



European Technical Assessment

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General Part

Technical Assessment Body issuing the European Technical Assessment:

Itecons - Instituto de Investigação e Desenvolvimento Tecnológico para a Construção, Energia, Ambiente e Sustentabilidade

Trade name of the construction product

Neucetherm Mineral MW

Product family to which the construction product belongs

External Thermal Insulation Composite Systems

Product area code:4

Manufacturer

NEUCE – Indústria de Tintas, S.A.
Rua Joaquim Francisco Rocha
Apartado 4514
3701-902 Romariz
Portugal

Manufacturing plant

NEUCE – Indústria de Tintas, S.A.
Rua Joaquim Francisco Rocha
Apartado 4514
3701-902 Romariz
Portugal

This European Technical Assessment contains

18 pages

This European Technical Assessment is issued in accordance with regulation (EU) No 305/2011, on the basis of

EAD 040083-00-0404
External Thermal Insulation Composite Systems (ETICS) with renderings

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Specific parts

1. Technical description of the product

This product is an ETICS (External Thermal Insulation Composite System) with rendering – a kit comprising components which are factory-produced by manufacturer or component suppliers. The ETICS manufacturer is ultimately responsible for all components of ETICS specified in this ETA.

The ETICS kit comprises a prefabricated insulation product of mineral wool (MW) to be mechanically fixed with supplementary adhesive onto a wall. The methods of fixing and the relevant components of the ETICS are specified in Table 1. The insulation product is faced with a rendering system consisting of one or two layers (site applied), one of which contains reinforcement. The rendering is applied directly to the insulation panels, without any air gap or disconnecting layer.

The ETICS may include special fittings (e.g., base profiles, corner profiles...) to treat details of ETICS (connections, apertures, corners, parapets, sills...). The assessment and performance of these components is not addressed in this ETA, however the ETICS manufacturer is responsible for adequate compatibility and performance within the ETICS when the components are delivered as a part of the kit.

Table 1: Components of the ETICS

Component	Description		Coverage (kg/m ²)	Thickness (mm)
Insulation product	RE Coat+ Mineral wool (MW) with CE marking.		---	60 - 240
Anchors	NEUCETHERM BUCHA (A) Anchor LTX-10, according to ETA 16/0509, with EJOT VT 90 plate		---	---
	NEUCETHERM BUCHA (B) Anchor ejothem H1 B, according to ETA 11/0192, with EJOT SBL 140 plus plate			
Adhesive (supplementary adhesive)	NEUCEGLUE R 25 Adhesive mortar based on mineral compounds, cement, re-dispersible powders and chemical adjuvants, with CE marking		3.0 to 3.5	---
Base Coat	NEUCEGLUE R 25 Adhesive mortar based on mineral compounds, cement, re-dispersible powders and chemical adjuvants, with CE marking	with standard glass fibre mesh	6.0 to 10.0	---
		with double standard glass fibre mesh		
Finishing coat 1	HYDRONEUCE PRIMÁRIO Water-based white primer based on Hydro Pliolite resin		0.1	---
	NEUCEGLUE 100 F Based on water-based special co-polymers and selected fillers and aggregates		1.0 to 1.5	---
	Endurance High Durability Silicone Paint based on the combination of pure acrylic and silicone resins, high lightfastness pigments and fillers		0.2	---

Component	Description	Coverage (kg/m ²)	Thickness (mm)
Finishing coat 2	NEUCETHERM PRIMÁRIO Based on pure acrylic resins, selected fillers and pigments	0.2 to 0.3	---
	NEUCEDECOR Coloured organic coating based on synthetic polymer in a high-quality water-based emulsion, mineral fillers and pigments	1.8 to 4.0	---
Finishing coat 3	NEUCETHERM PRIMÁRIO SILICATUS Inorganic silicate-based primer	0.2	---
	NEUCEDECOR SILICATUS Inorganic silicate-based coating, with added siloxane resins and marble aggregates	1.6 to 4.0	---
Finishing coat 4	SILICATUS PRIMÁRIO Water-based primer formulated with a potassium silicate solution, intended to porous mineral substrates	0.125	---
	SILICATUS Organic coating with a mineral matt appearance made up of potassium silicates, organic polymers and inorganic pigments of high strength	0.1	---
Glass fibre mesh	NEUCETHERM rede normal Standard mesh (glass fibre mesh with nominal mesh size 5.0 mm x 4.0 mm and a nominal mass per unit area of 160 gr/m ²)	---	---
	NEUCETHERM rede reforçada Reinforced mesh (glass fibre mesh with mesh size 6.0 mm x 6.0 mm and a nominal mass per unit area of 330 gr/m ²)	---	---
Ancillary components	Remain under the ETA holder responsibility		

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

2.1. Intended use

This ETICS is intended for use as external insulation of building walls. The walls are made of masonry (bricks and blocks) or concrete (cast on site or as prefabricated panels) with a reaction to fire classification A1 to A2-s2,d0 according to EN 13501-1 or A1 according to the EC decision 96/603/EC as amended. The ETICS is designed to give the wall to which it is applied satisfactory thermal insulation. The characteristics of walls shall be verified prior to use of the ETICS, especially regarding conditions for reaction to fire classification and for fixing of the ETICS either by bonding or mechanically.

The ETICS shall be designed and installed in accordance with ETA holder's installation instructions and this ETA. The kit consists of components defined by the ETA holder and manufactured either by the ETA holder or his supplier(s).

The ETICS is made of non-loadbearing construction elements. It does not contribute directly to the stability of wall on which it is installed, but it can contribute to durability by providing enhanced protection from the effect of weathering.

The ETICS can be used on new or existing (retrofit) vertical walls. It can also be used on horizontal or inclined surfaces which are not exposed to precipitation.

The ETICS is not intended to ensure the airtightness of the building structure.

The provisions made in this European Technical Assessment (ETA) are based on an assumed intended working life of at least 25 years, provided that the conditions laid down in the following sections 2.2 to 2.5 for the packing, transport, storage, installation are met and that the installed ETICS is subjected to an appropriate use, maintenance and repair as well. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right product in relation to the expected economically reasonable working life of the works.

2.2. Manufacturing

The European Technical Assessment is issued for the ETICS on the basis of agreed data/information, deposited with the Itecons - Instituto de Investigação e Desenvolvimento Tecnológico para a Construção, Energia, Ambiente e Sustentabilidade, which identifies the ETICS that has been assessed and judged. Changes to the ETICS or production process, which could result in the deposited data/information being incorrect should be notified to Itecons before changes are introduced. The Itecons will decide whether or not such changes affect the ETA and consequently the validity of the CE marking on the basis of the ETA and if so whether further assessment or alterations to the ETA, shall be necessary.

2.3. Design and installation

The installation instruction including special installation techniques and provisions for the qualification of the personnel are given in the manufacturer's technical documentation.

2.4. Packing, transport and storage

The information on packing, transport and storage is given in the manufacturer's technical documentation. It is the responsibility of the manufacturer to ensure that this information is made know to the concerned people.

2.5. Use, maintenance and repair

The finishing coat shall be normally maintained in order to fully preserve the ETICS performance. Maintenance includes at least:

- visual inspection of the ETICS,
- the repairing of localized damaged areas due to accidents,
- the aspect maintenance with products adapted and compatible with the ETICS (possibly after washing or ad hoc preparation).

Necessary repairs should be performed as soon as the need has been identified.

It is important to be able to carry out maintenance as far as possible using readily available products and equipment, without spoiling appearance. Only products which are compatible with the ETICS shall be used.

The information on use, maintenance and repair is given in the manufacturer's technical documentation. It is the responsibility of manufacturer(s) to ensure that this information is made know to the concerned people.

3. Performance of the product and references to the methods used for its assessment

The identification tests and the assessment for the intended use of this ETICS according to the Essential Requirements were carried out in compliance with the EAD 040083-00-0404, “External Thermal Insulation Composite Systems (ETICS) with Renderings” – edition January 2019 (hereinafter referred to as “EAD”).

3.1. ETICS characteristics

3.1.1. Safety in case of fire (BWR 2)

3.1.1.1. Reaction to fire

3.1.1.1.1. Reaction to fire of ETICS

The reaction to fire was tested according to ISO 1716:2010 and EN 13823:2020+A1:2022 and classified according to EN 13501-1:2018.

The Neucetherm Mineral MW system meets the requirements of class A2-s1, d0 for Neucetherm Mineral MW with finishing coats 1 and 2, and A1 for Neucetherm Mineral MW with finishing coats 3 and 4.

The heat combustion of the ETICS components and the classification of reaction to fire obtained for the configurations of the Neucetherm Mineral MW are presented in Table 2.

Table 2: Heat combustion and classification of reaction to fire of the Neucetherm Mineral MW

System components		Heat combustion Q_{PCS}	Flame retardant content	Classification acc. to EN 13501-1
Adhesive		0.2 [MJ/kg]	No flame retardant	A2-s1,d0
Insulation product		0.8 [MJ/kg]		
Base coat		0.2 [MJ/kg]		
Standard mesh		0.7 [MJ/m ²]		
Finishing coat 1	HYDRONEUCE PRIMÁRIO	9.4 [MJ/kg]		
	NEUCEGLUE 100 F	0.0 [MJ/kg]		
	ENDURANCE	6.5 [MJ/kg]		
Finishing coat 2	NEUCTHERM PRIMÁRIO	3.8 [MJ/kg]		
	NEUCEDECOR	2.2 [MJ/kg]		
Adhesive		0.2 [MJ/kg]	No flame retardant	A1
Insulation product		0.8 [MJ/kg]		
Base coat		0.2 [MJ/kg]		
Standard mesh		0.7 [MJ/m ²]		
Finishing coat 3	NEUCETHERM PRIMÁRIO SILICATUS	0.3 [MJ/kg]		
	NEUCEDECOR SILICATUS	0.1 [MJ/kg]		
Finishing coat 4	SILICATUS PRIMÁRIO	0.4 [MJ/kg]		
	SILICATUS	0.2 [MJ/kg]		

Note: A European reference fire scenario has not been laid down for facades. In some Member States, the classification of ETICS according to EN 13501-1:2018 might not be sufficient for the use in facades. An additional assessment of ETICS according to national provisions (e.g., on the basis of large-scale

test) might be necessary to comply with Member State regulations, until the existing European classification system has been completed.

3.1.1.1.2. Reaction to fire of thermal insulation material

The reaction to fire classification of thermal insulation product MW is class A1, according to EN 13501-1 and its heat combustion value, Q_{PCS} , is 0.8 MJ/kg.

3.1.1.2. Facade fire performance

No performance assessed.

3.1.1.3. Propensity to undergo continuous smouldering of ETICS

No performance assessed.

3.1.2. Hygiene, health and environment (BWR 3)

3.1.2.1. Content, emission and/or release of dangerous substances – Leachable substances

No performance assessed.

3.1.2.2. Water absorption

3.1.2.2.1. Water absorption of the base coat and the rendering system

The results of the water absorption test of the base coat (system without finishing) and the rendering system, are presented in Table 3.

Table 3: Water absorption (capillary test)

System specimens	Water absorption after 1 h (mean value) [kg/m²]	Water absorption after 24 h (mean value) [kg/m²]
MW + base coat + standard mesh	0.01	0.28
MW+ base coat + standard mesh + key coat 1 + finishing coat 1	0.00	0.05
MW + base coat + standard mesh + finishing coat 2	0.03	0.39
MW + base coat + standard mesh + finishing coat 3	0.01	0.08
MW + base coat + standard mesh + finishing coat 4	0.01	0.28

3.1.2.2.2. Water absorption of thermal insulation product

The maximum value obtained in the water absorption test of the thermal insulation product, through partial immersion according to EN ISO 29767, method A, is < 0.5 kg/m².

3.1.2.3. Watertightness of the ETICS: Hygrothermal behaviour

Hygrothermal cycles were performed on a rig. The ETICS is assessed resistant to hygrothermal cycles, it means ETICS passed the test without defects.

3.1.2.4. Watertightness of the ETICS: Freeze-thaw behaviour

The ETICS is freeze-thaw resistant if the water absorption of both reinforced base coat and the rendering system are less than 0.5 kg/m² after 24 hours (see 3.1.2.2.1).

3.1.2.5. Impact resistance

The resistance to hard body impact (3 and 10 Joules) tests were carried out on samples of system

composition led to the use categories presented in Table 4.

Table 4: Impact resistance to hard body impacts

System specimens	Hard body impact	Impact zone – diameter (maximum value) [mm]	Use categories ¹
Test specimens tested on the rig			
MW + base coat + standard mesh	10 J	49.46 Cracks reaching the insulation product	III
	3J	17.71 Superficial damages without cracks formation	
MW + base coat + standard mesh + reinforced mesh	10 J	36.06 Cracks without reaching the insulation product	II
	3 J	13.01 Superficial damages without cracks formation	
MW + base coat + standard mesh + reinforced mesh + finishing coat 1	10 J	45.33 Cracks without reaching the insulation product	III
	3 J	20.22 Cracks without reaching the insulation product	
MW + base coat + standard mesh + reinforced mesh + finishing coat 2	10 J	32.52 Cracks without reaching the insulation product	II
	3 J	--- Superficial damages without cracks formation	
MW + base coat + standard mesh + reinforced mesh + finishing coat 3	10 J	37.39 Cracks without reaching the insulation product	II
	3 J	--- Superficial damages without cracks formation	
MW + base coat + standard mesh + reinforced mesh + finishing coat 4	10 J	39.16 Cracks without reaching the insulation product	III
	3 J	21.04 Cracks without reaching the insulation product	
Test specimens tested out of the rig (small samples)			
MW + base coat + standard mesh + finishing coat 1	10 J	76.36 Cracks reaching the insulation product	III
	3 J	31.83 Cracks without reaching the insulation product	
MW + base coat + standard mesh + finishing coat 2	10 J	33.29 Cracks without reaching the insulation product	II
	3 J	--- Superficial damages without cracks formation	
MW + base coat + standard mesh + finishing coat 3	10 J	32.23 Cracks without reaching the insulation product	II
	3 J	20.30 Superficial damages without cracks formation	
MW + base coat + standard mesh + finishing coat 4	10 J	32.86 Cracks without reaching the insulation product	III
	3 J	21.13 Cracks without reaching the insulation product	

¹ Use categories:

Category I – zones readily accessible at ground level to the public and vulnerable to hard impacts but not subjected to abnormally rough use;

Category II – zones liable to impacts from thrown or kicked objects, but in public locations where the height of system will limit the size of impact; or at lower levels where access to the building is primarily to those with some incentive to exercise care.

Category III – zones not likely to be damaged by normal impacts caused by people or by thrown or kicked objects.

3.1.2.6. Water vapour permeability

3.1.2.6.1. Water vapour permeability of the rendering system

Table 5 presents the resistance to water vapour diffusion of rendering system (base coat and finishing coat) for the system configuration, expressed by the equivalent air thickness and verify the condition $S_d \leq 1$.

Table 5: Equivalent air thickness

System specimens	Thickness of the rendering system (mean value) [mm]	Water vapour diffusion resistance factor (mean value) μ [-]	Equivalent air thickness (mean value) S_d [m]
Base coat + standard mesh + finishing coat 1	3.4	76.1	0.3
Base coat + standard mesh + finishing coat 2	4.4	42.1	0.2
Base coat + standard mesh + finishing coat 3	4.2	20.2	0.1
Base coat + standard mesh + finishing coat 4	2.9	22.6	0.1

3.1.2.6.2. Water vapour permeability of thermal insulation product

The declared μ -value of the thermal insulation product, according to EN 12086, is 1.30.

3.1.3. Safety and accessibility in use (BWR 4)

3.1.3.1. Bond strength

3.1.3.1.1. Bond strength between the base coat and the thermal insulation products

Tests were performed on the system Neucetherm Mineral MW, at initial state and after hygrothermal cycles. The results are summarized in Table 6 and fulfil the condition that, after each conditioning, the rupture occurs in the thermal insulation product (cohesive rupture) if the failure resistance is lower than 80 kPa.

Table 6: Bond strength between base coat and insulation product at initial state and after hygrothermal cycles

System	Bond strength - Initial state	
	Minimum value [kPa] (Rupture type)	Mean value [kPa]
MW + base coat + standard mesh	15 (cohesive rupture - 100% rupture in the insulation product)	17
System	Bond strength - After ageing	
	Minimum value [kPa] (Rupture type)	Mean value [kPa]
MW + base coat + standard mesh	17 (cohesive rupture - 100% rupture in the insulation product)	20

3.1.3.1.2. Bond strength between the adhesive and the substrate

Not relevant for mechanically fixed systems with supplementary adhesive, when the mechanical fixing is intended to transfer shear loads of the ETICS.

3.1.3.1.3. Bond strength between the adhesive and the thermal insulation product

Not relevant for mechanically fixed systems with supplementary adhesive, when the mechanical fixing is intended to transfer shear loads of the ETICS.

3.1.3.2. Fixing strength (transverse displacement test)

Not relevant for mechanically fixed systems with supplementary adhesive where the bonded area exceeds 20%.

3.1.3.3. Wind load resistance of ETICS

3.1.3.3.1. Pull-through tests of fixings

The pull-through test of anchors in dry conditions was performed according to the section 2.2.13.1 of the EAD. The results, type of fixing and the characteristics of the thermal insulation product are presented in Table 7 and Table 8. The respective load/displacement graphs are presented in Figure 1 and Figure 2.

Table 7: Failure loads of pull-through test, type of fixing and characteristics of thermal insulation product – NEUCETHERM BUCHA (A)

MW Thickness [mm]	Position	Conditions	Individual values [kN/fixing]							Mean value [kN/fixing]
			1	2	3	4	5	6	7	
60	R _{panel}	Dry	0.56	0.55	0.60	0.53	0.55	0.47	---	0.54
	R _{panel}	Wet	0.26	0.35	0.30	0.28	0.25	0.27	0.27	0.28
	R _{jointl}	Dry	0.38	0.43	0.33	0.37	0.34	0.38	0.39	0.37
	R _{jointl}	Wet	0.21	0.24	0.17	0.20	0.20	0.21	0.21	0.21
Type of fixing										
Plate diameter [mm]			60							
Plate stiffness [kN/mm]			0.6							
Load resistance [kN]			1.4							
Thermal insulation product										
Tensile strength perpendicular to the faces – dry conditions/wet conditions			See section 3.1.3.4							

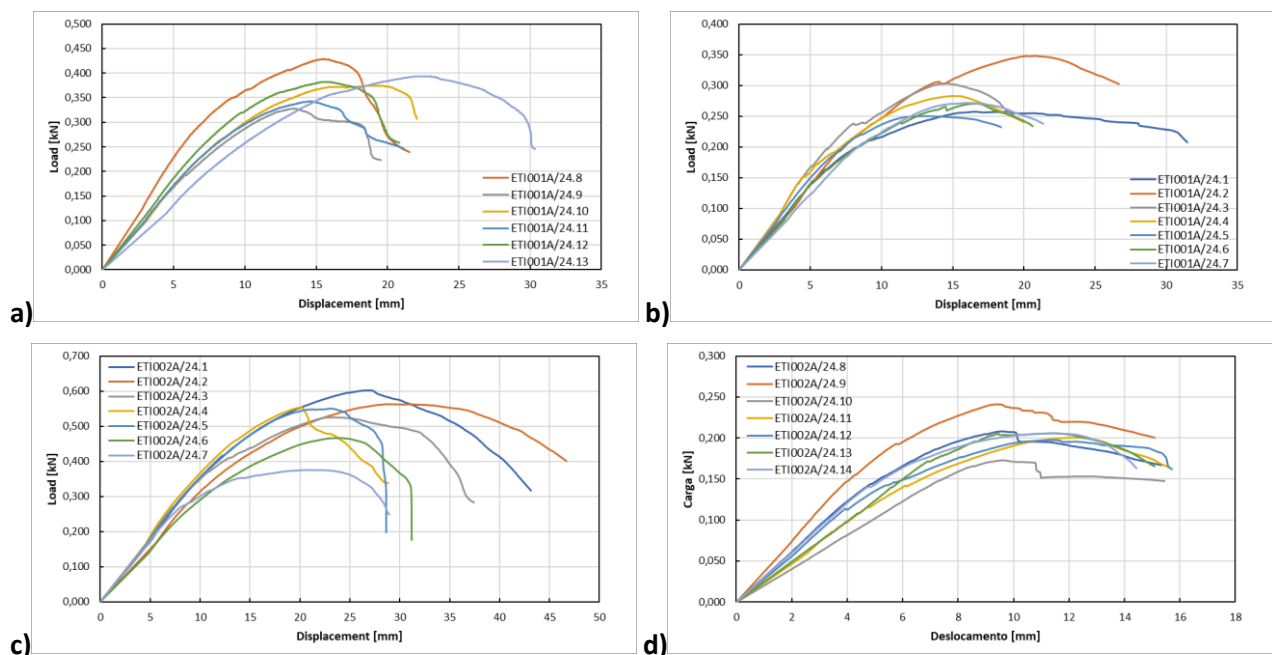


Figure 1: Load/Displacement graphs – a) R_{Panel} Dry; b) R_{Panel} Wet; c) R_{Joint} Dry; d) R_{Joint} Wet

Table 8: Failure loads of pull-through test, type of fixing and characteristics of thermal insulation product – NEUCETHERM BUCHA (B)

MW Thickness [mm]	Position	Conditions	Individual values [kN/fixing]							Mean value [kN/fixing]
			1	2	3	4	5	6	7	
60	R _{panel}	Dry	0.67	0.69	0.70	0.62	0.71	0.59	0.72	0.67
	R _{panel}	Wet	0.37	0.34	0.45	0.41	0.36	0.43	---	0.39
	R _{jointl}	Dry	0.42	0.44	0.51	0.46	0.48	0.48	0.49	0.47
	R _{jointl}	Wet	0.25	0.24	0.18	0.23	0.28	0.23	0.29	0.24
Type of fixing										
Plate diameter [mm]			60							
Plate stiffness [kN/mm]			0.5							
Load resistance [kN]			1.02							
Thermal insulation product										
Tensile strength perpendicular to the faces – dry conditions/wet conditions			See section 3.1.3.4							

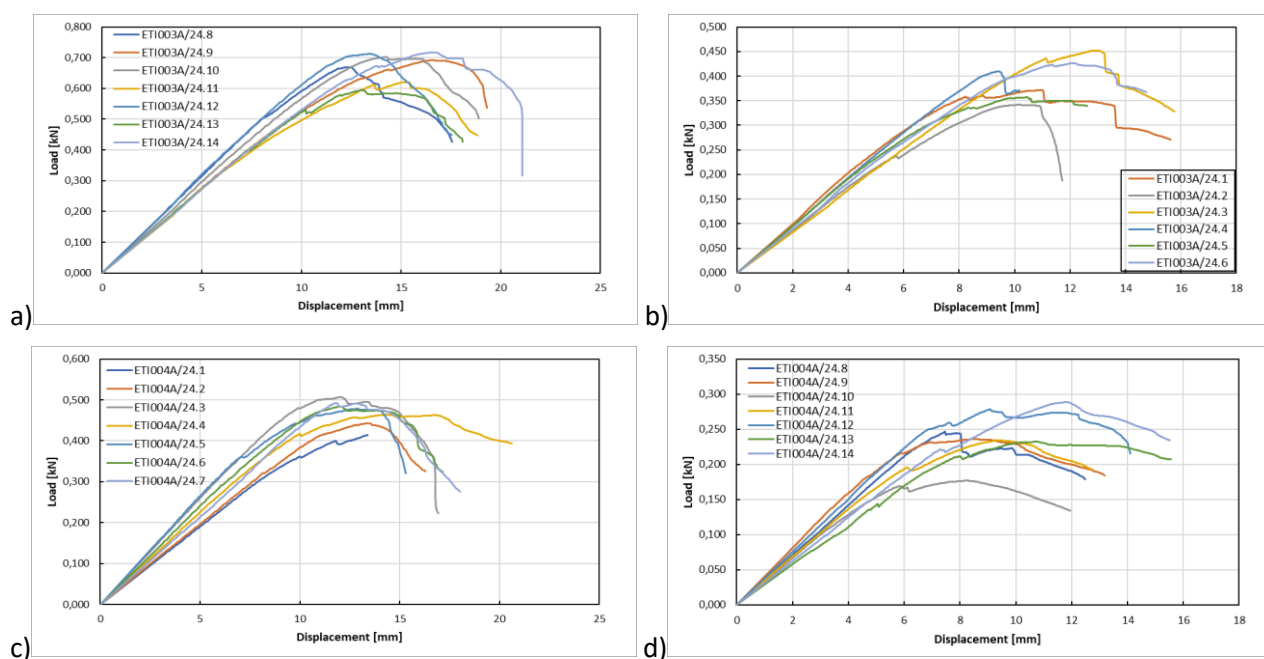


Figure 2: Load/Displacement graphs – a) R_{Panel} Dry; b) R_{Panel} Wet; c) R_{Joint} Dry; d) R_{Joint} Wet

3.1.3.3.2. Static foam block test

No performance assessed.

3.1.3.3.3. Dynamic wind uplift test

Not relevant.

3.1.3.4. Tensile test perpendicular to the faces of thermal insulation product

The tensile test perpendicular to the faces of the thermal insulation product, in dry and wet conditions, was carried out according to EN 1607.

The results are presented in Table 9.

Table 9: Tensile perpendicular to the faces of the thermal insulation product

MW Thickness [mm]	Conditions	Minimum value [kPa]	Mean value [kPa]
60	Dry	4.8	7.0
100	Dry	10.7	12.2
	After 7 days at (70 ± 2) °C and (95 ± 5) % RH + 7 days at (23 ± 2) °C and (50 ± 5) % RH	3.3	4.9
	After 28 days at (70 ± 2) °C and (95 ± 5) % RH + 7 days at (23 ± 2) °C and (50 ± 5) % RH	3.1	3.8
120	Dry	11.8	14.3

3.1.3.5. Shear strength and shear modulus of elasticity test of ETICS

Not relevant for mechanically fixed systems with supplementary adhesive.

3.1.3.6. Pull-through resistance of fixings from profiles

Not relevant.

3.1.3.7. Render strip tensile test

No performance assessed.

3.1.3.8. Shear strength and shear modulus of foam adhesive

Not relevant.

3.1.3.9. Post expansion behaviour of foam adhesives

Not relevant.

3.1.3.10. Bond strength after ageing

The bond strength after ageing of finishing coats tested on the rig was performed after hygrothermal cycles. The results indicate that all test results verify the condition that, if the failure resistance is lower than 80 kPa, rupture occurs in the thermal insulation product (100 % cohesive rupture). The results are presented in Table 10.

Table 10: Bond strength after ageing of finishing coats tested on the rig after hygrothermal cycles

System specimens	Bond strength - After ageing						
	Individual values [kPa]					Mean value [kPa]	Rupture type
MW + base coat + standard mesh + finishing coat 1	16	15	17	20	21	18	Cohesive rupture - 100% rupture in the insulation product
MW + base coat + standard mesh + key coat 1 + finishing coat 2	15	15	18	12	13	15	Cohesive rupture - 100% rupture in the insulation product
MW + base coat + standard mesh + finishing coat 3	21	17	20	19	17	19	Cohesive rupture - 100% rupture in the insulation product
MW + base coat + standard mesh + finishing coat 4	16	16	16	15	13	15	Cohesive rupture - 100% rupture in the insulation product

3.1.3.11. Mechanical and physical characteristics of the mesh

See Table 13.

3.1.4. Protection against noise (BWR 5)

3.1.4.1. Airborne sound insulation of ETICS

No performance assessed.

3.1.5. Energy economy and heat retention (BWR 6)

3.1.5.1. Thermal resistance and thermal transmittance of ETICS

The additional thermal resistance R_{ETICS} provided by the ETICS to the substrate wall is calculated in accordance with EN ISO 6946 from the nominal value of the insulation products thermal resistance R_D given accompanied to the CE marking and from the thermal resistance of the rendering system R_{render} .

$$R_{ETICS} = R_D + R_{render}$$

The value of thermal resistance of the render system (R_{render}) was considered as equal to $0.02 \text{ (m}^2\cdot\text{K)/W}$ according to clause 2.2.23 of the EAD 040083-00-0404.

The thermal bridges caused by mechanical fixing devices influence the thermal transmittance of the entire wall and shall be taken into account using the following calculation:

$$U_C = U + \Delta U \text{ (W/m}^2\text{K)}$$

U_C : corrected thermal transmittance ($\text{W/m}^2\text{K}$) of the entire wall, including thermal bridges;

U : thermal transmittance of the entire wall, including ETICS, without thermal bridges ($\text{W/m}^2\text{K}$):

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

R_i : thermal resistance of the insulation product;

R_{render} : thermal resistance of the render [about $0.02 \text{ (m}^2\cdot\text{K)/W}$];

$R_{substrate}$: thermal resistance of the substrate of the building (concrete, brick...) [$\text{(m}^2\cdot\text{K)/W}$];

R_{se} : external superficial thermal resistance [$\text{(m}^2\cdot\text{K)/W}$];

R_{si} : internal superficial thermal resistance [$\text{(m}^2\cdot\text{K)/W}$];

ΔU : correction term of the thermal transmittance for mechanical fixing devices

$$\Delta U = X_p * n$$

n : number of anchors (through insulation product) per m^2 ;

X_p : point thermal transmittance value of the anchor (0.002 W/K)¹.

¹The thermal bridge effect of the anchor is smaller than 0.0005 W/K and can therefore be neglected in the calculation.

Table 11 presents the values of thermal resistance calculation for Neucetherm Mineral MW with MW thickness equal to 60 mm to 120 mm.

Table 11: Thermal resistance values for Neucetherm Mineral MW system

MW thickness [mm]	R_D [$\text{(m}^2\cdot\text{K)/W}$]	R_{ETICS} [$\text{(m}^2\cdot\text{K)/W}$]
60	1.65	1.67
65	1.80	1.82
70	1.90	1.92
75	2.05	2.07

MW thickness [mm]	R _D [(m ² .K)/W]	R _{ETICS} [(m ² .K)/W]
80	2.20	2.22
85	2.35	2.37
90	2.50	2.52
95	2.60	2.62
100	2.75	2.77
105	2.90	2.92
110	3.05	3.07
115	3.15	3.17
120	3.30	3.32
125	3.45	3.47
130	3.60	3.62
135	3.75	3.77
140	3.85	3.87
145	4.00	4.02
150	4.15	4.17
155	4.30	4.32
160	4.40	4.42
165	4.55	4.57
170	4.70	4.72
175	4.85	4.87
180	5.00	5.02
185	5.10	5.12
190	5.25	5.27
195	5.40	5.42
200	5.55	5.57
205	5.65	5.67
210	5.80	5.82
215	5.95	5.97
220	6.10	6.12
225	6.25	6.27
230	6.35	6.37
235	6.50	6.52
240	6.65	6.67

3.2. Characteristics of the components

3.2.1. Insulation product

Uncoated factory made mineral wool (MW) panels, complying with the requirements of EN 13162 (see Table 12).

Table 12: MW characteristics

Component	Trade name	Characteristics	Declared values and classes
Insulation product	RE Coat+	Reaction to Fire / EN 13501-1	A1
		Thermal conductivity [W/m.°C] / EN 12667	0.036
		Compressive stress at 10% deformation [kPa] / EN 826	CS(10)30
		Point load / EN 12430	PL(5)450 (100mm – 240mm)
		Thickness [mm] / EN 823	Class T(5)
		Water absorption by partial immersion [kg/m ²] / EN 1609	WS
		Tensile strength perpendicular to Faces in dry conditions [kPa]	TR7.5
		Water vapour diffusion resistance factor [-] / EN 12086	1.30

3.2.2. Glass fibre meshes

The characteristics of the glass fibre mesh are presented in Table 13.

Table 13: Characteristics of the glass fibre meshes

Component	Trade Name	Characteristics	Results	
Standard mesh	NEUCETHERM rede normal	Mass per unit area (g/m ²)	156 ± 10%	
		Ash content at 625 °C (%)	80.8 ± 1	
		Residual strength after ageing (N/mm)	Warp	≥ 20
			Weft	≥ 20
		Relative residual strength after ageing (%) ¹	Warp	≥ 50
			Weft	≥ 50
		Mesh size (mm)		5.0 x 4.0
Mesh opening (mm)		4.8 x 4.0 ±10 %		
Reinforced mesh	NEUCETHERM rede reforçada	Mass per unit area (g/m ²)	330 ± 10%	
		Ash content at 625 °C (%)	82.3 ± 1	
		Relative residual strength after ageing (N/mm)	Warp	≥ 20
			Weft	≥ 20
		Relative residual strength after ageing (%) ¹	Warp	≥ 40
			Weft	≥ 40
		Mesh size (mm)		6.0 x 6.0
Mesh opening (mm)		5.6 x 5.1 ±10 %		

¹ Percentage of the strength in the as-delivered state

3.2.3. Anchors

The characteristic resistances of anchors were evaluated according EAD 330196-00-0604. The test results are presented in Table 14.

Table 14: Anchors description of individual product characteristics contained in the ETA

Trade name	Plate diameter (mm)	Characteristic resistances in the substrate
LTX-10	60	See ETA-16/0509
ejothem H1	60	See ETA 11/0192

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

According to the Decision 97/556/EC of European Commission as amended by the European Commission Decision 2001/596/EC, the AVCP systems (further described in Annex V Regulation (EU) No 305/2011) 1 and 2+ apply.

Table 15: AVCP Systems

Product(s)	Intended use(s)	Levels(s) or class(es) (Reaction to fire)	System(s)
External thermal insulation composite systems/kits with rendering (ETICS)	In external wall subject to fire regulations	A1 ⁽¹⁾ , A2 ⁽¹⁾ , B ⁽¹⁾ , C ⁽¹⁾	1
		A1 ⁽²⁾ , A2 ⁽²⁾ , B ⁽²⁾ , C ⁽²⁾ , D, E, (A1 to E) ⁽³⁾ , F	2+
	In external wall not subject to fire regulations	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 required to be tested for reaction to fire (e.g., products/materials of Classes A1 according to Commission Decision 96/603/EC).

5. Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

The ETA is issued on the basis of agreed data/information, deposited at Itecons, which identifies the product that has been assessed and judged. It is the manufacturer's responsibility to make sure that all those who use the kit are appropriately informed of specific conditions laid down in this ETA.

Changes to the ETICS or the components or their production process should be notified to the Itecons before the changes are introduced. Itecons will decide whether or not such changes affect the ETA and if so whether further assessment or alterations to the ETA shall be necessary.

5.1. Tasks of the manufacturer

5.1.1. Factory production control

The manufacturer shall exercise permanent internal control of production of concerned product. All the elements, requirements and provisions adopted by the manufacturer shall be documented in a

systematic manner in the form of written policies and procedures, including records of results performed. This production control system shall ensure that the product is in conformity with this ETA.

The manufacturer may only use components stated in the technical documentation of this ETA including Control Plan. The incoming raw materials are subjected to verifications by the manufacturer before acceptance.

For the components of the ETICS which the manufacturer does not manufacture by himself, he shall make sure that factory production control carried out by the other manufacturers gives the guarantee of the component's compliance with the ETA.

The factory production control shall be in accordance with the Control Plan which is a part of technical documentation of this European Technical Assessment. The control plan has been agreed between the manufacturer and Itecons and is laid down in context of the factory production control system operated by the manufacturer and deposited within Itecons. The results of factory production control shall be recorded and evaluated in accordance with the provisions of the control plan.

5.1.2. Other tasks for the manufacturer

The manufacturer shall, on the basis of a contract, involve a body which is notified for the tasks referred to in section 4 in the field of ETICS in order to undertake the actions laid down in this clause. For this purpose, the control plan shall be handed over by the manufacturer to the notified bodies involved.

For initial type-testing of the ETICS and the components the results of the tests performed as part of the assessment for the ETA shall be used unless there are changes in the production line or plant. In such cases the necessary testing has to be agreed with Itecons.

The manufacturer shall make a declaration of performance, stating that the ETICS is in conformity with the provisions of this ETA.

Changes to the ETICS or the components or their production process should be notified to Itecons before the changes are introduced. Itecons will decide whether or not such changes affect the ETA and if so whether further assessment or alterations to the ETA shall be necessary.

5.2. Tasks for the Notified Body (bodies)

5.2.1. Initial inspections of factory and of factory production control

The Notified Body shall ascertain that, in accordance with the Control Plan, the factory (in particular the employees and the equipment) and the factory production control are suitable to ensure continuous and orderly manufacturing of the components according to the specifications mentioned in this ETA.

5.2.2. Continuous surveillance, assessment and evaluation of factory production control

Within the scope of continuous surveillance, assessment and evaluation of factory production control, the Notified Body (bodies) shall visit the factory at least once a year for surveillance. It has to be verified that the factory production control is maintained in suitable conditions.

These tasks shall be performed in accordance with the provisions laid down in the control plan.

The Notified Body (bodies) shall retain the essential points of its (their) actions referred to above and state the results obtained and conclusions drawn in a written report. The Notified Body involved by

the manufacturer shall issue a certificate of conformity of the factory production control stating the conformity with the provisions of this ETA.

In cases where the provisions of the ETA and its control plan are no longer fulfilled, the Notified Body shall withdraw the certificate of conformity and inform Itecons without delay.

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By

Technical Assessment Unit of

Itecons – Instituto de Investigação e Desenvolvimento Tecnológico para a Construção, Energia, Ambiente e Sustentabilidade



Andreia Gil
Senior Official

(Technical Assessment Unit Coordinator)



Validated document

(Administration)