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European Organisation for  
Technical Assessment  
Organisation Européenne  
pour l'évaluation technique

## European Technical Assessment - ETA 17/0769 30/10/2017

(English language translation; the original version is in Italian)

### GENERAL PART

Trade name of the construction product

**"Acriflex"**

Product family to which the construction product belongs

**PAC 03: MEMBRANES, INCLUDING LIQUID APPLIED AND KITS (FOR WATER AND/OR WATER VAPOUR CONTROL).**

**Liquid Applied Roof Waterproofing Kit, based on water dispersible polymers**

Manufacturer

**Diasen S.r.l.  
Via Zona Industriale Berbentina, 5 – 60045  
Sassoferrato (AN) - Italy**

Manufacturing plant

**Via Zona Industriale Berbentina, 5 – 60045  
Sassoferrato (AN) - Italy**

This European Technical Assessment contains:

**9 pages**

This European Technical Assessment is issued in accordance with Regulation (EU) n° 305/2011, on the basis of

**ETAG 005 Edition 2000 – Revision 2004 – Part 8, used as EAD (European Assessment Document)**

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## SPECIFIC PARTS

### 1. TECHNICAL DESCRIPTION OF THE PRODUCT

The liquid applied roof waterproofing "Acriflex" is a kit which consists of two different components. The former is a water dispersion of acrylic polymers, with fillers and additives. The latter is a layer (spunbonded polyethylene fabric) used as internal reinforcement.

There are two versions of the liquid component that may be used to obtain the waterproofing membrane, "Acriflex Rapido" and "Acriflex Pro".

For "Acriflex Rapido" the minimum layer thickness of the assembled system is 1.4 mm and the minimum quantity consumed is 2.3 kg/m<sup>2</sup> and for "Acriflex Pro" the minimum layer thickness is 1.4 mm and the minimum quantity consumed is 2.3 kg/m<sup>2</sup>.

The kit comprises the components described in the following paragraph which are factory-made by the ETA Holder or by his suppliers. The ETA Holder is ultimately responsible for the kit.

The components of the kit are specified by the ETA Holder as follows:

Configuration	Component	Trade name	Installation information	
			Minimum coverage	Minimum thickness
Acriflex Rapido	Water dispersion acrylic polymers with additives	Acriflex Rapido	2.3 kg/m <sup>2</sup>	1.4 mm
	Spunbonded polyethylene fabric	Polites TNT		
Acriflex Pro	Water dispersion acrylic polymers with additives	Acriflex Pro	2.3 kg/m <sup>2</sup>	1.4 mm
	Spunbonded polyethylene fabric	Polites TNT		

Tab. 1: components of the kit

The ancillary materials that may be used to improve the adesion with the substrate are specified by the ETA Holder as follows:

Trade name	Component	Suppliers	Function / type of use
Vapostop	Aqueous emulsion of acrylic polymers	Diasen s.r.l.	to prepare the substrate (e.g.: to seal the cracks) or near special point and to improve the adesion with concrete
SBS - Bond	Aqueous emulsion of acrylic polymers and bitumen	Diasen s.r.l.	to prepare the substrate (e.g.: to seal the cracks) or near special point and to improve the adesion with waterproofing bitumen sheet

Tab. 2: ancillary components

Annex 1 shows layer thickness of the components and the system build-up of "Acriflex" (both configurations).

### 2. SPECIFICATION OF THE INTENDED USE IN ACCORDANCE WITH ETAG 005 USED AS EUROPEAN ASSESSMENT DOCUMENT

"Acriflex" is intended for use as waterproofing of roof surfaces, against penetration of atmospheric water. The provisions made in this ETA are based on the following declarations provided by the ETA Holder:

Configuration		
Acriflex Rapido	Expected working life	the expected working life of the roof waterproofing is 10 years (W2)
	Solar exposure	the assembled system is resistant to the solar exposure effects of "Severe climate" (S) during its expected working life
	Loads	the assembled system is non-accessible (P1)
	Slope	the assembled system can be used on roofs with any slope (S1-S4)
	Temperature	the assembled system is resistant throughout its working life to a maximum surface temperature of 90 °C (TH4) and to a minimum surface temperature of - 20 °C (TL3)
	Substrate	ETA Holder suggests this kit to waterproofing the following types of substrate: concrete, waterproofing bitumen sheet.
Acriflex Pro	Expected working life	the expected working life of the roof waterproofing is 10 years (W2)
	Solar exposure	the assembled system is resistant to the solar exposure effects of "Severe climate" (S) during its expected working life
	Loads	the assembled system is non-accessible (P1)
	Slope	the assembled system can be used on roofs with any slope (S1-S4)
	Temperature	the assembled system is resistant throughout its working life to a maximum surface temperature of 90 °C (TH4) and to a minimum surface temperature of - 20 °C (TL3)
	Substrate	ETA Holder suggests this kit to waterproofing the following types of substrate: concrete, waterproofing bitumen sheet.

Tab. 3: use categories

The provisions made in this ETA are based on an assumed intended working life of at least 10 years, provided that the conditions laid down in section 2.2, 2.3, 2.4 of this ETA for the packaging, transport, storage, installation as well as appropriate use, maintenance and repair are met. The indications given on the working life cannot be interpreted as a guarantee given by the manufacturer or by the Assessment Body, but should only be regarded as a mean for choosing the appropriate products in relation to the expected economically reasonable working life of the works.

## 2.1 Manufacturing

The "Acriflex" components shall correspond, as far as their composition and manufacturing process is concerned, to the products subject to the assessment tests. Manufacturing process scheme is deposited with ITC-CNR.

## 2.2 Installation

### 2.2.1. General

It is the responsibility of the ETA Holder to guarantee that the information about design and installation of the kit "Acriflex" are effectively communicated to the concerned people. These information can be given using reproductions of the respective parts of this European Technical Assessment. Besides, all the data concerning the execution shall be indicated clearly on the packaging and/or the enclosed instruction sheets using one or several illustrations. In any case, it is suitable to comply with national regulations and particularly concerning fire.

Only the components described in tab. 1 with characteristics in accordance with clause 2 of this ETA can be used for the system "Acriflex". The requirements given in ETAG 005 Edition 2000 – Revision 2004, used as EAD, chapter 7, have to be considered.

### 2.2.2. Design

The fitness for use of the system depends on the levels of the use categories stated in Tab. 3 and the complies with national requirements, if any.

In any case the required thickness of the roof waterproofing shall be at least 1.4 mm.

### 2.2.3. Execution

The recognition and preparation of the substrate as well as the generalities about the installation of the kit "Acriflex", which are fully described in the current version of the ETA Holder Catalogue, shall be carried out in compliance with:

- chapter 7 of the ETAG 005 Edition 2000 – Revision 2004, used as EAD;
- national regulations in effect, if any.

In particular it is necessary to take account of the following points:

- Installation of only those components which are a marked as components of the kit;
- Any points of weakness in the substrate should be treated prior to installation of the waterproofing layer
- Installation with the required tools and adjuvants;
- Inspection of the roof surface for cleanliness and correct preparation of the substrate;
- Application of the Acriflex Rapido only with temperature between 1 °C and 35 °C and R.H. up to 98 %
- Application of the Acriflex Pro only with temperature between 5 °C and 35 °C and R.H. up to 70 %
- Avoid applying when there is risk of rain
- Ensuring a thickness of the waterproofing of at least 1.4 mm in installation of appropriate amounts of material.

### 2.3 Packaging, transport and storage

Tab. 4 reports the expiration periods (applicable considering the indicated production date of the component) of the liquid and the storage conditions so as declared by the ETA Holder. The expirations periods are valid only if the packages are closed and the materials are properly stored. The ETA Holder defines no recommendation about storage conditions concerning the reinforcement material.

Components	Storing condition	Storage temperature (°C)		Expiration period (month)
		Minimum	Maximum	
"Acriflex" liquid component	protected from sun, freeze and not exposed to heat	5	35	12

Tab. 4: storage conditions

### 2.4 Maintenance and repair of the works

Roofs with deteriorated areas of the waterproofing layer, will be repaired removing all the damaged areas taking care to clean the substrate. The application of the new layer must be executed following all the details reported at § 2.2.

## 3. PERFORMANCE OF THE PRODUCT AND REFERENCES TO THE METHODS USED FOR ITS ASSESSMENT

The tests for the assessment of the performances of "Acriflex" were carried out according to the tests mentioned in ETAG 005 Edition 2000 – Revision 2004, used as EAD; the performances are valid only if the kit's components are exactly the ones mentioned at § 1 of this ETA.

Characteristic	Test methods	Acriflex Rapido	Acriflex Pro
		Results	
External fire performance	EN 1187	NPD	NPD
Reaction to fire	EN 13501-1	NPD	NPD
Resistance to water vapour	EN 1931	$\mu \approx 6483$	$\mu \approx 8827$
Watertightness	EOTA TR 003	Pass	Pass
Resistance to wind loads	EOTA TR 004	Pass (> 50 kPa)	Pass (> 50 kPa)
Resistance to dynamic indentation	EOTA TR 006	I <sub>1</sub>	I <sub>1</sub>
Resistance to static indentation	EOTA TR 007	L <sub>1</sub>	L <sub>1</sub>
Resistance to fatigue movement	EOTA TR 008	Pass	Pass
Resistance to low temperature effects: dynamic indentation at -20 °C	EOTA TR 006	I <sub>1</sub>	I <sub>1</sub>
Resistance to high temperature effects: static indentation at 90 °C	EOTA TR 007	L <sub>1</sub>	L <sub>1</sub>
Tensile strength (MPa)	EN ISO 527-3	1.50	1.37
Tensile elongation (%)		102.0	64.4

Tab. 5

Resistance to heat aging (EOTA TR 011)

The samples have been exposed to 80 °C during 100 days. After this treatment the following tests were made:

Type of test	Test methods	Acriflex Rapido	Acriflex Pro
		Results	
Dynamic indentation	EOTA TR 006	I <sub>1</sub>	I <sub>1</sub>
Fatigue movement (50 cycles)	EOTA TR 008	Pass	Pass
Tensile strength (MPa)	EN ISO 527-3	2.76	
Tensile elongation (%)		82.6	

Tab. 6

Resistance to UV radiation in the presence of moisture (EOTA TR 010)

The samples have been exposed 2470 hours to UV radiation. After this treatment the following tests were made:

Type of test	Test methods	Acriflex Rapido	Acriflex Pro
		Results	
Dynamic indentation (-10 °C)	EOTA TR 006	I <sub>1</sub>	I <sub>1</sub>
Tensile strength (MPa)	EN ISO 527-3	2.60	
Tensile elongation (%)		75.1	

Tab. 7

Resistance to water ageing (EOTA TR 012)

The samples have been keep in touch of water at 60 °C over 30 days. After the treatment the following test were made:

Type of test	Test methods	Acriflex Rapido	Acriflex Pro
		Results	
Static indentation at 90 °C	EOTA TR 007	L <sub>1</sub>	L <sub>1</sub>
Delamination strength (kPa) (concrete)	EOTA TR 004	1530	
Delamination strength (kPa) (waterproofing bitumen sheet)		209	

Tab. 8

Slipperiness (EN 13893)

No performance determined (NPD).

### Effect of weather conditions

The system was assembled and cured under two conditions:

- Acriflex Rapido: 1 °C for 7 days, 35 °C for 7 day
- Acriflex Pro: 5 °C for 7 days, 35 °C for 7 day

The resistance to wind loads was tested for both the conditions and substrate defined by the ETA Holder (concrete, waterproofing bitumen sheet). All of them fulfil the requirement (> 50 kPa).

### Effect of daily joints

The kit was applied on concrete substrate and dried for 7 days at 23 °C. Then the kit was applied on the dried cover and the delamination strength was tested. The delamination strength does not show a decrease upper than 20 % of the value obtained with the system applied over concrete substrate (Pass).

### Release of dangerous substances

In accordance with § 5.3.2 of ETAG 005 Edition 2000 – Revision 2004, and with EOTA TR 034.

The liquid applied roof waterproofing kit, based on water dispersible polymers neither contains nor releases the dangerous substances specified in EOTA TR 034 (March 2012).

A written declaration in this respect was made by the manufacturer. In addition to the specific clauses relating to dangerous substances contained in this European Technical Assessment, there may be other requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the EU Construction Products regulation 305/2011, these requirements need also to be complied with, when and where they apply.

## 4. Component's characteristics and parameters<sup>1</sup>

### 4.1.1 Liquid components

The characteristics are given in the following table.

	Characteristic	Test methods	ETA Holder's declaration
Acriflex Rapido	Density (g/ml)	EN ISO 1675	1.35 ± 0.1
	Dry extract (%)	prEN 1768	73.0 ± 3
	Viscosity (Pa·s)	prEN 1781	10 ± 2 (at 20 rpm)
Acriflex Pro	Density (g/ml)	EN ISO 1675	1.35 ± 0.1
	Dry extract (%)	prEN 1768	73.0 ± 3
	Viscosity (Pa·s)	prEN 1781	10 ± 2 (at 20 rpm)

Tab. 9: liquid components "Acriflex Rapido" and "Acriflex Pro"

### 4.1.2 Internal layer "Polites TNT"

The characteristics are given in the following table.

Characteristic	Test methods	ETA Holder's declaration
Thickness [mm]	Internal Method	0.55 ± 20 %
Tensile strength L/T (MPa)	EN 527-1	4.5 ± 1
Tensile elongation L/T (%)	EN 527-1	50 ± 15

Tab. 10: internal layer "PolitesTNT"

<sup>1</sup> The ETA Holder could change, under his own responsibility, some of the suppliers of a component, but only provided that the characteristics and the performances of the new components and the final performances of the system do not change at all. These changes must be fully recorded within the Factory Production Control documents in order to grant full traceability.

**5. Assessment and Verification of Constancy of Performance (hereinafter AVCP) system applied, with reference to its legal base**

According to Decision 98/556/EC<sup>2</sup> of the European Commission amended by the Decision 2001/596/EC, the AVCP (see Annex V to Regulation (EU) 305/2011) given in the following table applies.

Product	Intended use	Level(s) or class(es)	System
Liquid applied waterproofing kit	For uses subject to regulations on reaction to fire	A1 <sup>(1)</sup> , A2 <sup>(1)</sup> , B <sup>(1)</sup> , C <sup>(1)</sup>	1
		A1 <sup>(2)</sup> , A2 <sup>(2)</sup> , B <sup>(2)</sup> , C <sup>(2)</sup> , D, E	3
		(A1 to E) <sup>(3)</sup> , F	4
	For all roof waterproofing uses	-	3

Tab. 11: AVCP system

<sup>(1)</sup> Products/materials for which a clearly identifiable stage in the production process results in an improvement of the reaction to fire classification (e.g. an addition of fire retardants or a limiting of organic material).

<sup>(2)</sup> Products/materials not covered by footnote (1).

<sup>(3)</sup> Products/materials that do not require to be tested for reaction to fire (e.g. Products/materials of Classes A1 according to Commission Decision 96/603/EC).

The system of Attestation of Conformity is System 3 (see Annex V to Regulation (EU) 305/2011 for tasks and responsibilities).

**6. Technical details necessary for the implementation of the AVCP system, as provided for in ETAG 005 used EAD**

Technical details necessary for the implementation of the AVCP system are laid down in the Control Plan which is deposited at ITC CNR.

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 ITC CNR and the Notified Body.

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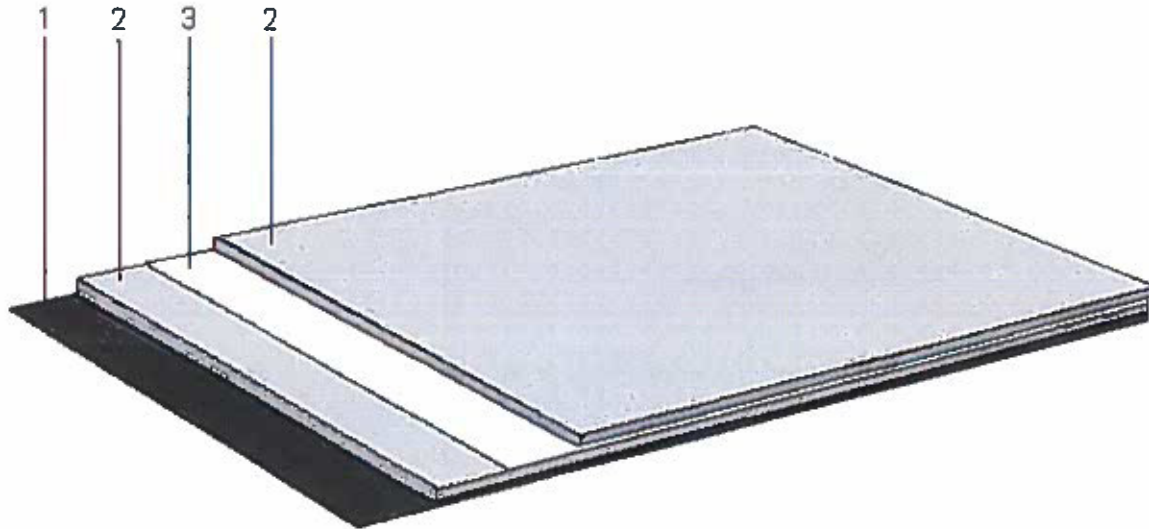
Prof. Antonio Occhiuzzi  
Director of ITC – CNR

<sup>2</sup> Official Journal of the European Communities L 254 of 8.10.1996



**Annex 1 of European Technical Assessment 17/0769: System build-up of the roof waterproofing “Acriflex”**

**“Acriflex Rapido” configuration**



- 1- Substrate
- 2- “Acriflex Rapido”
- 3- “Polites TNT”

Characteristics of the system “Acriflex Rapido”:

Minimum layer thickness	1.4 mm
External fire performance	NPD
Reaction to fire	NPD
Resistance to water vapour	$\mu \approx 6483$
Resistance to wind loads	> 50 kPa
Resistance to slipperiness	NPD
Statement on dangerous substances	None contained

Tab. 12: characteristics of the system

Performance levels according to ETAG 005:

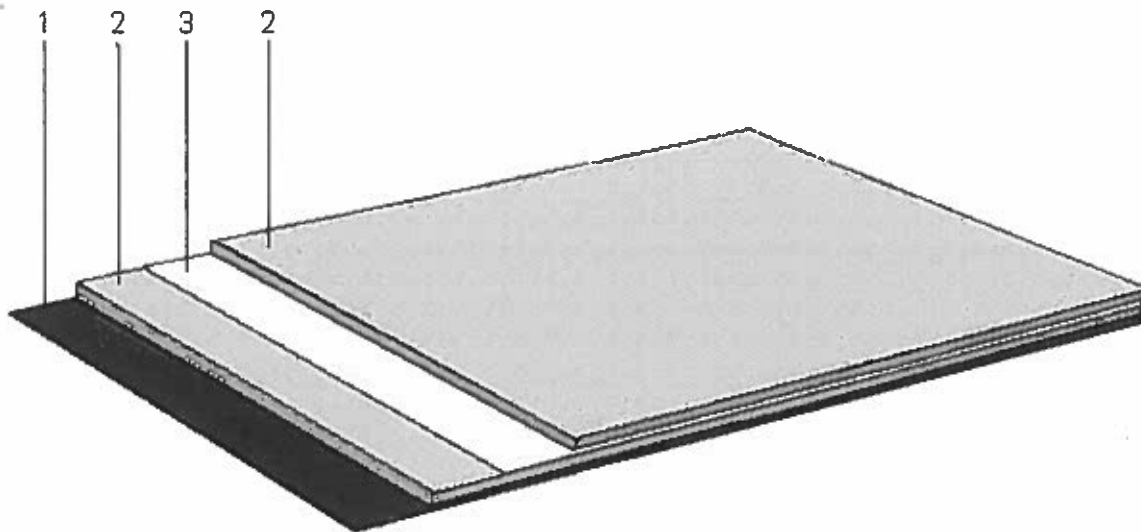
Expected working life	W2
Solar exposure	“Severe climate” S
Loads	P1
Slope	S1 - S4
Minimum surface temperature	TL3
Maximum surface temperature	TH4

Tab. 13: performance levels

Acriflex Rapido configuration	<b>Annex 1 of European Technical Assessment 17/0769: System build-up of the roof waterproofing “Acriflex”</b>
table 12: characteristics of the system	
table 13: performance levels	



## “Acriflex Pro” configuration



- 1- Substrate
- 2- “Acriflex Pro”
- 3- “Polites TNT”

Characteristics of the system “Acriflex Pro”:

Minimum layer thickness	1.4 mm
External fire performance	NPD
Reaction to fire	NPD
Resistance to water vapour	$\mu \approx 8827$
Resistance to wind loads	> 50 kPa
Resistance to slipperiness	NPD
Statement on dangerous substances	None contained

Tab. 14: characteristics of the system

Performance levels according to ETAG 005:

Expected working life	W2
Solar exposure	“Severe climate” S
Loads	P1
Slope	S1 - S4
Minimum surface temperature	TL3
Maximum surface temperature	TH4

Tab. 15: performance levels

Acriflex Pro configuration	<b>Annex 1 of European Technical Assessment 17/0769: System build-up of the roof waterproofing “Acriflex”</b>
table 14: characteristics of the system	
table 15: performance levels	