



DESMOPOL - SINGLE COMPONENT, POLYURETHANE WATERPROOFING MEMBRANE

DESMOPOL is a single component liquid made up of polyurethane, solvent-based, moisture-cured once catalyzed forms a continuous, seamless, solid and elastic, watertight, and waterproof membrane. Its properties make it an excellent choice to be applied on a multitude of substrates of new buildings and especially in refurbishments. It is applied manually, using a roller or brush, squeegee, 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.



USES

Polyurethane liquid membrane system, for waterproofing or coating:

- **ROOFING:** Flat, low, or steep-slope roof, balconies, and overhangs. (ETA 10/0121 "Liquid Applied Roof Waterproofing Kit, based on polyurethane" and BBA 16/5340)
- **FLOORING:** Walkable floors with waterproofing and hard-wearing requirements, including an approved non-slip finish (ENV-12633:2003)
- Structural concrete slabs, and concrete walls and foundations
- Metal and asbestos roofs
- Swimming pools, artificial lakes, and ponds. Near seawater
- Green roof and walls (ETA 10/0121 y BBA 16/5340)
- IRMA roofing system
- Flat or sloped asbestos roofs (used with TECNOFOAM spray polyurethane foam system)
- As a protection for SPF (TECNOFOAM, spray polyurethane foam system)

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

	WITHOUT DESMOPLUS	WITH DESMOPLUS	WITH DESMOPLUS 700
Recommended minimum thickness	± 1,5 mm	± 1,5 mm	± 1,5 mm
Pot -life	--	± 30 min.	± 90 min.
Dry time	± 5~6 hours	± 1~3 hours	± 90 min.
Elongation at break	400 ~600 %	400 ~600 %	400 ~600 %
Tensile strength	2~3 MPa	4~6 MPa	4~6 MPa
Application methods	By roll, brush or "airless" equipment	By squeegee, trowel, brush, or roll	By squeegee, trowel, brush, or roll
Widespread systems	± 2~3 thin layers by roll or brush to achieve the recommended thickness	Single-layer to achieve the recommended thickness	Single-layer to achieve the recommended thickness



COLORS

	White
	Gray
	Red

GENERAL FEATURES

- DESMOPOL is a highly elastic and wear-resistant, aromatic, moisture-cured, solvent-content liquid polyurethane that once applied, forms a continuous, seamless, waterproofing, and solid membrane.
 - it holds an ETA 10/0121, issued by EOTA (European Organization for Technical Assessment), under the 005 guide, specific approval for "**Liquid Applied Roof Waterproofing based on polyurethane**" working life 25 years (W3), at 1.2 mm thickness, ponding water admitted
 - it holds a BBA certification n 16/5340 (validation on UK market and influenced) for **waterproofing of walkable roofs**, at 1,2 mm thickness, ponding water admitted
 - 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 detail works encounters with other building elements.
 - Green roof application certified, according to EN 13948(on ETA 10/0121 and BBA 16/5340)
 - Desmopol, polyurethane liquid membrane can be applied in only a single layer (minimum total thickness recommended 1,5 mm) by mixing with Desmoplus or Desmoplus 700, this fact upgrades their physical performances, increases the execution speed, and thus reduces the direct costs of the application, forms a solid membrane without bubbles inside. Using Desmoplus or Desmoplus 700, do not use an airless machine.
 - it should be applied in dry conditions avoiding the presence of humidity or coming from the surface to be coated or the substrate, whether at the time of application or subsequently (pressure from phreatic water level). In the event there is humidity in the substrate at the time of application, consult the technical specifications of our primers in the TDS
 - the system requires solar radiation protection (UV rays) to do not lose its physical and mechanical properties, given that it is an aromatic membrane. Therefore, our EOTA (European Organization for Technical Assessment) approved systems (ETA 10/0121, BBA 16/5340), incorporates a protective polyurethane colored aliphatic resin, Tecnotop 2C, for use in the absence of other physical protection elements. You can apply too Tecnotop S-3000, Tecnotop 2CP or Tecnotop 1C.
 - Desmopol system's properties enable it to bond to any surface, such as cement, concrete, polyurethane foam, butyl, and bituminous sheets of 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 range)
 - Desmopol polyurethane liquid membrane is a self-leveling membrane. It can be used on low and steep slope roofs. It requires a Desmothix additive for slopes of more than 1,5% of a gradient. Mix Desmothix, maximum ratio 1liter for each 25 kg of Desmopol. You could apply on thin several layers.
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- Do not use airless equipment when you apply with Desmothix or Desmoplus/Desmoplus 700
 - Ceramic flooring can be placed on top. In this case, we recommended spreading 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/sqm PRIMER PU-1000, for anchoring the Silica Sand



- It can be used to fill fissures and joints, using Desmoplus/Desmoplus 700 (see TDS of booth products)
- Consult our technical department, the Technical Guides of systems or the Application Methodologies, the characteristics of the proposed system according to the use, situation, or type of application.

THICKNESS AND RECOMMENDED YIELD

The recommended minimum thickness is up to 1,5 mm, so the yield will be up to 2,4 kg/sqm (DFT) applied on ONE or various coats, depending on the application method and application conditions.

PACKAGING

Metal tins in three different formats: 6 kg / 15 kg / 25 kg.

SHELF LIFE

12 months at temperatures between 5°C and 35°C, provided it is stored in a dry place. Once the tin has been opened, the product must be used immediately.

APPLICATION METHOD

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 polyurethane membrane over several supports and materials. Below we set out some of the applications for the most common surfaces; for other surfaces not described, please call our technical department.

Concrete substrate

Recommended application typology: single coat application (mixing DESMOPLUS)

- 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 an 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 on the surface.
- existing joints or seals: remove the old material, clean up and fill with MASTIC PU and TECNOMESH 100 matting.
- next, clean up well and eliminate all contaminants from the elements, such as dust or chippings, using dry methods preferably.



- apply the primer resin in the conditions and the parameters indicated in the technical specifications for these products. On concrete, we recommended the two-component resins PRIMER PU-1050 / PRIMER PU-1000 / PRIMER PUc-1050 / PRIMER EP-1010. See the TDS of each product before the application
- apply DESMOPOL polyurethane membrane (**Single coat application or Application by coats**)
- UV rays protection: aliphatic polyurethane resin TECNOTOP 2C, fill with a green roof, apply ceramic tiles on top...according to the ETA 10/0121 and BBA 16/5340. The application of the TECNOTOP 2C can be done by short nap roller type equipment "airless", consumption and desired thickness depending on the final use of the element (see the conditions of application in the product datasheet TDS). You can apply TECNOTOP 1C also on a non-walkable roof or only for maintenance.

Metal substrate

Recommended application typology: mechanical application

- metal surfaces should be prepared using sand-blasting 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 and use TECNOMESH 100 to reinforce.
- for a quick and efficient cleaning up of the surface using a ketone-based solvent.
- apply prior priming using our PRIMER EP-1040 or PRIMER EPw-1070, to improve surface bonding. See the technical specifications of this product, on his TDS.
- application of DESMOPOL (**Mechanical application, "airless" equipment**)
- UV rays protection: aliphatic polyurethane resin TECNOTOP 2C, fill with a green roof, apply ceramic tiles on top...according to the ETA 10/0121 and BBA 16/5340. The application of the TECNOTOP 2C can be done by short nap roller type equipment "airless", consumption and desired thickness depending on the final use of the element (see the conditions of application in the product datasheet TDS). You can apply TECNOTOP 1C also on the non-walkable roof or only for maintenance.

Ceramic tiles substrate

Recommended application typology: application by coats with intermediate reinforcing (using TECNOMESH 100)

- ceramic surfaces should not have empty joints or loose elements or parts. These should be filled with MASTIC PU mastic or mortar, according to their size.
- existing joints or seals: remove the old material, clean up and fill with MASTIC PU and reinforced using TECNOMESH 100
- sanding with specific equipment. Thereby, to remove moss or solids particles bonded to the support, and opening the pore.
- clean up, using a vacuum method.
- apply prior priming using our PRIMER EP-1040 or PRIMER EPw-1070, to improve surface bonding. See the technical specifications of this product, on his TDS.
- application of DESMOPOL (**Application by coats with intermediate reinforcing**)
- UV rays protection: aliphatic polyurethane resin TECNOTOP 2C, fill with a green roof, apply ceramic tiles on top...according to the ETA 10/0121 and BBA 16/5340. The application of the TECNOTOP 2C can be done by short nap roller type equipment "airless", consumption and desired thickness depending on the final use of the element (see the conditions of application in the product datasheet TDS). You can apply TECNOTOP 1C also on the non-walkable roof or only for maintenance.



Bitumen Membranes

Recommended application typology: application by coats with intermediate reinforcing (using TECNOMESH 100)

- existing joints or seals: remove the old material, clean up and fill with MASTIC PU and reinforced using TECNOMESH 100
- light sandblasting of the surface, to remove chips and dirt
- clean up, using a vacuum method.
- apply prior priming using our PRIMER EP-1040 or PRIMER EPw-1070, to improve surface bonding. See the technical specifications of this product, on his TDS.
- application of DESMOPOL (**Application by coats with intermediate reinforcing**)
- UV rays protection: aliphatic polyurethane resin TECNOTOP 2C, fill with a green roof, apply ceramic tiles on top...according to the ETA 10/0121 and BBA 16/5340. The application of the TECNOTOP 2C can be done by short nap roller type equipment "airless", consumption and desired thickness depending on the final use of the element (see the conditions of application in the product datasheet TDS). You can apply TECNOTOP 1C also on the non-walkable roof or only for maintenance.

APPLICATION TYPOLOGIES

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

1.-Application by coats (traditional or classical application)

- Open the DESMOPOL metal tin and stir it up to homogenize
- Extended the first layer using a short nap roller, a maximum thickness of 0,7 mm. (1,2 kg/sqm). 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 the desired or recommended thickness.

2.-Application by coats with intermediate reinforcing (using TECNOMESH 100)

To be used in ceramic supports, torch and felt, bitumen membranes in general, in cracked supports, or that have contraction or dilation movements

- Open the DESMOPOL metal tin and stir it up to homogenize
- Extended the first layer using a short nap roller, a maximum thickness of 0,7 mm. (1,2 kg/sqm). Applying the material without dilution.
- Extent TECNOMESH 100 on the wet resin, and push using a dry roll
- apply DESMOPOL on the still-wet previous coat.

In this case, consumption can increase from the application without mesh.

3.-Single coat application (mixing DESMOPLUS or DESMOPLUS 700)

- Pour DESMOPLUS inside the DESMOPOL metal tin, always in the fixed ratio supplied by the manufacturer. Continuous mixing with medium-speed mechanical equipment
- Pouring of the material formed directly on the support, and spread using Use of trowel, squeegee or rubber lip (a short nap roll can also be used).
- 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 a mechanical equipment mix it's not recommended when DESMOPLUS is used.
- if it is necessary to add DESMOTHIX due to the slope of the roof, you can add a maximum of 250 ml of this (per 25 kg DESMOPOL pail).



- Check all the waiting and drying times, application conditions (see the TDS)

4.-Mechanical application ("airless" equipment)

- Add 5~10% solvent DESMOSOLVENT into DESMOPOL metal tin. Mix the drum with medium-speed mechanical equipment.
- Apply thin layers using specific equipment.
- Wait for total drying.
- Repeat this process until the desired or recommended thickness.

Notes:

- Consult in all cases the waiting times, drying time, singular points treatment, conditions of applying all the products through the technical data sheets of each product, the technical guidelines, or consulting our technical department.
- For other types of supports/substrates, for further information on the execution application procedure, for any additional questions, please, consult the technical data sheets (TDS) of these products, or our technical department.

REPAIR AND OVERLAPS PROCESSES

REPAIR

In cases where the membrane must be repaired by accidental causes, or assembly procedures not covered installations, 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 for reducing this type of surface cleaning
- apply a thin layer (100-150 g/sqm) of polyurethane resin PRIMER PU-1050, PRIMER EPw-1070
- light spread SILICA SAND over the wet primer applied before
- wait for the total drying
- apply DESMOPOL (with DESMOPLUS or DESMOPLUS 700), TECNOCOAT CP-2049, TECNOCOAT CP-2049 PLUS
- apply TECNOTOP S-3000/2C/2CP/1C, in consumption and desired thicknesses in the case of no protection against UV rays. This application can be done by short nap roller type equipment "airless" (see the conditions of application in the product datasheet TDS)

OVERLAPS

In cases where the recoat time (24~48 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, dust...) or existing dust; if it's possible, do not use water, and if it's used, check the support humidity value; ketones applicability based solvents for conducting this type of surface cleaning
- apply a thin layer (100-150 g/sqm) of polyurethane resin PRIMER PU-1050, PRIMER EPw-1070.
- light spread SILICA SAND over the wet primer applied before
- wait for the total drying
- apply DESMOPOL (with DESMOPLUS or DESMOPLUS 700), TECNOCOAT CP-2049, TECNOCOAT CP-2049 PLUS
- apply TECNOTOP S-3000/2C/2CP/1C, in consumption and desired thicknesses in the case of no protection against UV rays. This application can be done by short nap roller type equipment "airless" (see the conditions of application in the product datasheet TDS)



SAFETY AND HEALTH

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 the air.
- Waste: Waste generation should be avoided or minimized. Incinerate under controlled conditions by local laws and national regulations.

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

COMPLEMENTARY PRODUCTS

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

- PRIMER EP-1010: 100% solids, two-component, fillerized epoxy resin, to fill in depressions in concrete surfaces, one coat application so, rapidly providing a firm and fast drying even base.
- PRIMER EP-1020: 100% solids, two-component, epoxy resin, improving the adhesion, in one coat application so, rapidly providing a firm and fast drying even base.
- PRIMER PU-1050/PUC-1050: these several resins are applied on the substrate beforehand to improve bonding and level the surface and regulate the humidity in the substrate (see permitted levels in their technical specifications).
- PRIMER EP-1040: epoxy resin for its previous application on metallic or ceramic supports, improving adhesion, absorbing resident moisture in the support, and regularizing the planimetry of the support.
- PRIMER EPw-1070: epoxy water-based resin for the application on concrete, asphalt sheets, metal, or ceramic, improving adhesion, absorbing resident moisture in the support.
PRIMER WET: epoxy resin for the application on concrete or ceramic substrates, improving adhesion, absorbing resident moisture in the substrate.
- TECNOCOAT CP-2049: pure cold polyurea coating for manual application, self-leveling for small applications on TECNOCOAT P-2049, repairs or application in areas of difficult access
- TECNOCOAT CP-2049 PLUS: pure cold polyurea coating for manual application, self-leveling for small applications on TECNOCOAT P-2049, repairs or application in areas of difficult access. It is certified by a European Technical Approval (ETA 20/0253) under EAD 030350-0402 for roofing.
- TECNOTOP 2C: dual-component, glossy, and colored aliphatic polyurethane resin, used to protect walkable and vehicular roofs and floors or ground against UV rays when there is no other protection.
- TECNOTOP 2CP: dual-component, satin and colored aliphatic polyurethane resin used to protect against UV rays and chlorinated/salted water for swimming pools, lakes, and aquariums waterproofing.
- TECNOTOP 1C: single component, glossy, and colored aliphatic, used to protect non-walkable roofs or only for maintenance, against UV rays when there is no other protection
- TECNOTOP S-3000: polyaspartic resin two-component, aliphatic, colored, coating for protection against UV rays, quick dry time, and excellent chemical and mechanical characteristics.
- TECNOPLASTIC: this plastic powder, once mixed with TECNOTOP 2C/2CP/S-3000/1C, forms a rough surface, conforming even to norm ENV 12633:2003 (floors slipperiness), to achieve Class 3 (>45 slip resistance), depending on dosage (consult our technical department).
- DESMOPLUS or DESMOPLUS 700 (at your choice): the additive that allows the application of the membrane DESMOPOL. Especially in applications on humid or cold climatologies, improve mechanical properties, and reduces the membrane's drying and curing time (see TDS)



- DESMOTHIX: the additive that provides thyrotrophic properties, specifically designed to be mixed with
- TECNOBAND 100: the cold bond deformable band made up of an upper layer of non-woven textile and a lower layer of viscoelastic 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.
- TECNOMESH 100: fiberglass mesh to reinforce the solid membrane (joints, upstands...)
- MASTIC PU: polyurethane mastic for filling joints (use together with TECNOBAND 100 when necessary).

TECHNICAL DATA (SOLID MEMBRANE)

PROPERTIES	VALUES
Density ISO 1675	1,45±5 g/cm ³
Viscosity ISO 2555	2.500 ~ 6.000 cps
Dry extract at 105 °C % weight EN1768	85± 5 g/cm ³
Flash Point ASTM D93	42 °C
Ashes at 450 °C % weight	42~47%
Solid content ISO 1768	80 ~ 90%
VOC	210 ~270 g/l
Working-life of the system (according to the EOTA and BBA)	25 years W3: 25 years and 1,2 mm thickness
Roof slope	S1~S4 (zero slopes)
Fire reaction	Euroclass E
External fire performance EN 13501-5	Broof (t1)+ (t4)
Resistance to wind loads	ABLE>50KPa
Anti roots certification EN13948	YES
Support/environment temperatures range	5 °C~35 °C
Service temperatures range	-20 °C~80 °C
Hardness Shore A/D DIN 53.505	>85 / >35
Tear Strength, (longitudinal)trouser, angle, and crescent test pieces ISO 34-1:2011	±24 KN/m
Tensile strength without Desmoplus / with Desmoplus / or Desmoplus 700 ISO 527-3	2~3 MPa / 4~6 MPa / 4~6 MPa
Elongation at break without Desmoplus / with Desmoplus or Desmoplus 700 ISO 527-3	400~600% / 400~600% / 400~600%
Initial dry time without Desmoplus / with Desmoplus / with Desmoplus 700	5~6 hours / 1,5 hours / ±3 horas
Recoat time without Desmoplus / with Desmoplus / with Desmoplus 700	5~48 hours / 1,5~24 hours / 3~24 hours
Water vapor resistance EN 1931	μ=2.500
Water-vapor permeability EN 1931	14 g/sqm/day
Concrete adherence	>2 MPa



Results were performed in the laboratory at 23°C and 50% RH, under controllable conditions. These values may vary depending on the application, coloration, climatology, or substrate conditions.

The information herein is to assist customers in determining whether our products are suitable for their applications. Our products are only intended for sale to industrial and commercial customers. The customer assumes full responsibility for quality control, testing, and determination of the suitability of products for its intended application or use.

We warrant that our products will meet our written liquid component specifications. We make no other warranty of any kind, either express or implied, by fact or law, including any warranty of merchantability or fitness for a particular purpose since Tecnopol Sistemas S.L.U. does not control the execution, since Tecnopol Sistemas S.L.U. does not control the execution. Our total liability and customers' exclusive remedy for all proven claims is the replacement of the nonconforming product and in no event shall we be liable for any other damages. While descriptions, designs, data and information contained herein are presented in good faith and believed to be accurate, they are provided for guidance only. Because many factors may affect processing or application/ use, Tecnopol Sistemas S.L.U. recommends that the reader make tests to determine the suitability of a product for a particular purpose prior to use.

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All data furnished refers to standard production using manufacturing testing tolerances. The product user, and not Tecnopol Sistemas S.L.U., is responsible for determining the suitability and compatibility of our products for the final user's intended use.

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