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INSTITUTO DE CIENCIAS DE LA CONSTRUCCIÓN EDUARDO TORROJA
C/ Serrano Galvache, 4. 28033 Madrid (Spain)
Tel.: (+34) 91 302 0440 www.ietcc.csic.es
gestiondit@ietcc.csic.es dit.ietcc.csic.es

European Technical Assessment ETA 22/ 0380 of 01/ 06/ 2022

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	**MAXELASTIC POLY-H**
Product family to which the construction product belongs	Liquid Applied Roof Waterproofing Kit, based on polyurea
Manufacturer	**DRIZORO, S.A.U.** C/Primavera 50-52. PI. Las Monjas 28850 Torrejon de Ardoz (Madrid). Spain
Manufacturing plant(s)	Plant 1.
This European Technical Assessment contains	6 pages including 1 Annex which form an integral part of this assessment. Annex 2 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

Specific parts

1 Technical description of the product

The Liquid Applied Roof Waterproofing Kit (LARWK) “MAXELASTIC POLY-H” 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.

Components	Trade name	Consume
Primer over concrete	MAXURETHANE PRIMER polyurethane based	≥ 0.200 kg/m^2
Primer over concrete and thermal insulation	MAXEPOX PRIMER W epoxy water based	≥ 0.200 kg/m^2
Primer on metal	MAXEPOX -AC, epoxy	≥ 0.150 kg/m^2
Waterproofing membrane	MAXELASTIC POLY-H	≥ 1.5 kg/m^2.
Finish layer: Protection UV	MAXURETHANE 2C	≥ 0.250 kg/m^2
	MAXURETHANE -W	≥ 0.100 kg/m^2
Film Slipperiness	MAXFLOOR ANTISLIP	8 % weight mixed MAXURETHANE 2C or MAXURETHANE-W
	MAXFLOOR ANTISLIP-G	8 % weight mixed MAXURETHANE 2C or MAXURETHANE-W

MAXELASTIC POLY-H is a two components liquid applied roof waterproofing based on applied hybrid polyurea, consists of a hybrid polyurea resins, two components, elastomeric without reinforcing internal layer; which once polymerized conforms an elastic lining, in form of a layer completely bonded to the support (steel, concrete, mortar, ceramic, XPS) and other waterproofing membranes like PVC, EPDM and bituminous. The minimum layer thickness of the assembled membrane has to be 1,4 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. 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.

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 ≥ 1.4 mm.

Execution. Particularly, it is recommended to consider the:

- kit installation has to carried out by qualified installers and 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 MAXELASTIC POLY-H, 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 "MAXELASTIC POLY-H" 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	NPA
Reaction to fire	2.2.2	E

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	The leachable substances are not determined in accordance with this EAD
Resistance to water vapour	2.2.4	μ = 1700 (without any top coat)
Watertightness	2.2.5	Watertight
Resistance to wind loads	2.2.6	Delamination strength: Pass (> 50 kPa) Concrete; 3.0 MPa Steel. 3,6 MPa XPS: 0,09 (cohesive support) MPa
Resistance to dynamic indentation (23 ºC)	2.2.7.1	Support steel/concrete: I4 (6 mm) Support XPS: I4 (6 mm)
Resistance to static indentation (23 ºC)	2.2.7.2	Support steel/concrete: L4 (250 N) Support XPS: L4 (250 N)
Resistance to fatigue movement (1000 cycles) (-10ºC)	2.2.8	Pass

Resistance to the effects of low surface temperatures (-20ºC)	2.2.9.1	Dynamic Indentation Support steel/concrete: I4 (6 mm) Support XPS: I4 (6 mm)
Resistance to high temperatures effects	2.2.9.3	Static indentation Support steel/concrete: L4 (250 N) at 90 - 30 ºC Support XPS: L3 (200 N) at 90 - 30 ºC
Resistance to heat ageing (200 days)	2.2.10.1	Dynamic Indentation Support steel/concrete: I4 (6 mm) Support XPS: I4 (6 mm)
		Fatigue movement (50 cycles) at -10 ºC: Pass
		Tensile properties T. Strength (MPa) (initial / ageing): 22 / 19 Elongation (%) (initial / ageing): εt* 403 / 380
		*The value of ε is about a 50 % higher than εt
Resistance to UV radiation in the presence of moisture (5000 hours) With top coat 1C or 2C	2.2.10.2	Dynamic Indentation Support steel/concrete: I4 (6 mm) Support XPS: I4 (6 mm)
		Tensile properties T. Strength (MPa) (initial / ageing): 22 / 20 Elongation (%) (initial / ageing): εt 390 / 386
Resistance to water ageing (60 -180 days)	2.2.10.3	Static indentation *60 days* Support steel/concrete: L4 (250 N) at 90 - 30 ºC Support XPS: L3 (200 N) at 90 - 30 ºC *180 days* Support steel/concrete: L4 (250 N) at 90 ºC Support XPS: L3 (200 N) at 30 ºC L2 (150 N) at 60 ºC
		Delamination strength: Pass (> 50 kPa) Concrete: 3.3 – 2.7 MPa XPS: 0.09 – 0.09 MPa
Resistance to plant root	2.2.11	NPA (in process)
Effects of variations in kit components and site practices	2.2.12	Dynamic Indentation *5 ºC / 40 ºc* Support steel/concrete: I4 (6 mm) Support XPS: I4 (6 mm)
		Tensile properties *5 ºC / 40 ºC* T. Strength (MPa): 24 - 20 Elongation (%): εt 390 - 345
Effects of day joints	2.2.13	3.8 MPa

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 MAXURETHANE 2C + MAXFLOOR ANTISLIP (8 %), show a Rd= 50 (ENV 12633:2003 Annex A). The kit with MAXURETHANE 2C + MAXFLOOR ANTISLIP-G (8 %), show a Rd= 68 (ENV 12633:2003 Annex A)

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[1], system 3 of assessment and verification of constancy of performance (see EC delegated regulation (EU) No 568/2014 amending Annex V to Regulation (EU) N.º 305/2011) applies.

Product	Intended uses	Level or Classes	System
MAXELASTIC POLY-H	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[2].

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

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.

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 issued 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.

[1] 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
[2] 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.

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By

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

Annex 1.

Characteristics of the System "MAXELASTIC POLY-H"

Minimum thickness	1,4 mm
Water vapour diffusion resistant factor	$\mu \approx 1700$
Resistance to wind loads	> 50 kPa
Resistance to plant roots	NPA (test in process)
Statement on dangerous substances	Does not contain any
Resistance to slipperiness	Rd= 50 with MAXFLOOR ANTISLIP Rd= 68 with MAXFLOOR ANTISLIP-G

Performance levels according to the intended use

External fire performance	NPA
Fire reaction	E
Expected working life	W3
Climatic zone of use	S (Severe)
User loads	Concrete / steel: P4: TH4 - TH1 XPS: P3: TH4 - TH1
Roofs slopes	S1 – S4
Minimum surface temperatures	TL3 (- 20 ^{0}C)
Maximum surface temperatures	TH4 -TH1