INSTYTUT TECHNIKI BUDOWLANEJ

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# European Technical Assessment

# ETA-21/0876 of 22/09/2025

## General Part

| | |
|---|---|
| **Technical Assessment Body issuing the European Technical Assessment** | Instytut Techniki Budowlanej |
| **Trade name of the construction product** | ClimaWall® Extra |
| **Product family to which the construction product belongs** | External Thermal Insulation Composite System (ETICS) with rendering |
| **Manufacturer** | DRUCKFARBEN HELLAS S.A.<br>Megaridos Ave., Kallistiri Area<br>19300 ASPROPYRGOS, Greece |
| **Manufacturing plant** | DRUCKFARBEN HELLAS S.A.<br>Megaridos Ave., Kallistiri Area<br>19300 ASPROPYRGOS, Greece |
| **This European Technical Assessment contains** | 19 pages including 3 Annexes which form an integral part of this Assessment |
| **This European Technical Assessment is issued in accordance with regulation (EU) No 305/2011, on the basis of** | European Assessment Document (EAD) 040083-00-0404 “External thermal insulation composite systems (ETICS) with renderings” |
| **This version replaces** | ETA-21/0876 issued on 25/11/2021 |

## Specific Part

### 1 Technical description of the product

External Thermal Insulation Composite System with rendering ClimaWall® Extra called ETICS in the following text is a kit comprising components which are factory-produced by the manufacturer or purchased by the ETICS manufacturer from suppliers. ETICS is made up on site from these components. The ETICS manufacturer is ultimately responsible for all components of the ETICS kit specified in this ETA.

The ETICS comprises a factory-made thermal insulation product made of extruded polystyrene (XPS) to be bonded or mechanically fixed onto a wall. The methods of fixing and the ETICS composition are specified in Table 1.

The thermal insulation product is faced with a rendering system consisting of several 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.

**Table 1**

| | Components | Coverage (kg/m²) | Thickness (mm) |
|---|---|---|---|
| **Thermal insulation products with methods of fixing** | **Bonded ETICS:** fully bonded or fully bonded with supplementary mechanical fixings (bonded surface shall be 100%). | | |
| | • **Insulation product:** Extruded polystyrene (XPS) panels according to EN 13164; see Annex B – thermal insulation product characteristics | - | 30 to 300 |
| | • **Adhesive:** **Strong Bond Grey** cement based powder requiring addition of 0,24 to 0,26 l/kg of water | 4,0 to 6,0 (powder) | - |
| | **Mechanically fixed ETICS with supplementary adhesive:** according to the manufacturer's recommendation the minimal bonded surface shall be 40%. National application documents shall be taken into account. | | |
| | • **Insulation product:** Extruded polystyrene (XPS) panels according to EN 13164; see Annex B - thermal insulation product characteristics | - | 50 to 300 |
| | • **Anchors:** see Annex C - anchors characteristics | - | - |
| | • **Supplementary adhesive:** see bonded ETICS | - | - |
| **Base coats** | • **Strong Bond White / Strong Bond Grey** cement based powder requiring addition of 0,24 to 0,26 l/kg of water | 3,0 to 5,0 (powder) | 2,0 to 3,0 |
| **Glass fibre mesh** | • **Standard glass fibre mesh:** **Clima Net 160** see Annex C – glass fibre mesh characteristics | 1,1 (1) | - |
| **Key coat** | • **ClimaTop® Primer** ready to use liquid to be used with all finishing coats | 8,0 to 10,0 (2) | - |

(1) glass fibre mesh coverage in $m^2/m^2$

(2) key coat coverage in $m^2/l$

**Table 1**

| | Components | Coverage (kg/m²) | Thickness (mm) |
|---|---|---|---|
| **Finishing coats** | • **Acrylic finishing coats:**<br>**ClimaTop® FlexoSil FINE**<br>hydrophobically modified polymer dispersion with natural filler, pigments and additives<br>grain structure; max. particle size: 0,6 mm | 2,0 to 2,5 | 1,0 to 1,5 |
| | **ClimaTop® FlexoSil**<br>hydrophobically modified polymer dispersion with natural filler, pigments and additives<br>grain structure; max. particle size: 0,8; 1,0; 1,5; 2,0 mm<br>ribbed structure; max. particle size: 1,5 mm | 1,4 to 3,7 | regulated by particle size |
| **Ancillary materials** | Remain under the ETICS manufacturer responsibility.<br>The ETICS is supported with ancillary materials which are defined in clause 1.3.13 of EAD 040083-00-0404. | | |

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

This ETICS is intended to be used as external thermal insulation applied on the walls of buildings. The walls are made of masonry (bricks, blocks, stones, etc.) or concrete (cast on site or as prefabricated panels) with or without rendering.

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

The ETICS gives the building wall to which it is applied additional thermal insulation and protection from effects of weathering.

The ETICS are non-load-bearing construction elements. They do not contribute directly to the stability of the wall on which they are installed.

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

The provisions made in this European Technical Assessment are based on an assumed working life of the ETICS of at least 25 years, provided that the conditions for the packaging, transport, storage, installation as well as appropriate use, maintenance and repair are met. The indications given on the working life cannot be interpreted as a guarantee given by the manufacturer or the Technical Assessment Body, but should only be regarded as a means for choosing the appropriate products in relation to the expected economically reasonable working life of the product.

The information concerning packaging, transport, storage, maintenance and repair shall be given in the manufacturer's technical documentation.

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

Performance of the ETICS related to the Basic Requirements is given in Table 2.

**Table 2**

| No | Essential characteristic | Assessment method (EAD clause) | Performance |
|---|---|---|---|
| **Safety in case of fire (BWR 2)** | | | |
| **1** | Reaction to fire: | 2.2.1 | - |
| | – reaction to fire of ETICS | 2.2.1.1 | Annex A1 |
| | – reaction to fire of the thermal insulation product | 2.2.1.2 | no performance assessed (see Annex B for thermal insulation product characteristics) |
| **2** | Façade fire performance | 2.2.2 | no performance assessed |
| **Hygiene, health and the environment (BWR 3)** | | | |
| **3** | Content, emission and/or release of dangerous substances – leachable substances | 2.2.4 | no performance assessed |
| **4** | Water absorption: | 2.2.5 | - |
| | – of the base coat and the rendering system | 2.2.5.1 | Annex A2 |
| | – of the thermal insulation product | 2.2.5.2 | no performance assessed (see Annex B for thermal insulation product characteristics) |
| **5** | Water-tightness of the ETICS: Hygrothermal behaviour | 2.2.6 | Annex A3 |
| **6** | Water-tightness of the ETICS: Freeze-thaw performance | 2.2.7 | Annex A3 |
| **7** | Impact resistance | 2.2.8 | Annex A4 |
| **8** | Water vapour permeability: | 2.2.9 | - |
| | – of the rendering system (equivalent air thickness $s_d$) | 2.2.9.1 | Annex A5 |
| | – of thermal insulation product (water-vapour resistance factor) | 2.2.9.2 | no performance assessed (see Annex B for thermal insulation product characteristics) |
| **Safety and accessibility in use (BWR 4)** | | | |
| **9** | Bond strength: | 2.2.11 | - |
| | – bond strength between the base coat and the thermal insulation product (mortar or paste) | 2.2.11.1 | Annex A6 |
| | – bond strength between the adhesive and the substrate | 2.2.11.2 | Annex A6 |
| | – bond strength between the adhesive and the thermal insulation product | 2.2.11.3 | Annex A6 |
| **10** | Fixing strength (transverse displacement test) | 2.2.12 | test not required because the ETICS fulfils the criteria $E \cdot d \leq 50.000$ N/mm |
| **11** | Wind load resistance of ETICS: | 2.2.13 | - |
| | – pull-through tests of fixings | 2.2.13.1 | Annex A7 |
| | – static foam block test | 2.2.13.2 | Annex A7 |
| | – dynamic wind uplift test | 2.2.13.3 | no performance assessed |

**Table 2**

| No | Essential characteristic | Assessment method (EAD clause) | Performance |
|---|---|---|---|
| **12** | Tensile test perpendicular to the faces of the thermal insulation product: | 2.2.14 | - |
| | – in dry conditions | 2.2.14.1 | no performance assessed (see Annex B for thermal insulation product characteristics) |
| **13** | Shear strength and shear modulus of elasticity test of ETICS | 2.2.15 | no performance assessed (see Annex B for thermal insulation product characteristics) |
| **14** | Render strip tensile test | 2.2.17 | no performance assessed |
| **15** | Bond strength after ageing: | 2.2.20 | - |
| | – bond strength after ageing of finishing coat tested on the rig | 2.2.20.1 | Annex A8 |
| | – bond strength after ageing of finishing coat not tested on the rig | 2.2.20.2 | no performance assessed |
| **16** | Mechanical and physical characteristics of the mesh: | 2.2.21 | - |
| | Tensile strength of the glass fibre mesh | 2.2.21.1 | Annex C |
| **Protection against noise (BWR 5)** | | | |
| **17** | Airborne sound insulation of ETICS | 2.2.22.1 | no performance assessed |
| **18** | Dynamic stiffness of the thermal insulation product | 2.2.22.2 | no performance assessed |
| **19** | Air flow resistance of the thermal insulation product | 2.2.22.3 | no performance assessed |
| **Energy economy and heat retention (BWR 6)** | | | |
| **20** | Thermal resistance and thermal transmittance of ETICS | 2.2.23 | Annex A9 |

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

According to Decision 97/556/EC of the European Commission amended by the Decision 2001/596/EC, the systems of assessment and verification of constancy of performance (see Annex V to regulation (EU) No 305/2011) given in table 3 apply.

**Table 3**

| Product | Intended use | Level or class (Reaction to fire) | System |
|---|---|---|---|
| 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 Class 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 European Assessment Document (EAD)

Technical details necessary for the implementation of the AVCP system are laid down in the control plan which is deposited at Instytut Techniki Budowlanej.

For type testing the results of the tests performed as part of the assessment for the European Technical Assessment shall be used unless there are changes in the production line or plant. In such cases the necessary type testing has to be agreed between Instytut Techniki Budowlanej and the notified body.

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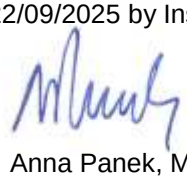


Anna Panek, MSc
Deputy Director of ITB

**Table A1**

| Configuration | Maximum declared organic content | Declared flame retardant content | Heat of combustion | Reaction to fire class according to EN 13501-1 |
|---|---|---|---|---|
| **ETICS ClimaWall® Extra:**<br>• Adhesive:<br>Strong Bond Grey | 1,5% | - | -0,07 MJ/kg | **B – s1, d0** |
| • XPS panels<br>Class E according to EN 13501-1<br>thickness ≤ 100 mm | - | - | - | |
| • Glass fibre mesh:<br>Clima Net 160 | - | - | 6,60 MJ/kg | |
| • Base coats:<br>Strong Bond White, Strong Bond Grey | 1,5% | - | -0,07 MJ/kg | |
| • Key coat: ClimaTop® Primer | 25,8% | - | 8,03 MJ/kg | |
| • Finishing coats:<br>ClimaTop® FlexoSil, ClimaTop® FlexoSil FINE | 11,8% | 19,7% | 2,34 MJ/kg | |

**Table A2.1**

| Water absorption of the reinforced base coat | After 1 hour ($kg/m^2$) | After 24 hours ($kg/m^2$) |
|---|---|---|
| **Strong Bond White** | **0,114** | **0,296** |
| **Strong Bond Grey** | **0,130** | **0,270** |

**Table A2.2**

| Water absorption of the complete rendering | | After 1 hour ($kg/m^2$) | After 24 hours ($kg/m^2$) |
|---|---|---|---|
| **Rendering system:** Base coat: **Strong Bond White / Strong Bond Grey** + key coat + finishing coat indicated hereafter: | ClimaTop® FlexoSil / ClimaTop® FlexoSil FINE, particle size 2,0 mm | **0,013** | **0,156** |

**Table A3.1**

| **Water-tightness of the ETICS: Hygrothermal behavior** |
|---|
| The ETICS is assessed resistant to hygrothermal cycles on a rig.<br>ETICS passed the test without defects.<br>**Resistant to hygrothermal cycles** |

**Table A3.2**

| **Water-tightness of the ETICS: Freeze-thaw performance** |
|---|
| The ETICS with the base coat **Strong Bond White / Strong Bond Grey,** the key-coat and **finishing coats** according to Table 1 is assessed freeze-thaw resistant because of the water absorption of base coat and the rendering system is less than 0,5 kg/m² after 24 hours.<br>**Resistant to freeze-thaw performance.** |

**Table A4**

| Impact resistance | | | | |
|---|---|---|---|---|
| **ETICS after hygrothermal cycles on the rig** | | | | |
| **ETICS with XPS according to Annex B and standard mesh (single layer)** | | **Cracks** | **Max. crack diameter (mm)** | **Impact resistance category** |
| **Rendering system:** base coat **Strong Bond White / Strong Bond Grey** (with the key-coat) + finishing coat indicated hereafter: | ClimaTop® FlexoSil / ClimaTop® FlexoSil FINE | No – 3 J<br>Yes – 10 J | 25,78 | **II** |
| **ETICS after ageing on the small samples** | | | | |
| **ETICS with XPS according to Annex B and standard mesh (single layer)** | | **Cracks** | **Max. crack diameter (mm)** | **Impact resistance category** |
| **Rendering system:** base coat **Strong Bond White** / **Strong Bond Grey** (with the key-coat) + finishing coat indicated hereafter: | ClimaTop® FlexoSil / ClimaTop® FlexoSil FINE | No – 3 J<br>Yes – 10 J | 32,08 | **II** |

**Table A5**

| | Finishing coat | Equivalent air thickness $s_d$ |
|---|---|---|
| **Rendering system:**<br>base coat **Strong Bond White** / **Strong Bond Grey**<br>(thickness 2 - 3 mm)<br>(with the key-coat) +<br>finishing coat indicated hereafter: | ClimaTop® FlexoSil / ClimaTop® FlexoSil FINE | 0,48 |
| | *thickness 2,0 mm* | |

**Table A6.1**

| Bond strength between the base coat and the insulation product | | | | | |
|---|---|---|---|---|---|
| **Insulation product** | **Base coat** | **Conditioning before the test** | **Rupture type** | **Bond strength (kPa)** | |
| | | | | **Min.** | **Mean** |
| **XPS Panels** | **Strong Bond White (approx. 2 mm)** | Initial state (dry conditions) | failure in borderline between the insulation product and the base coat | **82** | **88** |
| | | After hygrothermal cycles (on the rig) | | **117** | **128** |
| | **Strong Bond Grey (approx. 2 mm)** | Initial state (dry conditions) | failure in borderline between the insulation product and the base coat | **103** | **114** |
| | | 7 days immersion and min. 7 days drying | | **116** | **128** |

**Table A6.2**

| Bond strength between the adhesive and the substrate | | | | | |
|---|---|---|---|---|---|
| **Substrate** | **Adhesive (and tested thickness)** | **Conditioning before the test** | **Rupture type** | **Bond strength (kPa)** | |
| | | | | **Min.** | **Mean** |
| **Concrete** | **Strong Bond Grey (approx. 3 mm)** | Initial state (dry conditions) | failure in the adhesive | **870** | **1011** |
| | | 2 days immersion and 2 hours drying | failure in the adhesive | **847** | **1010** |
| | | 2 days immersion and min. 7 days drying | failure in the adhesive | **1843** | **2001** |

**Table A6.3**

| Bond strength between the adhesive and the insulation product | | | | | |
|---|---|---|---|---|---|
| **Insulation product** | **Base coat** | **Conditioning before the test** | **Rupture type** | **Bond strength (kPa)** | |
| | | | | **Min.** | **Mean** |
| **XPS Panels** | **Strong Bond White (approx. 3 mm)** | Initial state (dry conditions) | failure in borderline between adhesive and the insulation product | **115** | **141** |
| | | 2 days immersion and 2 hours drying | | **92** | **115** |
| | | 2 days immersion and min. 7 days drying | | **134** | **173** |
| | **Strong Bond Grey (approx. 3 mm)** | Initial state (dry conditions) | failure in borderline between adhesive and the insulation product | **153** | **173** |
| | | 2 days immersion and 2 hours drying | | **134** | **156** |
| | | 2 days immersion and min. 7 days drying | | **122** | **173** |

**Table A7.1**

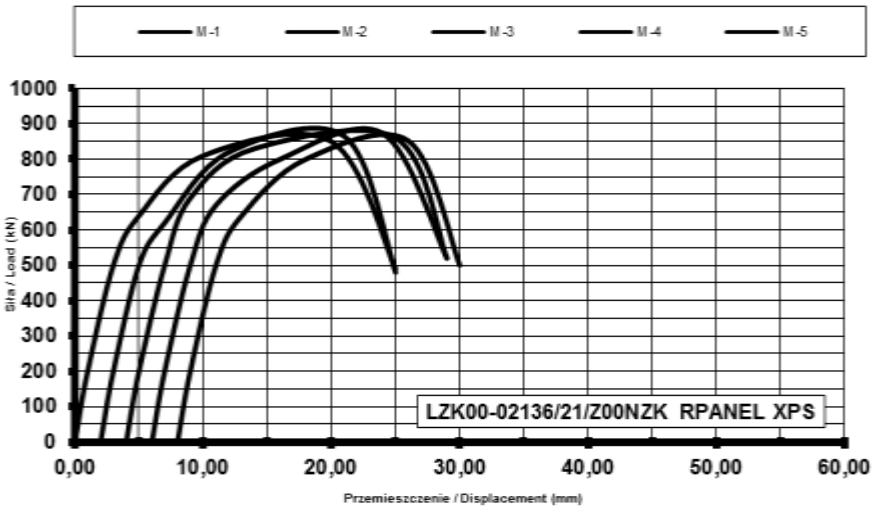
| **Anchor** | **Anchors according to Annex C Surface assembly** | | | |
|---|---|---|---|---|
| | Plate diameter of the anchor, mm | | ≥ 60 | |
| **XPS Panels** | Thickness, mm | | ≥ 50 | |
| | Tensile strength perpendicular to the faces, kPa | | ≥ 400 | |
| Failure load, kN | Anchors not placed at the panel joints (pull-through test), dry conditions | $R_{panel}$ | Individual:<br>Mean: | 0,85; 0,87; 0,86; 0,87; 0,85<br>**0,86** |
| **Load / displacement graphs** | | | | |
| Test conditions:<br>dry condition<br>23 °C / 50 % RH |  | | | |

**Table A7.2**

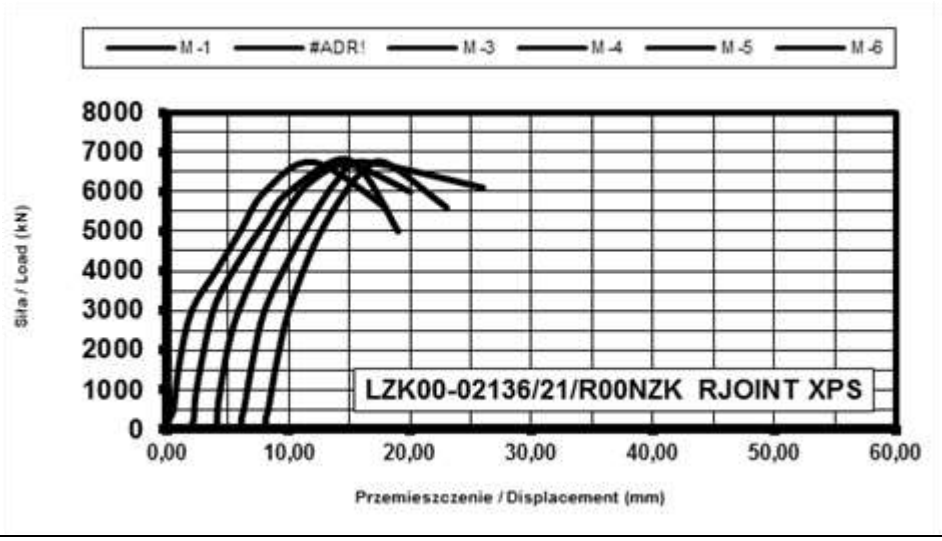
| **Anchor** | **Anchors according to Annex C<br>Surface assembly** | | | |
|---|---|---|---|---|
| | Plate diameter of the anchor, mm | | ≥ 60 | |
| **XPS Panels** | Thickness, mm | | ≥ 50 | |
| | Tensile strength perpendicular to the faces, kPa | | ≥ 400 | |
| Failure load, kN | Anchors placed at the panel joints (static foam block test) | $R_{joint}$ | Individual:<br>Mean: | 0,84; 0,85; 0,83; 0,84; 0,83<br>**0,84** |
| **Load / displacement graphs** | | | | |
| Test conditions:<br>dry condition<br>23 °C / 50 % RH |  | | | |

**Table A8**

| Bond strength after ageing of finishing coat tested on the rig | | | | | |
|---|---|---|---|---|---|
| **Insulation product** | **ETICS configuration** | | **Rupture type** | **Bond strength (kPa)** | |
| | | | | **Individual** | **Mean** |
| **XPS Panels** | **Rendering system:** base coat **Strong Bond White / \|Strong Bond Grey** (with key-coat) + finishing coat indicated hereafter: | ClimaTop® FlexoSil / ClimaTop® FlexoSil FINE | failure in borderline between the insulation product and the base coat | 142 | 137 |
| | | | | 128 | |
| | | | | 128 | |
| | | | | 116 | |
| | | | | 172 | |

**Table A9**

| Thermal resistance | |
|---|---|
| **Thermal resistance** | **[(m²·K)/W]** |
| **$R_{render}$** | **0,02** |
| **$R_{ETICS}$** | **≥ 1,00** |

**Information on calculation of thermal resistance and thermal transmittance of ETICS:**

The additional thermal resistance provided by the ETICS ($R_{ETICS}$) to the substrate wall is calculated from the thermal resistance of the thermal insulation product ($R_{insulation}$), determined in accordance with clause 2.2.23.1, and from either the tabulated R render value of the render system ($R_{render}$ is about 0,02 $m^2K/W$) or $R_{render}$ determined by test according to EN 12667 or EN 12664 (depending on expected thermal resistance).

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

as described in EN ISO 10456.

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

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

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

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

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

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

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

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

$\Delta U$ correction term of the thermal transmittance for mechanical fixing devices

$= \chi_p \cdot n$ (for anchors) (formula for $U_c$)

$\chi_p$ point thermal transmittance value of the anchor [W/K]. If not specified in ETA for anchors, the following values apply:

= 0,002 W/K for anchors with a plastic screw/nail, stainless steel screw/nail with the head covered by at least 15 mm plastic material, or with a minimum 15 mm air gap at the head of the screw/nail

= 0,004 W/K for anchors with a galvanized carbon steel screw/nail with the head covered by at least 15 mm plastic material or a minimum 15 mm air gap at the head of the screw/nail

= 0,008 W/K for all other anchors (worst case)

n number of anchors per $m^2$. In case n is more than 16, the formula for $U_c$ is not applied.

The influence of thermal bridges can also be calculated as described in EN ISO 10211.

It shall be calculated according to this standard if there are more than 16 anchors per $m^2$ foreseen. The declared $\chi_p$ values do not apply in this case.

**Table B1**

| Factory-prefabricated extruded polystyrene (XPS) Panels according to EN 13164 | |
|---|---|
| **Description and characteristics** | **XPS Panels** |
| **Reaction to fire**<br>EN 13501-1 | Class E |
| **Thermal resistance (m²·K)/W** | Defined in the CE marking |
| **Thickness tolerance**<br>EN 823 | XPS-EN 13164 – T3 |
| **Compressive stress at 10% thickness deformation**<br>EN 826 | XPS-EN 13164 – CS(10\Y)300 |
| **Dimensional stability under specified temperature and humidity**<br>EN 1604 | XPS-EN 13164 – DS(70,90) |
| **Long-term water absorption (total immersion)**<br>EN 12087 | XPS-EN 13164 – WL(T)1,5 |
| **Water vapour diffusion resistance factor (μ)**<br>EN 12086 | 50 |
| **Tensile strength perpendicular to the faces in dry conditions**<br>EN 1607 | XPS-EN 13164 – TR400 |
| **Shear strength (kPa)**<br>EN 12090 | ≥ 20 |
| **Shear modulus (kPa)**<br>EN 12090 | ≥ 1000 |

**Table C1**

| Anchor trade name [1] | | Plate diameter (mm) | Description of the anchor and characteristic resistance in the substrate |
|---|---|---|---|
| Clima Anchor | WKRĘT-MET KLIMAS LMX ϕ8 | ≥ 60 | ETA-16/0509 |

[1] **In addition anchors meeting the following criteria can be used**:
- covered by ETA according to EAD 330196-00-0604 or EAD 330196-01-0604
- plate diameter ≥ 60 mm
- plate stiffness of anchor ≥ 0,5 kN/mm
- load resistance of anchor plate ≥ 1,09 kN
- anchors mounted on the insulation panel surface

**Table C2**

| Mesh trade name | | Description | Direction | Tensile strength N/mm (average value) | | Elongation $\varepsilon$ % (average value) | |
|---|---|---|---|---|---|---|---|
| | | | | In the as-delivered state | After alkalis conditioning | In the as-delivered state | After alkalis conditioning |
| Clima Net 160 | Lifitex PRO 165 | ETA-19/0428 | warp | 41,3 | 20,8 | 4,20 | 1,80 |
| | | | weft | 46,7 | 24,1 | 5,00 | 1,70 |
| | E132L | ETA-16/0068 | warp | 43,0 | 26,0 | 3,56 | 2,15 |
| | | | weft | 48,0 | 29,0 | 3,60 | 2,17 |