Member of



INSTITUTO DE CIENCIAS DE LA CONSTRUCCIÓN EDUARDO TORROJA

C/ Serrano Galvache, 4. 28033 Madrid (Spain) Tel.: (+34) 91 302 0440 gestiondit@ietcc.csic.es

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



European Technical Assessment

www.ietcc.csic.es

dit.ietcc.csic.es



English translation prepared by IETcc. Original version in Spanish language

General Part

Technical Assessment Body issuing the European Technical Assessment: Instituto de Ciencias de la Construcción Eduardo Torroja (IETcc)

Trade name of the construction product	TERMOK8 [®] IVAS
Product family to which the construction product belongs	External Thermal Insulation Composite System with rendering for use on building walls
Manufacturer	I .V.A.S. Industria Vernici S.p.a Via Bellaria, 40. 47030 San Mauro Pascoli (FC). Italy
Manufacturing plant(s)	Via Bellaria, 40. 47030 San Mauro Pascoli (FC). Italy
This European Technical Assessment contains	10 pages including 2 Annex which form an integral part of this assessment. Annex 3 contains confidential information and is not included in the European Technical Assessment when that assessment is publicly disseminated
This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of	040083-00-0404: External thermal insulation composite systems (ETICS) with renderings
This version replaces	ETA 10/0231 issued on 11/ 01/ 2021

Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document and should be identified as such.

Communication of this European Technical Assessment, including transmission by electronic means, shall be in full (excepted the confidential Annex(es) referred to above). However, partial reproduction may be made, with the written consent of the issuing Technical Assessment Body. Any partial reproduction has to be identified as such.

Specific parts

1 Technical description of the product

The External Thermal Insulation Composite System (from now on, referred to as ETICS) "TERMOK8[®] IVAS" is designed and installed in accordance with the manufacturer, design and installation instructions, deposited at the IETcc⁽¹⁾. It is made up on site from these components. The manufacturer is ultimately responsible for the ETICS.

TERMOK8[®] IVAS is defined as "bonded system with supplementary mechanical fixings" with is used with EPS panel, and "mechanically fixed ETICS with supplementary adhesive" with is used with MW panel. The minimum number of fasteners per square metres are 6 for EPS and MW. This ETICS comprises the following components, which are factory produced by the manufacturer or a supplier.

			nponents				Coverage ([kg/m ²)	Thickness [mm]	
	IVAS MINERAL WOOL PANEL and ISOVER CLIMA 34. Board of Mineral wool (MW) (EN 13162) Fastener fixed (minimum 6 fasteners/m ²). with supplementary adhesive. IVAS PANEL EPS (white, grey and other colors EPS). <i>Bonded</i> Board of Expanded polystyrene (EPS)						2,4 - 15 0,4 - 3,5	40 - 200	
	(EN 13163) with supplementary mechanical fixings (minimum 6 fasteners/m ²)							30 - 200	
Adhesive	KLEBOCEM. Minimum bonded surface: 40 % over EPS Board and 80 % over MW board.(grey or white cement based mortar in powder requiring addition and mixing with $23,0 \pm 1,0\%$ water)							≥ 3,0	
, lanceive	cement based morta	r in powder requiring	ded surface: 40 % over EPS Board and 80 % over MW board.(grey or white wder requiring addition and mixing with $23,0 \pm 1,0$ % water)						
-		ame product described above. (Fully applied in two layers on external side of insulation ss ARMATEX C1, o ARMATEX C1-M o ARMTEX C1 "R imbibed in between)							
Base coat	ADEFIX 12. Same product described above. (Fully applied in two layers on external side of insulation boards, with glass ARMATEX C1, o ARMATEX C1-M o ARMTEX C1 "R imbibed in between)						(powder, and per mm layer thickness)	4,0 - 5,0	
	ARMATEX C1. Stan						0,14-0,18	0,5	
	ARMATEX C1-M. St						0,21-0,24	0.65	
	ARMTEX C1 "R". R						0,34-0,36	0,9	
	Other different mesh characteristics	can be used in this E	TICS, if they	have the	CE marking accord	ing to EAD 040016-00			
		aracteristics		V	alues (standard / r	einforcement)			
01	Me	sh size (mm)			3-6/7-		1		
Glass fibre		er ageing (%) after a	igeing		≥2/≥3		-		
mesh		er unit area (g/m ²)	5 5		≥ 140 / ≥		-		
		Thickness			≤2	010	-		
	Or	ganic content			 ≤ 20 %		1		
			an value of r	esidual s		ard mesh (see EAD	1 3 8 1) in th	ne weft and	
	warp direction shall b								
						and warp direction sh	all he at lea	st: 40 % of	
	the strength in the as								
	RIVATONE PLUS G		= 20 N/III				1,5 - 2,5	$1,2 \pm 0,1$	
	RIVATONE PLUS G			Acrylic	binder based ready	to use paste	2,5 - 3,5	$1,2 \pm 0,1$ $1,5 \pm 0,1$	
	RIVATONE IDROSIL		2				1,5 - 2,5	$1,3 \pm 0,1$ $1,2 \pm 0,1$	
	RIVATONE IDROSIL						2,5 - 3,5	$1,2 \pm 0,1$ $1,5 \pm 0,1$	
	RIVATONE PLUS T		5				1,5 - 2,0	$1,0 \pm 0,1$ $1,0 \pm 0,1$	
	RIVATONE PLUS T			Acrylic S	Silicone binder base	d ready to use paste	1,5 - 2,5	$1,0 \pm 0,1$ $1,2 \pm 0,1$	
Finishing coat				-					
-						$1,5 \pm 0,1$ $0,8 \pm 0,1$			
	INTONACHINO IDR	USILICONICO		ا معانه ا					
				ACTYLIC L	binder based ready t	o use pasie	1,0-1,5	$0,6 \pm 0,1$	
	FACTOR EXT			مسانم	Oilianna biadar basa		1,0-1,5	$0,6 \pm 0,1$	
	FACTOR EXT + SOUL CEMENT EXT					1,0 -1,5 + 0,6 – 0,7	0,6 ± 0,1 0,3 ± 0,1		
	Anchors with sleeve made of plastic and expansion nail made of either plastic or metal, for insulation material with different lengths in relation with thickness of insulation board:								
	Fasteners	ETA n.º	Diameter (mm		Stiffness (kN/mm ²)	Minimum tension load (N)*			
	TASSELLO H1	11/0192	60		0,6	150			
	TASSELLO H2	15/0740	60		0,0	150			
Fasteners							Pomoin	under the	
1 031611613	TASSELLO H3 TASSELLO CT 2G							acturer	
	*These values show Other higher values a	the minimum pull or	ut of the fast	ener in th				nsibility	
		e used with CE mark	king (EAD 33	0196-00-0	0604, they have to ha	ave a plate dimension			
	An additional washer			ne used					
Ancillary elements	Aluminium and PVC		Ŭ		ls, expansion joint a	nd its fixing devices	1		

⁽¹⁾ The technical documentation of this European Technical Assessment is deposited at the *Instituto de Ciencias de la Construcción Eduardo Torroja* (IETcc) and, as far as relevant for the tasks of the notified bodies involved in the attestation of conformity procedure, is handed over to the notified bodies.

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

2.1 Intended use(s)

This ETICS is intended to be used as external thermal insulation for building walls. The walls are made of masonry (bricks, 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 is applied satisfactory thermal insulation.

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

This 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.

This ETA covers application of ETICS on supports of masonry or concrete.

2.2 Relevant general conditions for the use of the kit

The provisions made in this European Technical Assessment are based on an assumed working life of 25 years from installation in the works, according to EAD 040083-00-0404, provided that the conditions lay down for the installation, packaging, transport and storage as well as appropriate use, maintenance and repair are met. In this respect.

The indications given on the working life cannot be interpreted as a guarantee given neither by the product manufacturer nor by EOTA nor by the Technical Assessment Body issuing this ETA, but are regarded only as a means for choosing the right product in relation to the expected economically reasonable working life of the works.

Installation. The ETICS is installed on site. It is the responsibility of the manufacturer to guarantee that the information about design and installation of this ETICS is effectively communicated to the concerned people. This information can be given using reproductions of the respective parts of this ETA. Besides, all the data concerning the execution shall be clearly indicated on the packaging and/or the enclosed instruction sheets using one or several illustrations.

The wall on which the ETICS is applied shall be sufficiently stable and airtight. Its stiffness shall be large enough to ensure that ETICS is not subjected to deformations, which could lead to damage.

<u>Design</u>. In any case, the user shall comply with the national regulations and particularly concerning fires and wind load resistance. Only the components described in clause 1 with characteristics according to clause 3 of this ETA can be used for this ETICS.

The works including the details (connection, joint,.) shall be designed in order to avoid water penetration behind the system. The minimal surface area for the bonded ETICS, and the method of bonding shall comply with the characteristics of the ETICS as well as the national regulations. In any case, the minimal surface shall be at least 40 % for EPS and 80 % for MW. Besides, the numbers of fasteners used with MW must comply with the National requirements⁽²⁾.

<u>Execution</u>. The recognition and preparation of the substrate as well as the generalities about the execution of the ETICS shall be carried out in compliance with the manufacturer prescriptions and the corresponding national regulations.

The particularities in execution linked to the method of bonding and the application of the rendering system shall be handled in accordance with manufacturer prescriptions. In particular, it is suitable to comply with the quantities of rendering applied, the thickness regularity and the drying periods between layers.

⁽²⁾ The value of the pull through to calculate the numbers of fasteners will be the minor value between the average value of pull through fastener-MW (defined in this ETA) and the average value pull out of the fastener-support (defined in its ETA).

Use, maintenance and repair of the works. It is accepted that the finishing coats shall normally be maintained in order to fully preserve the system's performance. Maintenance will include at least:

- The repairing of localised damaged areas due to accidents
- The application of various products or paints, possibly after washing or ad hoc preparation.

Necessary repairs should be done rapidly. It is important to be able to carry out maintenance as far as possible using readily available products and equipment, without spoiling appearance.

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 Basic Work Requirements (BWR) were carried out in compliance with EAD 040083-00-0404, The characteristics of each system shall correspond to the respective values laid down in following tables of this ETA, checked by IETcc.

Methods of verification and of assessing and judging are listed afterwards.

3.1 Safety in case of fire (BWR 2)

3

Basic requirement for construction works 2: Safety in case of fire							
Essential characteristic	Relevant clause in EAD	Performance					
Reaction to fire of ETICS							
System composition							
Adhesive + Insulation + Base coat	Finishing coat	2.2.1.1	Euroclass				
KLEBOCEM + MW (thickness 160 mm) + KLEBOCEM	Any		A2-s1,d0				
KLEBOCEM+ EPS (thickness 200 mm) + KLEBOCEM	Any		B-s1, d0				
ADEFIX 12 + MW (thickness 160 mm) + ADEFIX 12		A2-s1,d0					
ADEFIX 12 + EPS (thickness 200 mm) + ADEFIX 12	Any		B-s1, d0				
Reaction to fire of thermal insulation mate	2.2.1.2	EPS : E MW : A1 / QPCS:0,9 MJ/kg					
Facade fire performance		2.2.2	NPA				
Propensity to undergo continuous smouldering	of ETICS	2.2.3	NPA				

3.2 Hygiene, health and environment (BWR 3)

Basic requirement for construction works 3: Hygiene, health, and the environment							
Essential characteristic Relevant clause in EAD Performance							
Content, emission and/or release of dangerous substances. Leachable substances	2.2.4	NPA. The leachable substances are not determined in accordance with this EAD					
		Rendering	After 1h	After 24h			
		KLEBOCEM without rendering	0,05	0,48			
		ADEFIX 12 without rendering	0,2	0,49			
Water absorption of the base coat and rendering system		RIVATONE PLUS G12	0,05	0,23			
		RIVATONE PLUS G15	0,04	0,24			
		RIVATONE IDROSILICONICO PLUS G 10-12	0,04	0,25			
	2251	RIVATONE IDROSILICONICO PLUS G15	0,06	0,35			
	2.2.5.1	RIVATONE PLUS TRV G10	0,06	0,25			
(kg/m²)		RIVATONE PLUS TRV G12	0,08	0,3			
		RIVATONE PLUS TRV G15	0,08	0,3			
		INTONACHINO IDROSILICONICO	0,05	0,24			
		PLATOTEX (METRO TEX)	0,02	0,1			
		METROPOLIS FACTOR EXT	0,02	0,1			
		SOUL CEMENT EXT	0,02	0,1			

Essential characteristic	Relevant clause in EAD	Perfo	rmance					
Water absorption of the thermal insulation	2.2.5. 2	IVAS PANEL EPS : EN 1609: \leq 1 kg/m ² IVAS MINERAL WOOL PANEL and ISOVER CLIMA 34:EN 1609: \leq 1 kg/m ²						
Water-tightness of the ETICS Hygrothermal behaviour	2.2.6	The ETICS is assessed resistant to hyg without defects and without pass throug	rothermal cy h of water	cles on a rig, p	assed the test			
Water tightness of the ETICS: Freeze-thaw behaviour	2.2.7	The water absorption of the base coat a kg/m ² after 24 hours and so the system resistant without any further testing.						
		Rendering	Category	ARMATEX C1	ARMATEX C1 "R"			
		MW / EPS + KEBLOCEM + RIVATONE PLUS G12 RIVATONE PLUS G15 RIVATONE IDROSILICONICO PLUS G 12			m			
Ċ	0	RIVATONE IDROSILICONICO PLUS G15 RIVATONE PLUS TRV G10 RIVATONE PLUS TRV G12 RIVATONE PLUS TRV G15 INTONACHINO IDROSILICONICO METRO TEX		3J: 2.0 10J: 3.0	3J: 2.0 10J: 3.0			
Impact resistance (Category, diameter)	2.2.8	FACTOR EXT FACTOR EXT + SOUL CEMENT EXT						
(eategory, alameter)		MW / EPS + ADEFIX 12 + RIVATONE PLUS G12		C	m			
		RIVATONE PLUS G15 RIVATONE IDROSILICONICO PLUS G 12 RIVATONE IDROSILICONICO PLUS G15 RIVATONE PLUS TRV G10 RIVATONE PLUS TRV G12 RIVATONE PLUS TRV G15 INTONACHINO IDROSILICONICO METRO TEX FACTOR EXT FACTOR EXT FACTOR EXT + SOUL CEMENT EXT	1	3J: 2.0 10J: 3.0	3J: 2.0 10J: 3.0			
		Base coat + finishing coat	KEBLOCE M	ADEFIX 12	Required			
		Without finishing coat	0,1	0,1				
		RIVATONE PLUS G12	0,4					
		RIVATONE PLUS G15	0,4	0,4				
Water vapour		RIVATONE IDROSILICONICO PLUS G12 RIVATONE IDROSILICONICO PLUS G15	0,2	0,4				
permeability of the endering system	2.2.9.1	RIVATONE IDROSILICONICO PLOS G15 RIVATONE PLUS TRV G10	0,2	0,4				
Sd, m)		RIVATONE PLUS TRV G10	0,8		< 1			
(C u, III)		RIVATONE PLUS TRV G15	0,8	0,25				
		INTONACHINO IDROSILICONICO		0,25				
		METRO TEX	0,7	0,6				
		FACTOR EXT	0,9	0,9				
		FACTOR EXT + SOUL CEMENT EXT	0,9	0,8	. +			
Water vapour		IVAS PANEL EPS : EN 12086: μ = 40						
permeability of the	2.2.9.2	IVAS MINERAL WOOL PANEL and ISC	OVER CLIMA	A 34:				
thermal insulation		EN 12086: μ = 1						

3.3 Safety and accessibility in use (BWR 4)

Essential characteristic	Relevant clause in EAD			Performance	
Bond strength between base coat and insulation	2.2.11.1	Thermal insulation EPS	Initial state 90 /100 ≥ 80	After hydrothermal cycles (rigs) 90 / 100 ≥ 80	After free/thaw cycles samples) 90 /100 ≥ 80
product.(minimum / mean value)(kPa)		MW	7 /10	7 /10	7 /10
Bond strength between adhesive		Base Coat	Initial state	Immersion 48 h and 2 h drying	Immersion 48 h and 7 d drying
and substrate (minimum /mean value)	2.2.11.2	KEBLOCEM ADEFIX 12	600 / 800 ≥ 250 1600 / 1800 ≥ 250	400 / 500 ≥ 80 900 / 1000 ≥ 80	1000 / 1100 ≥ 250 1600 / 1800 ≥ 250
(kPa) Bond strength		Thermal	Initial state	Immersion 48 h	Immersion 48 h
between adhesive and insulation	2.2.11.3	insulation EPS:	90 / 120 ≥ 80	and 2 h drying 90 / 120 ≥ 030	and 7 d drying 90 / 120 ≥ 80
(minimum /mean value) (kPa)		MW	8/ 10	7 /10	7 /10
Fixing strength (transverse displacement test)	2.2.12		t required since mecha ided area exceeds 20	anically fixed ETICS with su %.	pplementary adhesive,
Pull-through of the fasteners. (minimum /	2.2.13.1	(6	dle ISOVER CLIMA 34 cm thickness) itional 90 mm washer	(6 cm tl	/ARTWALL S C1 hickness) al 90 mm washer
mean value) (kN/fastener)	2.2.10.1	Dry conditi 0,2 / 0.3	on Wet conditio		Wet condition 0,4 / 0.5
Tensile perpendicular to the faces of thermal insulation Shear strength / shear modulus of	2.2.14.1	IVAS PANEL IVAS MINERA	EPS : EN 1607: TR =		
	2.2.10	IVAS PANEL	EPS: EN 12090: Shea	ar strength (kPa): 20; Shear	modulus (N/mm²):1
elasticity th.Insulation Rendering strip tensile test: base coat	2.2.15	KLEBOCEM.	Warp: nº fissures:9, w	idth (mm): 0,12	modulus (N/mm²):1 ADEFIX 12: NPA
		KLEBOCEM.	Warp: nº fissures:9, w Welf: nº fissures:9, w Rendering	idth (mm): 0,12	
Rendering strip tensile test: base coat Bond strength after ageing		KLEBOCEM. MW / E RIVA RIVATONE IDI RIVATONE IDI RIVATO RIVATO RIVATO RIVATO RIVATO RIVATO SOL	Warp: n ^o fissures:9, w Welf: n ^o fissures:9, w Rendering PS + KEBLOCEM + TONE PLUS G12 TONE PLUS G15 ROSILICONICO PLUS G ROSILICONICO PLUS G NE PLUS TRV G10 DNE PLUS TRV G12 DNE PLUS TRV G15 TEX (METRO TEX) POLIS FACTOR EXT	idth (mm): 0,12 idth (mm): 0,15 MW 12 15 6 / 10 Failure: Rupture in the insulation	ADEFIX 12: NPA EPS 80 / 80 Failure: Rupture in the insulation
Rendering strip tensile test: base coat Bond strength after	2.2.17	KLEBOCEM. MW / E RIVA RIVA RIVATONE IDI RIVATONE IDI RIVATO RIVATO RIVATO RIVATO METROI SOL MW / E RIVA RIVA RIVATONE IDI RIVATO RIVA	Warp: nº fissures:9, w Welf: nº fissures:9, w Rendering PS + KEBLOCEM + TONE PLUS G12 TONE PLUS G15 ROSILICONICO PLUS G ROSILICONICO PLUS G INE PLUS TRV G10 INE PLUS TRV G12 INE PLUS TRV G15 TEX (METRO TEX) POLIS FACTOR EXT	idth (mm): 0,12 idth (mm): 0,15 MW 12 15 6 / 10 Failure: Rupture in the insulation MW 12 15 8 /10 Failure: Rupture in the insulation	ADEFIX 12: NPA EPS 80 / 80 Failure: Rupture in the insulation EPS 80 / 100

Basic requirement for construction works 6: Energy economy and heat retention				
Essential clause Performance in EAD		Performance		
Thermal resistance thermal transmittance	2.2.23.1	IVAS PANEL EPS $\lambda_D = 0,035$ W/mK IVAS MINERAL WOOL PANEL and ISOVER CLIMA 34: $\lambda_D = 0,034$ W/mK		

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 the European Commission⁽³⁾ amended by 2001/596/EC⁽⁴⁾, a system 2+ of assessment and verification of constancy of performance (see EC delegated regulation (EU) No 568/2014 amending Annex V to Regulation (EU) N° 305/2011) applies.

Product	Intended uses	Level or Classes	System
TERMOK8® IVAS	External Thermal Insulation Composite System with rendering for use on building walls	Any	2+

This system of attestation of conformity +2 is defined as follows:

<u>Tasks for the manufacturer</u>. Initial type-testing of the product, Factory production control and Testing of samples taken at the factory in accordance with a prescribed test plan.

Tasks for the notified body: Certification of factory production control on the basis of:

- Initial inspection of factory and of factory production control.
 - Continuous surveillance (annual), assessment and assessment of factory production control.

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

Technical details necessary for the implementation of the AVCP system are laid down in the control plan which is deposited at IETcc⁽⁵.

5.1 Tasks of the manufacturer

Factory production control. The manufacturer shall exercise permanent internal control of production. 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.

The factory production control shall be in accordance with the Control Plan. The results of factory production control shall be recorded and evaluated in accordance with the provisions of the Control Plan.

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 components compliance with the ETA.

⁽³⁾ Official Journal of the European Communities L229/14 of 20.08.1997

⁽⁴⁾ Official Journal of the European Communities L209/33 of 02.08.2001

⁽⁵⁾ The Control Plan is a confidential part of the ETA and only handed over to the notified certification body involved in the assessment and verification of constancy of performance.

Initial type-testing of the product. The initial type-testing have been conducted by the IETcc to issued this ETA in accordance with the EAD 040083-00-0404 "External thermal insulation composite systems (ETICS) with renderings". The verifications underlying this ETA have been furnished on samples from the current production.

Other tasks of 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 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.

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

5.2 Tasks of notified bodies.

Initial inspection 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 clause 2 of this ETA.

Continuous surveillance, assessment and assessment of factory production control, in accordance with the provisions laid down in the control plan, at least one per year.

The notified body shall retain the essential points of its actions referred to above and state the results obtained and conclusions drawn in a written report. The notified certification body involved by the manufacturer shall issue an EC Certificate of factory production control stating the conformity of the provisions of this ETA.

In cases where the provisions of the ETA and its control plan are no longer fulfilled the notified certification body shall withdraw the certificate of conformity and inform to IETcc without delay.

Issued in Madrid on 4 November 2022

Bv

Director on behalf of Instituto de Ciencias de la Construcción Eduardo Torroja (IETcc – CSIC)



