84, avenue Jean-Jaurès
Champs-sur-Marne
FR-77447 Marne-la-Vallée Cedex 2
Tél. : + 33 (0)1 64 68 82 82
Fax : + 33 (0)1 60 05 70 37
E-mail : etics@cstb.fr
Site internet : www.cstb.fr

Designated according to Article 29 of Regulation (UE) No 305/2011

EOTA Member
Membre de l'EOTA
www.eota.eu

European Technical Assessment

ETA-20/0250-version 1
of 23/10/2020

GENERAL PART

Technical Assessment Body issuing the European Technical Assessment:	Centre Scientifique et Technique du Bâtiment (CSTB)
Trade name of the construction product:	**PARISO LR - F**
Product family to which the construction product belongs:	Product Area Code: 04 External Thermal Insulation Composite System with rendering (ETICS)
Manufacturer:	**ParexGroup S.A.** 19 place de la Résistance CS 50053 FR-92445 Issy-les-Moulineaux Cedex
Manufacturing plant(s):	**ParexGroup S.A.** 19 place de la Résistance CS 50053 FR-92445 Issy-les-Moulineaux Cedex
This European Technical Assessment contains:	24 pages including 3 Annexes which form an integral part of this assessment Annex 4 contains confidential information and is not included in the European Technical Assessment when that assessment is publicly available
This European Technical Assessment is issued in accordance with regulation (EU) No 305/2011, on the basis of:	European Technical Approval Guideline No 004 (ETAG 004), edition 2013, used as European Assessment Document (EAD)

SPECIFIC PART

1. Technical description of the product

The External Thermal Insulation Composite System "**PARISO LR - F**", subject to this European Technical Assessment (hereinafter ETA) and called ETICS in the following text, is a kit designed and installed in accordance with the Manufacturer's instructions, deposited with the CSTB. The ETICS comprises the components listed in the following table, which are factory-produced by the Manufacturer or a supplier. The ETICS is made up on site from these components.

The ETICS also includes ancillary materials which are defined in clause 3.2.2.5 of the ETAG 004[1]. They shall be used in accordance with the Manufacturer's instructions.

The ETICS is described according to its method of fixing, as defined in clause 2.2 of the ETAG 004.

Method of fixing	Component	Coverage (kg/m²)	Thickness (mm)
Mechanically fixed ETICS with anchors and supplementary adhesive	**Insulation product**		
	Insulation products, mineral wool (MW):		
	Rock wool panels		
	ECOROCK MONO, by Rockwool, see Annex 1 (1/5)	—	50 to 160
	ECOROCK DUO, by Rockwool, see Annex 1 (2/5)	—	50 to 240
	ISOVER TF 36, by Saint-Gobain Isover, see Annex 1 (3/5)	—	50 to 200
	FKD-MAX C2, by Knauf Insulation, see Annex 1 (4/5)	—	60 to 300
	Glass wool panels		
	ISOCOMPACT / ISOCOMPACT 34, by Saint-Gobain Isover, see Annex 1 (5/5)	—	60 to 280
	Supplementary adhesives		
	MAITÉ: white cement-based powder requiring addition of about 17% wt. water	2.6 to 3.4 [powder]	—
	COLLE CCP+: grey cement-based powder requiring addition of 21 to 22% wt. water	2.6 to 3.5 [powder]	—
	UNITÉ: white cement-based powder requiring addition of about 22% wt. water	2.6 to 3.5 [powder]	—
	FACITÉ: grey cement-based powder requiring addition of about 22% wt. water	2.0 to 3.0 [powder]	—
	Anchors for insulation product		
	Plastic anchors, see Annex 2	—	—

[1] ETAG 004 is available on the EOTA website: www.eota.eu.

Method of fixing	Component	Coverage (kg/m²)	Thickness (mm)
Mechanically fixed ETICS with anchors and supplementary adhesive	**Base coat**		
	FACITÉ: powder requiring addition of about 21 to 23% wt. water, consisting of grey cement, a vinylic micronised copolymer, calcium carbonate and silica as particles and specific additives	About 4.6 [powder]	Mean (dry): 3.5 Minimal (dry): 3.0
	Meshes		
	Glass fibre meshes (standard and reinforced), see Annex 3		
	Key coats		
	REVLANE+ RÉGULATEUR: ready-to-use pigmented liquid, acrylic binder, to apply mandatory before **GRANILANE+, REVLANE+ IGNIFUGÉ TALOCHÉ FIN/GROS, REVLANE+ IGNIFUGÉ RIBBÉ FIN** and **REVLANE+ SILOXANÉ IGNIFUGÉ TF/RB/TG** finishing coats	0.15 to 0.20	—
	SILICANE FOND: uncoloured liquid, silicate binder requiring addition of 100% wt. **SILICANE PEINTURE**, to apply mandatory before silicate finishing coats	0.10 to 0.15 [prepared]	—
	Finishing coats		
	Ready-to-use pastes – acrylic binder: - **REVLANE+ IGNIFUGÉ TALOCHÉ FIN** (particles size 1.0 mm) - **REVLANE+ IGNIFUGÉ TALOCHÉ GROS** (particles size 1.6 mm) - **REVLANE+ IGNIFUGÉ RIBBÉ FIN** (particles size 1.6 mm)	2.2 to 2.5 2.7 to 3.0 2.5 to 2.7	Regulated by particle size
	For applications between 1 and 15°C, these pastes can be mixed with 4 to 8% wt. of **PARITÉ+ ACCÉLÉRATEUR** (powder made of hydraulic binder and mineral filler) to accelerate their drying.		
	Ready-to-use pastes – acrylic binder with siloxane: - **REVLANE+ SILOXANÉ IGNIFUGÉ TF** (particles size 1.0 mm) - **REVLANE+ SILOXANÉ IGNIFUGÉ TG** (particles size 1.6 mm) - **REVLANE+ SILOXANÉ IGNIFUGÉ RB** (particles size 1.6 mm)	2.2 to 2.5 2.7 to 3.0 2.5 to 2.7	Regulated by particle size
	For applications between 1 and 15°C, these pastes can be mixed with 4 to 8% wt. of **PARITÉ+ ACCÉLÉRATEUR** (powder made of hydraulic binder and mineral filler) to accelerate their drying.		

Method of fixing	Component	Coverage (kg/m²)	Thickness (mm)
Mechanically fixed ETICS with anchors and supplementary adhesive	Ready-to-use paste – acrylic binder with coloured marble aggregates: **GRANILANE+** (particles size 1.8 mm)	4.5 to 5.0	Regulated by particle size
	Ready-to-use pastes – silicate binder: **SILICANE TALOCHÉ FIN** (particles size 1.0 mm) **SILICANE TALOCHÉ GROS** (particles size 1.6 mm)	1.4 to 1.7 2.7 to 3.0	Regulated by particle size
	Cement-based powder associated with a decorative paint: **FACITÉ** with **SILICANE PEINTURE**: - **FACITÉ**: same product as base coat - **SILICANE PEINTURE**: silicate-based pigmented liquid, requiring addition of about 20% wt. **SILICANE FOND**	About 2.0 [powder] About 0.4 [prepared]	About 1.5
Ancillary materials	Descriptions in accordance with § 3.2.2.5 of the ETAG 004 Remain under the ETA-Manufacturer responsibilities		

The ETICS is designed to give the walls to which it is applied satisfactory thermal insulation. The minimum thermal resistance of the ETICS shall be higher than 1.0 m^2.K/W.

The components are protected from moisture during transport and storage by means of appropriate packaging, unless other measures are foreseen by the Manufacturer for this purpose.

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

This ETICS is intended to be used as thermal insulation of buildings' external walls made of masonry (bricks, blocks, stones, *etc.*) or concrete (cast on site or as prefabricated panels).

The ETICS can be installed on new or existing (retrofit) vertical walls. It can also be installed 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 walls on which it is installed, but it can contribute to durability by providing enhanced protection from the effect of weathering.

The ETICS is not intended to ensure the airtightness of the walls.

The provisions made in this ETA are based on an assumed working life of at least 25 years, provided that the construction works are subject to appropriate design, execution, maintenance and repair. 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.

Design, execution, maintenance and repair of the construction works shall take into account principles given in chapter 7 of the ETAG 004 and shall be done in accordance with national instructions.

3. Performances of the product and references to the methods used for their assessment

Performances of the ETICS, related to the basic requirements for construction works (hereinafter BWR), were determined according to chapters 4, 5 and 6 of the ETAG 004.

These performances, given in the following paragraphs, are valid as long as the components are the ones described in § 1 and Annexes 1 to 3 of this ETA.

3.1 Mechanical resistance and stability (BWR 1)

Not relevant.

3.2 Safety in case of fire (BWR 2)

Reaction to fire:

Configuration	Declared organic content (1)	Declared flame retardant content (1)	Class according to EN 13501-1
• Supplementary adhesives: - **MAITÉ** - **COLLE CCP+** - **UNITÉ** - **FACITÉ** • Insulation product: - MW (Stone/Rock Wool) boards Reaction to fire Class A1 Thickness ≥ 20 mm, density ≤ 155 kg/m^3 - MW (Glass Wool) boards Reaction to fire Class A2-s1,d0 Thickness ≥ 20 mm, density ≤ 65 kg/m^3 • Base coat: **FACITÉ** • Key coats: - **REVLANE+ RÉGULATEUR** - **SILICANE FOND** • Meshes: - SSA-1363 F+ - R 131 A 101 C+ - R 131 A 102 C+ • Finishing coats: - **FACITÉ** with **SILICANE PEINTURE** - **SILICANE TALOCHÉ FIN/GROS** - **REVLANE+ IGNIFUGÉ TALOCHÉ FIN/GROS(2)** - **REVLANE+ IGNIFUGÉ RIBBÉ FIN(2)** - **REVLANE+ SILOXANÉ IGNIFUGÉ TF/TG /RB(2)**	Base coat: 3.2% Key coats: 12.5 to 58.8% Finishing coats: 6.3 to 11.4% Except for FACITÉ (3.2%) with SILICANE PEINTURE (15.0%)	Base coat: 0.0% Key coats: 0.0% Finishing coats: ≤ 17.5%	A2 – s1, d0

(1) Percentage declared by the Manufacturer, relative to the dried weight of the component as delivered.

(2) With or without PARITÉ+ ACCÉLÉRATEUR.

Configuration	Declared organic content (1)	Declared flame retardant content (1)	Class according to EN 13501-1
• Supplementary adhesives: - **MAITÉ** - **COLLE CCP+** - **UNITÉ** - **FACITÉ** • Insulation product: - MW (Stone/Rock Wool) boards Reaction to fire Class A1 Thickness ≥ 20 mm, density ≤ 155 kg/m^3 - MW (Glass Wool) boards Reaction to fire Class A2-s1,d0 Thickness ≥ 20 mm, density ≤ 65 kg/m^3 • Base coat: **FACITÉ** • Key coat: **REVLANE+ RÉGULATEUR** • Meshes: - SSA-1363 F+ - R 131 A 101 C+ - R 131 A 102 C+ • Finishing coat: **GRANILANE+**	Base coat: 3.2% Key coat: 12.5 % Finishing coats: 8.0%	Base coat: 0.0% Key coat: 0.0% Finishing coats: 0.0%	B – s1, d0

(1) Percentage declared by the Manufacturer, relative to the dried weight of the component as delivered.

Note: a European reference fire scenario has not been laid down for façades. In some Member States, the classification of ETICS according to EN 13501-1 might not be sufficient for the use in façades. 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 States regulations, until the existing European classification system has been completed.

3.3 Hygiene, health and the environment (BWR 3)

3.3.1 Water absorption – capillarity test

3.3.1.1 Water absorption of the base coat

- After 1 hour: water absorption < 1 kg/m^2
- After 24 hours: water absorption ≤ 0.5 kg/m^2

3.3.1.2 Water absorption of the rendering system

Rendering system: Base coat + finishing coat indicated below	Water absorption after 24 hours	
	< 0.5 kg/m²	**≥ 0.5 kg/m²**
With REVLANE+ RÉGULATEUR: - REVLANE+ IGNIFUGÉ TALOCHÉ FIN(1) - REVLANE+ IGNIFUGÉ TALOCHÉ GROS(1) - REVLANE+ IGNIFUGÉ RIBBÉ FIN(1)	X	
With REVLANE+ RÉGULATEUR: - REVLANE+ SILOXANÉ IGNIFUGÉ TF(1) - REVLANE+ SILOXANÉ IGNIFUGÉ RB(1) - REVLANE+ SILOXANÉ IGNIFUGÉ TG(1)	X	
With SILICANE FOND + SILICANE PEINTURE: - SILICANE TALOCHÉ FIN - SILICANE TALOCHÉ GROS	X	
With REVLANE+ RÉGULATEUR: GRANILANE+	X	
FACITÉ with SILICANE FOND + SILICANE PEINTURE		X

(1) With or without PARITÉ+ ACCÉLÉRATEUR.

3.3.2 Watertightness

3.3.2.1 Hygrothermal behaviour

Heat-rain and heat-cold cycles have been performed on a rig. The ETICS is assessed as resistant to hygrothermal cycles.

3.3.2.2 Freeze-thaw behaviour

Rendering system with finishing coat “FACITÉ with SILICANE FOND and SILICANE PEINTURE”: the ETICS has been assessed as freeze/thaw resistant according to simulation method.

Rendering systems with the other finishing coats: water absorptions of both the base coat and the rendering systems are less than 0.5 kg/m² after 24 hours and the ETICS is therefore assessed as freeze/thaw resistant.

3.3.3 Impact resistance

Rendering system: Base coat + finishing coat indicated below	Use category		
	single standard mesh	double standard mesh	reinforced mesh + standard mesh
With REVLANE+ RÉGULATEUR: - REVLANE+ IGNIFUGÉ TALOCHÉ FIN(1) - REVLANE+ IGNIFUGÉ TALOCHÉ GROS(1) - REVLANE+ IGNIFUGÉ RIBBÉ FIN(1)	Category I	Category I	
With REVLANE+ RÉGULATEUR: - REVLANE+ IGNIFUGÉ TALOCHÉ FIN(2) - REVLANE+ IGNIFUGÉ TALOCHÉ GROS(2) - REVLANE+ IGNIFUGÉ RIBBÉ FIN(2)	Category II		
With REVLANE+ RÉGULATEUR: - REVLANE+ SILOXANÉ IGNIFUGÉ TF(1) - REVLANE+ SILOXANÉ IGNIFUGÉ RB(1) - REVLANE+ SILOXANÉ IGNIFUGÉ TG(1)	Category I		
With REVLANE+ RÉGULATEUR: - REVLANE+ SILOXANÉ IGNIFUGÉ TF(2) - REVLANE+ SILOXANÉ IGNIFUGÉ RB(2) - REVLANE+ SILOXANÉ IGNIFUGÉ TG(2)	Category II		
With SILICANE FOND + SILICANE PEINTURE: - SILICANE TALOCHÉ FIN - SILICANE TALOCHÉ GROS	Category II		
With REVLANE+ RÉGULATEUR: GRANILANE+	Category I		
FACITÉ with SILICANE FOND + SILICANE PEINTURE	Category II		

(1) Without PARITÉ+ ACCÉLÉRATEUR.

(2) With PARITÉ+ ACCÉLÉRATEUR.

3.3.4 Water vapour permeability – resistance to water vapour diffusion

Rendering system: Base coat + finishing coat indicated below	Equivalent air thickness s_d (m)
With REVLANE+ RÉGULATEUR: - REVLANE+ IGNIFUGÉ TALOCHÉ FIN(1) - REVLANE+ IGNIFUGÉ TALOCHÉ GROS(1) - REVLANE+ IGNIFUGÉ RIBBÉ FIN(1)	≤ 1.0 (Test result obtained with REVLANE+ RÉGULATEUR with REVLANE+ IGNIFUGÉ TALOCHÉ GROS: 0.6)
With REVLANE+ RÉGULATEUR: - REVLANE+ SILOXANÉ IGNIFUGÉ TF(1) - REVLANE+ SILOXANÉ IGNIFUGÉ RB(1) - REVLANE+ SILOXANÉ IGNIFUGÉ TG(1)	≤ 1.0 (Test result obtained with REVLANE+ RÉGULATEUR with REVLANE+ SILOXANÉ IGNIFUGÉ TG: 0.5)
With SILICANE FOND + SILICANE PEINTURE: - SILICANE TALOCHÉ FIN - SILICANE TALOCHÉ GROS	≤ 1.0 (Test result obtained: 0.2)
With REVLANE+ RÉGULATEUR: GRANILANE+	≤ 1.0 (Test result obtained: 0.4)
FACITÉ with SILICANE FOND + SILICANE PEINTURE	≤ 1.0 (Test result obtained: 0.2)

(1) With or without PARITÉ+ ACCÉLÉRATEUR.

3.3.5 Release of dangerous substances

The ETICS belong to Category S/W2, according to EOTA Technical Report No 034.

A written declaration was submitted by the Manufacturer.

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.

3.4 Safety and accessibility in use (BWR 4)

3.4.1 Bond strength of the base coat onto insulation product

- Initial state: bond strength < 0.08 MPa but cohesive failure into insulation product.
- After hygrothermal cycles / conditioning: bond strength < 0.08 MPa but cohesive failure into insulation product.
- After freeze-thaw cycles: bond strength < 0.08 MPa but cohesive failure into insulation product or test not performed (see § 3.3.2.2 of this ETA).

3.4.2 Fixing strength (transverse displacement)

Test not required because the ETICS fulfils the following criteria:

$$E.d < 50{,}000 \text{ N/mm}$$

E modulus of elasticity of the base coat without mesh (MPa)

d mean dried thickness of the base coat (mm)

3.4.3 Resistance to wind load

3.4.3.1 Resistance to wind load of mechanically-fixed ETICS using anchors

Anchors	**Plate diameter (mm)**	≥ 60	
	Plate stiffness (kN/mm)	≥ 0.4	
Insulation product	**Type**	**ECOROCK MONO** (Rockwool)	
	Tensile strength perpendicular to the face (kPa)	≥ 10	
		Mono-density product	
	Thickness (mm)	≥ 50	≥ 120
Maximum load ***(Pull-through test)***	**Anchors not placed at the panel joints (dry conditions): R_{panel} (N)**	Minimal: 444	Minimal: 1023
		Average: 475	Average: 1044
	Anchors placed at the panel joints (dry conditions): R_{joint} (N)	Minimal: 362	Minimal: 500
		Average: 404	Average: 679

Anchors	**Trade name**	termoz SV II ecotwist
	Helix dimensions	Diameter: 66 Height: 27
Insulation product	**Type**	**ECOROCK MONO** (Rockwool)
	Tensile strength perpendicular to the face (kPa)	≥ 10
		Mono-density product
	Thickness (mm)	100
Maximum load ***(Pull-through test)***	**Anchors not placed at the panel joints (dry conditions): R_{panel} (N)**	Minimal: 687
		Average: 752

Anchor termoz SV II ecotwist can only be used as mounted countersunk.

Anchors	**Plate diameter (mm)**	≥ 60		
	Plate stiffness (kN/mm)	≥ 0.4		
Insulation product	**Type**	**ECOROCK DUO** (Rockwool)		
	Tensile strength perpendicular to the face (kPa)	≥ 7.5		
		Dual density product		
	Thickness (mm)	≥ 50	≥ 80	≥ 120
Maximum load ***(Pull-through test)***	**Anchors not placed at the panel joints (dry conditions): R_{panel} (N)**	Minimal: 339	Minimal: 348	Minimal: 454
		Average: 365	Average: 410	Average: 503
	Anchors not placed at the panel joints (wet conditions*): R_{panel} (N)	Minimal: 198	-	Minimal: 368
		Average: 229	-	Average: 406

* 28 days at (70 ± 2)°C / (95 ± 5)% RH + drying period at (23 ± 2)°C / (50 ± 5)% HR until constant weight

Anchors	**Plate diameter (mm)**	≥ 90	
	Plate stiffness (kN/mm)	≥ 0.4	
Insulation product	**Type**	**ECOROCK DUO** (Rockwool)	
	Tensile strength perpendicular to the face (kPa)	≥ 7.5	
		Dual density product	
	Thickness (mm)	≥ 80	≥ 120
Maximum load ***(Pull-through test)***	**Anchors not placed at the panel joints (dry conditions): R_{panel} (N)**	-	Minimal: 511
		-	Average: 611
	Anchors placed at the panel joints (dry conditions): R_{joint} (N)	Minimal: 362	-
		Average: 392	-

Anchors	**Trade name**	Ejotherm STR U, STR U 2G + Ejotherm VT 2G
	Dimensions	Diameter: Ejotherm STR U, STR U 2G: 60 mm Ejotherm VT 2G: 110 mm
Insulation product	**Type**	**ECOROCK DUO** (Rockwool)
	Tensile strength perpendicular to the face (kPa)	≥ 7.5
		Dual density product
	Thickness (mm)	≥ 120
Maximum load ***(Pull-through test)***	**Anchors not placed at the panel joints (dry conditions): R_{panel} (N)**	Minimal: 699
		Average: 838

Anchors Ejotherm STR U or Ejotherm STR U 2G, associated with Ejotherm VT 2G can only be used as mounted countersunk.

Anchor	**Trade name**	termoz SV II ecotwist
	Helix dimensions	Diameter: 66 Height: 27
Insulation product	**Type**	**ECOROCK DUO** (Rockwool)
	Tensile strength perpendicular to the face (kPa)	≥ 7.5
		Dual-density product
	Thickness (mm)	100
Maximum load ***(Pull-through test)***	**Anchors not placed at the panel joints (dry conditions): R_{panel} (N)**	Minimal: 357
		Average: 413

Anchor termoz SV II ecotwist can only be used as mounted countersunk.

Anchors	**Plate diameter (mm)**	≥ 60	
	Plate stiffness (kN/mm)	≥ 0.4	
Insulation product	**Type**	**ISOVER TF 36** (Saint-Gobain ISOVER)	
	Tensile strength perpendicular to the face (kPa)	≥ 10	
		Mono-density product	
	Thickness (mm)	≥ 50	≥ 120
Maximum load ***(Pull-through test)***	**Anchors not placed at the panel joints (dry conditions): R_{panel} (N)**	Minimal: 292	Minimal: 414
		Average: 342	Average: 432
	Anchors placed at the panel joints (dry conditions): R_{joint} (N)	Minimal: 238	Minimal: 332
		Average: 281	Average: 398
	Anchors not placed at the panel joints (wet conditions*): R_{panel} (N)	Minimal: 243	Minimal: 355
		Average: 286	Average: 375
	Anchors placed at the panel joints (wet conditions*): R_{joint} (N)	Minimal: 177	Minimal: 263
		Average: 215	Average: 301

* 28 days at (70 ± 2)°C / (95 ± 5)% RH + drying period at (23 ± 2)°C / (50 ± 5)% HR until constant weight.

Anchor	**Trade name**	termoz SV II ecotwist
	Helix dimensions	Diameter: 66 Height: 27
Insulation product	**Type**	**ISOVER TF 36** (Saint-Gobain ISOVER)
	Tensile strength perpendicular to the face (kPa)	≥ 10
		Mono-density product
	Thickness (mm)	100
Maximum load ***(Pull-through test)***	**Anchors not placed at the panel joints (dry conditions): R_{panel} (N)**	Minimal: 257
		Average: 299

Anchor termoz SV II ecotwist can only be used as mounted countersunk.

Anchors	**Plate diameter (mm)**	≥ 60	
	Plate stiffness (kN/mm)	≥ 0.4	
Insulation product	**Type**	**FKD MAX C2** (Knauf Insulation)	
	Tensile strength perpendicular to the face (kPa)	≥ 7.5	
		Mono-density product	
	Thickness (mm)	≥ 80	≥ 140
Maximum load ***(Pull-through test)***	**Anchors not placed at the panel joints (dry conditions): R_{panel} (N)**	Minimal: 600	Minimal: 726
		Average: 653	Average: 833
	Anchors placed at the panel joints (dry conditions): R_{joint} (N)	Minimal: 462	Minimal: 519
		Average: 495	Average: 570
	Anchors not placed at the panel joints (wet conditions*): R_{panel} (N)	Minimal: 372	Minimal: 526
		Average: 400	Average: 615
	Anchors placed at the panel joints (wet conditions*): R_{joint} (N)	Minimal: 297	Minimal: 369
		Average: 319	Average: 398

* 28 days at (70 ± 2)°C / (95 ± 5)% RH + drying period at (23 ± 2)°C / (50 ± 5)% HR until constant weight.

Anchors	**Trade name**	Ejotherm STR U, STR U 2G + Ejotherm VT 90	
	Dimensions	Diameter: Ejotherm STR U, STR U 2G: 60 mm Ejotherm VT 90: 90 mm	
Insulation product	**Type**	**FKD MAX C2** (Knauf Insulation)	
	Tensile strength perpendicular to the face (kPa)	≥ 7.5	
		Mono density product	
	Thickness (mm)	≥ 80	≥ 140
Maximum load ***(Pull-through test)***	**Anchors not placed at the panel joints (dry conditions): R_{panel} (N)**	Minimal: 766	Minimal: 949
		Average: 826	Average: 1010
	Anchors placed at the panel joints (dry conditions): R_{panel} (N)	Minimal: 647	Minimal: 702
		Average: 692	Average: 727

Anchor	**Trade name**	termoz SV II ecotwist
	Helix dimensions	Diameter: 66 Height: 27
Insulation product	**Type**	**FKD MAX C2** (Knauf Insulation)
	Tensile strength perpendicular to the face (kPa)	≥ 7.5
		Mono-density product
	Thickness (mm)	100
Maximum load ***(Pull-through test)***	**Anchors not placed at the panel joints (dry conditions): R_{panel} (N)**	Minimal: 403
		Average: 509

Anchor termoz SV II ecotwist can only be used as mounted countersunk.

Anchors	**Plate diameter (mm)**	≥ 60	
	Plate stiffness (kN/mm)	≥ 0.6	
Insulation product	**Type**	**ISOCOMPACT / ISOCOMPACT 34** (Saint-Gobain ISOVER)	
	Tensile strength perpendicular to the face (kPa)	≥ 7.5	
		Mono-density product	
	Thickness (mm)	≥ 60	≥ 120
Maximum load ***(Pull-through test)***	**Anchors not placed at the panel joints (dry conditions): R_{panel} (N)**	Minimal: 556	Minimal: 621
		Average: 587	Average: 665
	Anchors placed at the panel joints (dry conditions): R_{joint} (N)	Minimal: 364	Minimal: 381
		Average: 394	Average: 403
Maximum load ***(Pull-through test)***	**Anchors not placed at the panel joints (wet conditions*): R_{panel} (N)**	Minimal: 441	-
		Average: 481	-
	Anchors placed at the panel joints (wet conditions*): R_{joint} (N)	-	Minimal: 399
		-	Average: 432

* 28 days at (70 ± 2)°C / (95 ± 5)% RH + drying period at (23 ± 2)°C / (50 ± 5)% HR until constant weight.

Anchors which can be used are described in Annex 2 of this ETA.

The design wind load resistance of the ETICS fixed with anchors is determined as follows:

$$R_{\mathrm{d}} = \frac{R_{\mathrm{panel}} \cdot n_{\mathrm{panel}} + R_{\mathrm{joint}} \cdot n_{\mathrm{joint}}}{\gamma}$$

n_{panel} number of anchors not placed at the panel joints, per m²
n_{joint} number of anchors placed at the panel joints, per m²
γ national safety factor

3.4.4 Width of crack – Render Strip Tensile Test

No performance was determined for the ETICS.

3.5 Protection against noise (BWR 5)

No performance was determined for the ETICS.

3.6 Energy economy and heat retention (BWR 6)

Thermal resistance and thermal transmittance are defined in clause 5.1.6 of the ETAG 004.

3.7 Sustainable use of natural resources (BWR 7)

No performance was determined for the ETICS.

3.8 Aspects of durability and serviceability

Bond strength after ageing:

Rendering system: **Base coat + finishing coat indicated below**	**Bond strength (MPa)**
With REVLANE+ RÉGULATEUR: - REVLANE+ IGNIFUGÉ TALOCHÉ FIN(1) - REVLANE+ IGNIFUGÉ TALOCHÉ GROS(1) - REVLANE+ IGNIFUGÉ RIBBÉ FIN(1)	≥ 0.08 (tests on EPS)
With REVLANE+ RÉGULATEUR: - REVLANE+ SILOXANÉ IGNIFUGÉ TF(1) - REVLANE+ SILOXANÉ IGNIFUGÉ RB(1) - REVLANE+ SILOXANÉ IGNIFUGÉ TG(1)	
With SILICANE FOND + SILICANE PEINTURE: - SILICANE TALOCHÉ FIN - SILICANE TALOCHÉ GROS	
With REVLANE+ RÉGULATEUR: GRANILANE+	
FACITÉ with SILICANE FOND + SILICANE PEINTURE	

(1) With or without PARITÉ+ ACCÉLÉRATEUR.

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

According to Decision 97/556/EC (Decision of the Commission of 14 July 1997, L 229 of 20.8.1997, p. 15), as amended by Decision 2001/596/EC (Decision of the Commission of 8 January 2001, L 209 of 2.8.2001, p. 33)[2], the systems of AVCP given in the following table apply:

Product	Intended use	Levels or classes (Reaction to fire)	System
External Thermal Insulation Composite Systems with rendering	in external walls subject to fire regulation	A1(1), A2(1), B(1) or C(1)	1
		- A1(2), A2(2), B(2), C(2) - D, E, F - (A1 to E)(3)	2+
	in external walls not subject to fire regulation	any	2+

(1) Products/materials for which as clearly identifiable stage in the production process results in an improvement of the reaction to fire classification (e.g. an addition of fire retardants or a limiting of organic material).

(2) Products/materials not covered by footnote 1.

(3) Products/materials that do not require to be tested for reaction to fire (e.g. Products/materials of Classes A1 according to Commission Decision 96/603/EC).

The systems of AVCP are described in Annex V of Regulation (EU) No 305/2011, as amended by Delegated Regulation (EU) No 568/2014.

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 deposited at the CSTB.

The control plan is given in Annex 4. As the control plan contains confidential information, Annex 4 is not included in the published parts of this ETA.

Issued in Marne-la-Vallée on 23/10/2020 by Christine GILLIOT
Director of Department Floors and Covering

[2] Decisions are published in the *Official Journal of the European Union (OJEU)*, see www.new.eur-lex.europa.eu/oj/direct-access.html.

Factory-prefabricated, uncoated boards made of mineral wool **ECOROCK MONO** (MW) according to EN 13162+A1 and having characteristics described in the following table. Mass per unit area (kg/m²) depends on both thickness of the board and density of mineral wool.

Reaction to fire / EN 13501-1		Class A1
Thermal resistance / EN 13162		Defined in the CE marking
Dimensional tolerances	**Thickness / EN 823**	T5 [-1 % or -1 mm / +3 mm]
Dimensional stability	**Under specified temperature and humidity / EN 1604: 48 h at 70°C and 90% RH**	DS(70,90) [≤ 1%]
Water absorption (partial immersion) / EN 1609 – method A		WS [≤ 1.0 kg/m²]
Longterm water absorption (partial immersion) / EN 1609		WL(P) [≤ 3.0 kg/m²]
Water vapour diffusion resistance factor (μ) / EN 12086		MU1
Tensile strength perpendicular to the faces in dry conditions / EN 1607		TR 10 [≥ 10 kPa]
Dynamic stiffness / EN 29052-1		No performance determined
Air flow resistance / EN 29053		No performance determined
Compressive strength / EN 826		CS(10)30

ETICS PARISO LR - F	**ANNEX 1 (1/5)** of ETA-20/0250-version 1
Insulation product for mechanically-fixed ETICS with anchors	

Factory-prefabricated, uncoated boards made of mineral wool **ECOROCK DUO** (MW) according to EN 13162+A1 and having characteristics described in the following table. Mass per unit area (kg/m^2) depends on both thickness of the board and density of mineral wool.

Reaction to fire / EN 13501-1		Class A1
Thermal resistance / EN 13162		Defined in the CE marking
Dimensional tolerances	**Thickness / EN 823**	T5 [-1 % ou -1 mm / +3 mm]
Dimensional stability	**Under specified temperature and humidity / EN 1604: 48 h at 70°C and 90% RH**	DS(70,90) [≤ 1%]
Water absorption (partial immersion) / EN 1609 – method A		WS [≤ 1.0 kg/m²]
Longterm water absorption (partial immersion) / EN 1609		WL(P) [≤ 3.0 kg/m²]
Water vapour diffusion resistance factor (μ) / EN 12086		MU1
Tensile strength perpendicular to the faces in dry conditions / EN 1607		TR 7.5 [≥ 7.5 kPa]
Dynamic stiffness / EN 29052-1		No performance determined
Air flow resistance / EN 29053		No performance determined
Compressive strength / EN 826		CS(10)15

Factory-prefabricated, uncoated boards made of mineral wool **ISOVER TF 36** (MW) according to EN 13162+A1 and having characteristics described in the following table. Mass per unit area (kg/m^2) depends on both thickness of the board and density of mineral wool.

Reaction to fire / EN 13501-1		Class A1
Thermal resistance / EN 13162		Defined in the CE marking
Dimensional tolerances	**Thickness / EN 823**	T5 [-1% or -1 mm / +3 mm]
Dimensional stability	**Under specified temperature and humidity / EN 1604: 48 h at 70°C and 90% RH**	DS(70,90) [≤ 1%]
Water absorption (partial immersion) / EN 1609 – method A		WS [≤ 1.0 kg/m²]
Longterm water absorption (partial immersion) / EN 1609		WL(P) [≤ 3.0 kg/m²]
Water vapour diffusion resistance factor (μ) / EN 12086		MU1
Tensile strength perpendicular to the faces in dry conditions / EN 1607		TR 10 [≥ 10 kPa]
Dynamic stiffness / EN 29052-1		No performance determined
Air flow resistance / EN 29053		AFr 43 [43 kPa.s/m²]
Compressive strength / EN 826		CS(10/Y)30 [≥ 30 kPa]

ETICS PARISO LR - F	**ANNEX 1 (3/5)** of ETA-20/0250-version 1
Insulation product for mechanically-fixed ETICS with anchors	

Factory-prefabricated, coated boards made of mineral wool **FKD MAX C2** (MW) according to EN 13162+A1 and having characteristics described in the following table. Mass per unit area (kg/m^2) depends on both thickness of the board and density of mineral wool.

Reaction to fire / EN 13501-1		Class A1
Thermal resistance / EN 13162		Defined in the CE marking
Dimensional tolerances	**Thickness / EN 823**	T5 [-1% or -1 mm / +3 mm]
Dimensional stability	**Under specified temperature and humidity / EN 1604: 48 h at 70°C and 90% RH**	DS(70,90) [≤ 1%]
Water absorption (partial immersion) / EN 1609 – method A		WS [≤ 1.0 kg/m²]
Longterm water absorption (partial immersion) / EN 1609		WL(P) [≤ 3.0 kg/m²]
Water vapour diffusion resistance factor (μ) / EN 12086		MU1
Tensile strength perpendicular to the faces in dry conditions / EN 1607		TR 7.5 [≥ 7.5 kPa]
Dynamic stiffness / EN 29052-1		No performance determined
Air flow resistance / EN 29053		No performance determined
Compressive strength / EN 826		CS(10)20 [≥ 20 kPa]

ETICS PARISO LR - F	**ANNEX 1 (4/5)** of ETA-20/0250-version 1
Insulation product for mechanically-fixed ETICS with anchors	

Factory-prefabricated, uncoated boards made of mineral wool **ISOCOMPACT / ISOCOMPACT 34** (MW) according to EN 13162+A1 and having characteristics described in the following table. Mass per unit area (kg/m^2) depends on both thickness of the board and density of mineral wool.

Reaction to fire / EN 13501-1		Class A2-s1,d0.
Thermal resistance / EN 13162		Defined in the CE marking
Dimensional tolerances	**Thickness / EN 823**	T5 [-1% or -1 mm / +3 mm]
Dimensional stability	**Under specified temperature and humidity / EN 1604: 48 h at 70°C and 90% RH**	DS(70,90) [≤ 1%]
Water absorption (partial immersion) / EN 1609 – method A		WS [≤ 1.0 kg/m²]
Longterm water absorption (partial immersion) / EN 1609		WL(P) [≤ 3.0 kg/m²]
Water vapour diffusion resistance factor (μ) / EN 12086		MU1
Tensile strength perpendicular to the faces in dry conditions / EN 1607		TR 7.5 [≥ 7.5 kPa]
Dynamic stiffness / EN 29052-1		No performance determined
Air flow resistance / EN 29053		AFr 5 [5 kPa.s/m²]
Compressive strength / EN 826		CS(10)20 [≥ 20 kPa]

ETICS PARISO LR - F	**ANNEX 1 (5/5)** of ETA-20/0250-version 1
Insulation product for mechanically-fixed ETICS with anchors	

Anchors with ETA according to European Technical Approval Guideline No 014 (hereinafter ETAG 014) or to European Assessment Document (EAD) 330196-ED-0604 (hereinafter EAD “anchors”). The anchors are composed of a plastic expansion sleeve with a plate having diameter of 60 mm or a helix (spiral) and a plastic or metallic nail or screw. Use categories and characteristic resistances in the substrate are given in each anchor’s ETA. Validity of the anchor’s ETA shall be checked before using the anchor.

Trade name	ETA reference	Mounting(1)	Plate stiffness (kN/mm)
Fischer TERMOZ CNplus 8	ETA-09/0394	a, b	≥ 0.6
Koelner TFIX-8M	ETA-07/0336	a	
Koelner TFIX-8S	ETA-11/0144	a	
Koelner TFIX-8ST	ETA-11/0144	b	
Ejotherm STR U, STR U 2G	ETA-04/0023	a, b	
Ejot H1 eco	ETA-11/0192	a	
Ejotherm H2 eco	ETA-15/0740	a	
Ejot H3	ETA-14/0130	a	
Rawlplug Insulation System R-TFIX-8S	ETA-17/0161	a, b	
Rawlplug Façade Insulation Fixing R-TFIX-8M	ETA-17/0592	a	
termoz SV II ecotwist	ETA-12/0208	b	-

(1) a: surface mounting; b: countersunk mounting.

These characteristics, the use categories and the characteristic resistances in the substrate shall be taken from the corresponding anchor’s ETA.

ETICS PARISO LR - F	ANNEX 2
Anchors for insulation product	of ETA-20/0250-version 1

Glass fibre meshes:

- standard meshes: with mesh size between 3 and 6 mm;
- reinforced mesh: implemented in addition to the standard mesh, to improve the impact resistance.

Trade name	Mass per unit area (g/m^2)	Residual strength after ageing (N/mm)		Relative residual strength after ageing (%)(1)	
		Warp	Weft	Warp	Weft
Standard meshes					
SSA-1363 F+ (IAVPC)	167	≥ 20	≥ 20	≥ 50	≥ 50
R 131 A 101 C+ (IAVPC)	167	≥ 20	≥ 20	≥ 50	≥ 50
R 131 A 102 C+ (IAVU)	161	≥ 20	≥ 20	≥ 50	≥ 50
Reinforced mesh					
R 585 A 101 (IAVR)	696	≥ 20	≥ 20	≥ 40	≥ 40

(1) Percentage of the strength in the as-delivered state.

ETICS PARISO LR - F	ANNEX 3 of ETA-20/0250-version 1
Glass fibre meshes	