Technical Datasheet

ISOFLEX-PU 550

Two-component, solvent-free, polyurethane, liquid waterproofing membrane

Description

ISOFLEX-PU 550 is a two-component, solvent-free polyurethane liquid waterproofing membrane.

- Based on hydrophobic polyurethane resins, it features excellent mechanical, chemical and thermal resistance.
- Forms a continuous, elastic, waterproof, vapor-permeable layer, without seams or joints.
- Has excellent adhesion to a variety of substrates, such as concrete, cement screeds, wood and acrylic or hybrid liquid waterproofing membranes.
- Applicable even to irregular substrates.
- Ideal for interior use (e.g. under-tile waterproofing), as it is solvent-free and almost odorless.

Certified as material suitable for contact with potable water, according to the requirements of RD140/2003 (Spanish Regulation that establishes sanitary criteria for water intended for human consumption, in accordance with 80/778/EEC). Water tanks must be thoroughly washed prior to filling with potable water.
Certified according to EN 1504-2 and classified as a coating for surface protection of concrete. Certificate No.: 2032-CPR-10.11. CE marked.

Fields of application

ISOFLEX-PU 550 is suitable for waterproofing:

- Under tiles in kitchens, bathrooms, balconies, roofs and flat roofs, as long as quartz sand has been previously broadcast on its last layer.
- Under thermal insulation boards on flat roofs.
- In construction works, highways, tunnels, waterproofing bridge decks, etc.
- Aboveground and underground concrete tanks with potable water, metal tanks, fire protection tanks, etc.

Technical data

1. Properties of the product in liquid form

Form:	polyurethane prepolymer
Color:	beige
Density (A+B):	1.45 kg/l
Mixing ratio	84:16 by weight
Viscosity:	5,600 mPa·s (at +23ºC)
Pot life:	25 min (at +23ºC)

2. Properties of the cured membrane

Elongation at break: (ASTM D 412 / EN 527-3)	132%
Tensile strength: (ASTM D 412 / EN 527-3)	4.2 N/mm^2
Hardness acc. to SHORE A:	82 ± 2
Water impermeability: (DIN 1048-5)	5 atm
Capillary water absorption: (EN 1062-3: requirement EN 1504-2: w < 0.1)	0.01kg·m^2·h$^{0.5}$
CO_2 permeability: (EN 1062-6):	S_d > 50 m
Vapor permeability: (EN ISO 7783-2, vapor-permeable Class I, S_d < 5 m)	S_d = 0.80 m
Adhesion: (EN 1542):	4.6 N/mm^2
Artificial weathering: (EN 1062-11, after 2000 h)	Pass (no blistering, cracking or flaking)
Reaction to fire: (EN 13501-1)	Euroclass F
Service temperature:	from -40ºC to +90ºC

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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 on the substrate must be locally primed and must be sealed with the polyurethane sealants FLEX PU-30 S or FLEX PU-50 S.

Concrete and other porous surfaces with a moisture content < 4% should be treated with the epoxy primer DUROFLOOR-PSF, with a consumption of 200-300 g/m^2.
Application of ISOFLEX-PU 550 should follow within the next 24-48 hours.

Surfaces with moisture content > 4% should be primed with the special two-component polyurethane primer PRIMER-PU 140, with a consumption of 100-250 g/m^2.
Application of ISOFLEX-PU 550 should follow after 3-4 hours, depending on the temperature.

1.2 Smooth – Non-absorbent surfaces
Smooth and non-absorbent surfaces, bituminous waterproofing membranes coated with granules and existing acrylic or hybrid liquid waterproofing membranes 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 550 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 might impair adhesion.
- Free of rust or corrosion that might impair adhesion.

Having been prepared by brushing, rubbing, sandblasting, etc., and then thoroughly cleaned from dust, metal surfaces are primed with EPOXYCOAT-AC anti-corrosion epoxy coating in one or two 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 550 should follow within the next 24-48 hours.

2. Application – Consumption
Components A (resin) and B (hardener) are packaged in two separate containers, at the correct, fixed mixing ratio by weight.
At first, component A should be stirred. Then, all of component B is added to all of component A and the two components are mixed for about 3 minutes with a low-speed mixer (300 rpm). It is important to stir the mixture thoroughly near the walls and bottom of the container to achieve uniform dispersion of the hardener.

a) Full-surface waterproofing
ISOFLEX-PU 550 is applied by brush or roller in two layers. The first layer is applied as soon as the primer has dried. The second layer should be applied crosswise after 8-24 hours, depending on the weather conditions.

In areas of severe cracks, it is recommended to locally reinforce ISOFLEX-PU 550 with a 10 cm wide polyester fleece strip (60 g/m^2) along the cracks.
In that case, as soon as the primer has dried, the first layer of ISOFLEX-PU 550 is applied along the cracks and, while still fresh, the 10 cm wide polyester fleece strip is embedded lengthwise.
Then, two extra layers of ISOFLEX-PU 550 are applied over the entire surface.
Consumption: 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 fully reinforce ISOFLEX-PU 550 membrane with 100 cm wide strips of polyester fleece (60 g/m^2).

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These strips must overlap by 5-10 cm. In that case, as soon as the primer has dried, the first layer of ISOFLEX-PU 550 is applied to a width of 100 cm (as wide as the reinforcement), and while that layer is still fresh, a strip of polyester fleece is embedded. The same application process is followed over the remaining surface. Then two additional layers of ISOFLEX-PU 550 are applied covering the entire reinforcement.
Consumption: >2.50 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 along the cracks, to a width of 10-12 cm. As soon as the primer has dried, the first ISOFLEX-PU 550 layer is applied and, while still fresh, a 10 cm wide polyester fleece strip (60 g/m^2) is embedded lengthwise. Finally, two extra ISOFLEX-PU 550 layers are applied along the cracks, completely covering the reinforcement.
Consumption: 200-250 g/m of crack length.

c) Waterproofing under tiles
ISOFLEX-PU 550 is applied by brush or roller in two layers.
It is recommended to locally reinforce the waterproofing membrane along joints and wall-floor junctions by applying a polyester fleece strip (60 g/m^2) on the first (fresh) layer of ISOFLEX-PU 550.
Then two additional layers of ISOFLEX-PU 550 are applied along joints so that the reinforcement is completely covered.
After applying the final total layer and while is still fresh, quartz sand (Ø 0.3-0.8 mm) must be broadcast. The quartz sand must be completely dry.
Consumption of quartz sand: approx. 3 kg/m^2.

After 24 hours, any loose grains should be removed with a high-suction vacuum cleaner.
When installing ceramic tiles, it is recommended to use high-performance, polymer-modified tile adhesives, such as ISOMAT AK-22, ISOMAT AK-24 CRYSTAL GEL, ISOMAT AK-25, ISOMAT AK-ELASTIC, ISOMAT AK-MEGARAPID.

Tools should be cleaned with SM-28 special solvent while ISOFLEX-PU 550 is still fresh.

Packaging

12.5 kg (A+B) containers.

Shelf life – Storage

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

Remarks

- In case of application by spray, it may be diluted only with SM-28 special solvent up to 10%, depending on the weather conditions.
- ISOFLEX-PU 550 is not suitable for contact with chemically treated water of swimming pools.
- Temperature during the application and hardening of the product should be between +8ºC and +35ºC.
- Each ISOFLEX-PU 550 layer should not exceed 0.7 mm.
- Unsealed containers must be used at once and cannot be restored.
- ISOFLEX-PU 550 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 500 g/l (2010) for the ready-to-use product.
The ready-to-use product ISOFLEX-PU 550 contains a maximum of 500 g/l VOC.

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2032-CPR-10.11

EN 1504-2

DoP No. ISOFLEX-PU 550/1835-01

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: ≥ 1.0 N/mm^2

Reaction to fire: Euroclass F

Dangerous substances comply with 5.3

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