



European Technical Assessment

ETA-21/0273-version 1 of 16/03/2022

GENERAL PART

**Technical Assessment Body issuing the
European Technical Assessment:**

Centre Scientifique et Technique du Bâtiment
(CSTB)

Trade name of the construction product:

PARISO FB – M

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

Product Area Code: 04
External Thermal Insulation Composite System
with rendering (ETICS)

Manufacturer:

ParexGroup SAS
19 place de la Résistance
CS 50053
FR-92445 Issy-les-Moulineaux

Manufacturing plant(s):

ParexGroup S.A.
19 place de la Résistance
CS 50053
FR-92445 Issy-les-Moulineaux

**This European Technical Assessment
contains:**

29 pages including 4 Annexes which form an
integral part of this assessment

Annex 5 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 Assessment Document (EAD)
040083-00-0404
External Thermal Insulation Composite Systems
(ETICS) with renderings

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SPECIFIC PART

1. Technical description of the product

The External Thermal Insulation Composite System “PARISO FB – M”, 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 1.3.13 of the EAD¹. 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 1.1 of the EAD .

Method of fixing	Component	Coverage (kg/m ²)	Thickness (mm)
Mechanically fixed ETICS with anchors and supplementary adhesive	Insulation product		
	Wood Fibre (WF) boards, see Annex 1:		
	PAVAWALL-SMART, by Pavatex		120 to 240
	PARNATUR ISOLANT FIBRES DE BOIS, by ParexLanko		120 to 240
	MULTISOL 110, by Isonat		60 to 240
	STEICOPROTECT L dry, by Steico		60 to 240
	Supplementary adhesives		
	MAITÉ: white cement-based powder requiring addition of about 17% wt. water	2.6 to 3.5 [powder]	—
	UNITÉ: cement-based powder requiring addition of 21 to 24 % 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]	—
	COLLE CCP+: grey cement-based powder requiring addition of 21 to 22 % wt. water	2.6 to 3.5 [powder]	—
	Anchors for insulation product		
	Plastic anchors, see Annex 2	—	—

¹ EAD 040083-00-0404 is available on the EOTA website: www.eota.eu.

Method of fixing	Component	Coverage (kg/m ²)	Thickness (mm)
Mechanically fixed ETICS with anchors and supplementary adhesive	Base coat		
	MAITÉ: powder requiring addition of about 17% wt. water, consisting of white cement, a vinyllic micronised copolymer, mineral pigments, calcium carbonate and silica as particles and specific additives.	About 5.7 [powder] <i>For thick finishing coats</i> About 4.8 [powder] <i>For the other finishing coats</i>	Mean: 4.0 [dry] Minimal: 3.5 [dry]
	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 and PAREX DÉCO TRAVERTIN finishing coats, and to apply optionally before REVLANE TF 1.0 / TG 1.6 / RF 1.6 and REVLANE SILOXANÉ TF 1.0 / 1.6 finishing coats.	0.15 to 0.20	—
	SILICANE FOND: uncoloured liquid, silicate binder: - requiring addition of 100% wt. SILICANE LISSE , to apply mandatory before silicate finishing coats - ready-to-use, to apply optionally before CALCIFIN and CALCILISSE .	0.10 to 0.15 [prepared] 0.08 to 0.12	— —
	Finishing coats		
	Ready-to-use pastes, acrylic binder: - REVLANE TF 1.0 (particles size 1.0 mm) - REVLANE TG 1.6 (particles size 1.6 mm) - REVLANE RF 1.6 (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 PATACCEL (powder made of hydraulic binder and mineral filler) to accelerate their drying.		
	Ready-to-use pastes, acrylic binder with siloxane: - REVLANE SILOXANÉ TF 1.0 (particles size 1.0 mm) - REVLANE SILOXANÉ TG 1.6 (particles size 1.6 mm)	2.2 to 2.5 2.7 to 3.0	Regulated by particle size
	For applications between 1 and 15°C, these pastes can be mixed with 4 to 8% wt. of PATACCEL (powder made of hydraulic binder and mineral filler) to accelerate their drying.		

Method of fixing	Component	Coverage (kg/m ²)	Thickness (mm)
	Ready-to-use paste, acrylic binder with siloxane: PAREX DÉCO TRAVERTIN (particle size 0.8 mm)	1.7 to 2.2	About 1.5
	For applications between 1 and 15°C, these pastes can be mixed with 4 to 8% wt. of PATACCEL (powder made of hydraulic binder and mineral filler) to accelerate their drying.		
	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 TF 1.0 (particle size 1.0 mm) - SILICANE TG 1.6 (particle size 1.6 mm)	1.5 to 1.7 2.7 to 3.0	Regulated by particle size
	Hydrated calcic lime-based powder requiring addition of 24 to 26 % wt. water: CALCIFIN (particle size 1.0 mm)	1.8 to 2.2 [powder]	Regulated by particle size
	Hydrated calcic lime-based powder requiring addition of 22 to 23% wt. water: CALCILISSE (particle size 0.8 mm)	3.0 to 3.4 [powder]	2.5 to 3.0
	Cement-based powders requiring addition of 20 to 24% wt. water: - EHI GF (particle size 2.0 mm) - EHI GM (particle size 3.0 mm)	14.0 to 18.0 [powder]	8.0 to 10.0
	Cement-based powder requiring addition of 22 to 24% wt. water: UNITÉ (particle size 2.0 mm)	12.0 to 14.0 [powder]	8.0 to 10.0
Ancillary materials	Cement-based powder associated with a decorative paint: MAITÉ with SILICANE LISSE : - MAITÉ : same product as base coat. - SILICANE LISSE : silicate-based pigmented liquid, requiring addition of about 20% wt. SILICANE FOND .	About 2.0 [powder] About 0.4 [prepared]	About 1.5
	Descriptions in accordance with § 1.3.13 of the EAD 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 m².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.

The ETICS is installed in accordance with Manufacturer's installation instructions.

Design, execution, maintenance and repair of the construction works 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 chapter 2 of the EAD.

These performances, given in the following paragraphs, are valid as long as the components are the ones described in § 1 and Annexes 1 to 5 of this ETA.

3.1 Safety in case of fire (BWR 2)

No	Essential characteristic	Assessment method (EAD clause)	Performance
1	Reaction to fire	2.2.1	-
	- Reaction to fire of ETICS	2.2.1.1	Euroclass B-s1, d0
	- Reaction to fire of thermal insulation material	2.2.1.2	Class E
	- Reaction to fire of PU foam adhesive	2.2.1.3	Not applicable
2	Façade fire performance	2.2.2 The ETICS has been tested according to the French test method "LEPIR 2" ² , as foreseen by Annex C of EAD 040083-00-0404.	According to the French test method "LEPIR 2": •The criteria requiring that the fire doesn't propagate through the second level above the fire level is met. •The criteria requiring that the fire does not spread through the facade floor junction is met.
3	Propensity to undergo continuous smouldering of ETICS	2.2.3	No performance assessed

² The successful completion of the "LEPIR 2" test fulfils the requirements of French Regulation

Reaction to fire of ETICS:

Configuration	Declared organic content ⁽¹⁾	Declared flame retardant content ⁽¹⁾	Class according to EN 13501-1
<ul style="list-style-type: none"> Adhesives / supplementary adhesives: <ul style="list-style-type: none"> - UNITÉ - COLLE CCP+ - MAITÉ - FACITÉ Insulation product: WF boards, reaction to fire Class E, thickness ≥ 20 mm, density: 110 to 190 kg/m³ Base coat: MAITÉ Meshes: <ul style="list-style-type: none"> - R 131 A 101 C+ - R 131 A 102 C+ - SSA-1363 F+ Key coats: <ul style="list-style-type: none"> - REVLANE RÉGULATEUR - SILICANE FOND Finishing coats: <ul style="list-style-type: none"> - REVLANE RF 1.6⁽²⁾ - REVLANE TF 1.0⁽²⁾ - REVLANE TG 1.6⁽²⁾ - REVLANE SILOXANÉ TF 1.0⁽²⁾ - REVLANE SILOXANÉ TG 1.6⁽²⁾ - GRANILANE - PAREX DÉCO TRAVERTIN⁽²⁾ - SILICANE TF 1.0 / SILICANE TG 1.6 - CALCIFIN - CALCILISSE - EH1 GF / EH1 GM - UNITÉ - MAITÉ with SILICANE LISSE 	<p>Base coat: 7.0%</p> <p>Key coats: 12.5 to 58.8%</p> <p>Finishing coats: 2.6 to 11.9%</p> <p>Except for MAITÉ (7.0%) with SILICANE LISSE (15%)</p>	<p>Base coat: 0.0%</p> <p>Key coats: 0.0%</p> <p>Finishing coats: 0.0 to 18.3%</p>	B – s1, d0

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

⁽²⁾ With or without PATACCEL.

3.2 Hygiene, health and the environment (BWR 3)

#	Essential characteristic	Assessment method (EAD clause)	Performance
4	Content, emission and/or release of dangerous substances – leachable substances	2.2.4	No performance assessed
5	Water absorption	2.2.5	-
	- of the base coat and the rendering system	2.2.5.1	See cl. 3.2.1
	- of the thermal insulation product	2.2.5.2	Maximal value after 24 h (ex : $\leq 1 \text{ kg/m}^3$ (EN 1609- Method A))
6	Water-tightness of the ETICS: Hygrothermal behaviour	2.2.6	Hygrothermal cycles have been performed on two rigs. The ETICS is assessed resistant to hygrothermal cycles, it means system "PARISO FB – M" passed the test without defects.
7	Water-tightness: Freeze thaw performance	2.2.7	The water absorption of the base coat as well as the rendering systems is less than 0.5 kg/m^2 for all configurations of the ETICS, except for the configuration with the finishing coat SILICANE LISSE. The ETICS is assessed as freeze/thaw resistant for all configurations, except for the configuration with the finishing coat SILICANE LISSE.
8	Impact resistance	2.2.8	See cl. 3.2.2
9	Water vapour permeability	2.2.9	-
	- of the rendering system (equivalent air thickness s_d)	2.2.9.1	See cl. 3.2.3
	- of thermal insulation product (water-vapour resistance factor)	2.2.9.2	$\mu = 3$

3.2.1 Water absorption – capillarity test

3.2.1.1 Water absorption of the base coat

- After 1 hour: mean value of the water absorption: 0.06 kg/m^2
- After 24 hours: mean value of the water absorption: 0.32 kg/m^2

3.2.1.2 Water absorption of the rendering system

Rendering system: Base coat + finishing coat indicated below	Mean value of the water absorption (kg/m ²) after	
	1 hour	24 hours
With or without REVLANE RÉGULATEUR: - REVLANE TG 1.6* - REVLANE TF 1.0* - REVLANE RF 1.6*	0.05	0.44
	Test result obtained with REVLANE TG 1.6 + 8% wt. PATACCEL	
With or without REVLANE RÉGULATEUR: - REVLANE SILOXANÉ TF 1.0* - REVLANE SILOXANÉ TG 1.6*	0.04	0.28
	Test result obtained with REVLANE SILOXANÉ TG 1.6 + 8% wt. PATACCEL	
With REVLANE RÉGULATEUR: GRANILANE	0.11	0.34
With REVLANE RÉGULATEUR: PAREX DÉCO TRAVERTIN*	0.04	0.37
	Test result obtained with addition of 8% wt. PATACCEL in the finishing coat	
With SILICANE FOND / SILICANE LISSE: - SILICANE TG 1.6 - SILICANE TF 1.0	0.04	0.26
	Test result obtained with SILICANE TG 1.6	
With or without SILICANE FOND: CALCIFIN	0.12	0.40
With or without SILICANE FOND: CALCILISSE	0.02	0.26
- EHI GF - EHI GM	0.08	0.34
	Test result obtained with EHI GM	
UNITÉ	0.08	0.47
MAITÉ with SILICANE FOND with SILICANE LISSE	0.05	0.59

* With or without the setting accelerator PATACCEL

3.2.2 Impact resistance

Rendering system: Base coat + finishing coat indicated below		Presence of cracks	Maximum impact diameter (mm)	Use category
With or without REVLANE RÉGULATEUR: - REVLANE TF 1.0* - REVLANE TG 1.6* - REVLANE RF 1.6*	single standard mesh	No – 3J Yes – 10J	-- 3J 26 – 10J	Category II
	double standard mesh	No- 3J No -10J	-- 3J -- 10J	Category I
	reinforced mesh + standard mesh	No- 3J No -10J	-- 3J -- 10J	Category I
With or without REVLANE RÉGULATEUR: - REVLANE SILOXANÉ TF 1.0* - REVLANE SILOXANÉ TG 1.6*	single standard mesh	No- 3J No -10J	-- 3J 32 – 10J	Category I
	double standard mesh	No- 3J No -10J	-- 3J -- 10J	Category I
	reinforced mesh + standard mesh	No- 3J No -10J	-- 3J -- 10J	Category I
With REVLANE RÉGULATEUR: - GRANILANE	single standard mesh	No – 3J No – 10J	-- 3J 19 – 10J	Category I
	double standard mesh	No – 3J No – 10J	-- 3J -- 10J	Category I
	reinforced mesh + standard mesh	No – 3J No – 10J	9 – 3J 20 – 10J	Category I
With REVLANE RÉGULATEUR - PAREX DÉCO TRAVERTIN*	single standard mesh	No- 3J Yes -10J	10 – 3J 43 – 10J	Category II
	double standard mesh	No- 3J No -10J	-- 3J 12 – 10J	Category I
	reinforced mesh + standard mesh	No- 3J No -10J	-- 3J -- 10J	Category I
With SILICANE FOND / SILICANE LISSE: - SILICANE TF 1.0 - SILICANE TG 1.6	single standard mesh	No – 3J Yes – 10J	-- 3J 51 – 10J	Category II
	double standard mesh	No – 3J No – 10J	-- 3J 21 – 10J	Category I
	reinforced mesh + standard mesh	No – 3J No – 10J	-- 3J 21 – 10J	Category I

Rendering system: Base coat + finishing coat indicated below		Presence of cracks	Maximum impact diameter (mm)	Use category
With or without SILICANE FOND: - CALCIFIN	single standard mesh	No – 3J No – 10J	14 – 3J 22 – 10J	Category I
	double standard mesh	No – 3J No – 10J	13 – 3J 20 – 10J	Category I
	reinforced mesh + standard mesh	No – 3J No – 10J	14 – 3J 21 – 10J	Category I
With or without SILICANE FOND: - CALCILISSE	single standard mesh	Yes – 3J Yes – 10J	22 – 3J 24 – 10J	Category III
	double standard mesh	No – 3J No – 10J	- – 3J 22 – 10J	Category I
	reinforced mesh + standard mesh	No – 3J No – 10J	- – 3J 19 – 10J	Category I
- EHI GF - EHI GM	single standard mesh	No – 3J Yes – 10J	17 – 3J 23 – 10J	Category II
	double standard mesh	No – 3J No – 10J	17 – 3J 23 – 10J	Category I
	reinforced mesh + standard mesh	No – 3J No – 10J	16 – 3J 22 – 10J	Category I
UNITÉ	single standard mesh	No – 3J No – 10J	14 – 3J 23 – 10J	Category I
	double standard mesh	No – 3J No – 10J	10 – 3J 18 – 10J	Category I
	reinforced mesh + standard mesh	No – 3J No – 10J	17 – 3J 19 – 10J	Category I
MAITÉ with SILICANE FOND with SILICANE LISSE	single standard mesh	No – 3J Yes – 10J	- – 3J 29 – 10J	Category II
	double standard mesh	No – 3J Yes – 10J	- – 3J 29 – 10J	Category II
	reinforced mesh + standard mesh	No – 3J No – 10J	- – 3J 19 – 10J	Category I

* With or without the setting accelerator PATACCEL

3.2.3 Water vapour permeability – resistance to water vapour diffusion

Rendering system: Base coat + finishing coat indicated below	Thickness of tested rendering system (mm)	Equivalent air thickness s_d (m)
With or without REVLANE RÉGULATEUR: - REVLANE TF 1.0* - REVLANE TG 1.6* - REVLANE RF 1.6*	4.6	≤ 1.0 (Test result obtained with REVLANE TG 1.6: 0.5)
With or without REVLANE RÉGULATEUR: - REVLANE SILOXANÉ TG 1.6* - REVLANE SILOXANÉ TF 1.0*	5.6	≤ 1.0 (Test result obtained with REVLANE SILOXANÉ TG 1.6: 0.5)
With REVLANE RÉGULATEUR: - GRANILANE	7.9	≤ 1.0 (Test result obtained: 0.6)
With REVLANE RÉGULATEUR: - PAREX DÉCO TRAVERTIN*	4.4	≤ 1.0 (Test result obtained: 0.5)
With SILICANE FOND / SILICANE LISSE: - SILICANE TF 1.0 - SILICANE TG 1.6	5.7	≤ 1.0 (Test result obtained with SILICANE TG 1.6: 0.2)
With or without SILICANE FOND: - CALCIFIN	5.3	≤ 1.0 (Test result obtained: 0.2)
With or without SILICANE FOND: - CALCILISSE	6.9	≤ 1.0 (Test result obtained: 0.2)
- EHI GM - EHI GF	17.0	≤ 1.0 (Test result obtained with EHI GM: 0.3)
UNITÉ	18.1	≤ 1.0 (Test result obtained: 0.2)
MAITÉ with SILICANE FOND with SILICANE LISSE	6.1	≤ 1.0 (Test result obtained: 0.3)

* with or without the setting accelerator PATACCEL

3.3 Safety and accessibility in use (BWR 4)

No	Essential characteristic	Assessment method (EAD clause)	Performance
10	Bond strength	2.2.11	-
	- bond strength between the base coat and the thermal insulation product (mortar or paste)	2.2.11.1	See cl. 3.3.1
	- bond strength between the adhesive and the substrate	2.2.11.2	Not applicable
	- bond strength between the adhesive and the thermal insulation product	2.2.11.3	Not applicable
	- bond strength of foam adhesives	2.2.11.4	Not applicable
11	Fixing strength	2.2.12	Not required because the ETICS fulfils the following criteria: E.d < 50,000 N/mm
12	Wind load resistance of ETICS	2.2.13	-
	- pull-through tests of fixing	2.2.13.1	See cl. 3.3.2.1
	- static foam block test	2.2.13.2	Not applicable
	- dynamic wind uplift test	2.2.13.3	See cl.3.3.2.2
13	Tensile test perpendicular to the faces of the thermal insulation product	2.2.14	-
	- in dry conditions	2.2.14.1	See cl 3.3.3.1
	- in wet conditions	2.2.14.2	See cl 3.3.3.2
14	Shear strength and shear modulus of elasticity test of ETICS	2.2.15	Not relevant because the system is mechanically fixed with anchors

No	Essential characteristic	Assessment method (EAD clause)	Performance
15	Pull-through resistance of fixings from profiles	2.2.16	Not relevant because the system is mechanically fixed with anchors
16	Render strip tensile test	2.2.17	No performance assessed
17	Shear strength and shear modulus of foam adhesive	2.2.18	Not relevant
18	Post expansion behaviour of foam adhesives	2.2.19	Not relevant
19	Bond strength after ageing	2.2.20	-
	- bond strength after ageing of finishing coat tested on the rig	2.2.20.1	See cl. 3.3.4
	- bond strength after ageing of finishing coat not tested on the rig	2.2.20.2	See cl. 3.3.4
20	Mechanical and physical characteristics of the mesh	2.2.21	-
	Tensile strength of the glass fibre mesh	2.2.21.1 2.2.21.2	See cl. 3.3.5
	Protection of metal mesh	2.2.21.3	Not relevant

3.3.1 Bond strength: Bond strength between the base coat and the thermal insulation product

Base coat + Thermal insulation product indicated below	Failure resistance (kPa)		
	Initial state	After hygrothermal cycles	Type of failure
PAVAWALL-SMART/ PARNATUR ISOLANTS DE BOIS	Minimal: 10	Minimal: 10	Cohesive in the insulation product
	Average: 10	Average: 10	
STEICOprotect L dry	Minimal: 10	Minimal: 10	Cohesive in the insulation product
	Average: 10	Average: 10	
MULTISOL 110	Minimal: 12	Minimal: 7	Cohesive in the insulation product
	Average: 13	Average: 8	

3.3.2 Wind load resistance of the ETICS

3.3.2.1 Pull-through tests of fixings

Anchors	Plate diameter (mm)	60		
	Plate stiffness (kN/mm)	0.6		
	Load resistance (kN)	2.04		
Insulation product	Type	PAVAWALL-SMART / PARNATUR ISOLANT FIBRES DE BOIS		
	Tensile strength perpendicular to the face (kPa)	See cl. 3.3.3		
		Mono-density product		
	Thickness (mm)	≥ 120	≥ 160	≥ 200
Maximum load (Pull-through test)	Anchors not placed at the panel joints (dry conditions): R_{panel} (kN/fixing)	Minimal: 1.141	Minimal: 1.453	Minimal: 2.260
		Average: 1.248	Average: 1.662	Average: 2.393
	Anchors not placed at the panel joints (wet conditions*): R_{panel} (kN/fixing)	Minimal: 0.984	-	-
		Average: 1.041	-	-

* 28 days at $(70 \pm 2)^{\circ}\text{C}$ / $(95 \pm 5)\%$ RH + drying period at $(23 \pm 2)^{\circ}\text{C}$ / $(50 \pm 5)\%$ HR until constant weight.

Anchors	Plate diameter (mm)	60	
	Plate stiffness (kN/mm)	3.3	
	Load resistance (kN)	3.3	
Insulation product	Type	MULTISOL 110	
	Tensile strength perpendicular to the face (kPa)	See cl. 3.3.3	
		Mono-density product	
	Thickness (mm)	≥ 60	≥ 100
Maximum load (Pull-through test)	Anchors not placed at the panel joints (dry conditions): R_{panel} (kN/fixing)	Minimal: 0.420	Minimal: 0.872
		Average: 0.640	Average: 0.903
	Anchors not placed at the panel joints (wet conditions*): R_{panel} (kN/fixing)	Minimal: 0.597	-
		Average: 0.665	-

* 28 days at $(70 \pm 2)^{\circ}\text{C}$ / $(95 \pm 5)\%$ RH + drying period at $(23 \pm 2)^{\circ}\text{C}$ / $(50 \pm 5)\%$ HR until constant weight.

Anchors	Plate diameter (mm)	60
	Plate stiffness (kN/mm)	0.6
	Load resistance (kN)	2.08
Insulation product	Type	STEICOprotect L dry
	Tensile strength perpendicular to the face (kPa)	See cl. 3.3.3 Mono-density product
	Thickness (mm)	≥ 60
Maximum load (Pull-through test)	Anchors not placed at the panel joints (dry conditions): R_{panel} (kN/fixing)	Minimal: 0.900
		Average: 1.110
	Anchors placed at the panel joints (dry conditions): R_{joint} (kN/fixing)	Minimal: 0.740
		Average: 0.760
	Anchors not placed at the panel joints (wet conditions*): R_{panel} (kN/fixing)	Minimal: 0.730
		Average: 0.760

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

The results of pull-through tests are valid for anchors:

- with same or larger plate diameter than that tested,
and/or
- the same or higher plate stiffness/load resistance than that tested.

See list of fixings in Annex 2.

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

$$R_d = \frac{R_{\text{panel}} \cdot n_{\text{panel}} + R_{\text{joint}} \cdot n_{\text{joint}}}{\gamma}$$

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

3.3.2.2 Dynamic Wind Uplift Test

Insulation product	Characteristics		See Annex 1 (1/3)
	Thickness (mm)		60
Anchors	Characteristics		See Annex 2
	Plate diameter (mm)		60
	Plate stiffness (kN/mm)		0.6
	Load at plate rupture (kN)		1.25
	Number of anchors per m ² (pcs/m ²)		≥ 4.2 pcs/m ²
	Assembly of anchors		surface
Maximum load $R_k = Q_1 \times C_s \times C_a$	Maximum resisted load Q_1	1500	Characteristic design resistance: $R_k = 1.5 \text{ kPa}$
	Statistical correction factor C_s	0.98	
	Geometric factor C_a	1	

Insulation product	Characteristics		See Annex 1 (3/3)
	Thickness (mm)		240
Anchors	Characteristics		See Annex 2
	Plate diameter (mm)		60
	Plate stiffness (kN/mm)		0.6
	Load at plate rupture (kN)		2.08
	Number of anchors per m ² (pcs/m ²)		≥ 15.6 pcs/m ²
	Assembly of anchors		surface
Maximum load $R_k = Q_1 \times C_s \times C_a$	Maximum resisted load Q_1	6500	Characteristic design resistance: $R_k = 6.4 \text{ kPa}$
	Statistical correction factor C_s	0.99	
	Geometric factor C_a	1	

3.3.3 Tensile test perpendicular to the faces of the thermal insulation product

3.3.3.1 Tensile strength perpendicular to the faces in dry conditions

- Insulation product: **PAVAWALL-SMART / PARNATUR ISOLANT FIBRES DE BOIS**

Thickness (mm)	Minimum (kPa)	Mean (kPa)
120	6.2	7.3
160	3.6	5.1
200	6.0	7.6

- Insulation product: **MULTISOL 110**

Thickness (mm)	Minimum (kPa)	Mean (kPa)
60	12.6	16.4
100	11.2	12.0

- Insulation product: **STEICOprotect L dry**

Thickness (mm)	Minimum (kPa)	Mean (kPa)
60	21.8	23.7

3.3.3.2 Tensile strength perpendicular to the faces in wet conditions

- Insulation product: **PAVAWALL-SMART / PARNATUR ISOLANT FIBRES DE BOIS**

Conditioning	Thickness (mm)	Minimum (kPa)	Mean (kPa)
7 days at (23±2)°C / (50±5)% RH until constant weight	120	3.5	5.3
28 days at (23±2)°C / (50±5)% RH until constant weight		4.0	4.6

- Insulation product: **MULTISOL 110**

Conditioning	Thickness (mm)	Minimum (kPa)	Mean (kPa)
7 days at (23±2)°C / (50±5)% RH until constant weight	60	11.1	14.8
28 days at (23±2)°C / (50±5)% RH until constant weight		12.7	15.6

- Insulation product: **STEICOprotect L dry**

Conditioning	Thickness (mm)	Minimum (kPa)	Mean (kPa)
7 days at (23±2)°C / (50±5)% RH until constant weight	60	16.4	17.4
28 days at (23±2)°C / (50±5)% RH until constant weight		11.3	14.0

3.3.4 Bond strength after ageing

Rendering system: Base coat + finishing coat indicated below	Bond strength (kPa)	Type of failure
With or without REVLANE RÉGULATEUR: - REVLANE TF 1.0* - REVLANE TG 1.6* - REVLANE RF 1.6*	Minimal: 120 Average: 138 (Test result obtained with REVLANE TG 1.6)	Cohesive ⁽¹⁾
With or without REVLANE RÉGULATEUR: - REVLANE SILOXANÉ TG 1.6* - REVLANE SILOXANÉ TF 1.0*	Minimal: 120 Average: 140 (Test result obtained with REVLANE SILOXANÉ TG 1.6)	Cohesive ⁽¹⁾
With REVLANE RÉGULATEUR: - GRANILANE	Minimal: 40 Average: 48	Cohesive ⁽²⁾
With REVLANE RÉGULATEUR: - PAREX DÉCO TRAVERTIN*	Minimal: 140 Average: 152	Cohesive ⁽¹⁾
With SILICANE FOND/ SILICANE LISSE - SILICANE TF 1.0 - SILICANE TG 1.6	Minimal: 120 Average: 136 (Test result obtained with SILICANE TG 1.6)	Cohesive ⁽¹⁾
With or without SILICANE FOND: - CALCIFIN	Minimal: 19 Average: 21	Cohesive ⁽³⁾
With or without SILICANE FOND: - CALCILISSE	Minimal: 140 Average: 180	Cohesive ⁽¹⁾
- EHI GF - EHI GM	Minimal: 170 Average: 184 (Test result obtained with EH GF)	Cohesive ⁽¹⁾
- UNITÉ	Minimal: 130 Average: 146	Cohesive ⁽¹⁾
MAITÉ with SILICANE FOND with SILICANE LISSE	Minimal: 150 Average: 162	Cohesive ⁽¹⁾

* With or without the setting accelerator PATACCEL

⁽¹⁾ Tests were carried out onto EPS panels.

⁽²⁾ Tests were carried out onto MW panels.

⁽³⁾ Tests were carried out onto WF panels.

3.3.5 Mechanical and physical characteristics of the mesh: Tensile strength of the glass fibre mesh

			IAVPC		IAVU
Producer's trade name			R 131 A 101 C+	SSA-1363 F+	R 131 A 102 C+
Tensile strength in the as-delivered state (N/mm)	Warp		40.3	42.3	48.1
	Weft		48.3	47.6	46.4
Elongation at break in the as-delivered state (%)	Warp		4.0	4.0	4.0
	Weft		4.6	4.0	3.9
Resistance after ageing	Residual resistance (N/mm)	Warp	31.0	44.0	29.6
		Weft	25.9	45.9	32.8
	Relative residual resistance (%)	Warp	76.9	100.0	61.6
		Weft	53.6	96.5	70.8

3.4 Protection against noise (BWR 5)

No	Essential characteristic	Assessment method (EAD clause)	Performance
21	Airborne sound insulation of ETICS	2.2.22.1	No performance assessed
	Dynamic stiffness of the thermal insulation product	2.2.22.2	No performance assessed
	Air flow resistance of the thermal insulation product	2.2.22.3	No performance assessed

3.5 Energy economy and heat retention (BWR 6)

No	Essential characteristic	Assessment method (EAD clause)	Performance
22	Thermal resistance and thermal transmittance of ETICS	2.2.23	Defined in clause 2.2.23 of EAD See cl.3.5.1
	Thermal resistance and thermal transmittance of the thermal insulation product	2.2.23.1	See cl. 3.5.2

3.5.1 Thermal resistance and thermal transmittance of ETICS

The calculated value of thermal resistance of ETICS with minimal thickness and highest value of thermal conductivity of the insulation material is:

$R_{ETICS} = R_{insulation} + R_{render} [(m^2.K)/W]$	$1.45 + 0.02 = 1.47$
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3.5.2 Thermal resistance and thermal transmittance of the thermal insulation product

See Declaration of Performances of the insulation product.

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)³, 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 3.

⁽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 5. As the control plan contains confidential information, Annex 5 is not included in the published parts of this ETA.

Issued in Marne-la-Vallée on 16/03/2022 by Aurélie BAREILLE
Head of "Certification and Assessment" Division
"Building Envelope" Direction



³ Decisions are published in the *Official Journal of the European Union (OJEU)*, see www.new-lex.europa.eu/oj/direct-access.html.

Factory-prefabricated, uncoated boards made of wood fibres **PAVAWALL-SMART / PARNATUR ISOLANT FIBRES DE BOIS** (WF) according to EN 13171 and having characteristics described in the following table. The surface of the boards is homogeneous and without "skin". Coverage (kg/m²) depends on both thickness of the board and density of wood fibres.

Reaction to fire / EN 13501-1		Class E
Thermal resistance / EN 13171		See Declaration of Performances
Dimensional tolerances	Thickness / EN 823	T5 [-1 mm / +3 mm]
	Length / EN 822	± 2 %
	Width / EN 822	± 1.5 %
	Squareness / EN 824	≤ 5 mm/m
	Flatness / EN 825	≤ 6 mm
Dimensional stability under specified temperature and humidity / EN 1604: 48 h at 70°C and 90% RH		DS(70,90)2 [≤ 2 %]
Compressive strength / EN 826		CS(10/Y)50 [≥ 50 kPa]
Tensile strength perpendicular to the faces in dry conditions / EN 1607		TR7.5 [≥ 7.5 kPa]
Water absorption (partial immersion) / EN 1609		WS1.0 [≤ 1.0 kg/m ²]
Water vapour diffusion resistance factor (μ) / EN 12086		MU3

ETICS PARISO FB – M

Insulation product for mechanically-fixed ETICS with anchors

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Factory-prefabricated, uncoated boards made of wood fibres **STEICOp Protect L dry** (WF) according to EN 13171 and having characteristics described in the following table. The surface of the boards is homogeneous and without "skin". Coverage (kg/m²) depends on both thickness of the board and density of wood fibres.

Reaction to fire / EN 13501-1		Class E
Thermal resistance / EN 13171		See Declaration of Performances
Dimensional tolerances	Thickness / EN 823	T5 [-1 mm / +3 mm]
	Length / EN 822	± 2 %
	Width / EN 822	± 1.5 %
	Squareness / EN 824	≤ 5 mm/m
	Flatness / EN 825	≤ 6 mm
Dimensional stability	Under specified temperature and humidity / EN 1604: 48 h at 70°C and 90% RH	DS(70,90)3 [≤ 3 %]
Compressive strength / EN 826		CS(10/Y)50 [≥ 50 kPa]
Tensile strength perpendicular to the faces in dry conditions / EN 1607		TR10 [≥ 10 kPa]
Water absorption (partial immersion) / EN 1609		WS1.0 [≤ 1.0 kg/m ²]
Water vapour diffusion resistance factor (μ) / EN 12086		MU3

ETICS PARISO FB – M		ANNEX 1 (2/3) of ETA-21/0273-version 1
Insulation product for mechanically-fixed ETICS with anchors		

Factory-prefabricated, uncoated boards made of wood fibres **MULTISOL110** (WF) according to EN 13171 and having characteristics described in the following table. The surface of the boards is homogeneous and without “skin”. Coverage (kg/m²) depends on both thickness of the board and density of wood fibres.

Reaction to fire / EN 13501-1		Class E
Thermal resistance / EN 13171		See Declaration of Performances
Dimensional tolerances	Thickness / EN 823	T4 [-3 mm / +5 mm]
	Length / EN 822	± 2 %
	Width / EN 822	± 1.5 %
	Squareness / EN 824	≤ 3 mm/m
	Flatness / EN 825	≤ 2 mm
Dimensional stability under specified temperature and humidity / EN 1604: 48 h at 70°C and 90% RH		DS(70,90)3 [≤ 3 %]
Compressive strength / EN 826		CS(10/Y)50 [≥ 50 kPa]
Tensile strength perpendicular to the faces in dry conditions / EN 1607		TR7.5 [≥ 7.5 kPa]
Water absorption (partial immersion) / EN 1609		WS1.0 [≤ 1.0 kg/m ²]
Water vapour diffusion resistance factor (μ) / EN 12086		MU3

ETICS PARISO FB – M	ANNEX 1 (3/3) of ETA-21/0273-version 1
Insulation product for mechanically-fixed ETICS with anchors	

Anchors or powder actuated fasteners with ETA according to European Technical Approval Guideline No 014 or to European Assessment Document (EAD) 330196-ED-0604. The anchors are composed of a plastic expansion sleeve with a plate having diameter of 60 mm 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)	Load resistance (kN)
Fischer TERMOZ CNplus 8	ETA-09/0394	a	0.6	1.7
Koelner TFIX-8M	ETA-07/0336	a	1.0	1.75
Koelner TFIX-8S	ETA-11/0144	a	0.6	2.04
Ejotherm STR U, STR U 2G	ETA-04/0023	a	0.6	2.08
Ejot H1 eco	ETA-11/0192	a	0.6	1.40
Ejotherm H2 eco	ETA-15/0740	a	0.97	1.25
Ejot H3	ETA-14/0130	a	0.6	1.25
Rawlplug Insulation System R-TFIX-8M	ETA-17/0592	a	1.0	1.5
Rawlplug Façade Insulation Fixing Rawlplug R-TFIX-8S	ETA-17/0161	a	0.6	2.0

a: surface mounting.

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

ETICS PARISO FB – M	ANNEX 2 of ETA-21/0273-version 1
Anchors for insulation product	

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

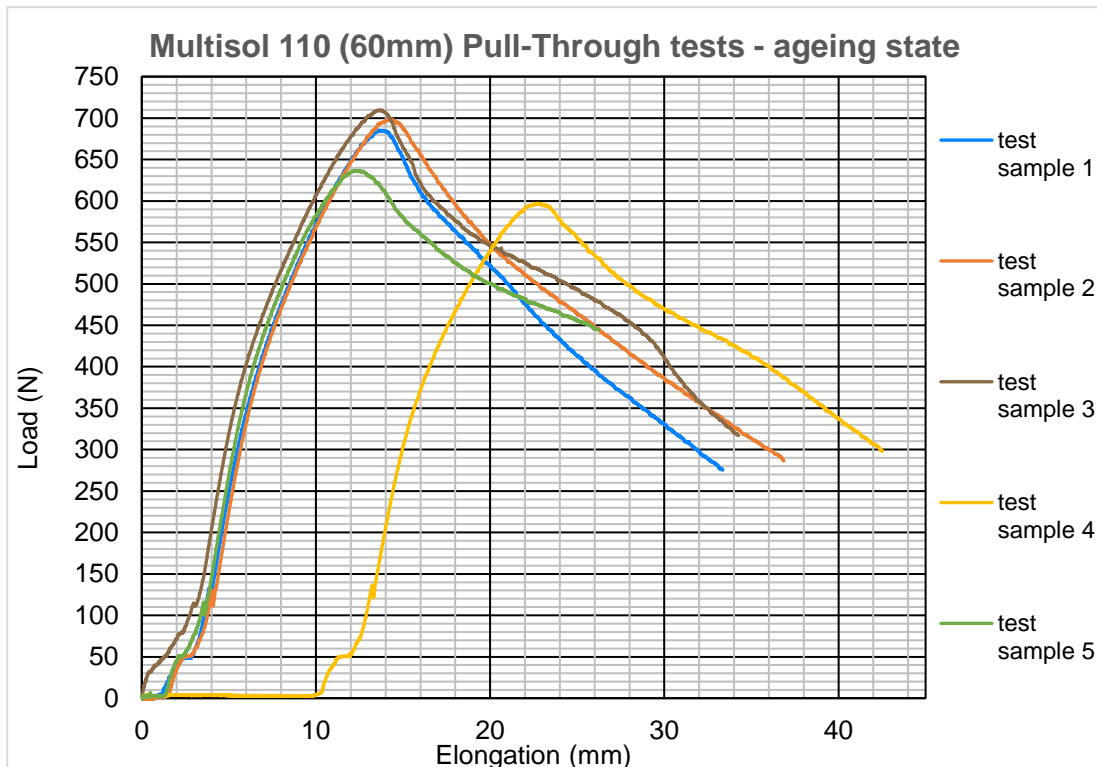
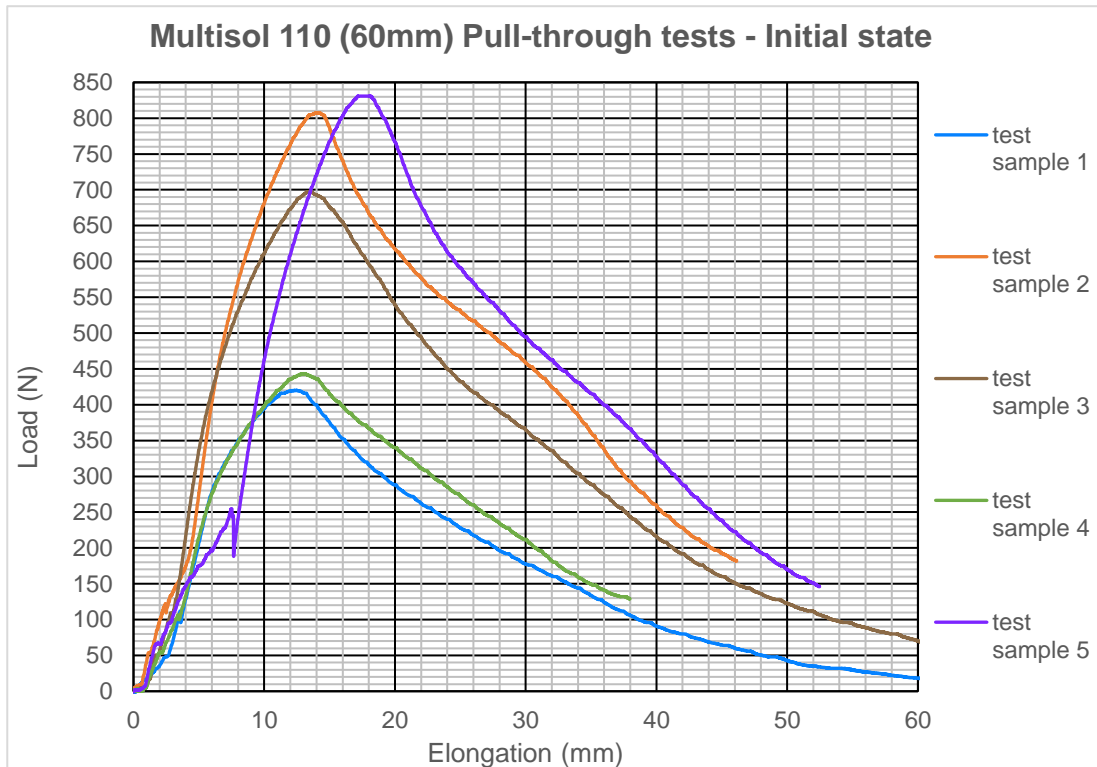
⁽¹⁾ Percentage of the strength in the as-delivered state.

ETICS PARISO FB – M

Glass fibre meshes

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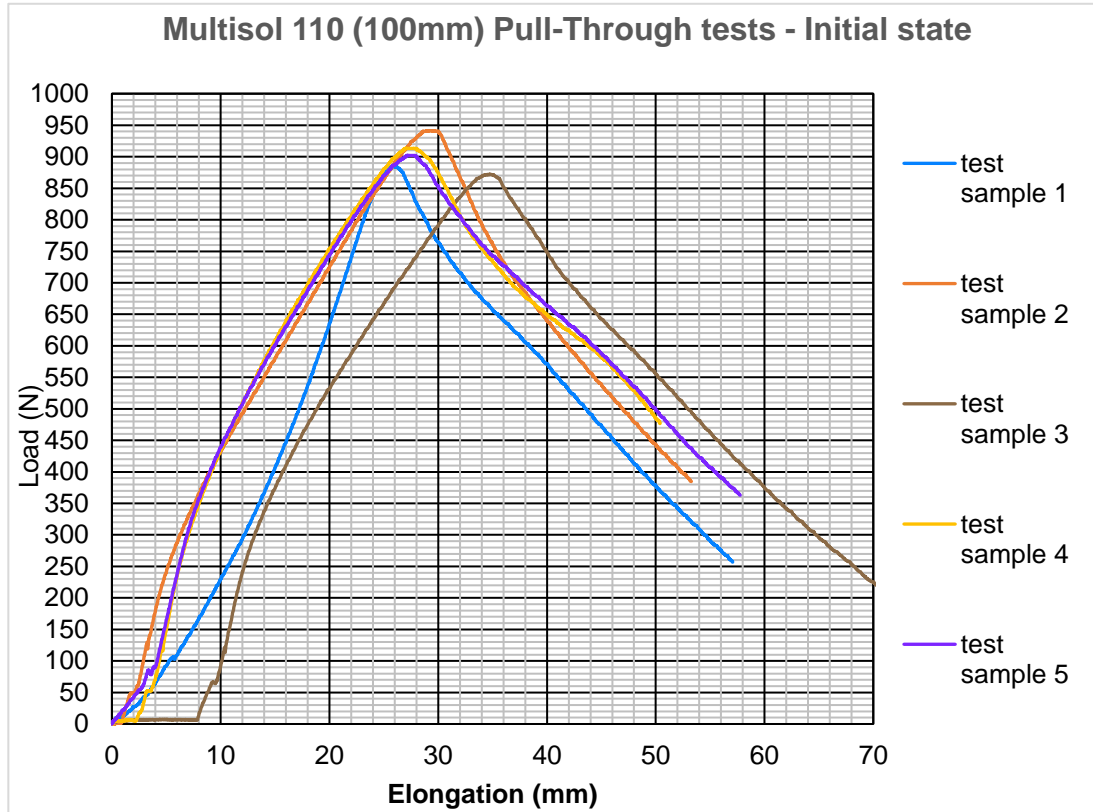


ETICS PARISO FB – M

Pull-through tests – load/displacement graphs

ANNEX 4 (1/2)

of ETA-21/0273-version 1



ETICS PARISO FB – M

Pull-through tests – load/displacement graphs

ANNEX 4 (2/2)

of ETA-21/0273-version 1