



## European Technical Assessment

**ETA-15/089  
of 26/03/2015**

(English translation prepared by CSTB – Original version in French language)

### GENERAL PART

**Technical Assessment Body issuing the European Technical Assessment:**

Centre Scientifique et Technique du Bâtiment (CSTB)

**Trade name of the construction product:**

**ENDUROFLEX**

**Product family to which the construction product belongs:**

Product Area Code: 03  
Liquid applied roof waterproofing on the basis on polyurethane polymers

**Manufacturer:**

ICOPAL  
12 rue de la renaissance  
92184 ANTONY Cedex

**Manufacturing plant(s):**

Siplast Inc.  
Liquid resin facility  
35 McLelland Boulevard  
AR 71923 GUMS SPRINGS  
USA

**This European Technical Assessment contains:**

7 pages including 1 Annex(es) which form an integral part of this assessment

**This European Technical Assessment is issued in accordance with regulation (EU) No 305/2011, on the basis of:**

European Technical Approval Guideline No 005 (ETAG 005), edition 2004, used as European Assessment Document (EAD)

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## SPECIFIC PART

### 1. Technical description of the product

The liquid applied roof waterproofing "ENDUROFLEX" is a kit which consists of a liquid synthetic material of reactive polyurethane single component, and a reinforcement of non woven polyester.

Application is made in 3 steps without drying time (wet on wet application) :

- One layer of "ENDUROFLEX" (2 kg/m<sup>2</sup>)
- One layer of reinforcement "Sealoflex Premium Reinforcing Fabric" (165 g/m<sup>2</sup>)
- One layer of "ENDUROFLEX" (1 kg/m<sup>2</sup>)

For an adequate adhesion of the waterproofing layer, the substrate may require a primer:

Admitted substrates	Primers
Concrete	none
Steel, Stainless steel	none
Derivated wood panel : CTBH, CTBX, OSB	EP1 Primer
Expanded polystyrene panel	none
Polyurethane or polyisocyanurate panel with kraft or aluminium facing	none
SBS or APP bitumen waterproofing sheets with metallic protection	none
SBS or APP bitumen waterproofing sheets with mineral protection	Acrylic Primer
PVC-P based waterproofing membranes	EP1 Primer
Ceramics tiles	none

The kit "ENDUROFLEX" is UV resistant and directly accessible by pedestrians.

The minimum layer thickness of the roof waterproofing applied amounts to 2 mm.

The resin "ENDUROFLEX" also exists under the tradenames :

"ENVIROFLEX ULTIMA"

"VEDASEAL 1Kn"

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

The liquid applied roof waterproofing for the waterproofing of roof surfaces against penetration of atmospheric water.

The roof waterproofing shows certain levels of performance according to ETAG 005 which facilitates the use taking account of national requirements.

In the manufacturer's technical dossier (MTD) to this European technical assessment (ETA) the manufacturer gave information concerning the concrete substrate which the roof waterproofing is suitable for and on how these substrates shall be pre-treated.

The verifications which are based on this ETA give reason for the assumption of an intended working life of the roof waterproofing of 25 years. The indications given on 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. Performances of the product and references to the methods used for their assessment**

Performances of the liquid applied waterproofing kit, related to the basic requirements for construction works (hereinafter BWR), were determined according to the ETAG 005.

These performances, given in the following paragraphs, are valid as long as the components are the ones described in § 1 and Annexe 1 of this ETA.

### **3.1 Mechanical resistance and stability (BWR 1)**

Not relevant.

### **3.2 Safety in case of fire (BWR 2)**

Reaction to fire: No performance determined

External fire performance: No performance determined

### **3.3 Hygiene, health and the environment (BWR 3)**

#### **3.3.1 Water vapour permeability**

Water vapour permeability factor ( $\mu$ ) is 825.

#### **3.3.2 Watertightness**

Kit is watertight according to Technical Report EOTA 003.

#### **3.3.3 Effects of highest and lowest surface temperatures**

The resistance to mechanical damage is P3 at the lowest surface temperature TL4 et and the highest surface temperature TH4.

#### **3.3.4 Resistance against ageing**

Performance and tensile properties, after exposure W3 of accelerated ageing by heat, artificial weathering and accelerated ageing by hot water are kept.

#### **3.3.5 Resistance to plant roots**

No performance determined.

#### **3.3.6 Release of dangerous substances**

According to Technical Report EOTA n° 034, the product does not contain dangerous substance.

### **3.4 Safety and accessibility in use (BWR 4)**

#### **3.4.1 Resistance to wind load**

Bond strength on concrete substrate is > 50kPa.

#### **3.4.2 Resistance to slipperiness**

No performance determined.

### **3.5 Protection against noise (BWR 5)**

No performance determined.

### **3.6 Energy economy and heat retention (BWR 6)**

No performance determined.

### **3.7 Sustainable use of natural resources (BWR 7)**

No performance determined.

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

According to Decision 97/556/EC (Decision of the Commission of 14 July 1997, L 229 of 20.8.1997, p. 15), as amended by Decision 2001/596/EC (Decision of the Commission of 8 January 2001, L 209 of 2.8.2001, p. 33), the systems of AVCP given in the following table apply:

Produit	Usage prévu	Niveaux ou classes	Système
Liquid applied roof waterproofing kits	For all roof waterproofing uses	-	3

The systems of AVCP are described in Annex V of Regulation (EU) No 305/2011, as amended by Delegated Regulation (EU) No 568/2014.

**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 deposited at the CSTB.

Issued in Marne-la-Vallée on 26/03/2015

by

Charles BALOCHE, Technical Manager of the CSTB

**Applicable to roof waterproofing "ENDUROFLEX":**

Minimum layer thickness	2 mm
Minimum quantity consumed	3 kg/m <sup>2</sup>
<u>Levels of use categories according to ETAG 005 with relation to :</u>	
Working life	W3
Climatic zones	S
Imposed loads	P3
Roof slope	S1 à S4
Lowest surface temperature	TL4
Highest surface temperature	TH4
<u>Performance du kit :</u>	
Resistance to spreading fire and radiant heat	class F (no performance determined)
Reaction to fire	class F (no performance determined)
Water vapour diffusion resistance factor	$\mu \approx 825$
Watertightness	Watertight
Statement on dangerous substances	Does not contain any
Resistance to plant roots	No performance determined
Resistance to wind loads	$\geq 50$ kPa on concrete substrate
Resistance to slipperiness	No performance determined

<b>Roof waterproofing "ENDUROFLEX"</b> <i>Liquid applied roof waterproofing on the basis of polyurethane</i>	<b>ANNEX 1 (1/2)</b> of ETA-15/089
<b>Characteristics of "ENDUROFLEX"</b>	

**Installation**

The fitness for use of the roof waterproofing can be assumed only, if the processing is carried out according to the processing instructions stated in the MTD by the manufacturer, in particular taking account of the following points:

- processing by appropriately trained personnel,
- processing of only those components which are a marked component of the kit,
- processing with the required tools and adjuvants,
- precautions during processing,
- inspecting the roof surface for cleanliness and correct preparation and applying the primer before applying the roof waterproofing,
- inspecting compliance with suitable weather and curing conditions,
- ensuring a thickness of the waterproofing of at least 2 mm by processing of appropriate minimum quantities of material,
- inspections during installation and of the finished roof waterproofing and documentation of the results.

<p><b>Roof waterproofing “ENDUROFLEX”</b> <i>Liquid applied roof waterproofing on the basis of polyurethane</i></p>	<p><b>ANNEX 1 (2/2)</b> of ETA-15/089</p>
<p><b>Intended use of “ENDUROFLEX”</b></p>	