



## SINGLE COMPONENT, POLYURETHANE MEMBRANE

DESMOPOL is a single liquid component made up from pure polyurethane, which once catalyzed forms a continuous elastic membrane, without any joints, overlapping or any integrated mesh needs. Its properties make it an excellent choice for achieving air-tightness and perfect waterproofing on a multitude of surfaces and substrates. It is applied manually, using a roller or brush and, exceptionally, using specific spray equipment.

It has CE marking on the basis of a statement made DoP Declaration of Performance (DoP) conforms to the regulations UE305/2011. Declaration is available on demand. DESMOPOL membrane, has an european technical approval ETA 10/0121 (W3 working life 25 years, 1,2mm minimum thickness).

## USES

Liquid membrane waterproofing system, to waterproofing or coating:

- Roofs, terraces, balconies and overhangs (walkables)
- Structural concrete slabs, and concrete walls and foundations
- Metal and asbestos roofs
- Swimming pools, artificial lakes and ponds
- Green roof and walls
- As a protection over TECNOFOAM (polyurethane foam)

**NOTE:** call our technical department about the application to other supports or situations

	WITHOUT DESMOPLUS	WITH DESMOPLUS
Recommended thickness	± 2 mm	± 2 mm
Dry time (23°C)	4 ~ 6 hours	± 2 hours
Dilution	10% Desmosolvent (only "airless" application)	
Application tools	By brush, roll or "airless" equipment	
Application method	Several thin layers	A single layer
Elongation (23°C)	> 650%	> 400%
Tensile strength (23°C)	2 MPa	4~6 MPa



## COLORS

	White
	Grey
	Red

## GENERAL FEATURES

- DESMOPOL is a highly elastic and wear-resistant membrane that, once applied, offers great stability, durability and waterproof certified (see ETA 10/0121)
- Thanks to its versatility DESMOPOL adapts to any surface, making it the ideal product for application on uneven surfaces and in areas of any shape, whether curved or squared.
- No surface reinforcement is required, only singular points of encounters with other building elements.(see ETA 10/0121)
- DESMOPOL membrane can be applied in a only single layer (minimum thickness recommended 1,5 mm) by mixing with DESMOPLUS, this fact increases the execution speed and thus reduces the direct costs of application. With this system, do not use airless machine. Do not use this additive with temperatures above 25°C, or in any case, store the drums in cool and not sunny areas.
- Applying DESMOPOL saves in seals and any other kind of joins, as the finish is uniform and makes up a single layer, providing a surface with optimum maintenance and cleaning properties.
- The DESMOPOL polyurethane membrane system should be applied in dry conditions avoiding the presence of humidity or water coming from the surface to be coated or the substrate, whether at the time of application or subsequently (pressure from phreatic water level).
- If there is humidity or moisture in the substrate at the time of application, check the technical specifications of our primers where the maximum support humidity ranges are specified.
- The DESMOPOL system requires solar radiation protection (UV rays) because is an aromatic membrane, so, in the absence of other physical protection elements, we recommended the application of our polyurethane colored resins TECNOTOP 2C/2CP.
- The DESMOPOL system's properties enable it to bond to any surface, such as cement, concrete, polyurethane foam, butyl and bituminous sheets wood, polyurethane plates,metal, etc.
- Due to its resistance, it can be walked on and it will accept a rough finish to make it non-slip.(using SILICA SAND or TECNOPLASTIC F/C)
- DESMOPOL is immune to temperature changes of between -40°C and +80°C, conserving its elastic properties.
- The DESMOPOL polyurethane membrane is a self-leveling membrane that requires additives for its application on vertical and sloped surfaces more than 1,5% of gradient. Mix DESMOTHIX maximum ratio 1liter for each 25 kg of DESMOPOL. You could apply on thin several layers too.
- Do not add DESMOTHIX when you apply DESMOPOL with DESMOPLUS.
- Do not use airless equipment when you apply with DESMOTHIX or DESMOPLUS
- Ceramic flooring can be placed on top. In this case, it is appropriate to apply a thin layer of PRIMER PU-1000 50-60 g/m<sup>2</sup> and it still not dry, sprinkle a load of SILICA SAND to improve the mechanical anchoring
- Ceramic flooring can be placed on top. In this case, we recommended to spread a well distributed load of SILICA SAND to improve mechanical anchorage in the last layer of DESMOPOL, or if it has already catalyzed,



spreading a layer of 50 to 60 g/m<sup>2</sup> PRIMER PU-1000, for anchoring the silica sand

- The repairs are easily localizable and are easy to carry out (see "REPAIR AND OVERLAPS PROCEDURES")

## YIELD

Product yield is 1.5 to 2 kg/m<sup>2</sup> with a thickness of 1.1 to 1.7 mm, applied in ONE or various, depending on the application method and conditions.

## PACKAGING

Metal tins 6kg and 25 kg.

## SHELF LIFE

12 months at temperatures between 5°C and 25°C, provided it is stored in a dry place. Once the tin has been opened, the product must be used immediately.

## SURFACE PREPARATION

In general, you should take the following factors:

- Surface reparation ( fill the cracks and fissures, remove old existing waterproofing paints...).
- Clean up the surface, removing dust, oils and grasses, and existing chippings.
- Support will be strong and dry.
- The supports must be firm and dry. No moisture or humidity inside or by capillarity from the backfill.

You can apply DESMOPOL liquid waterproofing membrane over several supports and materials. Below we set out some of the application for the most common surfaces; for other surfaces not described, please call our technical department.

### Concrete substrate

- The concrete should be completely cured (concrete curing takes 28 days) or, in any case, the maximum level of humidity allowed for the substrate should be verified, depending on the primer used.
- Any concrete latencies or release agents should be eliminated and an open pore surface achieved by grit blasting, milling or sanding.
- Any cracks, and damaged areas must be repaired using a epoxy mortar, mixing our epoxy resin PRIMER EP-1020 with silica sand (ratio of  $\pm 1:4$ ), or the same resin mixed with calcium carbonate (ratio of  $\pm 1:2$ ).
- MASTIC PU must be used on fissures or small cracks in the surface.
- Existing joints or seals: remove the old material, clean up and fill with MASTIC PU and TECNOBAND 100 matting.
- Next one, clean up well and eliminate all contaminants from the elements, such as dust or chippings, using dry methods preferably.
- Apply the primer in the conditions and the parameters indicated in the technical specifications for these products. On concrete, we recommended the two-component polyurethane resin PRIMER PU-1050. See the TDS.
- Apply the membrane depending on the chosen type (see "application types")



**Metal substrate:**

- Metal surfaces should be prepared using sand-blasting, in order to improve the surface's mechanical fixation properties. In many cases the application of corrosion inhibiting products will be required.
- Check the seals and overlaps and where necessary seal with MASTIC PU mastic or TECNOBAND 100, in combination.
- For a quick and efficient cleaning up of the surface use a ketone based solvent.
- Apply prior priming using a water-based epoxy type primer, our PRIMER EPw-1070, to improve surface leveling and bonding. See the technical specifications of this product.
- Application of the membrane depending on the chosen type (see "application types").

**Ceramic substrate:**

- Ceramic surfaces should not have empty joints or loose elements or parts. These should be filled with MASTIC PU mastic or mortar, according their size.
- Existing joints or seals:remove the old material, clean up and fill with MASTIC PU and TECNOBAND 100 matting.
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- Sanding with specific equipment. Thereby, to remove moss or solids particles bonded at the support, and to open the pore.
- Clean up, using vacuum method.
- Next apply the required primer; in these cases of non-porous surfaces use the water-based epoxy PRIMER EPw-1070.
- Application of the membrane depending on the chosen type (see "application types").

## APPLICATION TYPES

Once the surface preparation and primer application are done, as conditions, proceed to extends of the polyurethane membrane, using the following methods:

**Layers application (traditional/classic ):**

- Open the DESMOPOL metal tin and stir up to homogenize
- Extended a first layer using a short hair roller, maximum thickness 0,8 mm, (applying the material without dilution)
- Wait for complete drying (depend on the weather conditions), about 5~6 hours
- Then, apply the next layer, in the same way as above
- Repeat this process as many times as necessary to achieve desired thickness.

**Single application (mixing DESMOPLUS):**

- Empty DESMOPLUS inside the DESMOPOL metal tin, always in the fixed ratio supplied by the manufacturer. Continuous mixing with medium-speed mechanical equipment (pot life:  $\pm$  25 min.).
- Pouring of the material formed directly on the support, and spread using Use of trowel, squeegee or rubber lip. (roll can also be used too).
- This process is unique, whereby the desired thickness is obtained in one operation, eliminating intermediate waiting times, ensuring the formation of the membrane without internal bubbles, getting more tensile strength and reducing the global drying time.
- The use of mechanical equipment mix it's not recommended when DESMOPLUS is used.



- Don't add DESMOTHIX when DESMOPLUS is used.
- Check all the waiting and drying times, application conditions (see the TDS)

**Mechanical application("airless" equipment):**

- Add 5% solvent DESMOSOLVENT into DESMOPOL. Mix the drum with medium speed mechanical equipment.
- Apply thin layers using specific equipment.
- Wait total drying.
- Repeat this process until the desired thickness.

## REPAIR AND OVERLAPS PROCESSES

**REPAIR**

In cases where the membrane repair by accidental causes, or assembly procedures not covered installations that require drilling on polyurethane membrane DESMOPOL, the procedure is required, shall be as follows:

- Cut, removal of the affected area and / or damaged surface.
- Sanding this area extending about 20~30 cm. around the perimeter, for overlapping security
- Cleaning (vacuuming) of waste generated (powder, dust); if it's possible don't use water, and if used, support humidity value; ketones applicability based solvents (MEK) for reducing this type of surface cleaning
- Apply thin layer ( $\pm 80$  g/m<sup>2</sup>) of PRIMER PU-1000. Spread SILICA SAND over. Wait for the total dry time
- Apply DESMOPOL with DESMOPLUS
- Apply (optional) of TECNOTOP 2C/2CP

**OVERLAPS**

In cases has been exceeded recoat time (48~72 hours), so the waiting time between jobs is prolonged, proceed as follows:

- Sanding strip longitudinal overlap of about 20~30 cm. wide.
- Cleaning (vacuuming) of waste generated (powder); if possible not to use water, and if used, support humidity value; ketones applicability based solvents (MEK) for conducting this type of surface cleaning.
- Apply thin layer ( $\pm 80$  g/m<sup>2</sup>) of PRIMER PU-1000. Spread SILICA SAND over. Wait for the total drying.
- Apply DESMOPOL with DESMOPLUS.
- Apply (optional) of TECNOTOP 2C/2CP.

## HANDLING

These safety recommendations for handling, are necessary for the implementation process as well as in the pre-and post, on exposure to the loading machinery.

- Respiratory Protection: When handling or spraying use an air-purifying respirator.
- Skin protection: Use rubber gloves, remove immediately after contamination. Wear clean body-covering. Wash thoroughly with soap and water after work and before eating, drinking or smoking.
- Eye / Face: Wear safety goggles to prevent splashing and exposure to particles in air.
- Waste: Waste generation should be avoided or minimized. Incinerate under controlled conditions in accordance with local laws and national regulations.



Anyway, consult the material and safety data sheet of the product (MSDS)

## COMPLEMENTARY PRODUCTS

The DESMOPOL system may be complemented with the following products as a means of protection or to improve its physical-mechanical properties depending on its exposure, the desired finish or the type of substrate.

- PRIMER EP-1020: mixed with silica sand (ratio±1:4), or calcium carbonate (ratio±1:2) this is used to fill in depressions in concrete surfaces, rapidly providing a firm and fast drying even base.
- PRIMER PU-1050 | PRIMER EPw-1070 | PRIMER PUc-1050 | PRIMER PU-1000: These primers are applied on the substrate beforehand to improve bonding and level the surface, as well as regulating the humidity in the substrate (see permitted levels in their technical data sheet).
- TECNOTOP 2C: two-component colored aliphatic polyurethane resin used to protect roofs and floors or ground against UV rays when there is no other protection.
- TECNOTOP 2CP: two-component colored aliphatic polyurethane resin used to protect against UV rays and chlorinated water when waterproofing swimming pool, lakes and aquariums. Migration test on water according UNE EN ISO 12873-2:2005.
- TECNOPLASTIC F: this plastic powder, once mixed with TECNOTOP 2C/2CP, forms a rough surface, conforming even to norm UNE-ENV 12633: (floors slipperiness), to achieve Class 3 (>45 slip resistance), depending on dosage (consult our technical department).
- DESMOPLUS: additive that allows the application of the membrane DESMOPOL IN A SINGLE-USE. Specially in applications on humid or cold climatologies, improve mechanical properties, and reduces the membrane's drying and curing time(see TDS)
- DESMOTHIX: additive that provides thyrrotrophic properties, specifically designed to be mixed with DESMOPOL to enable application on vertical surfaces.
- G80: polyester mesh for reinforcing the membrane in specific areas.
- TECNOBAND 100: cold bond deformable band made up of an upper layer of non-woven textile and lower layer of viscose self-adhesive coating, which together allow it to adapt to the shape of the substrate. This band is ideal when dealing with structural joints and overlapping metal materials.
- MASTIC PU: polyurethane mastic for filling joints and fissures (use together with TECNOBAND 100 when necessary).

**NOTE:** see all the TDS of all products



## TECHNICAL DATA (ACCORDING ETA 10/0121)

PROPERTIES	VALUES
Specific gravity (DIN53 217)	1.320~1.420 kg/m <sup>3</sup>
Viscosity at 23 °C (ASTMD2196-86)	2.650cps
Dry extract at 105 °C % weight (EN1768)	>90
Flash Point (ASTM D93)	42 °C
Ashes at 450 °C % weight	42~47%
Minimum thickness	1,2 mm,
Working life of the system	25 years W3
Roof slope	S1~S4 (zero slope)
Fire reaction	Euroclass E
External fire performance (EN 13501-5)	Broof(t1)
Resistance to wind loads	ABLE>50KPa
Support/environment range temperatures	5 °C~35 °C
Hardness Shore A at 23 °C	>75
Tensile strength (initial/aged) with DESMOPLUS	4~6MPa
Tensile strength (initial/aged) without DESMOPLUS	2~4MPa
Initial dry time at 23 °C and 55% relative humidity without DESMOPLUS	±5~6 hours
Initial dry time at 23 °C and 55% relative humidity with DESMOPLUS	±2~3 hours
Repainted time without DESMOPLUS	±5~48 hours
Repainted time with DESMOPLUS	±3~24 hours
Rate elasticity at 23 °C	>420%
Water vapor resistance (EN 1931)	μ=2.500
Water vapor permeability(EN 1931)	14g/m <sup>2</sup> /day
Concrete adherence at 23°C	>2MPa

