Technical Datasheet

ISOFLEX-PU 500 A

One-component, rapid-curing, polyurethane, liquid waterproofing membrane

Description

One-component, rapid-curing, polyurethane, liquid waterproofing membrane for flat roofs. Based on elastomeric, hydrophobic polyurethane resins, ISOFLEX PU 500 A features excellent mechanical, chemical, thermal and weather resistance. Thanks to its unique formulation, it cures rapidly to form a thick, bubble-free membrane. It offers the following properties:

- Forms a continuous, elastic, waterproof, vapor-permeable membrane, without seams or joints.
- Shows excellent adhesion to various substrates, such as concrete, cement mortars, wood and most waterproofing layers.
- Applicable even on irregular substrates and at low temperatures.
- Maximum consumption can be achieved in only one coat reducing labor costs.
- The membrane becomes quickly rainproof.

Certified according to EN 1504-2 and classified as a coating for surface protection of concrete. CE marked. Certificate No.: 2032-CPR-10.11.
In addition, the product has been checked according to the requirements of ETAG-005 and is classified as: W3, S, TL4-TH4, P4 special, which means that its expected working life is 25 years under the worst control conditions specified in this standard concerning user loads (P4), the climatic zone (S) and the resistance to maximum and minimum service temperatures (TL4-TH4).
ISOFLEX-PU 500 A is certified as root-resistant, according to UNE CEN/TS 14416 EX: 2014.

Fields of application

ISOFLEX-PU 500 A is suitable for waterproofing:

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

Technical data

1. Properties of the product in liquid form

Colors:	grey, white
Density:	1.43 kg/l
Viscosity:	2,000-4,500 mPa·s (+23°C)

2. Properties of the cured membrane

Elongation at break: (EN-ISO 527)	> 300%
Tensile strength: (EN-ISO 527)	3 ± 0.5 N/mm^2
Hardness acc. SHORE A:	60 ± 2
Water impermeability. (DIN 1048)	5 atm
Solar Reflectance (SR): (ASTM E903-96)	85%
Infrared Emittance: (ASTM C1371-04a)	0.9
Solar Reflectance Index: (SRI) (ASTM E1980-01)	107
Service temperature:	from -40°C to +90°C

According to ETAG-005:

Expected working life:	W3 (25 years)
Climatic zone:	S (Severe)

	Severe
Annual radiant exposure on horizontal surface	≥ 5 GJ/m^2
Average temperature of the warmest month per year	≥ +22°C

Minimum surface temperature:	TH4 (-30°C)
Maximum surface temperature:	TL4 (+90°C)
User load:	**P4**

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Category	User load	Examples of accessibility
P1	Low	Non-accessible
P2	Moderate	Accessible for maintenance of the roofing only
P3	Normal	Accessible for maintenance of plant and equipment and to pedestrian traffic
P4	**Special**	**Roof gardens, inverted roofs, green roofs**

According to EN 1504-2:

Capillary absorption: (EN 1062-3, requirement of EN 1504-2: w < 0.1)	0.005 kg/m^2·h$^{0.5}$
Water vapor permeability: (EN ISO 7783-2, permeable, Class I < 5m)	Sd = 0.92 m
Adhesion (EN 1542, requirement for flexible systems with no traffic: ≥ 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

Directions for use

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

1.1 Concrete surfaces
Any existing cavities in concrete should be repaired in advance.
Severe cracks in the substrate must be primed locally and after 2-3 hours (depending on the weather conditions) must be sealed with the polyurethane sealants FLEX PU-30 S/50 S.

Concrete and other porous surfaces with moisture content < 4%, should be treated with primer PRIMER-PU 100, with a consumption of approx. 200 g/m^2.

Surfaces with moisture content > 4% should be primed with PRIMER-PU 140 special two-component polyurethane primer, with a consumption of 150-250g/m^2.

1.2 Smooth – Non-absorbent surfaces
Smooth and non-absorbent surfaces, as well as surfaces with bituminous membranes or other 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: 150-200g/m^2.
Depending on the weather conditions, ISOFLEX-PU 500 A is applied within 24-48 hours from priming, as soon as the moisture content falls below 4%.

1.3 Metal surfaces
The metal surfaces should be:
- Dry and stable.
- Free of materials that may hinder adhesion, e.g. dust, loose particles, grease, etc.
- Free of rust or corrosion that may hinder adhesion.

Having been prepared by brushing, rubbing, sandblasting, etc., and then thoroughly cleaned from dust, metal surfaces are primed with the EPOXYCOAT-AC anticorrosive 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 SOFLEX-PU 500 A should follow within the next 24-48 hours.

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2. Application – Consumption
Before application, it is recommended to slightly stir ISOFLEX-PU 500 A, until it becomes homogeneous. Extensive stirring should be avoided though, in order to prevent air entrapment.

a) Total waterproofing of the surface without reinforcement
ISOFLEX-PU 500 A is applied by brush or roller in two 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 4-5 hours (at +23°C, 50% RH).
Consumption: approx. 1.00-1.50kg/m^2, depending on the substrate.

b) Total waterproofing of the surface with reinforcement
ISOFLEX-PU 500 A membrane is reinforced with 100 cm wide polyester fleece strips (60g/m^2 or 120g/m^2). These placed strips must overlap by 5-10cm. In that case, 2-3 hours after priming, about two thirds of the required quantity is poured onto the floor and as soon as the material is spread, the polyester fleece is placed on it and then is rolled in, in order to help release the entrapped air. Then, the remaining content is poured over the fleece and is spread with a roller.
Consumption: > 2.50kg/m^2, depending on the substrate.

c) Local waterproofing of cracks with reinforcement
In this case, the primer is applied on the substrate, only along the cracks to a width of 10-12cm. Two-three hours after priming, about two thirds of the required quantity of ISOFLEX-PU 500 A is poured and while this is still fresh, a 10cm wide polyester fleece strip (60g/m^2 or 120g/m^2) is placed on it and is then rolled in to help release the entrapped air.
Then, the remaining quantity is poured over the fleece and is spread with a roller.
Consumption: > 250g/m of crack length, depending on the substrate.

d) Waterproofing under tiles
After applying the final layer of ISOFLEX-PU 500 A and while this is still fresh, quartz sand (Ø 0.3-0.8mm) must be broadcast. The quartz sand must be completely dry.
Consumption of quartz sand: approx. 3kg/m^2.

After 24 hours, any loose grains should be removed with a high suction vacuum cleaner.
Tiles should be fixed with a high performance polymer-modified tile adhesive, such as ISOMAT AK-22, ISOMAT AK-25, ISOMAT AK-ELASTIC, ISOMAT AK-MEGARAPID.

Tools should be cleaned with SM-28 special solvent while ISOFLEX-PU 500 A is still fresh.

Packaging

ISOFLEX-PU 500 A is supplied in metal containers of 1kg, 5kg, 12.5kg and 25kg.

Shelf life – Storage

6 months from production date if stored in original, unopened packaging at temperatures between +5°C and +35°C. Protect from direct sunlight and frost.

Remarks

- For spray application and at temperatures of less than 10ºC, it may be diluted, only with the special solvent SM-28, up to 10%.
- ISOFLEX-PU 500 A is not suitable for contact with chemically treated water of pools.
- Temperature during the application and hardening of the product should be between +5ºC and +35ºC.
- Substrate temperature must be at least 3ºC above the dew point, in order to avoid the risk of vapor condensation.
- Unsealed containers must be used at once and cannot be restored.
- ISOFLEX-PU 500 A is intended for professional use only.

Volatile Organic Compounds (VOCs)

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

ISOFLEX-PU 500 A

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 500A / 1858-01

EN 1504-2

Surface protection products

Coating

Permeability to CO_2: Sd > 50m

Water vapor permeability: Class I (permeable)

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

Adhesion: ≥ 0.8 N/mm^2

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
P.O. BOX 1043, 570 03 Ag. Athanasios
Tel.: 2310 576 000 Fax: 2310 722 475
www.isomat.eu e-mail: support@isomat.eu