CSIC
Consejo Superior de Investigaciones Científicas
INSTITUTO EDUARDO TORROJA

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

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

Member of EOTA
www.eota.eu

European Technical Assessment ETA 22/ 0640 of 12/ 09/ 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	**Owl Universal primer, Lava 20, Lava 20 top coat**
Product family to which the construction product belongs	Liquid Applied Roof Waterproofing Kit, based on polyurethane
Manufacturer	Owl Manufacturing, 135 Slaney Road, Glasnevin, D11AW6D. Ireland
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

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 Liquid Applied Roof Waterproofing Kit (LARWK) "LAVA 20 SYSTEM" is designed and installed in accordance with the manufacturer design and installation instructions. This LARWK comprises the following components and systems, which are produced by the manufacturer.

Components		Trade name	Consume
Primer over concrete metal and PU		LAVA PRIMER 20: epoxy water based	≥ 0.15 kg/m^2
System 1	Waterproofing membrane	LAVA 20 + 3 % (weight) LAVA 20 CATALYST (+ Optional: LAVA 20 TOP COAT)	≥ 2.3 kg/m^2
	Internal mesh	LAVA 20 GEOTEXTILE (POLYESTER) 60 g	--------
System 2	Waterproofing membrane	LAVA 20 + 3 % (weight) LAVA 20 CATALYST	≥ 1.8 kg/m^2
	Finish layer: UV Protection	LAVA 20 TOP COAT	≥ 0.15 kg/m^2

LAVA 20 is a mono component liquid applied roof waterproofing based on polyurethane, consisting of a polyurethane elastomeric membrane without or with internal mesh; which once polymerized conforms an elastic lining, in form of a layer completely bonded to the support (steel, concrete, mortar, ceramic, PU, PU) and other waterproofing membranes like PVC, EPDM and bituminous (for each kind of substrate application with suitable primer, following the indications of the manufacturer). LAVA 20 CATALYST is added to LAVA 20 (3 % weight) during application of thick layers as an accelerator for faster curing.

LAVA 20 TOP COAT is a mono component liquid applied roof waterproofing based on an aliphatic polyurethane, that is applied on LAVA 20 (once it is dry, following the manufacturer instructions).

The minimum layer thickness of the assembled system has to be 1.0 mm without internal mesh and 1.2 mm with internal mesh.

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 roofs. This LARWK fulfils the Basic works requirements nº 2 (Safety in case of fire), nº 3 (Hygiene, health and the environment) and nº 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 corresponding technical documents.

Design. The fitness for the respective use for the levels of performance of this System stated in Annex 1 complies with the EOTA requirements. In the MTD the manufacturer gives information on the quantities consumed and the processing, which shall lead to a thickness of the roof waterproofing ≥ 1.0 mm without internal mesh and ≥ 1.2 mm with internal mesh.

Execution. Particularly, it is recommended to consider the:

- kit installation that has to be carried out by qualified installers and only the components of the kit indicated in this ETA can be used,
- minimum thickness of the kits can be ensured by supervision of the amount of material used (kg/m^2) and visual control to check that each coating covers totally the one below,
- 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 35 ºC, substrate temperatures will not be more than 40 ºC and substrate humidity will not be more than 5%. In other conditions it will need to follow the manufacturer's instructions.

Before, the installation of the kit, it is recommended to read its safety data sheet.

Use, maintenance and repair of the works. Roofs with deteriorated areas of waterproofing layers will be repaired following the installation instructions of the manufacturer. Further installation details are laid down in the MTD placed 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 "LAVA 20 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	**System 1 without LAVA 20 TOP COAT***: B_{ROOF} (t4) for pitches ≤ 10º and non-combustibles support. For other types of supports and pitches: NPA* **System 2 with LAVA 20 TOP COAT***:* NPA
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 = 1620 (1.2 mm thckness)
Watertightness	2.2.5	Watertight
Resistance to wind loads	2.2.6	Delamination strength: Pass (> 50 kPa) Concrete; 3.8 MPa Steel. 2.1 MPa PU: 0.2 MPa (cohesive support)

Resistance to dynamic indentation (23 ºC)	2.2.7.1	Without / with internal mesh Support steel/concrete: I4 (6 mm) Support PU: I3 (10 mm)
Resistance to static indentation (23 ºC)	2.2.7.2	Without / with internal mesh Support steel/concrete: L4 (250 N) Support PU: L3 (200 N)
Resistance to fatigue movement (1000 cycles) (-10 ºC)	2.2.8	Pass
Resistance to the effects of low surface temperatures (-30 ºC)	2.2.9.1	Dynamic Indentation without / with internal mesh Support steel/concrete: I4 (6 mm) Support PU: I2 (20 mm)
Crack bridging capability (-30 ºC)	2.2.9.2	Pass
Resistance to high temperatures effects	2.2.9.3	Static indentation without / with internal mesh Support steel/concrete: L2 / L2 at 90-80 ºC L3 / L3 at 60 ºC L4 / L4 at 30 ºC Support PU: L1 / L2 at 90-80-60 ºC L2 / L3 at 30 ºC
Resistance to heat ageing (200 days)	2.2.10.1	Dynamic Indentation (-30 ºC) Without / with internal mesh Support steel/concrete: I4 / I4 Support PU: I1 / I2
		Fatigue movement (50 cycles) at -10 ºC: Pass
		Tensile properties without / with internal mesh T. Strength (MPa) (initial // ageing): 4.5 / 8 // 2.5 /6 Elongation (%) (initial // ageing): ε 367 /27 //135 /40
Resistance to UV radiation in the presence of moisture (5000 hours)	2.2.10.2	Dynamic Indentation without / with internal mesh Support steel/concrete: I3 / I4 Support PU: I2 / I3
		Tensile properties without internal mesh T. Strength (MPa) (initial // ageing): 4.5 / 7 Elongation (%) (initial // ageing): ε 367 / 880
Resistance to water ageing (60 days)	2.2.10.3	Static indentation, Without / with internal mesh *60 days* Support steel/concrete: L2 / L2 at 90-80 ºC L3 / L3 at 60 ºC L4 / L4 at 30 ºC Support PU: L1 / L2 at 90-80-60 ºC L2 / L3 at 30 ºC
		Delamination strength: Pass (> 50 kPa) Concrete: 2.4 MPa PU: 0.15 MPa (cohesive support)
Resistance to plant root	2.2.11	NPA
Effects of variations in kit components and site practices	2.2.12	Dynamic Indentation without internal mesh *5 ºC / 40 ºC* Support steel/concrete: I4 (6 mm) Support PU: I3 (10 mm)
		Tensile properties without internal mesh *5 ºC / 40 ºC* T. Strength (MPa): 5 / 5 Elongation (%): ε 438 / 361
Effects of day joints	2.2.13	3.4 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

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) Nº 305/2011) applies.

Product	Intended uses	Level or Classes	System
Owl Universal primer, Lava 20, Lava 20 top coat	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.

Issued in Madrid on 12 september 2022

By

Firmado por CASTILLO TALAVERA ANGEL - DNI 52507605P
Fecha: 06/10/2022 13:39:29 CEST

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

Annex 1.

Characteristics of the System "LAVA 20 SYSTEM"

Minimum thickness	Without internal mesh 1.0 mm With internal mesh 1.2 mm
Water vapour diffusion resistant factor	$\mu \approx 1620$
Resistance to wind loads	> 50 kPa
Resistance to plant roots	NPA
Statement on dangerous substances	NPA
Resistance to slipperiness	NPA

Performance levels according to the intended use

External fire performance	**System 1 without LAVA 20 TOP COAT***: B_{ROOF} (t4) for pitches ≤ 10º and non-combustibles support, for other types of supports and pitches: NPA* **System 2 with LAVA 20 TOP COAT***:* NPA	
Fire reaction	NPA	
Expected working life	W3	
Climatic zone of use	S (Severe)	
User loads	Support; Concrete / steel: P3: TH2 - TH1 P2: TH4 - TH3	Support; PU: Without mesh P1: TH4 - TH1 With mesh: P2: TH4 - TH1
Roofs slopes	S1 – S4	
Minimum surface temperatures	TL4 (- 30 ^{0}C)	
Maximum surface temperatures	TH4 – TH1	