Technical leaflet

ISOFLEX-PU 510

Brushable, polyurethane waterproofing membrane

Description

ISOFLEX-PU 510 is a one-component brushable, polyurethane, 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 TOP COAT-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)
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 > 50m
Water vapor permeability: (permeable, EN ISO 7783-2, Class I < 5m)	Sd=0.82m
Adhesion: (EN 1542, requirement for flexible systems without trafficking: 0.8 N/mm^2)	> 2.0 N/mm^2
Artificial weathering: (EN 1062-11, after 2000h)	Pass (no blistering, cracking or flaking)
Reaction to fire: (EN 13501-1)	Euroclass F

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Temperature resistance: from -20^{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 filled with the polyurethane sealants FLEX-PU 20/30 S/40/50 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.

Substrates with moisture content > 4% should be primed with the special epoxy primer – vapor barrier DUROPRIMER-SG, at a consumption of 600-1000 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-W at a consumption of approx. 200-300 g/m^2. ISOFLEX-PU 510 may be applied as soon as the moisture content of EPOXYPRIMER-W becomes lower than 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.

The substrate should be prepared by brushing, rubbing, sandblasting etc. and then thoroughly cleaned from dust. ISOFLEX-PU 510 may be applied without prior priming.

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 sealing 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 fabric (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 fabric 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 sealing 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 fabric (60 g/m^2) is embedded lengthwise. Then, two extra ISOFLEX-PU 510 layers are applied along the cracks, completely covering the reinforcement.

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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 10cm wide polyester fabric 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 0.3-0.8mm) 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.

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CE

2032

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EN 1504-2

Surface protection products

Coating

Permeability to CO_2: Sd > 50m

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

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