



European Technical Assessment

ETA-20/0250-version 2 of 15/03/2024

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:

SIKA France S.A.S
84 rue Edouard Vaillant
FR-93350 Le Bourget

Manufacturing plant(s):

SIKA France S.A.S
84 rue Edouard Vaillant
FR-93350 Le Bourget

This European Technical Assessment contains:

52 pages including 3 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
ETA-20/0250-version 1 valid from 23/10/2020

This version replaces :

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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 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		
	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 300
	ECOROCK DUO PR, by Rockwool, see Annex 1 (3/5)	—	50 to 300
	ISOVER ETICS 35, 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 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 3.5 [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]	—
	CALISO : 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		
	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 4.5 [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 mandatorily before GRANILANE and optionally before REVLANE TF 1.0/TG 1.6 , REVLANE RF 1.6 and REVLANE SILOXANÉ TF 1.0/RF 1.6/TG 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	0.10 to 0.15 [prepared]	—
	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 GT (particles size 1.6 mm) - REVLANE SILOXANÉ RB 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.			

Method of fixing	Component	Coverage (kg/m ²)	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 TF 1.0 (particles size 1.0 mm) SILICANE TG 1.6 (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 LISSE : - FACITÉ : 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
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 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 chapters 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 4 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	A2-s1, d0 or B-s1,d0 See clause 3.1.1 for the details
	- Reaction to fire of thermal insulation material	2.2.1.2	Rock Wool: Class A1 Glass Wool: Class A2-s1, d0
	- Reaction to fire of PU foam adhesive	2.2.1.3	Not applicable
2	Façade fire performance	2.2.2	No performance assessed
3	Propensity to undergo continuous smouldering of ETICS	2.2.3	No performance assessed

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"> • Supplementary adhesives: <ul style="list-style-type: none"> - MAITÉ - COLLE CCP+ - UNITÉ - FACITÉ - CALISO • Insulation product: <ul style="list-style-type: none"> - MW (Stone/Rock Wool) boards Reaction to fire Class A1 Thickness ≥ 20 mm, density ≤ 155 kg/m³ - MW (Glass Wool) boards Reaction to fire Class A2-s1,d0 Thickness ≥ 20 mm, density ≤ 65 kg/m³ • Base coat: FACITÉ • Key coats: <ul style="list-style-type: none"> - REVLANE RÉGULATEUR - SILICANE FOND • Meshes: <ul style="list-style-type: none"> - SSA-1363 F+ - R 131 A 101 C+ - R 131 A 102 C+ • Finishing coats: <ul style="list-style-type: none"> - FACITÉ with SILICANE LISSE - SILICANE TF 1.0/ TG 1.6 - REVLANE TF 1.0/TG 1.6 ⁽²⁾ - REVLANE RF 1.6 ⁽²⁾ - REVLANE SILOXANÉ TF 1.0/TG /RB ⁽²⁾ 	<p>Base coat: 3.2%</p> <p>Key coats: 12.5 to 58.8%</p> <p>Finishing coats: 6.3 to 11.4%</p> <p>Except for FACITÉ (3.2%) with SILICANE LISSE (15.0%)</p>	<p>Base coat: 0.0%</p> <p>Key coats: 0.0%</p> <p>Finishing coats: ≤ 17.5%</p>	A2 – s1, d0

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

⁽²⁾ With or without PATACCEL.

Configuration	Declared organic content ⁽¹⁾	Declared flame retardant content ⁽¹⁾	Class according to EN 13501-1
<ul style="list-style-type: none"> • Supplementary adhesives: <ul style="list-style-type: none"> - MAITÉ - COLLE CCP+ - UNITÉ - FACITÉ - CALISO • Insulation product: <ul style="list-style-type: none"> - MW (Stone/Rock Wool) boards Reaction to fire Class A1 Thickness ≥ 20 mm, density ≤ 155 kg/m³ - MW (Glass Wool) boards Reaction to fire Class A2-s1,d0 Thickness ≥ 20 mm, density ≤ 65 kg/m³ • Base coat: FACITÉ • Key coat: REVLANE RÉGULATEUR 	<p>Base coat: 3.2%</p> <p>Key coat: 12.5 %</p> <p>Finishing coats: 8.0%</p>	<p>Base coat: 0.0%</p> <p>Key coat: 0.0%</p> <p>Finishing coats: 0.0%</p>	B – s1, d0

Configuration	Declared organic content ⁽¹⁾	Declared flame retardant content ⁽¹⁾	Class according to EN 13501-1
<ul style="list-style-type: none"> Meshes: <ul style="list-style-type: none"> - SSA-1363 F+ - R 131 A 101 C+ - R 131 A 102 C+ Finishing coat: GRANILANE 			

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

3.2 Hygiene, health and the environment (BWR 3)

No	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	≤ 1 kg/m ² (EN 1609- Method A)
6	Water-tightness of the ETICS: Hygrothermal behaviour	2.2.6	Hygrothermal cycles have been performed on a rig. The ETICS is assessed resistant to hygrothermal cycles, it means system "PARISO LR-F" passed the test without defects.
7	Water-tightness: Freeze thaw performance	2.2.7	See cl. 3.2.2: 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. The ETICS is so assessed as free/thaw resistant.
8	Impact resistance	2.2.8	See cl. 3.2.3
9	Water vapour permeability	2.2.9	-
	- of the rendering system (equivalent air thickness s_d)	2.2.9.1	See cl. 3.2.4
	- of thermal insulation product (water-vapour resistance factor)	2.2.9.2	$\mu = 1$

3.2.1 Water absorption – capillarity test

3.2.1.1 Water absorption of the base coat

- After 1 hour: water absorption: 0.1 kg/m²
- After 24 hours: water absorption: 0.5 kg/m²

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 REVLANE RÉGULATEUR : - REVLANE TF 1.0 ⁽¹⁾ - REVLANE TG 1.6 ⁽¹⁾ - REVLANE RF 1.6 ⁽¹⁾	0.02	0.18
	Test result obtained with REVLANE TG 1.6 / PATACCEL	
Without REVLANE RÉGULATEUR : - REVLANE TF 1.0 ⁽¹⁾ - REVLANE TG 1.6 ⁽¹⁾ - REVLANE RF 1.6 ⁽¹⁾	0.22	0.89
	Test result obtained with REVLANE TG 1.6 / PATACCEL	
With REVLANE RÉGULATEUR: - REVLANE SILOXANÉ TF 1.0 ⁽¹⁾ - REVLANE SILOXANÉ RB 1.6 ⁽¹⁾ - REVLANE SILOXANÉ TG 1.6 ⁽¹⁾	0.02	0.09
	Test result obtained with REVLANE SILOXANE TG 1.6 / PATACCEL	
Without REVLANE RÉGULATEUR: - REVLANE SILOXANÉ TF 1.0 ⁽¹⁾ - REVLANE SILOXANÉ RB 1.6 ⁽¹⁾ - REVLANE SILOXANÉ TG 1.6 ⁽¹⁾	0.06	0.49
	Test result obtained with REVLANE SILOXANE TG 1.6 / PATACCEL	
With SILICANE FOND : - SILICANE TF 1.0 - SILICANE TG 1.6	0.24	0.36
	Test result obtained with SILICANE TG 1.6	
With SILICANE FOND with SILICANE LISSE: - SILICANE TF 1.0 - SILICANE TG 1.6	0.03	0.25
	Test result obtained with SILICANE TG 1.6	
With REVLANE RÉGULATEUR: GRANILANE	0.05	0.19
FACITÉ with SILICANE FOND + SILICANE LISSE + SILICANE LISSE	0.13	0.88*

⁽¹⁾ With or without PATACCEL.

*The tests were carried out on EPS samples.

3.2.2 Freeze-thaw behaviour

Water absorptions of rendering systems with the finishing coat SILICANE LISSE are more than 0.5 kg/m² after 24 hours. The ETICS has not been assessed as freeze/thaw resistant.

Bond strength tests were carried out after freeze/thaw cycles:

Rendering system: Base coat + finishing coat indicated below	Bond strength (kPa)		
	Minimal	Average	Type of failure
FACITÉ + SILICANE FOND + SILICANE LISSE + SILICANE LISSE	17	21	Cohesive in the insulation product

Tests were carried out onto mineral wool panels.

Water absorptions of rendering systems with the finishing coat REVLANE TG 1.6 without key coat is more than 0.5 kg/m² after 24 hours. The ETICS has not been assessed as freeze/thaw resistant according to simulation.

Water absorptions of both the base coat and the other rendering systems are less than 0.5 kg/m² after 24 hours. The ETICS is therefore assessed as freeze/thaw resistant for these configurations.

3.2.3 Impact resistance

Rendering system: Base coat + finishing coat indicated below		Presence of cracks	Maximum impact diameter (mm)	Use category
Without REVLANE RÉGULATEUR : - REVLANE TF 1.0 - REVLANE TG 1.6 - REVLANE RF 1.6	single standard mesh	No – 3J Yes – 10J	– 3J 28 – 10 J	Category II
	double standard mesh	No – 3J No – 10J	– 3J – 10 J	Category I
	reinforced mesh + standard mesh	No – 3J No – 10J	– 3J – 10 J	Category I
Without REVLANE RÉGULATEUR : - REVLANE TF 1.0 - REVLANE TG 1.6 - REVLANE RF 1.6 + PATACCEL	single standard mesh	Yes – 3J Yes – 10J	22 – 3J 35 – 10J	Category III
	double standard mesh	No – 3J Yes – 10J	– 3J 17 – 10J	Category II
	reinforced mesh + standard mesh	No – 3J No – 10J	– 3J – 10J	Category I
With REVLANE RÉGULATEUR : - REVLANE TF 1.0 ⁽¹⁾ - REVLANE TG 1.6 ⁽¹⁾ - REVLANE RF 1.6 ⁽¹⁾	single standard mesh	No – 3J Yes – 10J	– 3J 38 – 10J	Category II
	double standard mesh	No – 3J Yes – 10J	– 3J 27 – 10 J	Category II
	reinforced mesh + standard mesh	No – 3J No – 10J	– 3J – 10 J	Category I
Without REVLANE RÉGULATEUR: - REVLANE SILOXANÉ TF 1.0 ⁽¹⁾ - REVLANE SILOXANÉ RB 1.6 ⁽¹⁾ - REVLANE SILOXANÉ TG 1.6 ⁽¹⁾	single standard mesh	No – 3J Yes – 10J	– 3J 24 – 10 J	Category II
	double standard mesh	No – 3J No – 10J	– 3J – 10 J	Category I
	reinforced mesh + standard mesh	No – 3J No – 10J	– 3J – 10 J	Category I
With REVLANE RÉGULATEUR: - REVLANE SILOXANÉ TF 1.0 ⁽¹⁾ - REVLANE SILOXANÉ RB 1.6 ⁽¹⁾ - REVLANE SILOXANÉ TG 1.6 ⁽¹⁾	single standard mesh	No – 3J Yes – 10J	– 3J 34 – 10 J	Category II
	double standard mesh	No – 3J Yes – 10J	– 3J 26 – 10 J	Category II
	reinforced mesh + standard mesh	No – 3J No – 10J	– 3J – 10 J	Category I

Rendering system: Base coat + finishing coat indicated below		Presence of cracks	Maximum impact diameter (mm)	Use category
With SILICANE FOND with SILICANE LISSE: - SILICANE TF 1.0 - SILICANE TG 1.6	single standard mesh	Yes – 3J Yes – 10J	23 – 3J 45 – 10 J	Category III
	double standard mesh	No – 3J No – 10J	– 3J – 10 J	Category I
	reinforced mesh + standard mesh	No – 3J No – 10J	– 3J – 10 J	Category I
With SILICANE FOND without SILICANE LISSE: - SILICANE TF 1.0 - SILICANE TG 1.6	single standard mesh	No – 3J Yes – 10J	– 3J 51 – 10 J	Category II
	double standard mesh	No – 3J No – 10J	– 3J – 10 J	Category I
	reinforced mesh + standard mesh	No – 3J No – 10J	– 3J – 10 J	Category I
With REVLANE RÉGULATEUR: GRANILANE	single standard mesh	No – 3J No – 10J	– 3J 24 – 10 J	Category I
	double standard mesh	No – 3J No – 10J	– 3J 17 – 10 J	Category I
	reinforced mesh + standard mesh	No – 3J No – 10J	– 3J 18 – 10 J	Category I
FACITÉ with SILICANE FOND + SILICANE LISSE + SILICANE LISSE	single standard mesh	Yes – 3J Yes – 10J	17 – 3J 39 – 10 J	Category III
	double standard mesh	No – 3J No – 10J	12 – 3J 25 – 10 J	Category I
	reinforced mesh + standard mesh	No – 3J No – 10J	– 3J 16 – 10 J	Category I

⁽¹⁾ With or without PATACCEL

3.2.4 Water vapour permeability – resistance to water vapour diffusion

Rendering system: Base coat + finishing coat indicated below	Thickness of 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	5.9	≤ 1.0 (Test result obtained with REVLANE RÉGULATEUR + REVLANE TG 1.6: 0.6)
With or without REVLANE RÉGULATEUR: - REVLANE TF 1.0 - REVLANE TG 1.6 - REVLANE RF 1.6 + PATACCEL	6.1	≤ 1.0 (Test result obtained with REVLANE TG 1.6: 0.3)
With or without REVLANE RÉGULATEUR: - REVLANE SILOXANÉ TF 1.0 - REVLANE SILOXANÉ RB 1.6 - REVLANE SILOXANÉ TG 1.6	5.4	≤ 1.0 (Test result obtained with REVLANE RÉGULATEUR + REVLANE SILOXANÉ TG 1.6: 0.5)
With or without REVLANE RÉGULATEUR: - REVLANE SILOXANE TF 1.0 - REVLANE SILOXANÉ RB 1.6 - REVLANE SILOXANÉ TG 1.6 + PATACCEL	5.7	≤ 1.0 (Test result obtained with REVLANE RÉGULATEUR + REVLANE SILOXANÉ TG 1.6: 0.3)
With SILICANE FOND with SILICANE LISSE : - SILICANE TF 1.0 - SILICANE TG 1.6	5.1	≤ 1.0 (Test result obtained with SILICANE TG 1.6: 0.2)
With SILICANE FOND without SILICANE LISSE : - SILICANE TF 1.0 - SILICANE TG 1.6	5.4	≤ 1.0 (Test result obtained with SILICANE TG 1.6: 0.2)
With REVLANE RÉGULATEUR: GRANILANE	7.0	≤ 1.0 (Test result obtained: 0.4)
FACITÉ with SILICANE FOND + SILICANE LISSE + SILICANE LISSE	4.3	≤ 1.0 (Test result obtained: 0.2)

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. 3.3.1.1
	- 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	Test not required because the ETICS fulfils the following criteria: E.d < 50,000 N/mm

No	Essential characteristic	Assessment method (EAD clause)	Performance
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	Not applicable
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	No performance assessed
14	Shear strength and shear modulus of elasticity test of ETICS	2.2.15	Not relevant because the system is mechanically fixed with anchors
15	Pull-through resistance of fixing 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(s) and thermal insulation product indicated below:	Failure resistance (kPa)		
	Initial state	After conditioning	Type of failure
ECOROCK MONO	Minimal: 10	Minimal: 20	Cohesive in the insulation product
	Average: 10	Average: 20	
ECOROCK DUO	Minimal: 10	Minimal: 10	Cohesive in the insulation product
	Average: 10	Average: 10	
ECOROCK DUO PR	Minimal: 9	Minimal: 6	Cohesive in the insulation product
	Average: 10	Average: 8	
FKD-MAX C2	Minimal: 10	Minimal: 10	Cohesive in the insulation product
	Average: 10	Average: 10	
ISOVER ETICS 35	Minimal: 5	Minimal: 6	Cohesive in the insulation product
	Average: 7	Average: 8	
ISOCOMPACT	Minimal: 10	Minimal: 10	Cohesive in the insulation product
	Average: 10	Average: 10	

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)	≥ 0.4	
	Load resistance (kN)	≥ 1.7	
Insulation product	Type	ECOROCK MONO (Rockwool)	
	Tensile strength perpendicular to the face (kPa)	≥ 10	
	Thickness (mm)	≥ 50	≥ 120
Maximum load (Pull-through test)	Anchors not placed at the panel joints (dry conditions): R_{panel} (kN/fixing)	Minimal: 0.444	Minimal: 1.023
		Average: 0.475	Average: 1.044
	Anchors placed at the panel joints (dry conditions): R_{joint} (kN/fixing)	Minimal: 0.362	Minimal: 0.500
		Average: 0.404	Average: 0.679

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		
	Thickness (mm)	100		
Maximum load (Pull-through test)	Anchors not placed at the panel joints (dry conditions): R_{panel} (kN/fixing)	Minimal: 0.687		
		Average: 0.752		

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

Anchors	Plate diameter (mm)	≥ 60		
	Plate stiffness (kN/mm)	≥ 0.4		
	Load resistance (kN)	≥ 1.7		
Insulation product	Type	ECOROCK DUO (Rockwool)		
	Tensile strength perpendicular to the face (kPa)	≥ 7.5		
	Thickness (mm)	≥ 50	≥ 80	≥ 120
Maximum load (Pull-through test)	Anchors not placed at the panel joints (dry conditions): R_{panel} (kN/fixing)	Minimal: 0.339	Minimal: 0.348	Minimal: 0.454
		Average: 0.365	Average: 0.410	Average: 0.503
	Anchors not placed at the panel joints (wet conditions*): R_{panel} (kN/fixing)	Minimal: 0.198	-	Minimal: 0.368
		Average: 0.229	-	Average: 0.406

* 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	
	Load resistance (kN)	≥ 1.7	
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} (kN/fixing)	-	Minimal: 0.511
		-	Average: 0.611
	Anchors placed at the panel joints (dry conditions): R_{joint} (kN/fixing)	Minimal: 0.362	-
		Average: 0.392	-

Anchors	Trade name	Ejothem STR U / STR U 2G + Ejothem VT 2G	
	Dimensions	Diameter: Ejothem STR U / STR U 2G: 60 mm Ejothem 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} (kN/fixing)	Minimal: 0.699	
		Average: 0.838	

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

Anchors	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} (kN/fixing)	Minimal: 0.357
		Average: 0.413

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

Anchors	Plate diameter (mm)	≥ 60
	Plate stiffness (kN/mm)	≥ 0.6
	Load resistance (kN)	≥ 2.08
Insulation product	Type	ECOROCK DUO PR (Rockwool)
	Tensile strength perpendicular to the face (kPa)	≥ 7.5 Dual density product
	Thickness (mm)	≥ 130
Maximum load (Pull-through test)	Anchors not placed at the panel joints (dry conditions): R_{panel} (kN/fixing)	Minimal: 0.533
		Average: 0.566
	Anchors not placed at the panel joints (wet conditions*): R_{panel} (kN/fixing)	Minimal: 0.275
		Average: 0.316

Anchors	Plate diameter (mm)	60		
	Plate stiffness (kN/mm)	0.6		
	Load resistance (kN)	2.08		
Insulation product	Type	ISOVER ETICS 35 (Saint Gobain ISOVER)		
	Tensile strength perpendicular to the face (kPa)	≥ 7.5		
	Thickness (mm)	Mono-density product		
Maximum load (Pull-through test)	Anchors not placed at the panel joints (dry conditions): R_{panel} (kN/fixing)	Minimal: 0.309	Minimal: 0.343	Minimal: 0.426
		Average: 0.317	Average: 0.433	Average: 0.453
	Anchors placed at the panel joints (dry conditions): R_{joint} (kN/fixing)	Minimal: 0.215	Minimal: 0.230	Minimal: 0.190
		Average: 0.245	Average: 0.278	Average: 0.227
	Anchors not placed at the panel joints (wet conditions*): R_{panel} (kN/fixing)	Minimal: 0.201	Minimal: 0.271	Minimal: 0.318
		Average: 0.217	Average: 0.291	Average: 0.451
	Anchors placed at the panel joints (wet conditions*): R_{panel} (kN/fixing)	Minimal: 0.158	Minimal: 0.190	Minimal: 0.143
		Average: 0.189	Average: 0.222	Average: 0.180

* 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)	≥ 60	
	Plate stiffness (kN/mm)	≥ 0.4	
	Load resistance (kN)	≥ 1.44	
Insulation product	Type	FKD MAX C2 (Knauf Insulation)	
	Tensile strength perpendicular to the face (kPa)	≥ 7.5	
	Thickness (mm)	≥ 80	≥ 140
Maximum load (Pull-through test)	Anchors not placed at the panel joints (dry conditions): R_{panel} (kN/fixing)	Minimal: 0.600	Minimal: 0.726
		Average: 0.653	Average: 0.833
	Anchors placed at the panel joints (dry conditions): R_{joint} (kN/fixing)	Minimal: 0.462	Minimal: 0.519
		Average: 0.495	Average: 0.570
	Anchors not placed at the panel joints (wet conditions*): R_{panel} (kN/fixing)	Minimal: 0.372	Minimal: 0.526
		Average: 0.400	Average: 0.615
	Anchors placed at the panel joints (wet conditions*): R_{joint} (kN/fixing)	Minimal: 0.297	Minimal: 0.369
		Average: 0.319	Average: 0.398

* 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	Trade name	Ejothem STR U / STR U 2G + Ejothem VT 90	
	Dimensions	Diameter: Ejothem STR U / STR U 2G: 60 mm Ejothem 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} (kN/fixing)	Minimal: 0.766	Minimal: 0.949
		Average: 0.826	Average: 1.010
	Anchors placed at the panel joints (dry conditions): R_{joint} (kN/fixing)	Minimal: 0.647	Minimal: 0.702
		Average: 0.692	Average: 0.727

Anchors	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} (kN/fixing)	Minimal: 0.403	
		Average: 0.509	

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

Anchors	Plate diameter (mm)	60	
	Plate stiffness (kN/mm)	0.6	
	Load resistance (kN)	2.08	
Insulation product	Type	ISOCOMPACT (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} (kN/fixing)	Minimal: 0.556	Minimal: 0.621
		Average: 0.587	Average: 0.665
	Anchors placed at the panel joints (dry conditions): R_{joint} (kN/fixing)	Minimal: 0.364	Minimal: 0.381
		Average: 0.394	Average: 0.403
	Anchors not placed at the panel joints (wet conditions*): R_{panel} (kN/fixing)	Minimal: 0.441	-
		Average: 0.481	-
	Anchors placed at the panel joints (wet conditions*): R_{joint} (kN/fixing)	-	Minimal: 0.399
		-	Average: 0.432

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

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

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

3.3.3.1 Tensile strength perpendicular to the faces in dry conditions

See Declaration of Performances of insulation product.

3.3.3.2 Tensile strength perpendicular to the faces in wet conditions

No performance assessed.

3.3.4 Bond strength after ageing

Rendering system: Base coat + finishing coat indicated below	Bond strength (kPa)	Type of failure
Without REVLANE RÉGULATEUR **: - REVLANE TF 1.0 - REVLANE TG 1.6 - REVLANE RF 1.6	Minimal:11	Cohesive in the insulation product (EPS (*) and MW (**))
	Average: 13 (Test result obtained with REVLANE TG 1.6)	
With REVLANE RÉGULATEUR *: - REVLANE TF 1.0 ⁽¹⁾ - REVLANE TG 1.6 ⁽¹⁾ - REVLANE RF 1.6 ⁽¹⁾	Minimal:110	
	Average: 130 (Test result obtained with REVLANE TG 1.6)	
Without REVLANE RÉGULATEUR **: - REVLANE SILOXANÉ TF 1.0 - REVLANE SILOXANÉ RB 1.6 - REVLANE SILOXANÉ TG 1.6	Minimal: 12	
	Average: 13 (Test result obtained with SILOXANE TG 1.6)	
With REVLANE RÉGULATEUR *: - REVLANE SILOXANÉ TF 1.0 - REVLANE SILOXANÉ RB 1.6 - REVLANE SILOXANÉ TG 1.6	Minimal: 130	
	Average: 130 (Test result obtained with SILOXANE TG 1.6)	
With REVLANE RÉGULATEUR *: - REVLANE SILOXANÉ TF 1.0 - REVLANE SILOXANÉ RB 1.6 - REVLANE SILOXANÉ TG 1.6 + PATACCEL	Minimal: 120	
	Average: 140 (Test result obtained with SILOXANE TG 1.6)	
With SILICANE FOND without SILICANE LISSE **: - SILICANE TF 1.0 - SILICANE TG 1.6	Minimal: 10	
	Average: 12 (Test result obtained with SILICANE TG 1.6)	
With SILICANE FOND with SILICANE LISSE *: - SILICANE TF 1.0 - SILICANE TG 1.6	Minimal: 120	
	Average: 140 (Test result obtained with SILICANE TG 1.6)	
With REVLANE RÉGULATEUR *: GRANILANE	Minimal: 110	
	Average: 140	
FACITÉ with SILICANE FOND + SILICANE LISSE *	Minimal: 130	
	Average: 140	

⁽¹⁾ With or without PATACCEL

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

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

$R_{ETICS} = R_{insulation} + R_{render} [(m^2.K)/W]$	$1.39 + 0.02 = 1.41$
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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.

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.

4. 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 15/03/2024 by

Aurélie BAREILLE
Head of "Certification and Assessment" Division
"Building Envelope" Direction

² 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 mineral wool **ECOROCK MONO** (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) [$\leq 1\%$]
Water absorption (partial immersion) / EN 1609 – method A		WS [$\leq 1.0 \text{ kg/m}^2$]
Longterm water absorption (partial immersion) / EN 1609		WL(P) [$\leq 3.0 \text{ kg/m}^2$]
Water vapour diffusion resistance factor (μ) / EN 12086		MU1
Tensile strength perpendicular to the faces in dry conditions / EN 1607		TR 10 [$\geq 10 \text{ kPa}$]
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

Insulation product for mechanically-fixed ETICS with anchors

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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) [$\leq 1\%$]
Water absorption (partial immersion) / EN 1609 – method A		WS [$\leq 1.0 \text{ kg/m}^2$]
Longterm water absorption (partial immersion) / EN 1609		WL(P) [$\leq 3.0 \text{ kg/m}^2$]
Water vapour diffusion resistance factor (μ) / EN 12086		MU1
Tensile strength perpendicular to the faces in dry conditions / EN 1607		TR 7.5 [$\geq 7.5 \text{ kPa}$]
Dynamic stiffness / EN 29052-1		No performance determined
Air flow resistance / EN 29053		No performance determined
Compressive strength / EN 826		CS(10)15

ETICS PARISO LR - F		ANNEX 1 (2/6) of ETA-20/0250-version 2
Insulation product for mechanically-fixed ETICS with anchors		

Factory-prefabricated, uncoated boards made of mineral wool **ECOROCK DUO PR** (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) [$\leq 1\%$]
Water absorption (partial immersion) / EN 1609 – method A		WS [$\leq 1.0 \text{ kg/m}^2$]
Longterm water absorption (partial immersion) / EN 1609		WL(P) [$\leq 3.0 \text{ kg/m}^2$]
Water vapour diffusion resistance factor (μ) / EN 12086		MU1
Tensile strength perpendicular to the faces in dry conditions / EN 1607		TR 7.5 [$\geq 7.5 \text{ kPa}$]
Dynamic stiffness / EN 29052-1		No performance determined
Air flow resistance / EN 29053		No performance determined
Compressive strength / EN 826		CS(10)15

ETICS PARISO LR - F	ANNEX 1 (3/6) of ETA-20/0250-version 2
Insulation product for mechanically-fixed ETICS with anchors	

Factory-prefabricated, uncoated boards made of mineral wool **ISOVER ETICS 35** (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) [$\leq 1\%$]
Water absorption (partial immersion) / EN 1609 – method A		WS [$\leq 1.0 \text{ kg/m}^2$]
Longterm water absorption (partial immersion) / EN 1609		WL(P) [$\leq 3.0 \text{ kg/m}^2$]
Water vapour diffusion resistance factor (μ) / EN 12086		MU1
Tensile strength perpendicular to the faces in dry conditions / EN 1607		TR 7.5 [$\geq 7.5 \text{ kPa}$]
Dynamic stiffness / EN 29052-1		No performance determined
Air flow resistance / EN 29053		AFr 29 [29 kPa.s/m^2]
Compressive strength / EN 826		CS(10/Y)20

ETICS PARISO LR - F	ANNEX 1 (4/6) of ETA-20/0250-version 2
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) [$\leq 1\%$]
Water absorption (partial immersion) / EN 1609 – method A		WS [$\leq 1.0 \text{ kg/m}^2$]
Longterm water absorption (partial immersion) / EN 1609		WL(P) [$\leq 3.0 \text{ kg/m}^2$]
Water vapour diffusion resistance factor (μ) / EN 12086		MU1
Tensile strength perpendicular to the faces in dry conditions / EN 1607		TR 7.5 [$\geq 7.5 \text{ kPa}$]
Dynamic stiffness / EN 29052-1		No performance determined
Air flow resistance / EN 29053		No performance determined
Compressive strength / EN 826		CS(10)20 [$\geq 20 \text{ kPa}$]

ETICS PARISO LR - F	ANNEX 1 (5/6) of ETA-20/0250- version 2
Insulation product for mechanically-fixed ETICS with anchors	

Factory-prefabricated, uncoated boards made of mineral wool **ISOCOMPACT** (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) [$\leq 1\%$]
Water absorption (partial immersion) / EN 1609 – method A		WS [$\leq 1.0 \text{ kg/m}^2$]
Longterm water absorption (partial immersion) / EN 1609		WL(P) [$\leq 3.0 \text{ kg/m}^2$]
Water vapour diffusion resistance factor (μ) / EN 12086		MU1
Tensile strength perpendicular to the faces in dry conditions / EN 1607		TR 7.5 [$\geq 7.5 \text{ kPa}$]
Dynamic stiffness / EN 29052-1		No performance determined
Air flow resistance / EN 29053		AFr 5 [5 kPa.s/m^2]
Compressive strength / EN 826		CS(10)20 [$\geq 20 \text{ kPa}$]

ETICS PARISO LR - F	ANNEX 1 (6/6) of ETA-20/0250- version 2
Insulation product for mechanically-fixed ETICS with anchors	

Anchors or powder actuated fasteners 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”) and 330965-ED-0601 (for the fastener). 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. The powder actuated fasteners are composed of a plastic expansion sleeve with a plate having diameter of 60 mm and a metallic fastener. 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)
Ejot H1 eco / Ejotharm H1	11/0192	a	0.6	1.4
Ejotharm H2 eco	15/0740	a	0.97	1.25
Ejot H3	14/0130	a	0.6	1.25
Ejotharm STR U, STR U 2G	04/0023	a	0.6	2.08
Fischer Termoz CN plus8	09/0394	a, b	0.6	1.7
Parecotwist (Termoz SV II Ecotwist)	12/0208	b	1.0	-
Koelner TFIX-8S	11/0144	a	0.6	2.0
Koelner TFIX-8ST	11/0144	b	0.6	2.0
Koelner TFIX-8M	07/0336	a	1.0	1.8
Rawlplug Insulation System R-TFIX-8S	17/0161	a, b	0.6	1.7
Rawlplug Facade Insulation Fixing R-TFIX-8M	17/0592	a	1.0	1.5

⁽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 of ETA-20/0250- version 2
Anchors for insulation product	

Glass fibre meshes:

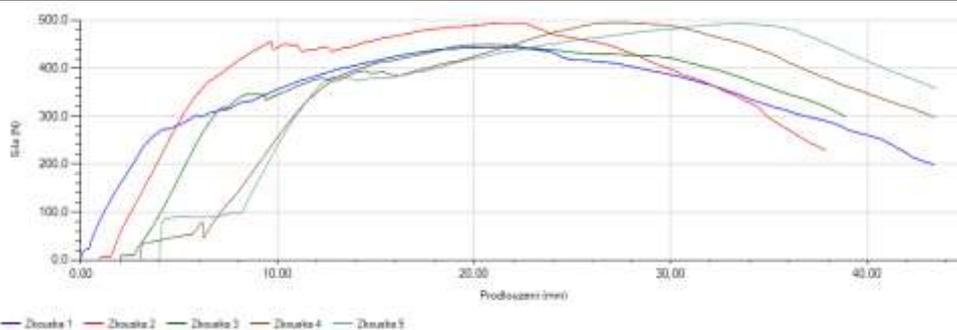
- standard meshes: with mesh size between 3 and 6 mm;
- reinforced mesh: implemented in addition to the standard mesh, to improve the impact resistance.

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

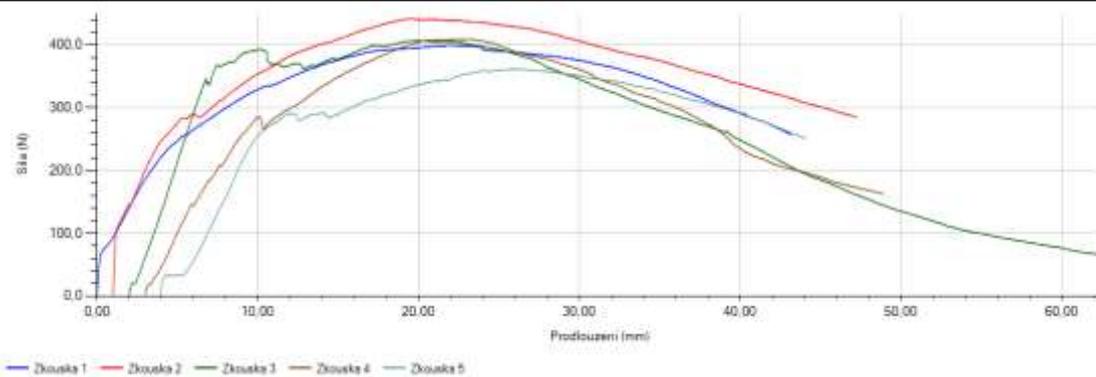
⁽¹⁾ Percentage of the strength in the as-delivered state.

ETICS PARISO LR - F	ANNEX 3 of ETA-20/0250- version 2
Glass fibre meshes	

ECOROCK MONO (50 mm) – Initial state – out of the joint



ECOROCK MONO (50 mm) – Initial state – at the joint

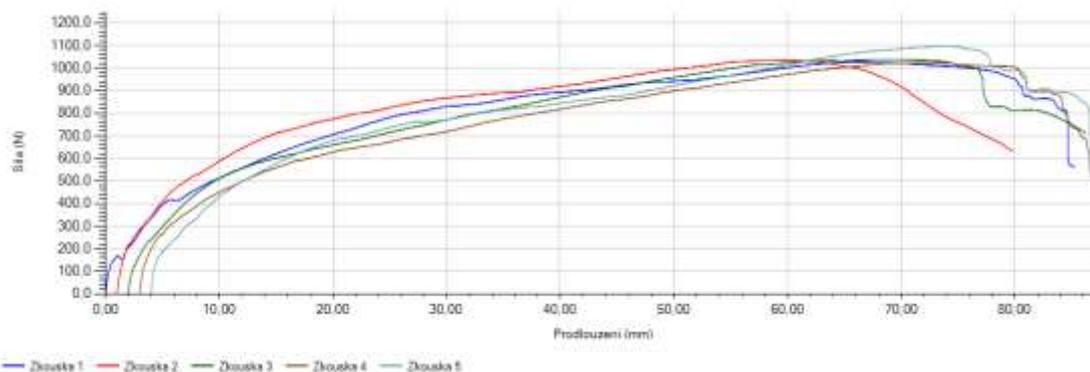


ETICS PARISO LR - F

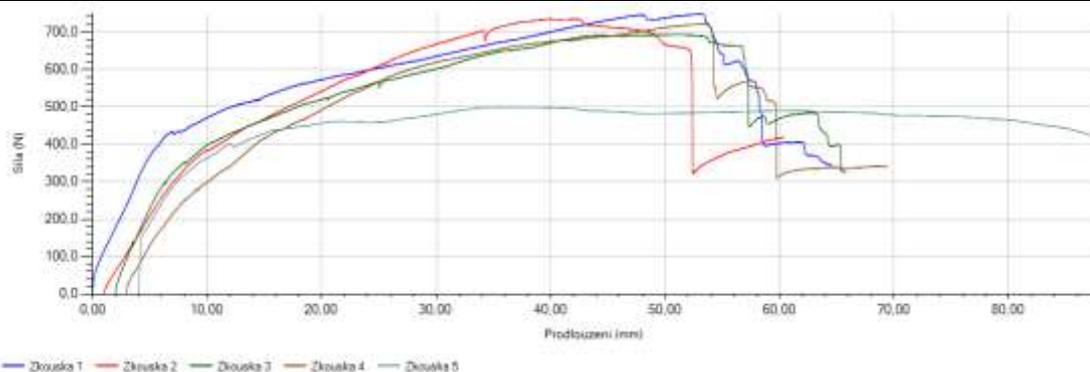
Pull-through tests – load/displacement graphs

ANNEX 4 (1/19)
of ETA-20/0250-version 2

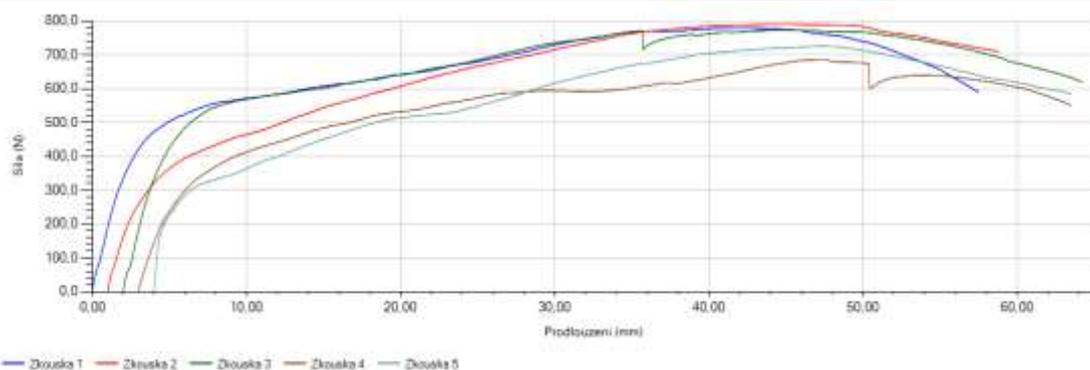
ECOROCK MONO (120 mm) – Initial state – out of the joint



ECOROCK MONO (120 mm) – Initial state – at the joint



ECOROCK MONO (100 mm) – Initial state – out of the joint (with Fischer Termoz SV II ecotwist)

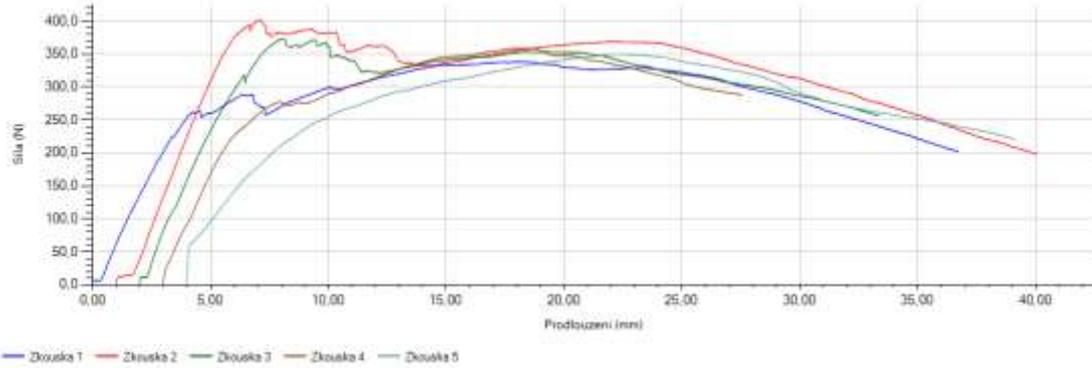


ETICS PARISO LR - F

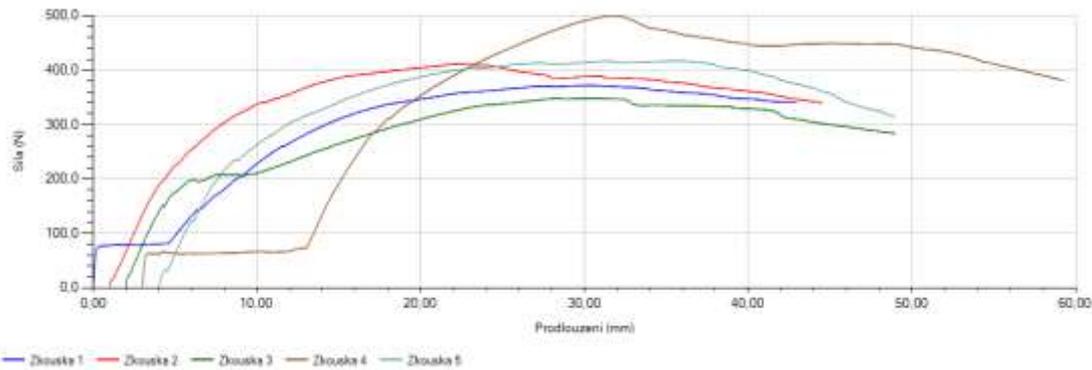
Pull-through tests – load/displacement graphs

ANNEX 4 (2/19)
of ETA-20/0250-version 2

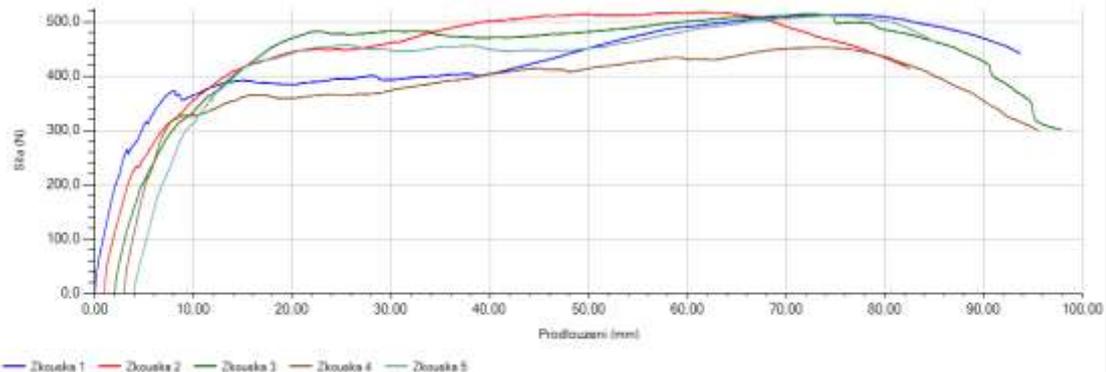
ECOROCK DUO (50 mm) – Initial state – out of the joint



ECOROCK DUO (80 mm) – Initial state – out of the joint



ECOROCK DUO (120 mm) – Initial state – out of the joint

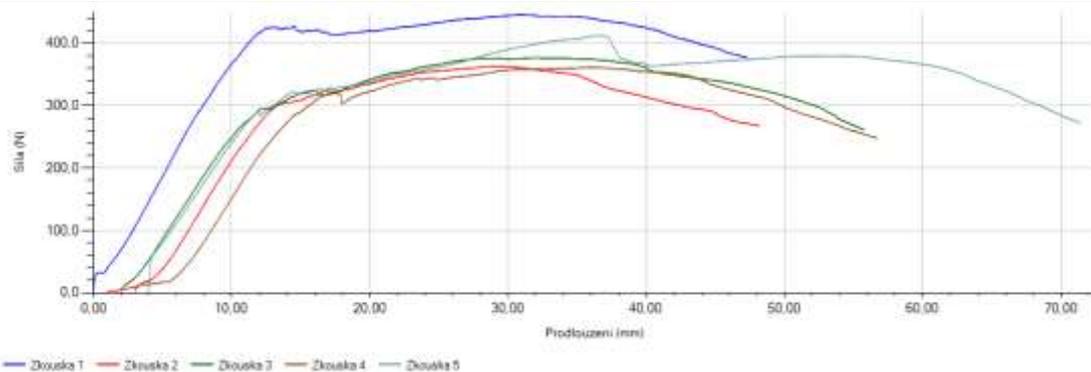


ETICS PARISO LR - F

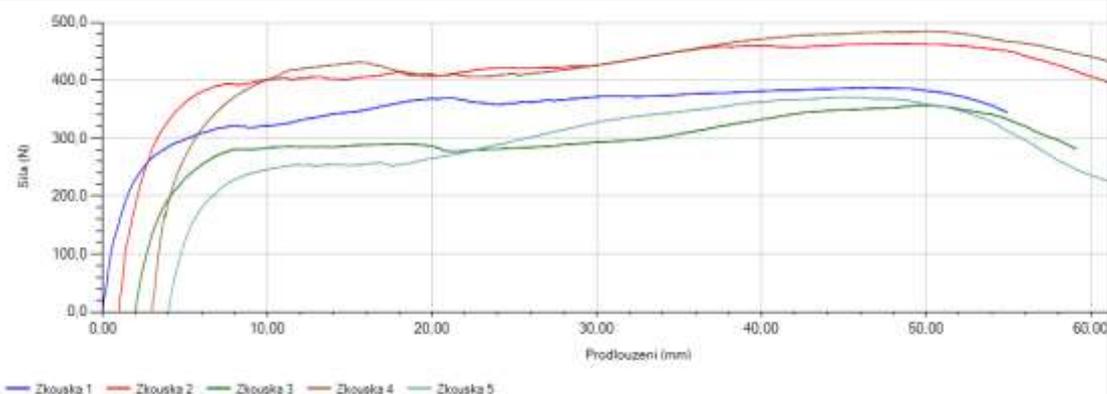
Pull-through tests – load/displacement graphs

ANNEX 4 (3/19)
of ETA-20/0250-version 2

ECOROCK DUO (80 mm) – Initial state –at the joint



ECOROCK DUO (100 mm) – Initial state – out of the joint



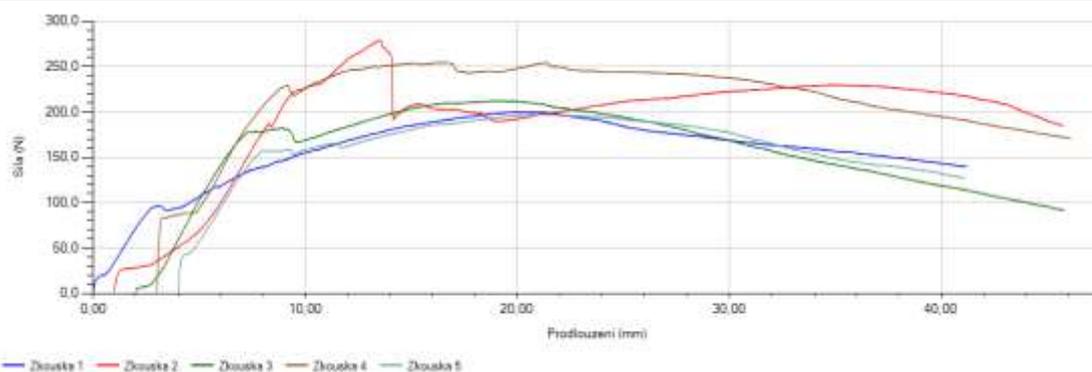
ETICS PARISO LR - F

Pull-through tests – load/displacement graphs

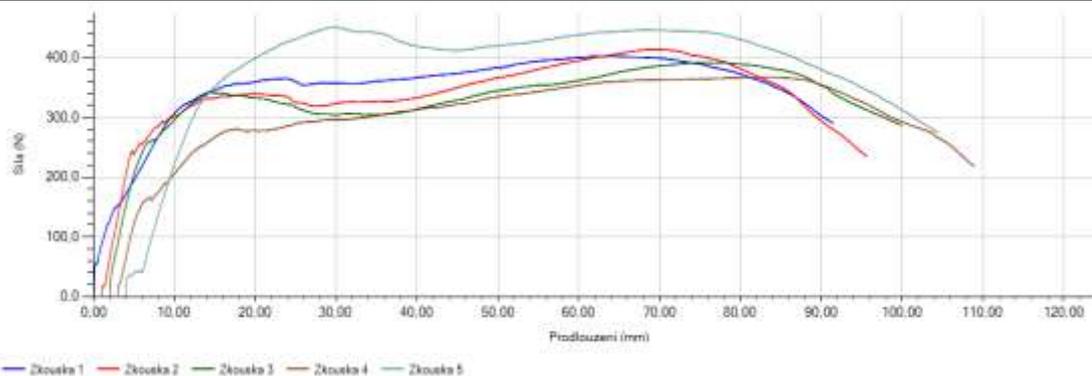
ANNEX 4 (4/19)

of ETA-20/0250-version 2

ECOROCK DUO (50 mm) – Ageing state –out of the joint



ECOROCK DUO (120 mm) – Ageing state – out of the joint

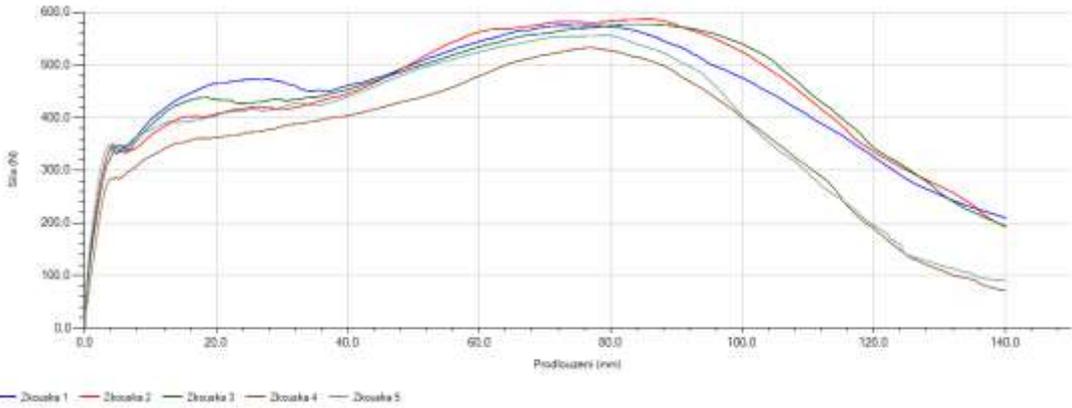


ETICS PARISO LR - F

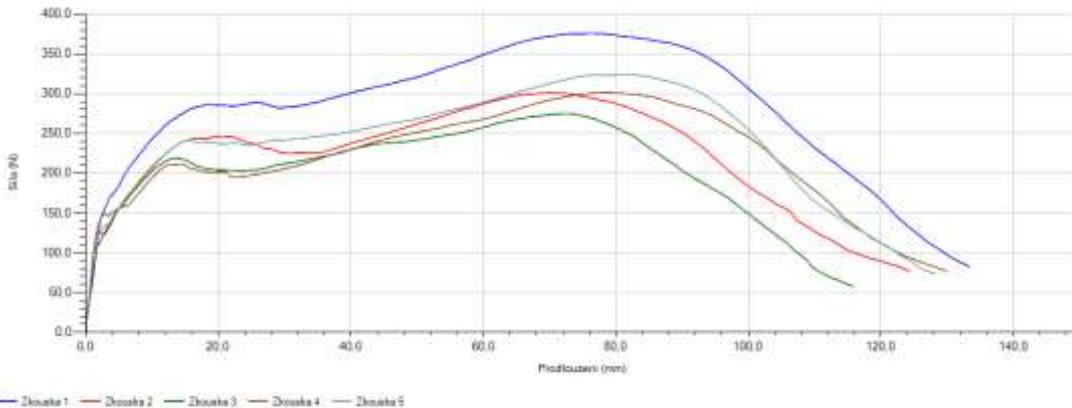
Pull-through tests – load/displacement graphs

ANNEX 4 (5/19)
of ETA-20/0250-version 2

ECOROCK DUO PR (130 mm) – Initial state –out of the joint



ECOROCK DUO PR (130 mm) – Ageing state –out of the joint

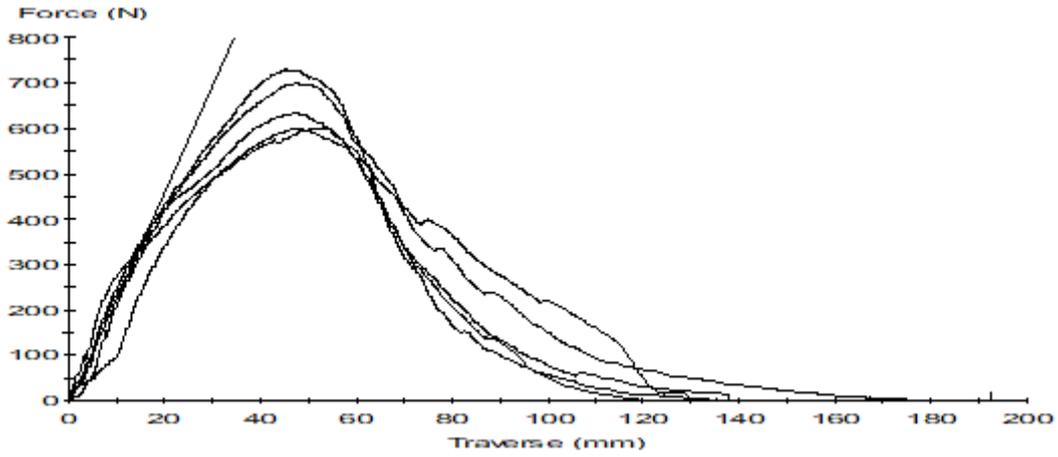


ETICS PARISO LR - F

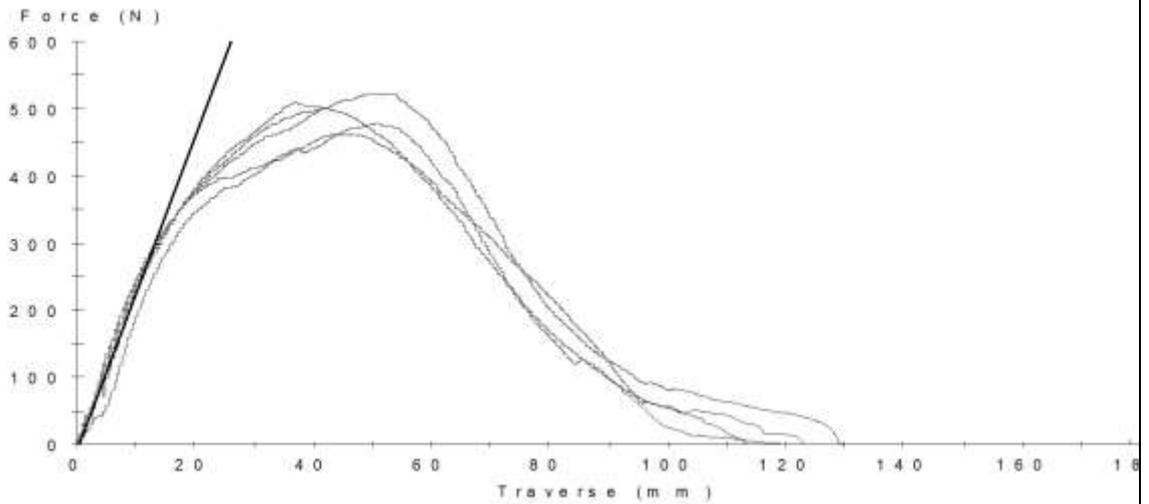
Pull-through tests – load/displacement graphs

ANNEX 4 (6/19)
of ETA-20/0250-version 2

FKD-MAX C2 (80 mm) – Initial state –out of the joint
(with ejothem NTK U 150)



FKD-MAX C2 (80 mm) – Initial state –at the joint
(with ejothem NTK U 150)



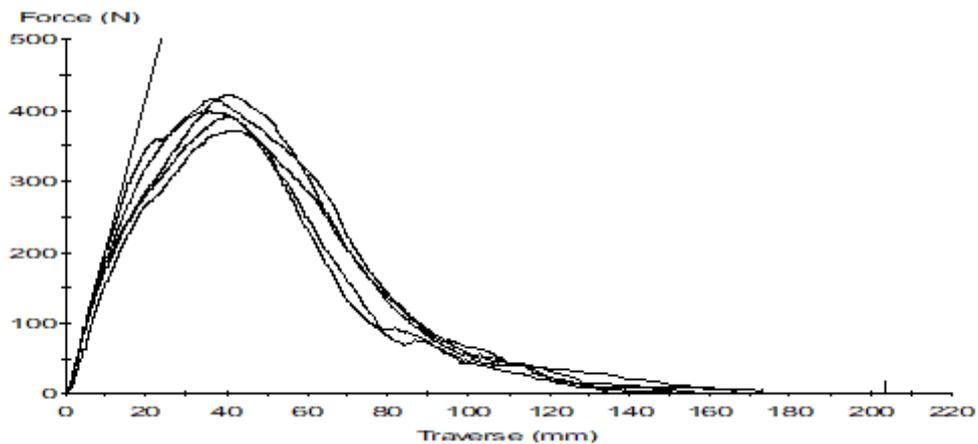
ETICS PARISO LR - F

Pull-through tests – load/displacement graphs

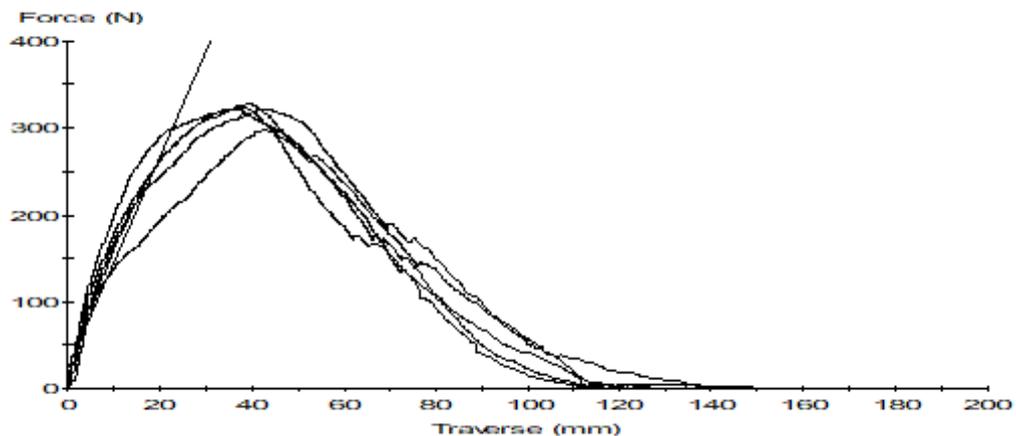
ANNEX 4 (7/19)

of ETA-20/0250-version 2

FKD-MAX C2 (80 mm) – Ageing state –out of the joint
(with ejothem NTK U 150)



FKD-MAX C2 (80 mm) – Ageing state –at the joint
(with ejothem NTK U 150)



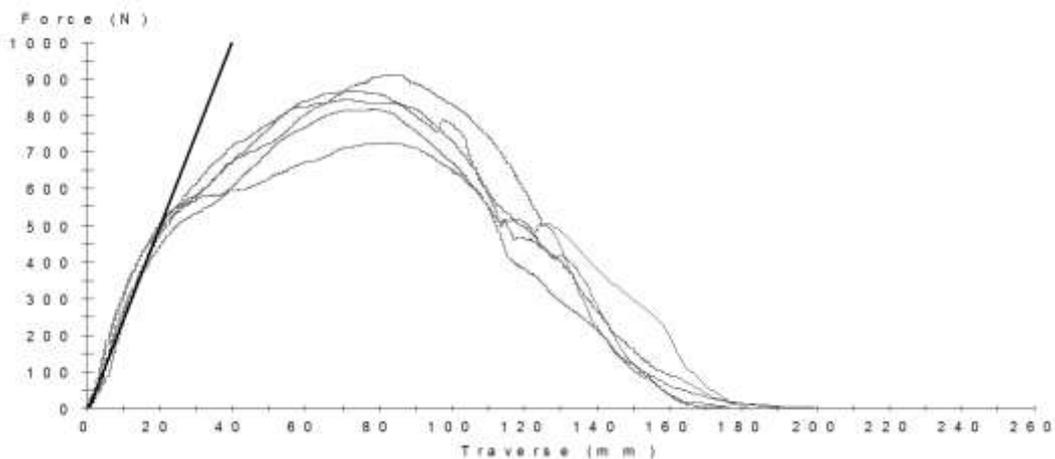
ETICS PARISO LR - F

Pull-through tests – load/displacement graphs

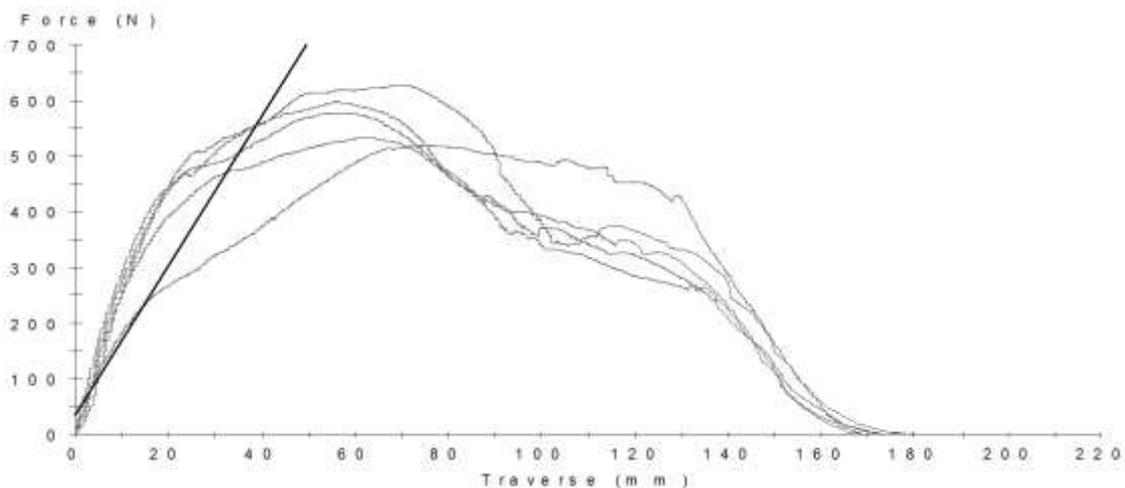
ANNEX 4 (8/19)

of ETA-20/0250-version 2

FKD-MAX C2 (140 mm) – Initial state –out of the joint
(with ejothem NTK U 210)



FKD-MAX C2 (140 mm) – Initial state –at the joint
(with ejothem NTK U 210)



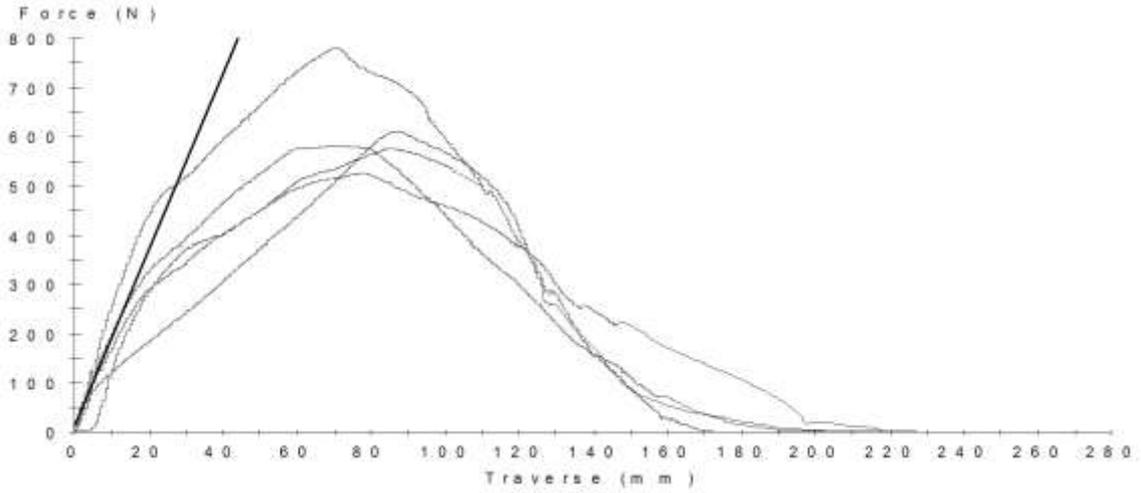
ETICS PARISO LR - F

Pull-through tests – load/displacement graphs

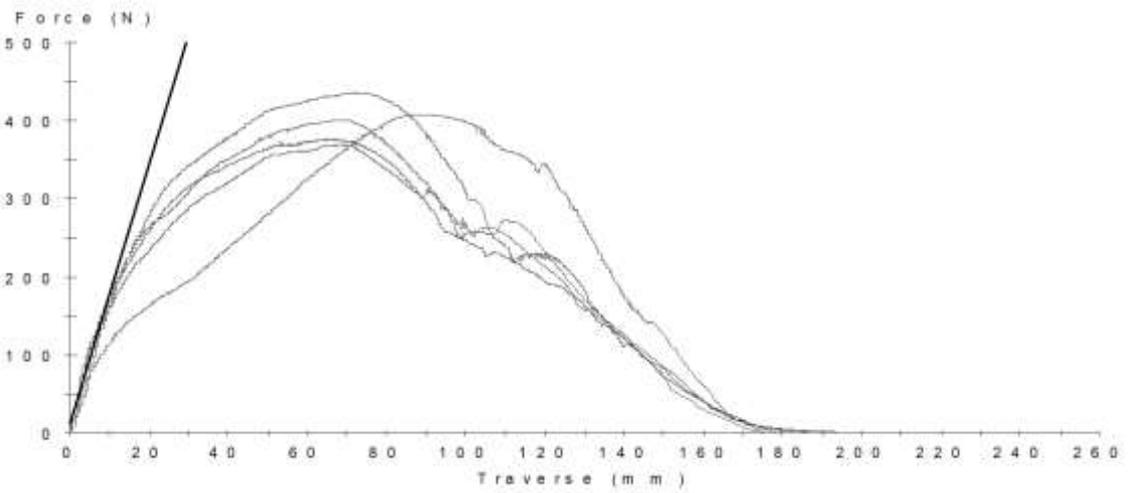
ANNEX 4 (9/19)

of ETA-20/0250-version 2

FKD-MAX C2 (140 mm) – Ageing state –out of the joint
(with ejothem NTK U 210)



FKD-MAX C2 (140 mm) – Ageing state –at the joint
(with ejothem NTK U 210)

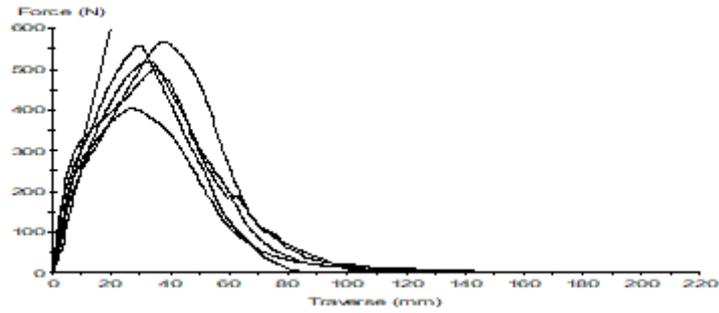


ETICS PARISO LR - F

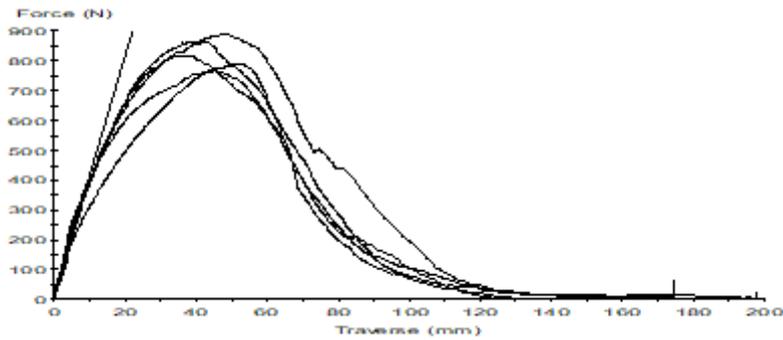
Pull-through tests – load/displacement graphs

ANNEX 4 (10/19)
of ETA-20/0250-version 2

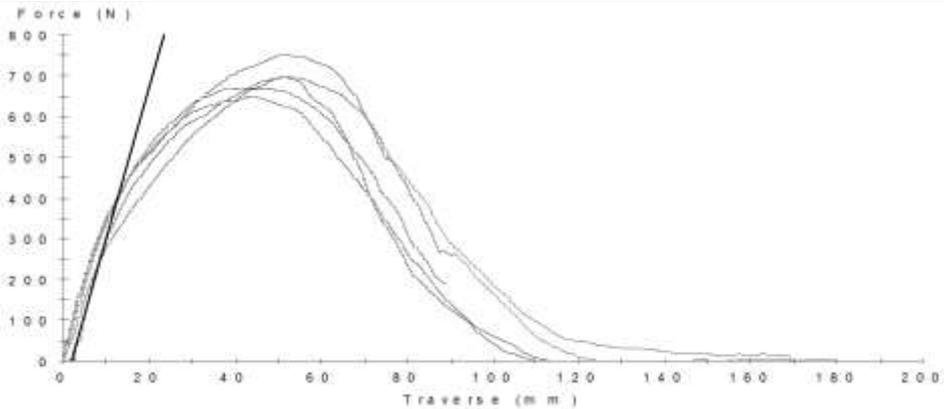
FKD-MAX C2 (100 mm) – Initial state –out of the joint
(with Fischer termoiz SV II ecotwist)



FKD-MAX C2 (80 mm) – Initial state –out of the joint
(with STR U / STR U 2G + rosace VT 90)



FKD-MAX C2 (80 mm) – Initial state – at the joint
(with STR U / STR U 2G 150 + rosace VT 90)

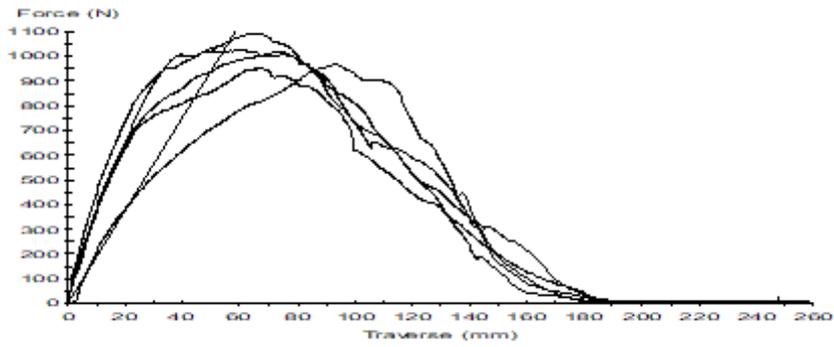


ETICS PARISO LR - F

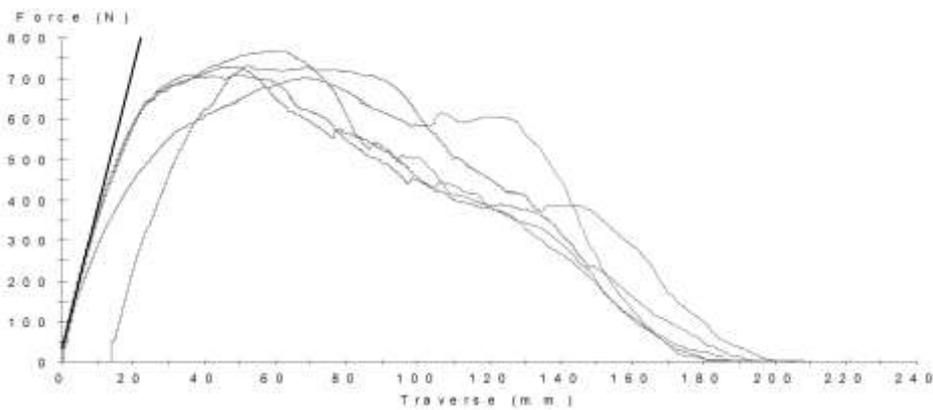
Pull-through tests – load/displacement graphs

ANNEX 4 (11/19)
of ETA-20/0250-
version 2

FKD-MAX C2 (140 mm) – Initial state –out of the joint (ejothem STR U / STR U 2G 195+ rosace VT 90)



FKD-MAX C2 (140 mm) – Initial state –at the joint (with ejothem STR U /STR U 2G 195 + rosace VT 90)

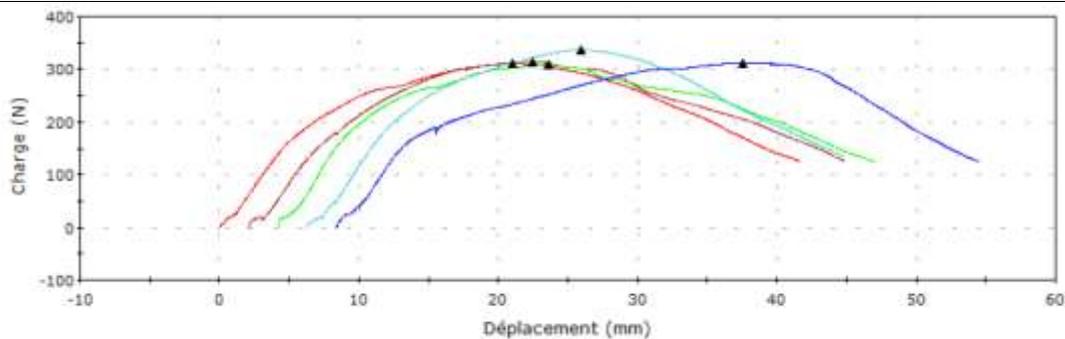


ETICS PARISO LR - F

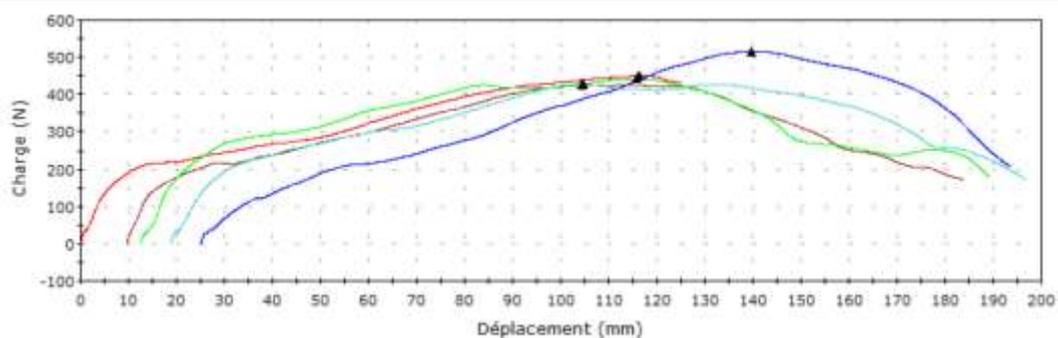
Pull-through tests – load/displacement graphs

ANNEX 4 (12/19)
of ETA-20/0250-version 2

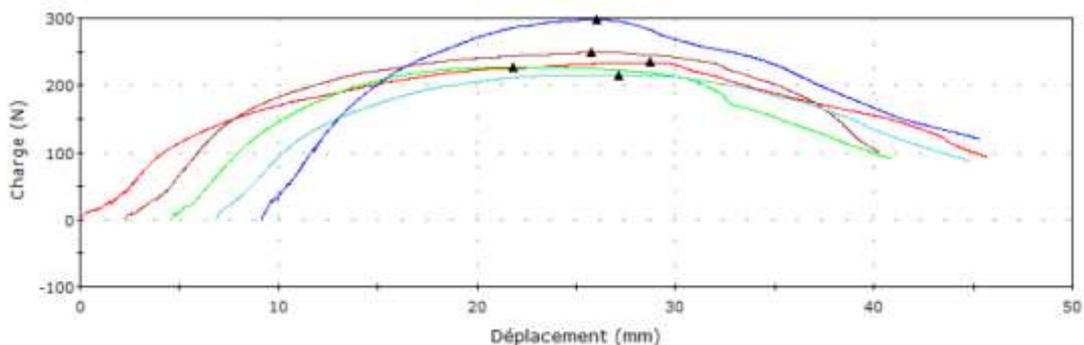
ISOVER ETICS 35 (60 mm) – Initial state –out of the joint



ISOVER ETICS 35 (200 mm) – Initial state –out of the joint



ISOVER ETICS 35 (60 mm) – Initial state –at the joint

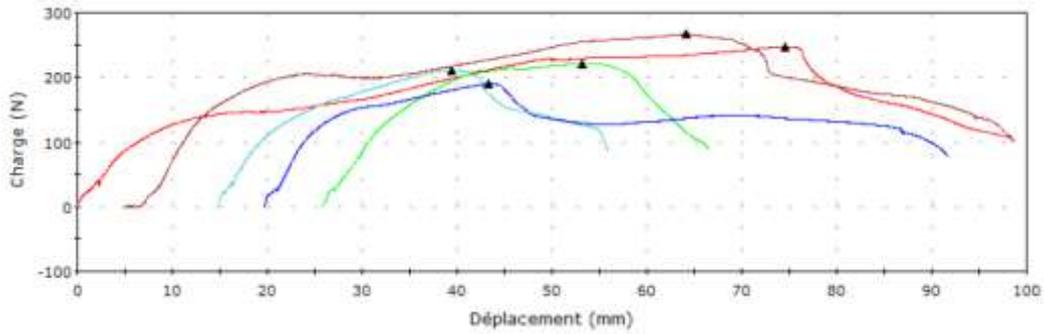


ETICS PARISO LR - F

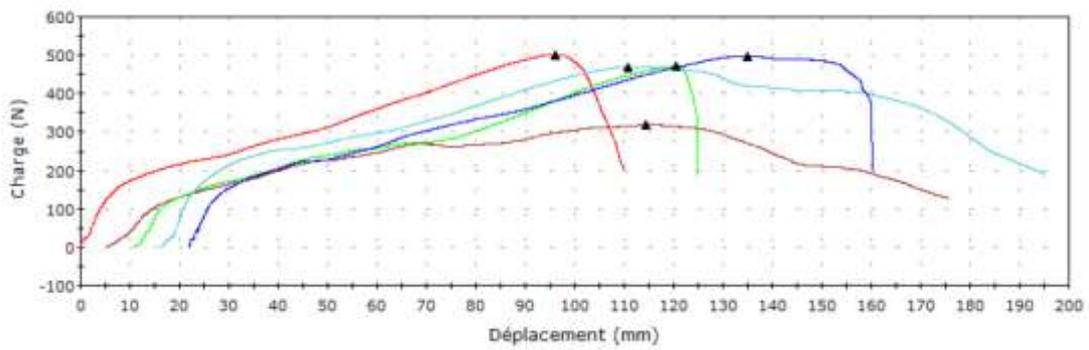
Pull-through tests – load/displacement graphs

ANNEX 4 (13/19)
of ETA-20/0250-
version 2

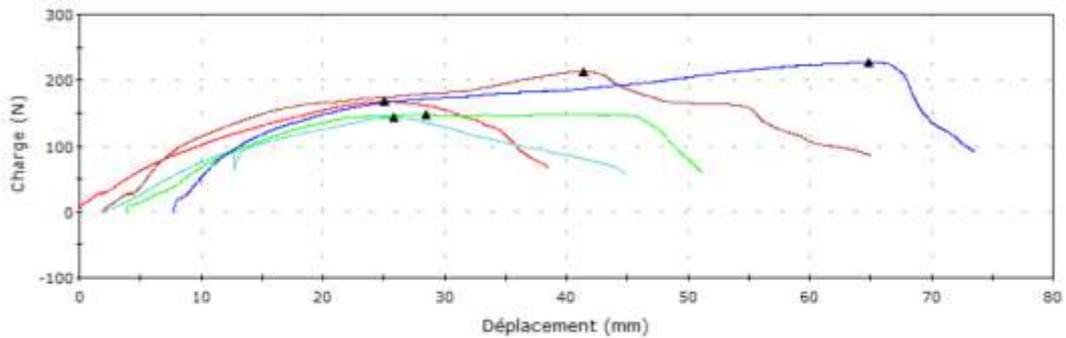
ISOVER ETICS 35 (200 mm) – Initial state –at the joint



ISOVER ETICS 35 (200 mm) – Ageing state –out of the joint



ISOVER ETICS 35 (200 mm) – Ageing state –at the joint

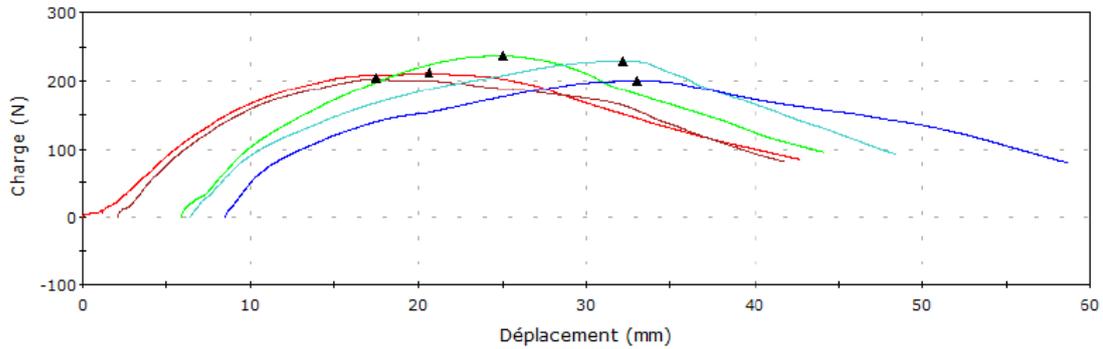


ETICS PARISO LR - F

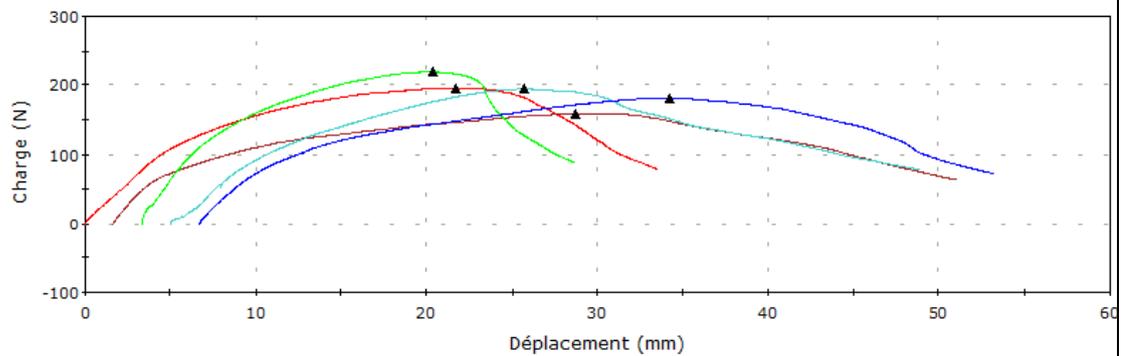
Pull-through tests – load/displacement graphs

ANNEX 4 (14/19)
of ETA-20/0250-version 2

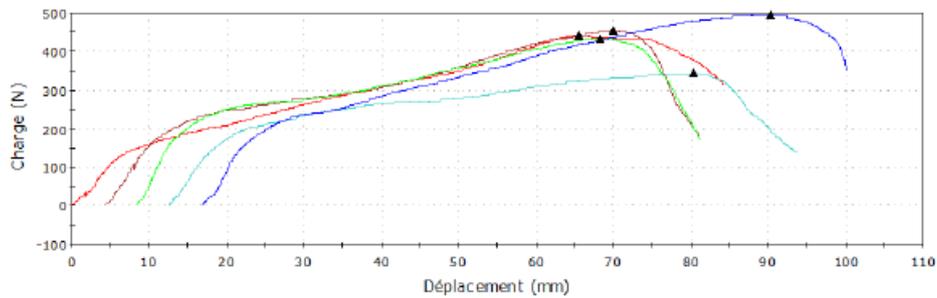
ISOVER ETICS 35 (60 mm) – Ageing state –out of the joint



ISOVER ETICS 35 (60 mm) – Ageing state –at the joint



ISOVER ETICS 35 (120 mm) – Initial state –out of the joint

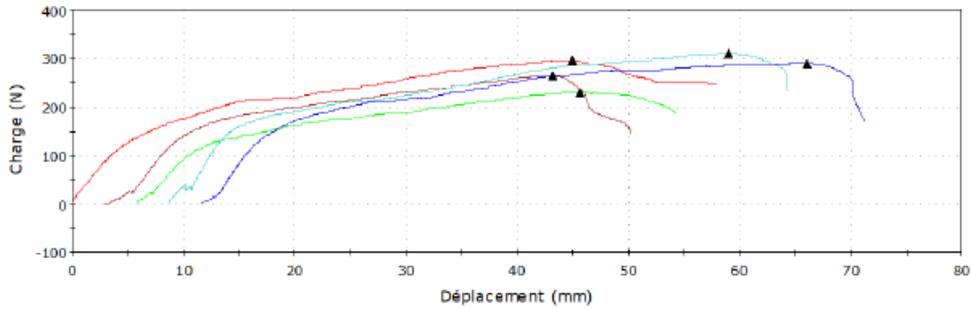


ETICS PARISO LR - F

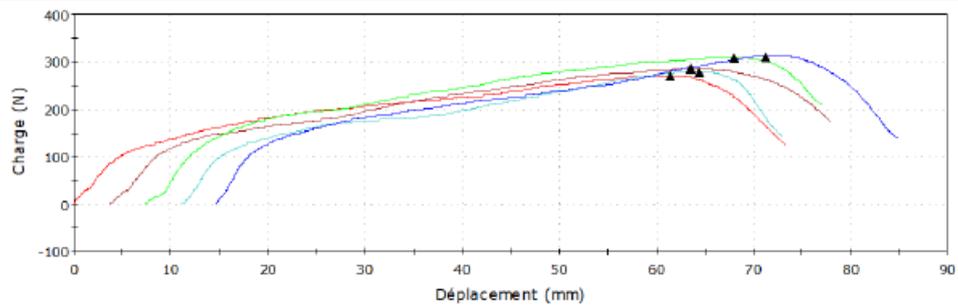
Pull-through tests – load/displacement graphs

ANNEX 4 (15/19)
of ETA-20/0250-version 2

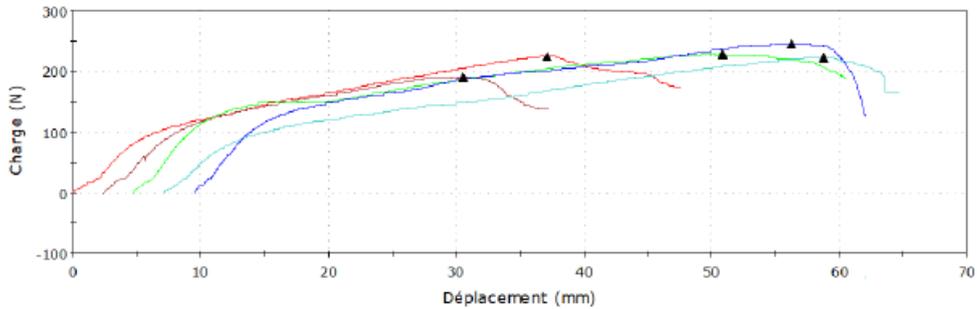
ISOVER ETICS 35 (120 mm) – Initial state – at the joint



ISOVER ETICS 35 (120 mm) – Ageing state –out of the joint



ISOVER ETICS 35 (120 mm) – Ageing state –at the joint

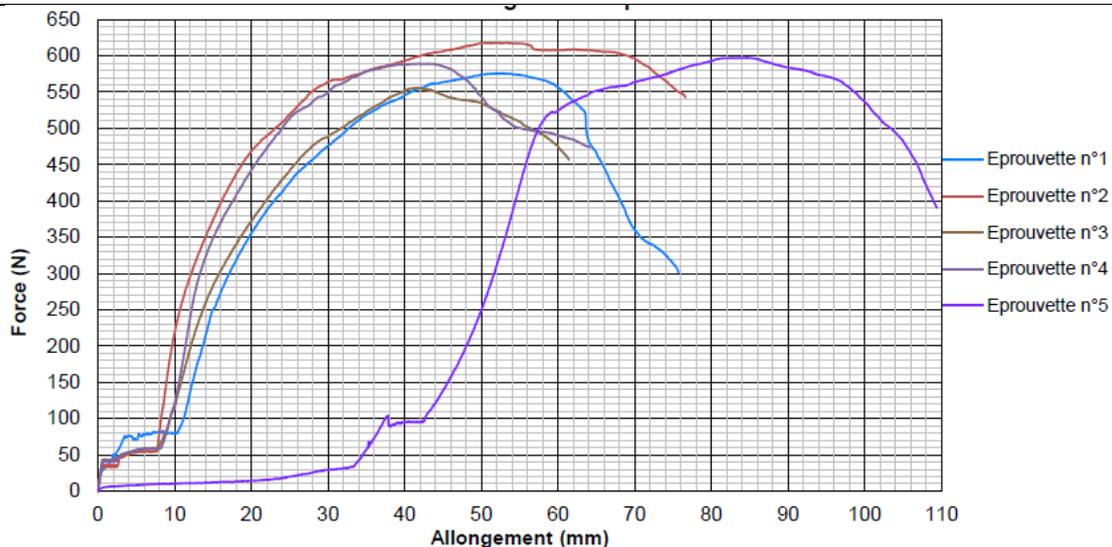


ETICS PARISO LR - F

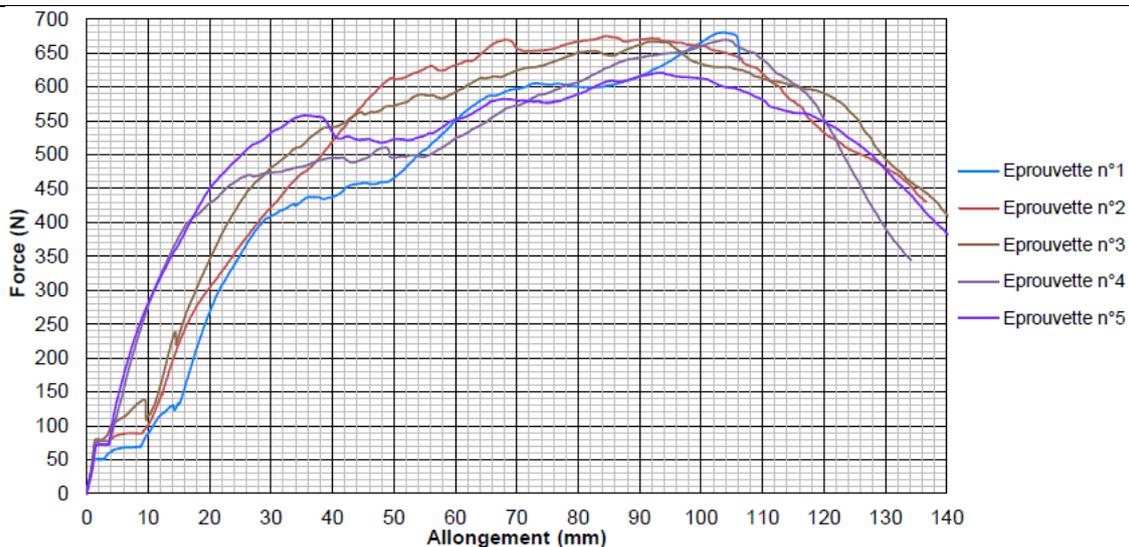
Pull-through tests – load/displacement graphs

ANNEX 4 (16/19)
of ETA-20/0250-
version 2

ISOCOMPACT (60 mm) – Initial state – out of the joint



ISOCOMPACT (120 mm) – Initial state – out of the joint



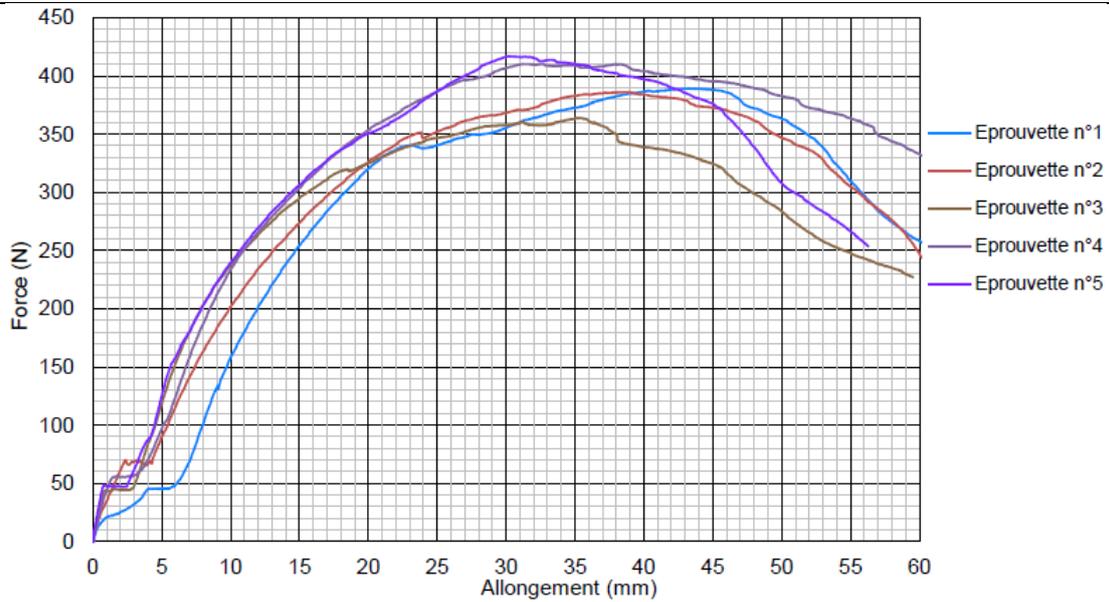
ETICS PARISO LR - F

Pull-through tests – load/displacement graphs

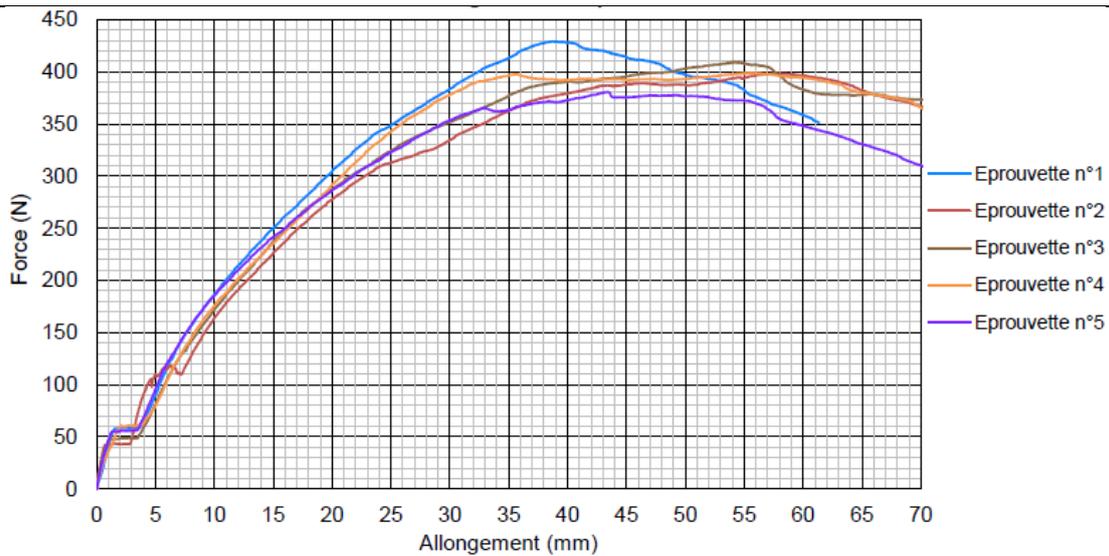
ANNEX 4 (17/19)

of ETA-20/0250-version 2

ISOCOMPACT (60 mm) – Initial state – at the joints



ISOCOMPACT (120 mm) – Initial state – at the joints



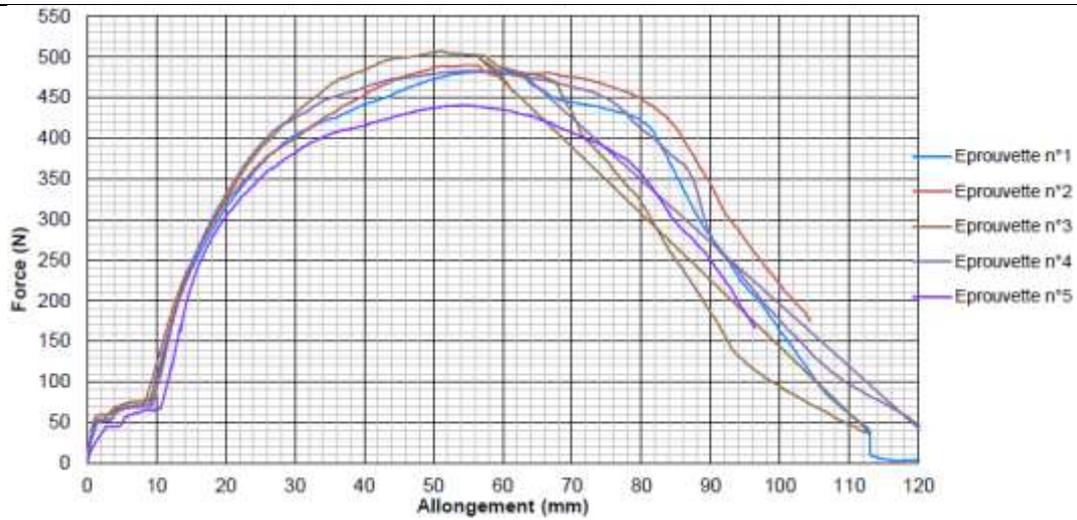
ETICS PARISO LR - F

Pull-through tests – load/displacement graphs

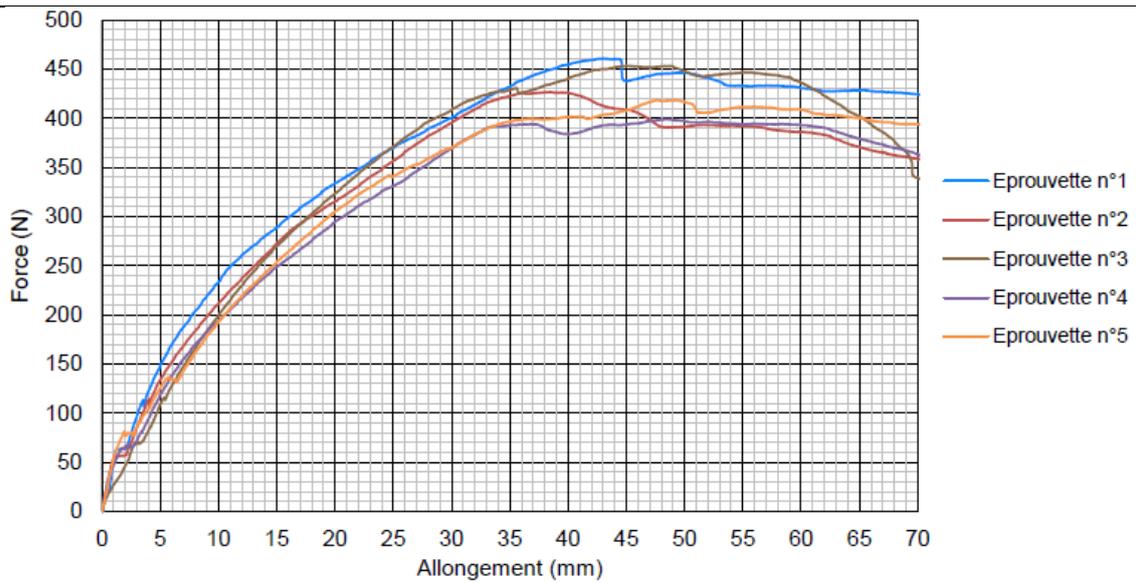
ANNEX 4 (18/19)

of ETA-20/0250-version 2

ISOCOMPACT (60 mm) – Ageing state – out of the joint



ISOCOMPACT (120 mm) – Ageing state – at the joints



ETICS PARISO LR - F

Pull-through tests – load/displacement graphs

ANNEX 4 (19/19)

of ETA-20/0250-version 2