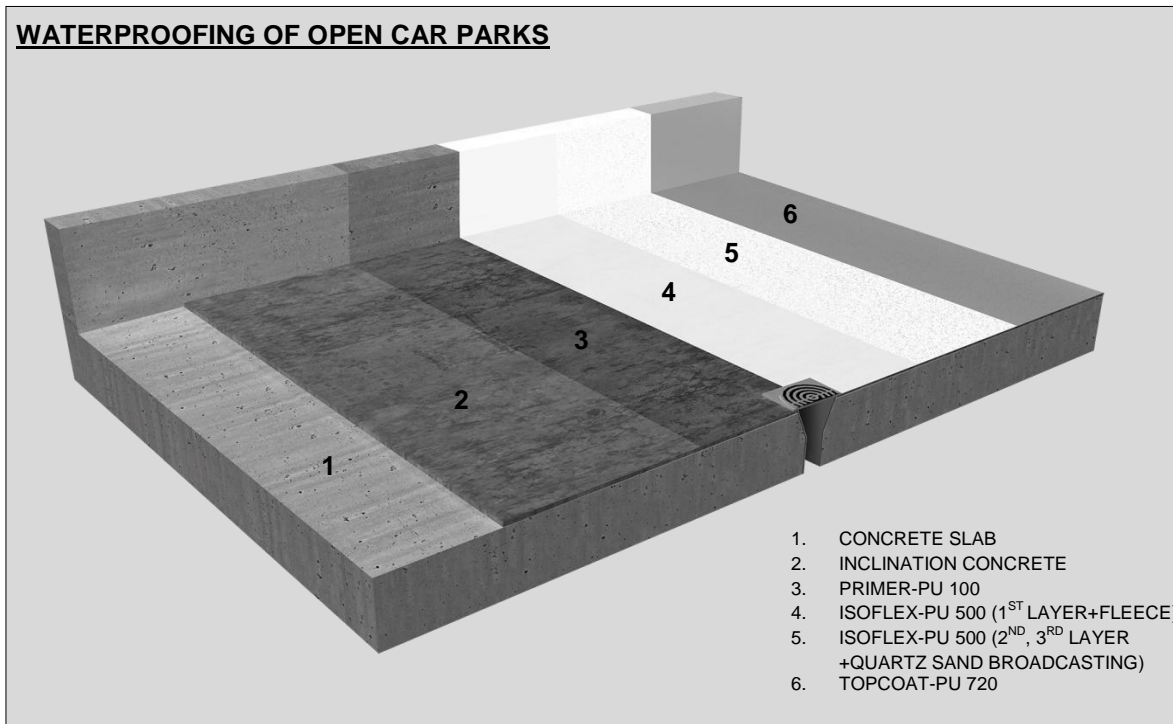


WATERPROOFING OF OPEN CAR PARKS



SOLUTION: Waterproofing of open car parks with the polyurethane liquid membrane **ISOFLEX-PU 500** and the **TOPCOAT-PU 720**, as final polyurethane, aliphatic top coat, show skid resistance.

Related Materials

ISOFLEX-PU 500

One-component, polyurethane, waterproofing liquid membrane for roofs

TOPCOAT-PU 720

One-component, aliphatic, elastic polyurethane top coat

PRIMER-PU 100

One-component polyurethane primer

PRIMER-PU 140

Two-component polyurethane primer for surfaces with high moisture content

DUROCRET-PLUS

Polymer-modified, fiber-reinforced repairing cement mortar

POLYESTER FLEECE 60 g/m²

Polyester fleece for reinforcing waterproofing layers

FLEX PU-30 S/FLEX PU-50 S

Polyurethane sealants

ACCELERATOR 5000

Special set accelerator for ISOFLEX-PU 500

I. NATURE OF THE PROBLEM - REQUIREMENTS

Waterproofing of exposed concrete slabs which are going to be used as open, light-traffic car parks, should show special resistance to weathering, reliability and durability, elasticity and good adhesion to the substrate, apart from ensuring their full tightness. The final exposed surface should have the necessary resistance to mechanical loads and abrasion, and provide long-term resistance to UV radiation.

II. SOLUTION

These requirements are fully covered by the system of polyurethane liquid products **ISOFLEX-PU 500** and **TOPCOAT-PU 720**. ISOFLEX-PU 500 is a one-component, polyurethane, waterproofing liquid membrane for roofs which constitutes the base layer of the system, while TOPCOAT-PU 720 is a one-component, aliphatic, elastic polyurethane top coat that constitutes the final exposed surface of the system.

This two-product system has excellent adhesion to the substrate, high flexibility, great resistance to weathering and UV radiation. It offers high resistance to standing water, and can thus be used on surfaces without particularly good slopes.

It creates a continuous, elastic membrane with excellent mechanical strength, without joints or seams and is used for total waterproofing of concrete surfaces that are going to be used as open car parks.

III. APPLICATION

Substrate preparation

The substrate must be dry (moisture content <4%), stable and free from loose particles, dust, grease, etc.

Local restorations or repairs of concrete elements are carried out with the polymer-modified, fiber-reinforced, PCC R3 type, cement mortar **DUROCRET-PLUS**.

Substrate priming

As soon as the materials that may have been used for leveling the substrate have dried, the clean, dry concrete surface (moisture content <4%) is coated with the one-component, polyurethane primer **PRIMER-PU 100**. The primer is evenly applied across the surface with a brush, roller or by spraying.

Consumption of the polyurethane primer PRIMER-PU 100: 200-300 g/m².

In case the substrate has moisture content > 4%, the PRIMER-PU 140 which is a polyurethane, two-component primer for surfaces with high moisture content is applied instead of the polyurethane primer PRIMER-PU 100.

Consumption of PRIMER-PU 140: 200-250 g/m².

Cracks on the substrate (wider than 1 mm) 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 < 1 mm, no sealing is required.

Application of the polyurethane liquid membrane, ISOFLEX-PU 500

The polyurethane liquid membrane, **ISOFLEX-PU 500**, is applied by roller in three coats. Due to the intense shear stress developed by the cars moving on the surface of car parks, it is required to totally reinforce the membrane of the polyurethane, liquid membrane ISOFLEX-PU 500 with 60 g/m² polyester fleece strips, 100 cm wide, which overlap by 5-10 cm. In order for the polyester fabric to be properly embedded in the mass of ISOFLEX-PU 500, the following procedure is followed.

While applying the first layer of the polyurethane liquid membrane ISOFLEX-PU 500, 2-3 hours after application of the polyurethane primer PRIMER-PU 100 and while the surface is still a bit tacky, ISOFLEX-PU 500 is applied partially to a width of about 100 cm (as wide as the reinforcement) and while the material is still fresh, the polyester fleece strip is positioned and embedded. The same procedure is followed on the entire surface.

Then, two successive coats of the polyurethane liquid membrane for roofs, ISOFLEX-PU 500 are applied, entirely covering the reinforcement.

ISOFLEX-PU 500 could be applied also with the addition of ACCELERATOR 5000. ACCELERATOR 5000 is a special set accelerator for ISOFLEX-PU 500 that enables its application at low temperatures or in thicker layers. It also increases the thixotropy and mechanical strength of ISOFLEX-PU 500.

Total consumption of the polyurethane, waterproofing liquid membrane for roofs, ISOFLEX- PU 500: 2.00-2.25 kg/m², depending on the substrate.

The waterproofing is extended to the vertical surfaces up to a height of at least 15-20 cm, in order for a watertight basin to be formed.

Forming a slip-resistant surface

In order to create the required slip resistance on the final surface, the following procedure has to be followed: In the last total layer of the polyurethane, brushable, waterproofing membrane for roofs, ISOFLEX-PU 500 and while this is still fresh, quartz sand (Ø 0.3-0.8 mm) is broadcast. The quartz sand should be completely dry. As soon as the polyurethane, waterproofing liquid membrane for roofs, ISOFLEX-PU 500 has hardened, any loose grains are removed using a high-suction vacuum cleaner.

Quartz sand consumption: approx. 2.5-3 kg/m².

Application of TOPCOAT-PU 720

As soon as the last layer of the polyurethane waterproofing liquid membrane for roofs, ISOFLEX-PU 500 has dried and any loose quartz sand grains have been removed, the entire surface is coated with the one-component, polyurethane, aliphatic, elastic top coat, **TOPCOAT-PU 720**. The aliphatic, elastic polyurethane paint TOPCOAT-PU 720 is applied by roller in two layers. The second layer is applied crosswise to the first one, after 4-24 hours, depending on the weather conditions.

Consumption of the aliphatic, elastic, polyurethane paint, TOPCOAT-PU 720: 0.40-0.45 kg/m², depending on the substrate.

IV. NOTES

- The temperature during application and curing of the materials should be between +5°C and +35°C.
- Maximum consumption of ISOFLEX-PU 500 per layer should not exceed 750 g/m². With the addition of ACCELERATOR 5000 each layer should not exceed the 1.25 kg/ m².
- Excessive stirring of the polyurethane, waterproofing liquid membrane for flat roofs, ISOFLEX-PU 500, and the aliphatic polyurethane top coat TOPCOAT-PU 720 should be avoided to prevent air entrapment.
- Consult the instructions for safe use and precautions written on the packaging.
- ISOFLEX-PU 500 may be applied when the ambient temperature is 5°C and rising, and the temperature of the substrate is a minimum of 3 degrees above the dew point. The maximum application temperature is approximately 35°C. Low temperatures retard curing while high temperature accelerates curing. High values of humidity may affect the final finish of the membrane.