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## European Technical Assessment

**ETA 09/0256**  
of 08/09/2014

### General Part

Technical Assessment Body issuing the ETA and designated according to Article 29 of the Regulation (EU) No 305/2011: **Technický a skúšobný ústav stavebný, n. o.**

**Trade name of the construction product**

Baunit open

**Product family to which the construction product belongs**

Product area code: 4  
External Thermal Insulation Composite Systems with rendering on expanded polystyrene (EPS) for the use as external insulation to walls of buildings

**Manufacturer**

Baunit Beteiligungen GmbH  
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Austria  
<http://www.baunit.at>

**Manufacturing plant**

Baunit Beteiligungen GmbH  
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**This European Technical Assessment contains**

31 pages including 4 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**

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

**This version replaces**

ETA-09/0256 with validity from 10.06.2013 to 09.06.2018

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## **Specific part**

### **1 Technical description of the product**

#### **1.1 General**

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

The ETICS kit comprises a prefabricated insulation product of expanded polystyrene boards to be bonded or 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 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 part of the kit.

## 1.2 Composition of the ETICS

Table 1 – Composition of the ETICS

	<b>Components</b> (see Annex 1 for further description, characteristics and performances of the components)	<b>Coverage</b> kg/m <sup>2</sup>	<b>Thickness</b> mm
Insulation materials with associated methods of fixing	<p>Bonded ETICS (partially or fully bonded) with supplementary anchors. According to ETA-holder's prescription the minimal bonded surface shall be at least 40 %. National application documents shall be taken into account).</p> <ul style="list-style-type: none"> <li>• <b>Insulation product:</b> Expanded polystyrene boards Baumit openTherm Baumit openTherm plus Baumit openTherm reflect Baumit openTherm 031G Baumit openTherm 031G reflect Baumit openTherm 035W</li> <li>• <b>Adhesive:</b> <ul style="list-style-type: none"> <li>- <b>Baumit openContact</b> Mineral powder, white cement (CEM I 52,5N white) base with silica sand, dispersion powder, additives</li> </ul> </li> <li>• <b>Supplementary anchors</b> See Annex 2 for list of anchors and their product characteristics.</li> </ul>	/	20 to 300
	<p>Mechanically fixed ETICS with anchors and supplementary adhesive (see Clause 3.4.5) for possible associations EPS/anchors). According to ETA-holder's prescription the minimal bonded surface shall be at least 40 %. National application documents shall be taken into account.</p> <ul style="list-style-type: none"> <li>• <b>Insulation products</b> Expanded polystyrene boards Baumit openTherm Baumit openTherm plus Baumit openTherm reflect Baumit openTherm 031G Baumit openTherm 031G reflect Baumit openTherm 035W</li> <li>• <b>Supplementary adhesive</b> <ul style="list-style-type: none"> <li>- <b>Baumit openContact</b> Mineral powder, white cement (CEM I 52,5N white) base with silica sand, dispersion powder, additives</li> </ul> </li> <li>• <b>Anchors</b> See Annex 2 for list of anchors and their product characteristics.</li> </ul>	4,0 to 5,0 (powder)	50 to 300
Base coat	<ul style="list-style-type: none"> <li>• <b>Baumit openContact</b> Preparation: mixing of 6 l to 7 l water/25 kg powder Composition: mineral powder, cement (CEM I 52,5N white) base with silica sand, dispersion powder, additives</li> </ul>	4,0 to 5,0 (powder)	min. 3,0 mm

Glass fibre meshes	<ul style="list-style-type: none"> <li>Standard glass fibre mesh: (glass fibres mesh with mesh size approx. 4 mm and 4 mm, mass per unit area: min. 145 g/m<sup>2</sup>): <b>Baumit openTex/Baumit StarTex</b></li> </ul>	/	/
	<ul style="list-style-type: none"> <li>Standard glass fibre mesh: (glass fibres mesh with mesh size approx. 3,5 mm and 3,8 mm, mass per unit area: min. 160 g/m<sup>2</sup>): <b>R 131 A101</b></li> </ul>	/	/
Key coats	<ul style="list-style-type: none"> <li><b>Baumit UniPrimer:</b> ready to use pigmented liquid</li> </ul>	0,20 to 0,25	
	<ul style="list-style-type: none"> <li><b>Baumit openPrimer:</b> ready to use pigmented liquid</li> </ul>	0,20 to 0,25	
	<ul style="list-style-type: none"> <li><b>Baumit Premium Primer</b> ready to use pigmented liquid</li> </ul>	0,25	
Finishing coats	<ul style="list-style-type: none"> <li>Ready to use pastes – acrylic binder Baumit StyleTop (particles size 1,5/2,0/3,0 mm), floated structure (particles size 2,0/3,0 mm), ribbed structure</li> </ul>	2,5 to 4,1	
	<ul style="list-style-type: none"> <li>Ready to use pastes – silicate binder Baumit NanoporTop (particles size 1,5/2,0/3,0 mm), floated structure</li> </ul>	2,5 to 4,2	
	<ul style="list-style-type: none"> <li>Ready to use pastes – silicate binder Baumit openTop (particles size 1,5/2,0/3,0 mm), floated structure (particles size 2,0/3,0 mm), ribbed structure</li> </ul>	2,5 to 4,2	
	<ul style="list-style-type: none"> <li>Ready to use pastes – silicone binder Baumit SilikonTop (particles size 1,5/2,0/3,0 mm), floated structure (particles size 2,0/3,0 mm), ribbed structure</li> </ul>	2,5 to 4,2	
	<ul style="list-style-type: none"> <li>Ready to use pastes – silicate binder Baumit SilikatTop (particles size 1,5/2,0/3,0 mm), floated structure</li> </ul>	2,5 to 4,2	
	<ul style="list-style-type: none"> <li>Ready to use pastes – silicone and acrylic binder Baumit CreativTop (particles size 1,0 (Fine)/3,0 (Trend)/ 4,0 mm (Max)), modelling and floated structure</li> </ul>	2,9 to 6,2	
	<ul style="list-style-type: none"> <li>Ready to use pastes – silicate binder Baumit FineTop/Baumit SilikonFine (particles size 1,0 mm), floated structure</li> </ul>	2,0	
	<ul style="list-style-type: none"> <li>Ready to use pastes – silicate binder Baumit NanoporFine (particles size 1,0 mm), floated structure</li> </ul>	2,0	
Decorative coats/ plasters*	<ul style="list-style-type: none"> <li>Ready to use pastes – silicone and acrylic binder Baumit Creativ Top S-Fine (particles size 0,2 mm), floated structure</li> </ul>	3,0 to 4,0	0,5 to 2,0
	<ul style="list-style-type: none"> <li>Ready to use pastes – silicone binder Baumit FillTop (particles size 0,5 mm), floated structure</li> </ul>	1,4	0,5 to 1,0
	* To be used optionally with all types of finishing coats mentioned above.		

Decorative coats/paints**	<ul style="list-style-type: none"> <li>• Ready to use paint – silicate binder Baumit NanoporColor</li> </ul>	0,5	
	<ul style="list-style-type: none"> <li>• Ready to use paint – silicone binder Baumit SilikonColor</li> </ul>	0,5	
	<ul style="list-style-type: none"> <li>• Ready to use paint – silicate binder Baumit SilikatColor</li> </ul>	0,5	
	<ul style="list-style-type: none"> <li>• Ready to use paint – acrylic binder Baumit StyleColor</li> </ul>	0,5	
	** To be used optionally alone with all types of finishing coats mentioned above or with decorative plasters applying on finishing coats.		
Ancillary materials	Descriptions in accordance with 3.2.2.5 of the ETAG 004. Remain under the ETA-holder responsibilities.		

## 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 classifications 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 could need preparation (see 7.2.1 of the ETAG 004) and shall be done in accordance with the national instructions.

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

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 in the basis of agreed data/information, deposited with the Technical Assessment Body "Building Testing and Research Institute", which identified the ETICS that has been assessed and judged. Changes to the ETICS or production process, which could result in deposited data/information being incorrect, shall be notified to the Technical Assessment Body "Building Testing and Research Institute" before the changes are introduced. The Technical Assessment Body "Building Testing and Research Institute" will decide whether or not such changes affect the ETA and consequently the validity of the CE marking on the basis of the ETA and if so whether further assessment or alternations to the ETA, shall be necessary.

## **2.3 Design and installation**

The installation instructions including special installation techniques and provisions for the qualifications 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 7.1 and 7.2 of ETAG 004 used as EAD, which summarized 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;
- the 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 responsibility of the manufacturer(s) to ensure that these provisions are easily accessible to the concerned people.

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

### **3.0 The performances of the kit as described in this clause are valid provided that the components of the kit comply with Annexes 1 to 3.**

#### **3.1 Mechanical resistance and stability (BWR 1)**

Not relevant.

**3.2 Safety in case of fire (BWR 2)**

**3.2.1 Reaction to fire (ETAG 004 – Clause 5.1.2.1, EN 13501-1)**

**Table 2 – Reaction to fire classification of ETICS**

Configuration	Max. organic content or heat combustion	Flame retardant content	Euroclass according to EN 13501-1		
Adhesive: Baumit openContact					
EPS-EN 13163-TR150/TR100 thickness: from 50 mm to 300 mm (tested thickness: 180 mm) reaction to fire: E, $\mu$ : max. 10 measured density: $(17,9 \pm 0,15) \text{ kg/m}^2$					
Base coat: Baumit openContact					
Glass fibre meshes: Baumit openTex/Baumit StarTex R 131 A101 (tested in configuration) mass per unit area: from $145 \text{ g/m}^2 + 8 \%$ to $160 \text{ g/m}^2 + 8 \%$				Base coat: $(2,4 \text{ to } 2,8) \pm 0,6) \%$  Finishing coat: $(10,9 \pm 1,09) \%$	
Key coats: Baumit UniPrimer Baumit openPrimer Baumit PremiumPrimer (tested in configuration)				Decorative coats/plasters: max. $(2,211 \pm 0,153) \text{ MJ/kg}$	Base coat: 0 % Finishing coat: 0 %
Finishing coats: Baumit StyleTop (tested in configuration) Baumit NanoporTop Baumit openTop Baumit SilikonTop Baumit SilikatTop Baumit CreativTop Baumit FineTop Baumit NanoporFine				Decorative coats/paints: max. $(4,274 \pm 0,014) \text{ MJ/kg}$	
Decorative coats/plasters: Baumit Creativ Top S-Fine Baumit FillTop					
Decorative coats/paints: Baumit NanoporColor Baumit SilikonColor Baumit SilikatColor Baumit StyleColor (tested in configuration)					

**Mounting and fixing:**

The assessment of reaction to fire is based on tests with maximal insulation layer thickness of 180 mm, STN EN ISO 11925-2 and insulation material densities ( $17,9 \pm 0,15$ ) kg/m<sup>2</sup>, with maximum organic content of finishing coat 10,9 % and thicknesses 1,0 mm and 4,0 mm), with maximum heat combustion value of decorative paint ( $4,274 \pm 0,014$ ) MJ/kg.

For the SBI this ETICS is mounted directly to a calcium silicate plasterboard substrate with a minimum density of 820 kg/m<sup>3</sup>.

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

The test specimens were prefabricated and did not include any joints. The panel edges were rendered except the upper and bottom edges.

Anchors were not included in the tested ETICS as they have no influence on the test result.

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

Further the edges of the ETICS always have to be protected against fire.

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.

**3.3 Hygiene, health and environment (BWR 3)**

**3.3.1 Water absorption (ETAG 004 – Clause 5.1.3.1)**

**Table 3 – Water absorption of base coat**

		Water absorption after 24 hours	
		< 0,5 kg/m <sup>2</sup>	≥ 0,5 kg/m <sup>2</sup>
<b>Base coat</b>	Baumit openContact	X	

**Table 4 – Water absorption of rendering systems**

Base coat Baumit openContact		Water absorption after 24 hours	
		< 0,5 kg/m <sup>2</sup>	≥ 0,5 kg/m <sup>2</sup>
Rendering systems: base coat + key coat according to Clause 1.1 + finishing coats indicated hereafter:	Baumit StyleTop	x	
	Baumit NanoporTop	x	
	Baumit openTop	x	
	Baumit SilikonTop	x	
	Baumit SilikatTop	x	
	Baumit CreativTop	x	
	Baumit FineTop	x	
	Baumit NanoporFine	x	



### 3.3.2 Watertightness (ETAG 004 – Clause 5.1.3.2)

#### 3.3.2.1 Hydrothermal behaviour (ETAG 004 – Clause 5.1.3.2.1)

Hygrothermal cycles have been performed on a rig. None of the following defects occurred during the testing:

- blistering or peeling of any finishing coat;
- failure or cracking associated with joints between insulation product boards or profiles fitted with ETICS;
- detachment of render coat;
- cracking allowing water penetration to the insulation layer (normally not bigger than 0,2 mm).

The ETICS is so assessed resistant to hygrothermal cycles, it means ETICS passed the test without defects.

#### 3.3.2.2 Freeze-thaw behaviour (ETAG 004 – Clause 5.1.3.2.2)

The water absorptions of base coat used in ETICS are less than 0,5 kg/m<sup>2</sup> after 24 hours and so **the corresponding configuration(s) of the ETICS are assessed as freeze/thaw resistant.**

The water absorptions of all rendering systems are less than 0,5 kg/m<sup>2</sup> after 24 hours and so **the corresponding configuration(s) of the ETICS are assessed as freeze/thaw resistant.**

### 3.3.3 Impact resistance (ETAG 004 – Clause 5.1.3.3)

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

**Table 5 – Use categories for ETICS according to impact resistance**

Baumit openContact		Single standard mesh
<b>Rendering systems:</b> base coat indicated above + key coats according to Clause 1.1 + finishing coats indicated hereafter:	Baumit StyleTop	Category II
	Baumit NanoporTop	
	Baumit openTop	
	Baumit SilikonTop	
	Baumit SilikatTop	
	Baumit CreativTop	Category III
	Baumit FineTop	No performance determined
	Baumit NanoporFine	Category III

3.3.4 Water vapour permeability (ETAG 004 – Clause 5.1.3.4)

Table 6 – Water vapour permeability of rendering systems

Baumit openContact	Equivalent air thickness (m)	
<p style="text-align: center;"><b>Rendering systems:</b> base coat indicated above + key coats according to Clause 1.1 + finishing coats indicated hereafter:</p>	Baumit StyleTop	<p style="text-align: center;"><b>≤ 2,0</b> (test results obtained with finishing coat Baumit StyleTop, floated structure, particles size 3,0 mm: 0,762)</p>
	Baumit NanoporTop	<p style="text-align: center;"><b>≤ 2,0</b> (test results obtained with finishing coat Baumit NanoporTop, floated structure, particles size 3,0 mm: 0,192) THR is 6 mm</p>
	Baumit openTop	<p style="text-align: center;"><b>≤ 2,0</b> (test results obtained with finishing coat Baumit openTop, floated structure, particles size 3,0 mm: 0,168) THR is 6 mm</p>
	Baumit SilikonTop	<p style="text-align: center;"><b>≤ 2,0</b> (test results obtained with finishing coat Baumit SilikonTop, floated structure, particles size 3,0 mm: 0,348) THR is 6 mm</p>
	Baumit SilikatTop	<p style="text-align: center;"><b>≤ 2,0</b> (test results obtained with finishing coat Baumit SilikatTop, floated structure, particles size 3,0 mm: 0,252) THR is 6 mm</p>
	Baumit CreativTop	<p style="text-align: center;"><b>≤ 2,0</b> (test results obtained with finishing coat Baumit CreativTop Max, floated structure, particles size 4,0 mm: 0,357) THR is 7 mm</p>
	Baumit FineTop	<p style="text-align: center;"><b>≤ 2,0</b> (test results obtained with finishing coat Baumit SilikonTop, floated structure, particles size 3,0 mm: 0,348) THR is 6 mm</p>
	Baumit NanoporFine	<p style="text-align: center;"><b>≤ 2,0</b> (test results obtained with finishing coat Baumit NanoporFine, floated structure, particles size 1,0 mm: 0,228) THR is 4 mm</p>

**Table 7 – Water vapour permeability of rendering systems**

Baumit openContact	Equivalent air thickness (m)	
<p><b>Rendering systems:</b> base coat indicated above + key coats according to Clause 1.1 + finishing coats indicated hereafter + decorative paints (decorative plasters) indicated hereafter:</p>	<p>Baumit StyleTop Baumit StyleColor</p>	<p><b>≤ 2,0</b> (test results obtained with finishing coat Baumit StyleTop, floated structure, particles size 3,0 mm and decorative paint BaumitColor: 1,464) THR is 6 mm</p>
	<p>Baumit NanoporTop Baumit NanoporColor</p>	<p><b>≤ 2,0</b> (test results obtained with finishing coat Baumit NanoporTop, floated structure, particles size 3,0 mm: 0,216) THR is 6 mm</p>
	<p>Baumit SilikonTop Baumit SilikonColor</p>	<p><b>≤ 2,0</b> (test results obtained with finishing coat Baumit SilikonTop and decorative paint Baumit SilikonColor, floated structure, particles size 3,0 mm: 0,714) THR is 6 mm</p>
	<p>Baumit SilikonTop Baumit FillTop</p>	<p><b>≤ 2,0</b> (test results obtained with finishing coat Baumit SilikonTop, floated structure, particles size 3,0 mm and decorative plaster Baumit FillTop: 0,474) THR is 6 mm</p>
	<p>Baumit SilikatTop Baumit SilikatColor</p>	<p><b>≤ 2,0</b> (test results obtained with finishing coat Baumit SilikatTop, floated structure, particles size 3,0 mm and decorative paint Baumit SilikatColor: 0,342) THR is 6 mm</p>
	<p>Baumit CreativTop Baumit CreativTop S-Fine</p>	<p><b>≤ 1,0</b> (test results obtained with finishing coat Baumit CreativTop Max, floated structure, particles size 4,0 mm and decorative plaster Baumit CreativTop S-Fine: 0,357) THR is 7 mm</p>
	<p>Baumit FineTop Baumit SilikonColor</p>	<p><b>≤ 2,0</b> (test results obtained with finishing coat Baumit SilikonTop, floated structure, particles size 1,0 mm: 0,696) THR is 4 mm</p>

### 3.3.5 Release of dangerous substances (ETAG 004 – Clause 5.1.3.5, EOTA TR034)

A written declaration was submitted by the ETA-holder.

In addition to the specific clauses relating to dangerous substances contained in this European Technical Assessment, there may be other requirements applicable to the kit falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet provisions of the EU Construction Products Regulation, these requirements need also to be complied with, when and where they apply.

A written declaration was submitted by the ETA-holder- ETICS manufacturer.

**3.4 Safety and accessibility in use (BWR 4)**

**3.4.1 Bond strength between base coat and insulation product (ETAG 004 – Clause 5.1.4.1.1)**

**Table 8 – Bond strength between base coat Baunit openContact and expanded polystyrene board (EPS – TR100, grey)**

Conditionings		
Initial state	After the hygrothermal cycles (on the rig)	After the freeze/thaw cycles (on samples)
≥ 0,08 MPa	≥ 0,08 MPa	Test not required because freeze/thaw cycles not necessary

**Table 9 – Bond strength between base coat Baunit openContact and expanded polystyrene board (EPS – TR100, white)**

Conditionings		
Initial state	After the hygrothermal cycles (on the rig)	After the freeze/thaw cycles (on samples)
≥ 0,08 MPa	Not tested	Test not required because freeze/thaw cycles not necessary

**Table 10 – Bond strength between base coat Baunit openContact and expanded polystyrene board (EPS – TR150, white)**

Conditionings		
Initial state	After the hygrothermal cycles (on the rig)	After the freeze/thaw cycles (on samples)
≥ 0,08 MPa	Not tested	Test not required because freeze/thaw cycles not necessary

**3.4.2 Bond strength between adhesive and substrate/insulation product (ETAG 004 – Clauses 5.1.4.1.2 and 5.1.4.1.3)**

**Table 11 – Bond strength between adhesive and substrate/insulation product**

		Conditionings		
		Initial state	48 h immersion in water + 2 h 23 °C/50% RH	48 h immersion in water + 7 days 23 °C/50% RH
Baumit openContact	Concrete	≥ 0,25 MPa	≥ 0,08 MPa	≥ 0,25 MPa
	Insulation product (EPS – TR100, grey)	≥ 0,08 MPa	≥ 0,03 MPa	≥ 0,08 MPa
	Insulation product (EPS – TR100, white)	≥ 0,08 MPa	≥ 0,03 MPa	≥ 0,08 MPa
	Insulation product (EPS – TR150, white)	≥ 0,08 MPa	≥ 0,03 MPa	≥ 0,08 MPa

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

**Table 12 – Minimal bonded surface of adhesive to substrate**

	Tensile strength perpendicular to the face of the insulation product	
	≥ 100 kPa	≥ 150 kPa
Baumit openContact	40 %	40 %

### 3.4.3 Bond strength after ageing (ETAG 004 – Clauses 5.1.7.1 and 5.1.7.2)

Table 13 – Bond strength of rendering systems after ageing  
(ETAG 004 – Clauses 5.1.7.1 and 5.1.7.2)

Baumit openContact		After 7 days immersion in water + 7 days 23 °C/50% RH (on samples)	After freeze/thaw cycles
<b>Rendering systems:</b> base coat + key coats according to Clause 1.1 + finishing coats indicated hereafter:	Baumit StyleTop**	≥ 0,08 MPa	Not required
	Baumit NanoporTop**		
	Baumit openTop**		
	Baumit SilikonTop**		
	Baumit SilikatTop**		
	Baumit CreativTop*		
	Baumit FineTop	Not tested	
	Baumit NanoporFine*	≥ 0,08 MPa	
* Tested according to ETAG 004, Clause 5.1.7.1. ** Tested according to ETAG 004, Clause 5.1.7.2.			

### 3.4.4 Fixing strength (ETAG 004 – Clause 5.1.4.2)

Test not required (no limitation of ETICS length) because the ETICS fulfils the following criteria:

- The bonded area exceeds 40 % in case of mechanically fixed systems with supplementary adhesive.
- $E \times d = 10\,494 \text{ N/mm} < 50\,000 \text{ N/mm}$ , where  $E$  is modulus of elasticity of the base coat **Baumit openContact** without glass fibre mesh and  $d$  is mean dried thickness of the base coat.

### 3.4.5 Wind load resistance (ETAG 004 – Clause 5.1.4.3)

Safety in use of mechanically fixed ETICS using anchors

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

**Table 14 – Failure loads of combination of anchors described in below table and insulation product - EPS-EN 13163-TR100**

<b>Anchors for which the following failure loads apply</b>	Trade name	Hilti SD-FV 8 Hilti D8-FV Fischer TERMOFIX CF 8 Fischer TERMOZ PN8	
	Plate diameter (mm)	≥ 60	
<b>Characteristic of the insulation product panels for which the following failure loads apply</b>	Thickness (mm)	≥ 60	
	Tensile strength perpendicular to the face (kPa)	≥ 100	
<b>Failure loads (N)</b>	Anchors not placed at the panel joint (pull – through test)	$R_{panel}$ :	Minimum: <b>450</b> Average: <b>510</b>
	Anchors placed at the panel joint (static foam block test)	$R_{joint}$ :	Minimum: <b>337,5</b> Average: <b>383</b>

**Table 15 – Failure loads of combination of anchors described in below table and insulation product - EPS-EN 13163-TR100**

<b>Anchors for which the following failure loads apply</b>	Trade name	Fischer TERMOZ 8U Fischer TERMOZ 8Z Fischer Termoz 8 SV Hilti ETICS-Anchor D-FV Hilti ETICS-Anchor D-FV T	
	Plate diameter (mm)	≥ 60	
<b>Characteristic of the insulation product panels for which the following failure loads apply</b>	Thickness (mm)	≥ 60	
	Tensile strength perpendicular to the face (kPa)	≥ 100	
<b>Failure loads (N)</b>	Anchors not placed at the panel joint (pull – through test)	$R_{panel}$ :	Minimum: <b>560</b> Average: <b>571</b>
	Anchors placed at the panel joint (static foam block test)	$R_{joint}$ :	Minimum: <b>493</b> Average: <b>503</b>

**Table 16 – Failure loads of combination of anchors described in below table and insulation product - EPS-EN 13163-TR100**

<b>Anchors for which the following failure loads apply</b>	Trade name	Bravoll PTH-KZ 60/8-La Bravoll PTH-KZL 60/8-La <b>Bravoll PTH 60/8-La</b> Bravoll PTH-L 60/8-La Bravoll PTH-S 60/8 Bravoll PTH-SX ejotherm STR U ejotherm STR U 2G EJOT SDM-T plus EJOT SDF-K plus ejotherm NT U ejotherm NK U Hilti SX-FV Koelner TFIX 8S Koelner TFIX 8ST KEW TSD-V	
	Plate diameter (mm)	≥ 60	
<b>Characteristic of the insulation product panels for which the following failure loads apply</b>	Thickness (mm)	≥ 50	
	Tensile strength perpendicular to the face (kPa)	≥ 100	
<b>Failure loads (N)</b>	Anchors not placed at the panel joint (pull – through test)	$R_{panel}$ :	Minimum: <b>502</b> Average: <b>514</b>
	Anchors placed at the panel joint (static foam block test)	$R_{joint}$ :	Minimum: <b>322</b> Average: <b>359</b>



**Table 17 – Failure loads of combination of anchors described in below table and insulation product – EPS-EN 13163-TR100**

<b>Anchors for which the following failure loads apply</b>	Trade name	SPIT ISO SPIT ISOPPLUS ejot H1 eco ejot H3 ejotherm NTK U fischer TERMOZ 8 N fischer Termoz 8 NZ fischer TERMOZ KS 8 fischer Termoz CN 8 hilti fixing element XI-FV KOELNER KI-10N KOELNER KI-10NS KI-10, KI-10PA KI-10M KOELNER TFIX-8M KOELNER TFIX-8P	
	Plate diameter (mm)	≥ 50	
<b>Characteristic of the insulation product panels for which the following failure loads apply</b>	Thickness (mm)	≥ 50	
	Tensile strength perpendicular to the face (kPa)	≥ 100	
<b>Failure loads (N)</b>	Anchors not placed at the panel joint (pull – through test)	$R_{panel}$ :	Minimum: <b>407</b> Average: <b>421</b>
	Anchors placed at the panel joint (pull – through test)	$R_{joint}$ :	Minimum: <b>363</b> Average: <b>373</b>

**Table 18 – Failure loads of combination of anchors described in below table and insulation product – EPS**

<b>Anchors for which the following failure loads apply</b>	Trade name	Baumit KlebeAnker/ Baumit StarTrack	
	Plate diameter (mm)	≥ 60	
<b>Characteristic of the insulation product panels for which the following failure loads apply</b>	Thickness (mm)	≥ 70	
	Tensile strength perpendicular to the face (kPa)	≥ 150	
<b>Failure loads (N)</b>	Anchors not placed at the panel joint (static foam block test – four anchors placed at the centre of the panel)	$R_{panel}$ :	Minimum: <b>500</b> Average: <b>614</b>

The wind load resistance of the ETICS  $R_d$  is calculated as follows:

$$R_d = [R_{panel} \times n_{panel} + R_{joint} \times n_{joint}] / \gamma_m$$

$n_{panel}$  is number (per m<sup>2</sup>) of anchors placed at the body of the insulation product;  
 $n_{joint}$  is number (per m<sup>2</sup>) of anchors placed at joints;  
 $\gamma_m$  is national safety factor.

### 3.4.5 Render strip tensile test (ETAG 004 – Clause 5.5.4.1)

Width of crack (Render Strip Tensile Strength with Baunit openContact) was not performed: no performance determined.

## 3.5 Protection against noise (BWR 5)

### 3.5.1 Airborne sound insulation (ETAG 004 – Clause 5.1.5.1)

No performance determined.

## 3.6 Energy economy and heat retention (BWR 6)

### 3.6.1 Thermal resistance (ETAG 004 – Clause 5.1.6.1)

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

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

where  $\chi_p \cdot n$  has only to be taken into account if it is greater than 0,04 W/(m<sup>2</sup>.K);  
 $U_c$  global (corrected) thermal transmittance of the covered wall (W/(m<sup>2</sup>.K));  
 $n$  number of anchors (through insulation product) per m<sup>2</sup>;  
 $\chi_p$  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 ( $\chi_p \cdot n$  negligible for  $n < 20$ );  
 = 0,004 W/K for anchors with a galvanized steel screw with the head covered by a plastic material ( $\chi_p \cdot n$  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/(m<sup>2</sup>.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 13163) in (m<sup>2</sup>.K)/W;  
 $R_{render}$  thermal resistance of the render (about 0,02 in (m<sup>2</sup>.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 (m<sup>2</sup>.K)/W;  
 $R_{se}$  external superficial thermal resistance in (m<sup>2</sup>.K)/W;  
 $R_{si}$  internal superficial thermal resistance in (m<sup>2</sup>.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.

## 3.7 Sustainable use of natural resources (BWR 7)

No performance determined.

#### 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 (further described in Annex V to Regulation (EU) No. 305/2011) 1 and 2+ apply.

**Table 19 – Assessment and verification of constancy of performance system**

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 <sup>(1)</sup> , A2 <sup>(1)</sup> , B <sup>(1)</sup> , C <sup>(1)</sup>	1
		A1 <sup>(2)</sup> , A2 <sup>(2)</sup> , B <sup>(2)</sup> , C <sup>(2)</sup> , D, E, (A1 to E) <sup>(3)</sup> , F	2+
	in external wall not subject to fire regulations	any	2+
<p><sup>(1)</sup> 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).</p> <p><sup>(2)</sup> Products/materials not covered by footnote (1).</p> <p><sup>(3)</sup> 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).</p>			

#### 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) The 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 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 "Technický a skúšobný ústav stavebný, n. o." have agreed a Control Plan which is deposited with the "Technický a skúšobný ústav stavebný, n. o." 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 before acceptance.

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 Technický a skúšobný ústav stavebný, n. o. without delay.

**Technický a skúšobný ústav stavebný, n. o.**  
Building Testing and Research Institute  
Studená 3, 821 04 Bratislava, Slovak Republic

On behalf of the Technický a skúšobný ústav stavebný, n. o.  
Bratislava, 08 September 2014



prof. Ing. Zuzana Sternová, PhD.  
Head of Technical Assessment Body

**Annexes**

Annex 1 – Insulation product characteristics

Annex 2 – Description and characteristics of the anchors

Annex 3 – Description and characteristics of the reinforcement

Annex 4 – Correspondence between trade names used for components Baumit open

**Annex 1 – Insulation product characteristics**

**Table 20 – Characteristics of the insulation product(s)**

Description and characteristics	EPS panel "Baumit openTherm" <i>white color</i>	
	for bonded ETICS	for mechanically fixed ETICS with anchors
Reaction to fire / STN EN 13501-1	Euroclass E (thickness from 20 to 300 mm, density from 15 to 18 kg/m <sup>3</sup> )	
Thermal resistance ((m <sup>2</sup> .K)/W)	Defined in the CE marking in reference to EN 13163 "Thermal insulation products for buildings – Factory made products of expanded polystyrene" $\lambda_{ins} < 0,040 \text{ W/(m}\cdot\text{K)}$ (declared value)	
Thickness (mm) / EN 823	EPS - EN 13163 – T1	
Length (mm) / EN 822	EPS - EN 13163 – L3	
Width (mm) / EN 822	EPS - EN 13163 – W2	
Squareness (mm) / EN 824	EPS - EN 13163 – S2	
Flatness (mm) / EN 825	EPS - EN 13163 – P5	
Surface condition	Cut surface (homogeneous and without "skin")	
Dimensional stability under	specified temperature and humidity / EN 1604	EPS - EN 13163 – DS(70,-)1
	laboratory condition / EN 1603	EPS - EN 13163 – DS(N)2
Bending strength according to EN 12089	EPS - EN 13163 – BS100	
Compressive stress or compressive strength (kPa) / EN 826	EPS - EN 13163 – CS(10)70	
Tensile strength perpendicular to the faces in dry conditions / EN 1607	≥ 100 kPa and < 150 kPa, EPS - EN 13163 – TR100	
Short term water absorption by partial immersion / EN 1609	< 0,5 kg/m <sup>3</sup>	
Water vapour diffusion resistance factor ( $\mu$ ) / EN 12086	≤ 10	
Shear strength (N/mm <sup>2</sup> ) / EN 12090	≥ 0,02 MPa	–
Shear modulus (N/mm <sup>2</sup> ) / EN 12090	≥ 1,0 MPa	–

**Table 21 – Characteristics of the insulation product(s)**

Description and characteristics	EPS panel "Baumit open plus" <i>grey color</i>	
	for bonded ETICS	for mechanically fixed ETICS with anchors
Reaction to fire / STN EN 13501-1	Euroclass E (thickness from 20 to 300 mm, density from 15 to 18 kg/m <sup>3</sup> )	
Thermal resistance ((m <sup>2</sup> .K)/W)	Defined in the CE marking in reference to EN 13163 "Thermal insulation products for buildings – Factory made products of expanded polystyrene" $\lambda_{ins} < 0,031 \text{ W/(m}\cdot\text{K)}$ (declared value)	
Thickness (mm) / EN 823	EPS - EN 13163 – <b>T1</b>	
Length (mm) / EN 822	EPS - EN 13163 – <b>L3</b>	
Width (mm) / EN 822	EPS - EN 13163 – <b>W2</b>	
Squareness (mm) / EN 824	EPS - EN 13163 – <b>S2</b>	
Flatness (mm) / EN 825	EPS - EN 13163 – <b>P5</b>	
Surface condition	Cut surface (homogeneous and without "skin")	
Dimensional stability under	specified temperature and humidity / EN 1604	EPS - EN 13163 – <b>DS(70,-)1</b>
	laboratory condition / EN 1603	EPS - EN 13163 – <b>DS(N)2</b>
Bending strength according to EN 12089	EPS - EN 13163 – <b>BS100</b>	
Compressive stress or compressive strength (kPa) / EN 826	EPS - EN 13163 – <b>CS(10)70</b> (EPS 70)	
Tensile strength perpendicular to the faces in dry conditions / EN 1607	$\geq 150 \text{ kPa}$ and $< 200 \text{ kPa}$ , EPS - EN 13163 – TR150	
Short term water absorption by partial immersion / EN 1609	$< 0,5 \text{ kg/m}^3$	
Water vapour diffusion resistance factor ( $\mu$ ) / EN 12086	$\leq 10$	
Shear strength (N/mm <sup>2</sup> ) / EN 12090	$\geq 0,02 \text{ MPa}$	–
Shear modulus (N/mm <sup>2</sup> ) / EN 12090	$\geq 1,0 \text{ MPa}$	–

Table 22 – Characteristics of the insulation product(s)

Description and characteristics	EPS panel "Baumit open reflect" <i>grey coloured board with white cement paint</i>	
	for bonded ETICS	for mechanically fixed ETICS with anchors
Reaction to fire / STN EN 13501-1	Euroclass E (thickness from 20 to 300 mm, density from 15 to 18 kg/m <sup>3</sup> )	
Thermal resistance ((m <sup>2</sup> .K)/W)	Defined in the CE marking in reference to EN 13163 "Thermal insulation products for buildings – Factory made products of expanded polystyrene" $\lambda_{ins} < 0,031 \text{ W/(m}\cdot\text{K)}$ (declared value)	
Thickness (mm) / EN 823	EPS - EN 13163 – T1	
Length (mm) / EN 822	EPS - EN 13163 – L3	
Width (mm) / EN 822	EPS - EN 13163 – W2	
Squareness (mm) / EN 824	EPS - EN 13163 – S2	
Flatness (mm) / EN 825	EPS - EN 13163 – P5	
Surface condition	Cut surface (homogeneous and without "skin")	
Dimensional stability under	specified temperature and humidity / EN 1604	EPS - EN 13163 – DS(70,-)1
	laboratory condition / EN 1603	EPS - EN 13163 – DS(N)2
Bending strength according to EN 12089	EPS - EN 13163 – BS100	
Compressive stress or compressive strength (kPa) / EN 826	EPS - EN 13163 – CS(10)70 (EPS 70)	
Tensile strength perpendicular to the faces in dry conditions / EN 1607	≥ 150 kPa and < 200 kPa, EPS - EN 13163 – TR150	
Short term water absorption by partial immersion / EN 1609	< 0,5 kg/m <sup>3</sup>	
Water vapour diffusion resistance factor ( $\mu$ ) / EN 12086	≤ 10	
Shear strength (N/mm <sup>2</sup> ) / EN 12090	≥ 0,02 MPa	–
Shear modulus (N/mm <sup>2</sup> ) / EN 12090	≥ 1,0 MPa	–

Table 23 – Characteristics of the insulation product(s)

Description and characteristics	EPS panel "Baumit openTherm 031 G <i>grey color</i>	
	for bonded ETICS	for mechanically fixed ETICS with anchors
Reaction to fire / STN EN 13501-1	Euroclass E (thickness from 20 to 300 mm, density from 15 to 18 kg/m <sup>3</sup> )	
Thermal resistance ((m <sup>2</sup> .K)/W)	Defined in the CE marking in reference to EN 13163 "Thermal insulation products for buildings – Factory made products of expanded polystyrene" $\lambda_{ins} < 0,031 \text{ W/(m}\cdot\text{K)}$ (declared value)	
Thickness (mm) / EN 823	EPS - EN 13163 – T1	
Length (mm) / EN 822	EPS - EN 13163 – L3	
Width (mm) / EN 822	EPS - EN 13163 – W2	
Squareness (mm) / EN 824	EPS - EN 13163 – S2	
Flatness (mm) / EN 825	EPS - EN 13163 – P5	
Surface condition	Cut surface (homogeneous and without "skin")	
Dimensional stability under	specified temperature and humidity / EN 1604	EPS - EN 13163 – DS(70,-)1
	laboratory condition / EN 1603	EPS - EN 13163 – DS(N)2
Bending strength according to EN 12089	EPS - EN 13163 – BS100	
Compressive stress or compressive strength (kPa) / EN 826	EPS - EN 13163 – CS(10)70 (EPS 70)	
Tensile strength perpendicular to the faces in dry conditions / EN 1607	≥ 100 kPa, EPS - EN 13163 – TR100 (EPS 70)	
Short term water absorption by partial immersion / EN 1609	< 0,5 kg/m <sup>3</sup>	
Water vapour diffusion resistance factor ( $\mu$ ) / EN 12086	≤ 10	
Shear strength (N/mm <sup>2</sup> ) / EN 12090	≥ 0,02 MPa	–
Shear modulus (N/mm <sup>2</sup> ) / EN 12090	≥ 1,0 MPa	–



**Table 24 – Characteristics of the insulation product(s)**

Description and characteristics	EPS panel "Baumit openTherm 031 reflect grey coloured board with white cement paint	
	for bonded ETICS	for mechanically fixed ETICS with anchors
Reaction to fire / STN EN 13501-1	Euroclass E (thickness from 20 to 300 mm, density from 15 to 18 kg/m <sup>3</sup> )	
Thermal resistance ((m <sup>2</sup> .K)/W)	Defined in the CE marking in reference to EN 13163 "Thermal insulation products for buildings – Factory made products of expanded polystyrene" $\lambda_{ins}: < 0,031 \text{ W/(m}\cdot\text{K)}$ (declared value)	
Thickness (mm) / EN 823	EPS - EN 13163 – T1	
Length (mm) / EN 822	EPS - EN 13163 – L3	
Width (mm) / EN 822	EPS - EN 13163 – W2	
Squareness (mm) / EN 824	EPS - EN 13163 – S2	
Flatness (mm) / EN 825	EPS - EN 13163 – P5	
Surface condition	Cut surface (homogeneous and without "skin")	
Dimensional stability under	specified temperature and humidity / EN 1604	EPS - EN 13163 – DS(70,-)1
	laboratory condition / EN 1603	EPS - EN 13163 – DS(N)2
Bending strength according to EN 12089	EPS - EN 13163 – BS100	
Compressive stress or compressive strength (kPa) / EN 826	EPS - EN 13163 – CS(10)70 (EPS 70)	
Tensile strength perpendicular to the faces in dry conditions / EN 1607	≥ 100 kPa, EPS - EN 13163 – TR100 (EPS 70)	
Short term water absorption by partial immersion / EN 1609	< 0,5 kg/m <sup>3</sup>	
Water vapour diffusion resistance factor ( $\mu$ ) / EN 12086	≤ 10	
Shear strength (N/mm <sup>2</sup> ) / EN 12090	≥ 0,02 MPa	–
Shear modulus (N/mm <sup>2</sup> ) / EN 12090	≥ 1,0 MPa	–

**Table 25 – Characteristics of the insulation product(s)**

Description and characteristics	EPS panel "Baumit openTherm 035W <i>white</i>	
	for bonded ETICS	for mechanically fixed ETICS with anchors
Reaction to fire / STN EN 13501-1	Euroclass E (thickness from 20 to 300 mm, density from 15 to 18 kg/m <sup>3</sup> )	
Thermal resistance ((m <sup>2</sup> .K)/W)	Defined in the CE marking in reference to EN 13163 "Thermal insulation products for buildings – Factory made products of expanded polystyrene" $\lambda_{ins} < 0,031 \text{ W/(m}\cdot\text{K)}$ (declared value)	
Thickness (mm) / EN 823	EPS - EN 13163 – <b>T1</b>	
Length (mm) / EN 822	EPS - EN 13163 – <b>L3</b>	
Width (mm) / EN 822	EPS - EN 13163 – <b>W2</b>	
Squareness (mm) / EN 824	EPS - EN 13163 – <b>S2</b>	
Flatness (mm) / EN 825	EPS - EN 13163 – <b>P5</b>	
Surface condition	Cut surface (homogeneous and without "skin")	
Dimensional stability under	specified temperature and humidity / EN 1604	EPS - EN 13163 – <b>DS(70,-)1</b>
	laboratory condition / EN 1603	EPS - EN 13163 – <b>DS(N)2</b>
Bending strength according to EN 12089	EPS - EN 13163 – <b>BS100</b>	
Compressive stress or compressive strength (kPa) / EN 826	EPS - EN 13163 – <b>CS(10)70</b>	
Tensile strength perpendicular to the faces in dry conditions / EN 1607	$\geq 100 \text{ kPa}$ , EPS - EN 13163 – TR100 (EPS 70)	
Short term water absorption by partial immersion / EN 1609	$< 0,5 \text{ kg/m}^3$	
Water vapour diffusion resistance factor ( $\mu$ ) / EN 12086	$\leq 10$	
Shear strength (N/mm <sup>2</sup> ) / EN 12090	$\geq 0,02 \text{ MPa}$	–
Shear modulus (N/mm <sup>2</sup> ) / EN 12090	$\geq 1,0 \text{ MPa}$	–

## Annex 2 – Description and characteristics of anchors

Table 26 – References to ETAs for anchors used in ETICS

Trade name	Description Plate stiffness/Load resistance of the anchor plate	Plate diameter mm	Characteristic resistance in substrate stated in
Bravoll PTH-KZ Bravoll PTH-KZL Bravoll PTH Bravoll PTH-L	Nailed-in plastic anchor with polyamide (PTH-KZ) (steel – PTH-KZ) nail and plastic head 0,4 kN/mm/1,8 kN Use of category (Bravoll PTH 60/8): A, B Use of category (Bravoll PTH-KZ 60/8): A, B, C, D	60	ETA-05/0055
Bravoll PTH-S 60/8-La	Screwed-in plastic anchor with steel screw 0,9 kN/mm/2,6 kN Use of category: A, B, C, D, E	60	ETA-08/0267
Bravoll PTH SX	Screwed-in plastic anchor with plastic screw 0,5 kN/mm/1,8 kN Use of category: A, B, C, D, E	60	ETA-10/0028
Ejotharm STR U Ejotharm STR U 2G	Screwed-in plastic anchor with steel screw and plastic head 0,6 kN/mm/2,08 kN Use of category: A, B, C, D, E	60	ETA-04/0023
EJOT SDM-T plus and SDF-K plus	Screwed-in plastic anchor with steel screw and plastic head 0,6 kN/mm/2,08 kN Use of category: A, B, C	60	ETA-04/0064
Ejot H1 eco	Nailed-in plastic anchor with steel nail 0,6 kN/mm/1,4 kN Use of category: A, B, C	60	ETA-11/0192
EJOT H3	Nailed-in plastic anchor with polyamide nail 0,6 kN/mm/1,25 kN Use of category: A, B, C	60	ETA-14/0130
EJOT ejotharm NTK U	Nailed-in plastic anchor with polyamide nail and plastic head 0,5 kN/mm/1,4 kN Use of category: A, B, C	60	ETA-07/0026
ejotharm NT U ejotharm NK U	Nailed-in plastic anchor with steel nail 0,6 kN/mm/2,43 kN Use of category: A, B, C	60	ETA-05/0009
Fischer nailed-in anchor Termoz 8 N, Termoz 8 NZ	Nailed-in plastic anchor with steel nail 0,5 kN/mm /1,34 kN Use of category: A, B, C	60	ETA-03/0019
Fischer TERMOFIX CF 8	Nailed-in plastic anchor with steel nail 0,5 kN/mm/1,65 kN Use of category: A, B, C, D	60	ETA-07/0287
Fischer Termoz 8 UZ Fisher Termoz 8 U	Screwed-in plastic anchor with steel screw and plastic head 0,5 kN/mm/2,45 kN Use of category: A, B, C, E	60	ETA-02/0019
Fischer Termoz KS 8	Screwed-in plastic anchor with plastic screw 0,5 kN/mm/1,4 kN Use of category: A, B, C	60	ETA-04/0114

Fischer Termoz PN8*	Nailed-in plastic anchor with polyamide nail 0,4 kN/mm/1,6 kN Use of category: A, B, C	60	ETA-09/0171
Fischer Termoz 8 SV	Screwed-in anchor with screw of galvanised steel 1,1 kN/mm/2,13 kN Use of category: A, B, C, D, E	60	ETA-06/0180
Fischer Termoz CN 8	Nailed-in polypropylene anchor 0,4 kN/mm/1,6 kN Use of category: A, B, C, D	60	ETA-09/0394
Hilti ETICS screwed-in anchor D 8-FV	Screwed-in anchor with screw of galvanised steel No declared value (KN/mm/kN) Use of category: A, B, C, D, E	60	ETA-07/0288
Hilti SD-FV 8 with doublehead HDT-FV90	Nailed-in plastic anchor with polyamide nail 0,3 kN/mm /1,55 kN Use of category: A, B, C	60	ETA-03/0028
Hilti ETICS-Anchor D-FV Hilti ETICS-Anchor D-FV T	Screwed-in plastic anchor with steel screw 0,8 kN/mm /1,93 kN Use of category: A, B, C, D, E	60	ETA-05/0039
Hilti SX-FV	anchor with stainless steel 0,7 kN/mm /1,73 kN Use of category: A, B, C	60	ETA-03/0005
Hilti fixing element XI-FV	plastic part made of polyethylene 0,4 kN/mm /1,6 kN Use of category: without declarations	60	ETA-03/0004
Hilti SD-FV 8	plastic part with polyamide pin 0,3 kN/mm /1,55 kN Use of category: A, B, C	60	ETA-03/0028
KOELNER KI-10N KOELNER KI-10NS	Nailed-in plastic anchor with steel nail 0,5 kN/mm /1,23 kN Use of category: B, C, D, E (for KOELNER KI-10N) Use of category: A, B, C, D, E (for KOELNER KI-10NS)	60	ETA-07/0221
KI-10, KI-10PA KI-10M	Nailed-in plastic anchor with polypropylene nail 0,5 kN/mm /2,1 kN (for KI-10, KI-10PA) 0,4 kN/mm /2,6 kN (for KI-10M) Use of category: A, B, C, D, E	60	ETA-07/0291
KOELNER TFIX-8M	nailed-in anchor with nail of galvanised steel 1,0 kN/mm /1,75 kN Use of category: A, B, C	60	ETA-07/0336
KOELNER TFIX 8S KOELNER TFIX 8ST	Screwed-in anchor with screw of galvanised steel 0,6 kN/mm /2,04 kN Use of category: A, B, C, D, E	60	ETA-11/0144
KOELNER TFIX-8P	Nailed-in plastic anchor with nail of galvanised steel 0,3 kN/mm /1,38 kN Use of category: A, B, C	60	ETA-13/0845
KEW TSD-V	Nailed in anchor with galvanized steel nail 1,24 kN/mm /1,75 kN Use of category: A, B, C	60	ETA-08/0315

SPIT ISO	Nailed in plastic anchor with plastic nail 0,3 kN/mm /1,0 kN Use of category: A, B, C	50 to 60	90	ETA-04/0076
SPIT ISOPLUS	Nailed in plastic anchor with nailsscrew of galvanized steel 0,8 kN/mm /4,2 kN Use of category: A, B, C	60		ETA-09/0245
Baumit Klebeanker / Baumit StarTrack/ KlebeAnker JJ A8+ (This anchor is for load transmission of the adhesives Baumit StarContact and Baumit StarContact white into the substrate and is used only with EPS-TR150)	Use of category: A, B, C, E	60		ETA-06/0015
Baumit Klebeanker / Baumit StarTrack/ KlebeAnker Duplex JJ A8S (This anchor is for load transmission of the adhesives Baumit StarContact and Baumit StarContact white into the substrate and is used only with EPS-TR150)	Use of category: A, B, C, E	60		ETA-12/0064

**Annex 3 – Description and characteristics of the reinforcement**

**Table 27 – Description and characteristics of the reinforcement**

Mesh trade name	Description	Alkalis resistance (5.6.7.1 of ETAG 004)			
		Residual strength after ageing (N/mm)		Relative residual resistance: % (after ageing) of the strength in the as delivered state	
		Warp	Weft	Warp	Weft
Baunit openTex/Baunit StarTex	Standard mesh: Mesh size: 4 mm × 4,5 mm Mass per unit area: min. 145 g/m <sup>2</sup>	≥ 20		≥ 50	
R 131 A101	Standard mesh: Mesh size: 3,5 mm × 3,8 mm Mass per unit area: min. 160 g/m <sup>2</sup>	≥ 20		≥ 50	

**Annex 4 – Correspondence between trade names used for components Baunit open**

ETICS	Baunit open		
Adhesive	Baunit openContact	Baunit openContact W	Baunit open KlebeSpachtel W
Special anchors	Baunit KlebeAnker		Baunit StarTrack
Thermal insulations	Baunit openTherm		Baunit openTherm plus
	Baunit open plus		Baunit openTherm reflect
	Baunit open reflect		
	Baunit openTherm 031 G		
	Baunit openTherm 031 reflect		
	Baunit openTherm 035W		
Base coat	Baunit openContact	Baunit openContact W	Baunit open KlebeSpachtel W
Glass fibre meshes	Baunit openTex	Baunit Star Tex	Baunit open TextilglasGitter
	R 131 A101		
Key coats	Baunit UniPrimer		Baunit UniversalGrund
	Baunit openPrimer		Baunit open Grundierung
	Baunit PremiumPrimer	Baunit DecorGrundierung DG 27	Baunit PremiumPrimer DG 27
Finishing coats	Baunit StyleTop	Baunit ArtlineTop	Baunit ArtlinePutz
	Baunit NanoporTop		Baunit NanoporPutz
	Baunit openTop		Baunit open StrukturPutz
	Baunit NanoporTop		Baunit NanoporPutz
	Baunit Silikon Top		Baunit SilikonPutz
	Baunit Silikat Top		Baunit SilikatPutz
	Baunit CreativTop (Max, Trend, Fine)		
	Baunit FineTop	Baunit SilikonFine	Baunit UniTop Fine
	Baunit NanoporFine		Baunit NanoporTopFine
	Decorative coat / plaster	Baunit CreativTop S-Fine	
Baunit FillTop		Baunit UniTop Fill	
Decorative coat / paint	Baunit NanoporColor		Baunit NanoporFarbe
	Baunit SilikonColor		Baunit SilikonFarbe
	Baunit SilikatColor		Baunit SilikatFarbe
	Baunit StyleColor	Baunit ArtlineFarbe	Baunit Artline Color