

# British Board of Agrément

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



## European Technical Assessment ETA-15/0362

**Technical Assessment Body issuing the ETA and designated according to Article 29 of the Regulation (EU) No 305/2011:**

<b>Trade name</b>	Eliminator Two-Coat Bridge Deck Waterproofing Kit
<b>Holder of assessment:</b>	Stirling Lloyd Polychem Ltd
<b>Generic type and use of construction product:</b>	Bridge Deck Waterproofing
<b>Issued on:</b>	19 June 2015
<b>Manufacturing plant:</b>	Stirling Lloyd Polychem Ltd Gateway Gate Street Dukinfield Cheshire SK16 4RU
<b>This European Technical Assessment contains:</b>	6 pages plus one Annex which forms an integral part of the document
<b>Basis of ETA:</b>	This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of the Guideline for European Technical Approval (ETAG) of Liquid Applied Bridge Deck Waterproofing Kits 033, Version July 2010 used as the European Assessment Document (EAD).



Member of EOTA

## 1 Technical description of the product

The Eliminator Bridge Deck Waterproofing Kit is an acrylic-based system consisting of the following components:

- PAR1 Primer — a two-component acrylic based primer for use on concrete substrates prior to the application of the Eliminator Waterproofing membrane. The product can be applied by airless spray, brush or roller at a typical coverage rate of 0.25 kg·m<sup>-2</sup> but this will vary depending on the surface texture and porosity of the concrete substrate
- Eliminator Waterproofing Membrane — a three-component, spray-applied, acrylic resin-based waterproofing membrane applied in two coats to achieve a minimum dry film thickness of 2.0 mm
- Bond Coat 3 — a two-component bond coat for use over the Eliminator Waterproofing Membrane prior to the application of a mastic asphalt or coarse bituminous mixture (CBM) overlay. The product can be applied by airless spray or by using a notched squeegee
- Benzoyl peroxide-based hardener component — for use with the Eliminator Waterproofing Membrane, PAR1 Primer and Bond Coat 3.

The minimum application rates based on a two coat system (giving a minimum finished thickness of 2.0 mm) are given in the table below:

Component	Minimum coverage rate (Kg·m <sup>-2</sup> )
PAR1 Primer	0.25
Eliminator first coat	1.20
Eliminator second coat	1.20
Bond Coat 3	
Mastic asphalt overlay	0.15
CBM overlay	0.60

## 2 Specification of the intended use in accordance with the applicable EAD

The system is intended for use as a liquid-applied bridge deck waterproofing on concrete bridge decks. The kit has been specifically assessed for the following conditions of use:

- application to young concrete with high moisture content (7 days cure)
- application at a minimum substrate application temperature of -10°C
- application at a maximum substrate temperature of 38°C.

The provisions made in this European Technical Assessment are based on an assumed working life of 25 years. The indications given in the working life cannot be interpreted as a guarantee given by the producer, but are regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

## 3 Performance of the product and references to the methods used for its assessment

### 3.1 Mechanical resistance and stability (ER1)

Characteristic	Method	Performance
Bond strength (assembled system to support)	EN 13596 : 2004	See Annex 2
Capacity to bridge cracks	EN 14224 : 2010	See Annex 2
Resistance to chloride ion penetration	EOTA TR 022 : 2007	See Annex 2
Resistance to compaction of a coarse bituminous mixture	EN 14692 : 2005, Method 2	See Annex 2
Resistance to heat impact	EN 13596 : 2004 & EN ISO 527-2	See Annex 2
Resistance to perforation	EOTA TR 006 : 2004	See Annex 2
Resistance to shear (assembled system to support)	EN 13653 : 2004	See Annex 2
Watertightness	EN 14694 : 2005 <sup>(1)</sup>	See Annex 2

(1) Test carried out without impact pre-treatment.

### 3.2 Safety in case of fire (ER 2)

Not relevant.

### 3.3 Health, hygiene and the environment (ER 3)

#### 3.3.1 Release of dangerous substances

The manufacturer has made a declaration that the system does not contain any dangerous substances of very high concern as listed on the European Chemicals Agency (ECHA) *Candidate List of substances of very high concern for Authorisation*.

### 3.4 Safety in use (ER4)

Characteristic	Method	Performance
Bond strength (assembled system to overlay)	EN 13596 : 2004	See Annex 2
Resistance to shear (assembled system to overlay)	EN 13653 : 2004	See Annex 2

### 3.5 Protection against noise (ER 5)

Not relevant.

### 3.6 Energy economy and heat retention (ER 6)

Not relevant.

### 3.7 Aspects of durability, serviceability and identification

Characteristic	Method	Performance
Materials in contact (water)	EN 14223 : 2005/ ISO 48 : 2007 <sup>(1)</sup>	See Annex 2
Materials in contact (alkali)	EN ISO 175 : 2001/ ISO 48 : 2007 <sup>(1)</sup>	See Annex 2
Materials in contact (bitumen)	ISO 48 : 2007 <sup>(1)</sup>	See Annex 2
Materials in contact (oil, petrol, diesel, de-icing salts)	EN 13529 : 2003	See Annex 2
Durability due to climate conditions (high and low temperatures) – heat ageing	EN 14224 : 2010 EN ISO 527-2 : 1996	See Annex 2
– freeze/thaw	EN 13687-3 : 2002 EN 13596 : 2004	
High and low service temperatures – capacity to bridge cracks	EN 14224 : 2010	See Annex 2
Capacity to penetrate pores in the support	EN 13596 : 2004 EN ISO 3219 : 1995	See Annex 2
Resistance to flow	N/A <sup>(2)</sup>	See Annex 2
Applied thickness	By calculation <sup>(2)</sup>	See Annex 2
Effects of the quality of the support – moisture content – day joints – section joints	EN 13596 : 2004	See Annex 2

(1) Method N – IRHD.

(2) Assessed during sample preparation.

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

According to the Decision 2003/722/EC<sup>(1)</sup> of the European Commission, the system of assessment and verification of constancy of performance (see Annex V to Regulation (EU) No 305/2011) given in the following table applies.

(1) Official Journal of the European Communities L260/32 of 11.10.2003.

Product	Intended use	Level or class	System
Liquid applied bridge deck waterproofing kits	Exclusively in bridge decks	–	2+

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

### 5.1 Tasks of the manufacturer

The manufacturer must make a declaration of conformity, stating that the construction product is in conformity with the provisions of the European Technical Assessment.



On behalf of the British Board of Agrément

*[Signature]*

John Albon — Head of Approvals  
Construction Products

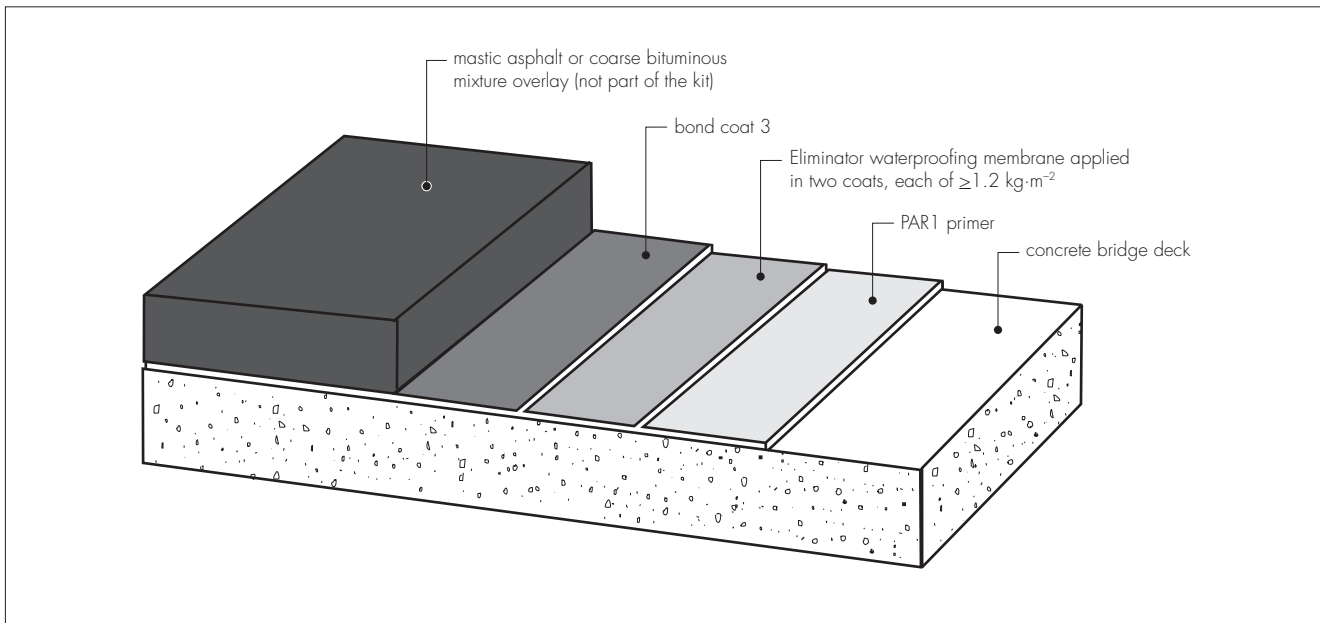
Date of issue: 19 June 2015

*[Signature]*

Claire Curtis-Thomas  
Chief Executive

## ANNEX 1 SYSTEM BUILD-UP AND USE CATEGORIES

### System build-up



Use categories according to ETAG 033:

Category A — With overlay and intended to receive vehicular traffic including:

- A.1 Overlay of coarse bituminous mixture applied at  $(160\pm 10)^\circ\text{C}$  (CBM)
- A.2 Overlay of mastic asphalt applied at  $220^\circ\text{C}$  to  $250^\circ\text{C}$  (MA)
- A.3 Overlay of low temperature mastic asphalt (LMA) applied at a minimum temperature of  $>160^\circ\text{C}$  ( $\text{LMA}_{\text{min}}$ ) and maximum temperature  $<250^\circ\text{C}$  ( $\text{LMA}_{\text{max}}$ ).

## ANNEX 2 CHARACTERISTICS AND CLASSIFICATIONS

The assessed performance of the assembled system is given using the keys for the categories of the test conditions given in Annex D of ETAG 033 for sample preparation (P), for stress conditions (S) before testing and for temperature conditions for testing (T).

Table 1 Levels of Performance

Characteristic	Test conditions (P,S,T) <sup>(1)</sup>	Minimum value/pass/NPD	
Bond strength to support	P1, S0, T5	3.2 MPa	
	P1, S3, T5	2.3 MPa	
	P2 <sub>min</sub> <sup>(2)</sup> , SO, T5	3.2 MPa	
	P2 <sub>max</sub> <sup>(2)</sup> , SO, T5	1.4 MPa	
	P1, S1.1, T5	1.9 MPa	
	P1, S1.3, T5	1.7 MPa	
	P1, SO, T3	1.0 MPa	
	P1, SO, T6	0.8 MPa	
	P3, SO, T5	1.4 MPa	
	P4, SO, T5 <sup>(3)</sup>	1.3 MPa	
	P4, SO, T5 <sup>(4)</sup>	1.7 MPa	
	Bond strength of overlay to the assembled system	P1, S1.1, T5	1.9 MPa
		P1, S1.3, T5	1.7 MPa <sup>(5)</sup>
Capacity to bridge cracks	P1, S1.1/S2, T2	Pass <sup>(6)</sup>	
	P1, S1.3/S2, T2	Pass <sup>(5)</sup>	
Resistance to shear of assembled system to support and overlay	P1, S1.1, T5	1.3 MPa	
	P1, S1.3, T5	0.8 MPa <sup>(5)</sup>	
Watertightness	P1, SO, T5	Watertight	
Resistance to chloride ion penetration	P1, SO, T5	Pass	
Resistance to compaction of a coarse bituminous mixture	P1, S1.3, T5	Pass	
Slipperiness	—	NPD <sup>(7)</sup>	
Materials in contact (Change in micro hardness)	Water (WA)	<1 IRHD	
	Alkali (Al)	1 IRHD	
	Bitumen (Bi)	-1 IRHD	
Materials in contact (Change in mass)	Water (WA)	1.59%	
	Alkali (Al)	0.23%	
Materials in contact (Assessment)	Diesel	Satisfactory	
	Engine oil	Satisfactory	
	Mineral oil	Satisfactory	
	Sodium chloride solution (20%)	Satisfactory	
	Sulphuric acid (10%)	Satisfactory	
Change of tensile characteristics	Sodium hydroxide (10%)	Satisfactory	
	Petrol	Not resistant	
	Heat aged		
	- Change of tensile strength	P1, S2, T5	+12.9%
- Change of elongation	P1, S2, T5	+3.0%	
Heat impact (MA)	- Change of tensile strength	P1, S1.1, T5	+15.3%
	- Change of elongation	P1, S1.1, T5	+3.8%
	Abrasion/wear	—	NPD <sup>(7)</sup>
Capacity to penetrate pores	Bond strength to support	P1, SO, T5	3.2 MPa
	Bond strength to support	P2 <sub>min</sub> <sup>(2)</sup> , SO, T5	3.2 MPa
	Viscosity	T5 (23.4°C)	89.6 – 93.6 MPa NPD
	Viscosity	T1 – T4	MPa NPD
	Resistance to flow	P1, T5	Satisfactory
Minimum thickness (Dry film)	Two coats of waterproofing membrane	2.0 mm	
Release of dangerous substances	—	None declared	

(1) Categories of sample preparation (P), stress conditions before testing (S) and test temperature (T) are defined in Annex 3 of this ETA. Also see Annex D of ETAG 033 for a full description.

(2) Assessed via the bond strength to support at conditions P2<sub>min</sub>, SO, T5, where P2<sub>min</sub> = 0°C (tested at -10°C) and P2<sub>max</sub> = 38°C.

(3) Day joints.

(4) Section joints.

(5) Also covers IMA<sub>min</sub> applied at <220°C.

(6) Assessed classification using test data relating to the effect of simulated application of mastic asphalt on tensile properties.

(7) Not applicable to use.

## ANNEX 3 KEY TO TEST CONDITIONS

<b>P</b>	<b>Conditions for sample preparation</b>
P1	Normal application conditions
P2	Severe application conditions (minimum and/or maximum application temperatures)
P3	High moisture content of the concrete substrate
P4	Overlapping areas - day and section joints
<b>S</b>	<b>Stress conditions before testing</b>
S0	No conditioning
S1.1	Heat impact of applying mastic asphalt (MA) at $\geq 220^{\circ}\text{C}$ to $250^{\circ}\text{C}$
S1.2	Heat impact of applying low temperature mastic asphalt at $< 220^{\circ}\text{C}$
S1.3	Heat impact of applying and compacting a coarse bituminous mixture at $160^{\circ}\text{C}$
S2	Heat ageing at $70^{\circ}\text{C}$
S3	Freeze/thaw cycling
S5	Materials in contact
S5.1	Water
S5.2	Alkali
S5.3	Bitumen
<b>T</b>	<b>Temperature conditions for testing</b>
T2	Severe low temperature of $-20^{\circ}\text{C}$
T3	Low temperature of $-10^{\circ}\text{C}$
T5	Normal temperature of $-23^{\circ}\text{C}$
T6	High temperature of $40^{\circ}\text{C}$