EPAFLEX POLYURETHANES

EPAPROOF

CE
UNI EN 1504-2

FPCS 94

FLAME RESISTANT SPRAY POLYUREA SYSTEM 100% VOC FREE

Elastomers

PRODUCT

EPAPROOF FPCS 94 : Elastomeric system based on pure polyurea containing particular components capable of improving the flame retardancy properties and performance of reaction to fire.

PRODUCT DESCRIPTION

EPAPROOF FPCS 94 is a two-component system, based on aromatic isocyanates and special flexible amines for the protection of metals, cementitious surfaces as well as wood and EPS. The product is 99% VOC-free and flame retardant belonging to Euroclass B s2 d0 according to EN 13501-1: 2005. The product is also ranked UL94V0.

FIELDS OF APPLICATION

CONCRETE AND METALS	• Covering roofs • bridges, roads, airports, railways • industrial maintenance and production facilities • coating tanks • in areas of maritime
WOOD	• wood protection • houses, wooden structures outdoors and indoors • boats
EPS, POLIURETHANE	• thematic parks and decorative designs • water parks and playgrounds • structural reinforcement

ADVANTAGES

EPAPROOF FPCS 94 is a polyurea system:

- environmentally friendly - contains no VOC
- no loss of weight
- has no secondary reaction products
- excellent fire resistance
- good resistance to impact, abrasion and puncture
- low permeability values
- applicable at temperatures between -15 ° C and + 70 ° C
- consistent performance at temperatures between -30 ° C and + 140 ° C

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SPECIFIC CHARACTERISTICS OF PRODUCT

EPAPROOF FPCS 94 is a polyurea system consists of two components, isocyanates and amines, mixed together and sprayed by means of special equipment, with special self-extinguishing characteristics.

COLOUR

Available colors: green RAL 6010, green RAL 6020, red RAL 3009, gray RAL 7040, black RAL 9005. Other colors available on request.

PHYSICAL AND MECHANICAL PROPERTIES OF PRODUCT

	VALUE		UNIT	STANDARD
	MIN	MAX		
Spec.weigth ISO (25°C)	1.115	1.125	g/cm^3	UNI EN ISO 2811-1
Spec.weight RES (25°C)	1,15	1,17	g/cm^3	UNI EN ISO 2811-1
Viscosity ISO (25°C)	600	900	mPas	UNI EN ISO 3219 Brookfield
Viscosity RES (25°C)	1700	1900	mPas	UNI EN ISO 3219 Brookfield
Mix Ratio	1:1		Vol	
Gel time	6	8	sec	EPALAB0006.01
Elongation at break	275 – 285		%	UNI EN 12311-2 (parte B)
Tensile strength	10 – 11		MPa	UNI EN 12311-2 (parte B)
Tear strength	70 – 85		kN/m	UNI ISO 34-1:2011 e 34-2:2012
Abrasion	100 - 115		mg	UNI EN ISO 5470-1
Hardness	35 – 40		Shore D	UNI EN ISO 868
Solids content	30		%	
Reaction to fire	B s2 d0		class	EN 13501-1:2005
Walkability	>15		min	
Light traffic	>8		h	
Complete curing	24		h	

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APPLICATION

EPAPROOF FPCS 94 is a two-component polyurea system which must be applied by experienced and qualified applicators equipped with high-pressure machinery to fixed or variable relation, equipped with pumps, pneumatic, electric or hydraulic and transfer pipes from the packaging in which are provided the two components system, through heated lines, of variable length, sending the two components at the end where it is located a gun in which the two components are dosed in a volume ratio of 1:1 and with the setting of the nozzles, adjustment of the temperatures and pressures manages the flow by creating a fan that allows the distension of a homogeneous and compact film on the support. Are different types of gun and nozzle assembly that may be used. Always refer to this effect to the directions and instructions of the supplier / manufacturer of the machinery. The applicator, made the necessary bleed from both the pipes (to remove any traces of materials previously used), the necessary recirculation of the two components in the respective pipes (to allow for thermal homogenization of the two components) may proceed in the spray system, taking care to previously having carried out the tests in containers to be disposed. The application of the system must take place in a number of passes of spray sufficient to achieve a maximum thickness of the membrane equal to 4 mm.
If the membrane **EPAPROOF FPCS 94** is intended for direct contact with the atmospheric agents, it is necessary to protect it with a suitable coating that will be suggested by the technical office.

PROCESS PARAMETERS

TEMPERATURE OF THE EQUIPMENT	*60 – 80°C*
TEMPERATURE OF RESIN PIPES	*80°C*
TEMPERATURE OF ISOCYANATE PIPES	*55°C*
CENTRAL PRESSURE	*78 bar*
WORKING PRESSURE OF RESIN AND ISOCYANATE	*120 – 130 bar*

The resin component must be constantly maintained in agitation during processing.

SURFACE PREPARATION

The outline criteria on the entity of a surface preparation depends on several factors that can be essentially summarized in:

- kind of surface;
- surface condition;
- coating cycle;
- overall stresses.

The surfaces usually needing to be coated can be limited to the following cases:

- concrete or cement surfaces;
- plastering;
- stoneware, Klinker, brick tile;
- stone;
- metal.

In all types of substrate moisture content must never be higher than 4%. The substrate and polymerized membrane must be at least 3 ° C above the dew point to reduce the risk of condensation or blooming of the membrane finish.

It is possible to identify different types of preparation:

Smoothing
It is intended as the mechanical action by abrasive wheels, or

abrasive paper (smoothing over) to remove cement milk, dirt and so on from the surface outer layer.

Bush-hammering
It is intended as the mechanical action by a suitable scotching machine, whether rotating or not, which removes 3□5 mm of surface layer.
Such tool only removes weak-mechanical-resistance material.

Milling
It is intended as the mechanical action by a rotating fraise to achieve a uniform and total constant- thickness removal, regardless of the surface resistance.

Sandblast
It is intended as the mechanical action by mineral or metal grains suitable to remove brittle and loose parts, previous coatings, besides realizing a higher nominal adhesion surface.

Shot-peening
It is intended as the mechanical action by metal grains gave off by suitable machines featuring a total recycle, parting and retrieval of sanding materials and fragments, in absence of powders.

Hydrowash
It is intended as the hydraulic action by an high- pressure water jet, in case at an high temperature, for a deep surface cleansing.

Hydro-sandblast
It is intended as the mechanical action by an high- pressure water jet together with the sand abrasive action to remove brittle and loose parts, previous coatings, and for a deep surface cleansing.

Chemical wash
It is intended as the chemical-physical action of suitable chemical agents to neutralize or remove particular products that could compromise the coating adhesion. Obviously, if the surface is particularly critical, several treatments can be superposed.
A suitable preparation treatment must be absolutely done in order to have a successful coating application.

Following the correct preparation it is suggested that the substrate be primed. In these case it is recommended an Epaflex product range as:

EPACRETE EPAPOX 22: a primer suggested for concrete and surfaces;
EPACRETE EPAPOX BUS: a primer suggested for dump surfaces;
EPACRETE EPAPOX 25: a primer suggested for metal surfaces;
EPACRETE OLV 13 MONOC.: a primer suggested for concrete and steel smooth surfaces.
EPACRETE OLV 512: a one component primer suitable for PVC membranes (for these products it is available the specific TDS)

The kinds of preparation as well as its weight depend on the kind of stress the surface will undergo; this is essentially valid for floorings, so the kinds of preparation can be divided as follows:

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Weak stresses:
- grinding;
- hydrowash;
- chemical wash.

Medium stresses:
- sandblast;
- hydro-sandblast.

Strong stresses:
- shot-peening;
- bush-hammering;
- milling.

PACKAGING	**EPAPROOF FPCS 94** is supplied in two components: **EPAPROOF FPCR 94 RESIN** in drums of 205 kg or 50 kg drums, **EPAPROOF FPCI ISO 94** 225 kg drums or in drums of 50 kg.
STORAGE	The two components of the system must be kept in a cool place away from direct sunlight, perfectly sealed in its original packaging and at a temperature between + 5 ° C and +25 ° C. The stability at 65 ° C of the isocyanate component is 60 - 90 days. The period of validity of the system is 6 months from the production date, when stored in original packaging, unopened, intact and sealed.
SAFETY	Avoid contact with skin and mucous membranes. Use protective gear, in particular, mask and gloves. Do not inhale the vapor product and if possible, ventilate work areas. For more information follow the recommendations of MSDS.

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ISSUED BY ANTONIO GARZIA
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