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## European Technical Assessment

**ETA-08/0205  
of 24/06/2014**

### General Part

<b>Technical Assessment Body issuing the European Technical Assessment</b>	Instytut Techniki Budowlanej
<b>Trade name of the construction product</b>	BOLIX W
<b>Product family to which the construction product belongs</b>	External Thermal Insulation Composite System with rendering (ETICS)
<b>Manufacturer</b>	BOLIX S.A. ul. Stolarska 8 PL 34-300 Żywiec, Poland
<b>Manufacturing plant</b>	BOLIX S.A. ul. Stolarska 8 PL 34-300 Żywiec
<b>This European Technical Assessment contains</b>	14 pages including 2 Annexes which form an integral part of this Assessment
<b>This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of</b>	Guideline for European Technical Approval ETAG 004, Edition 2013 "External Thermal Insulation Composite Systems with rendering", used as European Assessment Document (EAD)
<b>This version replaces</b>	ETA-08/0205 issued on 19/09/2008

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## Specific Part

### 1 Technical description of the product

External Thermal Insulation Composite System BOLIX W called ETICS in the following text is a kit designed and installed in accordance with the manufacturer design and installation instructions deposited with the Instytut Techniki Budowlanej.

The ETICS comprises the following components, which are factory-produced by the manufacturer or component suppliers. ETICS is made up on site from these components. The ETICS manufacturer is ultimately responsible for ETICS.

The ETICS comprises a prefabricated insulation product made of mineral wool (MW) 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 reinforcing mesh. The rendering is applied directly to the insulation panels, without any air gap or disconnecting layer.

The ETICS also includes ancillary materials which are defined in clause 3.2.2.5 of ETAG 004. They shall be used in accordance with the manufacturer's instruction.

**Table 1**

	Components	Coverage (kg/m <sup>2</sup> )	Thickness (mm)
Insulation materials with associated methods of fixing	<b>Bonded ETICS:</b> fully bonded or fully bonded with supplementary mechanical fixings (bonded surface shall be 100%). National application documents have to be taken into account.		
	<ul style="list-style-type: none"> <li><b>Insulation product:</b> Mineral wool (MW) lamella according to EN 13162; see Annex 1 for product characteristics</li> </ul>	-	40 to 250
	<ul style="list-style-type: none"> <li><b>Adhesives:</b> <b>BOLIX WM</b> cement based powder requiring addition of 0,20 to 0,22 l/kg of water <b>BOLIX ZW</b> cement based powder requiring addition of 0,19 to 0,22 l/kg of water</li> </ul>	about 5,0 <sup>1</sup> (powder)	-
		about 5,0 <sup>1</sup> (powder)	-
	<b>Mechanically fixed ETICS with supplementary adhesive:</b> according to the manufacturer's recommendation the minimal bonded surface shall be 40%. National application documents shall be taken into account.		
	<ul style="list-style-type: none"> <li><b>Insulation product:</b> Mineral wool (MW) panels according to EN 13162; see Annex 1 for product characteristics</li> </ul>	-	50 to 250
	<ul style="list-style-type: none"> <li><b>Anchors:</b> see Annex 2 for product characteristics</li> </ul>	-	-

<sup>1</sup> refers to fully bonded system



Table 1

	Components	Coverage (kg/m <sup>2</sup> )	Thickness (mm)
Insulation materials with associated methods of fixing	<ul style="list-style-type: none"> <li>• <b>Supplementary adhesives:</b></li> <li><b>BOLIX WM</b> cement based powder requiring addition of 0,20 to 0,22 l/kg of water</li> <li><b>BOLIX ZW</b> cement based powder requiring addition of 0,19 to 0,22 l/kg of water</li> </ul>	about 5,0 <sup>1</sup> (powder)	-
		about 5,0 <sup>1</sup> (powder)	-
<sup>1</sup> refers to fully bonded system			
Base coat	<ul style="list-style-type: none"> <li>• <b>BOLIX WM</b> cement based powder requiring addition of 0,20 to 0,22 l/kg of water</li> </ul>	about 5,0 (powder)	3,0 to 5,0
Glass fibre mesh	<b>Standard glass fibre meshes</b> see Annex 2 for product characteristics <ul style="list-style-type: none"> <li>• <b>VERTEX R 117 A 101 (AKE 145A)</b> mass per unit area: 147 g/m<sup>2</sup></li> <li>• <b>ST 112-100/7</b> mass per unit area: 165 g/m<sup>2</sup></li> </ul>	-	-
Key coats	<ul style="list-style-type: none"> <li>• <b>BOLIX O</b> composition: water, styroacrylat binder, additives ready to use liquid to be used with mineral finishing coats</li> </ul>	0,10 to 0,15	-
	<ul style="list-style-type: none"> <li>• <b>BOLIX OP</b> composition: water, styroacrylat binder, mineral fillers, additives ready to use liquid to be used with mineral finishing coats</li> </ul>	0,25 to 0,40	-
	<ul style="list-style-type: none"> <li>• <b>BOLIX SG</b> composition: water, styroacrylat binder, silicate binder, additives ready to use liquid to be used with silicate finishing coats</li> </ul>	0,10 to 0,20	-
	<ul style="list-style-type: none"> <li>• <b>BOLIX SG kolor</b> composition: water, styroacrylat binder, silicate binder, mineral fillers, additives ready to use liquid to be used with silicate finishing coats</li> </ul>	0,25 to 0,40	-
	<ul style="list-style-type: none"> <li>• <b>BOLIX SIG</b> composition: water, styroacrylat binder, silicone resin, additives ready to use liquid to be used with silicone finishing coats</li> </ul>	0,10 to 0,20	-
	<ul style="list-style-type: none"> <li>• <b>BOLIX SIG kolor</b> composition: water, styroacrylat binder, silicone resin, mineral fillers, additives ready to use liquid to be used with silicone finishing coats</li> </ul>	0,25 to 0,40	-
Finishing coats	<ul style="list-style-type: none"> <li>• <b>Silicone finishing coats</b> composition: water, silicone resin, styroacrylat binder, sand, mineral fillers, additives ready to use paste</li> </ul>		
	<b>BOLIX SIT 1,5 KA</b> particle size 1,5 mm; grained structure	2,0 to 2,5	regulated by particle size
	<b>BOLIX SIT 2 KA</b> particle size 2,0 mm; grained structure	2,5 to 3,0	
<b>BOLIX SIT 2 R</b> particle size 2,5 mm; ribbed structure	3,0 to 3,5		

Table 1

	Components	Coverage (kg/m <sup>2</sup> )	Thickness (mm)
Finishing coats	<ul style="list-style-type: none"> <li>• <b>Mineral finishing coats</b> composition: sand, cement, limestone filler, synthetic resin, additives powder requiring addition of 0,17 to 0,24 l/kg of water</li> </ul>		
	<b>BOLIX MP KA 15</b> particle size 1,5 mm; grained structure	2,2 to 3,0	regulated by particle size
	<b>BOLIX MP KA 20</b> particle size 2,0 mm; grained structure	3,0 to 3,5	
	<b>BOLIX MP KA 30</b> particle size 3,0 mm; grained structure	3,0 to 4,0	
	<b>BOLIX MP R 25</b> particle size 2,5 mm; ribbed structure	3,0 to 3,5	
	<b>BOLIX MP KA 15 for painting</b> particle size 1,5 mm; grained structure	2,2 to 3,0	
	<b>BOLIX MP R 25 for painting</b> particle size 2,5 mm; ribbed structure	3,0 to 3,5	
	<ul style="list-style-type: none"> <li>• <b>Silicate finishing coats</b> composition: water, silicate resin, styroacrylat binder, sand, mineral fillers, additives ready to use paste</li> </ul>		
	<b>BOLIX S 1 KA</b> particle size 1,0 mm; grained structure	1,8 to 2,2	regulated by particle size
	<b>BOLIX S 1,5 KA</b> particle size 1,5 mm; grained structure	2,5 to 3,0	
<b>BOLIX S 2 KA</b> particle size 2,0 mm; grained structure	3,0 to 3,5		
<b>BOLIX S 2 R</b> particle size 2,5 mm; ribbed structure	3,0 to 3,5		
Primers	<ul style="list-style-type: none"> <li>• <b>BOLIX SG</b> composition: water, styroacrylat binder, silicate binder, additives ready to use liquid to be used with BOLIX SZ decorative coat</li> </ul>	0,10 to 0,20	-
	<ul style="list-style-type: none"> <li>• <b>BOLIX SIG</b> composition: water, styroacrylat binder, silicone resin, additives ready to use liquid to be used with BOLIX SIL decorative coat</li> </ul>	0,10 to 0,20	-
Decorative coats (paints)	<ul style="list-style-type: none"> <li>• <b>BOLIX SZ</b> ready to use liquid to be used obligatory with "for painting" finishing coats and optionally with the other finishing coats composition: styrolacrylat binder, silicate binder, additives, mineral fillers</li> </ul>	0,18 to 0,28	-
	<ul style="list-style-type: none"> <li>• <b>BOLIX SIL</b> ready to use liquid to be used obligatory with "for painting" finishing coats and optionally with the other finishing coats composition: styrolacrylat binder, silicone resin, additives, mineral fillers</li> </ul>	0,18 to 0,28	-
Ancillary materials	Remain under ETICS manufacturer responsibility. Anchors as supplementary mechanical fixings covered by ETA issued according to ETAG 014.		

## 2 Specification of the intended use in accordance with the applicable EAD

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

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 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 effects of weathering.

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

The provisions made in this European Technical Approval 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 works.

Design, installation, maintenance and repair shall take into account principles given in clause 7 of ETAG 004 and shall be done in accordance with national provisions.

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

Performances of the ETICS related to the Basic Requirements were determined in compliance with the ETAG 004.

Performances of the ETICS as described in this clause are valid provided that the components of the kit comply with Annexes 1 + 2.

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

##### 3.1.1 Reaction to fire (ETAG 004, clause 5.1.2.1)

Table 2

Configuration	Maximum declared organic content	Declared flame retardant content	Reaction to fire class according to EN 13501-1
ETICS BOLIX W: <ul style="list-style-type: none"> <li>• Adhesives: BOLIX WM, ZW</li> <li>• MW boards</li> <li>• Base coat: BOLIX WM</li> <li>• Finishing coats BOLIX MP and S (with key coats BOLIX OP, SG and SG kolor)</li> <li>• Decorative coats BOLIX SZ and SIL (with BOLIX SG and SIG)</li> </ul>	4,2% Class A1 acc. to EN 13501-1  3,3%  3,5%  10,0%	0% (no flame retardant)	<b>A2 – s2, d0</b>
ETICS BOLIX W: <ul style="list-style-type: none"> <li>• Adhesives: BOLIX WM, BOLIX ZW</li> <li>• MW boards</li> <li>• Base coat: BOLIX WM</li> <li>• Finishing coats BOLIX SIT (with key coats BOLIX SIG and SIG kolor)</li> <li>• Decorative coats BOLIX SZ and SIL (with BOLIX SIG)</li> </ul>	4,2% Class A1 acc. to EN 13501-1  3,3%  8,0%  10,0%	0% (no flame retardant)	<b>B – s2, d0</b>
Any other configurations	-		<b>NPD</b> no performance determined

*Note: European reference fire scenario has not been laid down for facades. In some Member States the classification according to EN 13501-1 might not be sufficient for the use in facades. An additional tests might be required to comply with national provisions (e.g. large scale tests).*

### Mounting and fixing

The assessment of reaction to fire is based on tests with an insulation layer (MW) thickness of 180 mm – SBI test according to EN 13823, 60 mm – test according to EN ISO 11925-2 and EN ISO 1716 and insulation material (MW) density of 113,0 kg/m<sup>3</sup> as well as finishing coats with maximum organic content.

For the SBI test according to EN 13823, the ETICS is mounted directly to a substrate (Class A2-s1, d0) with a thickness of 12 mm.

For the test according to EN ISO 11925-2 no substrate is used.

The installation of the ETICS was carried out by the manufacturer following the manufacturer's specifications (instruction of installation) 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.

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

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

### 3.2.1 Water absorption (ETAG 004, clause 5.1.3.1)

- Base coat BOLIX WM:
  - water absorption after 1 hour < 1,0 kg/m<sup>2</sup>,
  - water absorption after 24 hours < 0,5 kg/m<sup>2</sup>,
- Rendering systems – according to Table 3.

Table 3

		Water absorption after 24 h	
		< 0,5 kg/m <sup>2</sup>	≥ 0,5 kg/m <sup>2</sup>
<b>Rendering system:</b> base coat BOLIX WM (with the relevant key-coat) + finishing coat indicated hereafter:	BOLIX MP R	X	-
	BOLIX MP KA	X	-
	BOLIX SIT KA	X	-
	BOLIX S KA	X	-

### 3.2.2 Watertightness (ETAG 004, clause 5.1.3.2)

Passed without defects. None of the following defects occurred during testing:

- blistering or peeling of any finishing,
- failure or cracking associated with joints between insulation product boards or profiles fitted with ETICS,
- detachment of the render,
- cracking allowing water penetration to the insulation layer.

The ETICS is so assessed as resistant to hygrothermal cycles.



The water absorption of base coat and the rendering system is less than 0,5 kg/m<sup>2</sup> after 24 hours for all configurations of the ETICS, so the ETICS is assessed as freeze/thaw resistant.

### 3.2.3 Impact resistance (ETAG 004, clause 5.1.3.3)

Table 4

		Single standard mesh
<b>Rendering system:</b> base coat BOLIX WM (with relevant key-coat) + finishing coat indicated hereafter:	MP KA 15, MP KA 20, MP KA 30, MP R 25, MP KA 15 for painting, MP R 25 for painting	Category III
	S 1 KA, S 1,5 KA, S 2 R	Category III
	S 2 KA	Category II
	SIT 1,5 KA, SIT 2 KA, SIT 2 R	Category II

### 3.2.4 Water vapour permeability (ETAG 004, clause 5.1.3.4)

Table 5

		Equivalent air thickness $s_d$
<b>Rendering system:</b> base coat BOLIX WM (with relevant key-coat) + finishing coat indicated hereafter:	MP KA 15, MP KA 20 MP KA 30, MP R 25 MP KA 15 for painting MP R 25 for painting	$\leq 1,0$ m BOLIX OP+BOLIX MP R 25+BOLIX SIG+BOLIX SIL: 0,25 m BOLIX OP+BOLIX MP R 25+BOLIX SG+BOLIX SZ: 0,22 m BOLIX OP+BOLIX MP R 25: 0,18 m BOLIX O+BOLIX MP KA 30: 0,22 m
	S 1 KA, S 1,5 KA S 2 KA, S 2 R	$\leq 1,0$ m BOLIX SG+BOLIX S 2 KA: 0,20 m BOLIX SG+BOLIX S 2 KA+BOLIX SG+BOLIX SZ: 0,25 m
	SIT 1,5 KA, SIT 2 KA SIT 2 R	$\leq 1,0$ m BOLIX SIG+BOLIX SIT 2 KA: 0,43 m BOLIX SIG+BOLIX SIT 2 KA+BOLIX SIG+BOLIX SIL: 0,50 m

### 3.2.5 Release of dangerous substances (ETAG 004 - clause 5.1.3.5, EOTA TR 034)

The written declaration on dangerous substances was submitted by the manufacturer to the Technical Assessment Body.

In addition to the specific clauses relating to dangerous substances contained in this ETA, there may be other requirements applicable to the ETICS falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the Regulation (EU) No 305/2011, these requirements need also to be complied with, when and where they apply.

## 3.3 Safety in use (BWR 4)

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



Table 6

Bond strength between base coat and insulation product (MW panels)			
Base coat	Initial state	After hygrothermal cycles (on the rig)	After freeze/thaw cycles
BOLIX WM	< 0,08 MPa failure into MW (cohesive rupture)	< 0,08 MPa failure into MW (cohesive rupture)	test not required because freeze/thaw cycles not necessary

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

Table 7

Bond strength between adhesive and substrate (concrete)				
Adhesives		Under dry conditions	48 h immersion in water + 2 h drying at (23±2)°C and (50±5)% RH	48 h immersion in water + 7 days drying at (23±2)°C and (50±5)% RH
BOLIX WM	Concrete	≥ 0,25 MPa	≥ 0,08 MPa	≥ 0,25 MPa
BOLIX ZW	Concrete	≥ 0,25 MPa	≥ 0,08 MPa	≥ 0,25 MPa
Bond strength between adhesive and insulation product (MW lamella)				
Adhesives		Under dry conditions	48 h immersion in water + 2 h drying at (23±2)°C and (50±5)% RH	48 h immersion in water + 7 days drying at (23±2)°C and (50±5)% RH
BOLIX WM	MW lamella	≥ 0,08 MPa	≥ 0,03 MPa	≥ 0,08 MPa
BOLIX ZW	MW lamella	≥ 0,08 MPa	≥ 0,03 MPa	≥ 0,08 MPa
Bond strength between adhesive and insulation product (MW panels)				
Adhesives		Under dry conditions	48 h immersion in water + 2 h drying at (23±2)°C and (50±5)% RH	48 h immersion in water + 7 days drying at (23±2)°C and (50±5)% RH
BOLIX WM	MW panels	< 0,08 MPa	< 0,03 MPa	< 0,08 MPa
		failure into MW (cohesive rupture)		
BOLIX ZW	MW panels	< 0,08 MPa	< 0,03 MPa	< 0,08 MPa
		failure into MW (cohesive rupture)		
Bonded surface area: at least 40% for MW panels and 100% for MW lamella.				

### 3.3.3 Fixing strength (ETAG 004, clause 5.1.4.2)

Test not required because the ETICS fulfils the criteria  $E \cdot d \leq 50.000 \text{ N/mm}$ .

### 3.3.4 Wind load resistance (ETAG 004, clause 5.1.4.3)

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

$$R_d = (R_{\text{panel}} \times n_{\text{panel}} + R_{\text{joint}} \times n_{\text{joint}}) / \gamma$$

where:

$n_{\text{panel}}$ : number (per m<sup>2</sup>) of anchors not placed at the panel joints

$n_{\text{joint}}$ : number (per m<sup>2</sup>) of anchors placed at the panel joints

$\gamma$ : national safety factor

**Table 8**

Anchors for which the following failure loads apply	Anchors according to Annex 2			
		Plate diameter of the anchor	≥ 140 mm	
Characteristics of the <b>MW panels</b> for which the following failure loads apply	Thickness	≥ 50 mm		
	Tensile strength perpendicular to the faces	≥ 10 kPa		
Failure load, kN	Anchors not placed at the panel joints (pull-through test), dry conditions	$R_{\text{panel}}$	Minimum value: Average value:	0,57 0,59
	Anchors not placed at the panel joints (pull-through test), wet conditions	$R_{\text{panel}}$	Minimum value: Average value:	0,46 0,48
	Anchors placed at the panel joints (static foam block test)	$R_{\text{joint}}$	Minimum value: Average value:	0,53 0,55

The above given loads apply for anchors according to Annex 2 and all other anchors if they meet the following criteria:

- covered by ETA according to ETAG 014,
- plate diameter ≥ 140 mm,
- plate stiffness of anchor ≥ 0,5 kN/mm,
- load resistance of anchor plate ≥ 1,23 kN,
- anchors mounted on the insulation panel surface.

### 3.3.5 Render strip tensile test (ETAG 004, clause 5.1.4.3)

No performance determined.

## 3.4 Protection against noise (BWR 5)

### 3.4.1 Airborne sound insulation (ETAG 004, clause 5.1.5)

No performance determined.

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

### 3.5.1 Thermal resistance and thermal transmittance (ETAG 004, clause 5.1.6)

The thermal transmittance of the 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)

$U_c$ : 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 plastic screw, stainless steel screw with a head covered by plastic material 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  $n < 10$ )
- = 0,008 W/K for all other anchors (worst case)

U: thermal transmittance of the current part of the covered wall (excluding thermal bridges) (W/(m<sup>2</sup>·K) determined as follows:

$$U = 1 : [R_{ETICS} + R_{substrate} + R_{se} + R_{si}]$$

where:  $R_i$ : thermal resistance of the insulation product (according to declaration in reference to EN 13162) 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 (e.g. 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 insulation product shall be given in the manufacturer's documentation along with the possible range of thicknesses. In addition, the point thermal conductivity of anchors shall be given when anchors are used in the ETICS.

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

No performance determined.

### 3.7 Aspects of durability and serviceability. Bond strength after ageing (ETAG 004, clause 6.1.7)

Table 9

		After hygrothermal cycles
<b>MW lamella</b>		
<b>Rendering system:</b> BOLIX WM (with relevant key-coat) + finishing coat indicated hereafter	MP KA 15, MP KA 20, MP KA 30, MP R 25, MP KA 15 for painting, MP R 25 for painting	≥ 0,08 MPa
	S 1 KA, S 1,5 KA, S 2 KA, S 2 R	≥ 0,08 MPa
	SIT 1,5 KA, SIT 2 KA, SIT 2 R	≥ 0,08 MPa
<b>MW panels</b>		
<b>Rendering system:</b> BOLIX WM (with relevant key-coat) + finishing coat indicated hereafter	MP KA 15, MP KA 20, MP KA 30, MP R 25, MP KA 15 for painting, MP R 25 for painting	< 0,08 MPa <b>failure into MW</b>
	S 1 KA, S 1,5 KA, S 2 KA, S 2 R	< 0,08 MPa <b>failure into MW</b>
	SIT 1,5 KA, SIT 2 KA, SIT 2 R	< 0,08 MPa <b>failure into MW</b>

**4 Assessment and verification of constancy of performance (hereinafter 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 the following table apply.

**Table 10**

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 <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+

<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)

<sup>(2)</sup> Products/materials not covered by footnote <sup>(1)</sup>

<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)

**5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable 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.

Issued in Warsaw on 24/06/2014 by Instytut Techniki Budowlanej

Marek Kaproń  
Deputy Director of ITB



<b>Factory-prefabricated mineral wool (MW) panels and lamella according to EN 13162</b>		
<b>Description and characteristics</b>	<b>MW lamella</b>	<b>MW panels</b>
<b>Reaction to fire</b> EN 13501-1	Class A1	
<b>Thermal resistance (m<sup>2</sup>·K)/W</b>	Defined in the CE marking in reference to EN 13162	
<b>Thickness</b> EN 823	MW-EN 13162 – T5	MW-EN 13162 – T4 MW-EN 13162 – T5
<b>Dimensional stability under specified temperature and humidity</b> EN 1604	MW-EN 13162 – DS(TH)	
<b>Short-term water absorption (partial immersion)</b> EN 1609	MW-EN 13162 – WS	
<b>Long-term water absorption (partial immersion)</b> EN 12087	MW-EN 13162 – WL(P)	
<b>Water vapour diffusion resistance factor (μ)</b> EN 12086	1	
<b>Tensile strength perpendicular to the faces in dry conditions</b> EN 1607	MW-EN 13162 – TR80 MW-EN 13162 – TR100	MW-EN 13162 – TR10 MW-EN 13162 – TR15
<b>Tensile strength perpendicular to the faces in wet conditions (kPa)</b> ETAG 004, clause 5.2.4.1.2	≥ 40 (TR80) ≥ 50 (TR100)	≥ 5 (TR10) ≥ 7,5 (TR15)
<b>Shear strength (MPa)</b> EN 12090	≥ 0,02	-
<b>Shear modulus (MPa)</b> EN 12090	≥ 1,0	-
<b>BOLIX W</b>		<b>Annex 1</b> of European Technical Assessment ETA-08/0205
Thermal insulation products characteristic		

### Anchors

Anchor trade name	Plate diameter (mm)	Description of the anchor and characteristics resistance in the substrate
TERMOZ 8 N	≥ 140	ETA-03/0019
EJOT ejothem STR U	≥ 140	ETA-04/0023
EJOT ejothem NT U	≥ 140	ETA-05/0009
KOELNER KI-10N	≥ 140	ETA-07/0221
TERMOFIX CF 8	≥ 140	ETA-07/0287
KOELNER TFIX-8M	≥ 140	ETA-07/0336
WKREȚ-MET-ŁTXØ10	≥ 140	ETA-08/0172
WKREȚ-MET-ŁMXØ10	≥ 140	ETA-08/0172
fischer termoz PN 8	≥ 140	ETA-09/0171
FIXPLUGØ8	≥ 140	ETA-11/0231
FIXPLUGØ10	≥ 140	ETA-11/0231
WK THERMØ8	≥ 140	ETA-11/0232

Additionally every anchor meeting the following criteria can be used:

- ETA according to ETAG 014,
- plate diameter ≥ 140 mm,
- plate stiffness ≥ 0,5 kN/mm,
- load resistance of the plate ≥ 1,23 kN.

### Glass fibre meshes

Mesh trade name	Description	Alkalis resistance	
		Residual resistance after ageing N/mm	Relative residual resistance, (after ageing) of the strength in the as delivered state, %
VERTEX R 117 A 101	standard mesh mesh size: 3,5 x 4,5 mm	≥ 20	≥ 50
ST 112-100/7	standard mesh mesh size: 3,0 x 3,5 mm	≥ 20	≥ 50

### BOLIX W

Anchors characteristic  
Glass fibre meshes characteristic

**Annex 2**  
of European  
Technical Assessment  
ETA-08/0205