor – based on water-based acrylic binders, special additives (in combination with all finishing coats	200 ml/m² (solution)
Revitalcolor - based on water-based acrylic binders, special additives, micro-reinforcing fibres (in combination with all finishing coats	270 ml/m² (solution)
Jubosilcolor Silicone - based on water-based silicon binders, special additives (in combination with all finishing coats	200 ml/m² (solution)
Nanocolor - based on water-based silicone binders, special additives, special fillers, micro-reinforcing fibres (in combination with all finishing coats	270 ml/m² (solution)
Siliconecolor - based on water-based silicone binders, special additives, micro-reinforcing fibres (in combination with all finishing coats	270 ml/m² (solution)
Silicatecolor - based on water-based potassium silicate binder, special additives (in combination with all finishing coats	200 ml/m² (solution)
Revitalcolor Silicate - based on water-based potassium silicate binder, special additives, micro-reinforcing fibres (in combination with all finishing coats	270 ml/m² (solution)
Décor Antique - based on water-based potassium silicate binder, special additives (in combination with all finishing coats	180 ml/m² (solution)
Trendcolor - based on water-based acrylic binders, siloxane, special additives, special fillers, micro-reinforcing fibres (in combination with all finishing coats	270 ml/m² (solution)

Table 9: Lists of compatible EWIS components.

Base coat	Key coat	Finishing coat
JUBIZOL ADHESIVE MORTAR JUBIZOL STRONG FIX JUBIZOL EPS ADHESIVE MORTAR JUBIZOL MICROAIR FIX JUBIZOL UNIWOOL ADHESIVE	Acryl emulsion Acrylcolor	JUBIZOL MINERAL finish S 1.5/2.0/2.5 JUBIZOL MINERAL finish T 2.0/2.5

Base coat	Key coat	Finishing coat
JUBIZOL ADHESIVE MORTAR JUBIZOL STRONG FIX JUBIZOL EPS ADHESIVE MORTAR JUBIZOL MICROAIR FIX JUBIZOL ULTRALIGHT FIX JUBIZOL UNIWOOL ADHESIVE	SILICATE primer JUBIZOL Unigrund	JUBIZOL SILICATE finish S 1.5/2.0/2.5 JUBIZOL SILICATE finish T 2.0/2.5

Base coat	Key coat	Finishing coat
JUBIZOL ADHESIVE MORTAR JUBIZOL STRONG FIX JUBIZOL EPS ADHESIVE MORTAR JUBIZOL MICROAIR FIX JUBIZOL CEMENT FREE BASE COAT JUBIZOL ULTRALIGHT FIX JUBIZOL UNIWOOL ADHESIVE	SILICONE primer JUBIZOL Unigrund	JUBIZOL SILICONE finish S 1.5/2.0/2.5/3.0 JUBIZOL SILICONE finish T 2.0/2.5/3.0 JUBIZOL NANO finish S 1.5/2.0/2.5

Base coat	Key coat	Finishing coat
JUBIZOL ADHESIVE MORTAR JUBIZOL STRONG FIX JUBIZOL EPS ADHESIVE MORTAR JUBIZOL MICROAIR FIX JUBIZOL CEMENT FREE BASE COAT JUBIZOL ULTRALIGHT FIX JUBIZOL UNIWOOL ADHESIVE	Acryl emulsion Acrylcolor JUBIZOL Unigrund	JUBIZOL ACRYL finish S 1.5/2.0/2.5 JUBIZOL ACRYL finish T 2.0/2.5 JUBIZOL UNIXIL finish S 0.7/1.0/1.5/2.0/2.5 JUBIZOL UNIXIL Winter finish S 0.7/1.0/1.5/2.0/2.5 JUBIZOL UNIXIL finish T 2.0/2.5

Base coat	Key coat	Finishing coat
JUBIZOL ADHESIVE MORTAR JUBIZOL STRONG FIX	JUBIZOL Unigrund	JUBIZOL Kulirplast 2.0 JUBIZOL Kulirplast 1.8 premium

Base coat	Key coat	Finishing coat
JUBIZOL ADHESIVE MORTAR JUBIZOL STRONG FIX JUBIZOL EPS ADHESIVE MORTAR JUBIZOL MICROAIR FIX JUBIZOL ULTRALIGHT FIX JUBIZOL UNIWOOL ADHESIVE	SILICONE primer JUBIZOL Unigrund	JUBIZOL AEROGEL finish S 1.5/2.0

Base coat	Key coat	Finishing coat
JUBIZOL ADHESIVE MORTAR JUBIZOL STRONG FIX JUBIZOL EPS ADHESIVE MORTAR JUBIZOL MICROAIR FIX JUBIZOL ULTRALIGHT FIX JUBIZOL UNIWOOL ADHESIVE	Acryl emulsion Acrylcolor JUBIZOL Unigrund	JUBIZOL CARBON STRONG finish S 1.5/2.0

2 Specification of the intended use(s) in accordance with the applicable UK Assessment Document (hereinafter UKAD)

2.1 Intended use

The JUBIZOL EPS EWIS is intended for use as external insulation of buildings' walls according to the EC decision 96/603/EC as amended. The walls are constructed 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 EN 13501-1 and a minimum density of 820 kg/m^3. The EWIS is designed to give the wall to which it is applied satisfactory thermal insulation.

The EWIS 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 EWIS 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 EWIS 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 clause 1.3.1 of the UKAD 040083-00-0404) and shall be done in accordance with national instructions.

The EWIS shall be classified onto category S/W2 according to the EOTA Technical Report No. 034.

2.2 Manufacturing

The UK Technical Assessment is issued for the EWIS based on agreed data/information, deposited with the BBA, which identifies the EWIS that has been assessed and judged. Changes to the EWIS or production process, which could result in the deposited data/information being incorrect should be notified to BBA before the changes are introduced. BBA will decide whether or not such changes affect the UKTA and consequently the validity of the UKCA marking on the basis of the UKTA and if so whether further assessment or alterations to the UKTA, 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 EWIS are to be in conformity with national documents.

Therefore, the assessment and declaration if performance are done taking into account general assumptions introduced in the clauses 1.1 and 1.2 of the UKAD 040083-00-0404, which summarizes how information introduced in the UKTA and related documents is intended to be used in the construction process and gives advice to all parties interested when normative documents are missing.

2.4 Packaging, transport and storage

The information on packaging, transport and storage is given in the manufacturer's technical documentation. It is the responsibility of the manufacturer(s) to ensure that this information is made know to the concerned people.

2.5 Use, maintenance and repair

The provisions made in this UK Technical Assessment (UKTA) are based on an assumed intended working life of at least 25 years, provided that the conditions laid down in sections: 2.2 (Manufacturing), 2,3 (Design and installation), 2.4 (Packaging, transport and storage), 2.5 (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.

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

- visual inspection of the EWIS,
- the repairing of localised damaged areas due to accidents,
- the aspect maintenance with products adapted and compatible with the EWIS (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 EWIS 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

3.1 Mechanical resistance and stability (BWR 1)

Refer to BWR3

3.2 Safety in case of fire (BWR 2)

3.2.1 Reaction to fire of EWIS

The assessment of reaction to fire is based on two tests EN 13823 and EN ISO 1716). The SBI test (EN 13823) is done on a sample with insulation layer thickness 180 mm, (overall EWIS 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, the EWIS is installed directly to a calcium silicate substrate (A2-s1, d0) with a minimum density of 820 kg/m^3. The installation of the EWIS 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). Test specimens were prefabricated and did not include any joints. The panel edges were rendered. Anchors were not included in the tested EWIS as they have no influence on the test result. The results and assessment of the EWIS are given in Table 10.

Table 10: reaction to fire of EWIS.

Configuration	Maximum declared organic content of the finishing coat	Declared flame retardant content of rendering system	Thickness (mm)	Classification according to EN 13501-1
EWIS 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 UKTA	14.2%	0%	≤ 300	B - s1, d0
EWIS 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 UKTA	14.2%	0%	≤ 300	B – s2, d0

*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 according to EN 13501-1, also the internal system shall be classified as B-s2, d0.

3.2.2 Reaction to fire of thermal insulation material

The density of the thermal insulation materials were determined according to the EN 1602 considering requirements of EN 13163. Assessment is based on small flame testing according to EN 11925-1. Results are given in Table 11.

Table 11: Reaction to fire of thermal insulation materials.

Insulation product materials	Designation code of the Insulation products	Density (kg/m³)	Classification according to EN 13501-1
JUBIZOL EPS F – W JUBIZOL EPS F – W035 JUBIZOL EPS F – G0 SunStop JUBIZOL EPS F – Graphite - G JUBIZOL EPS F – two layers insulate plate	EPS-EN 13163-T1-L2-W2-S2-P5-DS(N)2-DS(70,-)1-TR150-BS100	17	E
JUBIZOL EPS F Strong - S0 premium JUBIZOL EPS F Strong - S0 GRAPHITE	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	17	E
JUBHome WALL EPS system elements	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	30	E

3.3 Health, hygiene and the environment (BWR 3)

3.3.1 Content, emission and/or release of dangerous substances - leachable substances

No performance assessed.

3.3.2 Water absorption

3.3.2.1 Water absorption of the base coat and the rendering system

The water absorptions of the EWIS are given in Tables 12 to 18. Presented water absorptions results shall be applicable also to smooth (S) and trowelled (T) finishing coats of available granulations as stated in Table 7, therefore in Tables 12 to 18, finishing coat labels for finishing and granulation, are omitted.

Table 12: water absorptions of EWIS on JUBIZOL ADHESIVE MORTAR.

Base coat	Finishing coats including key coat and façade paint	Water absorption	
		after 1 h (kg/m²)	after 24h (kg/m²)
JUBIZOL ADHESIVE MORTAR	Without key coat and façade paint	0.02	0.10
	JUBIZOL MINERAL finish	0.02	0.15
	JUBIZOL SILICATE finish	0.01	0.12
	JUBIZOL SILICONE finish	0.01	0.10
	JUBIZOL ACRYL finish	0.02	0.24
	NIVELIN D + façade paints	0.07	0.27
	JUBIZOL UNIXIL finish	0.08	0.28
	JUBIZOL UNIXIL Winter finish	0.08	0.28
	JUBIZOL NANO finish	0.08	0.31
	JUBIZOL Kulirplast 1.8 premium	0.03	0.22
	JUBIZOL Kulirplast 2.0	0.17	0.67
	JUBIZOL AEROGEL finish	0.03	0.22
	JUBIZOL CARBON STRONG finish	0.06	0.32

Table 13: water absorptions of EWIS on JUBIZOL STRONG FIX.

Base coat	Finishing coats including key coat and façade paint	Water absorption	
		after 1 hour (kg/m^2)	after 24 hours (kg/m^2)
JUBIZOL STRONG FIX	Without key coat and façade paint	0.02	0.10
	JUBIZOL MINERAL finish	0.02	0.15
	JUBIZOL SILICATE finish	0.01	0.12
	JUBIZOL SILICONE finish	0.01	0.10
	JUBIZOL ACRYL finish	0.02	0.24
	NIVELIN D + façade paints	0.07	0.27
	JUBIZOL UNIXIL finish	0.08	0.28
	JUBIZOL UNIXIL Winter finish	0.08	0.28
	JUBIZOL NANO finish S	0.08	0.31
	JUBIZOL Kulirplast 1.8 premium	0.03	0.22
	JUBIZOL Kulirplast 2.0	0.17	0.67
	JUBIZOL AEROGEL finish	0.03	0.22
	JUBIZOL CARBON STRONG finish	0.06	0.32

Table 14: water absorptions of EWIS on JUBIZOL Cement-free base coat

Base coat	Finishing coats including key coat and façade paint	Water absorption	
		after 1 hour (kg/m^2)	after 24 hours (kg/m^2)
JUBIZOL Cement-free base coat	Without key coat and façade paint	0.04	0.17
	JUBIZOL SILICONE finish	0.01	0.11
	JUBIZOL ACRYL finish	0.02	0.12
	JUBIZOL UNIXIL finish	0.04	0.23
	JUBIZOL UNIXIL Winter finish	0.04	0.23
	JUBIZOL NANO finish S	0.06	0.27

Table 15: water absorptions of EWIS on JUBIZOL EPS ADHESIVE MORTAR.

Base coat	Finishing coats including key coat and façade paint	Water absorption	
		after 1 hour (kg/m^2)	after 24 hours (kg/m^2)
JUBIZOL EPS ADHESIVE MORTAR	Without key coat and façade paint	0.07	0.18
	JUBIZOL MINERAL finish	0.07	0.21
	JUBIZOL SILICATE finish	0.04	0.14
	JUBIZOL SILICONE finish	0.03	0.11
	JUBIZOL ACRYL finish	0.04	0.12
	JUBIZOL UNIXIL finish	0.08	0.30
	JUBIZOL UNIXIL Winter finish	0.08	0.30
	JUBIZOL NANO finish	0.08	0.29
	JUBIZOL Kulirplast 1.8 premium	0.04	0.20
	JUBIZOL Kulirplast 2.0	0.24	0.54
	JUBIZOL AEROGEL finish	0.06	0.26
	JUBIZOL CARBON STRONG finish	0.06	0.34

Table 16: water absorptions of EWIS on JUBIZOL MICROAIR FIX.

Base coat	Finishing coats including key coat and façade paint	Water absorption	
		after 1 hour (kg/m^2)	after 24 hours (kg/m^2)
JUBIZOL MICROAIR FIX	Without key coat and façade paint	0.07	0.18
	JUBIZOL MINERAL finish	0.07	0.21
	JUBIZOL SILICATE finish	0.04	0.14
	JUBIZOL SILICONE finish	0.03	0.11
	JUBIZOL ACRYL finish	0.04	0.12
	JUBIZOL UNIXIL finish	0.08	0.30
	JUBIZOL UNIXIL Winter finish	0.08	0.30
	JUBIZOL NANO finish	0.08	0.29
	JUBIZOL Kulirplast 1.8 premium	0.04	0.20
	JUBIZOL Kulirplast 2.0	0.24	0.54
	JUBIZOL AEROGEL finish	0.06	0.26
	JUBIZOL CARBON STRONG finish	0.06	0.34

Table 17: water absorptions of EWIS on JUBIZOL ULTRALIGHT FIX

Base coat	Finishing coats including key coat and façade paint	Water absorption	
		after 1 hour (kg/m^2)	after 24 hours (kg/m^2)
JUBIZOL ULTRALIGHT FIX	Without key coat and façade paint	0.04	0.21
	JUBIZOL MINERAL finish	0.09	0.32
	JUBIZOL SILICATE finish	0.02	0.19
	JUBIZOL SILICONE finish	0.03	0.09
	JUBIZOL ACRYL finish	0.02	0.12
	JUBIZOL UNIXIL finish	0.16	0.45
	JUBIZOL UNIXIL Winter finish	0.16	0.45
	JUBIZOL NANO finish	0.02	0.15
	JUBIZOL AEROGEL finish	0.04	0.26
	JUBIZOL CARBON STRONG finish	0.03	0.25

Table 18: water absorptions of EWIS on JUBIZOL UNIWOOL ADHESIVE.

Base coat	Finishing coats including key coat and façade paint	Water absorption	
		after 1 hour (kg/m^2)	after 24 hours (kg/m^2)
JUBIZOL UNIWOOL ADHESIVE	Without key coat and façade paint	0.01	0.18
	JUBIZOL MINERAL finish	0.10	0.48
	JUBIZOL SILICATE finish	0.03	0.31
	JUBIZOL SILICONE finish	0.02	0.10
	JUBIZOL ACRYL finish	0.01	0.15
	NIVELIN D + façade paints	0.01	0.13
	JUBIZOL UNIXIL finish	0.02	0.41
	JUBIZOL UNIXIL Winter finish	0.02	0.41
	JUBIZOL NANO finish	0.02	0.11
	JUBIZOL Kulirplast 1.8 premium	0.03	0.20
	JUBIZOL Kulirplast 2.0	0.18	0.46
	JUBIZOL AEROGEL finish	0.04	0.29
	JUBIZOL CARBON STRONG finish	0.05	0.27

Note: Where relevant, the results for the EWIS of finishing coat NIVELIN D + façade paints were obtained on Revitalcolor facade paint.

3.3.2.2 Water absorption of the thermal insulation product

The water absorption of thermal insulation materials was determined according to the EN 1609 (Method A). Results are given in Table 19.

Table 19: water absorption of thermal insulation materials

Insulation product materials	Designation code of the Insulation products	Water absorption
JUBIZOL EPS F – W JUBIZOL EPS F – W 035 JUBIZOL EPS F – G0 SunStop JUBIZOL EPS F Graphite – G JUBIZOL EPS F –two layer insulate plate	EPS-EN 13163-T1-L2-W2-S2-P5-DS(N)2-DS(70,-)1-TR150-BS100	< 0.5 kg/m²
JUBIZOL EPS F Strong - S0 premium JUBIZOL EPS F Strong - S0 GRAPHITE	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	< 0.5 kg/m²
JUBHome WALL EPS system elements	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.	< 0.5 kg/m²

3.3.3 Watertightness of the EWIS: Hygrothermal behaviour

Hygrothermal cycles have been performed on a rig in hygrothermal chamber. During testing the defects from clause 2.2.6 of the UKAD 040083-00-0404 were not detected. EWIS is assessed as resistant to hygrothermal cycles.

3.3.4 Watertightness of the EWIS: Freeze-thaw behaviour

For some of the rendering systems the water absorptions of both, base coats and rendering systems is above 0.5 kg/m² after 24 hours. The bond strength of the systems are presented in Table 20. All configurations of the EWIS are assessed as freeze / thaw resistant

3.3.5 Impact resistance

Resistance to hard body impacts of EWIS are given in tables below. Presented results shall be applicable also to smooth (S) and trowelled (T) finishing coats as stated in Table 7. In result Tables 20 to 26, finishing coats labels for finishing are omitted. In some cases where the granulations of finishing coats are not declared, the results were obtained on finest granulation. It can be safely assumed that impact performance obtained on coarser finishing coats would be at least equal or better.

Table 20: impact resistances of the EWIS on JUBIZOL ADHESIVE MORTAR.

Base coat	Finishing coats including key coat and façade paint	Single standard mesh	Double standard mesh
JUBIZOL ADHESIVE MORTAR	JUBIZOL MINERAL finish	Category II	-
	NIVELIN D + façade paints	-	Category II
	JUBIZOL SILICATE finish (granulation 1.5)	Category II	-
	JUBIZOL SILICATE finish (granulations 2.0/2.5)	Category I	
	JUBIZOL SILICATE finish (all granulations)	-	Category I
	JUBIZOL SILICONE finish (granulation 1.5)	Category II	-
	JUBIZOL SILICONE finish (granulations 2.0/2.5)	Category I	
	JUBIZOL SILICONE finish (all granulations)	-	Category I
	JUBIZOL ACRYL finish (granulation 1.5)	Category II	-
	JUBIZOL ACRYL finish (granulations 2.0/ 2.5)	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/ 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. 2.5)	Category I	
	JUBIZOL UNIXIL Winter finish (all granulations)		Category I
	JUBIZOL NANO finish (granulation 1.5)	Category II	Category I
	JUBIZOL NANO finish (granulation 2.0)	Category I	
	JUBIZOL NANO finish (all granulations)		Category I
	JUBIZOL Kulirplast 1.8 premium (granulation 1.8)	Category I	Category I
	JUBIZOL Kulirplast 2.0 (granulation 2.0)	Category I	Category I
	JUBIZOL AEROGEL finish (granulation 1.5)	Category II	
	JUBIZOL CARBON STRONG finish (granulation 1.5)	Category II	

Note: impact resistances of kits with MINERAL, SILICATE, SILICONE and ACRYL finishes of finest granulations and with single standard mesh were tested on a rig, other results are originated from testing of small sample tests. The results for the kit consisted of finishing coat NIVELIN D + façade paints were obtained on Revitalcolor facade paint.

Table 21: impact resistances of the EWIS on JUBIZOL STRONG FIX.

Base coat	Finishing coats including key coat and façade paint	Single standard mesh	Double standard mesh
JUBIZOL STRONG FIX	JUBIZOL MINERAL finish	Category II	-
	NIVELIN D + façade paints	-	Category II
	JUBIZOL SILICATE finish (granulation 1.5)	Category II	-
	JUBIZOL SILICATE finish (granulations 2.0/2.5)	Category I	
	JUBIZOL SILICATE finish (all granulations)	-	Category I
	JUBIZOL SILICONE finish (granulation 1.5)	Category II	-
	JUBIZOL SILICONE finish (granulations 2.0/2.5)	Category I	
	JUBIZOL SILICONE finish (all granulations)	-	Category I
	JUBIZOL ACRYL finish (granulation 1.5)	Category II	-
	JUBIZOL ACRYL finish (granulations 2.0/ 2.5)	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/ 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. 2.5)	Category I	
	JUBIZOL UNIXIL Winter finish (all granulations)		Category I
	JUBIZOL NANO finish(granulation 1.5)	Category II	Category I
	JUBIZOL NANO finish (granulation 2.0)	Category I	
	JUBIZOL NANO finish (all granulations)		Category I
	JUBIZOL Kulirplast 1.8 premium (granulation 1.8)	Category I	Category I
	JUBIZOL Kulirplast 2.0 (granulation 2.0)	Category I	Category I
	JUBIZOL AEROGEL finish (granulation 1.5)	Category II	
	JUBIZOL CARBON STRONG finish (granulation 1.5)	Category II	

Note: impact resistances of kits with MINERAL, SILICATE, SILICONE and ACRYL finishes of finest granulations and with single standard mesh were tested on a rig, other results are originated from testing of small sample tests. The results for the kit consisted of finishing coat NIVELIN D + façade paints were obtained on Revitalcolor facade paint.

Table 22: impact resistances of the EWIS on JUBIZOL Cement-free base coat.

Base coat	Finishing coats including key coat and façade paint	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

Note: impact resistances of kits with MINERAL, SILICATE, SILICONE and ACRYL finishes of finest granulations and with single standard mesh were tested on a rig, other results are originated from testing of small sample tests.

Table 23: impact resistances of the EWIS on JUBIZOL EPS ADHESIVE MORTAR.

Base coat	Finishing coats including key coat and façade paint	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
	JUBIZOL AEROGEL finish	Category I	
	JUBIZOL CARBON STRONG finish	Category II	

Note: impact resistances of kits with MINERAL, SILICATE, SILICONE and ACRYL finishes of finest granulations and with single standard mesh were tested on a rig, other results are originated from testing of small sample tests.

Table 24: impact resistances of the EWIS on JUBIZOL MICROAIR FIX.

Base coat	Finishing coats including key coat and façade paint	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
	JUBIZOL AEROGEL finish	Category I	
	JUBIZOL CARBON STRONG finish	Category II	

Note: impact resistances of kits with MINERAL, SILICATE, SILICONE and ACRYL finishes of finest granulations and with single standard mesh were tested on a rig, other results are originated from testing of small sample tests

Table 25: impact resistances of the EWIS on JUBIZOL ULTRALIGHT FIX.

Base coat	Finishing coats including key coat and façade paint	Single standard mesh	Double standard mesh
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)	Category II	Category I
	JUBIZOL UNIXIL finish (granulation: 1.5)	Category II	
	JUBIZOL UNIXIL finish (granulations 2.0/ 2.5)	Category I	
	JUBIZOL UNIXIL finish (all granulations)		Category I
	JUBIZOL UNIXIL Winter finish (granulation 1.0/ 1.5)	Category II	Category I
	JUBIZOL UNIXIL Winter finish (granulation: 2.0/ 2.5)	Category I	
	JUBIZOL UNIXIL Winter finish (all granulations)		Category I
	JUBIZOL NANO finish (all granulations)	-	Category I
	JUBIZOL AEROGEL finish	Category I	
	JUBIZOL CARBON STRONG finish	Category II	

Note: impact resistances of kits with MINERAL, SILICATE, UNIXIL and NANOXIL finishes of finest granulations and with single standard mesh were tested on a rig, other results are originated from testing of small sample tests.

Table 26: impact resistances of the EWIS on JUBIZOL UNIWOOL ADHESIVE.

Base coat	Finishing coats including key coat and façade paint	Single standard mesh	Double standard mesh
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
	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
	JUBIZOL AEROGEL finish	Category I	
	JUBIZOL CARBON STRONG finish	Category II	

Note: impact resistances of kits with NIVELIN D, SILICATE, UNIXIL and ACRYL finishes of finest granulations and with single standard mesh were tested on a rig, other results are originated from testing of small sample tests.

3.3.6 Water vapour permeability

Water vapour permeability of rendering systems was determined according to EN 12086. They were obtained on smooth (S) finishing coats of finer granulations and following historical data they are applicable to finishing coats of any type of finish or granulation. Results are given in Tables 27 to 33.

Table 27: Water vapour permeability on JUBIZOL ADHESIVE MORTAR base coat.

Base coat	Finishing coats including key coat and façade paint	Equivalent air thickness s_d (m)
JUBIZOL ADHESIVE MORTAR	JUBIZOL MINERAL finish	0.1
	JUBIZOL SILICATE finish	0.1
	JUBIZOL SILICONE finish	0.2
	JUBIZOL ACRYL finish	0.3
	NIVELIN D + façade paint	0.1
	JUBIZOL UNIXIL Winter finish	0.4
	JUBIZOL UNIXIL finish	0.4
	JUBIZOL NANO finish	0.3
	JUBIZOL Kulirplast 1.8 premium	0.5
	JUBIZOL Kulirplast 2.0	0.4
	JUBIZOL AEROGEL finish	0.4
	JUBIZOL CARBON STRONG finish	0.4

Note: result for the kit consisted of finishing coat NIVELIN D + façade paints was obtained on Revitalcolor facade paint.

Table 28: water vapour permeability on JUBIZOL STRONG FIX base coat

Base coat	Finishing coats including key coat and façade paint	Equivalent air thickness s_d (m)
JUBIZOL STRONG FIX	JUBIZOL MINERAL finish	0.1
	JUBIZOL SILICATE finish	0.1
	JUBIZOL SILICONE finish	0.2
	JUBIZOL ACRYL finish	0.3
	NIVELIN D + façade paint	0.1
	JUBIZOL UNIXIL Winter finish	0.4
	JUBIZOL UNIXIL finish	0.4
	JUBIZOL NANO finish	0.3
	JUBIZOL Kulirplast 1.8 premium	0.5
	JUBIZOL Kulirplast 2.0	0.4
	JUBIZOL AEROGEL finish	0.4
	JUBIZOL CARBON STRONG finish	0.4

Note: result for the kit consisted of finishing coat NIVELIN D + façade paints was obtained on Revitalcolor facade paint.

Table 29: water vapour permeability on JUBIZOL Cement-free base coat

Base coat	Finishing coats including key coat and façade paint	Equivalent air thickness s_d (m)
JUBIZOL Cement-free base coat	JUBIZOL SILICONE finish	0.7
	JUBIZOL ACRYL finish	0.6
	JUBIZOL UNIXIL finish	0.9
	JUBIZOL UNIXIL Winter finish	0.9
	JUBIZOL NANO finish	0.8

Table 30: water vapour permeability on JUBIZOL EPS ADHESIVE MORTAR base coat.

Base coat	Finishing coats including key coat and façade paint	Equivalent air thickness s_d (m)
JUBIZOL EPS ADHESIVE MORTAR	JUBIZOL MINERAL finish	0.1
	JUBIZOL SILICATE finish	0.2
	JUBIZOL SILICONE finish	0.3
	JUBIZOL ACRYL finish	0.4
	JUBIZOL UNIXIL finish	0.4
	JUBIZOL UNIXIL Winter finish	0.4
	JUBIZOL NANO finish	0.3
	JUBIZOL Kulirplast 1.8 premium	0.6
	JUBIZOL Kulirplast 2.0	0.4
	JUBIZOL AEROGEL finish	0.3
	JUBIZOL CARBON STRONG finish	0.3

Table 31: water vapour permeability on JUBIZOL MICROAIR FIX base coat

Base coat	Finishing coats including key coat and façade paint	Equivalent air thickness s_d (m)
JUBIZOL EPS ADHESIVE MORTAR	JUBIZOL MINERAL finish	0.1
	JUBIZOL SILICATE finish	0.2
	JUBIZOL SILICONE finish	0.3
	JUBIZOL ACRYL finish	0.4
	JUBIZOL UNIXIL finish	0.4
	JUBIZOL UNIXIL Winter finish	0.4
	JUBIZOL NANO finish	0.3
	JUBIZOL Kulirplast 1.8 premium	0.6
	JUBIZOL Kulirplast 2.0	0.4
	JUBIZOL AEROGEL finish	0.3
	JUBIZOL CARBON STRONG finish	0.3

Table 32: water vapour permeability on JUBIZOL ULTRALIGHT FIX base coat

Base coat	Finishing coats including key coat and façade paint	Equivalent air thickness s_d (m)
JUBIZOL ULTRALIGHT FIX	JUBIZOL MINERAL finish	0.1
	JUBIZOL SILICATE finish	0.2
	JUBIZOL SILICONE finish	0.6
	JUBIZOL ACRYL finish	0.3
	JUBIZOL UNIXIL finish	0.2
	JUBIZOL UNIXIL Winter finish	0.2
	JUBIZOL NANO finish	0.5
	JUBIZOL AEROGEL finish	0.3
	JUBIZOL CARBON STRONG finish	0.4

Table 33: water vapour permeability on JUBIZOL UNIWOOL ADHESIVE base coat.

Base coat	Finishing coats including key coat and façade paint	Equivalent air thickness s_d (m)
JUBIZOL UNIWOOL ADHESIVE	JUBIZOL MINERAL finish	0.2
	JUBIZOL SILICATE finish	0.4
	JUBIZOL SILICONE finish	0.4
	JUBIZOL ACRYL finish	0.3
	NIVELIN D + façade paint	0.2
	JUBIZOL UNIXIL finish	0.2
	JUBIZOL UNIXIL Winter finish	0.2
	JUBIZOL NANO finish	0.5
	JUBIZOL Kulirplast 1.8 premium	0.4
	JUBIZOL Kulirplast 2.0	0.2
	JUBIZOL AEROGEL finish	0.4
	JUBIZOL CARBON STRONG finish	0.4

Note: where relevant the results for the EWIS of finishing coat NIVELIN D + façade paints were obtained on Revitalcolor façade paint.

3.4 Safety and accessibility in use (BWR 4)

3.4.1 Bond strength

Bond strengths between the base coats and thermal insulation are given in table 34.

Table 34: bond strengths between the base coat and thermal insulation.

Conditionings		
Initial state	**After the hygrothermal cycles (on the rig)**	**After the freeze/thaw cycles (on samples)**
Base coat: **JUBIZOL ADHESIVE MORTAR**		
min ≥ 80 kPa average = 170 kPa	min ≥ 80 kPa average = 120 kPa	Test not required because freeze/thaw cycles not necessary
Base coat: **JUBIZOL STRONG FIX**		
min ≥ 80 kPa average = 170 kPa	min ≥ 80 kPa average= 120 kPa	Test not required because freeze/thaw cycles not necessary
Base coat: **JUBIZOL Cement-free base coat**		
min ≥ 80 kPa average = 110 kPa	min ≥ 80 kPa average = 150 kPa	Test not required because freeze/thaw cycles not necessary
Base coat: **JUBIZOL EPS ADHESIVE MORTAR**		
min ≥ 80 kPa average = 100 kPa	min ≥ 80 kPa average = 160 kPa	Test not required because freeze/thaw cycles not necessary
Base coat: **JUBIZOL MICROAIR FIX**		
min ≥ 80 kPa average = 100 kPa	min ≥ 80 kPa average = 160 kPa	Test not required because freeze/thaw cycles not necessary
Base coat: **JUBIZOL ULTRALIGHT FIX**		
min ≥ 80 kPa average = 180 kPa	min ≥ 80 kPa average = 120 kPa	Test not required because freeze/thaw cycles not necessary
Base coat: **JUBIZOL UNIWOOL ADHESIVE**		
min ≥ 80 kPa average = 120 kPa	min ≥ 80 kPa average = 140 kPa	Test not required because freeze/thaw cycles not necessary

Bond strengths between the adhesives, substrate and thermal insulation are given in table 35.

Table 35: bond strengths between the substrate, base coat and thermal insulation.

	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	min ≥ 250 kPa average = 460 kPa	min ≥ 80 kPa average = 310 kPa	min ≥ 250 kPa average = 1590 kPa
Expanded polystyrene	min ≥ 80 kPa average = 110 kPa	min ≥ 30 kPa average = 100 kPa	min ≥ 80 kPa average = 130 kPa
Adhesive: **JUBIZOL STRONG FIX**			
Concrete	min ≥ 250 kPa average = 460 kPa	min ≥ 80 kPa average = 310 kPa	min ≥ 250 kPa average = 1590 kPa
Expanded polystyrene	min ≥ 80 kPa average = 110 kPa	min ≥ 30 kPa average = 100 kPa	min ≥ 80 kPa average =130 kPa
Adhesive: **JUBIZOL ADHESIVE**			
Concrete	min ≥ 250 kPa average = 2000 kPa	min ≥ 80 kPa average = 560 kPa	min ≥ 250 kPa average = 2360 kPa
Expanded polystyrene	min ≥ 80 kPa average = 110 kPa	min ≥ 30 kPa average = 100 kPa	min ≥ 80 kPa average = 130 kPa
Adhesive: **JUBIZOL EPS ADHESIVE MORTAR**			
Concrete	min ≥ 250 kPa average = 860 kPa	min ≥ 80 kPa average = 430 kPa	min ≥ 250 kPa average = 760 kPa
Expanded polystyrene	min ≥ 80 kPa average = 100 kPa	min ≥ 30 kPa average = 90 kPa	min ≥ 80 kPa average = 90 kPa
Adhesive: **JUBIZOL MICROAIR FIX**			
Concrete	min ≥ 250 kPa average = 860 kPa	min ≥ 80 kPa average = 430 kPa	min ≥ 250 kPa average = 760 kPa
Expanded polystyrene	min ≥ 80 kPa average = 100 kPa	min ≥ 30 kPa average = 90 kPa	min ≥ 80 kPa average = 90 kPa
Adhesive: **JUBIZOL ULTRALIGHT FIX**			
Concrete	min ≥ 250 kPa average = 380 kPa	min ≥ 80 kPa average = 260 kPa	min ≥ 250 kPa average =560 kPa
Expanded polystyrene	min ≥ 80 kPa average = 180 kPa	min ≥ 30 kPa average = 190 kPa	min ≥ 80 kPa average = 120 kPa
Adhesive: **JUBIZOL UNIWOOL ADHESIVE**			
Concrete	min ≥ 250 kPa average = 330 kPa	min ≥ 80 kPa average = 300 kPa	min ≥ 250 kPa average = 530 kPa
Expanded polystyrene	min ≥ 80 kPa average = 120 kPa	min ≥30 kPa average = 140 kPa	min ≥ 80 kPa average = 140 kPa

Note: The thicknesses of all the adhesives varied in-between 5 to 7 mm.

The minimal bonded area S, which must exceed 20 %. is calculated as follows [S (%) = [30 x 100] / B], where: B is minimum mean failure resistance of the adhesive to the insulation product in dry conditions (kPa).

The EWIS can so be installed on the substrate with application of the adhesive on the following minimal surfaces presented in Table 36.

Table 36: minimal required bonded surface of the adhesive to the substrate.

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

3.4.2 Fixing strength

Test not required because the EWIS fulfils the following criteria: E×d < 50000 N/mm, where E denotes modulus of elasticity of the base coat and denotes thickness of the dry base coat.

3.4.3 Wind load resistance

Anchors for insulation product (used as an ancillary component without contribution to resistance to wind load resistance or as a fixing device in mechanically fixed systems). Presented characteristics of the anchors / insulation systems are relevant for purely mechanically and mechanically fixed EWIS. The anchor to be used in EWIS shall be verified according to UKAD 330196-01-0604 (see Table 37).

Table 37: list of verified anchors according to the UKAD 330196-01-0604

Manufacturer	Anchor	ETA according to EAD/UKTA 330196-01-0604
Fischer	TERMOZ 8 U	02/0019
EJOT	Ejotherm NT-U, Ejotherm NK-U	05/0009
	STR U 2G, STR U	04/0023
	Ejotherm H1 Eco	11/0192
Leskovec	Pritrdilo PPV	12/0331
	Pritrdilo PSV	15/0233
Ranit	IsoFux NDS8Z, IsoFux NDM8Z	07/0129
	IsoFux NDS90Z, IsoFux NDM90Z	
Hilti	T-Save HTS-P, T-Save HTS-M	14/0400
	HTR-P, HTR-M	18/0640
	D8-FV	07/0288
Wkret-Met	WKTHERM S	13/0724
	LFM-8, LFM-10, LFN-10, LFMG-10	17/0450

Results shall be applied only for anchor – thermal insulation combinations presented in Table 38. According to research, a head plate diameter is the most influential parameter (assuming similar plate stiffness). Head plate diameters for all anchors presented in Table 38 are 60 mm. Failure loads for larger plates are therefore expected to be higher.

Table 38: characteristics of the anchor / insulation combinations

Description of the anchor		Description of the thermal insulation product		Failure load according to the clause 2.2.13 of the UKAD 040083-00-0404
Anchor manufacturer	Anchor	Thickness (mm)	Tensile strength (kPa)	Anchors not placed at the panel joints minimal (N), average (N) Anchors placed at the panel joints minimal (N), average (N)
Fischer	TERMOZ 8 U	≥ 50	≥ 150	440, 460 400, 410
EJOT	Ejotherm NT-U Ejotherm NK-U	≥ 60	≥ 100	510. 520 400, 430
		≥ 60	≥ 150	632, 636
	Ejotherm H1 Eco			560, 597
	Ejotherm H1 Eco	≥ 110	≥ 150	738, 748 660, 687
	Ejotherm H1 Eco	≥ 120	≥ 150	725, 759 588, 612
	STR U 2G	≥ 60	≥ 150	666, 678 600, 621
	STR U 2G	≥ 120	≥ 150	1050, 1100 823, 833
	STR U	≥ 80	≥ 100	550, 560 480, 500
Leskovec	Pritrdilo PPV	≥ 60	≥ 100	450, 487 404, 411
	Pritrdilo PPV	≥ 110	≥ 150	832, 888 669, 688
	Pritrdilo PPV	≥ 180	≥ 150	683, 710 913, 914
	Pritrdilo PSV	≥ 110	≥ 150	535, 563 436, 477
Ranit	IsoFux NDS8Z IsoFux NDM8Z IsoFux NDS90Z IsoFux NDM90Z	≥ 80	≥ 100	503, 613 520, 540
Wkret	LFM-8	≥ 80	≥ 100	665, 706 441, 452
	LFM-10	≥ 60	≥ 150	568, 580 499, 504
		≥ 130	≥ 150	634, 679 514, 551

For calculation the following equation shall be used: $R_d = (R_{panel} \times n_{panel} + R_{joint} \times n_{joint})/\gamma$. Where: n_{panel} is number of anchors per m² not placed at the panel joints, n_{joint} is number of anchors per m² placed at the panel joint and γ is safety factor.

Test results are also valid for:

- thermal insulation product of the same thermal insulation type with higher thicknesses and/or higher tensile strength perpendicular to the faces,
- Anchors with the same or larger plate diameter and/or the same or higher plate stiffness/load resistance (determined according to EOTA TR 026). However, the anchor's plate diameter ≥ 60 mm, plate stiffness ≥ 0.6 kN/mm and plate load resistance ≥ 1.0 kN are recommended.

3.4.4 Tensile test of the insulation product

The tensile strength perpendiculars to the faces of thermal insulation materials were determined according to the EN 1607 on 50 mm thick specimens. Results are given in Table 39.

Table 39: tensile strength of insulation materials.

Insulation product materials	Designation code of the Insulation products	Tensile strength
JUBIZOL EPS F – W JUBIZOL EPS F – W 035 JUBIZOL EPS F – G0 SunStop JUBIZOL EPS F Graphite – G JUBIZOL EPS F –two layer insulate plate	EPS-EN 13163-T1-L2-W2-S2-P5-DS(N)2-DS(70,-)1-TR150-BS100	≥ 150 kPa
JUBIZOL EPS F Strong - S0 premium JUBIZOL EPS F Strong - S0 GRAPHITE	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	≥ 150 kPa
JUBHome WALL EPS system elements	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.	≥ 400 kPa

3.4.5 Shear properties of the insulation product

Shear strength and modulus of the thermal insulation materials were determined according to the EN 12090 on 60 mm thick specimens. Results are given in Table 40.

Table 40: shear strength of insulation materials.

Insulation product materials	Designation code of the Insulation products	Shear strength Shear modulus
JUBIZOL EPS F – W JUBIZOL EPS F – W 035 JUBIZOL EPS F – G0 SunStop JUBIZOL EPS F Graphite – G JUBIZOL EPS F –two layer insulate plate	EPS-EN 13163-T1-L2-W2-S2-P5-DS(N)2-DS(70,-)1-TR150-BS100	≥ 20 kPa ≥ 1000 kPa
JUBIZOL EPS F Strong - S0 premium JUBIZOL EPS F Strong - S0 GRAPHITE	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	≥ 20 kPa ≥ 1000 kPa
JUBHome WALL EPS system elements	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.	≥ 20 kPa ≥ 1000 kPa

3.4.6 Render strip tensile test

Assessment of the render strip tensile test of base coats reinforced with glass fibre meshes are presented below.

- The mean value of the crack width of a base coat JUBIZOL ADHESIVE MORTAR at a render strain value of 0.8 % is about 0.2 mm in warp direction and about 0.1 mm in weft direction.
- The mean value of the crack width of the base coat JUBIZOL STRONG FIX at a render strain value of 0.8 % is about 0.2 mm in warp direction and about 0.1 mm in weft direction.
- No cracks were observed on JUBIZOL Cement-free base coat at all render strains up to 2.0 % in any direction.
- No cracks were observed on JUBIZOL EPS ADHESIVE MORTAR base coat at a strain of 0.3 % while at all further strains the mean value of the crack width in warp and weft direction were about 0.1 mm.
- No cracks were observed on the JUBIZOL MICROAIR FIX base coat at a strain of 0.3 %, while at all further strains the mean value of the crack width in warp and weft direction were about 0.1 mm.
- For JUBIZOL ULTRALIGHT FIX base coat the width of cracks reached up to 0.40 mm at strain of 2.0 % in warp direction, while in the weft direction the cracks reached up to 0.30 mm.
- For JUBIZOL UNIWOOL ADHESIVE base coat the width of cracks reached up to 0.15 mm at strain of 2.0 % in both warp and weft directions.

3.4.7 Bond strength after ageing

Bond strengths between the base coats and finishing coats are presented in Tables 41 to 47.

Table 41: bond strengths after ageing of the finishing coats on the JUBIZOL ADHESIVE MORTAR base coat

Base coat	Finishing coats including key coat and façade paint	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	min ≥ 80 kPa avg = 80 kPa	Test not required
	JUBIZOL SILICATE finish	min ≥ 80 kPa avg = 440 kPa	
	JUBIZOL SILICONE finish	min ≥ 80 kPa avg = 250 kPa	
	JUBIZOL ACRYL finish	min ≥ 80 kPa avg = 330 kPa	
	NIVELIN D + façade paint	min ≥ 80 kPa avg = 160 kPa	
	JUBIZOL UNIXIL finish	min ≥ 80 kPa avg = 170 kPa	
	JUBIZOL UNIXIL Winter finish	min ≥ 80 kPa avg = 170 kPa	
	JUBIZOL NANO finish	min ≥ 80 kPa avg = 170 kPa	
	JUBIZOL Kulirplast 1.8 premium	min ≥ 80 kPa avg = 120 kPa	
	JUBIZOL Kulirplast 2.0	min ≥ 80 kPa avg = 120 kPa	min≥ 80 kPa avg = 120 kPa
	JUBIZOL AEROGEL finish	min = 94 kPa avg = 108 kPa	Test not required
	JUBIZOL CARBON STRONG finish	min = 104 kPa avg = 115 kPa	

Note: the results for the EWIS of finishing coat NIVELIN D + façade paints were obtained on Revitalcolor facade paint.

Table 42: bond strengths after ageing of the finishing coats on the JUBIZOL STRONG FIX base coat.

Base coat	Finishing coats including key coat and façade paint	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	min ≥ 80 kPa avg = 80 kPa	Test not required
	JUBIZOL SILICATE finish	min ≥ 80 kPa avg = 440 kPa	
	JUBIZOL SILICONE finish	min ≥ 80 kPa avg = 250 kPa	
	JUBIZOL ACRYL finish	min ≥ 80 kPa avg = 330 kPa	
	NIVELIN D + façade paint	min ≥ 80 kPa avg = 160 kPa	
	JUBIZOL UNIXIL finish	min ≥ 80 kPa avg = 170 kPa	
	JUBIZOL UNIXIL Winter finish	min ≥ 80 kPa avg = 170 kPa	
	JUBIZOL NANO finish	min ≥ 80 kPa avg = 170 kPa	
	JUBIZOL Kulirplast 1.8 premium	min ≥ 80 kPa avg = 120 kPa	

	JUBIZOL Kulirplast 2.0	min ≥ 80 kPa avg = 120 kPa	min≥ 80 kPa avg = 120 kPa
	JUBIZOL AEROGEL finish	min = 94 kPa avg = 108 kPa	Test not required
	JUBIZOL CARBON STRONG finish	min = 104 kPa avg = 115 kPa	

Note: where relevant the results for the EWIS of finishing coat NIVELIN D + façade paints were obtained on Revitalcolor facade paint.

Table 43: bond strengths after ageing of the finishing coats on the JUBIZOL Cement - free base coat.

Base coat	Finishing coats including key coat and façade paint	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	min ≥ 80 kPa avg = 130 kPa	Test not required
	JUBIZOL ACRYL finish	min ≥ 80 kPa avg = 110 kPa	
	JUBIZOL UNIXIL finish	min ≥ 80 kPa avg = 110 kPa	
	JUBIZOL UNIXIL Winter finish	min ≥ 80 kPa avg = 110 kPa	
	JUBIZOL NANO finish	min ≥ 80 kPa avg = 130 kPa	

Table 44: bond strengths after ageing of the finishing coats on the JUBIZOL EPS ADHESIVE MORTAR base coat.

Base coat	Finishing coats including key coat and façade paint	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	min ≥ 80 kPa avg = 170 kPa	Test not required
	JUBIZOL SILICATE finish	min ≥ 80 kPa avg = 160 kPa	
	JUBIZOL SILICONE finish	min ≥ 80 kPa avg = 180 kPa	
	JUBIZOL ACRYL finish	min ≥ 80 kPa avg = 160 kPa	
	NIVELIN D + façade paint	min ≥ 80 kPa avg = 160 kPa	
	JUBIZOL UNIXIL finish	min ≥ 80 kPa avg = 170 kPa	
	JUBIZOL UNIXIL Winter finish	min ≥ 80 kPa avg = 170 kPa	
	JUBIZOL NANO finish	min ≥ 80 kPa avg = 170 kPa	
	JUBIZOL Kulirplast 1.8 premium	min ≥ 80 kPa avg = 120 kPa	
	JUBIZOL Kulirplast 2.0	min ≥ 80 kPa avg = 100 kPa	min ≥ 80 kPa avg = 110 kPa
	JUBIZOL AEROGEL finish	min = 87 kPa avg = 108 kPa	Test not required
	JUBIZOL CARBON STRONG finish	min = 96 kPa avg = 112 kPa	

Note: the results for the EWIS of finishing coat NIVELIN D + façade paints were obtained on Revitalcolor facade paint.

Table 45: bond strengths after ageing of the finishing coats on the JUBIZOL MICROAIR base coat.

Base coat	Finishing coats including key coat and façade paint	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	min ≥ 80 kPa avg = 170 kPa	Test not required
	JUBIZOL SILICATE finish T	min ≥ 80 kPa avg = 160 kPa	
	JUBIZOL SILICONE finish T	min ≥ 80 kPa avg = 180 kPa	
	JUBIZOL ACRYL finish T	min ≥ 80 kPa avg = 160 kPa	
	NIVELIN D + façade paint	min ≥ 80 kPa avg = 160 kPa	
	JUBIZOL UNIXIL finish	min ≥ 80 kPa avg = 170 kPa	
	JUBIZOL UNIXIL Winter finish S	min ≥ 80 kPa avg = 170 kPa	
	JUBIZOL NANO finish S	min ≥ 80 kPa avg = 170 kPa	
	JUBIZOL Kulirplast 1.8 premium	min ≥ 80 kPa avg = 120 kPa	
	JUBIZOL Kulirplast 2.0	min ≥ 80 kPa avg = 100 kPa	min ≥ 80 kPa avg = 110 kPa
	JUBIZOL AEROGEL finish	min = 87 kPa avg = 108 kPa	Test not required
	JUBIZOL CARBON STRONG finish	min = 96 kPa avg = 112 kPa	

Note: the results for the EWIS of finishing coat NIVELIN D + façade paints were obtained on Revitalcolor facade paint.

Table 46: bond strengths after ageing of the finishing coats on the JUBIZOL ULTRALIGHT FIX base coat

Base coat	Finishing coats including key coat and façade paint	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	min ≥ 80 kPa avg = 290 kPa	Test not required because freeze / thaw cycles not necessary
	JUBIZOL SILICATE finish	min ≥ 80 kPa avg = 260 kPa	
	JUBIZOL SILICONE finish	min ≥ 80 kPa avg = 160 kPa	
	JUBIZOL ACRYL finish	min ≥ 80 kPa avg = 180 kPa	
	NIVELIN D + façade paint	min ≥ 80 kPa avg = 280 kPa	
	JUBIZOL UNIXIL finish	min ≥ 80 kPa avg = 220 kPa	
	JUBIZOL UNIXIL Winter finish	min ≥ 80 kPa avg = 220 kPa	
	JUBIZOL NANO finish	min ≥ 80 kPa avg = 250 kPa	
	JUBIZOL AEROGEL finish	min = 97 kPa avg = 118 kPa	

	JUBIZOL CARBON STRONG finish	min = 105 kPa avg = 121 kPa

Note: the results for the EWIS of finishing coat NIVELIN D + façade paints were obtained on Revitalcolor facade paint.

Table 47: bond strengths after ageing of the finishing coats on the JUBIZOL UNIWOOL ADHESIVE base coat.

Base coat	Finishing coats including key coat and façade paint	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	min ≥ 80 kPa avg = 250 kPa	Test not required
	JUBIZOL SILICATE finish	min ≥ 80 kPa avg = 290 kPa	
	JUBIZOL SILICONE finish	min ≥ 80 kPa avg = 140 kPa	
	NIVELIN D + façade paint	min ≥ 80 kPa avg = 280 kPa	
	JUBIZOL ACRYL finish	min ≥ 80 kPa avg = 250 kPa	
	JUBIZOL UNIXIL finish	min ≥ 80 kPa avg = 290 kPa	
	JUBIZOL UNIXIL Winter finish S	min ≥ 80 kPa avg = 290 kPa	
	JUBIZOL NANO finish	min ≥ 80 kPa avg = 180 kPa	
	JUBIZOL AEROGEL finish	min = 97 kPa avg = 110 kPa	
	JUBIZOL CARBON STRONG finish	min = 97 kPa avg = 108 kPa	

Note: the results for the EWIS of finishing coat NIVELIN D + façade paints were obtained on Revitalcolor facade paint

3.4.8 Mechanical and physical characteristic of the meshes

The alkalis resistances of glass fibre meshes are presented in Table 48.

Table 48: glass fibre mesh with 3.5 mm to 4.7 mm wide grid of fibres.

Alkalis resistance	JUBIZOL glass fibre meshes	
	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

Note: the strengths of the meshes were about 40 N/mm in as-delivered state and more than 20 N/mm after alkaline exposure. The strain at failure of the glass fibre meshes degraded from about 4% before to about 3% after alkaline exposure. There were observed no significant variations of failure strains in warp and weft directions.

3.5 Protection against noise (BWR 5)

Not relevant

3.6 Energy economy and heat retention (BWR 6)

3.6.1 Thermal resistance and thermal transmittance of EWIS

The additional thermal resistance provided by the EWIS (R_{EWIS}) 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 m²·K/W).

$R_{EWIS} = R_D + R_{render}$ [(m² ·K)/W]

as described in:
– 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 cannot be calculated, it can be measured on the complete EWIS as described in 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:

$U_c = U + \Delta U$ [W/(m² ·K)]

With: U_c corrected thermal transmittance of the entire wall. including thermal bridges
U thermal transmittance of the entire wall. including EWIS. without thermal bridges

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

$R_{substrate}$ 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) + $\sum \psi_I \cdot l_i$ (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 UKTA. 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_I	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

4 Assessment and verification of constancy of performance (hereinafter AVCP) system applied

4.1 System of assessment and verification of constancy of performance

According to UKAD No. 040083-00-0404 and Annex V of the Construction Products Regulation (Regulation (EU) 305/2011 as brought into UK law and amended, the system of assessment and verification of constancy of performance (AVCP) 1 and 2+ applies.

Products	Intended Use(s)	Level(s) or class(es) (Reaction to fire)	System(s)
External thermal insulation composite systems/kits (EWIS) 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 UKAD

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with the British Board of Agrément and made available to the UK Approved Bodies involved in the conformity attestation process.

5.1 UKCA marking for the product/ system must contain the following information:

- Identification number of the Approved Body
- Name/address of the manufacturer of the product/ system
- Marking with intention of clarification of intended use
- Date of marking
- Number of certificate of constancy of performance
- UKTA number.

On behalf of the British Board of Agrément 	
Date of Issue: 11 August 2022	**Hardy Giesler** Chief Executive Officer

British Board of Agrément,
1st Floor Building 3
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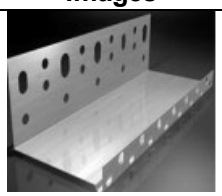
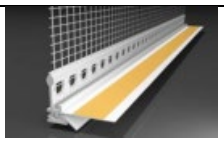
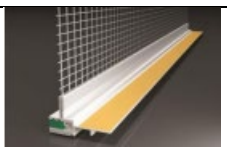
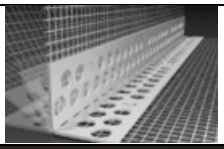
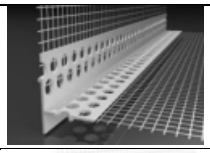
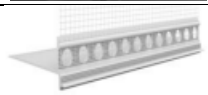
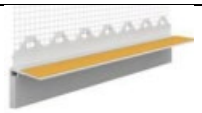
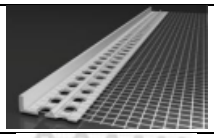
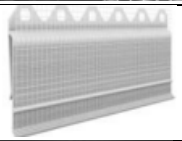
ANNEX 1 : JUBIZOL EPS / Ancillary materials - finishing profiles

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

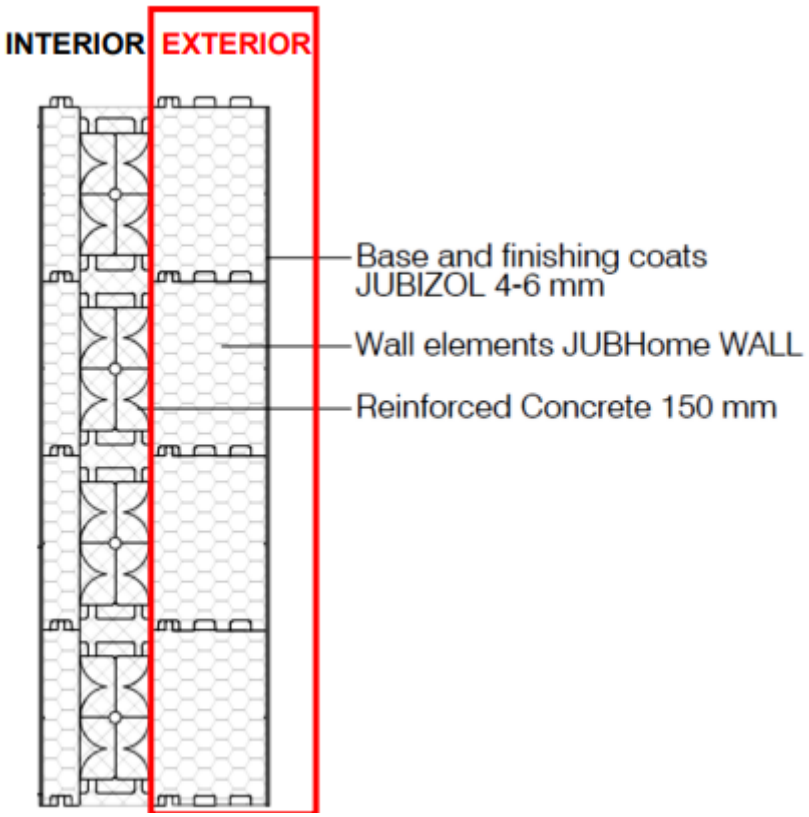
	Finishing components	
Trade names	**Description**	**Images**
JUBIZOL ALU BASE PROFILE	The ALU base profile is used for horizontal setup of thermal insulating plates in the contact insulation system. It enables a perfect structural and visual finish and closure of the system. The base profile protects 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 colours. 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.	
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 if 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 EWIS. The profile prevents hairline cracks and enables attachment of protective foil for windows during EWIS 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	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 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: the ancillary materials remain under the UKTA-holder responsibilities in accordance with clause 1.3.13 of UKAD 040083-00-0404

ANNEX 2 : JUBIZOL EPS / Composition of JUBHome WALL system

The JUBHome WALL system consists of INTERIOR and EXTERIOR parts as it can be seen on the figure below. Only the EXTERIOR part - facade system of the JUBHome WALL system is evaluated in the scope this UKTA.



ANNEX 3 : JUBIZOL EPS / Rendering systems for the protection of the façade plinths

Use
EWIS
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 winter finish S 1.5 JUBIZOL Kulirplast premium 1.8 JUBIZOLKulirplast 2.0 JUBIZOL ACRYL finish S 1.5

The UKTA holder recommends the renderings listed in above table to be used for the protection of the lower part “plinth” of the façades.

The resistance to hard body impacts according to the § 2.2.8 of the UKAD 040083-00-0404

Base coat	**Finishing coat**	**Base coat thickness (mm)**	**Single standard mesh**
HIDROZOL SUPERFLEX 2K	JUBIZOL UNIXIL finish S 1.0	3	Cat I
		5	Cat I
	JUBIZOL UNIXIL finish S 1.5	3	Cat I
		5	Cat I
	JUBIZOL UNIXIL finish S 1.0	3	Cat I
		5	Cat I
	JUBIZOL UNIXIL Winter finish S 1.5	3	Cat I
		5	Cat I
	JUBIZOL ACRYL finish S 1.5	3	Cat I
		5	Cat I
	JUBIZOL Kulirplast premium 1.8	3	Cat I
		5	Cat I
	JUBIZOL Kulirplast 2.0	3	Cat I
		5	Cat I

Note; The only property determined for proposed plinth protection renderings according to UKAD 040083-00-0404 were impact resistances (clause 3.3.3) while other properties were not determined.

ANNEX 4 : JUBIZOL EPS / Rendering systems for hail protection

Use EWIS				
Base Coat JUBIZOL ADHESIVE MORTAR. JUBIZOL STRONG FIX				
Base Coat thickness Up to 6mm				
JUBIZOL glass fibre mesh 1 x 145 g/m² to 2 x 160 g/m²				
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/m²)**	**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 x 160		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
	6.0	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/m²)**	**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 x 160		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
	6.0	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

ANNEX 5 : JUBIZOL EPS / Composition of the EWIS

<table>
<tr><th colspan="7">Adhesive</th></tr>
<tr><td>JUBIZOL ADHESIVE MORTAR</td><td>JUBIZOL STRONG FIX</td><td>JUBIZOL EPS ADHESIVE MORTAR</td><td>JUBIZOL MICROAIR FIX</td><td>JUBIZOL UNIWOOL ADHESIVE</td><td>JUBIZOL ULTRALIGHT FIX</td><td>JUBIZOL ADHESIVE</td></tr>
<tr><td colspan="7">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</td></tr>
<tr><th colspan="7">Base Coat</th></tr>
<tr><td>JUBIZOL ADHESIVE MORTAR</td><td>JUBIZOL STRONG FIX</td><td>JUBIZOL EPS ADHESIVE MORTAR</td><td>JUBIZOL MICROAIR FIX</td><td>JUBIZOL UNIWOOL ADHESIVE</td><td>JUBIZOL ULTRALIGHT FIX</td><td>JUBIZOL CEMENT-FREE BASE COAT</td></tr>
<tr><td colspan="7">Glass fibre mesh
JUBIZOL glass fibre mesh</td></tr>
<tr><th colspan="7">Key coat</th></tr>
<tr><td colspan="2">JUBIZOL Unigrund</td><td colspan="2">Acryl emulsion</td><td>Acrylcolor</td><td>SILICATE primer</td><td>SILICONE primer</td></tr>
<tr><td colspan="7">Finishing coat
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
JUBIZOL SILICATE finish S 1.5/2.0/2.5
JUBIZOL SILICONE finish T 2.0/2.5/3.0
JUBIZOL SILICONE finish S 1.5/2.0/2.5/3.0
JUBIZOL ACRYL finish T 2.0/2.5
JUBIZOL ACRYL finish S 1.5/2.0/2.5
NIVELIN D + façade paints
JUBIZOL UNIXIL finish S 0.7/1.0/1.5/2.0/2.5
JUBIZOL UNIXIL Winter finish S 0.7/1.0/1.5/2.0/2.5
JUBIZOL UNIXIL finish T 2.0/2.5
JUBIZOL NANO finish S 1.5/2.0/2.5
JUBIZOL Kulirplast 1.8 premium JUBIZOL Kulirplast 2.0
JUBIZOL AEROGEL finish S 1.5/2.0
JUBIZOL CARBON STRONG finish S 1.5/2.0</td></tr>
<tr><td colspan="7">Façade paints
Acrylcolor.
Revitalcolor
Jubosilcolor Silicone
Siliconecolor
Silicatecolor
Revitalcolor Silicate
Nanocolor
Décor Antique
Trendcolor</td></tr>
<tr><td colspan="7">Anchors
Ejot Ejotherm STR U, STR U 2G, Ejotherm NT-U, Ejotherm NK-U, Ejotherm H1 Eco
Fischer Termoz 8U
Hilti T-Save HTS-P, T-Save HTS-M, HTR-P, HTR-M, D8-FV
Leskovec Pritrdilno sidro PPV, Pritrdilo PSV
Ranit IsoFux NDS8Z, NDM8Z, NDS90Z, NDM90Z
WKRET MET WKTHERM S, LFM-8. LFM-10, LFN-10, LFMG-10</td></tr>
</table>

ANNEX 6 : JUBIZOL EPS / Original and alternative trade names of the EWIS components

Original trade name	Alternative trade names
JUBIZOL ACRYL finish S 1.5/2.0/2.5	Acrylic smooth render 1.5/2.0/2.5. Akrilni glajen omet 1.5/2.0/2.5. Akrilni glajen omet. Acrylic smooth render. JUBIZOL ACRYL finish. JUBIZOL X-ACRYL finish. JUBIZOL ACRYL finish X. . JUBIZOL Thermal Finish S. JUBIZOL Therma Finish S. JUBIZOL Temperature Finish S. JUBIZOL White Finish S. JUBIZOL Snow Finish S. JUBIZOL Frost Finish S. JUBIZOL ACRYL finish XS. JUBIZOL ACRYL finish G. JUBIZOL ACRYL finish XG. JUBIZOL ATG finish. JUBIZOL XTG finish. JUBIZOL X- ACRYL finish S. JUBIZOL UNICRYL finish S. JUBIZOL UNICRYL finish XS. JUBIZOL DECOR finish S. JUBIZOL DECOR finish XS. JUBIZOL ART finish S. JUBIZOL ART finish XS. JUBIZOL ARTECH finish S. JUBIZOL ARTECH finish XS. JUBIZOL ATECH finish S. JUBIZOL ATECH finish XS. JUBIZOL DESIGN finish S. JUBIZOL DESIGN finish XS. JUBIZOL PRIME finish S. JUBIZOL PRIME finish XS. JUBIZOL PRIMA finish S. JUBIZOL PRIMA finish XS. JUBIZOL finish acrylate S. ATG finish acrylate. JUBIZOL finish acrylate XS. XTG finish acrylate. XTG akrilni glajen omet (XTG acrylic smooth render). JUBIZOL finish acryl XS 1.5/2.0/2.5
JUBIZOL SILICATE finish S 1.5/2.0/2.5	Silicate smooth render 1.5/2.0/2.5. Silikatni glajeni omet Silikatni glajen omet 1.5/2.0/2.5. Silicate smooth render. JUBIZOL SILICATE finish. JUBIZOL X-SILICATE finish. JUBIZOL SILICATE finish X. JUBIZOL SILICATE finish XS. JUBIZOL SILICATE finish G. JUBIZOL SILICATE finish XG. JUBIZOL X-SILICATE finish S. JUBIZOL finish silicate S. STG finish silicate
JUBIZOL SILICONE finish S 1.5/2.0/2.5/3.0	Silicone smooth render 1.5/2.0/2.5. Silikonski glajen omet. Silikonski glajen omet 1.5/2.0/2.5. Silicone smooth render. JUBIZOL SILICONE finish. JUBIZOL X-SILICONE finish. JUBIZOL SILICONE finish X. JUBIZOL SILICONE finish XS. JUBIZOL SILICONE finish G. JUBIZOL SILICONE finish XG. JUBIZOL X-SILICONE finish S. JUBIZOL XNG finish S. JUBIZOL SISI finish S. JUBIZOL SISI finish XS. JUBIZOL UNICON finish S. JUBIZOL SILICONE winter finish XS. JUBIZOL SILICONE winter finish S. JUBIZOL XNG winter finish XS. JUBIZOL XNG winter finish S. JUBIZOL finish silicone S. SNG finish silicone. JUBIZOL SILICONE finish XS (XNG). JUBIZOL SILICONE finish XS 1.5/2.0/2.5. JUBIZOL finish silicone XS 1.5/2.0/2.5
JUBIZOL MINERAL finish S 1.5/2.0/2.5	MINERAL SMOOTH RENDER 1.5/2.0/2.5. MINERALNI GLAJEN OMET 1.5/2.0/2.5. MINERAL SMOOTH RENDER. MINERALNI GLAJEN OMET. JUBIZOL MINERAL FINISH. JUBIZOL MINERAL FINISH X. JUBIZOL MINERAL FINISH XS. JUBIZOL MINERAL FINISH G. JUBIZOL MINERAL FINISH XG. JUBIZOL FINISH MINERAL S. MLG FINISH MINERAL
JUBIZOL UNIXIL finish S 0.7/1.0/1.5/2.0/2.5	UNIXIL G - Siloxaned acrylic smooth render. JUBIZOL UNIXIL Winter finish S. UNIXIL G 1.5/2.0/2.5. Unixil G. JUBIZOL TREND finish. JUBIZOL TREND finish S. JUBIZOL TREND finish XS. JUBIZOL SILOXANE finish. . JUBIZOL X-SILOXANE finish. JUBIZOL SILOXANE finish X. JUBIZOL SILOXANE finish S. JUBIZOL SILOXANE finish XS. JUBIZOL SILOXANE finish G. JUBIZOL SILOXANE finish XG. JUBIZOL UNIXIL finish. JUBIZOL SUPRA finish S. JUBIZOL specter finish S. JUBIZOL MAXXI finish S. JUBIZOL finish S 1.0.. JUBIZOL finish siloxane S. USG finish siloxane. XNG glajen omet (XNG smooth render). JUBIZOL finish XS. XNG finish
JUBIZOL UNIXIL Winter finish S 0.7/1.0/1.5/2.0/2.5	UNIXIL G - Siloxaned acrylic smooth render. JUBIZOL UNIXIL finish S. UNIXIL G 1.5/2.0/2.5. Unixil G. JUBIZOL TREND finish. JUBIZOL TREND finish S. JUBIZOL TREND finish XS. JUBIZOL SILOXANE finish. JUBIZOL X-SILOXANE finish. JUBIZOL SILOXANE finish X. JUBIZOL SILOXANE finish S. JUBIZOL SILOXANE finish XS. JUBIZOL SILOXANE finish G. JUBIZOL SILOXANE finish XG. JUBIZOL UNIXIL finish. JUBIZOL SUPRA finish S. JUBIZOL specter finish S. JUBIZOL MAXXI finish S. JUBIZOL finish S 1.0. JUBIZOL UNIXIL Winter finish S. JUBIZOL finish siloxane S. USG finish siloxane. XNG glajen omet (XNG smooth render). JUBIZOL finish XS. XNG finish
JUBIZOL NANO finish S 1.5/2.0/2.5	Nanoxil G. NANOXIL G 1.5/2.0/2.5. JUBIZOL NANO finish. JUBIZOL NANO finish XS. JUBIZOL NANO finish G. JUBIZOL NANO finish XG.

	JUBIZOL NANOXIL finish XS. JUBIZOL NANOXIL finish S. JUBIZOL finish nano S. NSG finish nano
JUBIZOL ACRYL finish T 2.0/2.5	Acrylic trowelled render 2.0/2.5. Akrilni zariban omet 2.0/2.5. Akrilni zariban omet. Acrylic smooth render. JUBIZOL ACRYL finish. JUBIZOL X-ACRYL finish. JUBIZOL ACRYL finish X. . JUBIZOL Thermal Finish T. JUBIZOL Therma Finish T. JUBIZOL Temperature Finish T. JUBIZOL Snow Finish T. JUBIZOL Frost Finish T. JUBIZOL White Finish T. JUBIZOL Winter Finish T. JUBIZOL ACRYL finish XT. JUBIZOL ACRYL finish Z. JUBIZOL ACRYL finish XZ. JUBIZOL ATZ finish. JUBIZOL XTZ finish. JUBIZOL X- ACRYL finish T. JUBIZOL UNICRYL finish T. JUBIZOL UNICRYL finish XT. JUBIZOL DECOR finish T. JUBIZOL DECOR finish XT. JUBIZOL ART finish T. JUBIZOL ART finish XT. JUBIZOL ARTECH finish T. JUBIZOL ARTECH finish XT. JUBIZOL ATECH finish T. JUBIZOL ATECH finish XT. . . JUBIZOL DESIGN finish T. JUBIZOL DESIGN finish XT. JUBIZOL PRIME finish T. JUBIZOL PRIME finish XT. JUBIZOL PRIMA finish T. JUBIZOL PRIMA finish XT. JUBIZOL finish acrylate T. ATZ finish acrylate . XTZ akrilni zariban omet (XTZ acrylic trowelled render). JUBIZOL finish acrylate XT. JUBIZOL finish acryl XT 2.0/2.5
JUBIZOL SILICATE finish T 2.0/2.5	Silicate trowelled render 2.0/2.5. Silikatni zariban omet 2.0/2.5. Silikatni zariban omet. Silicate trowelled render. JUBIZOL SILICATE finish. JUBIZOL X-SILICATE finish. JUBIZOL SILICATE finish X. JUBIZOL SILICATE finish XT. JUBIZOL SILICATE finish Z. JUBIZOL SILICATE finish XZ. JUBIZOL X-SILICATE finish T. JUBIZOL finish silicate T. STZ finish silicate
JUBIZOL SILICONE finish T 2.0/2.5/3.0	Silicone trowelled render 2.0/2.5. Silikonski zariban omet 2.0/2.5. Silikonski zariban omet. Silicone trowelled render. JUBIZOL SILICONE finish. JUBIZOL X-SILICONE finish. JUBIZOL SILICONE finish X. JUBIZOL SILICONE finish XT. JUBIZOL SILICONE finish Z. JUBIZOL SILICONE finish XZ. JUBIZOL X-SILICONE finish T. JUBIZOL XNZ finish T. JUBIZOL XNG finish T. JUBIZOL SISI finish T. JUBIZOL SISI finish XT. JUBIZOL UNICON finish T. JUBIZOL SILICONE winter finish XT. JUBIZOL SILICONE winter finish T. JUBIZOL XNG winter finish XT. JUBIZOL XNG winter finish T. JUBIZOL finish silicone T. SNZ finish silicone. JUBIZOL SILICONE finish XT (XNZ). JUBIZOL SILICONE finish XT 2.0/2.5. JUBIZOL finish silicone XT 2.0/2.5
JUBIZOL MINERAL finish T 2.0/2.5	MINERAL TROWELLED RENDER 2.0/2.5. MINERALNI ZARIBAN OMET 2.0/2.5. MINERAL TROWELLED RENDER. MINERALNI ZARIBAN OMET. JUBIZOL MINERAL FINISH. JUBIZOL MINERAL FINISH X. JUBIZOL MINERAL FINISH XT. JUBIZOL MINERAL FINISH Z. JUBIZOL MINERAL FINISH XZ. JUBIZOL FINISH MINERAL T. MLZ FINISH MINERAL
JUBIZOL UNIXIL finish T 2.0/2.5	UNIXIL Z - Siloxaned acrylic smooth render. UNIXIL Z 2.0/2.5. Unixil Z. JUBIZOL TREND finish T. JUBIZOL TREND finish XT. JUBIZOL X-SILOXANE finish. JUBIZOL SILOXANE finish. JUBIZOL X-SILOXANE finish. JUBIZOL SILOXANE finish X. JUBIZOL SILOXANE finish T. JUBIZOL SILOXANE finish XT. JUBIZOL SILOXANE finish Z. JUBIZOL SILOXANE finish XZ. JUBIZOL UNIXIL finish T. JUBIZOL XSILOXANE finish T. JUBIZOL SUPRA finish T. JUBIZOL specter finish T. JUBIZOL MAXXI finish T. JUBIZOL UNIXIL Winter finish T. JUBIZOL finish siloxane T. USZ finish siloxane. XNZ zariban omet (XNZ trowelled render) JUBIZOL finish XT. XNZ finish
JUBIZOL ADHESIVE MORTAR	JUBIZOL LEPILNA MALTA. JUBIZOL STRONG FIX. JUBIZOL STRONG ADHESIVE MORTAR. JUBIZOL STRONG LEPILNA MALTA. JUBIZOL ADHESIVE MORTAR WINTER. JUBIZOL WINTER FIX. JUBIZOL LEPILNA MALTA WINTER. JUBIZOL UNIVERSAL FIX. JUBIZOL MW FIX. JUBIZOL WOOL FIX. JUBIZOL MWOOL FIX. JUBIZOL MULTI FIX. JUBIZOL SUPER FIX.JUBIZOL UNI FIX. UNI PROJECT FIX. JUBIZOL UNI PROJECT FIX., JUBIZOL ADHESIVE MORTAR PROJECT. JUBIZOL LEPILNA MALTA PROJECT. JUBIZOL LEPILNA MALTA GROBA. JUBIZOL ADHESIVE MORTAR GROB. JUBIZOL LEPILNA MALTA Winter, JUBIZOL Lepilna malta Premium fix, JUBIZOL Premium fix Lepilna malta, JUBIZOL Premium fix, JUBIZOL Lepilna malta winter Premium fix winter, JUBIZOL Premium fix winter Lepilna malta winter, JUBIZOL Premium fix winter, JUBIZOL Lepilna malta groba Premium fix grob, JUBIZOL Premium fix grob Lepilna malta groba, JUBIZOL Premium fix grob, JUBIZOL Uniwool

	white, JUBIZOL Premium fix white
JUBIZOL STRONG FIX	JUBIZOL ADHESIVE MORTAR. JUBIZOL LEPILNA MALTA. JUBIZOL STRONG ADHESIVE MORTAR. JUBIZOL STRONG LEPILNA MALTA. JUBIZOL ADHESIVE MORTAR WINTER. JUBIZOL WINTER FIX. JUBIZOL LEPILNA MALTA WINTER. JUBIZOL UNIVERSAL FIX. JUBIZOL MW FIX. JUBIZOL WOOL FIX. JUBIZOL MWOOL FIX. JUBIZOL MULTI FIX. JUBIZOL SUPER FIX. JUBIZOL UNI FIX. UNI PROJECT FIX. JUBIZOL UNI PROJECT FIX., JUBIZOL ADHESIVE MORTAR PROJECT. JUBIZOL LEPILNA MALTA PROJECT. JUBIZOL LEPILNA MALTA GROBA. JUBIZOL ADHESIVE MORTAR GROB. . JUBIZOL LEPILNA MALTA Winter, JUBIZOL Lepilna malta Premium fix, JUBIZOL Premium fix Lepilna malta, JUBIZOL Premium fix, JUBIZOL Lepilna malta winter Premium fix winter, JUBIZOL Premium fix winter Lepilna malta winter, JUBIZOL Premium fix winter, JUBIZOL Lepilna malta groba Premium fix grob, JUBIZOL Premium fix grob Lepilna malta groba, JUBIZOL Premium fix grob, JUBIZOL Uniwool white, JUBIZOL Premium fix white
JUBIZOL EPS ADHESIVE MORTAR	JUBIZOL MICROAIR FIX. JUBIZOL EPS LEPILNA MALTA. JUBIZOL EPS ADHESIVE WINTER. JUBIZOL EPS LEPILNA MALTA WINTER. JUBIZOL EPS STANDARD FIX. JUBIZOL BASE FIX. JUBIZOL CLASSIC FIX. JUBIZOL EPS CLASSIC FIX. JUBIZOL EPS FIX. EPS ADHESIVE MORTAR PROJECT. EPS LEPILNA MALTA PROJECT. JUBIZOL EPS LEPILNA MALTA PROJECT. EPS PROJECT FIX. JUBIZOL EPS PROJECT FIX. JUBIZOL EPS LEPILNA MALTA GROBA. JUBIZOL EPS ADHESIVE MORTAR GROB, JUBIZOL EPS lepilna malta EPS fix, JUBIZOL EPS fix EPS lepilna malta, JUBIZOL EPS fix, JUBIZOL EPS fix white, JUBIZOL EPS fix grob
JUBIZOL MICROAIR FIX	JUBIZOL EPS ADHESIVE MORTAR. JUBIZOL EPS LEPILNA MALTA. JUBIZOL EPS ADHESIVE WINTER. JUBIZOL EPS LEPILNA MALTA WINTER. JUBIZOL EPS STANDARD FIX. JUBIZOL BASE FIX. JUBIZOL CLASSIC FIX. JUBIZOL EPS CLASSIC FIX. JUBIZOL EPS FIX. EPS ADHESIVE MORTAR PROJECT. EPS LEPILNA MALTA PROJECT. JUBIZOL EPS LEPILNA MALTA PROJECT. EPS PROJECT FIX. JUBIZOL EPS PROJECT FIX. JUBIZOL EPS LEPILNA MALTA GROBA. JUBIZOL EPS ADHESIVE MORTAR GROB, JUBIZOL EPS lepilna malta EPS fix, JUBIZOL EPS fix EPS lepilna malta, JUBIZOL EPS fix, JUBIZOL EPS fix white, JUBIZOL EPS fix grob
JUBIZOL ADHESIVE	JUBIZOL LEPILO,. JUBIZOL ADHESIVE FIX. JUBIZOL STICK. JUBIZOL UNI STICK. JUBIZOL FIX, JUBIZOL Lepilo Start fix, JUBIZOL Start fix Lepilo, JUBIZOL Start fix
JUBIZOL Kulirplast 1.8 premium	JUBIZOL Kulirplast 1.8 Premium finish. JUBIZOL Kulirplast 1.8mm Premium finish Kulirplast 1.8mm Premium. JUBIZOL Kulirplast 1.8. JUBIZOL Kulirplast 1.8 finish. JUBIZOL Kulirplast 1.8mm finish. Kulirplast 1.8mm
JUBIZOL Kulirplast 2.0	JUBIZOL Kulirplast 2.0 finish. JUBIZOL Kulirplast 2.0mm. finish Kulirplast 2.0mm
JUBIZOL Cement-free base coat	JUBIZOL dispersion fix. JUBIZOL disperzijska malta
JUBIZOL Cement-free adhesive	JUBIZOL disperzijsko lepilo. JUBIZOL dispersion stick
JUBIZOL Unigrund	Unigrund - universal primer for decorative renders.
SILICONE primer	JUBOSIL G
SILICATE primer	JUBOSIL GX
NIVELIN D	DECOR NIVELIN D. DECOR RELIEF RUSTICAL. DECOR RUSTICAL. DECOR TRAVERTINO. JUBIZOL DECOR FINISH. JUBIZOL SMOOTH FINISH. JUBIZOL DÉCOR. JUBOGLET DECOR. JUBOGLET SMOOTH. JUBOGLET NIVELIN D. JUBIZOL NIVELIN D. JUBOGLET DECOR FINISH. JUBOGLET SMOOTH FINISH
JUBIZOL UNIWOOL ADHESIVE	JUBIZOL UNIWOOL FIX. JUBIZOL UNIWOOL LEPILO
Acrylcolor	JUBIZOL ACRYL COLOR. JUBIZOL ACRYL COLORIX. JUBIZOL ACRYL FAS COLOR. JUBIZOL ACRYL FAS. JUBIZOL TREND COLOR. JUBIZOL TREND REVITAL. JUBIZOL TREND 2IN 1. JUBIZOL ACRYL FAS
Revitalcolor	JUBIZOL ACRYL REVITAL. JUBIZOL ACRYL REVITAL COLORIX. JUBIZOL ACRYL REVITAL FAS COLOR. JUBIZOL ACRYL REVITAL FAS. JUBIZOL TREND COLOR. JUBIZOL TREND REVITAL. JUBIZOL TREND 2 IN 1. JUBIZOL TREND COLOR

JUBOSILcolor silicone	JUBIZOL SILICONE COLOR. JUBIZOL SILICONE COLORIX. JUBIZOL SILICONE FAS COLOR. JUBIZOL SILICONE FAS.
REVITALcolor silicone	JUBIZOL SILICONE REVITAL. JUBIZOL SILICONE REVITAL COLORIX. JUBIZOL SILICONE REVITAL FAS COLOR. JUBIZOL SILICONE REVITAL FAS. JUBIZOL SILICONE COLOR
NANOcolor	JUBIZOL NANO COLOR. JUBIZOL NANO REVITAL
JUBOSILhydrophob	JUBIZOL SILICONE HYDROPHOB
Silicatecolor	JUBIZOL SILICATE COLOR. JUBIZOL SILICATE COLORIX. JUBIZOL SILICATE FAS COLOR. JUBIZOL SILICATE FAS
REVITALcolor silicate	JUBIZOL SILICATE REVITAL. JUBIZOL SILICATE REVITAL COLORIX. JUBIZOL SILICATE REVITAL FAS COLOR. JUBIZOL SILICATE REVITAL FAS. JUBIZOL SILICATE COLOR
JUBIZOL EPS F – W	JUBIZOL EPS F-W0. JUBIZOL EPS F-W1. JUBIZOL EPS F-W2. JUBIZOL EPS FW3. EUROTHERM EPS F-W0. EUROTHERM EPS F-W1. EUROTHERM EPS F-W2. EUROTHERM EPS F-W3. JUB PROJECT EPS F-W0. JUB PROJECT EPS F-W1. JUB PROJECT EPS F-W2. JUB PROJECT EPS F-W3
JUBIZOL EPS F – W 035	JUBIZOL EPS F W1 035. EUROTHERM EPS F W0 035. EUROTHERM EPS F W1 035. JUB PROJECT EPS F-W0 035. JUB PROJECT EPS F-W1 035
JUBIZOL EPS F – G0 SunStop	EUROTHERM EPS F-G0 SUNSTOP. JUB PROJECT EPS F-G0 SUNSTOP
JUBIZOL EPS F Graphite – G	JUBIZOL EPS F-G0. JUBIZOL EPS F-G1. JUBIZOL EPS F-G2. JUBIZOL EPS F-G3. EUROTHERM EPS F-G0. EUROTHERM EPS F-G1. EUROTHERM EPS F-G2. EUROTHERM EPS F-G3. JUB PROJECT EPS F-G0. JUB PROJECT EPS F-G1. JUB PROJECT EPS F-G2. JUB PROJECT EPS F-G3
JUBIZOL EPS F – two layers insulate plate	JUBIZOL EPS F-G0 SUNSTOP PREMIUM. EUROTHERM EPS F-G0 SUNSTOP PREMIUM. EUROTHERM EPS F - two layers insulate plate
JUBIZOL EPS F Strong - S0 premium	EUROTHERM EPS F STRONG S0 PREMIUM. EPS F STRONG S0 PREMIUM
JUBIZOL EPS F Strong - S0 GRAPHITE	EUROTHERM EPS F STRONG S0 GRAPHITE. EPS F STRONG S0 GRAPHITE
JUBIZOL ALU BASE PROFILE	JUBIZOL ALU OSNOVNA LETEV
JUBIZOL CORNER PVC PROFILE	JUBIZOL PVC VOGALNIK Z MREŽICO
JUBIZOL DRIP PROFILE PRO	JUBIZOL ODKAPNI PROFIL
JUBIZOL WINDOW PROFILE STANDARD	JUBIZOL ŠPALETNI PROFIL
JUBIZOL WINDOW PROFILE 2D	JUBIZOL ŠPALETNI 2D PROFIL
JUBIZOL WINDOW PROFILE 3D	JUBIZOL ŠPALETNI 3D PROFIL
JUBIZOL FLEX CORNER PROFILE	JUBIZOL FLEKSIBILNI VOGALNIK
JUBIZOL DILETATION E PROFILE	JUBIZOL DILATACIJSKI PROFIL E
JUBIZOL DILETATION V PROFILE	JUBIZOL DILATACIJSKI PROFIL V
JUBIZOL SNAP-ON PROFILE	JUBIZOL NATIČNI PROFI
JUBIZOL DRIP PROFILE LIGHT	JUBIZOL ODKAPNI PROFIL LIGHT
JUBIZOL PRACTIC PVC PROFILE	JUBIZOL PVC VZNOŽNI ODKAPNI PROFIL
JUBIZOL SHUTTER PROFILE	JUBIZOL ROLETNI PROFIL
JUBIZOL STOP PROFILE	JUBIZOL STOP ZAKLJUČNI PROFIL
JUBIZOL METAL ROOF-EDGE JOINT	JUBIZOL ZAK.PROF.ZA PLOČEVINO
JUBIZOL BALCONY PROFILE	JUBIZOL ALU ODKAPNA LETEV BALKON

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