Technical leaflet

ISOFLEX-PU 510

Polyurethane, one component, liquid waterproofing membrane

Description

ISOFLEX-PU 510 is one-component polyurethane, liquid waterproofing membrane, offering:

- Mechanical, chemical, thermal, UV and weather resistance properties, as it is based on pure, elastomeric, hydrophobic, polyurethane resins.
- A uniform, elastic, waterproof, vapor-permeable sealing layer, without forming seams or joints.
- Excellent bonding to various substrates like concrete, cement-mortars and most waterproofing layers.
- Applicability even on irregular substrates.
- An affordable and reliable solution for waterproofing.
- Availability in white and other colors. When a dark color of ISOFLEX-PU 510 has been chosen as an exposed layer, it is necessary to cover it with a layer of TOPCOAT-PU 720 of the same color.

It is certified with the CE marking as a coating for surface protection of concrete, according to EN 1504-2. Certificate Nr. 2032-CPR-10.11.

Fields of application

ISOFLEX-PU 510 is suitable for waterproofing:

- Flat roofs and balconies as an exposed waterproofing membrane.
- Underneath tile layers in kitchens, bathrooms, balconies and flat roofs, as long as quartz sand has been broadcasted on its last layer.
- Under thermal insulation boards on flat roofs.
- In construction works, such as highways, bridge decks, tunnels etc.
- Foundations.
- Gypsum and cement boards.
- Old layers of bituminous or EPDM membranes.
- Polyurethane foam.
- Metal surfaces.

Technical data

Form:	pre-polymer polyurethane
Colors:	white, black
Density:	1.44 kg/l
Viscosity:	5,500 ± 500 mPa·sec (at +23^{0}C)
Elongation at break: (ASTM D 412)	750 ± 50%
Tensile strength: (ASTM D412)	4.0 N/mm^2
Hardness according to SHORE A:	80 ± 2
Water impermeability:	5 atm (DIN 1048)
Solar Reflectance (SR): (ASTM E903-96)	84%
Infrared Emittance: (ASTM C1371-04a)	0.9
Solar Reflectance Index (SRI) (ASTM E1980-0):	106
Capillary absorption: (EN 1062-3, requirement of EN 1504-2: w < 0.1)	0.01 kg/m^2·h$^{0.5}$
Permeability to CO_2: (EN 1062-6)	Sd > 50 m
Water vapor permeability: (permeable, EN ISO 7783-2, Class I < 5m)	Sd = 0.82 m
Adhesion: (EN 1542, requirement for flexible systems without trafficking: 0.8 N/mm^2)	> 2.0 N/mm^2

ISOFLEX-PU 510

Artificial weathering: (EN 1062-11, after 2000 h)	Pass (no blistering, cracking or flaking)
Reaction to fire: (EN 13501-1)	Euroclass F
Temperature resistance:	from -30^{0}C to +90^{0}C

Directions for use

1. Substrate preparation

In general, the substrate must be dry (moisture content < 4%), clean, free of grease, loose particles, dust etc.

1.1 Concrete substrates

Any existing cavities in concrete should be filled with the appropriate repairing materials in advance.
Intense cracks on the substrate must be primed locally and after 2-3 hours (depending the weather conditions) must be sealed with the polyurethane sealants FLEX PU-30 S or FLEX PU-50 S.
Concrete and other porous surfaces with moisture content < 4% should be treated with the special primer PRIMER-PU 100, at a consumption of approx. 200 g/m^2.
Surfaces with moisture content > 4% should be primed with the special two component polyurethane primer PRIMER-PU 140, at a consumption of 100-200 g/m^2.

1.2 Smooth and non-absorptive substrates

Smooth and non-absorptive substrates, as well as bituminous membranes or old waterproofing layers, must be primed with the water-based epoxy primer EPOXYPRIMER 500, thinned with water up to 30% by weight. The product is applied by brush or roller in one coat.
Consumption: 150-200 g/m^2.
Depending on the weather conditions, ISOFLEX-PU 510 is applied within 24-48 hours from priming, as soon as the moisture content falls below 4%.

1.3 Metal surfaces

Metal surfaces should be:

- Dry and clean.
- Free of grease, loose particles, dust etc. that may hinder adhesion.
- Free of rust or corrosion that may hinder adhesion.

Prepared by brushing, rubbing, sandblasting etc. and then thoroughly cleaned from dust. After the preparation are primed with the EPOXYCOAT-AC anti-corrosive epoxy coating in 1 or 2 layers. EPOXYCOAT-AC is applied by roller, brush or spray. The second layer follows after the first has dried, but within 24 hours.
Consumption: 150-200 g/m^2/layer.
Application of ISOFLEX-PU 510 should follow within the next 24-48 hours.

2. Application - Consumption

Before the application, it is recommended to slightly stir ISOFLEX-PU 510, until it becomes homogeneous. Extensive stirring should be avoided, in order to prevent air entrapment in the material.

a) Total waterproofing of the surface

ISOFLEX-PU 510 is applied by brush or roller in 2 layers. The first layer is applied 2-3 hours after priming and while PRIMER-PU 100 is still tacky. The second layer should be applied crosswise after 8-24 hours, depending on the weather conditions.
Consumption: approx. 1.0-1.5 kg/m^2, depending on the substrate.
In case of dense, multiple cracks all over the surface, it is strongly recommended to thoroughly reinforce ISOFLEX-PU 510 membrane with 100 cm wide strips of polyester fleece (60 g/m^2). These placed strips must overlap one another by 5-10 cm. In detail, 2-3 hours after priming, the first layer of ISOFLEX-PU 510 is applied covering the reinforcement to a width of 100cm, and, while still fresh, a strip of polyester fleece is embedded. The same application procedure is followed in the remaining surface.

Two extra layers of ISOFLEX-PU 510 are applied over the entire surface.
Consumption: approximately 2.00-2.25 kg/m^2, depending on the substrate and type of reinforcement.

b) Local waterproofing of cracks
In this case, the primer is applied on the substrate only across the cracks to a width of 10-12 cm. 2-3 hours after priming, the first ISOFLEX-PU 510 layer is applied and, while still fresh, a 10cm wide polyester fleece (60 g/m^2) is embedded lengthwise. Then, two extra ISOFLEX-PU 510 layers are applied along the cracks, completely covering the reinforcement.
Consumption: approximately 200-250 g/m of crack length.

c) Waterproofing under tiles
ISOFLEX-PU 510 is applied by brush or roller in 2 layers.
ISOFLEX-PU 510 should be locally reinforced along the joints and wall-floor junctions, by embedding a 10 cm wide polyester fleece on its first layer, while it is still fresh.
After the application of the final layer and while it is still fresh, quartz sand (Ø 0.3-0.8 mm) must be broadcasted. The quartz sand must be completely dry.
Consumption of quartz sand: approx. 3 kg/m^2.
After ISOFLEX-PU 510 has hardened, any loose grains should be removed with a vacuum cleaner.
Tiles should be fixed with a high-performance, polymer-modified tile adhesive, like ISOMAT AK 22, ISOMAT AK 25, ISOMAT AK-ELASTIC, ISOMAT AK-MEGARAPID.

Tools should be cleaned with SM-16 solvent, while ISOFLEX-PU 510 is still fresh.

Packaging

ISOFLEX-PU 510 is supplied in metal containers of 1 kg, 6 kg and 25 kg.

Storage

12 months from production date, if stored in original, unopened packaging, at temperatures between +5^{o}C and +35^{o}C. Protect from direct sun exposure and frost.

Remarks

- In case of application by spraying, it may be diluted, depending on the weather conditions up to 10%, only with the special solvent SM-16.
- ISOFLEX-PU 510 is not suitable for contact with chemically treated water of swimming pools.
- Temperature during the application and hardening of the product should be between +8^{0}C and +35^{0}C.
- The consumption of ISOFLEX-PU 510 should not exceed 750 g/m^2 per layer.
- Unsealed packages should be used as soon as they are opened and cannot be restored.

Volatile Organic Compounds (VOCs)

According to the Directive 2004/42/CE (Annex II, table A), the maximum allowed VOC content for the product subcategory i, type SB is 500 g/l (2010) for the ready-to-use product.
The ready-to-use product ISOFLEX-PU 510 contains a maximum of 500 g/l VOC.

ISOFLEX-PU 510

CE

2032

ISOMAT S.A.
17th km Thessaloniki – Ag. Athanasios
P.O. BOX 1043, 570 03 Ag. Athanasios,
Greece

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DoP No.: ISOFLEX-PU 510/1811-01

EN 1504-2

Surface protection products

Coating

Permeability to CO_2: Sd > 50 m

Water vapor permeability: Class I (permeable)

Capillary absorption: w < 0.1 kg/m^2·h$^{0.5}$

Adhesion: ≥ 0.8 N/mm^2

Artificial weathering: Pass

Reaction to fire: Euroclass F

Dangerous substances comply with 5.3

ISOMAT S.A.
BUILDING CHEMICALS AND MORTARS
MAIN OFFICES - FACTORY:
17th km Thessaloniki - Ag. Athanasios Road,
P.O. BOX 1043, 570 03 Ag. Athanasios, Greece,
Tel.: +30 2310 576 000, Fax: +30 2310 722 475
www.isomat.eu e-mail: info@isomat.eu