

1. Unique identification code of the product-type: **RW-PL-G-0092-I**
2. Type and serial number allowing identification of the product: **See the labels on components of ECOROCK® FF, the product defined in Table 1.**
3. Intended use of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer: **Set of products for thermal insulation of external walls made of masonry (bricks, blocks, stone, etc.) or concrete (cast on site or precast panels) having reaction-to-fire classification of A1 or A2-s2 d0 in accordance with EN 13501 or designation A1 in accordance with EC decision 96/603/EC as amended. The ECOROCK® FF 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.**
4. Name, registered trade name or trade mark and contact address of the manufacturer as required under article 11(5): **ROCKWOOL® Polska Sp. z o.o., ul. Kwiatowa 14**
5. System of attestation of conformity: **System 1(due to reaction to fire classification) and System 2+**
6. **Member of EOTA TZUS TECHNICKÝ A ZKUŠEBNÍ ÚSTAV STAVEBNÍ PRAHA, s.p.,** Notified body No. **1020** who performed the initial type-testing and initial inspection of the factory and of the factory production control and issued **ETA-12/004**, EC Certificate of Conformity No. **1020-CPD-020-027460**, performs the continuous surveillance, assessment and approval of factory production control.
Reaction to fire ECOROCK FF: **A2-s1;d0** (Report No **M1-7273X-00877-2013**; test performed and report issued by no. NAT-1-1110/2010 Accredited Firetest Laboratory (*) of ÉMI Építészügyi Minőségellenőrző Innovációs Nonprofit Kft., Diószegi út 37, Budapest HU-1113)
(*) Member of EGOLF (European Group of Organisations for Fire Testing; Inspection and Certification)
7. Declared Performance **ECOROCK® FF** of the product defined in Table 1:

Essential Characteristics ETAG 004/2011	The reference to provisions of ETA 12/004 and ETAG 004/2011	ETA -12/004	Declared value / NPD ¹⁾
Fire safety ²⁾	2.2.1 Reaction to fire EN 13501-1	Euroclass acc. to EN13501-1 - ETA -12/004; - Test Report No M1-7273X-00877-2013 ;	A2-s2,d0 A2-s1,d0
Hygiene, health and environment	2.2.2 Water absorption (rising water)	Base coat + external plaster BR-ECOROCK M, DR-ECOROCK M with appropriate agents of penetrating and protective paint coatings; DR-ECOROCK S (max particle size 2,0 mm); BR-ECOROCK SIL, DR-ECOROCK SIL	< 0,5 kg/m ²
		Base coat + plaster BR-ECOROCK S (max particle size 1,0 mm and 2,0 mm); DR-ECOROCK S(max particle size 3,0 mm)	≥ 0,5 kg/m ²
	2.2.3 The behavior in the thermal and humidity cycles	Evaluation of resistance to thermal and humidity	resistant
	2.2.4 The behavior under influence of changing cycles of freezing and thawing	Rating simulation method of frost and simulated method of freezing and thawing.	resistant
	2.2.5 Resistance to mechanical damage. Resistance to hard body impacts and puncture resistance	Resistance to hard body impacts (3J I 10J) and puncture resistance: A) insulation material: FASROCK MAX (TR7,5) or MW lamella TR80 + base coat + 1x standard glass fibre mesh + BR-ECOROCK M/DR-ECOROCK M with appropriate agents of penetrating and protective paint coatings, or BR-ECOROCK S/ DR-ECOROCK S or BR-ECOROCK SIL/ DR-ECOROCK SIL;	Category II
		B) slabs MW TR15 or FRONTROCK MAX E (TR10) + base coat + 1x standard glass fibre mesh + finishing coats: - BR-ECOROCK M/DR-ECOROCK M with appropriate agents of penetrating and protective paint coatings; - BR-ECOROCK S/ DR-ECOROCK S or BR-ECOROCK SIL/ DR-ECOROCK SIL;	Category III Category II
		C) slabs MW o TR15 or FRONTROCK MAX E (TR10) + base coat + 2x standard glass fibre mesh + finishing coats: - BR-ECOROCK M/DR-ECOROCK M with appropriate agents of penetrating and protective paint coatings; - BR-ECOROCK S/ DR-ECOROCK S or BR-ECOROCK SIL/ DR-ECOROCK SIL;	Category II for grain ≥2mm Category I for grain ≥2mm
	2.2.6 Water vapor permeability (resistance to water vapor diffusion)	Base coat + finishing coats BR-ECOROCK M/ DR-ECOROCK M with appropriate agents of penetrating and protective paint coatings or BR-ECOROCK S/ DR-ECOROCK S, or BR-ECOROCK SIL/ DR-ECOROCK SIL; layer thickness 3mm or 5mm	Equivalent air thickness (m) Sd ≤ 1,0 m
	2.2.7 Release of dangerous substances	ETICS components covered by ETA – 12/0044	With the provisions of**

Safety of use	2.2.8.1 Adhesion	<p>Adhesion of base coat to slab MW (TR15); FASROCK MAX (TR7,5); FRONTROCK MAX E (TR10); MW lamella (TR80):</p> <ul style="list-style-type: none"> - in dry conditions; < 0,08 MPa* - after thermal and humidity cycles (on the wall); < 0,08 MPa* - after freeze-thaw cycles (no samples) < 0,08 MPa* <p>Adhesion of adhesives to the substrate, to an insulation slablayer MW (TR15); FASROCK MAX (TR7,5); FRONTROCK MAX E (TR10); MW lamella (TR80):</p> <p>A) to the concrete substrate:</p> <ul style="list-style-type: none"> - in dry conditions; ≥ 0,25 MPa - after 48 h immersion in water +2 h at 23°C/50%RV, ≥ 0,08 MPa - after 48 h immersion in water +7 h at 23°C/50%RV, ≥ 0,25 MPa <p>B) substrate MW lamella (TR80):</p> <ul style="list-style-type: none"> - in dry conditions, ≥ 0,08 MPa* - after 48 h immersion in water +2 h at 23°C/50%RV, ≥ 0,03 MPa - after 48 h immersion in water +7 h at 23°C/50%RV, ≥ 0,08 MPa* <p>C) substrate MW slab (TR15); FASROCK MAX (TR7,5); FRONTROCK MAX E (TR10):</p> <ul style="list-style-type: none"> - in dry conditions, < 0,08 MPa* - after 48 h immersion in water +2 h at 23°C/50%RV, < 0,03 MPa* - after 48 h immersion in water +7 h at 23°C/50%RV, < 0,08 MPa* 	
	2.2.8.2 Fixing strength (displacement)	The study not required because:	> 20%
	2.2.8.3 Wind load resistance	See Table 2 A and Table 2B	See Table 2 A and Table 2B
Energy saving and heat retention	4.2.1 Thermal resistance calculation according to EN ISO 6946	The thermal resistance of the wall on which the ETICS shall be calculated in accordance with EN ISO 6946 and the guidelines contained in section 2.2.9 ETA-12/0044	Value calculation
Resistance	2.2.10.1 Adhesion after aging	Strength after artificial aging to the insulating material MW lamella (TR80), MW slab (TR15), MW slab double-thick FASROCK MAX (TR7,5), FRONTROCK MAX E (TR10); base coat + plaster BR-ECOROCK M, DR-ECOROCK M with appropriate agents of penetrating and protective paint coatings; BR-ECOROCK S, DR-ECOROCK S; BR-ECOROCK SIL, DR-ECOROCK SIL	< 0,08 MPa*

*failure in thermal insulation material

** Document H harmonized approach to dangerous substances under Directive 89/106/EEC, amendment in August 2002.

1) No Performance Determined

2) National guidelines are located in informational materials regarding system ETICS ECOROCK FF

Table 1

Components of ETICS ECOROCK® FF		Coverage (kg/m²)	Thickness (mm)
Full bonded ETICS ECOROCK® FF with supplementary anchor fixing. National Application documents shall be taken into account.			
Insulation material with associated methods of fixing	Insulation product		
	Mineral wool boards with properties given in Table 3, column 5		
	Adhesive		
	ZK - ECOROCK Normal W <i>Product as delivered:</i> powder <i>Preparation:</i> powder requiring addition of 0,22 l/kg of water <i>Composition:</i> dry mineral-based cement mixture modified with synthetic polymers		
	ZZ - ECOROCK Specjal W <i>Product as delivered:</i> powder <i>Preparation:</i> powder requiring addition of 0,22 l/kg of water <i>Composition:</i> dry mineral-based cement mixture modified with synthetic polymers		
		4,0 - 6,0 of dry mixture	-
Mechanical fixes ETICS ECOROCK® FF with supplementary adhesive (the minimal bonded surface should be 40% of the surface). See Table 2 –the possible combinations of MW/anchors. National Application documents shall be taken into account.			
Insulation material with associated methods of fixing	Insulation product		
	Mineral wool boards with properties given in Table 3 column 4		
	FASROCK MAX – mineral wool slabs with characteristics given in Table 3 column 2		
	FRONTROCK MAX E - mineral wool slabs with characteristics given in Table 3 column 3		
		-	50 - 250
		-	80 - 200
		-	80 - 280

Components of ETICS ECOROCK® FF		Coverage (kg/m ²)	Thickness (mm)
	Adhesive		
	ZK - ECOROCK Normal W <i>Product as delivered:</i> powder <i>Preparation:</i> powder requiring addition of 0,22 l/kg of water <i>Composition:</i> dry mineral-based cement mixture modified with synthetic polymers ZZ - ECOROCK Spezial W <i>Product as delivered:</i> powder <i>Preparation:</i> powder requiring addition of 0,22 l/kg of water <i>Composition:</i> dry mineral-based cement mixture modified with synthetic polymers	4,0 – 6,0 of dry mixture	-
	Anchors		
	Bravoll PTH-KZ 60/8-La, Bravoll PTH-KZL 60/8-La Plastic nailed-in anchors ETA-05/0055 KOELNER KI-8M Plastic nailed-in anchors ETA-06/0191 Dämmstoffdübel KOELNER TFIX-8M Plastic nailed-in anchors ETA-08/0336 KOELNER KI-10N, KI-10NS Plastic nailed-in anchors ETA-07/0221 KOELNER TFIX-8S, TFIX-8ST Plastic screwed-in anchors ETA-11/0144 fischer Temoz 8U, 8UZ Plastic screwed-in anchors ETA-02/0019 fischer Schlagdübel Temoz 8N, 8NZ Plastic nailed-in anchors ETA-03/0019 Hilti-Dämmstoff-Befestigungselement XI-FV Plastic shot fired fixings ETA-03/0004 Hilti SX-FV Plastic screwed-in anchors ETA-03/0005 EJOT SDM-T plus Plastic screwed-in anchors ETA-04/0064 Ejothert NT U Plastic nailed-in anchors ETA-05/0009 ejothert NTK U Plastic nailed-in anchors ETA-07/0026 Ejothert STR U Plastic screwed-in anchors ETA-04/0023 ejothert ST U Plastic screwed-in anchors ETA-02/0018 WKRET-MET LFN Ø 8 Plastic nailed-in anchors ETA-06/0080 WKRET-MET LFM Ø 8 Plastic nailed-in anchors ETA-06/0105 WKRET - MET LFN Ø 10 Plastic nailed-in anchors ETA-06/0105 WKRET - MET LFM Ø 10 Plastic nailed-in anchors ETA-06/0105 KEW TSD 8 Plastic nailed-in anchors ETA-04/0030 Thermoschraubdübel KEW TSBD 8 Plastic screwed-in anchors ETA-08/0314		Plate diameter 60 mm
Base coat	Trowel finished matter base coat		
	ZZ - ECOROCK Spezial W <i>Product as delivered:</i> powder <i>Preparation:</i> powder requiring addition of 0,22 l/kg of water <i>Composition:</i> dry mineral-based cement mixture modified with synthetic polymers	4,0 - 6,0 of dry mixture	3,0-5,0
	Reinforcement		
	Glass fibre mesh for ETICS ECOROCK FF in one or two layers AKE 145 A / VERTEX R 117 A101 (mesh size 3,5x4,5mm) VERTEX R 131 A101 (mesh size 3,5x3,8mm) OMFA 117S (mesh size 4,5x3,5mm) OMFA 122 (mesh size 3,8x3,3mm)	one layer of 1,1-1,2, two layers 2,2-2,4 (m ² /m ²)	-
Key coats	PT - ECOROCK Grunt M Key coat under mineral and silicone renderings <i>Product as delivered:</i> ready-to-use liquid <i>Preparation:</i> do not dilute <i>Composition:</i> dispersion of acrylic resin with mineral additives	0,35	-
	PT - ECOROCK Grunt S - T Key coat under mineral and silicate renderings <i>Product as delivered:</i> ready-to-use liquid <i>Preparation:</i> do not dilute <i>Composition:</i> dispersion of potassium water glass		-

Components of ETICS ECOROCK® FF		Coverage (kg/m²)	Thickness (mm)
Finishing coat	Mineral renderings always provided with one of the protective paints including the relevant key coat		
	BR - ECOROCK M twisted rendering, max. particle size 2,0 mm	2,25	According to max. particle size
	BR - ECOROCK M twisted rendering, max. particle size 2,5 mm	3,00	
	BR - ECOROCK M twisted rendering, max. particle size 3,0 mm	3,85	
	DR - ECOROCK M scratched rendering, max. particle size 2,0 mm	2,80	
	DR - ECOROCK M scratched rendering, max. particle size 3,0 mm	3,50	
	Silicate renderings		
	BR - ECOROCK S twisted rendering, max. particle size 1,0 mm	1,70	According to max. particle size
	BR - ECOROCK S twisted rendering, max. particle size 1,5 mm	2,50	
	BR - ECOROCK S twisted rendering, max. particle size 2,0 mm	3,20	
	DR - ECOROCK S scratched rendering, max. particle size 2,0 mm	2,80	
	DR - ECOROCK S scratched rendering, max. particle size 3,0 mm	3,50	
	Silicone renderings		
	BR - ECOROCK SIL twisted rendering, max. particle size 1,0 mm	1,70	According to max. particle size
	BR - ECOROCK SIL twisted rendering, max. particle size 1,5 mm	2,50	
	BR - ECOROCK SIL twisted rendering, max. particle size 2,0 mm	3,20	
	DR - ECOROCK SIL scratched rendering, max. particle size 2,0 mm	2,80	
	DR - ECOROCK SIL scratched rendering, max. particle size 3,0 mm	3,50	
Key coat under protective paint	ECOROCK Grunt S Key coat under silicate protective coat Product as delivered: ready-to-use liquid Preparation: do not dilute Composition: oxisilane water emulsion	0,08-0,10 (l/m²)	-
	ECOROCK Grunt SIL Key coat under silicone protective coat Product as delivered: ready-to-use liquid Preparation: do not dilute Composition: oxisilane water emulsion	0,05-0,17 (l/m²)	-
Protective coat	ECOROCK F-S silicate protective coat Product as delivered: ready-to-use liquid Preparation: 2 coats, dilute with max. 5 volume 0% FAST Grunt S Composition: dispersion of potassium water glasses and styrene-acrylic resin with mineral additives and pigments	0,10-0,20 (l/m²) per coat	-
	ECOROCK Silikon silicone protective coat Product as delivered: ready-to-use liquid Preparation: 1- 2 coats, the first coat dilute with max. 10 % of water. Composition: dispersion of silicone and styrene-acrylic resin with mineral additives and pigments	0,12 (l/m²) per coat	-
Ancillary materials	All the elements, components, or other products used in the system, eg to the formation of connections (sealants, tapes corner, etc.) or to provide continuity of layers (sealants, tapes completing the connections, etc.) without affecting the deterioration of property ETICS ECOROCK® FF		

Table 2A Safety in use when fixing the ETICS ECOROCK FF with anchors

Trade name of anchor defined in Table 1	Surface assembly Bravoll PTH-KZ 60/8-La, Bravoll PTH-KZL 60/8-La, KOELNER KI-8M, Dämmstoffdübel KOELNER TFIX-8M, KOELNER KI-10N, KI-10NS, KOELNER TFIX-8S, fischer Termoz 8U, 8UZ, fischer Schlagdübel Termoz 8N, 8NZ, Hilti-Dämmstoff-Befestigungselement XI-FV, Hilti SX-FV, EJOT SDM-T plus, Ejothorn NT U, ejothorn NTK U, ejothorn ST U, Ejothorn STR U, WKRET-MET LFN Ø 8, WKRET-MET LFM Ø 8, WKRET - MET LFN ø 10, WKRET - MET LFM ø 10, KEW TSD 8, Thermoschraubdübel KEW TSBD 8		
	Countersunk assembly Ejothorn STR U, KOELNER TFIX-8M		
MW slab characteristics (Table 3, column 4)	Thickness (mm)	≥ 50 ≥ 100 for countersunk assembly	
	Tensile strength perpendicularly to the faces (kPa)	≥ 15	
Max. load in pull through	Anchors placed at the panel joints (pull-through test of fixings - ETAG 004, Clause 5.1.4.3, scheme 1a)	R _{panel}	in dry conditions Minimal value: 0,41 kN Mean value: 0,43 kN
			in wet conditions Minimal value: 0,35 kN Mean value: 0,37 kN
	Anchors placed at the panel joints (pull-through test of fixings through insulation material+ foam block test- ETAG 004, pkt. 5.1.4.3, scheme 2b)	R _{joint}	in dry conditions Minimal value: 0,38 kN Mean value: 0,41 kN
			in wet conditions Minimal value: 0,29 kN Mean value: 0,30 kN

Tabela 2B Safety in use when fixing the ETICS ECOROCK FF with anchors

Trade name of anchor defined in table 1	Surface assembly			
	Bravoll PTH-KZ 60/8-La, Bravoll PTH-KZL 60/8-La, KOELNER KI-8M, Dämmstoffdübel KOELNER TFIX-8M, KOELNER KI-10N, KI-10NS, KOELNER TFIX-8S, fischer Termoz 8U, 8UZ, fischer Schlagdübel Termoz 8N, 8NZ, Hilti-Dämmstoff-Befestigungselement XI-FV, Hilti SX-FV, EJOT SDM-T plus, Ejothem NT U, ejothem NTK U, ejothem ST U, Ejothem STR U, WKRET-MET LFN Ø 8, WKRET-MET LFM Ø 8, WKRET - MET LFN Ø 10, WKRET - MET LFM Ø 10, KEW TSD 8, Thermoschraubdübel KEW TSBD 8			
MW slab characteristics (Table 3 column 2 and 3)	Thickness (mm)	≥ 80		
	Tensile strength perpendicularly to the faces (kPa)	≥ 7,5		
Max. load in pull through	Anchors placed at the panel joints (pull-through test of fixings - ETAG 004, Clause 5.1.4.3, scheme 1a)	R_{panel}	in dry conditions	Minimal value: 0,39 kN Mean value: 0,43 kN
			in wet conditions	Minimal value: 0,32 kN Mean value: 0,34 kN
	Anchors placed at the panel joints (pull-through test of fixings through insulation material+ foam block test- ETAG 004, pkt. 5.1.4.3, scheme 2b)	R_{joint}	in dry conditions	Minimal value: 0,35 kN Mean value: 0,38 kN
			in wet conditions	Minimal value: 0,26 kN Mean value: 0,28 kN
	Anchors placed at the panel joints (pull-through test of fixings ETAG 004, Clause 5.1.4.3, scheme 2a)			

NOTE: Wind load resistance R_d ETICS ECOROCK FF is calculated according to the formula:

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

n_{panel} : number of anchors not placed at the panel joints (m^2)
 n_{joint} : number of anchors placed at the panel joint (m^2)
 γ : national safety factor

Table 3

Property Description according to EN 13162	Thermal insulation material and method of installation			
	FASROCK® MAX MW dual density slabs (longitudinal fibre orientation) ETICS for fully bonded with supplementary fixing	FRONTROCK® MAX E MW dual density slabs (longitudinal fibre orientation) ETICS for fully bonded with supplementary fixing	MW slabs (longitudinal fibre orientation) ETICS for fully bonded with supplementary fixing	MW lamellas (perpendicular fibre orientation) ETICS for fully bonded with supplementary fixing
1	2	3	4	5
Reaction to fire	Euroclass A1 for density max. 200 kg/m ³	Euroclass A1 for density max. 155 kg/m ³	Euroclass A1 for density max. 217 kg/m ³	Euroclass A1 for density max. 150 kg/m ³
Thermal Resistance ((m ² K)/W)	As specified in the CE marking			
Thickness (mm)	T4		T5	
Length (mm)			±2	
Width (mm)			±1,5	
Squareness (mm)			≤ 5	
Flatness (mm)			≤ 6	
Surface	Cut surface (homogeneous and without "skin")			
Dimensional stability under specified temperature	DS(T+)			
Dimensional stability under specified temperature and humidity	DS(TH)			
Water absorption by partial immersion	WS (≤1,0kg/m ²), WL(P) (≤3 kg/m ²)			
Water vapor permeability coefficient (μ)	max.1		max.6	max.5
The tensile strength perpendicularly to the board surface in the dry state (kPa)	≥ 7,5 (TR 7,5)	≥ 10 (TR 10)	≥ 15 (TR 15)	≥ 80 (TR 80)
Tensile strength perpendicular to the faces wet / ETAG 004 (kPa)	≥ 3,0	≥ 4,0	≥ 6,0	≥ 50
Shear strength (MPa)	-			
Shear modulus of elasticity (MPa)	-			
	≥ 20			
	≥ 1,0			

NOTE: System components can be present under the names contained in the table 4

Table 4

Variations of trade names of the ETICS ECOROCK FF components	
Adhesive	ZK-ECOROCK Normal W
Trade name No. 2	FAST Normal W
Adhesive and base coat	ZZ-ECOROCK Special W
Trade name No. 2	FAST Special W
Key coat	PT-ECOROCK Grunt M
Trade name No. 2	FAST GRUNT M
Key coat	PT-ECOROCK Grunt S-T
Trade name No. 2	FAST Grunt S-T
Finishing coat mineral rendering	BR-ECOROCK M
Trade name No. 2	FAST baranek
Finishing coat mineral rendering	DR-ECOROCK M
Trade name No. 2	FAST Kornik
Finishing coat silicate rendering	BR-ECOROCK S
Trade name No. 2	FAST baranek S
Finishing coat silicate rendering	DR-ECOROCK S
Trade name No. 2	FAST komik s
Finishing coat silicone rendering	BR-ECOROCK SIL
Trade name No. 2	FAST baranek SIL
Finishing coat silicone rendering	DR-ECOROCK SIL
Trade name No. 2	FAST komik SIL
Key coat for protective paint ECOROCK F-S	ECOROCK Grunt S
Trade name No. 2	FAST Grunt S
Key coat for protective paint ECOROCK Silikon	ECOROCK Grunt SIL
Trade name No. 2	FAST Grunt SIL
Protective coat	ECOROCK F-S
Trade name No. 2	FAST F-S
Protective coat	ECOROCK Silikon
Trade name No. 2	FAST Silikon

The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 7.
This declaration of performance is issued under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer by:

Frank Christian Bartel

Technical Director

(Name and Function)

Signature

Cigacice, 15. 11. 2013

(Place, date)