

## WATERPROOFING OF INTERIOR WET AREAS WITH A TWO-COMPONENT, POLYURETHANE LIQUID MEMBRANE

**SOLUTION:** Waterproofing of interior wet areas with the polyurethane, liquid waterproofing membrane **ISOFLEX-PU 550** & tiling.

### Related Materials

<b>ISOFLEX-PU 550</b>	Two-component, polyurethane, solvent-free liquid waterproofing membrane
<b>PRIMER-PU 140</b>	Two-component, solvent-free polyurethane primer
<b>POLYESTER FLEECE 60g/m<sup>2</sup></b>	Polyester fleece for reinforcing waterproofing layers
<b>FLEX PU-30 S/FLEX PU-50 S</b>	Polyurethane sealants

## I. NATURE OF PROBLEM – REQUIREMENTS

Interiors spaces with high humidity levels, such as professional kitchens, bathrooms, bathtubs, etc., must be waterproofed, to ensure that moisture is stopped from seeping through the surfaces and walls into adjacent rooms.

Such a waterproofing layer is usually formed under tiles. The primary requirement for waterproofing is the permanent moisture resistance and durability, as well as reliability over time, because any subsequent repair of the waterproofing layer is difficult and costly.

## II. SOLUTION

The two-component, solvent-free, polyurethane liquid membrane ISOFLEX-PU 550 is an ideal solution for waterproofing surfaces in areas suffering from moisture problems. This is a two-component, solvent-free, polyurethane, waterproofing membrane providing complete water tightness. It is ideal for indoor use, as it is solvent-free and is virtually odorless.

It creates a single membrane without joints, with excellent mechanical, chemical and thermal resistance and permanent elasticity at temperatures between -40°C and +90°C.

It has been certified with the CE marking as a concrete surface protection product in accordance with EN 1504-2. It shows excellent bonding to various surfaces, such as concrete, cement, cement boards, gypsum boards, etc.

### III. APPLICATION

#### Substrate preparation

Generally, the substrate must be free from loose particles, dust, grease, etc.

#### Surface priming

The polyurethane two-component solvent-free primer, **PRIMER-PU 140** is applied to the clean and dry substrate such as concrete, cement screed, gypsum board, cement board, etc. The primer is evenly applied across the surface with a brush, roller or by spraying.

Consumption of primer PRIMER-PU 140: 100-200g/m<sup>2</sup>.

Application of ISOFLEX-PU 550 should follow after 3-4 hours, depending on the temperature.

#### Application of the two-component, polyurethane, solvent-free, liquid waterproofing membrane ISOFLEX-PU 550

Components A (resin) and B (hardener) are packaged in containers with a predetermined mixing ratio. Initially, only component A is mixed. Then, component B is fully added to component A and the two components are mixed for approx. 3 minutes with a low-speed mixer (300 rpm.). It is important that the mixture is stirred on the walls and the bottom of the container, so that the hardener is uniformly spread.

#### Total waterproofing of the surface

ISOFLEX-PU 550 is applied by brush or roller in 2 layers. The second layer should be applied 8-24 hours after the first one, depending on the interior space conditions.

Consumption: approx. 1.0-1.5kg/m<sup>2</sup>, depending on the substrate.

Across construction joints and at the intersections between walls and floors, local reinforcing of the liquid waterproofing membrane with a 10cm wide strip of polyester fleece (60g/m<sup>2</sup>) is recommended. ISOFLEX-PU 550 is applied and the 10cm wide strip of polyester fleece (60g/m<sup>2</sup>) is embedded while is still fresh. After 8-24 hours, depending on temperature conditions, a second layer of the polyurethane liquid waterproofing membrane ISOFLEX-PU 550 is applied. After 8-24 hours, depending on temperature conditions, a third layer is applied to the spots where reinforcement has been used for its full coverage.

#### A) In case there are individual cracks in the substrate:

Application of ISOFLEX-PU 550 should follow 3-4 hours after the application of the primer. A layer of the polyurethane liquid waterproofing membrane ISOFLEX-PU 550 is applied along the cracks and, while it is still fresh, a 10cm wide strip of polyester fleece (60g/m<sup>2</sup>) is embedded. ISOFLEX-PU 550 is totally applied to the remaining surface in a single layer. After 8-24 hours, depending on temperature conditions, a total second layer of the polyurethane liquid waterproofing membrane ISOFLEX-PU 550 is applied. After 8-24 hours, depending on the weather conditions, a third layer is applied to the spots where reinforcement has been used for its full coverage.

**Cracks in the substrate (wider than 1mm) have to be initially primed locally and sealed with the polyurethane sealants FLEX PU-30 S or FLEX PU-50 S. In case of cracks < 1mm, no sealing is required.**

Total consumption of the polyurethane, liquid waterproofing membrane, ISOFLEX-PU 550: 1.0-1.5kg/m<sup>2</sup>, depending on the substrate.

#### **B) In case there are dense, multiple cracks in the substrate:**

Application of ISOFLEX-PU 550 should follow 3-4 hours after the application of the primer. The polyurethane liquid waterproofing membrane ISOFLEX-PU 55 is totally reinforced with 100cm wide strips of polyester fleece (60g/m<sup>2</sup>), which overlap one another by 5-10cm. The first layer of the polyurethane liquid waterproofing membrane ISOFLEX-PU 550 is applied and while is still fresh, the strip of polyester fleece is embedded. The same application process is followed in the remaining surface. As soon as this layer has set, after 8-24 hours depending on the weather conditions, two extra layers of the polyurethane liquid waterproofing membrane ISOFLEX-PU 550 are applied over the entire surface fully covering the reinforcement.

Total consumption of the polyurethane, liquid waterproofing membrane, ISOFLEX-PU 550: 2.0-2.25kg/m<sup>2</sup>, depending on the substrate.

**Cracks in the substrate (wider than 1mm) have to be initially primed locally and sealed with the polyurethane sealants FLEX PU-30 S or FLEX PU-50 S. In case of cracks < 1mm, no sealing is required.**

#### **Surface preparation for tiling**

After applying the final universal layer of the two-component, solvent-free, polyurethane liquid waterproofing membrane ISOFLEX-PU 550 and while is fresh, quartz sand (grain size 0.3-0.8 mm) is broadcast. The quartz sand should be completely dry. As soon as ISOFLEX-PU 550 has cured, any loose grains are removed using a high suction vacuum cleaner.

Quartz sand consumption: approx. 2.5-3.0kg/m<sup>2</sup>.

#### **Fixing - grouting of ceramic tiles**

As long as the last layer of the two-component, solvent-free, polyurethane liquid waterproofing membrane ISOFLEX-PU 550 has dried and the loose grains of quartz sand have been removed, it is recommended that the tiles be fixed with high performance polymer-modified adhesives, such as **ISOMAT AK 22, ISOMAT AK 25, ISOMAT AK-ELASTIC, ISOMAT AK-MEGARAPID.**

For spaces like bathrooms, bathtubs, etc., it is recommended that the tiles be grouted with the cementitious tile grout, reinforced with polymer components (resins), **MULTIFILL SMALTO 1-8** or the three-component, decorative, solvent-free epoxy grout **MULTIFILL EPOXY GLITTER.**

In areas with special requirements, e.g. professional kitchens, it is recommended that the tiles be grouted with the two-component, solvent-free epoxy grout **MULTIFILL-EPOXY THIXO.**

#### IV. NOTES

- The temperature during application and curing of the materials should be between +5°C and +35°C.
- Maximum consumption of the polyurethane liquid waterproofing membrane for flat roofs ISOFLEX-PU 550 must not exceed 750g/m<sup>2</sup> per layer.
- Intense cracks in the substrate must be sealed with the polyurethane sealants **FLEX PU-30 S** or **FLEX PU-50 S**.
- Tools are cleaned with the special polyurethane solvent SM-16 while the two-component, solvent-free, polyurethane liquid waterproofing membrane ISOFLEX-PU 550 is still fresh.