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Designated according to Article 29 of Regulation (EU) No 305/2011

Member of
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# European Technical Assessment

# ETA-25/0140 of 17/03/2025

## General Part

| | |
|---|---|
| **Technical Assessment Body issuing the European Technical Assessment:** Technical and Test Institute for Construction Prague | |
| **Trade name of the construction product** | **ETICS quick-mix therm CP-MW** |
| **Product family to which the construction product belongs** | Product area code: 4<br>External Thermal Insulation Composite Systems (ETICS) with Panels as Thermal Insulation Product and Discontinuous Claddings as Exterior Skin |
| **Manufacturer** | Sievert CZ k.s.<br>Vinohradská 1112/82<br>618 00 Brno<br>Czech Republic |
| **Manufacturing plant(s)** | See Annex No. 1 |
| **This European Technical Assessment contains** | 25 pages including 8 Annexes which form an integral part of this assessment.<br>Annex No. 9 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** | European Assessment Document (EAD) 040287-00-0404<br>Kits for External Thermal Insulation Composite System (ETICS) with Panels as Thermal Insulation Product and Discontinuous Claddings as Exterior Skin |

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## Specific Parts

# 1 Technical description of the product

## 1.1 Composition of the product (kit)

Table 1

| Use and variant | Component | Coverage [kg/m²] | Thickness [mm] |
|---|---|---|---|
| Base adhesive 1 | **quick-mix RKS**<br>Powder requiring addition of water 0.24 l/kg | 6.0 – 10.0 (dry powder) | 4 – 25 |
| Insulation panel 1 | **MW lamella (TR80)**<br>Factory made mineral wool (MW)<br>See Annex No. 3 | N/A | 40 – 300 |
| Anchors | **Plastic anchors**<br>Always fixed through the reinforcement (glass fibre mesh)<br>See Annex No. 4 | N/A | N/A |
| Base coat 1 | **quick-mix RKS**<br>Powder requiring addition of water 0.24 l/kg | 5.0 – 7.0 (dry powder) | 4 – 5 |
| Reinforcement 1 | **R 117 A101**<br>Standard glass fibre mesh, two layers<br>Embedded in the base coat<br>See Annex No. 5 | 0.14 – 0.16 | < 1 |
| Reinforcement 2 | **R 267 A101**<br>Reinforced glass fibre mesh, one layer.<br>Embedded in the base coat in addition to one layer of Reinforcement 1<br>See Annex No. 5 | 0.28 – 0.35 | ~ 1 |
| Reinforcement 3 | **125/1**<br>Reinforced glass fibre mesh, one layer.<br>Embedded in the base coat in addition to one layer of Reinforcement 1<br>See Annex No. 5 | 0.31 – 0.35 | ~ 1 |
| Cladding adhesive 1 | **quick-mix RKS**<br>Powder requiring addition of water 0.24 l/kg | 6.0 – 10.0 (dry powder) | 6 – 8 |
| Cladding element 1 | **Clay brick slips**<br>See Annex No. 6 | See Annex No. 6 | 9 – 25 |
| Cladding element 2 | **Ceramic tiles**<br>In accordance with EN 14411<br>See Annex No. 7 | See Annex No. 7 | 9 – 25 |
| Grout 1 | **quick-mix FM**<br>Powder requiring addition of water 0.10 – 0.13 l/kg<br>Joint depth: 8 – 25 mm<br>Joint width: 7 – 20 mm<br>To be used with Cladding element 1 and 2 | 4.5 – 7.5 (dry powder) | 8 – 25 |
| Grout 2 | **quick-mix FM-X**<br>Powder requiring addition of water 0.17 l/kg<br>Joint depth: 8 – 25 mm<br>Joint width: 7 – 20 mm<br>To be used with Cladding element 1 and 2 | 4.5 – 7.5 (dry powder) | 8 – 25 |

Types of the ETICS can be distinguished, depending on the fixing method of thermal insulation:

Table 2

| **Component** | **Type of ETICS** |
|---|---|
| | **Bonded with supplementary anchors and with reinforced base coat** |
| Base adhesive | **quick-mix RKS**<br>with 100 % of the surface area covered by an adhesive |
| Insulation panel | Insulation panel 1 |
| Reinforced base coat | Always present<br>In accordance with Table 1 |
| Anchors | See Annex No. 4<br>(always fixed through the reinforcement) |

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

This product is an External Thermal Insulation Composite System (ETICS) with panels as thermal insulation product and discontinuous claddings as exterior skin. The product is a kit, comprising from number of components.

The ETICS may include special fittings (e.g. base profiles, corner profiles ...) to treat details of ETICS (connections, apertures, corners, parapets, sills ...). Special fittings are not listed nor assessed in this ETA.

The ETICS is installed in accordance with Manufacturer´s installation instructions.

The ETICS may be used on new or existing (retrofit) vertical building walls. The walls can be made of masonry (bricks, blocks, stones, etc.) or concrete (cast on site or as prefabricated panels).

The provisions made in this ETA are based on an assumed intended working life of at least 25 years, provided that the ETICS installed and maintained properly. The indications given as to the working life of the construction product cannot be interpreted as a guarantee, but are regarded as means for expressing the expected economically reasonable working life of the product.

Concerning product packaging, transport, storage, maintenance, replacement and repair it is the responsibility of the manufacturer to undertake the appropriate measures and to advice his clients on the transport, storage, maintenance, replacement and repair of the product as he considers necessary.

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

Table 3

| Essential characteristic | Assessment method (EAD clause) | Performance |
|---|---|---|
| Reaction to fire | Čl. 2.2.1 | See cl. 3.1.1 |
| Façade fire performance | Čl. 2.2.2 | No performance assessed |
| Water absorption by capillarity | Čl. 2.2.3 | See cl. 3.2.1 |
| Water vapour permeability (resistance to water vapour diffusion) | Čl. 2.2.4 | See cl. 3.2.2 |
| Accelerated ageing behaviour: hygrothermal behaviour | Čl. 2.2.5.1 | See cl. 3.2.3.1 |
| Accelerated ageing behaviour: freeze-thaw behaviour | Čl. 2.2.5.2 | No performance assessed |
| Accelerated ageing behaviour: test with combined hygrothermal and freeze-thaw cycles | Čl. 2.2.5.3 | No performance assessed |
| Wind load resistance | Čl. 2.2.6 | Not relevant |
| Impact resistance | Čl. 2.2.7 | No performance assessed |
| Bond strength | Čl. 2.2.8 | See cl. 3.3.1 |
| Tensile strength of the thermal insulation panel | Čl. 2.2.9 | No performance assessed (See Annex No. 3 for component characteristic) |
| Shear strength and shear modulus | Čl. 2.2.10 | No performance assessed (See Annex No. 3 for component characteristic) |
| Dead load behaviour | Čl. 2.2.11 | See cl. 3.3.2 |
| Pull-through resistance | Čl. 2.2.12 | Not applicable |
| Pull-out resistance (foam block test) | Čl. 2.2.13 | No performance assessed |
| Improvement of airborne sound insulation | Čl. 2.2.14 | No performance assessed |
| Thermal conductivity and thermal resistance | Čl. 2.2.15 | See Annex No. 2 |

**Table 4 – Table 16 lay down assessments of essential characteristics of specific combinations of ETICS components.**

**Any combination of components not meeting the criteria of Table 4 – Table 16 is assessed as "No performance assessed" in regard to the relevant essential characteristic.**

## 3.1 Safety in case of fire (BWR 2)

### 3.1.1 Reaction to fire of ETICS

Table 4

| **Reaction to fire of ETICS: A1-s1, d0** | |
|---|---|
| **Component** | **ETICS configuration** |
| Base adhesive | In accordance with Table 1 |
| Insulation panel | In accordance with Table 1<br>**Max. apparent density (EN 1602): 88 kg/m³** |
| Anchors | In accordance with Table 1 |
| Base coat | In accordance with Table 1 |
| Reinforcement | **Reinforcement 1 applied in two layers** |
| Cladding adhesive | In accordance with Table 1 |
| Cladding element | In accordance with Table 1<br>**Min. thickness: 9 mm**<br>**Reaction to fire class: A1** |
| Grout | In accordance with Table 1 |

Table 5

| **Reaction to fire of ETICS: A2-s1, d0** | |
|---|---|
| **Component** | **ETICS configuration** |
| Base adhesive | In accordance with Table 1 |
| Insulation panel | In accordance with Table 1<br>**Max. apparent density (EN 1602): 88 kg/m³** |
| Anchors | In accordance with Table 1 |
| Base coat | In accordance with Table 1 |
| Reinforcement | **Reinforcement 1 applied on one layer**<br>**+**<br>**One additional layer of Reinforcement 2 or Reinforcement 3** |
| Cladding adhesive | In accordance with Table 1 |
| Cladding element | In accordance with Table 1<br>**Min. thickness: 9 mm**<br>**Reaction to fire class: A1** |
| Grout | In accordance with Table 1 |

## 3.2 Hygiene, health and the environment (BWR 3)

### 3.2.1 Water absorption by capillarity

Table 6

| Water absorption of components | |
|---|---|
| **ETICS configuration requirements:** | **Value** |
| **quick-mix RKS** | **0.04** [kg/(m²min$^{0.5}$)] by EN 1015-18 |
| **quick-mix FM** | **0.7** [g] after 30 minutes **1.3** [g] after 240 minutes by EN 13888-2 |
| **quick-mix FM-X** | **2.1** [g] after 30 minutes **4.3** [g] after 240 minutes by EN 13888-2 |
| **Cladding element 1 (clay brick slips)** | **23.48 %** by EN ISO 10545-3 |
| **Cladding element 2 (ceramic tiles)** | **5.91 %** by EN ISO 10545-3 |

Table 7

| Water absorption by capillarity | | | | | |
|---|---|---|---|---|---|
| **ETICS configuration requirements:** | | | **After 3 minutes [kg/m²] (reference value)** | **After 1 h [kg/m²]** | **After 24 h [kg/m²]** |
| **Base coat** | **Skin** | | | | |
| | **Cladding adhesive Cladding element** | **Grout** | | | |
| **quick-mix FM** | None | None | 0.00 | **0.01** | **0.10** |
| | **quick-mix RKS** + **Cladding element 1** clay brick slips (Annex No. 6) | In accordance with Table 1 | 4.43 | **0.23** | **1.01** |
| | **quick-mix RKS** + **Cladding element 2** ceramic tiles (Annex No. 7) | In accordance with Table 1 | 0.20 | **0.12** | **0.57** |

### 3.2.2 Water vapour permeability

Water vapour diffusion resistance $Z_{ETICS}$ depends on particular components chosen and is calculated as follows:

$$Z_{ETICS} = Z_{skin} + Z_{cladd-adhesive} + Z_{base_coat} + Z_{insulation} + Z_{base-adhesive}$$

Table 8

| Water vapour permeability (resistance to water vapour diffusion) | | | | |
|---|---|---|---|---|
| ETICS composition | Max. value of Z [$m^2 \cdot s \cdot Pa/kg$] | | Max. value of $S_d$ [m] | |
| | Minimal thickness of the claddings | Maximal thickness of the claddings | Minimal thickness of the claddings | Maximal thickness of the claddings |
| ETICS with cladding element 1 (clay brick slips) | $1.02 \times 10^{10}$ | $1.63 \times 10^{10}$ | 2.0 | 3.3 |
| ETICS with cladding element 2 (ceramic tiles) | $1.44 \times 10^{10}$ | $3.03 \times 10^{10}$ | 2.9 | 6.1 |

Table 9

| Water vapour permeability (resistance to water vapour diffusion) | | | | |
|---|---|---|---|---|
| Component of ETICS | Z [$m^2 \cdot s \cdot Pa/kg$] | | $S_d$ [m] | |
| | Minimal thickness | Maximal thickness | Minimal thickness | Maximal thickness |
| Base adhesive ($Z_{base_adhesive}$) | $5.00 \times 10^{8}$ | $3.13 \times 10^{9}$ | 0.10 | 0.63 |
| Thermal insulation panel ($Z_{insulation}$) | $2.00 \times 10^{8}$ | $1.50 \times 10^{9}$ | 0.04 | 0.30 |
| Reinforced base coat ($Z_{base_coat}$) | $1.06 \times 10^{9}$ | $1.33 \times 10^{9}$ | 0.21 | 0.27 |
| Cladding adhesive ($Z_{cladding_adhesive}$) | $7.50 \times 10^{8}$ | $1.00 \times 10^{9}$ | 0.15 | 0.20 |
| Cladding element 1 - clay brick slips ($Z_{cladding}$) | $4.50 \times 10^{9}$ | $1.25 \times 10^{10}$ | 0.90 | 2.50 |
| Cladding element 2 - ceramic tiles ($Z_{cladding}$) | $4.50 \times 10^{11}$ | $1.25 \times 10^{12}$ | 90.00 | 250.00 |
| Grout ($Z_{grout}$) | $7.60 \times 10^{8}$ | $2.38 \times 10^{9}$ | 0.15 | 0.48 |

### 3.2.3 Accelerated ageing behaviour

#### 3.2.3.1 Hygrothermal behaviour

The ETICS passed the test without defects.

Table 10

| Hygrothermal behaviour | | | | |
|---|---|---|---|---|
| ETICS configuration requirements: | | Bond strength | | |
| Base coat | Cladding adhesive<br>Cladding element<br>Grout | Mean value without ageing [kPa] | Mean value of after ageing [kPa] | Ratio between mean values [-] |
| quick-mix RKS | quick-mix RKS<br>+<br>Cladding element 1 – clay brick slips<br>(Annex No. 6, dimensions: 215 × 65 mm)<br>+<br>Grout in accordance with Table 1 | **78*** | **26*** | **1 / 0.33** |
| | quick-mix RKS<br>+<br>Cladding element 2 – ceramic tiles<br>(Annex No. 7, dimensions: 240 × 71 mm)<br>+<br>Grout in accordance with Table 1 | **76*** | **31*** | **1 / 0.41** |

*The measured values do not meet the requirements of EAD 040287-00-0404 (Annex H) and the characteristic is evaluated as "No performance assessed".

## 3.3 Safety and accessibility in use (BWR 4)

### 3.3.1 Bond strength

Table 11

| Connection 1<br>Between the external layers (exterior skin and reinforced base coat) and the insulation panel | | | | | |
|---|---|---|---|---|---|
| **ETICS configuration requirements:** | | **Conditioning before the test** | **Rupture type** | **Bond strength [kPa]** | |
| **Base coat** | **Exterior skin** | | | **Min.** | **Mean** |
| **quick-mix RKS** | None | Dry conditions | 100 % in the insulation product | **60** | **74*** |
| | | 2 days in water + 2 hours drying | | **40** | **57*** |
| | | 2 days in water + 7 days drying | | **24** | **47*** |
| | | After hygrothermal cycles | | **24** | **35*** |
| | | After freeze-thaw cycles | No performance assessed | | |

*The measured values do not meet the requirements of EAD 040287-00-0404 (Annex H) and the characteristic is evaluated as "No performance assessed".

Table 12

| Connection 1<br>Between the external layers (exterior skin and reinforced base coat) and the insulation panel | | | | | |
|---|---|---|---|---|---|
| **ETICS configuration requirements:** | | **Conditioning before the test** | **Rupture type** | **Bond strength [kPa]** | |
| **Base coat** | **Exterior skin** | | | **Min.** | **Mean** |
| **quick-mix RKS** | quick-mix RKS + Cladding element 1 (clay brick slips) + Grout 1 - 2 | Dry conditions | 100 % in the insulation product | **74** | **78*** |
| | | 2 days in water + 2 hours drying | | **55** | **65*** |
| | | 2 days in water + 7 days drying | | **71** | **77*** |
| | | After hygrothermal cycles | | **12** | **26*** |
| | | After freeze-thaw cycles | No performance assessed | | |

*The measured values do not meet the requirements of EAD 040287-00-0404 (Annex H) and the characteristic is evaluated as "No performance assessed".

Table 13

| Connection 1<br>Between the external layers (exterior skin and reinforced base coat) and the insulation panel | | | | | |
|---|---|---|---|---|---|
| **ETICS configuration requirements:** | | **Conditioning before the test** | **Rupture type** | **Bond strength [kPa]** | |
| **Base coat** | **Exterior skin** | | | **Min.** | **Mean** |
| **quick-mix RKS** | quick-mix RKS<br>+<br>Cladding element 2 (ceramic tiles)<br>+<br>Grout 1 - 2 | Dry conditions | 100 % in the insulation product | **69** | **76*** |
| | | 2 days in water<br>+<br>2 hours drying | | **32** | **47*** |
| | | 2 days in water<br>+<br>7 days drying | | **59** | **66*** |
| | | After hygrothermal cycles | | **15** | **31*** |
| | | After freeze-thaw cycles | No performance assessed | | |

*The measured values do not meet the requirements of EAD 040287-00-0404 (Annex H) and the characteristic is evaluated as "No performance assessed".

Table 14

| Connection 2<br>Between the insulation panel and the base adhesive | | | | |
|---|---|---|---|---|
| **ETICS configuration requirements:** | **Conditioning before the test** | **Rupture type** | **Bond strength [kPa]** | |
| **Base adhesive** | | | **Min.** | **Mean** |
| **quick-mix RKS** | Dry conditions | 100 % in the insulation product | **44** | **64*** |
| | 2 days in water<br>+<br>2 hours drying | | **37** | **50*** |
| | 2 days in water<br>+<br>7 days drying | | **44** | **59*** |

*The measured values do not meet the requirements of EAD 040287-00-0404 (Annex H) and the characteristic is evaluated as "No performance assessed".

Table 15

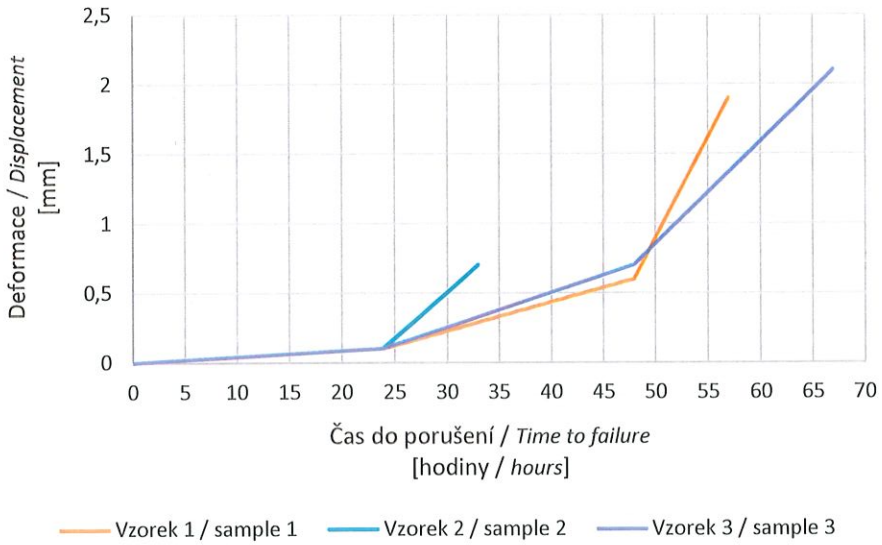
| Connection 3<br>Between the base adhesive and the substrate | | | | |
|---|---|---|---|---|
| **ETICS configuration requirements:** | **Conditioning before the test** | **Rupture type** | **Bond strength [kPa]** | |
| **Base adhesive** | | | **Min.** | **Mean** |
| **quick-mix RKS** | Dry conditions | 100 % in the adhesive | **820** | **870** |
| | 2 days in water<br>+<br>2 hours drying | | **200** | **210** |
| | 2 days in water<br>+<br>7 days drying | | **1360** | **1480** |

### 3.3.2 Dead load behaviour

Table 16

| Dead load of bonded ETICS with supplementary mechanical fixing devices<br>Specimen size: 200 × 200 mm | | | | | |
|---|---|---|---|---|---|
| ETICS configuration requirements: | | | Reference load [N] | Maximum dead load [N] | Maximum displacement [mm] |
| Base coat | Exterior skin | Insulation product | | | |
| In accordance with Table 1 | In accordance with Table 1<br><br>Cladding element with the following parameters:<br>max. 1580 kg/m³<br>max. 25 mm thick | In accordance with Table 1<br><br>Min. TR 40 kPa<br>Min. CS 46.9 kPa<br>Min. SS 19 kPa | 90 | **38** | **1.6** |

Deflection curve:




Tested composition (specimen size: 200 × 200 mm):

| | |
|---|---|
| Base adhesive: | quick-mix RKS |
| Instulation panel: | MW lamella TR80, 300 mm |
| Base coat: | quick-mix RKS |
| Reinforcement: | 2 × R 117 A101 |
| Cladding adhesive: | quick-mix RKS |
| Cladding element: | Clay brick slips 25 mm |
| Grout: | quick-mix FM-X |

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

According to the Decision 97/556/EC as amended by Decision 2001/596/EC of the European Commission the systems of assessment and verification of constancy of performance (see Annex V to Regulation (EU) No 305/2011) given in the following table apply.

Table 17

| Product | Intended uses | Class(es) (reaction to fire) | Systems of assessment and verification of constancy of performance |
|---|---|---|---|
| External thermal insulation composite system/kits with rendering (ETICS) | in external wall subject to fire regulations | **A**(1) – **B**(1) – **C**(1) | **1** |
| | | **A**(2) – **B**(2) – **C**(2)<br>**A** (without testing)<br>**D – E – F** | **2+** |
| | in external wall not subject to fire regulations | any | **2+** |

(1) Materials for which the reaction to fire performance is susceptible to change during the production process
(2) Materials for which the reaction to fire performance is not susceptible to change during the production process

## 5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD: 040287-01-0404

The manufacturer and the Technical and Test Institute for Construction Prague have agreed on a Control Plan which is deposited at the Technical and Test Institute for Construction Prague and it accompanies the ETA. The Control Plan specifies the type and frequency of checks/tests conducted on raw materials, manufactured and subcontracted components.

The manufacturer has defined special techniques of installation that shall always be followed.

Installation shall be done by qualified personnel trained in the special installation techniques defined by the manufacturer.

Notified body has to carry out the initial inspection of the manufacturing plant and of factory production control. Notified body also carries out continuous surveillance, assessment and evaluation of factory production control at least once per year.

Issued in Prague on 17/03/2025

by

**Ing. Jiří Studnička, Ph.D.**

Head of the Technical Assessment Body (TAB)






*Annexes:*

| | |
|---|---|
| Annex No. 1 | List of manufacturing plants |
| Annex No. 2 | Thermal conductivity and thermal resistance |
| Annex No. 3 | Insulation panel – MW lamella MW) |
| Annex No. 4 | Mechanical fixing device – anchors |
| Annex No. 5 | Reinforcement – glass fibre mesh |
| Annex No. 6 | Cladding – clay brick slips |
| Annex No. 7 | Cladding – ceramic tiles |
| Annex No. 8 | Alternative trade names of the components as defined by the manufacturer |

## Annex No. 1 List of manufacturing plants

1. Sievert CZ k.s.
   Vinohradská 1112/82
   618 00 Brno
   Czech Republic

2. Sievert CZ k.s.
   Ledčice 150
   277 08 Ledčice
   Czech Republic

3. Sievert SK s.r.o.
   Mostová 3476
   932 01 Veľký Meder
   Slovak Republic

## Annex No. 2 Thermal conductivity and thermal resistance

$$U_c = U + \Delta U \; [W/m^2 \cdot K]$$

$U_c$ is corrected thermal transmittance of the entire wall, including thermal bridges.

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

ΔU is correction term of the thermal transmittance for mechanical fixing devices.

$$U = \frac{1}{R_{si} + R_{substrate} + R_{ETICS} + R_{se}} \; [W/m^2 \cdot K]$$

$R_{ETICS}$ is thermal resistance of the ETICS calculated as follows by addition of thermal resistance of the different layers as described in EN ISO 6946 and EN ISO 10456:

$$R_{ETICS} = R_{skin} + R_{cladd_adhesive} + R_{base_coat} + R_{insulation} + R_{base_adhesive} \; [(m^2 \cdot K)/W]$$

Where: $R_{skin}$ is calculated as:

$$R_{skin} = R_{cladding} \cdot P_{cladding} + R_{grout} \cdot P_{joint} \; [(m^2 \cdot K)/W]$$

Where: $R_{cladding}$ is given either by tabulated values according to EN ISO 10456 or according to relevant harmonized standard [m²·K/W].
$P_{cladding}$ is percentage surface of cladding element [%].
$R_{joint}$ is obtained either from tabulated values according to EN ISO 10456 or EN 1745, or from measured values according to EN 12939, EN 12667 or EN 12664, or when relevant according to the harmonized standard [m²·K/W].
$P_{joint}$ is percentage surface of joints [%].

$R_{cladd_adhesive}$ and $R_{base_coat}$ and $R_{base_adhesive}$ are obtained either from tabulated values according to EN ISO 10456 or EN 1745, or from measured values according to EN 12939, EN 12667 or EN 12664, or when relevant according to the harmonized standard [m²·K/W].
$R_{insulation}$ is insulation thickness / thermal conductivity coefficient [m²·K/W] given in according to the relevant harmonized standard

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

$R_{se}$ is external surface thermal resistance [m²·K/W].

$R_{si}$ is internal surface thermal resistance [m²·K/W].

$$\Delta U = \chi_P \times n_{fix} \; [m^2 \cdot K/W]$$

Where: $\chi_P$ is point thermal transmittance value of the anchor [W/K]. Specified by the ETA for anchors or as follows:

- 0.002 [W/K] For anchors with a plastic screw/nail, stainless steel screw/nail with the head covered by plastic material, and for anchors with an air gap at the head of the screw/nail.
- 0.004 [W/K] For anchors with a galvanized steel screw/nail with the head covered by a plastic material.
- 0.008 [W/K] For all other anchors (the worst case).

n is number of anchors per m². In case n is more than 16, the $U_c$ calculation does not apply.

The influence of thermal bridges can also be calculated as described in EN ISO 10211. If there are more than 16 pcs of anchors per m² the declared $\chi_P$ shall not be used. The EN ISO 10211 calculation shall be used in such case.

## Annex No. 3 Insulation panel – MW lamella MW)

| Mineral wool (MW) | |
|---|---|
| **Generic type** | |
| **Requirements:** | |
| Harmonized technical specification: | EN 13162 |
| Direction of fibres: | Perpendicular to the faces of the panel (lamellas) |
| Apparent density (EN 1602 or EN ISO 29470): | ≤ 88 kg/m$^3$ |
| Composite insulation product: | No |
| Multi-layered insulation product | No |
| Facing: | No |
| Coating: | No |
| Max. thermal conductivity coefficient $\lambda_D$: | max. 0.065 W/(m·K) |
| Short-term water absorption $W_p$: | max. 1.0 kg/m$^2$ |
| Long-term water absorption $W_{lp}$: | max. 3.0 kg/m$^2$ |
| Length: | max. ± 2.0 % |
| Width: | max. ± 1.5 % |
| Thickness: | T5 |
| Squareness: | max. 5 mm/m |
| Flatness: | max. 6 mm |
| Dimensional stability: | DS(70,90) |
| Reaction to fire of thermal insulation material: | A1 |
| Water vapour permeability of thermal insulation product (water-vapour resistance factor) μ: | MU1 |
| Tensile test perpendicular to the faces of the thermal insulation product – in dry conditions: | min. 80 kPa |
| Shear strength: | min. 20 kPa |
| Shear modulus: | min. 1000 kPa |

## Annex No. 4 Mechanical fixing device – anchors

| Plastic anchors for fixing external thermal insulation composite systems with cladding elements | |
|---|---|
| **Generic type** | |
| **Requirements:** | |
| Harmonized technical specification: | ETAG 014 or EAD 330196-00-0604 or EAD 330196-01-0604<br>or<br>superseding harmonized technical specification |
| Setting: | to be screwed-in and to be installed through the glass fiber mesh |
| Diameter of the anchor plate: | min. 60 mm |
| Load resistance of the anchor plate: | min. 1.4 kN |
| Plate stiffness: | min. 0.6 kN/mm |
| Material of the nail | metal |

## Annex No. 5 Reinforcement – glass fibre mesh

| Standard glass fibre mesh | |
|---|---|
| **Specific type**<br>**R 117 A101** | |
| **Requirements:** | |
| Harmonized technical specification: | 040016-00-0404 or 040016-01-0404<br>or<br>superseding harmonized technical specification |
| Mass per unit area | 0.15 to 0.18 kg/m$^2$ |
| Heat of combustion: | Max. 7.81 MJ/kg<br>or<br>1.13 MJ/m$^2$ |
| Residual tensile strength<br>retained after alkaline conditioning: | in warp direction: min. 20 N/mm<br>in weft direction: min. 20 N/mm |
| Residual tensile strength after alkaline ageing | in warp direction: min. 50 %<br>in weft direction: min. 50 % |
| Mesh opening: | in warp direction: 3.5 to 4.5 mm<br>in weft direction: 4.0 to 5.0 mm |

| Reinforced glass fibre mesh | |
|---|---|
| **Specific type**<br>**R 267 A101** | |
| **Requirements:** | |
| Harmonized technical specification: | 040016-00-0404 or 040016-01-0404<br>or<br>superseding harmonized technical specification |
| Mass per unit area | 0.314 ± 5 % kg/m$^2$ |
| Heat of combustion: | Max. 6.02 MJ/kg<br>or<br>3.26 MJ/m$^2$ |
| Residual tensile strength<br>retained after alkaline conditioning: | in warp direction: min. 20 N/mm<br>in weft direction: min. 20 N/mm |
| Residual tensile strength after alkaline ageing | in warp direction: min. 50 %<br>in weft direction: min. 50 % |
| Mesh opening: | in warp direction: 7.4 to 8.4 mm<br>in weft direction: 6.0 to 7.0 mm |

| Reinforced glass fibre mesh | |
|---|---|
| **Specific type**<br>**125/1** | |
| **Requirements:** | |
| Harmonized technical specification: | 040016-00-0404 or 040016-01-0404<br>or<br>superseding harmonized technical specification |
| Mass per unit area | 0.330 ± 5 % kg/m$^2$ |
| Heat of combustion: | Max. 9.70 MJ/kg<br>or<br>3.26 MJ/m$^2$ |
| Residual tensile strength<br>retained after alkaline conditioning: | in warp direction: min. 20 N/mm<br>in weft direction: min. 20 N/mm |
| Residual tensile strength after alkaline ageing | in warp direction: min. 50 %<br>in weft direction: min. 50 % |
| Mesh opening: | in warp direction: 7.6 to 8.6 mm<br>in weft direction: 14.3 to 15.3 mm |

## Annex No. 6 Cladding – clay brick slips

| Requirements on clay brick slips | |
|---|---|
| Area weight: | ≤ 40 kg/m² (by EN ISO 10545-3 calculated from $m_1$ for m²) |
| Water absorption (24 hours): | $E_v$ ≤ 25.8 % (EN ISO 10545-3) |
| Thickness range: | 9 – 25 mm (by EN ISO 10545-2) |
| Length: | ≤ 240 mm (by EN 772-16) |
| Width: | ≤ 115 mm (by EN 772-16) |
| Surface area: | ≤ 0.028 m² |
| Frost resistance: | Without defects after 100 cycles (by EN ISO 10545-12) |
| Reaction to fire: | A1 (by 96/603/EC as amended) or max. heat of combustion by EN ISO 1716 must comply with the fire classification requirements |
| Water vapour diffusion resistance factor: | μ = 100 (by EN 1745) |

## Annex No. 7 Cladding – ceramic tiles

| Requirements on extruded and dry-pressed tiles by EN 14411 | |
|---|---|
| Area weight: | ≤ 40 kg/m² (by EN ISO 10545-3 calculated from $m_1$ for m²) |
| Water absorption | $E_v$ ≤ 6.5 % (EN ISO 10545-3) |
| Thickness range: | 9 - 25 mm (by EN ISO 10545-2) |
| Length: | ≤ 440 mm (by EN ISO 10545-2) |
| Width: | ≤ 71 mm (by EN ISO 10545-2) |
| Surface area: | ≤ 0.032 m² |
| Frost resistance: | Without defects (by EN ISO 10545-12) |
| Reaction to fire: | A1 (by 96/603/EC as amended) or max. heat of combustion by EN ISO 1716 must comply with the fire classification requirements |
| Water vapour diffusion resistance factor: | μ = 10 000 (by EN ISO 10456) |

## Annex No. 8 Alternative trade names of the components as defined by the manufacturer

| Trade name | Alternative trade name of the component |
|---|---|
| quick-mix RKS | quick-mix F-RKS |