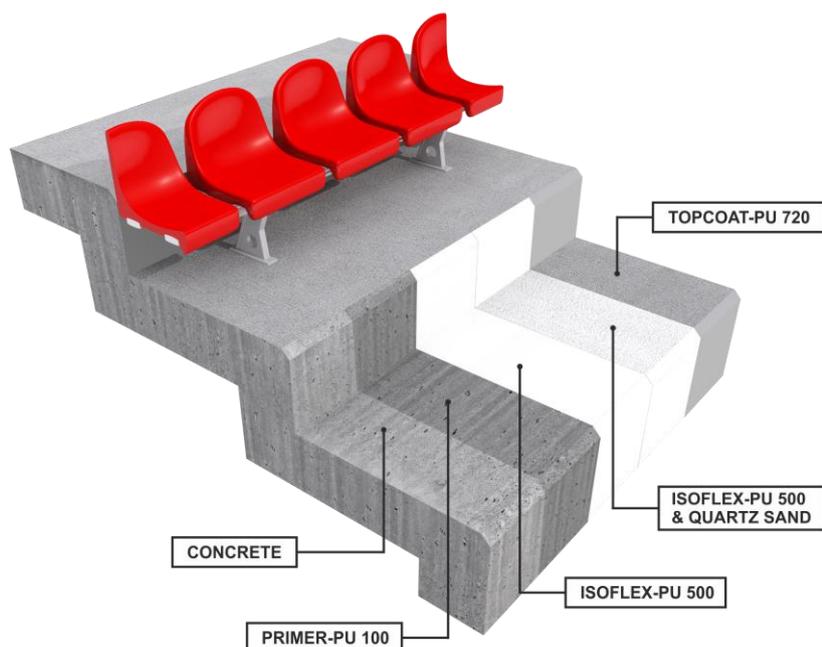


WATERPROOFING AND PROTECTING OF FIELD STANDS WITH A POLYURETHANE LIQUID MEMBRANE AND A PROTECTIVE ALIPHATIC COATING



Related Materials

ISOFLEX-PU 500
ACCELERATOR 5000
TOPCOAT-PU 720
PRIMER-PU 100
PRIMER-PU 140

One-component polyurethane, waterproofing liquid membrane
 Special set accelerator for ISOFLEX-PU 500
 One-component, aliphatic, elastic, polyurethane top coat
 One-component polyurethane primer
 Two-component polyurethane primer for surfaces with high moisture content

EPOXYPRIMER-500
DUROCRET-PLUS
POLYESTER FLEECE 60g/m²
FLEX PU-30 S/FLEX PU-50 S

Two-component water based epoxy primer
 Polymer-modified, fiber-reinforced repairing mortar
 Polyester fleece for reinforcing waterproofing layers
 Polyurethane sealants

I. NATURE OF PROBLEM-REQUIREMENTS

Waterproofing of field stands, either done during the construction phase or afterwards, apart from ensuring their full watertightness, should present special resistance to weathering, reliability and durability, elasticity and good adhesion to the substrate.

The field stands are used by pedestrians with the requirements of slip resistance and color stability over time (especially in dark shades), resistance to mechanical stress and friction, as well as long-term resistance to ultraviolet radiation.

II. SOLUTION

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

This two-material system shows excellent adhesion to the substrate, high flexibility, high resistance to weathering and UV radiation. It creates a continuous, elastic membrane with excellent mechanical strength, without joints or seams and is used for universal waterproofing and protecting of surfaces.

III. APPLICATION

Substrate preparation

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

Local restorations or repairs of the substrate (concrete, cement mortar, etc.) are made with the polymer-modified, fiber-reinforced, type PCC R3 cement mortar, **DUROCRET-PLUS**.

Surface priming

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

Consumption of 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.

Application of the polyurethane, waterproofing, liquid membrane ISOFLEX-PU 500

Total waterproofing of the surface

Before the application, it is recommended to slightly stir ISOFLEX-PU 500, until it becomes homogeneous. Extensive stirring should be avoided, in order to prevent air entrapment in the material.

It is recommended to reinforce ISOFLEX-PU 500 with the polyester fleece along the edges at the junction of the horizontal surface with vertical elements (parapet, stairwell termination, seats etc.).

As soon as the polyurethane primer PRIMER-PU 100 has set (approx. 2-3 hours), a coat of the polyurethane waterproofing liquid membrane ISOFLEX-PU 500 is applied along the junctions and while it is still fresh, a 10 cm wide strip of polyester fleece (60 g/m²) is embedded. ISOFLEX-PU 500 is totally applied on the remaining surface in a single layer. After 8-24 hours, depending on weather conditions, a total second coat of the polyurethane waterproofing liquid membrane ISOFLEX-PU 500 is applied. After 8-24 hours, depending on the weather conditions, a third layer is applied on the spots where reinforcement has been used for its full coverage.

Consumption: approx. 1.0-1.5 kg/m², depending on the substrate.

Consumption with polyester fleece: approx. 2.0-2.25 kg/m², depending on the substrate.

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.

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

Application of ISOFLEX-PU 500

As soon as the polyurethane primer PRIMER-PU 100 has set (approx. 2-3 hours), a coat of the polyurethane waterproofing liquid membrane ISOFLEX-PU 500 is applied along the cracks and, while it is still fresh, a 10 cm wide strip of polyester fleece (60 g/m²) is embedded. ISOFLEX-PU 500 is totally applied on the remaining surface in a single layer. After 8-24 hours, depending on weather conditions, a total second coat of the polyurethane waterproofing liquid membrane ISOFLEX-PU 500 is applied. After 8-24 hours, depending on the weather conditions, a third layer is applied on the spots where reinforcement has been used for its full coverage.

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.

It is recommended to reinforce ISOFLEX-PU 500 with the polyester fleece along the edges at the junction of the horizontal surface with vertical elements (parapet, stairwell termination, etc.)

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, ISOFLEX-PU 500: 1.0-1.5 kg/m², depending on the substrate.

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

Application of ISOFLEX-PU 500

As soon as the polyurethane primer PRIMER-PU 100 has dried (approx. 2-3 hours), the polyurethane waterproofing liquid membrane ISOFLEX-PU 500 is totally reinforced with 100 cm wide strips of polyester fleece (60 g/m²), which overlap one other by 10 cm. The first layer of the polyurethane waterproofing liquid membrane ISOFLEX-PU 500 is applied in order to cover the reinforcement (to a width of 100 cm), and while it is still fresh, the strip of polyester fabric is embedded. The same application procedure is followed in the remaining surface. As soon as this layer has set, after 8-24 hours depending on weather conditions, two extra layers of the polyurethane waterproofing liquid membrane ISOFLEX-PU 500 are applied on the entire surface, fully covering the reinforcement. The second coat can be applied as soon as the first one has dried, after 8-24 hours, depending on the weather conditions.

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, ISOFLEX-PU 500: 2.0-2.5 kg/m², depending on the substrate.

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.

It is recommended to reinforce ISOFLEX-PU 500 with the polyester fleece along the edges at the junction of the horizontal surface with vertical elements (parapet, stairwell termination, etc.)

Application of the aliphatic, elastic polyurethane top coat, TOPCOAT-PU 720

A) Forming a smooth final surface on vertical surfaces

Application of the one-component, aliphatic, elastic polyurethane top coat, TOPCOAT-PU 720

As long as the last layer of the polyurethane, waterproofing liquid membrane, ISOFLEX-PU 500, has dried, the aliphatic polyurethane top coat TOPCOAT-PU 720 is applied by roller in two layers. The second layer is applied crosswise with respect to the first one, after 4-24 hours, depending on the weather conditions.

Consumption of the aliphatic polyurethane top coat **TOPCOAT-PU 720**: 0.25-0.30 kg/m², depending on the substrate.

B) Forming a slip-resistant final surface on horizontal surfaces

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, waterproofing membrane, ISOFLEX-PU 500 and, while this is still fresh, quartz sand (Ø 0.3-0.8 mm) is broadcasted (uniformly distributed). The quartz sand should be completely dry. As soon as the polyurethane, waterproofing liquid membrane ISOFLEX-PU 500 has hardened, any loose grains are removed using a high-suction vacuum cleaner.

Quartz sand consumption: approx. 1.5-2.0 kg/m².

Application of the one-component, aliphatic, elastic polyurethane top coat, TOPCOAT-PU 720

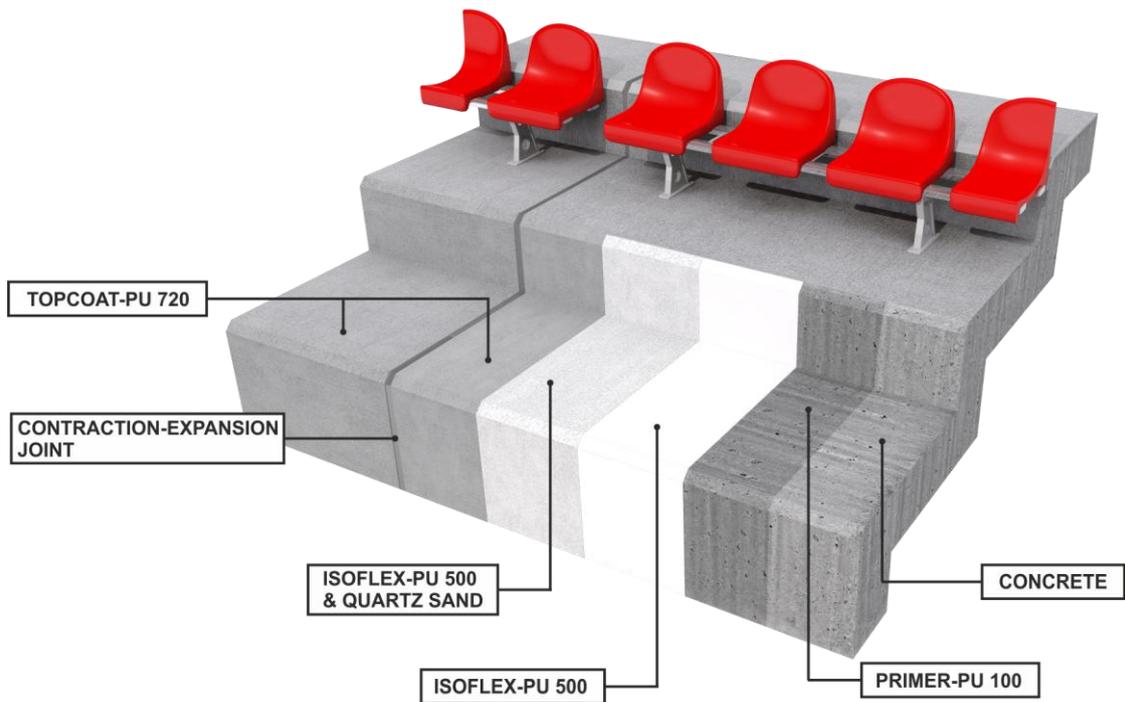
As soon as the last layer of the polyurethane, waterproofing liquid membrane for roofs, ISOFLEX-PU 500 has dried and any loose quartz sand grains have been removed, the entire surface is coated with the one-component, polyurethane, aliphatic, elastic top coat, **TOPCOAT-PU 720**. The aliphatic, elastic polyurethane top coat, 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 top coat, TOPCOAT-PU 720: 0.40-0.45 kg/m², depending on the substrate.

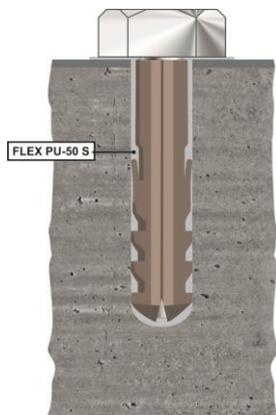
TOPCOAT-PU 720 is available in white, grey and other colors by order.

IV. NOTES

- 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.
- ISOFLEX-PU 500 must be protected from rain at least 5-6 hours after its application at temperature 20 °C and 60 % humidity, 8-10 hours at temperature 10°C and 60% humidity and 18-24 hours at temperature 5 °C and 50%.
- 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 ISOFLEX-PU 500, and the aliphatic polyurethane top coat TOPCOAT-PU 720 should be avoided to prevent air entrapment.
- ISOFLEX-PU 500 and TOP-COAT PU 720 can be applied by airless sprayer similar to type GRACO MARK V, GRACO MARK X, WAGNER SUPERFINISH SF 7000, etc.
- FLEX PU-50 S is appropriate for joint width up to 2,5-3 cm. FLEX PU-30 S is appropriate for joint width up to 5 cm. FLEX-PU 2K is appropriate for joint width up to 10 cm.
- During the installation of the seats it is necessary to seal the holes with FLEX PU-50 S and while it is still fresh to insert the screws or the bolts.
- Consult the instructions for safe use and precautions written on the packaging.



Detail of seats screws installation



Detail of contraction-expansion joint

