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European Technical Assessment

ETA 18/ 0946
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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	**HYPERDESMO-COLD CURE POLYUREA 2K**
Product family to which the construction product belongs	Liquid Applied Roof Waterproofing Kit, based on polyurethane-polyurea
Manufacturer	**ALCHIMICA, S.A** 7 Lampsakou st. 115 28 Athens - Greece
Manufacturing plant(s)	69 km of National road Athens-Lamia, Vrisses Area (on service Rd. Schimatariou-Ritsonas) GR-34100
This European Technical Assessment contains	5 pages + Annex 1. Contain confidential information and is not included in the ETA when that assessment is publicly available
This European Technical Assessment is issued in accordance with regulation (EU) No 305/2011, on the basis of	EAD 030350-00-0402 Liquid applied roof waterproofing kits
This version replaces	ETA 18/0946 issued on 20/02/2019

SPECIFIC PARTS

1 Technical description of the product

The Liquid Applied Roof Waterproofing Kit (LARWK) "HYPERDESMO-COLD CURE POLYUREA 2K**"** is designed and installed in accordance with the manufacturer design and installation instructions, deposited at the IETcc. This LARWK comprises the following components, which are factory produced by the manufacturer or a supplier.

Components	Trade name	Consume
Primer (optional)	AQUADUR	≥ 150 g/m^2
Waterproofing membrane	HYPERDESMO-COLD CURE POLYUREA 2K	≥1.5 kg/m^2
Finish layer: Protection UV	HYPERDESMO-Ady	≥ 150 g/m^2
Internal layer: geo-textile (optional)	Geotextile Alchimica	50 to 150 g/m^2

HYPERDESMO-COLD CURE POLYUREA 2K is a liquid applied roof waterproofing based on hybrid polyurea, manufactured by the company ALCHIMICA, S.A, consists of a polyurethane-polyurea resins, bi-component, elastomeric without reinforcing mesh (only in singular point: evacuations, upstands…) internal layer; which once polymerised conforms an elastic lining, in form of a layer completely bonded to the support (concrete, mortar, ceramic). The minimum layer thickness of the assembled membrane has to be 1.2 mm.

HYPDERSMO-Ady. External protection, Aliphatic Polyurethane resins for a P3 category for user loads and working life of 10 years.

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

2.1 Intended use(s)

The intended use of this System is the waterproofing of roof against the water, as in liquid as vapour form. On roofs with any slope between 0 and >30 % (S1-S4), for any type of categorisation of user load between P1 and P3 , resists the effects of low surface temperatures of –20 ºC (TL3), high temperatures of 90 ºC (TH4) and under climatic zone of use severe (S).

This LARWK fulfils the Basic works Requirements n.º 2 (Safety in case of fire), n.º 3 (Hygiene, health and the environment) and n.º 4 (Safety in use) of the European Regulation 305/11.

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

This LARWK can be used on new or existing (retrofit) roofs. It can also be used on horizontal surfaces (singular details).

2.2 Relevant general conditions for the use of the kit

The provisions made in this European Technical Approval (ETA) are based on an assumed intended working life of the system of 25 years (W3) (HYPERDESMO-COLD CURE POLYUREA 2K) and 10 years (W2) (HYPERDESMO-COLD CURE POLYUREA 2K + Hyperdesmo-Ady) from installation in the works, according to EAD 030350-00-0402, 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 (W3/W2) 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 Kit is installed on site. It is the responsibility of the manufacturer to guarantee that the information about design and installation of this product is effectively communicated to the concerned people. This information can be given using reproductions of the respective parts of this ETA, all the data concerning the execution shall be clearly indicated on the packaging and/or the enclosed instruction sheets using one or several illustrations.

Design. In the MTD the manufacture gives information on the quantities consumed and the processing, which shall lead to a thickness of the roof waterproofing ≥ 1.2 mm.

Execution. Particularly, it is recommended to consider:

- The kit installation has to be carried out by qualified installers
- It can only be used the components of the kit indicated in this ETA,
- the supervision of the amount of material used (kg/m^2) and the visual control to check that each coat covers totally the one below, can ensure the minimum thickness of the kits,
- inspection of the roof surface (cleanliness and correct preparation) before applying the roof waterproofing,
- The recommended temperature of the product to be assembled will be between 5 ºC and 40 ºC and it will be not admitted support temperatures upper to 45 ºC. In other conditions it will need to follow the manufacturer's instructions.

Before, the installation of HYPERDESMO-COLD CURE POLYUREA 2K, it is recommended to read its security card.

Use, maintenance and repair of the works. In those roofs with deteriorated areas of the waterproof layers, they will be repaired removing all the deteriorated layers. Afterwards, the new product will be assembled following the installation instruction and the new coats must overlap, at least 3 cm, to the coat no deteriorated. Further installation details are laid down in the MTD place at IETcc.

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 "HYPERDESMO-COLD PUR POLYUREA 2K" according to the Basic Work Requirements (BWR) were carried out in compliance with the EAD 030350-00-0402. 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)

Basic requirement for construction works 2: Safety in case of fire		
Essential characteristic	**Relevant clause in EAD**	**Performance**
External fire performance of roofs	2.2.1	Broof (t1): pitches < 20° and support A1-A2 Broof (t4): pitches < 10° and support A1-A2 NPA. For support with no A1-A2 fire classification.
Reaction to fire	2.2.2	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	2.2.3	NPA	
Resistance to water vapour	2.2.4	μ = 1100 (thickness 1,2 mm)	
Watertightness	2.2.5	Watertight	
Resistance to wind loads	2.2.6	Support + Pirmer + membrane	≥ 50 kPa (kPa)
		Concrete	3196
		Ceramic	1683
		Fibre-cement	937
Resistance to mechanical damage (perforation)	2.2.7	**P1-P3 on concrete /steel support**	
	2.2.7.1	Resistance to dynamic indentation (23 ºC) without UV protection	
		Concrete	I3 (10 mm)
		Steel	I3 (10 mm)
	2.2.7.2	Resistance to static indentation (23 ºC) without UV protection	
		Concrete	L4 (250 N)
		Steel	L4 (250 N)

Resistance to fatigue movement	2.2.8	W3 1000 cycles (-10 ºC) without UV protection Pass		
Resistance to the effects of low and high surface temperatures	2.2.9	**Low temperatures:TL3** **High temperatures: TH4**		
	2.2.9.1	R. Dynamic Indentation at -20 ºC	Steel	I3 (10 mm)
	2.2.9.3	R. Static indentation at 90 ºC	Steel	L1 (70 N)
			Steel + HYPERDESMO-Adv	L3 (200 N)
		R. Static indentation at 80 ºC	Steel	L2 (150 N)
		R. Static indentation at 60 ºC	Steel	L4 (250 N)
Resistance to ageing media (heat and water):	2.2.10.1	**Resistance to heat ageing W3, S (severe)** (100 and 200 days at 80 ºC) without UV protection		
		R. Dynamic Indentation -20 ºC	Steel	I3 (10 mm)
		Fatigue movement (50 cycles) at -10 ºC: Pass		
		Tensile properties (MPa / %)	Initial: 9 / 448	
			Ageing 10 years (W2): 3,6 / 170	
			Ageing 25 years (W5): 4 / 205	
	2.2.10.3	**Resistance to water ageing W3, S1-S2, P1- P4** (60 -180 days at 60 ºC) without UV protection		
		R. Static Indentation 30 d	90 ºC (with Hyperdesmo-Adv)	Steel L3 (200 N)
			80 ºC	Steel L1 (70 N)
		R. Static indentation 60 d	90 ºC	Steel L1 (70 N)
			80 ºC	Steel L1 (70 N)
			60 ºC	Steel L1 (70 N)
		R. Static Indentation 90 d	30 ºC	Steel L1 (70 N)
		R. Static indentation 180 d	30 ºC	Steel L1 (70 N)
		Resistance to delamination (kPa)	Concrete 60d::2500 kPa	
			Concrete 180d: 1800 kPa	
Resistance to UV radiation in the presence of moisture	2.2.10.2	**W3, S (severe), 2000/5000 hours.** With UV protection		
		Resistance to dynamic Indentation -20 ºC	Concrete	I3 (10 mm)
			Steel	I3 (10 mm)
		Tensile properties (MPa / %)	Initial: 9 / 448	
			Ageing 2000h: 5,5 / 670	
			Ageing 5000h: 8 / 500	
Resistance to plant roots	2.2.11	NPA		
Effects of variations in kit components and site practices	2.2.12	Tensile properties (MPa / %) 5 ºC	8,8 / 452	
		Tensile properties (MPa / %) 40 ºC	7,5 / 481	
		R. Dynamic Indentation (23 ºC) at -10 ºC	Steel: I4 (6 mm)	
Effects of the days joint	2.2.13	1500 kPa		

3.3 Safety and accessibility in use (BWR 4)

Basic requirement for construction works 4: Safety and accessibility in use		
Essential characteristic	**Relevant clause in EAD**	**Performance**
Slipperiness	2.2.14	NPA

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

4.1 System of assessment and verification of constancy performance.

According to the decision 98/599/EC of October 1998, Official Journal of the European Communities N° L 287, 24.10.1998) of the European Commission, system 3 of assessment and verification of constancy of performance (see EC delegated regulation (EU) No 568/2014 amending Annex V to Regulation (EU) Nº 305/2011) applies.

Product	Intended uses	Level or Classes	System
HYPERDESMO-COLD CURE POLYUREA 2K	Liquid Applied Roof Waterproofing Kit	Any	3

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

5.1 Task 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 material 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.

Other tasks of the manufacturer. 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. The notified body shall perform

Initial type-testing of the product. For type testing, the results of the tests performed as part of the assessment for the European Technical Assessment shall be used unless there are changes in the production line or plant. In such cases, the necessary type testing has to be agreed between IETcc and the notified body.

The initial type-testing have been conducted by the IETcc to issue this ETA in accordance with the EAD 030350-00-0402 “Liquid applied roof waterproofing kits”. The verifications underlying this ETA have been furnished on samples from the current production.

Issued in Madrid on 5 of March 2024

By

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