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European Technical Assessment ETA 24/ 1149 of 22/ 11/ 2024

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	**BITULIFE LIQUID SYSTEM**
Product family to which the construction product belongs	Liquid Applied Roof Waterproofing Kit, based on polyurethane
Manufacturer	**BITULIFE** BP 10 Ahl Loghlam RN 9 Aïn Harrpuda Titi Mellil 20640. Casablanca. Marruecos
Manufacturing plant(s)	Plant 1.
This European Technical Assessment contains	5 pages + Annex 1 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	EAD 030350-00-0402 Liquid applied roof waterproofing kits

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

Specific parts

1 Technical description of the product

The Liquid Applied Roof Waterproofing Kit (LARWK) "BITULIFE LIQUID SYSTEM" 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	Consumption (kg/m^2)	Thickness (mm)
PRIMAX	For concrete	PRIMAX PU-1050 (polyurethane 100 % solids)	0,250 - 0,300	0,25
		PRIMAX EP-1010 (epoxy 100 % solids)	≥ 0.250 kg/m^2	0,17
		PRIMAX EP-1020 (epoxy 100 % solids)	≥ 0.150 kg/m^2	0,14
		PRIMAX WET (epoxy 100 % solids)	≥ 0.450 kg/m^2	0,30
	For steel	PRIMAX EPw-1070 (epoxy water-borne)	≥ 0.200 kg/m^2	0,12
	For ceramic	PRIMAX EP-1040 (epoxy 100 % solids)	0,15 - 0,200	0,19
Waterproofing membrane		POLYFLEX	≥ 1.9 kg/m^2.	1.2
Finish layer: UV Protection		POLYTOP 2C	≥ 250 g/m^2	---
Film Slipperiness		TOPGRIP	8 % weight mixed POLYTOP 2C	----

BITULIFE POLYFLEX is a one component liquid applied roof waterproofing based on polyurethane consists of a polyurethane resins, mono-component, elastomeric without reinforcing mesh (only in singular point: evacuations, upstands…) internal layer; which once polymerized conforms an elastic lining, in form of a layer completely bonded to the support (steel, concrete, mortar, ceramic, foam polyurethane (PU) and other waterproofing membranes like PVC, EPDM and bituminous). The minimum layer thickness of the assembled membrane has to be 1,2 mm.

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 P4[1] , 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 vertical surfaces (singular details).

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 EAD030350-00-0402, 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 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.

[1] Concrete/Steel: P4:TH2 // P3:TH4
PU: P1: TH2

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 system 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.

Design. The fitness of the respective use for the levels of performance of this System stated in Annex 1 complies with the Spanish national requirements. 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 carried out by qualified installers
- it can only be used the components of the kit indicated in this ETA,
- supervision of the amount of material used (kg/m^2) and the control visual 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,
- 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 BITULIFE LIQUID SYSTEM, 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 carrying out some light grinding to open the pore of the deteriorated layers. Afterwards, the new product will be assembled following the installation instruction and the new coats must overlap, at least 15 - 20 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 "BITULIFE LIQUID SYSTEM" according to the Basic Work Requirements (BWR) were carried out in compliance with 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	2.2.1	Broof (t1): pitches < 20° and support A1-A2 Broof (t4): pitches < 10° and support A1-A2
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. The leachable substances are not determined in accordance with this EAD		
Resistance to water vapour	2.2.4	μ = 2500		
Watertightness	2.2.5	Watertight		
Resistance to wind loads	2.2.6	Support + PRIMAX + membrane		> 50 kPa
		Concrete	PRIMAX PU-1050	1.9
			PRIMAX EP-1010	1.75
			PRIMAX EP-1020	2.5
			PRIMAX WET	1.6
		Steel	PRIMAX EP-1040	2.3
		Ceramic	PRIMAX EPw-1070	1.6
		PU		0.2

<table>
<tr><td rowspan="11">Resistance to mechanical damage (perforation)</td><td rowspan="4">2.2.7.1</td><td colspan="5">Resistance to dynamic indentation (23ºC)</td></tr>
<tr><td colspan="2">Support</td><td colspan="2">Indentor (mm)</td><td>Resistance level</td></tr>
<tr><td colspan="2">Steel</td><td colspan="2">6</td><td>I4</td></tr>
<tr><td colspan="2">PU</td><td colspan="2">20</td><td>I2</td></tr>
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<tr><td colspan="2">Support</td><td colspan="2">Load (N)</td><td>Resistance Level</td></tr>
<tr><td colspan="2">Steel</td><td colspan="2">250</td><td>L4</td></tr>
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<tr><td>Resistance to fatigue movement (1000 cycles) (-10ºC)</td><td>2.2.8</td><td colspan="5">Pass</td></tr>
<tr><td rowspan="8">Resistance to the effects of low and high surface temperatures</td><td>2.2.9</td><td colspan="5">Low temperatures: TL3
High temperatures: TH4</td></tr>
<tr><td rowspan="4">2.2.9.1</td><td colspan="5">Resistance to the effects of low surface temperatures (-20ºC)</td></tr>
<tr><td colspan="2">Support</td><td colspan="2">Indentor (mm)</td><td>Resistance level</td></tr>
<tr><td colspan="2">Steel</td><td colspan="2">6</td><td>I4</td></tr>
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<tr><td rowspan="5">2.2.9.3</td><td colspan="5">Resistance to high temperatures effects</td></tr>
<tr><td>Temperature (º C)</td><td>Support</td><td>Load (N)</td><td>Resistance Level</td></tr>
<tr><td rowspan="2">60</td><td>Steel</td><td>250</td><td>L4</td></tr>
<tr><td>PU</td><td>70</td><td>L1</td></tr>
<tr><td rowspan="2">90</td><td>Steel</td><td>250</td><td>L4</td></tr>
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(200 days at 80 ºC)</td></tr>
<tr><td rowspan="2">R. Dynamic Indentation -20 ºC</td><td>Support</td><td>Indentor (mm)</td><td>Resistance Level</td></tr>
<tr><td>Steel</td><td>6</td><td>I4</td></tr>
<tr><td>PU</td><td>30</td><td>I1</td></tr>
<tr><td colspan="5">Fatigue movement (50 cycles) at -10 ºC: Pass</td></tr>
<tr><td rowspan="2">Tensile Properties (MPa / %)</td><td colspan="2">Initial</td><td colspan="2">5 / 418</td></tr>
<tr><td colspan="2">Ageing 25 years (W3)</td><td colspan="2">6 / 115</td></tr>
<tr><td rowspan="7">2.2.10.3</td><td colspan="5">Resistance to water ageing W3, P3-P4
(60 – 180 days at 60 ºC)</td></tr>
<tr><td rowspan="2">R. Static Indentation 60 d</td><td rowspan="2">60 ºC</td><td>Steel</td><td>L4 (250 N)</td></tr>
<tr><td>PU</td><td>L1 (70 N)</td></tr>
<tr><td rowspan="2">80 – 90 ºC</td><td>Steel</td><td>L4 (250 N)</td></tr>
<tr><td>PU</td><td>----------</td></tr>
<tr><td rowspan="3">R. Static Indentation 180 d</td><td rowspan="2">60 ºC</td><td>Steel</td><td>L4 (250 N)</td></tr>
<tr><td>PU</td><td>----------</td></tr>
<tr><td rowspan="2">80 – 90 ºC</td><td>Steel</td><td>L3 – L2 200-150 N)</td></tr>
<tr><td>PU</td><td>----------</td></tr>
<tr><td>Resistance to delamination (kPa)</td><td colspan="4">Concrete PRIMAX PU-1050: 1200</td></tr>
<tr><td rowspan="5">Resistance UV-radiation in the presence of moisture (5 000 hours)</td><td rowspan="5">2.2.10.2</td><td colspan="5">W3, S (Severe) 5 000 hours</td></tr>
<tr><td rowspan="3">R. Dynamic Indentation -10 ºC</td><td>Support</td><td>Indentor (mm)</td><td>Resistance Level</td></tr>
<tr><td>Steel</td><td>6</td><td>I4</td></tr>
<tr><td>PU</td><td>30</td><td>I1</td></tr>
<tr><td rowspan="2">Tensile Properties (MPa / %)</td><td colspan="2">No heat ageing</td><td colspan="2">5 / 418</td></tr>
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<tr><td>Resistance to plant root</td><td>2.2.11</td><td colspan="5">No penetration of roofs</td></tr>
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</table>

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 The kit with PRIMAX PU-1050 + POLYFLEX + POLYTOP 2C + TOPGRIP (8%), show a Rd= 50

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 of 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[2], 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
BITULIFE LIQUID SYSTEM	Liquid Applied Roof Waterproofing Kit	Any	3

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[3].

Issued in Madrid on 22 november 2024

By

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

[2] Published in the Official Journal of the European Union (OJEU) L 262, 14/10/2003 P. 0034 - 0036.
See www.new.eur-lex.europa.eu/oj/direct-access.html
[3] 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.