

# ISOFLEX-PU 650

## Transparent, one component, aliphatic polyurethane liquid waterproofing membrane

### Description

ISOFLEX-PU 650 is a transparent, one component, aliphatic polyurethane, liquid waterproofing membrane with high solid content. The resulting membrane is UV stable, watertight, elastic and has excellent mechanical and chemical strength. It consists of high quality elastomeric and hydrophobic resins and maintains its transparency and elasticity for long term. It offers the following advantages:

- Easy and cost-saving application (as it is not required to remove the old substrate (tiles etc.) for waterproofing).
- Effective waterproofing and protection (of surfaces with old tile layers, wood, glass bricks, plastic materials etc.).
- Continuous membrane, without seams or joints.
- UV-stability. It does not turn yellowish with time.
- Resistance to weather conditions (rain, frost).
- Resistance to detergents, oils, sea water.
- Resistance to pedestrian traffic.

Used also as a transparent binder resin for exterior or interior stone carpet decorative floorings. As a binder resin for stone carpet applications, provides high flexibility, making it ideal for applications on balconies and terraces.

It is classified as a coating for surface protection of concrete, according to EN 1504-2. Certificate Nr. 2032-CPR-10.11D

### Fields of application

ISOFLEX-PU 650 is ideal for waterproofing and protection of:

- Flat roofs, terraces and balconies covered with glazed tiles, ceramic tiles, natural stone, wood, microcement coatings, cement screeds etc.

- Walls made of glass bricks, natural stone, etc.
- Light domes, atriums and greenhouses made of glass, plastic materials (polycarbonate sheets), etc.

### Technical data

#### 1. Properties of the product in liquid form

Form:	pre-polymer polyurethane
Color:	transparent, gloss
Density:	1.0 ± 0.05 kg/l
Viscosity:	900 ± 200 mPa·sec (at +23°C)

#### 2. Properties of the cured membrane

Elongation at break: (EN-ISO 527)	> 200%
Tensile strength: (EN-ISO 527)	22 N/mm <sup>2</sup>
Hardness according to SHORE D:	45 ± 2
Capillary absorption: (EN 1062-3, requirement of EN 1504-2: w < 0,1)	0.01 kg/m <sup>2</sup> ·h <sup>0,5</sup>
Adhesion strength on tiles: (EN 1542)	> 2 N/mm <sup>2</sup> (tile failure)
Adhesion strength on concrete: (EN 1542)	> 2 N/mm <sup>2</sup> (concrete failure)
Artificial weathering: (EN 1062-11, after 2000 h)	Pass (no blistering, cracking or flaking)
Reaction to fire: (EN 13501-1)	Euroclass F
Tack free time: (at +23°C, 40-50% RH) (EN ISO 2811-1)	4-6 hrs

# ISOFLEX-PU 650

Service temperature: from -40°C to +90°C

## Directions for use

### I. Application as a Transparent Waterproofing liquid membrane

#### 1. Substrate

The substrate must be completely dry, clean, free of grease, loose particles, dust, old paints etc. Surfaces with trapped moisture (e.g. moisture under tiles) must be left to dry completely prior to the application of ISOFLEX-PU 650.

**1.a** Non porous surfaces (e.g. glazed tiles, glass bricks) should be treated with the special adhesion promoter PRIMER-S 165. The surface is cleaned with a cloth that has been soaked with the promoter. The cloth must be frequently changed. The first layer of ISOFLEX-PU 650 is applied 20-30 min after the application of PRIMER-S 165. The adhesion promoter cleans the surface and increases the bond strength of ISOFLEX-PU 650. PRIMER-S 165 should not be applied on transparent plastic materials (e.g. polycarbonate sheets).

Consumption approx. 30-70 g/m<sup>2</sup>.

**1.b** Porous surfaces (e.g. concrete, microcement-coatings, natural stone etc) should be primed with PRIMER-PU 150. PRIMER-PU 150 is thoroughly stirred and uniformly applied on the substrate by brush, roller or spraying. The first layer of ISOFLEX-PU 650 is applied 3-4 hours after the application of PRIMER-PU 150.

Consumption of PRIMER-PU 150: approx. 200-250 g/m<sup>2</sup>.

#### 2. Application

ISOFLEX-PU 650 should be slightly stirred before application. Excessive stirring should be avoided in order to prevent air entrapment in the material.

ISOFLEX-PU 650 is applied by roller in 2-3 layers. Each subsequent layer follows after 12-18 hours depending on the weather conditions and not later than 24 hours.

Consumption: approx. 0.8-1.2 kg/m<sup>2</sup>, in 2-3 layers, depending on the type of the substrate. Tools should be cleaned with SM-16 solvent, while ISOFLEX-PU 650 is still fresh.

#### 3. Finishing

If a satin surface is desired, apply one layer of VARNISH-PU 650 MF over ISOFLEX-PU 650.

### II. Application as a Binder Resin for decorative stone carpet flooring

#### 1. Substrate

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

Any existing cavities in concrete should be filled in advance with the appropriate repairing materials.

**1.a** Cementitious surfaces should be primed with either of DUROFLOOR-PSF, PRIMER-PU 150 or PRIMER-PU 100.

Consumption: 200-300 g/m<sup>2</sup>.

The resin stone carpet should be applied within 14-24 hours after priming with DUROFLOOR-PSF and 3-4 hours after priming with PRIMER-PU 100 or PRIMER-PU 150.

**1.b** Non porous surfaces (e.g. glazed tiles) should be treated with the special adhesion promoter PRIMER-S 165. The surface is cleaned with a clean cloth that has been soaked with the promoter. The cloth must be frequently changed. The adhesion promoter cleans the surface and increases the bond strength of the resin stone carpet.

Consumption approx. 30-70 g/m<sup>2</sup>.

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The resin stone carpet is applied 20-30 min after the application of PRIMER-S 165.

## 2. Application

The resin stone carpet is prepared, according to the following ratio:

ISOFLEX-PU 650: 1 part by weight  
Quartz aggregates: 8-10 parts by weight

Depending on the layer thickness, the colored quartz aggregates used, should usually have a particle size of 0.7-1.2 mm or 2.0-3.8 mm. The quartz aggregates are added into the ISOFLEX-PU 650 under continuous stirring with a low speed mixer (300 rpm) and mixed until the resin stone carpet mixture becomes homogeneous.

It is important to thoroughly stir the mixture near the sides and bottom of the container, to achieve uniform dispersion of the resin mortar. Pour the mixture onto the prepared surface and apply by a smooth trowel.

Before the application of the decorative stone carpet flooring on flat roofs, balconies etc. the substrate should be firstly waterproofed with a polyurethane liquid membrane such as ISOFLEX-PU 500, ISOFLEX-PU 510 or ISOFLEX-PU 550. The application of the stone carpet follows after 24 hours without priming.

### Packaging

ISOFLEX-PU 650 is supplied in tin buckets of 1 kg, 5 kg and 20 kg.

### Storage

9 months from date of production if stored in original sealed packaging, in areas protected from humidity and direct sun exposure.

Recommended storage temperature between +5°C and +35°C.

### Remarks

- Surfaces that have been treated in the past with hydrophobic impregnations might cause adhesion problems. It is recommended to perform a trial application first, in order to check the compatibility of the substrate.
- If an anti-slip surface is desired, for avoiding slipperiness during wet days, broadcast the appropriate type of quartz sand on the final wet coating of ISOFLEX-PU 650. For more information please consult the Technical Support Department.
- In case of application of ISOFLEX-PU 650 on polycarbonate sheets please consult the Technical Support Department.
- ISOFLEX-PU 650 is not suitable for contact with chemical treated water of swimming pools.
- Low temperatures retard the curing of ISOFLEX-PU 650 and high temperatures accelerate the curing of ISOFLEX-PU 650.
- High atmospheric humidity may affect the final finish of ISOFLEX-PU 650.
- Temperature during the application and hardening of the product should be between +8°C and +35°C.
- Unsealed packages shall be used at once 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 650 contains max <500 g/l VOC.

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2032

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**EN 1504-2**

Surface protection products

Coating

Permeability to CO<sub>2</sub>: Sd > 50 m

Water vapor permeability: Class I (permeable)

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

Adhesion:  $\geq 0.8 \text{ N/mm}^2$

Reaction to fire: Euroclass F

Dangerous substances comply with 5.3

## ISOMAT S.A.

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