

	DECLARATION OF PERFORMANCE	No.
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1. Unique identification code of the product type:

SOLTHERM Deco P Brick-ID

2. Intended use or uses

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

3. Producer:

BOLIX S.A., 34-300 Żywiec, ul. Stolarska 8, Poland

4. Authorised representative:

N/A

5. System or systems of assessment and verification of constancy of performance (AVCP):

System 2+

6a. Harmonised standard: **N/A**

Notified body or notified bodies: **N/A**

6b. European Assessment Document:

European Technical Assessment: **ETA-21/0633 z 29/06/2021 "Exterior Wall Insulation System with rendering (EWI)"**

Technical Assessment Body: **Ceramics and Building Material Institute, 31-983 Kraków, ul. Cementowa 8.**

Notified body or notified bodies:

Ceramics and Building Material Institute, notified body no. 1487.

Instytut Techniki Budowlanej (Building Research Institute) no. 1488.

Certification of the factory production control 1488-CPR-0607/Z

7. Declared performance/s:

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Reaction to fire	B – s1, d0	EAD-040083-00-0404
Weathering resistance (ageing cycles)	Conforms to the requirements	EAD-040083-00-0404
Water absorption	<0.2 kg/m ² after 1 h <0.5 kg/m ² after 24 h	EAD-040083-00-0404
Impact resistance	Category I See Table 1	EAD-040083-00-0404
Water vapour permeability	<0.4 m See Table 2	EAD-040083-00-0404
Release of dangerous substances	See point 3 of the Safety Data Sheets	-
Fixing strength (transverse displacement)	NPD	EAD-040083-00-0404
Bond strength between base coat and insulation material	≥ 100 kPa	EAD-040083-00-0404
Bond strength between adhesive and substrate and between adhesive and insulation material	Conforms to the requirements (See Table 3)	EAD-040083-00-0404
Wind load resistance	See Table 4	EAD-040083-00-0404
Sound insulation	NPD	EAD-040083-00-0404
Thermal resistance	1.19 for the thinnest EPS slabs 11.92 for the thickest EPS slabs See Table 5	EAD-040083-00-0404

Table 1: Impact resistance

		Hard body impact		
		Impact energy 3 J	Impact energy 10 J	Impact resistance category
Single mesh layer SOLTHERM HD 145/S (R 117 A101)		Impact diameter [mm] / damage		
Top coat: Reinforced Base Coat <u>SOLTHERM UB +</u> Primer + Render Finish:	SOLTHERM BQB 1,5 mm + SOLTHERM BQS 3,0 mm	4 / no cracks, no perforations	6 / no cracks, no perforations	I
Top coat: Reinforced Base Coat <u>SOLTHERM UB special</u> + Primer + Render Finish:	SOLTHERM BQB 1,5 mm + SOLTHERM BQS 3,0 mm	0 / no cracks, no perforations	0 / no cracks, no perforations	I

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* applies to the systems with single layer of the mesh SOLTHERM HD 145/S; R117A101; SSA-1363-145; SOLTHERM HD158/S; ST 2924-100/7KM; R 131 A101; SOLTHERM HD 160/S; 03-1; SSA-1363-160; SOLTHERM HD 160/S; SSA-1363-160; SOLTHERM HD 174/S; ST 112-100/7 KM

Table 2: Water vapour permeability

		Diffusion equivalent air layer thickness s_d
Top coat: Reinforced Base Coat <u>SOLTHERM UB</u> + Primer + Render Finish:	SOLTHERM BQB 2,5 mm + SOLTHERM BQS 6,0 mm	0,30 m
	<i>top coat thickness: 11,6 mm</i>	
Top coat: Reinforced Base Coat <u>SOLTHERM UB special</u> + Primer + Render Finish:	SOLTHERM BQB 2,5 mm + SOLTHERM BQS 6,0 mm	0,30 m
	<i>top coat thickness: 11,6 mm</i>	

Table 3: Bond strength between adhesive and substrate and between adhesive and insulation material

		Adhesion to surfaces (kPa)	
		mean	min.
SOLTHERM SA**	laboratory conditions	1314*	1210
	48 hours in water + 2 hours 23°C/50% RH	708*	512
	2 days in water + 7 days 23°C/ 50%	1350*	1290
SOLTHERM UB**	laboratory conditions	1686*	1500
	48 hours in water + 2 hours 23°C/50% RH	898*	799
	2 days in water + 7 days 23°C/ 50%	2132*	1890
SOLTHERM UB special**	laboratory conditions	1379*	1256
	48 hours in water + 2 hours 23°C/50% RH	914*	764
	2 days in water + 7 days 23°C/ 50%	1837*	1690
*failure occurs in the adhesive; **adhesive thickness – approx. 3 mm Minimum effective bond area: $S = 34 \%$			
		Adhesion of polyurethane adhesive (kPa)	
		mean	min.
		Number of results in the range 60-80	

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SOLTHERM ZP	Standard application conditions	124*	109	0
	Modified adhesive thickness (15 mm)	80*	74	1
	Modified open time (3 minutes)	121*	110	0
	Modified temperature (0 °C)	91*	84	0
	Modified temperature (35 °C)	80*	77	1
*failure within the polyurethane adhesive				
			Adhesion to insulation material (kPa)	
			mean	min.
SOLTHERM SA ****	laboratory conditions		101***	99
	48 hours in water + 2 hours 23°C/50% RH		84**	78
	2 days in water + 7 dni 23°C/50% RH		112*	100
SOLTHERM UB ****	laboratory conditions		99***	96
	48 hours in water + 2 hours 23°C/50% RH		65**	58
	2 days in water + 7 dni 23°C/50% RH		100*	94
SOLTHERM UB special ****	laboratory conditions		97***	88
	48 hours in water + 2 hours 23°C/50% RH		73**	68
	2 days in water + 7 dni 23°C/50% RH		102*	96
*cohesive rupture in insulation/adhesive rupture; **cohesive rupture in insulation; ***adhesive rupture; **** thickness of adhesive – 3 mm				
Minimal bonded area: S = 34%				

Tabela 4: Wind load resistance

Anchors to which The following failure load values apply to them	Anchors (mechanical fixings) acc. to Annex 2	
	Washer diameter (mm)	≥ 60
Characteristics of the standard EPS slabs to which the following failure loads apply	Thickness (mm)	≥ 50
	Tensile strength perpendicular to the faces (kPa) in dry conditions	≥ 144

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Failure loads (kN)	Fixings not placed at the panel joints (pull-through test) dry conditions	R_{panel}	Results: 0,446; 0,442; 0,445; 0,509; 0,453
			Mean: 0,459
	Fixings placed at the panel joints (pull-through test) wet conditions	R_{joint}	Results: 0,428; 0,423; 0,450; 0,502; 0,440
			Mean: 0,449

Table 5: Thermal resistance of ETICS

Thermal resistance of the insulation product R_D	Value declared by the producer of the insulation product (see product labelling on the packaging)
Thermal resistance of the render R_{render}	0.02 (m ² · K)/W
Thermal resistance of complete ETICS	$R_{ETICS} = R_D + R_{render}$

heat transfer coefficient of the wall with ETICS is calculated in accordance with the standard EN ISO 6946:

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

where:

$\chi_p \cdot n$ Only to be taken into account if greater than 0.04 W/(m²·K)

U_c : total (corrected) thermal transmittance value (W/ (m²·K))

n : number of anchors (through insulation product) per m²

χ_p : effect of thermal bridging locally due to anchor. The values provided below may be taken into account, if not specified in the ETA issued for the anchor:

= 0,002 W/K for anchors with a stainless steel screw with the head covered by a 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 $n < 10$)

= negligible for plastic anchors (reinforced or not with glass fibres)

U : heat transfer coefficient of the wall (with ETICS, without thermal bridges) (W/ (m²·K)), is determined as follows:

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

where:

R_i : thermal resistance of insulation material (as per the declaration and with reference to EN 13163) in (m²·K)/W

R_{render} : thermal resistance of the top coat (approx. 0.02 in (m²·K)/W or as determined in the tests acc.to EN 12667 or EN 12664)

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

R_{se} : external surface resistance in (m²·K)/W

R_{si} : external surface resistance in (m²·K)/W

Thermal resistance value of each thermal insulation product should be provided in the manufacturer's

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technical documentation together with a range for various thicknesses. In addition, the point thermal transmittance of the anchors should be provided, if installed.

8. Appropriate Technical Documentation or Specific Technical Documentation:

N/A

The performance of the product identified above is in conformity with the set of declared performance/s. This declaration of performance is issued compliant with the Regulation (EU) No. 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer by:

BOLIX®
INŻYNIER DOKŁADU PRODUKTU
Witold Charyasz
Witold Charyasz

Żywiec, 24/08/2022