

DESMOFLEX® POLYURETHANE

High quality liquid polyurethane, solvent based for waterproofing

DESMOFLEX POLYURETHANE is a polyurethane based, white, glossy one component membrane used for long term water-proofing. Due to its polyurethane formulation, provides solutions to problems of waterproofing where the rest methods fail, like to surfaces with stagnant waters and ices. The product is based on pure elastomeric hydrophobic polyurethane resins, which result in excellent mechanical, chemical, thermal, UV and natural element resistance properties. DESMOFLEX POLYURETHANE polymerizes with the underground moisture and air humidity.

The product is suitable for the coating and protection of concrete surfaces, according to EN 1504-2:2004 standard.



Advantages:

- Simple application (one component, ready for use).
- During the application polymerizes and creates a seamless elastic hydrophobic membrane without joints.
- Does not hydrolyze and can be applied to places with stagnant waters.
- Resistant to microorganisms.
- Crack-bridging up to 2mm, even at -10°C.
- Allows the substrate to breathe.
- Provides excellent adhesion to the whole surface.
- Resistant to detergents, oils, seawater and domestic chemicals
- Does not soften in the summer and does not harden in the winter, as it maintains its mechanical properties over a temperature span of -30°C to +80°C.
- The surface remains passable.
- In case of mechanical damage to the membrane, it can be easily repaired in a few minutes.
- Resistant to root penetration.
- Provides resistance to frost.
- Reflect sunlight and provides very good thermos-insulation.
- Provides excellent resistance against sunlight exposure and UV radiation.
- Over 15 years of possible repaint.

TECHNICAL CHARACTERISTICS

Packaging:



Metallic container
• 6kg
• 25kg

Consumption:



~ 1.4-2.4 kg/m² applied in two or three layers.

V.O.C. class :



A/I one-pack performance coatings (S.B.)
V.O.C limit: 500 gr/lit.
Maximum V.O.C. of product ready to use: 499 gr/lit.
Minimum thinning: ready to use.

Storage:



Containers must be stored in dry and cool places for a maximum of 9 months after the date of production. Protect the containers from moisture and sunlight. Storage temperature: 5 - 35°C. The product must remain in unopened containers, bearing the name of the producer, the product description, the production number and the precautionary label.

Application:



Waterproofing and protection. For concrete and other cementitious substrates and bituminous surfaces in terraces, roofs, balconies, verandas, asphalt membranes, and under pavers.

Color:



White, grey.

FIELDS OF APPLICATION

- Waterproofing of roofs and terraces.
- Waterproofing of balconies and verandas.
- Under-tile waterproofing in balconies, bathrooms, kitchens etc.
- Protection of polyurethane foam insulation.
- Waterproofing of flowerbeds and planter boxes.
- Protection of asphalt cloths, old bituminous membranes, EPDM and PVC membranes and old acrylic coatings.
- Waterproofing and protection of concrete constructions bridge-decks, tunnels, foundations, etc.

SUBSTRATE PREPARATION

For excellent adhesion, the surface must be clean, dry, free of dust, salts, corrosion products and other foreign substances before application. Remove all loose parts. Old coatings, dirt, grease, organic substances and dust must be removed with the aid of a grinding machine (sander). Any irregularities in the surface shall be sanded. Any loose pieces or grinding dust must be removed. New concrete structures must be allowed to dry for at least 28 days.

APPLICATION

CAUTION: Do not clean the surface with water. The careful sealing of existing cracks and joints is extremely important for long lasting waterproofing results.

Repair of cracks: Clean the cracks from dust, residues or other contamination. Prime locally with the primer DESMOFLEX EPOXY PRIMER and allow 2-3 hours to dry. Fill the cracks with the sealant ELASTO PU. Then, apply locally adequate waterproofing material DESMOFLEX POLYURETHANE, and while wet, cover with a suitable cut stripe of THRAKON FABRIC of 60 g/m², centered over the crack. Press the stripe with a metallic roll in the liquid in order to impregnate it. Then, apply enough waterproofing material DESMOFLEX POLYURETHANE, until complete saturation is achieved.

Repair of joints: Clean expansion joints and control joints of dust, residue or other contamination. If the joint is too small, use cutting machine in order to widen it to the pre-scribed size. The prepared movement joint should have a depth of 10-20 mm. The width-depth ratio of the movement joint should be 2:1. With a brush, apply waterproofing material DESMOFLEX POLYURETHANE, centered over and inside the joint.

Place a stripe of polyester geofabric over the wet material and with a suitable tool press the stripe deeply in the joint, till its internal surface to be fully covered with the geofabric. Apply over the fabric enough waterproofing material DESMOFLEX POLYURETHANE, till repletion. Then, place in the joint a suitable polyurethane cord and fill in the remaining free space of the joint with the sealant ELASTO PU. Allow it to cure for 12 to 18 hours.

Priming: Prime absorbent and non-absorbent surfaces like concrete (also prime fresh concrete), cement screed or wood metal, bituminous membranes, ceramic tiles and old acrylic coatings with the DESMOFLEX EPOXY PRIMER.

Application of waterproofing membrane: After approx. 6-12 hours (not later than 24 hours) and while the DESMOFLEX EPOXY PRIMER is still a bit tacky, apply the polyurethane coating DESMOFLEX POLYURETHANE. Pour enough of DESMOFLEX PU onto the prepared and primed surface and apply by roller or brush. Continue likewise until the surface is fully covered.

After 12 hours (not later than 48 hours), apply another layer of DESMOFLEX PU. For extended surfaces, the application of a third layer is recommended.

RECOMMENDATION: We recommend the reinforcement of DESMOFLEX POLYURETHANE with polyester geofabric THRAKON FABRIC of 60 g/m² either locally or to the whole surface of application. Use 5-10 cm stripe overlapping. Reinforce carefully with the polyester fabric all the critical points like connections of walls - floors, exits of ventilations, piping etc. In order to do that, apply on the wet DESMOFLEX POLYURETHANE a suitable appropriately cut piece of polyester fabric and press it with a metallic roll in order to be irrigated. Then, apply onto the fabric enough DESMOFLEX POLYURETHANE, until saturation.

WARNING: The thickness of DESMOFLEX POLYURETHANE membrane should not exceed 0.7mm per layer. For excellent results, the temperature during application and cure should be between 5°C and 35°C. Low temperatures retard curing while high temperatures accelerate it. High humidity may affect the finishing.

Finishing: For excellent results, cover the whole waterproofed surface with one layer of the elastic protection coating DESMOFLEX TOP COAT. The use of DESMOFLEX TOP COAT, is recommended especially when applied dark colors exposed to the sunlight. (after 12-24hours of DESMOFLEX POLYURETHANE).

In applications where heavy pedestrian traffic is expected (e.g. stadium shuttles), the application of two layers is highly recommended.

STANDARD COATING SYSTEM

Primer: DESMOFLEX® EPOXY PRIMER (all types of surfaces, including bituminous membranes and other pre-coated surfaces)/ DESMOFLEX® POLYURETHANE PRIMER (concrete surfaces)

Waterproofing Membrane: DESMOFLEX® POLYURETHANE

Finishing: DESMOFLEX® TOP COAT

Precautions

The product contains isocyanate compounds. For information regarding safe use, storage and disposal of the product, read carefully the information on the label and on the most recent Material Safety Data Sheet (MSDS) of the product, which is available to professionals upon request.

The skin and eyes must be protected during application. Protective gloves and goggles must be worn when applying the product. In case of contact with the eyes, rinse immediately with plenty of water and consult a physician. The product is intended only for professional use.

Leftovers and product wastes should not be disposed of with household waste. Please ask for the advice of local authorities regarding the proper disposal and collection of waste.

Technical characteristics	Units	Standard	Value
Composition			Polyurethane Membrane
Colour			White, Grey
Density (20°C)	kg/l		1.377
Elongation at Break	%	EN ISO 527-1 EN ISO 527-2	≥ 400
Tensile Strength at Break	N/mm ²	EN ISO 527-1 EN ISO 527-2	≥ 4
Adhesion strength by Pull Off Test (*) (EN 1504-2 requirement: ≥1.0 N/mm ²)	N/mm ²	EN 1542	> 2.0
Water Capillary Absorption, W (*) (EN 1504-2 requirement : w < 0.1)	kg/m ² ·h ^{0.5}	EN 1062-3	0.01
CO ₂ Permeability, S _d (*) (EN 1504-2 requirement of EN 1504-2: S _d > 50m)	(m)	EN 1062-6	S _d > 50.0
Water Vapour Permeability (*)	m	EN ISO 7783-1 EN ISO 7783-2	Class I (Permeable) < 5 m
Reaction to Fire (*)		EN 13501-1	Euroclass F
Reaction to external fire		EN 13501-5	B _{roof} (t4)
Artificial weathering (*) (EN 1504-2 requirement: No cracking after 2000h exposure)		EN 1062-11	Pass (no blistering, flaking)
Spectral Reflectance (SR)	%	ASTM E903-12 ASTM G159-98	86
Infrared Emittance Factor (e)		ASTM C1371-04a	0.87
Solar Reflective Index (SRI)		ASTM E1980-01	108
Chemical Resistance (against Acidic and alkali solutions (10%), common detergents, oils and seawater)			Good
Substrate Surface Moisture			< 5%
Rain stability time	h	(Conditions: 23°C, 50% RH)	7-24 after the application
Final Curing Time	days		

(*) Test methods and performance requirements as per EN 1504-2:2004

*Note: The measurements were taken in laboratory environment under a temperature of +23°C, Relative humidity 50% and without ventilation. It is possible for them to vary depending on the conditions prevailing at the worksite, such as temperature, humidity, ventilation, absorbability of the substrate.

The technical information and instructions contained in the present brochure and referring to the application and end use of Thrakon products are based on the up to now know-how and experience of the Company with regards to the products and are provided in good faith as long as such products are stored, used and applied as per Thrakon recommendations. Due to the inability, on our part, to directly inspect the conditions prevailing at the worksite as well as the application procedures of the product, the Company does not provide any guarantee with regards to the adequacy of its products for specific purpose while the Company shall not bear any legal responsibility based on the information stated in the present brochure or any other written, oral, or otherwise provided recommendations and instructions. The users of the products are advised to perform a limited surface testing of the products adequacy for the eventual application and use intentions. Thrakon reserves the right to modify the features of its products without prior notification. All orders shall be approved only following acceptance of the above and under the eventual Commercial Policy terms of the Company. The issuance of the present brochure voids any prior version.

Version E: 19/01/2023