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European Technical Assessment

**ETA 16/0270
of 27/05/2016**

I General Part

Technical Assessment Body issuing the ETA:

Technical and Test Institute for Construction Prague

Trade name of the construction product

REDArt

Product family to which the construction product belongs

Product area code: 4
External Thermal Insulation Composite Systems with rendering on mineral wool (MW) for the use as external insulation to walls of buildings.

Manufacturer

P.W. FAST Sp. z o.o.
ul. Folszowa 112
65-751 Zielona Gora
Republic of Poland

Manufacturing plant(s)

See Annex No. 1

This European Technical Assessment contains

70 pages including 16 Annexes which form an integral part of this assessment.

Annex No. 17 Control Plan contains confidential information and is not included in the European Technical Assessment when that assessment is publicly disseminated.

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

ETAG 004, edition 2013, used as European Assessment Document (EAD)

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II Specific part

1 Technical description of the product

1.1 Definition and composition of the kit

This product is an ETICS (External Thermal Insulation Composite System) with rendering - a kit comprising components which are factory-produced by the manufacturer or component suppliers. The ETICS manufacturer is ultimately responsible for all components of the ETICS specified in this ETA.

The ETICS kit comprises a prefabricated insulation product of mineral wool (MW) to be mechanically fixed onto a wall. The methods of fixing and the relevant components are specified in the table below. The insulation product is faced with a rendering system consisting of one or more layers (site applied), one of which contains reinforcement. The rendering system 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.

Composition of the ETICS with REDArt Base Coat or REDArt Base Coat Plus products used as base coat matter.

Table No. 1

	Components	Coverage (kg/m ²)	Thickness (mm)
Insulation products with associated methods of fixing	Fully bonded ETICS with or without supplementary anchors (National application documents shall be taken into account)		
	<ul style="list-style-type: none"> • Insulation product according to EN 13162 Annex No. 2 Insulation product characteristics for fully bonded ETICS with or without additional mechanical fixing – MW lamella (TR80) 	/	50 to 320
	<ul style="list-style-type: none"> • Adhesives: <ul style="list-style-type: none"> - REDArt Adhesive (cement based powder requiring addition of water 0.22 l/kg) - REDArt Base Coat (cement based powder requiring addition of water 0.22 l/kg) - REDArt Base Coat Plus (cement based powder requiring addition of water 0.22 l/kg) - REDArt Adhesive Plus (ready to use paste) 	4.0 to 6.0 (dry matter) 4.0 to 6.0 (dry matter) 5.0 to 7.0 (dry matter) 2.0 to 3.0	/

	Components	Coverage (kg/m ²)	Thickness (mm)
Insulation products with associated methods of fixing	Mechanically fixed ETICS with anchors and supplementary adhesive (see Cl. 3.3.5 and Annex No. 14 for possible associations MW/anchors)		
	<ul style="list-style-type: none"> • Insulation product according to EN 13162 see Annex No. 3 to Annex No. 13 for product characteristics 	/	50 to 320
	<ul style="list-style-type: none"> • Supplementary adhesives: <ul style="list-style-type: none"> - REDArt Adhesive (cement based powder requiring addition of water 0.22 l/kg) - REDArt Base Coat (cement based powder requiring addition of water 0.22 l/kg) - REDArt Base Coat Plus (cement based powder requiring addition of water 0.22 l/kg) - REDArt Adhesive Plus (ready to use paste) 	4.0 to 6.0 (dry matter)	/
	<ul style="list-style-type: none"> • Anchors see Annex No. 14 for individual product characteristics. In addition to the following list, other anchors can be used provided that they comply with the requirements introduced in the Annex No. 14. 		
	<ul style="list-style-type: none"> - ejotherm NT U plastic nailed-in anchors - ejotherm STR U, STR U 2G plastic screwed-in anchors alternatively with additional plate: EJOT VT 90 (surface assembly) EJOT VT 2G (countersunk assembly) - ejotherm NTK U plastic nailed-in anchors - EJOT SDM-T plus plastic screwed-in anchors - Ejot H1 eco plastic nailed-in anchors - BRAVOLL PTH-KZ 60/8-La plastic nailed-in anchors alternatively with additional plate: IT PTH 100, IT PTH 140 (surface assembly) - BRAVOLL PTH-S 60/8-La plastic screwed-in anchors alternatively with additional plate: IT PTH 100, IT PTH 140 (surface assembly) ZT100, countersunk apparatus BRAVOLL - ZP (countersunk assembly) 	ETA-05/0009	ETA-04/0023

	Components	Coverage (kg/m ²)	Thickness (mm)
Insulation products with associated methods of fixing	- PTH-KZ 60/10-La , plastic nailed-in anchors alternatively with additional plate: IT PTH 100, IT PTH 140 (surface assembly)	ETA-08/0166	
	- BRAVOLL PTH-EX plastic nailed-in anchors alternatively with additional plate: IT PTH 100, IT PTH 140 (surface assembly)	ETA-13/0951	
	- KOELNER KI-10N plastic nailed-in anchors	ETA-07/0221	
	- KOELNER KI-10NS plastic screw-in anchors	ETA-07/0221	
	- KOELNER KI-10M plastic nailed-in anchors	ETA-07/0291	
	- KOELNER TFIX-8M plastic nailed-in anchors alternatively with additional plate: KWL 090 (surface assembly)	ETA-07/0336	
	- KOELNER TFIX-8S, TFIX-8ST plastic screwed-in anchors alternatively with additional plate: KWL 090	ETA-11/0144	
	- KOELNER TFIX-8P plastic nailed-in anchors	ETA-13/0845	
	- fischer termoz 8 SV plastic screwed-in anchors	ETA-06/0180	
	- fischer Schlagdübel TERMOFIX CF 8 plastic nailed-in anchors alternatively with additional plates: DT 90, 110, 140 N (surface assembly)	ETA-07/0287	
	- fischer termoz CN 8 plastic nailed-in anchors alternatively with additional plates: DT 90, 110, 140 N (surface assembly)	ETA-09/0394	
	- fischer termoz CS 8 plastic screwed-in anchors alternatively with additional plates: DT 90, 110, 140 N (surface assembly) DT 110 V (countersunk assembly)	ETA-14/0372	
	- fischer TERMOZ 8U, 8 UZ plastic screwed-in anchors	ETA-02/0019	
	- fischer Schlagdübel TERMOZ 8N, 8 NZ plastic nailed-in anchors	ETA-03/0019	
- Hilti SD-FV8 plastic nailed-in anchors	ETA-03/0028		

	Components	Coverage (kg/m ²)	Thickness (mm)
Insulation products with associated methods of fixing	- Hilti SDK-FV 8 plastic nailed-in anchors	ETA-07/0302	
	- Hilti XI-FV plastic gun-nailed anchors	ETA-03/0004	
	- Hilti SX-FV plastic screwed-in anchors	ETA-03/0005	
	- Hilti D-FV, D-FV T plastic screwed-in anchors	ETA-05/0039	
	- Wkret-met LFM 8 plastic nailed-in anchors alternatively with additional plate: TDX 90, TDX 140 (surface assembly)	ETA-06/0080	
	- Wkret-met LFM 10 plastic nailed-in anchors alternatively with additional plate: TDX 90, TDX 140 (surface assembly)	ETA-06/0105	
	- Wkret-met LMX 8 plastic nailed-in anchors alternatively with additional plate: TDX 90, TDX 140 (surface assembly)	ETA-09/0001	
	- Wkret-met LMX 10 plastic nailed-in anchors alternatively with additional plate: TDX 90, TDX 140 (surface assembly)	ETA-08/0172	
	- Wkret-met WK THERM ø 8 plastic nailed-in anchors alternatively with additional plate: TDX 90, TDX 140 (surface assembly)	ETA-11/0232	
	- Wkret-met eco drive plastic screw-in anchors	ETA-13/0107	
	- Wkret-met WK THERM S plastic screw-in anchors alternatively with additional plate: TDX 90, TDX 140 (surface assembly)	ETA-13/0724	
	- KEW TSD 8 plastic nailed-in anchors	ETA-04/0030	
	- Thermoschraubdübel KEW TSBD 8 plastic screwed-in anchors	ETA-08/0314	

	Components	Coverage (kg/m ²)	Thickness (mm)
Base coat	<ul style="list-style-type: none"> • REDArt Base Coat (cement based powder requiring addition of water 0.22 l/kg) • REDArt Base Coat Plus (cement based powder requiring addition of water 0.22 l/kg) 	<p>Approximately 4.0 to 6.0 (dry matter)</p> <p>Approximately 5.0 to 7.0 (dry matter)</p>	3.0 to 5.0
Reinforcement	<ul style="list-style-type: none"> • Standard mesh applied in one or two layers see Annex No. 15 for product characteristics: <ul style="list-style-type: none"> - AKE 145A / R 117 A101 - AKE 160 / R 131 A101 - 117S - 122 - SECCO E 145 - SECCO E 160 - REDNET E 145 - REDNET E 160 - Valmieras SSA-1363-160 - Vitrulan SD.4420G/55 	<p>one layer 1,1 - 1,2 m²/m²</p> <p>two layers 2,2 - 2,4 m²/m²</p>	/
Key coat	<ul style="list-style-type: none"> - REDArt Mineral Primer ready to use liquid, to be used under mineral, silicone and acrylic renderings - REDArt Silicone Primer ready to use liquid, to be used under silicone and mineral renderings - REDArt Silicate Primer ready to use liquid, to be used under silicate renderings 	0.35	/
Finishing coats	<ul style="list-style-type: none"> • Powder - mineral binder: (optionally provided with one of the protective paints including a relevant key coat) - REDArt Mineral Top Coat <ul style="list-style-type: none"> - spotted (particle size 2.0; 2.5; 3.0 mm) powder requiring addition of water 0.20 - 0.22 l/kg - drilled ribbed structure (particle size 2.0; 3.0 mm) powder requiring addition of water 0.20 - 0.22 l/kg - REDArt Mineral Smooth Top Coat powder requiring addition of water 0.22 – 0.28 l/kg 	<p>2.2 to 3.85</p> <p>2.2 to 3.5</p> <p>3.0 to 4.5</p>	<p>Regulated by particle size</p> <p>2.0 – 3.0</p>

	Components	Coverage (kg/m²)	Thickness (mm)
Finishing coats	<ul style="list-style-type: none"> • Ready to use paste - silicate binder: <ul style="list-style-type: none"> - REDArt Silicate Top Coat <ul style="list-style-type: none"> - spotted grain structure (particle size 1.0; 1.5; 2.0 mm) - drilled ribbed structure (particle size 2.0; 3.0 mm) 	1.7 to 3.5	Regulated by particle size
	<ul style="list-style-type: none"> - REDArt Silicate Top Coat <ul style="list-style-type: none"> - spotted grain structure (particle size 1.0; 1.5; 2.0 mm) - drilled ribbed structure (particle size 2.0; 3.0 mm) 	2.8 to 3.5	
	<ul style="list-style-type: none"> • Ready to use paste – silicone binder: <ul style="list-style-type: none"> - REDArt Silicone Top Coat <ul style="list-style-type: none"> - spotted grain structure (particle size 1.0; 1.5; 2.0 mm) - drilled ribbed structure (particle size 2.0; 3.0 mm) 	1.7 to 3.5	Regulated by particle size
<ul style="list-style-type: none"> - REDArt Silicone Top Coat <ul style="list-style-type: none"> - spotted grain structure (particle size 1.0; 1.5; 2.0 mm) - drilled ribbed structure (particle size 2.0; 3.0 mm) 	2.8 to 3.5		
	<ul style="list-style-type: none"> • Ready to use paste - acrylic binder: <ul style="list-style-type: none"> - REDArt Granite Top Coat mosaic structure (particle size 1.5 mm) 	3.5	Regulated by particle size
Key coats shall be used with protective coats	Only to be used with finishing coats REDArt Mineral Top Coat and REDArt Mineral Smooth Top Coat		
	<ul style="list-style-type: none"> - REDArt Silicate Paint Primer to be used under silicate protective coat ready to use liquid - REDArt Silicone Paint Primer to be used under silicone protective coat ready to use liquid 	0.08 - 0.10 (l/m ²) per layer	-
Protective coats	Only to be used with finishing coats REDArt Mineral Top Coat and REDArt Mineral Smooth Top Coat		
	<ul style="list-style-type: none"> - REDArt Silicate Paint silicate protective coat ready to use liquid, two layers, dilute up to 5 % of volume with REDArt Silicate Paint Primer - REDArt Silicone Paint silicone protective coat ready to use liquid. one or two layers, first layer to be diluted up to 10 % of volume with water 	0.10 - 0.20 (l/m ²) per layer	
Ancillary materials	Remain under the manufacturer's responsibility		

Composition of the ETICS with ROCKWOOL REDArt Masă de șpaclu product used as the base coat matter.

Table No. 2

	Components	Coverage (kg/m ²)	Thickness (mm)
Insulation products with associated methods of fixing	Mechanically fixed ETICS with anchors and supplementary adhesive (see Cl. 3.3.5 and Annex No. 14 for possible associations MW/anchors)		
	<ul style="list-style-type: none"> • Insulation product: MW according to EN 13162 See Annex No. 4 and 13 for product characteristics • Supplementary adhesive: <ul style="list-style-type: none"> - ROCKWOOL REDArt Adeziv (cement based powder requiring addition of water 0.20 - 0.22 l/kg) - ROCKWOOL REDArt Masă de șpaclu (cement based powder requiring addition of water 0.24 – 0.26 l/kg) • Anchors, see Table No. 1 	---	50 – 320
Base coat	- ROCKWOOL REDArt Masă de șpaclu (cement based powder requiring addition of water 0.24 – 0.26 l/kg)	4.0 – 6.0 (dry matter)	3.0 – 6.0
Reinforcement	<ul style="list-style-type: none"> • Standard mesh applied in one or two layers see Annex No. 15 for product characteristics: - AKE 160 / R 131 A101 - Vitrulan SD.4420G/55 	one layer 1,1-1,2 m ² /m ² two layers 2,2 - 2,4 m ² /m ²	---
Key coat	- ROCKWOOL REDArt Amorsă Siliconică pentru Tencuială Decorativă ready to use liquid, to be used under silicone renderings dilute with up to 10% of potable water	0.25 - 0.30 l/m ²	/
Finishing coats	<ul style="list-style-type: none"> • Silicone renderings ROCKWOOL REDArt Tencuială decorativă Siliconică Granulată <ul style="list-style-type: none"> - spotted - grain structure particle size (1.0, 1.5, 2.0 mm) ROCKWOOL REDArt Tencuială Decorativă Siliconică Structurată <ul style="list-style-type: none"> - drilled - ribbed structure particle size (1.5, 2.0, 2.5 mm) 	1.8 - 2.7 according to max. particle size 1.3 - 2.5 according to max. particle size	according to max. particle size
Ancillary materials	Remain under the manufacturer's responsibility		

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

2.1 Intended use

This ETICS is intended for use as external insulation of buildings' walls. The walls are made of masonry (bricks, blocks, stones ...) or concrete (cast on site or as prefabricated panels). The characteristics of the walls shall be verified prior to use of the ETICS, especially regarding conditions for reaction to fire classification and for fixing of the ETICS either by bonding or mechanically. The ETICS is designed to give the wall to which it is applied satisfactory thermal insulation.

The ETICS is made of non load-bearing construction elements. It does not contribute directly to the stability of the wall on which it is installed, but it can contribute to durability by providing enhanced protection from the effect of weathering.

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

The ETICS is not intended to ensure the airtightness of the building structure.

The choice of the method of fixing depends on the characteristics of the substrate, which may need preparation (see cl. 7.2.1 of the ETAG 004) and shall be done in accordance with the national instructions.

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

2.2 Manufacturing

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

2.3 Design and installation

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

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

2.4 Packaging, transport and storage

The information on packaging, transport and storage is given in the manufacturer's technical documentation. It is the responsibility of the manufacturer(s) to ensure that this information is made known 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,
- repairing of localized damaged areas due to accidents,
- the aspect maintenance with products adapted and compatible with the ETICS (possibly after washing or ad hoc preparation).

Necessary repairs should be performed as soon as the need has been identified.

It is important to be able to carry out maintenance as far as possible using readily available products and equipment, without spoiling appearance. Only products which are compatible with the ETICS shall be used.

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

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

The performances of the kit as described in this chapter are valid provided that the components of the kit comply with Annexes 2 - 15.

3.1 Safety in case of fire (BWR 2)

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

Table No. 3

Configuration	Organic content / heat of combustion	Flame retardant content	Euroclass according to EN 13501-1
Adhesive	- / Max 0.39 MJ/kg	No flame retardant	A2 – s1, d0
Panels of mineral wool (MW) Maximal density of 155 kg/m ³	In quantity ensuring Euroclass A1 or A2 according to 13501-1	/	
Base coat	- / Max 0.39 MJ/kg	No flame retardant	
Glass fibre mesh	- / Max 8.17 MJ/kg	No flame retardant	
Key coat for mineral, silicone and silicate finishing coats	- / max. 2.81 MJ/kg	No flame retardant	
Finishing coats with mineral binder Finishing coats with silicate binder Finishing coats with silicone binder	- / Max 2.47 MJ/kg	No flame retardant	
Key coats for protective coats	- / max. 32.71 MJ/kg	No flame retardant	
Protective coats	- / max. 4.21 MJ/kg	No flame retardant	
For use of finishing coat with acrylic binder REDArt Granite Top Coat	- / max. 2.71 MJ/kg	No flame retardant	B – s1, d0
For use of adhesive REDArt Adhesive Plus	-	-	F

Note: A European reference fire scenario has not been laid down for facades. In some Member States, the classification of ETICS according to EN 13501-1 might not be sufficient for the use in facades. An additional assessment of ETICS according to national provisions (e.g. on the basis of a large scale test) might be necessary to comply with Member State regulations, until the existing European classification system has been completed.

3.2 Hygiene, health and environment (BWR 3)

3.2.1 Water absorption (ETAG 004 - clause 5.1.3.1)

- Base coat **REDArt Base Coat, REDArt Base Coat Plus, ROCKWOOL REDArt Masă de șpaclu:**

Water absorption after 1 hour < 1 kg/m²

Water absorption after 24 hours < 0.5 kg/m²

- Rendering system:

Table No. 4

		Water absorption after 24 hours	
		< 0.5 kg/m ²	≥ 0.5 kg/m ²
Rendering system: Base coat REDArt Base Coat + finishing coats as indicated here:	REDArt Mineral Top Coat (spotted / drilled, including protective paint)	X	
	REDArt Mineral Smooth Top Coat (including protective paint)	X	
	REDArt Silicate Top Coat (spotted / drilled)		X
	REDArt Silicone Top Coat (spotted / drilled)	X	
	REDArt Granite Top Coat	X	
Rendering system: Base coat REDArt Base Coat Plus + finishing coats as indicated here:	REDArt Mineral Top Coat (spotted / drilled, including protective paint)	X	
	REDArt Mineral Smooth Top Coat (including protective paint)	X	
	REDArt Silicate Top Coat (spotted / drilled)	X	
	REDArt Silicone Top Coat (spotted / drilled)	X	
	REDArt Granite Top Coat	X	
Rendering system: Base coat ROCKWOOL REDArt Masă de șpaclu + finishing coats as indicated here:	ROCKWOOL REDArt Tencuială decorativă Siliconică (spotted / drilled)	X	

Note: No performance assessed for system's configurations with mineral based top coats - REDArt Mineral Top Coat / REDArt Mineral Smooth Top Coat without protective paint.

3.2.2 Watertightness (ETAG 004 - clause 5.1.3.2)

3.2.2.1 Hygrothermal behaviour

Pass (without defects).

3.2.2.2 Freeze–thaw behaviour

Pass (without defects).

3.2.3 Impact resistance (ETAG 004 - clause 5.1.3.3)

- **Insulation product MW lamella (perpendicular fibre) TR80, MW panel (longitudinal fibre) TR15, TR10, TR7.5, TR5**

Table No. 5

Render coating: Base coat REDArt Base Coat + reinforcement and finishing coats listed hereafter:	Single standard mesh	Double standard mesh
REDArt Mineral Top Coat (spotted / drilled, including protective paint)	Category II	Category II
REDArt Mineral Smooth Top Coat (including protective paint)	Category II	Category I
REDArt Silicate Top Coat (spotted / drilled)		
REDArt Silicone Top Coat (spotted / drilled)		
REDArt Granite Top Coat		

- **Insulation product MW lamella (perpendicular fibre) TR80**

Table No. 6

Render coating: Base coat REDArt Base Coat Plus + reinforcement and finishing coats listed hereafter:	Single standard mesh	Double standard mesh
REDArt Mineral Top Coat (spotted / drilled, including protective paint)	Category III	Category II
REDArt Mineral Smooth Top Coat (including protective paint)	Category II	
REDArt Silicate Top Coat (spotted / drilled)	Category II	Category I
REDArt Silicone Top Coat (spotted / drilled)	Category II	
REDArt Granite Top Coat	Category I	

Table No. 7

Render coating: Base coat ROCKWOOL REDArt Masă de șpaclu + reinforcement and finishing coats listed hereafter:	Single standard mesh	Double standard mesh
ROCKWOOL REDArt Tencuială decorative Siliconică (spotted / drilled)	No performance assessed	

- **Insulation product MW panel (longitudinal fibre) TR15, TR10, TR7.5**

Table No. 8

Render coating: Base coat REDArt Base Coat Plus + reinforcement and finishing coats listed hereafter:	Single standard mesh	Double standard mesh
REDArt Mineral Top Coat (spotted / drilled, including protective paint)	Category II	Category II
REDArt Mineral Smooth Top Coat (including protective paint)		
REDArt Silicate Top Coat (spotted / drilled)	Category II	Category I
REDArt Silicone Top Coat (spotted / drilled)	Category II	
REDArt Granite Top Coat	Category I	

- **Insulation product MW panel (longitudinal fibre) TR10, TR7.5**

Table No. 9

Render coating: Base coat ROCKWOOL REDArt Masă de șpaclu + reinforcement and finishing coats listed hereafter:	Single standard mesh	Double standard mesh
ROCKWOOL REDArt Tencuială decorative Siliconică (spotted / drilled)	Category III	Category II

- **Insulation product MW panel (longitudinal fibre) TR5**

Table No. 10

Render coating: Base coat REDArt Base Coat Plus + reinforcement and finishing coats listed hereafter:	Single standard mesh	Double standard mesh
REDArt Mineral Top Coat (spotted / drilled, including protective paint)	Category II	Category II
REDArt Mineral Smooth Top Coat (including protective paint)		
REDArt Silicate Top Coat (spotted / drilled)	Category I	Category I
REDArt Silicone Top Coat (spotted / drilled)		
REDArt Granite Top Coat		

Note: No performance assessed for system's configurations with mineral based top coats - REDArt Mineral Top Coat / REDArt Mineral Smooth Top Coat without protective paint.

3.2.4 Water vapour permeability (ETAG 004 - clause 5.1.3.4)

Table No. 11

Rendering system: base coat REDArt Base Coat + reinforcement and finishing coats indicated hereafter	Equivalent air layer thickness s_d	
	Single standard mesh	Double standard mesh
REDArt Mineral Top Coat (spotted / drilled, including protective paint)	≤ 0.16 m	≤ 0.25 m
REDArt Mineral Smooth Top Coat (including protective paint)	≤ 0.42 m	≤ 0.51 m
REDArt Silicate Top Coat (spotted / drilled)	≤ 0.13 m	≤ 0.34 m
REDArt Silicone Top Coat (spotted / drilled)	≤ 0.19 m	≤ 0.37 m
REDArt Granite Top Coat	≤ 0.37 m	≤ 0.42 m

Table No. 12

Rendering system: base coat REDArt Base Coat Plus + reinforcement and finishing coats indicated hereafter	Equivalent air layer thickness s_d	
	Single standard mesh	Double standard mesh
REDArt Mineral Top Coat (spotted / drilled, including protective paint)	≤ 0.30 m	≤ 0.35 m
REDArt Mineral Smooth Top Coat (including protective paint)	≤ 0.27 m	≤ 0.38 m
REDArt Silicate Top Coat (spotted / drilled)	≤ 0.33 m	≤ 0.40 m
REDArt Silicone Top Coat (spotted / drilled)	≤ 0.44 m	≤ 0.48 m
REDArt Granite Top Coat	≤ 0.51 m	≤ 0.61 m

Note: No performance assessed for system's configurations with mineral based top coats - REDArt Mineral Top Coat / REDArt Mineral Smooth Top Coat without protective paint.

Table No. 13

Render coating: ROCKWOOL REDArt Masă de șpaclu + reinforcement and finishing coats listed hereafter:	Equivalent air layer thickness s_d	
	Single standard mesh	Double standard mesh
ROCKWOOL REDArt Tencuială decorative Siliconică (spotted / drilled)	≤ 0.39 m	≤ 0.50 m

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

The kit was not assessed according EOTA TR 34.

3.3 Safety and accessibility in use (BWR 4)

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

With REDArt Base Coat or REDArt Base Coat Plus products used as base coat matter:

- Initial state: bond strength ≥ 0.023 MPa but a cohesive failure in the insulation product
- After hygrothermal cycles: bond strength ≥ 0.005 MPa but a cohesive failure in the insulation product
- After freeze-thaw cycles: test not required (see Cl. 3.2.2.2 of this ETA)

With ROCKWOOL REDArt Masă de șpaclu product used as base coat matter:

- Initial state: bond strength ≥ 0.011 MPa but a cohesive failure in the insulation product
- After hygrothermal cycles: bond strength ≥ 0.006 MPa but a cohesive failure in the insulation product
- After freeze-thaw cycles: test not required (see Cl. 3.2.2.2 of this ETA)

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

Table No. 14

		Initial state	48 hours immersion in water + 2 hours. 23°C/50% RH	48 hours immersion in water + 7 days 23°C/50% RH
REDArt Adhesive	Concrete	≥ 0.25 MPa	≥ 0.08 MPa	≥ 0.25 MPa
REDArt Adhesive Plus	MW lamella	≥ 0.08 MPa	≥ 0.03 MPa	≥ 0.08 MPa
REDArt Base Coat				
REDArt Base Coat Plus	MW board	< 0.08 MPa	< 0.03 MPa	< 0.08 MPa
ROCKWOOL REDArt Adeziv		Failure in thermal insulation product	Failure in thermal insulation product	Failure in thermal insulation product
ROCKWOOL REDArt Masă de șpaclu				

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

With REDArt Base Coat or REDArt Base Coat Plus products used as base coat matter:

- After ageing: bond strength ≥ 0.005 MPa but a cohesive failure in the insulation product
- After freeze-thaw cycles: bond strength ≥ 0.012 MPa but a cohesive failure in the insulation product

With ROCKWOOL REDArt Masă de șpaclu product used as base coat matter:

- After ageing: bond strength ≥ 0.006 MPa but a cohesive failure in the insulation product
- After freeze-thaw cycles After freeze-thaw cycles: test not required (see Cl. 3.2.2.2 of this ETA)

3.3.4 Fixing strength (ETAG 004 - clause 5.1.4.2)

Test not required (no limitation of ETICS length).

3.3.5 Wind load resistance (ETAG 004 - clause 5.1.4.3)

- Insulation product - MW board (TR15, monodensity)

Table No. 15

Anchor description	Trade name		See Annex No. 14			See Annex No. 14 plate stiffness ≥ 0.6
	Assembly		Surface assembly		Countersunk assembly	Special assembly (anchor through the mesh stripe of dim. 200 × 200 mm)
	Plate diameter (mm)		60 or more	60 or more	60 or more	
MW board characteristics (TR15, monodensity)	Thickness (mm)		≥ 50	≥ 100	≥ 100	≥ 50
	Tensile strength (kPa)				≥ 15	
Maximal load	Anchors placed at the body of the insulation product	R_{panel} in dry condition	min. value: 0.41 kN average value: 0.43 kN	min. value: 0.70 kN average value: 0.75 kN	min. value: 0.41 kN average value: 0.43 kN	min. value: 1.11 kN average value: 1.15 kN
		R_{panel} in wet condition	min. value: 0.35 kN average value: 0.37 kN	No performance assessed	min. value: 0.35 kN average value: 0.37 kN	No performance assessed
	Anchors placed at joints of the insulation product	R_{joint} in dry condition	min. value: 0.38 kN average value: 0.41 kN	min. value: 0.47 kN average value: 0.57 kN	min. value: 0.38 kN average value: 0.41 kN	No performance assessed
		R_{joint} in wet condition	min. value: 0.29 kN average value: 0.30 kN	No performance assessed	min. value: 0.29 kN average value: 0.30 kN	No performance assessed

- **Insulation product - MW board (TR10, monodensity)**

Table No. 16

Anchor description	Trade name		See Annex No. 14	
	Assembly		Surface assembly	Countersunk assembly (only monodensity products)
	Plate diameter (mm)		60 or more	
MW board characteristics (TR10, monodensity)	Thickness (mm)		≥ 40	≥ 100
	Tensile strength (kPa)		≥ 10	
Maximal load	Anchors placed at the body of the insulation product	R_{panel} in dry condition	min. value: 0.63 kN average value: 0.65 kN	
		R_{panel} in wet condition	min. value: 0.52 kN average value: 0.57 kN	
	Anchors placed at joints of the insulation product	R_{joint} in dry condition	min. value: 0.61 kN average value: 0.63 kN	
		R_{joint} in wet condition	min. value: 0.46 kN average value: 0.51 kN	

Table No. 17

Anchor description	Trade name		Anchors ejotherm STR U 2G with additional plate VT 2G	Anchors BRAVOLL PTH-S with additional plate ZT 100	Anchors Wkret-met eco- drive W
	Assembly		Countersunk assembly		
	Plate diameter (mm)		112.5	100	110
MW board characteristics (TR10, monodensity)	Thickness (mm)		≥ 100		
	Tensile strength (kPa)		≥ 10		
Maximal load	Anchors placed at the body of the insulation product	R_{panel} in dry condition	min. value: 1.20 kN average value: 1.31 kN	min. value: 1.11 kN average value: 1.16 kN	min. value: 1.18 kN average value: 1.28 kN
Maximal load	Anchors placed at the body of the insulation product	R_{panel} in wet condition	min. value: 1.10 kN average value: 1.21 kN	min. value: 0.86 kN average value: 0.93 kN	min. value: 0.94 kN average value: 1.09 kN
	Anchors placed at joints of the insulation product	R_{joint} in dry condition	min. value: 1.22 kN average value: 1.27 kN	min. value: 1.09 kN average value: 1.13 kN	min. value: 1.05 kN average value: 1.13 kN
		R_{joint} in wet condition	min. value: 1.00 kN average value: 1.07 kN	min. value: 0.75 kN average value: 0.91 kN	min. value: 0.80 kN average value: 1.07 kN

- **Insulation product - MW dual density panel (TR10, dual density)**

Table No. 18

Anchor description	Trade name		See Annex No. 14				
			plate stiffness ≥ 0.6		plate stiffness $\geq 0.3 < 0.6$		
	Assembly method		Surface assembly				
	Plate diameter (mm)		60 or more				
MW board characteristics (TR10, dual density)	Thickness (mm)		≥ 80	≥ 80	≥ 100		
	Tensile strength (kPa)		≥ 10				
Maximal load	Anchors placed at the body of the insulation product	R_{panel} in dry conditions	min. value: 0.47 kN mean value: 0.51 kN	min. value: 0.38 kN mean value: 0.41 kN	min. value: 0.40 kN mean value: 0.43 kN		
		R_{panel} in wet conditions	min. value: 0.26 kN mean value: 0.29 kN	No performance assessed			
	Anchors placed at joints of the insulation product	R_{joint} in dry conditions	min. value: 0.34 kN mean value: 0.39 kN	min. value: 0.40 kN mean value: 0.43 kN	min. value: 0.32 kN mean value: 0.37 kN	min. value: 0.29 kN mean value: 0.34 kN	
		R_{joint} in wet conditions	min. value: 0.20 kN mean value: 0.22 kN	No performance assessed			

Table No. 19

Anchor description	Trade name		Anchors EJOT with plate EJOT VT 90		Anchors BRAVOLL with plate IT PTH 100		Anchors BRAVOLL with plate IT PTH 140		Anchors Wkre-met WK THERM , WK THERM -S with plate TDX 90, TDX 140	
	Assembly		Surface assembly with additional plate							
	Plate diameter (mm)		90		100		140		≥ 90	
MW board characteristics (TR10, dual density)	Thickness (mm)		≥ 80		≥ 80		≥ 100		≥ 100	
	Tensile strength (kPa)		≥ 10							
Maximal load	Anchors placed at the body of the insulation product	R_{panel} in dry condition	min. value: 0.59 kN average value: 0.66 kN	min. value: 0.60 kN average value: 0.63 kN	min. value: 0.65 kN average value: 0.67 kN	min. value: 0.77 kN average value: 0.82 kN	min. value: 0.62 kN average value: 0.68 kN			
		R_{panel} in wet condition	min. value: 0.29 kN average value: 0.31 kN	min. value: 0.30 kN average value: 0.33 kN	No performance assessed	No performance assessed	No performance assessed			
	Anchors placed at joints of the insulation product	R_{joint} in dry condition	min. value: 0.48 kN average value: 0.51 kN	min. value: 0.51 kN average value: 0.52 kN	min. value: 0.44 kN average value: 0.53 kN	min. value: 0.59 kN average value: 0.69 kN	No performance assessed			
		R_{joint} in wet condition	min. value: 0.28 kN average value: 0.29 kN	min. value: 0.23 kN average value: 0.27 kN	No performance assessed	No performance assessed	No performance assessed			

Table No. 20

Anchor description	Trade name		Anchors ejothem STR U 2G, KOELNER TFIX-8ST	Anchors BRAVOLL PTH-S	Anchors fischer termoz 8 SV
	Assembly method		Countersunk assembly		
	Plate diameter (mm)		60		
MW board characteristics (TR10, dual density)	Thickness (mm)		≥ 100		
	Tensile strength (kPa)		≥ 10		
Maximal load	Anchors placed at the body of the insulation product	R_{panel} in dry conditions	min. value: 0.31 kN mean value: 0.36 kN	min. value: 0.27 kN mean value: 0.31 kN	min. value: 0.35 kN mean value: 0.37 kN
	Anchors placed at joints of the insulation product	R_{joint} in dry conditions	min. value: 0.33 kN mean value: 0.37 kN	min. value: 0.29 kN mean value: 0.35 kN	min. value: 0.31 kN mean value: 0.33 kN

Table No. 21

Anchor description	Trade name		Anchors ejothem STR U 2G with additional plate VT 2G	Anchors BRAVOLL PTH-S with additional plate ZT 100	Anchors Wkret-met eco-drive W	Anchors fischer termoz CS 8 with additional plate DT 110 V
	Assembly		Countersunk assembly			
	Plate diameter (mm)		112.5	100	110	110
characteristics MW board (TR10, dual density)	Thickness (mm)		≥ 100			
	Tensile strength (kPa)		≥ 10			
Maximal load	Anchors placed at the body of the insulation product	R_{panel} in dry condition	min. value: 0.80 kN average value: 0.84 kN	min. value: 0.67 kN average value: 0.72 kN	min. value: 0.82 kN average value: 0.89 kN	min. value: 0.60 kN average value: 0.76 kN
	Anchors placed at joints of the insulation product	R_{joint} in dry condition	min. value: 0.82 kN average value: 0.86 kN	min. value: 0.56 kN average value: 0.62 kN	No performance assessed	min. value: 0.50 kN average value: 0.66 kN

Table No. 22

Anchor description	Trade name		See Annex No. 14	
			plate stiffness ≥ 0.6	
	Assembly method		Special assembly (anchor applied through the mesh stripe of dim. 200 × 200 mm)	
	Plate diameter (mm)		60 or more	
MW board characteristics (TR10, dual density)	Thickness (mm)		≥ 80	≥ 100
	Tensile strength (kPa)		≥ 10	
Maximal load	Anchors placed at the body of the insulation product	R _{panel} in dry conditions	min. value: 1.09 kN mean value: 1.12 kN	No performance assessed
Maximal load		R _{panel} in wet conditions	No performance assessed	min. value: 1.42 kN mean value: 1.46 kN

- **Insulation product - MW board (TR7.5, dual density)**

Table No. 23

Anchor description	Trade name		See Annex No. 14	
	Assembly		Surface assembly	
	Plate diameter (mm)		60 or more	
MW board characteristics (TR7.5, dual density)	Thickness (mm)		≥ 60	≥ 80
	Tensile strength (kPa)		≥ 7.5	
Maximal load	Anchors placed at the body of the insulation product	R_{panel} in dry condition	min. value: 0.37 kN average value: 0.40 kN	min. value: 0.39 kN average value: 0.43 kN
		R_{panel} in wet condition	min. value: 0.31 kN average value: 0.33 kN	min. value: 0.32 kN average value: 0.34 kN
Maximal load	Anchors placed at joints of the insulation product	R_{joint} in dry condition	min. value: 0.35 kN average value: 0.36 kN	min. value: 0.35 kN average value: 0.38 kN
		R_{joint} in wet condition	min. value: 0.27 kN average value: 0.29 kN	min. value: 0.26 kN average value: 0.28 kN

Table No. 24

Anchor description	Trade name		Anchors ejotherm STR U 2G with additional plate VT 2G	Anchors BRAVOLL PTH-S with additional plate ZT 100	Anchors Wkret-met eco- drive W
	Assembly		Countersunk assembly		
	Plate diameter (mm)		112.5	100	110
MW board characteristics (TR7.5, dual density)	Thickness (mm)		≥ 100		
	Tensile strength (kPa)		≥ 7.5		
Maximal load	Anchors placed at the body of the insulation product	R _{panel} in dry condition	min. value: 0.75 kN average value: 1.07 kN	min. value: 0.78 kN average value: 0.92 kN	min. value: 0.92 kN average value: 1.09 kN
		R _{panel} in wet condition	min. value: 0.90 kN average value: 0.95 kN	min. value: 0.62 kN average value: 0.76 kN	min. value: 0.68 kN average value: 0.86 kN
	Anchors placed at joints of the insulation product	R _{joint} in dry condition	min. value: 0.77 kN average value: 0.95 kN	min. value: 0.68 kN average value: 0.81 kN	min. value: 0.79 kN average value: 0.90 kN
		R _{joint} in wet condition	min. value: 0.69 kN average value: 0.75 kN	min. value: 0.54 kN average value: 0.58 kN	min. value: 0.46 kN average value: 0.76 kN

- **Insulation product - MW board (TR5, dual density)**

Table No. 25

Anchor description	Trade name		See Annex No. 14
	Assembly		Surface assembly
	Plate diameter (mm)		60 or more
MW board characteristics (TR5, dual density)	Thickness (mm)		≥ 60
	Tensile strength (kPa)		≥ 5
Maximal load	Anchors placed at the body of the insulation product	R_{panel} in dry condition	min. value: 0.46 kN average value: 0.65 kN
		R_{panel} in wet condition	min. value: 0.35 kN average value: 0.40 kN
	Anchors placed at joints of the insulation product	R_{joint} in dry condition	min. value: 0.51 kN average value: 0.53 kN
		R_{joint} in wet condition	min. value: 0.23 kN average value: 0.26 kN

Table No. 26

Anchor description	Trade name		Anchors ejotherm STR U 2G with additional plate VT 2G	Anchors BRAVOLL PTH-S with additional plate ZT 100	Anchors Wkret-met eco- drive W
	Assembly		Countersunk assembly		
	Plate diameter (mm)		112.5	100	110
characteristics MW board (TR5, dual density)	Thickness (mm)		≥ 80		
	Tensile strength (kPa)		≥ 5		
Maximal load	Anchors placed at the body of the insulation product	R_{panel} in dry condition	min. value: 0.81 kN average value: 0.89 kN	min. value: 0.75 kN average value: 0.78 kN	min. value: 0.82 kN average value: 0.89 kN
		R_{panel} in wet condition	min. value: 0.56 kN average value: 0.75 kN	min. value: 0.47 kN average value: 0.53 kN	min. value: 0.41 kN average value: 0.58 kN
Maximal load	Anchors placed at joints of the insulation product	R_{joint} in dry condition	min. value: 0.66 kN average value: 0.79 kN	min. value: 0.48 kN average value: 0.55 kN	min. value: 0.51 kN average value: 0.60 kN
		R_{joint} in wet condition	min. value: 0.49 kN average value: 0.59 kN	min. value: 0.31 kN average value: 0.33 kN	min. value: 0.51 kN average value: 0.56 kN

- **Insulation product - MW board Frontrock MAX PLUS (TR5, dual density)**

Table No. 27

Anchor description	Trade name		See Annex No. 14	
			plate stiffness ≥ 0.6	
	Assembly	Surface assembly	Special assembly (anchor through the mesh stripe of dim. 200 × 200 mm)	
	Plate diameter (mm)		60 or more	
MW board characteristics Frontrock MAX PLUS (TR5, dual density)	Thickness (mm)		≥ 50	
	Tensile strength (kPa)		≥ 5	
Maximal load	Anchors placed at the body of the insulation product	R_{panel} in dry condition	min. value: 0.24 kN average value: 0.28 kN	min. value: 0.99 kN average value: 1.06 kN
		R_{panel} in wet condition	min. value: 0.20 kN average value: 0.21 kN	min. value: 0.87 kN average value: 0.93 kN
	Anchors placed at joints of the insulation product	R_{joint} in dry condition	min. value: 0.18 kN average value: 0.22 kN	min. value: 0.97 kN average value: 1.00 kN
		R_{joint} in wet condition	min. value: 0.13 kN average value: 0.16 kN	min. value: 0.84 kN average value: 0.90 kN

3.3.6 Render strip tensile test

- **Base coat REDArt Base Coat**

Table No. 28

		Glass fibre mesh AKE 145 A / R 117 A101 (manufacturer: SAINT-GOBAIN ADFORS CZ s.r.o.)					
		Crack width W_{typ} [mm]/ number of cracks at relative elongation ε					
Load direction		$\varepsilon = 0.3 \%$	$\varepsilon = 0.5 \%$	$\varepsilon = 0.8 \%$	$\varepsilon = 1.0 \%$	$\varepsilon = 1.5 \%$	$\varepsilon = 2.0 \%$
Warp	Sample No. 1	-	-	$\leq 0.05/1$	$\leq 0.05/4$	$\leq 0.05/5$	$\leq 0.05/8$
	Sample No. 2	-	-	$\leq 0.05/1$	$\leq 0.05/5$	$\leq 0.05/8$	$\leq 0.10/10$
	Sample No. 3	-	-	$\leq 0.05/1$	$\leq 0.05/5$	$\leq 0.05/7$	$\leq 0.10/9$
Weft	Sample No. 1	-	$\leq 0.05/1$	$\leq 0.05/1$	$\leq 0.05/5$	$\leq 0.05/8$	$\leq 0.10/10$
	Sample No. 2	-	$\leq 0.05/1$	$\leq 0.05/2$	$\leq 0.05/4$	$\leq 0.05/6$	$\leq 0.10/11$
	Sample No. 3	-	$\leq 0.05/2$	$\leq 0.05/3$	$\leq 0.05/6$	$\leq 0.105/6$	$\leq 0.10/11$

Table No. 29

		Glass fibre mesh AKE 160 / R 131 A101 (manufacturer: SAINT-GOBAIN ADFORS CZ s.r.o.)					
		Crack width W_{typ} [mm]/ number of cracks at relative elongation ε					
Load direction		$\varepsilon = 0.3 \%$	$\varepsilon = 0.5 \%$	$\varepsilon = 0.8 \%$	$\varepsilon = 1.0 \%$	$\varepsilon = 1.5 \%$	$\varepsilon = 2.0 \%$
Warp	Sample No. 1	-	-	$\leq 0.05/2$	$\leq 0.05/3$	$\leq 0.05/5$	$\leq 0.05/7$
	Sample No. 2	-	-	$\leq 0.05/3$	$\leq 0.05/5$	$\leq 0.05/7$	$\leq 0.05/10$
	Sample No. 3	-	-	$\leq 0.05/2$	$\leq 0.05/4$	$\leq 0.05/6$	$\leq 0.05/8$
Weft	Sample No. 1	-	$\leq 0.05/4$	$\leq 0.05/7$	$\leq 0.05/7$	$\leq 0.05/7$	$\leq 0.05/11$
	Sample No. 2	-	$\leq 0.05/2$	$\leq 0.05/5$	$\leq 0.05/5$	$\leq 0.05/7$	$\leq 0.05/12$
	Sample No. 3	-	$\leq 0.05/3$	$\leq 0.05/7$	$\leq 0.05/7$	$\leq 0.05/8$	$\leq 0.05/12$

Table No. 30

		Glass fibre mesh 117 S (manufacturer: Technical Textiles, s.r.o.)					
		Crack width W_{typ} [mm]/ number of cracks at relative elongation ε					
Load direction		$\varepsilon = 0.3 \%$	$\varepsilon = 0.5 \%$	$\varepsilon = 0.8 \%$	$\varepsilon = 1.0 \%$	$\varepsilon = 1.5 \%$	$\varepsilon = 2.0 \%$
Warp	Sample No. 1	-	-	$\leq 0.05/4$	$\leq 0.05/5$	$\leq 0.05/7$	$\leq 0.10/8$
	Sample No. 2	-	$\leq 0.05/3$	$\leq 0.05/3$	$\leq 0.05/4$	$\leq 0.05/6$	$\leq 0.10/6$
	Sample No. 3	-	$\leq 0.05/2$	$\leq 0.05/4$	$\leq 0.05/4$	$\leq 0.05/6$	$\leq 0.10/7$
Weft	Sample No. 1	-	$\leq 0.05/3$	$\leq 0.10/3$	$\leq 0.10/5$	$\leq 0.10/5$	$\leq 0.15/7$
	Sample No. 2	-	$\leq 0.05/3$	$\leq 0.05/3$	$\leq 0.10/4$	$\leq 0.10/5$	$\leq 0.10/7$
	Sample No. 3	-	$\leq 0.05/3$	$\leq 0.05/3$	$\leq 0.10/4$	$\leq 0.10/5$	$\leq 0.10/6$

Table No. 31

		Glass fibre mesh 122 (manufacturer: Technical Textiles, s.r.o.)					
		Crack width W_{typ} [mm]/ number of cracks at relative elongation ε					
Load direction		$\varepsilon = 0.3 \%$	$\varepsilon = 0.5 \%$	$\varepsilon = 0.8 \%$	$\varepsilon = 1.0 \%$	$\varepsilon = 1.5 \%$	$\varepsilon = 2.0 \%$
Warp	Sample No. 1	-	$\leq 0.05/1$	$\leq 0.05/4$	$\leq 0.05/4$	$\leq 0.05/6$	$\leq 0.05/9$
	Sample No. 2	-	-	$\leq 0.05/2$	$\leq 0.05/3$	$\leq 0.05/5$	$\leq 0.05/7$
	Sample No. 3	-	-	$\leq 0.05/3$	$\leq 0.05/3$	$\leq 0.05/6$	$\leq 0.05/8$
Weft	Sample No. 1	-	$\leq 0.05/2$	$\leq 0.05/2$	$\leq 0.05/4$	$\leq 0.10/5$	$\leq 0.10/6$
	Sample No. 2	-	$\leq 0.05/1$	$\leq 0.05/1$	$\leq 0.05/2$	$\leq 0.10/4$	$\leq 0.10/5$
	Sample No. 3	-	$\leq 0.05/2$	$\leq 0.05/2$	$\leq 0.05/3$	$\leq 0.10/5$	$\leq 0.10/5$

Table No. 32

		SECCO E 145 (manufacturer: ASGLATEX Ohorn GmbH)					
		Crack width W_{typ} [mm]/ number of cracks at relative elongation ε					
Load direction		$\varepsilon = 0.3 \%$	$\varepsilon = 0.5 \%$	$\varepsilon = 0.8 \%$	$\varepsilon = 1.0 \%$	$\varepsilon = 1.5 \%$	$\varepsilon = 2.0 \%$
Warp	Sample No. 1	$\leq 0.05/1$	$\leq 0.05/2$	$\leq 0.05/5$	$\leq 0.05/10$	$\leq 0.05/11$ $\leq 0.10/3$	$\leq 0.05/12$ $\leq 0.10/3$
	Sample No. 2	$\leq 0.05/1$	$\leq 0.05/3$	$\leq 0.05/7$	$\leq 0.05/11$ $\leq 0.10/1$	$\leq 0.05/13$ $\leq 0.10/2$	$\leq 0.05/14$ $\leq 0.10/4$
	Sample No. 3	$\leq 0.05/2$	$\leq 0.05/3$	$\leq 0.05/6$	$\leq 0.05/9$	$\leq 0.05/12$ $\leq 0.10/2$	$\leq 0.05/13$ $\leq 0.10/3$
Weft	Sample No. 1	$\leq 0.05/1$	$\leq 0.05/3$	$\leq 0.05/7$	$\leq 0.05/11$ $\leq 0.10/2$	$\leq 0.05/13$ $\leq 0.10/3$	$\leq 0.05/15$ $\leq 0.10/3$
	Sample No. 2	$\leq 0.05/2$	$\leq 0.05/6$	$\leq 0.05/9$ $\leq 0.10/1$	$\leq 0.05/12$ $\leq 0.10/2$	$\leq 0.05/13$ $\leq 0.10/2$	$\leq 0.05/16$ $\leq 0.10/3$
	Sample No. 3	-	$\leq 0.05/4$	$\leq 0.05/7$	$\leq 0.05/11$ $\leq 0.10/2$	$\leq 0.05/14$ $\leq 0.10/3$	$\leq 0.05/17$ $\leq 0.10/2$ $\leq 0.15/1$

Table No. 33

		SECCO E 160 (manufacturer: ASGLATEX Ohorn GmbH)					
		Crack width W_{typ} [mm]/ number of cracks at relative elongation ε					
Load direction		$\varepsilon = 0.3 \%$	$\varepsilon = 0.5 \%$	$\varepsilon = 0.8 \%$	$\varepsilon = 1.0 \%$	$\varepsilon = 1.5 \%$	$\varepsilon = 2.0 \%$
Warp	Sample No. 1	$\leq 0.05/1$	$\leq 0.05/2$	$\leq 0.05/4$	$\leq 0.05/7$ $\leq 0.10/2$	$\leq 0.05/11$ $\leq 0.10/3$	$\leq 0.05/13$ $\leq 0.10/3$
	Sample No. 2	$\leq 0.05/1$	$\leq 0.05/3$	$\leq 0.05/5$	$\leq 0.05/6$	$\leq 0.05/13$ $\leq 0.10/2$	$\leq 0.05/15$ $\leq 0.10/3$
	Sample No. 3	-	$\leq 0.05/1$	$\leq 0.05/5$	$\leq 0.05/8$ $\leq 0.10/1$	$\leq 0.05/13$ $\leq 0.10/2$	$\leq 0.05/13$ $\leq 0.10/4$
Weft	Sample No. 1	-	$\leq 0.05/1$	$\leq 0.05/4$	$\leq 0.05/6$ $\leq 0.10/1$	$\leq 0.05/8$ $\leq 0.10/2$	$\leq 0.05/11$ $\leq 0.10/3$
	Sample No. 2	-	$\leq 0.05/2$	$\leq 0.05/6$	$\leq 0.05/8$	$\leq 0.05/9$ $\leq 0.10/1$	$\leq 0.05/12$ $\leq 0.10/2$
	Sample No. 3	$\leq 0.05/1$	$\leq 0.05/3$	$\leq 0.05/6$	$\leq 0.05/8$	$\leq 0.05/10$ $\leq 0.10/1$	$\leq 0.05/13$ $\leq 0.10/2$

Table No. 34

		REDNET E 145 (manufacturer: ASGLATEX Ohorn GmbH)					
		Crack width W_{typ} [mm]/ number of cracks at relative elongation ϵ					
Load direction		$\epsilon = 0.3 \%$	$\epsilon = 0.5 \%$	$\epsilon = 0.8 \%$	$\epsilon = 1.0 \%$	$\epsilon = 1.5 \%$	$\epsilon = 2.0 \%$
Warp	Sample No. 1	$\leq 0.05/1$	$\leq 0.05/2$	$\leq 0.05/5$	$\leq 0.05/10$	$\leq 0.05/11$ $\leq 0.10/3$	$\leq 0.05/12$ $\leq 0.10/3$
	Sample No. 2	$\leq 0.05/1$	$\leq 0.05/3$	$\leq 0.05/7$	$\leq 0.05/11$ $\leq 0.10/1$	$\leq 0.05/13$ $\leq 0.10/2$	$\leq 0.05/14$ $\leq 0.10/4$
	Sample No. 3	$\leq 0.05/2$	$\leq 0.05/3$	$\leq 0.05/6$	$\leq 0.05/9$	$\leq 0.05/12$ $\leq 0.10/2$	$\leq 0.05/13$ $\leq 0.10/3$
Weft	Sample No. 1	$\leq 0.05/1$	$\leq 0.05/3$	$\leq 0.05/7$	$\leq 0.05/11$ $\leq 0.10/2$	$\leq 0.05/13$ $\leq 0.10/3$	$\leq 0.05/15$ $\leq 0.10/3$
	Sample No. 2	$\leq 0.05/2$	$\leq 0.05/6$	$\leq 0.05/9$ $\leq 0.10/1$	$\leq 0.05/12$ $\leq 0.10/2$	$\leq 0.05/13$ $\leq 0.10/2$	$\leq 0.05/16$ $\leq 0.10/3$
	Sample No. 3	-	$\leq 0.05/4$	$\leq 0.05/7$	$\leq 0.05/11$ $\leq 0.10/2$	$\leq 0.05/14$ $\leq 0.10/3$	$\leq 0.05/17$ $\leq 0.10/2$ $\leq 0.15/1$

Table No. 35

		REDNET E 160 (manufacturer: ASGLATEX Ohorn GmbH)					
		Crack width W_{typ} [mm]/ number of cracks at relative elongation ϵ					
Load direction		$\epsilon = 0.3 \%$	$\epsilon = 0.5 \%$	$\epsilon = 0.8 \%$	$\epsilon = 1.0 \%$	$\epsilon = 1.5 \%$	$\epsilon = 2.0 \%$
Warp	Sample No. 1	$\leq 0.05/1$	$\leq 0.05/2$	$\leq 0.05/4$	$\leq 0.05/7$ $\leq 0.10/2$	$\leq 0.05/11$ $\leq 0.10/3$	$\leq 0.05/13$ $\leq 0.10/3$
	Sample No. 2	$\leq 0.05/1$	$\leq 0.05/3$	$\leq 0.05/5$	$\leq 0.05/6$	$\leq 0.05/13$ $\leq 0.10/2$	$\leq 0.05/15$ $\leq 0.10/3$
	Sample No. 3	-	$\leq 0.05/1$	$\leq 0.05/5$	$\leq 0.05/8$ $\leq 0.10/1$	$\leq 0.05/13$ $\leq 0.10/2$	$\leq 0.05/13$ $\leq 0.10/4$
Weft	Sample No. 1	-	$\leq 0.05/1$	$\leq 0.05/4$	$\leq 0.05/6$ $\leq 0.10/1$	$\leq 0.05/8$ $\leq 0.10/2$	$\leq 0.05/11$ $\leq 0.10/3$
	Sample No. 2	-	$\leq 0.05/2$	$\leq 0.05/6$	$\leq 0.05/8$	$\leq 0.05/9$ $\leq 0.10/1$	$\leq 0.05/12$ $\leq 0.10/2$
	Sample No. 3	$\leq 0.05/1$	$\leq 0.05/3$	$\leq 0.05/6$	$\leq 0.05/8$	$\leq 0.05/10$ $\leq 0.10/1$	$\leq 0.05/13$ $\leq 0.10/2$

Table No. 36

		Glass fibre mesh Valmieras SSA-1363-160 (manufacturer: JSC Valmieras Stikla Šķiedra)					
		Crack width W_{typ} [mm]/ number of cracks at relative elongation ε					
Load direction		$\varepsilon = 0.3 \%$	$\varepsilon = 0.5 \%$	$\varepsilon = 0.8 \%$	$\varepsilon = 1.0 \%$	$\varepsilon = 1.5 \%$	$\varepsilon = 2.0 \%$
Warp	Sample No. 1	$\leq 0.05/3$	$\leq 0.05/4$	$\leq 0.05/7$	$\leq 0.05/8$ $\leq 0.10/1$	$\leq 0.05/9$ $\leq 0.10/3$	$\leq 0.05/10$ $\leq 0.10/4$
	Sample No. 2	$\leq 0.05/1$	$\leq 0.05/3$	$\leq 0.05/5$ $\leq 0.10/1$	$\leq 0.05/7$ $\leq 0.10/3$	$\leq 0.05/9$ $\leq 0.10/3$ $\leq 0.15/1$	$\leq 0.05/10$ $\leq 0.10/4$ $\leq 0.15/1$
	Sample No. 3	-	$\leq 0.05/1$	$\leq 0.05/6$	$\leq 0.05/7$ $\leq 0.10/1$	$\leq 0.05/11$ $\leq 0.10/3$	$\leq 0.05/14$ $\leq 0.10/5$ $\leq 0.15/1$
Weft	Sample No. 1	$\leq 0.05/1$	$\leq 0.05/3$	$\leq 0.05/5$	$\leq 0.05/6$ $\leq 0.10/3$	$\leq 0.05/9$ $\leq 0.10/4$	$\leq 0.05/13$ $\leq 0.10/3$
	Sample No. 2	-	$\leq 0.05/2$	$\leq 0.05/5$	$\leq 0.05/7$	$\leq 0.05/11$ $\leq 0.10/2$	$\leq 0.05/15$ $\leq 0.10/3$
	Sample No. 3	$\leq 0.05/2$	$\leq 0.05/4$	$\leq 0.05/7$	$\leq 0.05/9$	$\leq 0.05/11$	$\leq 0.05/15$ $\leq 0.10/2$

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

Table No. 37

	Characteristic width of cracks W_{rk} [mm] at render strain value of 0.8%	
	Warp direction	Weft direction
AKE 145A / R117 A101	0.050	0.050
AKE 160 / R131 A101	0.050	0.050
117S	0.050	0.145
122	0.050	0.050
SECCO E 145	0.050	0.085
SECCO E 160	0.050	0.050
REDNET E 145	0.050	0.085
REDNET E 160	0.050	0.050
Valmieras SSA-1363-160	0.089	0.050

- **Base coat REDArt Base Coat Plus**

Table No. 38

		Glass fibre mesh AKE 145A / R 117 A101 (manufacturer: SAINT-GOBAIN ADFORS CZ s.r.o.)					
		Crack width W_{typ} [mm]/ number of cracks at relative elongation ε					
Load direction		$\varepsilon = 0.3 \%$	$\varepsilon = 0.5 \%$	$\varepsilon = 0.8 \%$	$\varepsilon = 1.0 \%$	$\varepsilon = 1.5 \%$	$\varepsilon = 2.0 \%$
Warp	Sample No. 1	$\leq 0.05/1$	$\leq 0.05/4$	$\leq 0.05/5$	$\leq 0.05/8$	$\leq 0.05/15$ $\leq 0.10/2$	$\leq 0.05/15$ $\leq 0.10/2$ $\leq 0.15/1$
	Sample No. 2	$\leq 0.05/3$	$\leq 0.05/3$	$\leq 0.05/4$	$\leq 0.05/7$ $\leq 0.10/1$	$\leq 0.05/12$ $\leq 0.10/4$ $\leq 0.15/1$	$\leq 0.05/13$ $\leq 0.10/5$ $\leq 0.15/2$
	Sample No. 3	$\leq 0.05/2$	$\leq 0.05/4$	$\leq 0.05/5$	$\leq 0.05/8$ $\leq 0.10/1$	$\leq 0.05/14$ $\leq 0.10/3$	$\leq 0.05/12$ $\leq 0.10/4$ $\leq 0.15/3$
Weft	Sample No. 1	$\leq 0.05/2$	$\leq 0.05/3$	$\leq 0.05/10$	$\leq 0.05/12$	$\leq 0.05/18$ $\leq 0.10/5$	$\leq 0.05/20$ $\leq 0.10/4$ $\leq 0.15/3$
	Sample No. 2	$\leq 0.05/1$	$\leq 0.05/3$	$\leq 0.05/8$	$\leq 0.05/11$	$\leq 0.05/17$ $\leq 0.10/3$ $\leq 0.15/1$	$\leq 0.05/19$ $\leq 0.10/5$ $\leq 0.15/5$
	Sample No. 3	$\leq 0.05/2$	$\leq 0.05/3$	$\leq 0.05/9$	$\leq 0.05/12$	$\leq 0.05/18$ $\leq 0.10/2$ $\leq 0.15/1$	$\leq 0.05/20$ $\leq 0.10/3$ $\leq 0.15/4$

Table No. 39

		Glass fibre mesh AKE 160 / R 131 A101 (manufacturer: SAINT-GOBAIN ADFORS CZ s.r.o.)					
		Crack width W_{typ} [mm]/ number of cracks at relative elongation ε					
Load direction		$\varepsilon = 0.3 \%$	$\varepsilon = 0.5 \%$	$\varepsilon = 0.8 \%$	$\varepsilon = 1.0 \%$	$\varepsilon = 1.5 \%$	$\varepsilon = 2.0 \%$
Warp	Sample No. 1	-	-	$\leq 0.05/7$	$\leq 0.05/8$	$\leq 0.05/18$	$\leq 0.05/25$
	Sample No. 2	-	-	$\leq 0.05/8$	$\leq 0.05/9$	$\leq 0.05/19$	$\leq 0.05/26$
	Sample No. 3	-	-	$\leq 0.05/8$	$\leq 0.05/9$	$\leq 0.05/20$	$\leq 0.05/26$
Weft	Sample No. 1	$\leq 0.05/6$	$\leq 0.05/6$	$\leq 0.05/10$	$\leq 0.05/11$ $\leq 0.10/3$	$\leq 0.05/15$ $\leq 0.10/6$	$\leq 0.05/18$ $\leq 0.10/6$
	Sample No. 2	$\leq 0.05/7$	$\leq 0.05/7$	$\leq 0.05/11$	$\leq 0.05/10$ $\leq 0.10/2$	$\leq 0.05/16$ $\leq 0.10/5$	$\leq 0.05/17$ $\leq 0.10/5$
	Sample No. 3	$\leq 0.05/5$	$\leq 0.05/6$	$\leq 0.05/10$	$\leq 0.05/12$ $\leq 0.10/1$	$\leq 0.05/15$ $\leq 0.10/7$	$\leq 0.05/16$ $\leq 0.10/7$

Table No. 40

		Glass fibre mesh 117 S (manufacturer: Technical Textiles, s.r.o.)					
		Crack width W_{typ} [mm]/ number of cracks at relative elongation ε					
Load direction		$\varepsilon = 0.3 \%$	$\varepsilon = 0.5 \%$	$\varepsilon = 0.8 \%$	$\varepsilon = 1.0 \%$	$\varepsilon = 1.5 \%$	$\varepsilon = 2.0 \%$
Warp	Sample No. 1	$\leq 0.05/4$	$\leq 0.05/6$	$\leq 0.05/9$	$\leq 0.05/10$	$\leq 0.05/28$ $\leq 0.10/2$	$\leq 0.05/26$ $\leq 0.10/4$
	Sample No. 2	$\leq 0.05/3$	$\leq 0.05/4$	$\leq 0.05/10$	$\leq 0.05/12$	$\leq 0.05/25$ $\leq 0.10/1$	$\leq 0.05/25$ $\leq 0.10/3$
	Sample No. 3	$\leq 0.05/2$	$\leq 0.05/4$	$\leq 0.05/10$	$\leq 0.05/11$	$\leq 0.05/23$ $\leq 0.10/1$	$\leq 0.05/24$ $\leq 0.10/2$
Weft	Sample No. 1	$\leq 0.05/0$	$\leq 0.05/2$	$\leq 0.05/4$	$\leq 0.05/6$	$\leq 0.05/23$	$\leq 0.05/23$
	Sample No. 2	$\leq 0.05/1$	$\leq 0.05/2$	$\leq 0.05/3$	$\leq 0.05/7$	$\leq 0.05/24$	$\leq 0.05/24$
	Sample No. 3	$\leq 0.05/1$	$\leq 0.05/1$	$\leq 0.05/4$	$\leq 0.05/6$	$\leq 0.05/22$	$\leq 0.05/23$

Table No. 41

		Glass fibre mesh 122 (manufacturer: Technical Textiles, s.r.o.)					
		Crack width W_{typ} [mm]/ number of cracks at relative elongation ε					
Load direction		$\varepsilon = 0.3 \%$	$\varepsilon = 0.5 \%$	$\varepsilon = 0.8 \%$	$\varepsilon = 1.0 \%$	$\varepsilon = 1.5 \%$	$\varepsilon = 2.0 \%$
Warp	Sample No. 1	$\leq 0.05/6$	$\leq 0.05/7$	$\leq 0.05/12$	$\leq 0.05/16$ $\leq 0.10/2$	$\leq 0.05/22$ $\leq 0.10/3$	$\leq 0.05/27$ $\leq 0.10/4$
	Sample No. 2	$\leq 0.05/5$	$\leq 0.05/6$	$\leq 0.05/10$	$\leq 0.05/15$ $\leq 0.10/3$	$\leq 0.05/24$ $\leq 0.10/3$	$\leq 0.05/25$ $\leq 0.10/5$
	Sample No. 3	$\leq 0.05/6$	$\leq 0.05/6$	$\leq 0.05/8$	$\leq 0.05/14$	$\leq 0.05/25$	$\leq 0.05/26$
Weft	Sample No. 1	$\leq 0.05/1$	$\leq 0.05/6$	$\leq 0.05/7$	$\leq 0.05/8$	$\leq 0.05/18$ $\leq 0.10/4$	$\leq 0.05/19$ $\leq 0.10/5$
	Sample No. 2	$\leq 0.05/2$	$\leq 0.05/5$	$\leq 0.05/8$	$\leq 0.05/9$	$\leq 0.05/17$ $\leq 0.10/5$	$\leq 0.05/18$ $\leq 0.10/6$
	Sample No. 3	$\leq 0.05/2$	$\leq 0.05/6$	$\leq 0.05/8$	$\leq 0.05/9$	$\leq 0.05/18$ $\leq 0.10/4$	$\leq 0.05/19$ $\leq 0.10/4$

Table No. 42

		SECCO E 145 (manufacturer: ASGLATEX Ohorn GmbH)					
		Crack width W_{typ} [mm]/ number of cracks at relative elongation ε					
Load direction		$\varepsilon = 0.3 \%$	$\varepsilon = 0.5 \%$	$\varepsilon = 0.8 \%$	$\varepsilon = 1.0 \%$	$\varepsilon = 1.5 \%$	$\varepsilon = 2.0 \%$
Warp	Sample No. 1	$\leq 0.05/3$	$\leq 0.05/6$	$\leq 0.05/13$	$\leq 0.05/17$ $\leq 0.10/3$	$\leq 0.05/18$ $\leq 0.10/4$	$\leq 0.05/20$ $\leq 0.10/4$ $\leq 0.15/1$
	Sample No. 2	$\leq 0.05/4$	$\leq 0.05/8$	$\leq 0.05/15$	$\leq 0.05/19$ $\leq 0.10/3$	$\leq 0.05/21$ $\leq 0.10/3$ $\leq 0.15/1$	$\leq 0.05/24$ $\leq 0.10/3$ $\leq 0.15/2$
	Sample No. 3	$\leq 0.05/4$	$\leq 0.05/7$	$\leq 0.05/16$	$\leq 0.05/20$ $\leq 0.10/4$	$\leq 0.05/22$ $\leq 0.10/3$ $\leq 0.15/2$	$\leq 0.05/23$ $\leq 0.10/4$ $\leq 0.15/2$
Weft	Sample No. 1	$\leq 0.05/6$	$\leq 0.05/8$	$\leq 0.05/12$ $\leq 0.10/2$	$\leq 0.05/12$ $\leq 0.10/3$	$\leq 0.05/19$ $\leq 0.10/6$	$\leq 0.05/20$ $\leq 0.10/8$
	Sample No. 2	$\leq 0.05/5$	$\leq 0.05/7$	$\leq 0.05/12$ $\leq 0.10/1$	$\leq 0.05/12$ $\leq 0.10/2$	$\leq 0.05/19$ $\leq 0.10/7$	$\leq 0.05/20$ $\leq 0.10/6$
	Sample No. 3	$\leq 0.05/5$	$\leq 0.05/8$	$\leq 0.05/12$ $\leq 0.10/2$	$\leq 0.05/13$ $\leq 0.10/2$	$\leq 0.05/18$ $\leq 0.10/5$	$\leq 0.05/20$ $\leq 0.10/8$

Table No. 43

		SECCO E 160 (manufacturer: ASGLATEX Ohorn GmbH)					
		Crack width W_{typ} [mm]/ number of cracks at relative elongation ε					
Load direction		$\varepsilon = 0.3 \%$	$\varepsilon = 0.5 \%$	$\varepsilon = 0.8 \%$	$\varepsilon = 1.0 \%$	$\varepsilon = 1.5 \%$	$\varepsilon = 2.0 \%$
Warp	Sample No. 1	-	$\leq 0.05/6$	$\leq 0.05/12$	$\leq 0.05/12$	$\leq 0.05/22$ $\leq 0.10/2$	$\leq 0.05/23$ $\leq 0.10/3$
	Sample No. 2	-	$\leq 0.05/6$	$\leq 0.05/13$	$\leq 0.05/11$	$\leq 0.05/21$ $\leq 0.10/3$	$\leq 0.05/23$ $\leq 0.10/3$
	Sample No. 3	-	$\leq 0.05/5$	$\leq 0.05/11$	$\leq 0.05/12$	$\leq 0.05/22$ $\leq 0.10/1$	$\leq 0.05/22$ $\leq 0.10/4$
Weft	Sample No. 1	$\leq 0.05/4$	$\leq 0.05/7$	$\leq 0.05/12$	$\leq 0.05/13$	$\leq 0.05/13$ $\leq 0.10/2$ $\leq 0.15/3$	$\leq 0.05/12$ $\leq 0.10/3$ $\leq 0.15/4$
	Sample No. 2	$\leq 0.05/4$	$\leq 0.05/7$	$\leq 0.05/11$	$\leq 0.05/12$	$\leq 0.05/12$ $\leq 0.10/1$ $\leq 0.15/2$	$\leq 0.05/13$ $\leq 0.10/2$ $\leq 0.15/3$
	Sample No. 3	$\leq 0.05/4$	$\leq 0.05/8$	$\leq 0.05/12$	$\leq 0.05/14$	$\leq 0.05/13$ $\leq 0.10/1$ $\leq 0.15/3$	$\leq 0.05/12$ $\leq 0.10/4$ $\leq 0.15/2$

Table No. 44

		REDNET E 145 (manufacturer: ASGLATEX Ohorn GmbH)					
		Crack width W_{typ} [mm]/ number of cracks at relative elongation ε					
Load direction		$\varepsilon = 0.3 \%$	$\varepsilon = 0.5 \%$	$\varepsilon = 0.8 \%$	$\varepsilon = 1.0 \%$	$\varepsilon = 1.5 \%$	$\varepsilon = 2.0 \%$
Warp	Sample No. 1	$\leq 0.05/3$	$\leq 0.05/6$	$\leq 0.05/13$	$\leq 0.05/17$ $\leq 0.10/3$	$\leq 0.05/18$ $\leq 0.10/4$	$\leq 0.05/20$ $\leq 0.10/4$ $\leq 0.15/1$
	Sample No. 2	$\leq 0.05/4$	$\leq 0.05/8$	$\leq 0.05/15$	$\leq 0.05/19$ $\leq 0.10/3$	$\leq 0.05/21$ $\leq 0.10/3$ $\leq 0.15/1$	$\leq 0.05/24$ $\leq 0.10/3$ $\leq 0.15/2$
	Sample No. 3	$\leq 0.05/4$	$\leq 0.05/7$	$\leq 0.05/16$	$\leq 0.05/20$ $\leq 0.10/4$	$\leq 0.05/22$ $\leq 0.10/3$ $\leq 0.15/2$	$\leq 0.05/23$ $\leq 0.10/4$ $\leq 0.15/2$
Weft	Sample No. 1	$\leq 0.05/6$	$\leq 0.05/8$	$\leq 0.05/12$ $\leq 0.10/2$	$\leq 0.05/12$ $\leq 0.10/3$	$\leq 0.05/19$ $\leq 0.10/6$	$\leq 0.05/20$ $\leq 0.10/8$
	Sample No. 2	$\leq 0.05/5$	$\leq 0.05/7$	$\leq 0.05/12$ $\leq 0.10/1$	$\leq 0.05/12$ $\leq 0.10/2$	$\leq 0.05/19$ $\leq 0.10/7$	$\leq 0.05/20$ $\leq 0.10/6$
	Sample No. 3	$\leq 0.05/5$	$\leq 0.05/8$	$\leq 0.05/12$ $\leq 0.10/2$	$\leq 0.05/13$ $\leq 0.10/2$	$\leq 0.05/18$ $\leq 0.10/5$	$\leq 0.05/20$ $\leq 0.10/8$

Table No. 45

		REDNET E 160 (manufacturer: ASGLATEX Ohorn GmbH)					
		Crack width W_{typ} [mm]/ number of cracks at relative elongation ε					
Load direction		$\varepsilon = 0.3 \%$	$\varepsilon = 0.5 \%$	$\varepsilon = 0.8 \%$	$\varepsilon = 1.0 \%$	$\varepsilon = 1.5 \%$	$\varepsilon = 2.0 \%$
Warp	Sample No. 1	-	$\leq 0.05/6$	$\leq 0.05/12$	$\leq 0.05/12$	$\leq 0.05/22$ $\leq 0.10/2$	$\leq 0.05/23$ $\leq 0.10/3$
	Sample No. 2	-	$\leq 0.05/6$	$\leq 0.05/13$	$\leq 0.05/11$	$\leq 0.05/21$ $\leq 0.10/3$	$\leq 0.05/23$ $\leq 0.10/3$
	Sample No. 3	-	$\leq 0.05/5$	$\leq 0.05/11$	$\leq 0.05/12$	$\leq 0.05/22$ $\leq 0.10/1$	$\leq 0.05/22$ $\leq 0.10/4$
Weft	Sample No. 1	$\leq 0.05/4$	$\leq 0.05/7$	$\leq 0.05/12$	$\leq 0.05/13$	$\leq 0.05/13$ $\leq 0.10/2$ $\leq 0.15/3$	$\leq 0.05/12$ $\leq 0.10/3$ $\leq 0.15/4$
	Sample No. 2	$\leq 0.05/4$	$\leq 0.05/7$	$\leq 0.05/11$	$\leq 0.05/12$	$\leq 0.05/12$ $\leq 0.10/1$ $\leq 0.15/2$	$\leq 0.05/13$ $\leq 0.10/2$ $\leq 0.15/3$
	Sample No. 3	$\leq 0.05/4$	$\leq 0.05/8$	$\leq 0.05/12$	$\leq 0.05/14$	$\leq 0.05/13$ $\leq 0.10/1$ $\leq 0.15/3$	$\leq 0.05/12$ $\leq 0.10/4$ $\leq 0.15/2$

Table No. 46

		Glass fibre mesh Valmieras SSA-1363-160 (manufacturer: JSC Valmieras Stikla Šķiedra)					
		Crack width W_{typ} [mm]/ number of cracks at relative elongation ε					
Load direction		$\varepsilon = 0.3 \%$	$\varepsilon = 0.5 \%$	$\varepsilon = 0.8 \%$	$\varepsilon = 1.0 \%$	$\varepsilon = 1.5 \%$	$\varepsilon = 2.0 \%$
Warp	Sample No. 1	$\leq 0.05/4$	$\leq 0.05/10$	$\leq 0.05/13$	$\leq 0.05/14$	$\leq 0.05/27$ $\leq 0.10/1$	$\leq 0.05/24$ $\leq 0.10/4$
	Sample No. 2	$\leq 0.05/3$	$\leq 0.05/8$	$\leq 0.05/12$	$\leq 0.05/15$	$\leq 0.05/27$ $\leq 0.10/2$	$\leq 0.05/25$ $\leq 0.10/4$
	Sample No. 3	$\leq 0.05/4$	$\leq 0.05/9$	$\leq 0.05/13$	$\leq 0.05/15$	$\leq 0.05/27$	$\leq 0.05/26$ $\leq 0.10/3$
Weft	Sample No. 1	$\leq 0.05/3$	$\leq 0.05/4$	$\leq 0.05/6$ $\leq 0.10/2$	$\leq 0.05/6$ $\leq 0.10/4$	$\leq 0.05/12$ $\leq 0.10/3$ $\leq 0.15/1$	$\leq 0.05/12$ $\leq 0.10/4$ $\leq 0.15/1$
	Sample No. 2	$\leq 0.05/4$	$\leq 0.05/5$	$\leq 0.05/7$	$\leq 0.05/6$ $\leq 0.10/5$	$\leq 0.05/12$ $\leq 0.10/3$ $\leq 0.15/2$	$\leq 0.05/14$ $\leq 0.10/2$ $\leq 0.15/3$
	Sample No. 3	$\leq 0.05/4$	$\leq 0.05/4$	$\leq 0.05/6$ $\leq 0.10/1$	$\leq 0.05/7$ $\leq 0.10/3$	$\leq 0.05/11$ $\leq 0.10/4$ $\leq 0.15/4$	$\leq 0.05/15$ $\leq 0.10/3$ $\leq 0.15/4$

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

Table No. 47

	Characteristic width of cracks W_{rk} [mm] at render strain value of 0.8%	
	Warp direction	Weft direction
AKE 145A / R117 A101	0.050	0.050
AKE 160 / R131 A101	0.050	0.050
117S	0.050	0.050
122	0.050	0.050
SECCO E 145	0.050	0.955
SECCO E 160	0.050	0.969
REDNET E 145	0.050	0.955
REDNET E 160	0.050	0.969
Valmieras SSA-1363-160	0.050	0.694

- **Base coat ROCKWOOL REDArt Masă de șpaclu**

Table No. 48

		Glass fibre mesh AKE 160 / R 131 A101 (manufacturer: SAINT-GOBAIN ADFORS CZ s.r.o.)					
		Crack width W_{typ} [mm]/ number of cracks at relative elongation ε					
Load direction		$\varepsilon = 0.3 \%$	$\varepsilon = 0.5 \%$	$\varepsilon = 0.8 \%$	$\varepsilon = 1.0 \%$	$\varepsilon = 1.5 \%$	$\varepsilon = 2.0 \%$
Warp	Sample No. 1	$\leq 0.05/9$	$\leq 0.05/6$ $\leq 0.10/3$	$\leq 0.05/7$ $\leq 0.10/7$	$\leq 0.05/10$ $\leq 0.10/7$	$\leq 0.05/5$ $\leq 0.10/9$ $\leq 0.15/7$	$\leq 0.05/4$ $\leq 0.10/10$ $\leq 0.15/5$ $\leq 0.20/4$
	Sample No. 2	$\leq 0.05/8$	$\leq 0.05/6$ $\leq 0.10/4$	$\leq 0.05/7$ $\leq 0.10/8$	$\leq 0.05/9$ $\leq 0.10/8$	$\leq 0.05/4$ $\leq 0.10/10$ $\leq 0.15/4$	$\leq 0.05/4$ $\leq 0.10/11$ $\leq 0.15/5$ $\leq 0.20/2$
	Sample No. 3	$\leq 0.05/9$	$\leq 0.05/6$ $\leq 0.10/4$	$\leq 0.05/7$ $\leq 0.10/9$	$\leq 0.05/12$ $\leq 0.10/8$	$\leq 0.05/8$ $\leq 0.10/8$ $\leq 0.15/5$	$\leq 0.05/8$ $\leq 0.10/8$ $\leq 0.15/3$ $\leq 0.20/2$
Weft	Sample No. 1	$\leq 0.05/8$	$\leq 0.05/8$ $\leq 0.10/4$	$\leq 0.05/7$ $\leq 0.10/7$	$\leq 0.05/5$ $\leq 0.10/7$ $\leq 0.15/2$	$\leq 0.05/6$ $\leq 0.10/11$ $\leq 0.15/3$	$\leq 0.05/5$ $\leq 0.10/16$ $\leq 0.15/4$
	Sample No. 2	$\leq 0.05/8$ $\leq 0.10/1$	$\leq 0.05/9$ $\leq 0.10/4$	$\leq 0.05/8$ $\leq 0.10/8$ $\leq 0.15/1$	$\leq 0.05/9$ $\leq 0.10/8$ $\leq 0.15/1$	$\leq 0.05/8$ $\leq 0.10/11$ $\leq 0.15/4$	$\leq 0.05/7$ $\leq 0.10/15$ $\leq 0.15/4$
	Sample No. 3	$\leq 0.05/7$ $\leq 0.10/1$	$\leq 0.05/8$ $\leq 0.10/3$	$\leq 0.05/8$ $\leq 0.10/7$ $\leq 0.15/2$	$\leq 0.05/7$ $\leq 0.10/8$ $\leq 0.15/2$	$\leq 0.05/11$ $\leq 0.10/8$ $\leq 0.15/2$	$\leq 0.05/7$ $\leq 0.10/17$ $\leq 0.15/2$

Table No. 49

		Glass fibre mesh Vitrulan SD.4420G/55 (manufacturer: VITRULAN Textilglas GmbH)					
		Crack width W_{typ} [mm]/ number of cracks at relative elongation ϵ					
Load direction		$\epsilon = 0.3 \%$	$\epsilon = 0.5 \%$	$\epsilon = 0.8 \%$	$\epsilon = 1.0 \%$	$\epsilon = 1.5 \%$	$\epsilon = 2.0 \%$
Warp	Sample No. 1	$\leq 0.05/8$	$\leq 0.05/9$ $\leq 0.10/3$	$\leq 0.05/6$ $\leq 0.10/8$ $\leq 0.15/1$	$\leq 0.05/5$ $\leq 0.10/10$ $\leq 0.15/2$	$\leq 0.05/4$ $\leq 0.10/14$ $\leq 0.15/3$	$\leq 0.05/3$ $\leq 0.10/20$ $\leq 0.15/5$
	Sample No. 2	$\leq 0.05/7$ $\leq 0.10/1$	$\leq 0.05/11$ $\leq 0.10/3$	$\leq 0.05/8$ $\leq 0.10/7$ $\leq 0.15/1$	$\leq 0.05/9$ $\leq 0.10/10$	$\leq 0.05/8$ $\leq 0.10/13$ $\leq 0.15/2$	$\leq 0.05/8$ $\leq 0.10/17$ $\leq 0.15/4$ $\leq 0.20/1$
	Sample No. 3	$\leq 0.05/7$	$\leq 0.05/12$ $\leq 0.10/2$	$\leq 0.05/8$ $\leq 0.10/8$	$\leq 0.05/7$ $\leq 0.10/9$ $\leq 0.15/2$	$\leq 0.05/8$ $\leq 0.10/11$ $\leq 0.15/2$	$\leq 0.05/7$ $\leq 0.10/18$ $\leq 0.15/4$
Weft	Sample No. 1	$\leq 0.05/4$	$\leq 0.05/11$	$\leq 0.05/19$ $\leq 0.10/1$	$\leq 0.05/20$ $\leq 0.10/1$	$\leq 0.05/10$ $\leq 0.10/17$ $\leq 0.15/2$	$\leq 0.05/7$ $\leq 0.10/25$ $\leq 0.15/1$
	Sample No. 2	$\leq 0.05/3$	$\leq 0.05/10$	$\leq 0.05/18$	$\leq 0.05/16$ $\leq 0.10/3$	$\leq 0.05/16$ $\leq 0.10/15$	$\leq 0.05/8$ $\leq 0.10/25$
	Sample No. 3	$\leq 0.05/3$	$\leq 0.05/8$ $\leq 0.10/1$	$\leq 0.05/19$ $\leq 0.10/1$	$\leq 0.05/18$ $\leq 0.10/3$	$\leq 0.05/13$ $\leq 0.10/15$ $\leq 0.15/3$	$\leq 0.05/4$ $\leq 0.10/27$ $\leq 0.15/3$

Table No. 50

	Characteristic width of cracks W_{rk} [mm] at render strain value of 0.8%	
	Warp direction	Weft direction
AKE 160 / R131 A101	0.182	0.081
Vitrulan SD.4420G/55	0.176	0.156

3.4 Protection against noise (BWR 5)

3.4.1 Airborne sound insulation

No performance assessed.

3.5 Energy economy and heat retention (BWR 6)

3.5.1 Thermal resistance

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

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

Where:

- $\chi_p \times n$ has only to be taken into account if it is greater than 0.04 W/(m².K)
- U_c global (corrected) thermal transmittance of the covered wall (W/ (m².K))
- n number of anchors (through insulation product) per 1 m²
- χ_p local influence of thermal bridge caused by an anchor. The values listed below can be taken into account if not specified in the anchor's ETA:
- = 0.002 W/K for anchors with a stainless steel screw covered by plastic anchors and for anchors with an air gap at the head of the screw
($\chi_p \times n$ negligible for $n < 20$)
 - = 0.004 W/K for anchors with a galvanized steel screw with the head covered by a plastic material
($\chi_p \times n$ negligible for $n < 10$)
 - = negligible for anchors with plastic nails (reinforced or not with glass fibres ...)
- U thermal transmittance of the current part of the covered wall (excluding thermal bridges) (W/ (m².K)) determined as follows:

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

Where:

- R_i thermal resistance of the insulation product (according to declaration in reference to EN 13162) in (m².K)/W
- R_{render} thermal resistance of the rendering system (about 0.02 in (m².K)/W) or determined by test according to EN 12667 or EN 12664
- $R_{substrate}$ thermal resistance of the substrate of the building (concrete, brick ...) in (m².K)/W
- R_{se} external superficial thermal resistance in (m².K)/W
- R_{si} internal superficial thermal resistance in (m².K)/W

The value of thermal resistance of each insulation product shall be given in the manufacturer's documentation along with the possible range of thicknesses. In addition, the point thermal conductivity of anchors shall be given when anchors are used in the ETICS.

3.6 Sustainable use of natural resources (BWR 7)

No performance assessed.

4 Assessment and verification of constancy of performance (hereinafter AVCP) system applied, with reference to its legal base

According to the European Commission decision 97/556/EC amended by the European Commission decision 2001/596/EC, the AVCP systems 1 and 2+ are valid (further described in Annex V to Regulation (EU) No. 305/2011).

Table No. 51

Product(s)	Intended use(s)	Level(s) or class(es) (Reaction to fire)	System(s)
External thermal insulation composite systems/kits (ETICS) with rendering	In external wall subject to fire regulations	A1 ⁽¹⁾ , A2 ⁽¹⁾ , B ⁽¹⁾ , C ⁽¹⁾	1
		A1 ⁽²⁾ , A2 ⁽²⁾ , B ⁽²⁾ , C ⁽²⁾ , D, E, (A1 to E) ⁽³⁾ , F	2+
	In external wall not subject to fire regulations	Any	2+

- (1) Products/materials for which a clearly identifiable stage in the production process results in an improvement of the reaction to fire classification (e.g. an addition of fire retardants or a limiting of organic material)
- (2) Products/materials not covered by footnote (1)
- (3) Products/materials that do not require to be tested for reaction to fire (e.g. Products/materials of Classes A1 according to Commission Decision 96/603/EC)

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

In order to help the Notified Body to make an evaluation of conformity, the Technical Assessment Body issuing the ETA shall supply the information detailed below. This information together with the requirements given in EC Guidance Paper B will generally form the basis on which the factory production control (FPC) is assessed by the Notified Body.

This information shall initially be prepared or collected by the Technical Assessment Body and shall be agreed with the manufacturer. The following gives guidance on the type of information required:

1) ETA

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

2) Basic manufacturing process

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

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

3) Product and materials specifications

The manufacturer's documentation includes:

- detailed drawings (possibly including manufacturing tolerances),
- incoming (raw) materials specifications and declarations,
- references to European and/or international standards,
- technical data sheets.

4) Control Plan (as a part of FPC)

The manufacturer and the Technical and Test Institute for Construction Prague have agreed a Control Plan which is deposited with the Technical and Test Institute for Construction Prague in documentation which accompanies the ETA. The Control Plan specifies the type and frequency of checks/tests conducted during production and on the final product. This includes the checks conducted during manufacture on properties that cannot be inspected at a later stage and for checks on the final product.

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

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

In cases where the provisions of the European Technical Assessment and its Control Plan are no longer fulfilled, the Notified Body shall withdraw the certificate and inform the Technical and Test Construction Institute Prague without delay.

Issued in Prague on 27/05/2016

By

Ing. Mária Schaan

Head of the Technical Assessment Body (TAB)

Annexes:

- Annex No. 1 Manufacturing plants
- Annex No. 2 Insulation product characteristics for fully bonded ETICS with or without additional mechanical fixing – MW lamella (TR80)
- Annex No. 3 Insulation product characteristics for mechanically fixed ETICS with anchors and supplementary bonding – MW board (TR15)
- Annex No. 4 Insulation product characteristics for mechanically fixed ETICS with anchors and supplementary bonding – MW board RockSATE MD (TR10)
- Annex No. 5 Insulation product characteristics for mechanically fixed ETICS with anchors and supplementary bonding – MW board Panneau 431 (TR10)
- Annex No. 6 Insulation product characteristics for mechanically fixed ETICS with anchors and supplementary bonding – MW boards ECOROCK MONO / RockSATE MD Plus (TR10)
- Annex No. 7 Insulation product characteristics for mechanically fixed ETICS with anchors and supplementary bonding – MW board Frontrock Max E (TR10)
- Annex No. 8 Insulation product characteristics for mechanically fixed ETICS with anchors and supplementary bonding – MW board External Wall DD Panel (TR10)
- Annex No. 9 Insulation product characteristics for mechanically fixed ETICS with anchors and supplementary bonding – MW board RockSATE DUO (TR7.5)
- Annex No. 10 Insulation product characteristics for mechanically fixed ETICS with anchors and supplementary bonding – MW board ECOROCK (TR7.5)
- Annex No. 11 Insulation product characteristics for mechanically fixed ETICS with anchors and supplementary bonding – MW board FASROCK MAX (TR7.5)
- Annex No. 12 Insulation product characteristics for mechanically fixed ETICS with anchors and supplementary bonding – MW boards Frontrock Max Plus / RockSATE DUO Plus / ECOROCK DUO (TR5 / TR7.5)
- Annex No. 13 Insulation product characteristics for mechanically fixed ETICS with anchors and supplementary bonding – MW boards Coverrock, Coverrock II, Coverrock 036, Coverrock Plus, Coverrock BR (TR5)
- Annex No. 14 Anchors, description of individual product characteristics contained in the ETA
- Annex No. 15 Description of glass fibre mesh
- Annex No. 16 Variations of trade names of the ETICS and ETICS components

Annex No. 1 Manufacturing plants

1. ROCKWOOL Polska Sp. z o.o., ul. Kwiatowa 14, 66-131 Cigacice, Poland
2. ROCKWOOL France SAS, 111 Rue du Chateau des Rentiers, 75013 Paris, France
3. ROCKWOOL Hungary Kft., Alkotás u. 39/c, 1123 Budapest, Hungary
4. ROCKWOOL Peninsular S.A.U., Carrer del Bruc, 50-3°, 08010 Barcelona, Spain
5. ROCKWOOL, a.s., Cihelní 769, 735 31 Bohumín 3, Czech republic
6. Deutsche ROCKWOOL Mineralwoll GmbH & Co OHG., ROCKWOOL Straße 37-41, 45966 Gladbeck, Germany
7. AS ROCKWOOL, Gjerdrums vei 19, Pb 4215 Nydalen, 0401 Oslo, Norway
8. ROCKWOOL Italia S.p.A. a socio unico, Via Londonio, 2, 20154 Milano, Italy
9. ROCKWOOL limited, Pencoed, Bridgend, CF35 6NY, United Kingdom
10. ROCKWOOL Romania, Str. Ocna Sibiului nr. 46 - 48, 014011, sector 1, Bucharest, Romania
11. P.W. FAST Sp. z o.o., ul. Foluszowa 112, 014011, 65-751 Zielona Gora, Poland

Annex No. 2 Insulation product characteristics for fully bonded ETICS with or without additional mechanical fixing – MW lamella (TR80)

Description and characteristics	Regulation	Declared characteristics MW lamella (TR80) (fibre orientation perpendicular)		
		Class, level according to EN 13162	Value	
Reaction to fire	EN 13501 -1+A1:2009	A1 or A2	Apparent density ≤ 155 kg/m ³	
Thermal resistance	EN 12667 EN 12939	Defined in CE mark in accordance with EN 13162		
Thickness	EN 823	T5	-1 % or -1 mm*, +3 mm	
		T4	-3 % or -3 mm*, +5 % or +5 mm**,	
Length	EN 822	---	± 2 %	
Width		---	± 1.5 %	
Squareness	EN 824	---	≤ 5 mm/m	
Flatness	EN 825	---	≤ 6 mm	
Surface	ETAG 004	No additional treatment (homogenous, without coating)		
Dimensional stability under defined temperature and humidity	EN 1604	DS(70,90)	1 %	
Water absorption	Short term water absorption	EN 1609	WS	≤ 1.0 kg/m ²
	Long term water absorption	EN 12087	WL(P)	≤ 3.0 kg/m ²
Diffusion factor (μ)(-)	EN 12086 - EN 13162	MU1	1	
Tensile strength perpendicular to the faces of insulation product in dry conditions	EN 1607	TR80	≥ 80 kPa	
Tensile strength perpendicular to the faces of insulation product in wet conditions	ETAG 004	---	≥ 50 kPa	
Shear strength	EN 12090	---	≥ 20 kPa	
Shear modulus of elasticity	EN 12090	---	≥ 1000 kPa	

* higher value applies

** lower value applies

Note: Classes and levels for individual characteristics comply with EN 13162+A1:2015

Annex No. 3 Insulation product characteristics for mechanically fixed ETICS with anchors and supplementary bonding – MW board (TR15)

Description and characteristics	Regulation	Declared characteristics MW board (TR15) (longitudinal fibre orientation)		
		Class, level according to EN 13162	Value	
Reaction to fire	EN 13501 -1+A1:2009	A1 or A2	Apparent density ≤ 155 kg/m ³	
Thermal resistance	EN 12667 EN 12939	Defined in CE mark in accordance with EN 13162		
Thickness	EN 823	T5	-1 % or -1 mm*, +3 mm	
		T4	-3 % or -3 mm*, +5 % or +5 mm**,	
Length	EN 822	---	± 2 %	
Width		---	± 1.5 %	
Squareness	EN 824	---	≤ 5 mm/m	
Flatness	EN 825	---	≤ 6 mm	
Surface	ETAG 004	No additional treatment (homogenous, without coating)		
Dimensional stability under defined temperature and humidity	EN 1604	DS(70,90)	1 %	
Water absorption	Short term water absorption	EN 1609	WS	≤ 1.0 kg/m ²
	Long term water absorption	EN 12087	WL(P)	≤ 3.0 kg/m ²
Diffusion factor (μ)(-)	EN 12086 - EN 13162	MU1	1	
Tensile strength perpendicular to the faces of insulation product in dry conditions	EN 1607	TR15	≥ 15 kPa	
Tensile strength perpendicular to the faces of insulation product in wet conditions	ETAG 004	---	≥ 6 kPa	
Shear strength	EN 12090	---	---	
Shear modulus of elasticity	EN 12090	---	---	

* higher value applies

** lower value applies

Note: Classes and levels for individual characteristics comply with EN 13162+A1:2015

Annex No. 4 Insulation product characteristics for mechanically fixed ETICS with anchors and supplementary bonding – MW board RockSATE MD (TR10)

Description and characteristics	Regulation	Declared characteristics MW board RockSATE MD (TR10) (longitudinal fibre orientation)		
		Class, level according to EN 13162	Value	
Reaction to fire	EN 13501 -1+A1:2009	A1	Apparent density ≤ 155 kg/m ³	
Thermal resistance	EN 12667 EN 12939	Defined in CE mark in accordance with EN 13162		
Thickness	EN 823	T5	-1 % or -1 mm*, +3 mm	
Length	EN 822	---	± 2 %	
Width		---	± 1.5 %	
Squareness	EN 824	---	≤ 5 mm/m	
Flatness	EN 825	---	≤ 6 mm	
Surface	ETAG 004	No additional treatment (homogenous, without coating)		
Dimensional stability under defined temperature and humidity	EN 1604	DS(70,90)	1 %	
Water absorption	Short term water absorption	EN 1609	WS	≤ 1.0 kg/m ²
	Long term water absorption	EN 12087	WL(P)	≤ 3.0 kg/m ²
Diffusion factor (μ)(-)	EN 12086 - EN 13162	MU1	1	
Tensile strength perpendicular to the faces of insulation product in dry conditions	EN 1607	TR10	≥ 10 kPa	
Tensile strength perpendicular to the faces of insulation product in wet conditions	ETAG 004	---	≥ 4 kPa	
Shear strength	EN 12090	---	---	
Shear modulus of elasticity	EN 12090	---	---	

* higher value applies

Note: Classes and levels for individual characteristics comply with EN 13162+A1:2015

Annex No. 5 Insulation product characteristics for mechanically fixed ETICS with anchors and supplementary bonding – MW board Panneau 431 (TR10)

Description and characteristics	Regulation	Declared characteristics MW board Panneau 431 (TR10) (longitudinal fibre orientation)		
		Class, level according to EN 13162	Value	
Reaction to fire	EN 13501 -1+A1:2009	A1	Apparent density ≤ 155 kg/m ³	
Thermal resistance	EN 12667 EN 12939	Defined in CE mark in accordance with EN 13162		
Thickness	EN 823	T5	-1 % or -1 mm*, +3 mm	
Length	EN 822	---	± 2 %	
Width		---	± 1.5 %	
Squareness	EN 824	---	≤ 5 mm/m	
Flatness	EN 825	---	≤ 6 mm	
Surface	ETAG 004	No additional treatment (homogenous, without coating)		
Dimensional stability under defined temperature and humidity	EN 1604	DS(70,90)	1 %	
Water absorption	Short term water absorption	EN 1609	WS	≤ 1.0 kg/m ²
	Long term water absorption	EN 12087	WL(P)	≤ 3.0 kg/m ²
Diffusion factor (μ)(-)	EN 12086 - EN 13162	MU1	1	
Tensile strength perpendicular to the faces of insulation product in dry conditions	EN 1607	TR10	≥ 10 kPa	
Tensile strength perpendicular to the faces of insulation product in wet conditions	ETAG 004	---	≥ 4 kPa	
Shear strength	EN 12090	---	---	
Shear modulus of elasticity	EN 12090	---	---	

* higher value applies

Note: Classes and levels for individual characteristics comply with EN 13162+A1:2015

Annex No. 6 Insulation product characteristics for mechanically fixed ETICS with anchors and supplementary bonding – MW boards ECOROCK MONO / RockSATE MD Plus (TR10)

Description and characteristics	Regulation	Declared characteristics MW boards ECOROCK MONO / RockSATE MD Plus (TR10) (longitudinal fibre orientation)		
		Class, level according to EN 13162	Value	
Reaction to fire	EN 13501 -1+A1:2009	A1	Apparent density ≤ 120 kg/m ³	
Thermal resistance	EN 12667 EN 12939	Defined in CE mark in accordance with EN 13162		
Thickness	EN 823	T5	-1 % or -1 mm*, +3 mm	
Length	EN 822	---	± 2 %	
Width		---	± 1.5 %	
Squareness	EN 824	---	≤ 5 mm/m	
Flatness	EN 825	---	≤ 6 mm	
Surface	ETAG 004	No additional treatment (homogenous, without coating)		
Dimensional stability under defined temperature and humidity	EN 1604	DS(70,90)	1 %	
Water absorption	Short term water absorption	EN 1609	WS	≤ 1.0 kg/m ²
	Long term water absorption	EN 12087	WL(P)	≤ 3.0 kg/m ²
Diffusion factor (μ)(-)	EN 12086 - EN 13162	MU1	1	
Tensile strength perpendicular to the faces of insulation product in dry conditions	EN 1607	TR10	≥ 10 kPa	
Tensile strength perpendicular to the faces of insulation product in wet conditions	ETAG 004	---	≥ 4 kPa	
Shear strength	EN 12090	---	---	
Shear modulus of elasticity	EN 12090	---	---	

* higher value applies

Note: Classes and levels for individual characteristics comply with EN 13162+A1:2015

Annex No. 7 Insulation product characteristics for mechanically fixed ETICS with anchors and supplementary bonding – MW board Frontrock Max E (TR10)

Description and characteristics	Regulation	Declared characteristics MW board Frontrock Max E (TR10) (dual density board, longitudinal fibre orientation)		
		Class, level according to EN 13162	Value	
Reaction to fire	EN 13501 -1+A1:2009	A1	Apparent density $\leq 155 \text{ kg/m}^3$	
Thermal resistance	EN 12667 EN 12939	Defined in CE mark in accordance with EN 13162		
Thickness	EN 823	T5	-1 % or -1 mm*, +3 mm	
Length	EN 822	---	$\pm 2 \%$	
Width		---	$\pm 1.5 \%$	
Squareness	EN 824	---	$\leq 5 \text{ mm/m}$	
Flatness	EN 825	---	$\leq 6 \text{ mm}$	
Surface	ETAG 004	No additional treatment (homogenous, without coating)		
Dimensional stability under defined temperature and humidity	EN 1604	DS(70,90)	1 %	
Water absorption	Short term water absorption	EN 1609	WS	$\leq 1.0 \text{ kg/m}^2$
	Long term water absorption	EN 12087	WL(P)	$\leq 3.0 \text{ kg/m}^2$
Diffusion factor (μ)(-)	EN 12086 - EN 13162	MU1	1	
Tensile strength perpendicular to the faces of insulation product in dry conditions	EN 1607	TR10	$\geq 10 \text{ kPa}$	
		TR7.5**	$\geq 7.5 \text{ kPa}^{**}$	
Tensile strength perpendicular to the faces of insulation product in wet conditions	ETAG 004	---	$\geq 4 \text{ kPa}$	
			$\geq 3 \text{ kPa}^{**}$	
Shear strength	EN 12090	---	---	
Shear modulus of elasticity	EN 12090	---	---	

* higher value applies

** valid only if insulation product's thickness is 60 mm

Note: Classes and levels for individual characteristics comply with EN 13162+A1:2015

Annex No. 8 Insulation product characteristics for mechanically fixed ETICS with anchors and supplementary bonding – MW board External Wall DD Panel (TR10)

Description and characteristics	Regulation	Declared characteristics MW board External Wall DD Panel (TR10) (dual density board, longitudinal fibre orientation)		
		Class, level according to EN 13162	Value	
Reaction to fire	EN 13501 -1+A1:2009	A1	Apparent density ≤ 155 kg/m ³	
Thermal resistance	EN 12667 EN 12939	Defined in CE mark in accordance with EN 13162		
Thickness	EN 823	T5	-1 % or -1 mm*, +3 mm	
Length	EN 822	---	± 2 %	
Width		---	± 1.5 %	
Squareness	EN 824	---	≤ 5 mm/m	
Flatness	EN 825	---	≤ 6 mm	
Surface	ETAG 004	No additional treatment (homogenous, without coating)		
Dimensional stability under defined temperature and humidity	EN 1604	DS(70,90)	1 %	
Water absorption	Short term water absorption	EN 1609	WS	≤ 1.0 kg/m ²
	Long term water absorption	EN 12087	WL(P)	≤ 3.0 kg/m ²
Diffusion factor (μ)(-)	EN 12086 - EN 13162	MU1	1	
Tensile strength perpendicular to the faces of insulation product in dry conditions	EN 1607	TR10	≥ 10 kPa	
Tensile strength perpendicular to the faces of insulation product in wet conditions	ETAG 004	---	≥ 4 kPa	
Shear strength	EN 12090	---	---	
Shear modulus of elasticity	EN 12090	---	---	

* higher value applies

Note: Classes and levels for individual characteristics comply with EN 13162+A1:2015

Annex No. 9 Insulation product characteristics for mechanically fixed ETICS with anchors and supplementary bonding – MW board RockSATE DUO (TR7.5)

Description and characteristics		Regulation	Declared characteristics MW board RockSATE DUO (TR7.5) (dual density board, longitudinal fibre orientation)	
			Class, level according to EN 13162	Value
Reaction to fire		EN 13501 -1+A1:2009	A1	Apparent density ≤ 155 kg/m ³
Thermal resistance		EN 12667 EN 12939	Defined in CE mark in accordance with EN 13162	
Thickness		EN 823	T5	-1 % or -1 mm*, +3 mm
Length		EN 822	---	± 2 %
Width			---	± 1.5 %
Squareness		EN 824	---	≤ 5 mm/m
Flatness		EN 825	---	≤ 6 mm
Surface		ETAG 004	No additional treatment (homogenous, without coating)	
Dimensional stability under defined temperature and humidity		EN 1604	DS(70,90)	1 %
Water absorption	Short term water absorption	EN 1609	WS	≤ 1.0 kg/m ²
	Long term water absorption	EN 12087	WL(P)	≤ 3.0 kg/m ²
Diffusion factor (μ)(-)		EN 12086 – EN 13162	MU1	1
Tensile strength perpendicular to the faces of insulation product in dry conditions		EN 1607	TR7.5	≥ 7.5 kPa
Tensile strength perpendicular to the faces of insulation product in wet conditions		ETAG 004	---	≥ 3 kPa
Shear strength		EN 12090	---	---
Shear modulus of elasticity		EN 12090	---	---

* higher value applies

Note: Classes and levels for individual characteristics comply with EN 13162+A1:2015

Annex No. 10 Insulation product characteristics for mechanically fixed ETICS with anchors and supplementary bonding – MW board ECOROCK (TR7.5)

Description and characteristics		Regulation	Declared characteristics MW board ECOROCK (TR7.5) (dual density board, longitudinal fibre orientation)	
			Class, level according to EN 13162	Value
Reaction to fire		EN 13501 -1+A1:2009	A1	Apparent density ≤ 155 kg/m ³
Thermal resistance		EN 12667 EN 12939	Defined in CE mark in accordance with EN 13162	
Thickness		EN 823	T5	-1 % or -1 mm*, +3 mm
Length		EN 822	---	± 2 %
Width			---	± 1.5 %
Squareness		EN 824	---	≤ 5 mm/m
Flatness		EN 825	---	≤ 6 mm
Surface		ETAG 004	No additional treatment (homogenous, without coating)	
Dimensional stability under defined temperature and humidity		EN 1604	DS(70,90)	1 %
Water absorption	Short term water absorption	EN 1609	WS	≤ 1.0 kg/m ²
	Long term water absorption	EN 12087	WL(P)	≤ 3.0 kg/m ²
Diffusion factor (μ)(-)		EN 12086 – EN 13162	MU1	1
Tensile strength perpendicular to the faces of insulation product in dry conditions		EN 1607	TR7.5	≥ 7.5 kPa
Tensile strength perpendicular to the faces of insulation product in wet conditions		ETAG 004	---	≥ 3 kPa
Shear strength		EN 12090	---	---
Shear modulus of elasticity		EN 12090	---	---

* higher value applies

Note: Classes and levels for individual characteristics comply with EN 13162+A1:2015

Annex No. 11 Insulation product characteristics for mechanically fixed ETICS with anchors and supplementary bonding – MW board FASROCK MAX (TR7.5)

Description and characteristics		Regulation	Declared characteristics MW board FASROCK MAX (TR7.5) (dual density board, longitudinal fibre orientation)	
			Class, level according to EN 13162	Value
Reaction to fire		EN 13501 -1+A1:2009	A1	Apparent density ≤ 155 kg/m ³
Thermal resistance		EN 12667 EN 12939	Defined in CE mark in accordance with EN 13162	
Thickness		EN 823	T4	-3 % or -3 mm*, +5 % or +5 mm**,
Length		EN 822	---	± 2 %
Width			---	± 1.5 %
Squareness		EN 824	---	≤ 5 mm/m
Flatness		EN 825	---	≤ 6 mm
Surface		ETAG 004	No additional treatment (homogenous, without coating)	
Dimensional stability under defined temperature and humidity		EN 1604	DS(70,90)	1 %
Water absorption	Short term water absorption	EN 1609	WS	≤ 1.0 kg/m ²
	Long term water absorption	EN 12087	WL(P)	≤ 3.0 kg/m ²
Diffusion factor (μ)(-)		EN 12086 - EN 13162	MU1	1
Tensile strength perpendicular to the faces of insulation product in dry conditions		EN 1607	TR7.5	≥ 7.5 kPa
Tensile strength perpendicular to the faces of insulation product in wet conditions		ETAG 004	---	≥ 3 kPa
Shear strength		EN 12090	---	---
Shear modulus of elasticity		EN 12090	---	---

* higher value applies

** lower value applies

Note: Classes and levels for individual characteristics comply with EN 13162+A1:2015

Annex No. 12 Insulation product characteristics for mechanically fixed ETICS with anchors and supplementary bonding – MW boards Frontrock Max Plus / RockSATE DUO Plus / ECOROCK DUO (TR5 / TR7.5)

Description and characteristics	Regulation	Declared characteristics MW board Frontrock Max Plus/ RockSATE DUO Plus / ECOROCK DUO (dual density board, longitudinal fibre orientation)		
		Class, level according to EN 13162	Value	
Reaction to fire	EN 13501 -1+A1:2009	A1	Apparent density ≤ 155 kg/m ³	
Thermal resistance	EN 12667 EN 12939	Defined in CE mark in accordance with EN 13162		
Thickness	EN 823	T5	-1 % or -1 mm*, +3 mm	
Length	EN 822	---	± 2 %	
Width		---	± 1.5 %	
Squareness	EN 824	---	≤ 5 mm/m	
Flatness	EN 825	---	≤ 6 mm	
Surface	ETAG 004	No additional treatment (homogenous, without coating)		
Dimensional stability under defined temperature and humidity	EN 1604	DS(70,90)	1 %	
Water absorption	Short term water absorption	EN 1609	WS	≤ 1.0 kg/m ²
	Long term water absorption	EN 12087	WL(P)	≤ 3.0 kg/m ²
Diffusion factor (μ)(-)	EN 12086 - EN 13162	MU1	1	
Tensile strength perpendicular to the faces of insulation product in dry conditions	EN 1607	TR7.5**	≥ 7.5 kPa**	
		TR5***	≥ 5.0 kPa***	
Tensile strength perpendicular to the faces of insulation product in wet conditions	ETAG 004	---	≥ 3 kPa** ≥ 1 kPa***	
Shear strength	EN 12090	---	---	
Shear modulus of elasticity	EN 12090	---	---	

* higher value applies

** valid only if insulation product's thickness is ≥ 80 mm

*** valid only if insulation product's thickness is 50 - 79 mm

Note: Classes and levels for individual characteristics comply with EN 13162+A1:2015

Annex No. 13 Insulation product characteristics for mechanically fixed ETICS with anchors and supplementary bonding – MW boards Coverrock, Coverrock II, Coverrock 036, Coverrock Plus, Coverrock BR (TR5)

Description and characteristics		Regulation	Declared characteristics MW boards Coverrock (TR5) (dual density board, longitudinal fibre orientation)	
			Class, level according to EN 13162	Value
Reaction to fire		EN 13501 -1+A1:2009	A1	Apparent density ≤ 155 kg/m ³
Thermal resistance		EN 12667 EN 12939	Defined in CE mark in accordance with EN 13162	
Thickness		EN 823	T5	-1 % or -1 mm*, +3 mm
Length		EN 822	---	± 2 %
Width			---	± 1.5 %
Squareness		EN 824	---	≤ 5 mm/m
Flatness		EN 825	---	≤ 6 mm
Surface		ETAG 004	With or without additional treatment (one side or both sides sprayed coating)	
Dimensional stability under defined temperature and humidity		EN 1604	DS(70,-)	1 %
Water absorption	Long term water absorption	EN 12087	WL(P)	≤ 3.0 kg/m ²
Diffusion factor (μ)(-)		EN 12086 - EN 13162	MU1	1
Tensile strength perpendicular to the faces of insulation product in dry conditions		EN 1607	TR5	≥ 5.0 kPa
Tensile strength perpendicular to the faces of insulation product in wet conditions		ETAG 004	---	≥ 1 kPa
Shear strength		EN 12090	---	---
Shear modulus of elasticity		EN 12090	---	---
Air flow resistance (kPa.s/m ²)		EN 29053	AFr30	≥ 30 kPa.s/m ²
Dynamic stiffness		EN 29052-1	---	5 – 15 MN/m ^{3**}

* higher value applies

** specific value depends on a thickness and product type – always see the related DoP

Note: Classes and levels for individual characteristics comply with EN 13162+A1:2015

Annex No. 14 Anchors, description of individual product characteristics contained in the ETA

Trade name	Plate diameter (mm)	Characteristic pull-out resistance	Plate stiffness (kN/mm)	Load at plate rupture (kN)
Surface assembly				
Ejotherm NT U	60	See ETA - 05/0009	0,60	2,43
Ejotherm STR U. STR U 2G alternatively with additional plate: EJOT VT 90	60 (90)	See ETA - 04/0023	0.60	2.08
Ejotherm NTK U	60	See ETA - 07/0026	0.50	1.44
EJOT SDM-T plus	60	See ETA - 04/0064	0.60	2.08
EJOT H1 eco	60	See ETA - 11/0192	0.60	1.40
BRAVOLL PTH-KZ 60/8-La alternatively with additional plate: IT PTH 100, IT PTH 140	60 (100, 140)	See ETA – 05/0055	0.70	2.10
BRAVOLL PTH-S 60/8-La alternatively with additional plate: IT PTH 100, IT PTH 140	60 (100, 140)	See ETA - 08/0267	0.90	2.60
BRAVOLL PTH-KZ 60/10-La alternatively with additional plate: IT PTH 100, IT PTH 140	60 (100, 140)	See ETA - 08/0166	0.70	1.36
BRAVOLL PTH-EX alternatively with additional plate: IT PTH 100, IT PTH 140	60 (100, 140)	See ETA - 13/0951	0.60	1.40
Koelner KI-10N, KI-10NS	60	see ETA - 07/0221	0.50	1.23
Koelner KI-10M	60	see ETA - 07/0291	No performance assessed	No performance assessed
KOELNER TFIX-8M alternatively with additional plate: KWL 090	60	See ETA - 07/0336	1.00	1.75
KOELNER TFIX-8S alternatively with additional plate: KWL 090	60	See ETA - 11/0144	0.60	2.04
KOELNER TFIX-8P	60	See ETA - 13/0845	0.30	1.38
fischer Schlagdübel TERMOFIX CF 8 alternatively with additional plates: DT 90, 110, 140 N	60	See ETA - 07/0287	0.50	1.65

Trade name	Plate diameter (mm)	Characteristic pull-out resistance	Plate stiffness (kN/mm)	Load at plate rupture (kN)
fischer termoz CN 8 alternatively with additional plates: DT 90, 110, 140 N	60	See ETA - 09/0394	0.40	1.60
fischer termoz CS 8 alternatively with additional plates: DT 90, 110, 140 N	60	See ETA - 14/0372	0.60	1.70
fischer TERMOZ 8U. 8 UZ	60	See ETA - 02/0019	0.50/0.50	2.45/1.43
fischer Schlagdübel TERMOZ 8N. 8 NZ	60	See ETA - 03/0019	0.50/0.50	1.34/1.43
Hilti SD-FV 8	60	See ETA - 03/0028	0.30	1.55
Hilti WDVS-Schlagdübel SDK- FV 8	60	See ETA - 07/0302	0.50	1.48
Hilti-Dämmstoff-Befestigungselement XI-FV	60	See ETA - 03/0004	0.40	1.60
Hilti SX-FV	60	See ETA - 03/0005	0.70	1.73
Hilti WDVS-Schraubdübel D-FV. D-FV T	60	See ETA - 05/0039	0.80	1.93
Wkret-met LFM ø 8 alternatively with additional plate: TDX 90, TDX 140	60	see ETA – 06/0080	No performance assessed	
Wkret-met LFM ø 10 alternatively with additional plate: TDX 90, TDX 140	60	see ETA – 06/0105		
Wkret-met LMX ø 10 alternatively with additional plate: TDX 90, TDX 140	60	see ETA - 08/0172	0.50	1.64
Wkret-met LMX ø 8 alternatively with additional plate: TDX 90, TDX 140	60	see ETA - 09/0001	0.50	1.53
Wkret-met WKTHERM ø 8 alternatively with additional plate: TDX 90, TDX 140	60 (90)	see ETA - 11/0232	0.60	4.3
Wkret-met WKTHERM S alternatively with additional plate: TDX 90	60 (90)	see ETA - 13/0724	0.60	4.3
KEW TSD 8	60	see ETA - 04/0030	0.53	1.63
Thermoschraubdübel KEW TSBD 8	60	see ETA - 08/0314	1.60	2.22

Trade name	Plate diameter (mm)	Characteristic pull-out resistance	Plate stiffness (kN/mm)	Load at plate rupture (kN)
Countersunk assembly				
Ejotherm STR U. STR U 2G alternatively with additional plate: EJOT VT 2G	60 (112.5)	see ETA - 04/0023	0.60	2.08
BRAVOLL PTH-S 60/8-La alternatively with additional plate: ZT100 or countersunk apparatus BRAVOLL - ZP	60 (100)	see ETA - 08/0267	0.90	2.60
KOELNER TFIX-8ST alternatively with additional plate: KWL 090	60 (90)	see ETA - 11/0144	0.60	2.04
fischer TERMOZ 8 SV	60	see ETA - 06/0180	1.10	2.13
fischer termoz CS 8 alternatively with additional plate: DT 110 V	60 (110)	see ETA - 06/0180	0.60	1.70
Thermoschraubdübel KEW TSBD 8	60	see ETA - 04/0030	1.60	2.22
Wkret-met eco drive	60 (110)	see ETA – 13/0107	0.60	2.80

In addition to this list, anchors assessed in accordance with ETAG 014 can be used provided that such anchors meet the following requirements:

	Requirements	
Plate diameter	≥ 60 mm	
Plate stiffness	Surface assembly:	≥ 0.3 kN/mm
	Countersunk assembly:	≥ 0.6 kN/mm
Rupture force of anchor's plate	≥ Higher of figures R_{panel} and R_{joint} in relevant table in Cl. 3.3.5	

Annex No. 15 Description of glass fibre mesh

	Description	Strength after ageing	
	Standard fibre mesh applied in one or two layers with aperture size	Absolute strength after ageing (N/mm)	Relative residual strength after ageing, of the strength in the as-delivered state (%)
AKE 145 A / R117 A101	4.0 × 4.5 mm	≥ 20	≥ 50
AKE 160 A / R131 A101	3.5 × 3.8 mm	≥ 20	≥ 50
117S	4.6 × 3.2 mm	≥ 20	≥ 50
122	3.8 × 3.3 mm	≥ 20	≥ 50
SECCO E 145	3.3 × 4.5 mm	≥ 20	≥ 50
SECCO E 160	3.5 × 3.8 mm	≥ 20	≥ 50
REDNET E 145	3.3 × 4.5 mm	≥ 20	≥ 50
REDNET E 160	3.5 × 3.8 mm	≥ 20	≥ 50
Valmieras SSA-1363-160	3.5 × 3.7 mm	≥ 20	≥ 50
Vitrulan SD.4420G/55	3.5 × 4.0 mm	≥ 20	≥ 50

Annex No. 16 Variations of trade names of the ETICS and ETICS components

Component of the ETICS	Trade name
Adhesive – 1. type	REDArt Adhesive
Trade name No. 2	ZK-ECOROCK Normal W
Trade name No. 3 (Danish)	REDArt Klæber
Trade name No. 4 (Dutch)	REDArt Lijmmortel
Trade name No. 5 (French)	REDArt Colle
Trade name No. 6 (Spanish)	REDArt Adhesivo
Trade name No. 7 (Italian)	REDArt Collante
Adhesive – 2. type	REDArt Adhesive Plus
Trade name No. 2	ZK-ECOROCK D
Trade name No. 3 (Danish)	REDArt Klæber Plus
Trade name No. 4 (Dutch)	REDArt lijm&wapeningsmortel
Trade name No. 5 (French)	REDArt Colle DS
Trade name No. 6 (Spanish)	REDArt Adhesivo DS
Trade name No. 7 (Italian)	REDArt Collante DS
Adhesive and base coat – 1. type	REDArt Base Coat
Trade name No. 2	ZZ-ECOROCK Specjal W
Trade name No. 3 (Danish)	REDArt Underpuds
Trade name No. 4 (Dutch)	REDArt lijm&wapeningsmortel
Trade name No. 5 (French)	REDArt Enduit de Base
Trade name No. 6 (Spanish)	REDArt Capa Base
Trade name No. 7 (Italian)	REDArt Rasante
Adhesive and base coat – 2. type	REDArt Base Coat Plus
Trade name No. 2	ZZ - ECOROCK Specjal W Plus
Trade name No. 3 (Danish)	REDArt Underpuds Plus
Trade name No. 4 (Dutch)	REDArt lijm&wapeningsmortel
Trade name No. 5 (French)	REDArt Enduit de Base Plus
Trade name No. 6 (Spanish)	REDArt Capa Base Plus
Trade name No. 7 (Italian)	REDArt Rasante Plus

Key coat under mineral, silicone and acrylic finishing coats	REDArt Mineral Primer
Trade name No. 2	PT - ECOROCK Grunt M
Trade name No. 3 (Danish)	REDArt Mineralprimer
Trade name No. 4(Dutch)	REDArt Primer mineraal
Trade name No. 5 (French)	REDArt Mineral Régulateur de fond
Trade name No. 6 (Spanish)	REDArt Imprimación Mineral
Trade name No. 7 (Italian)	REDArt Fissativo per finitura Minerale
Key coat under silicone and mineral finishing coats	REDArt Silicone Primer
Trade name No. 2	PT - ECOROCK Grunt M
Trade name No. 3 (Danish)	REDArt Silikoneprimer
Trade name No. 4 (Dutch)	REDArt Siliconenprimer
Trade name No. 5 (French)	REDArt Silicone Régulateur de fond
Trade name No. 6 (Spanish)	REDArt Imprimación para Silicona
Trade name No. 7 (Italian)	REDArt Fissativo per finitura Siliconica
Key coat under silicate finishing coats	REDArt Silicate Primer
Trade name No. 2	PT - ECOROCK Grunt S - T
Trade name No. 3 (Danish)	REDArt Silikatprimer
Trade name No. 4 (Dutch)	REDArt Silicaatprimer
Trade name No. 5 (French)	REDArt Silicate Régulateur de fond
Trade name No. 6 (Spanish)	REDArt Imprimación para Silicato
Trade name No. 7 (Italian)	REDArt Fissativo per finitura ai Silicati
Finishing coat - mineral	REDArt Mineral Top Coat
Trade name No. 2	BR - ECOROCK M
Trade name No. 3	DR - ECOROCK M
Trade name No. 4 (Danish)	REDArt Mineralpuds
Trade name No. 5 (Dutch)	REDArt Mineraalpleister
Trade name No. 6 (Dutch)	REDArt Toplaag Extra Wit Mineraal
Trade name No. 7 (French)	REDArt Mineral Enduit de finition
Trade name No. 8 (Spanish)	REDArt Acabado Mineral
Trade name No. 9 (Italian)	REDArt Finitura Minerale

Finishing coat - mineral (smooth type)	REDArt Mineral Smooth Top Coat
Trade name No. 2	MS -ECOROCK
Trade name No. 3 (Danish)	REDArt Glat Mineralpuds
Trade name No. 4 (French)	REDArt Mineral Enduit de finition Lisse
Trade name No. 5 (Spanish)	REDArt Acabado Mineral Liso
Trade name No. 6 (Italian)	REDArt Finitura Minerale effetto levigato
Finishing coat - silicate	REDArt Silicate Top Coat
Trade name No. 2	BR - ECOROCK S
Trade name No. 3	DR - ECOROCK S
Trade name No. 4 (Danish)	REDArt Silikatpuds
Trade name No. 5 (Dutch)	REDArt Silicaatpleister
Trade name No. 6 (French)	REDArt Silicate Enduit de finition
Trade name No. 7 (Spanish)	REDArt Acabado Silicato
Trade name No. 8 (Italian)	REDArt Finitura ai Silicati
Finishing coat - silicone	REDArt Silicone Top Coat
Trade name No. 2	BR - ECOROCK SIL
Trade name No. 3	DR - ECOROCK SIL
Trade name No. 4 (Danish)	REDArt Silikonepuds
Trade name No. 5 (Dutch)	REDArt Siliconenpleister
Trade name No. 6 (French)	REDArt Silicone Enduit de finition
Trade name No. 7 (Spanish)	REDArt Acabado Silicona
Trade name No. 8 (Italian)	REDArt Finitura Siliconica
Finishing coat - mosaic	REDArt Granite Top Coat
Trade name No. 2	MG- ECOROCK
Trade name No. 3 (Danish)	REDArt Granit Slutpuds
Trade name No. 4 (Dutch)	REDArt Granietpleister
Trade name No. 5 (French)	REDArt Granit Enduit de finition
Trade name No. 6 (Spanish)	REDArt Acabado Granito
Trade name No. 7 (Italian)	REDArt Finitura Granito

Key coat under silicate protective paint	REDArt Silicate Paint Primer
Trade name No. 2	ECOROCK Grunt S
Trade name No. 3 (Danish)	REDArt Silikat Pudsprimer
Trade name No. 4 (Dutch)	REDArt Silicateprimer
Trade name No. 5 (French)	REDArt Primaire Peinture Silicate
Trade name No. 6 (Spanish)	REDArt Imprimación pintura Silicato
Trade name No. 7 (Italian)	REDArt Fissativo per pittura ai Silicati
Key coat under silicone protective paint	REDArt Silicone Paint Primer
Trade name No. 2	ECOROCK Grunt SIL
Trade name No. 3 (Danish)	REDArt Silikone Pudsprimer
Trade name No. 4 (Dutch)	REDArt Siliconenpleister
Trade name No. 5 (French)	REDArt Primaire Peinture Silicone
Trade name No. 6 (Spanish)	REDArt Imprimación pintura Silicona
Trade name No. 7 (Italian)	REDArt Fissativo per pittura Siliconica
Protective coat - silicate	REDArt Silicate Paint
Trade name No. 2	ECOROCK F - S
Trade name No. 3 (Danish)	REDArt Silikatmaling
Trade name No. 4 (Dutch)	REDArt Pilicaatverf
Trade name No. 5 (French)	REDArt Peinture Silicate
Trade name No. 6 (Spanish)	REDArt Pintura al Silicato
Trade name No. 7 (Italian)	REDArt Pittura ai Silicati
Protective coat - silicone	REDArt Silicone Paint
Trade name No. 2	ECOROCK Silikon
Trade name No. 3 (Danish)	REDArt Silikonemaling
Trade name No. 4 (Dutch)	REDArt Siliconenverf
Trade name No. 5 (French)	REDArt Peinture Silicone
Trade name No. 6 (Spanish)	REDArt Pintura a la Silicona
Trade name No. 7 (Italian)	REDArt Pittura Siliconica

ETICS trade name	REDArt
Trade name No. 2	Ecorock
Trade name No. 3	ECOROCK FF*

* REDArt system can be offered on the market also under the ECOROCK FF trade name. It refers also to the all system components which can use ECOROCK FF system components naming.