



DESMOPOL - POLYURETHANE MEMBRANE FOR WATERPROOFING AND COATING

Single-component liquid, polyurethane solvent-based, moisture-cured to form a solid, aromatic, completely adhered to the substrate, seamless, without joints or overlaps, watertight and waterproof membrane to be used on new buildings or refurbishments. It can be applied by short-nap acrylic wool roll, notched trowel, or specific electric equipment.



USES

For application in the following situations:

- ROOFING: Sloped/flat walkable roofs, IRMA, balconies, and overhangs.(ETA 10/0121, BBA 16/5340)
- Green roof(ETA 10/0121, BBA 16/5340)
- BRIDGE-DECK:Liquid applied bridge-deck waterproofing (ETA 21/0734)
- Structural concrete slabs, and concrete walls and foundations
- Swimming pools, artificial lakes, and ponds. Near seawater
- Flat or sloped asbestos roofs (on 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 substrates or scopes of use

	WITHOUT DESMOPLUS	WITH DESMOPLUS	WITH DESMOPLUS 700
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	±3 hours
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 coats	Single coat	Single coat



COLORS

	Blanco
	Gris
	Rojo
	Black



GENERAL SPECIFICATIONS

- Single-component, moisture-cured, solvent-content liquid polyurethane that once applied, forms a continuous, seamless, highly elastic and wear-resistant, aromatic, 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 an ETA 21/0734, issued by EOTA (European Organization for Technical Assessment). under the EAD 030675-00-0107, specific approval for "**Liquid Applied Bridge-deck Waterproofing based on polyurethane**", at 1.2 mm thickness.
- 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
- Green roof application certified, **root resistance**, according to the EN 13948 (ETA 10/0121 and BBA 16/5340)
- It has **CE marking** on the basis of a statement made DoP Declaration of Performance (DoP) conforms to the regulations UE305/2011.
- The traditional application is done by applying successive coats with a maximum thickness of 0.7 mm each (1,2 kg/sqm). Dry time between coats approximately 4-6 hours.
- 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. Do not use airless equipment when you apply with Desmothix or Desmoplus/Desmoplus 700.
- When it is used on low and steep slope roofs it requires 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 coats.
- No surface reinforcement is required, only detail works encounters with other building elements or in certain situations depending on the conditions of the substrate.
- 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 Tecnoelastic range aggregates)
- A ceramic floor can be placed on top. In this case, we recommend applying a thin coat of Primer PU-1000 or Primer PU-1050, consumption of around 50 to 60 g/sqm, and spreading Silica Sand on top, consumption of around 700-1000 g /sqm, to improve mechanical anchorage.
- Joints and any type of union are saved since the finish is uniform and in one piece, providing a surface with optimal maintenance and cleaning.
- His properties allow it to adhere to any surface such as concrete, ceramic tiles, metals, spray polyurethane foam (Tecnofoam), plywood(OSB), asphalt/bituminous sheets. In any case or material, the surface must be consistent, firm, clean, and dry when the products are applied. Recommended applying directly on the concrete deck.
- 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.
- 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.



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 (maximum thickness per coat 0,7 mm./ 1,2 kg/sqm) 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 (41 °F to 95 °F), provided it is stored in a dry place. Once the tin has been opened, the product must be used.

APPLICATION TYPOLOGIES

Application by coats (traditional or classical application)

- Open the Desmopol metal tin and stir it up to homogenize
- Extends 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.
- If it is necessary to add Desmothix due to the slope of the roof, you can add a some quantity, recommended 0,500 l per 25 kg Desmopol pail.

Reinforced system with 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 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.

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

Single coat application (mixing Desmoplus or Desmoplus700)

- Pour Desmoplus or Desmoplus 700 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 ("airless") it's not recommended when Desmoplus or Desmoplus 700 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*).

Mechanical application ("airless" equipment)

- Open the metal tin and stir it up to homogenize
- 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.
- The use of a mechanical equipment ("airless") it's not recommended when Desmoplus or Desmoplus 700 is used.

NOTE: For other types of substrates, weather conditions or final use, consult our technical department.

APPLICATION METHOD

The following factors prior to application should be checked:

- Previous preparations of the substrate through physical processes (substrate preparation (sanding, polishing, shot blasting, or milling) for laitance and release agents as well as for the opening of the surface pore, achieving a suitable anchorage profile. (CSP 3 -4-5, according to the ICRI)
- Existing holes or areas with a lack of material must be repaired using some of our epoxy resins: Primer EP-1020/Primer EP-1010
- Joint fillings with Mastic PU
- In existing dilatations joints: remove old material, clean, and fill with Mastic PU. Use also Tecnoband 100 to cover, if necessary.
- Joint filling for installation, work and consolidation of surfaces.
- General cleaning of the substrate, removing existing dust, dirt, grease or efflorescence. The substrates must be resistant and cohesive.

Concrete or mortar substrate

- 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.
- Concrete must have a surface with a correct planimetry, high surface resistance, eliminating laitance or release agents, without excessive irregularities. Therefore, the previous action of sanding, polishing, milling or shot-blasting will be assessed by the applicator to achieve a preparation of the support according to ICRI Guide 03732, CSP values 3 to 5.
- Cracks and damaged areas must be repaired using epoxy mortar Primer EP-1020/Primer EP-1010.
- 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.
- Clean up well and eliminate all contaminants from the elements, such as dust or chippings, using dry methods preferably.
- Primer application using our Primer PU-1050/Primer PUC-1050, total yield of 250 g/sqm (applied in several thin coats) or Primer WET depending on the existing moisture in the substrate and with a total yield of 450 g/sqm
- Apply Desmopol: **Single coat application (mixing Desmoplus or Desmoplus 700) or Application by coats**
- UV rays protection: aliphatic polyurethane (Tecnotop 1C/2C or fill with a green roof or apply ceramic tiles on top...)according to the ETA 10/0121 and BBA 16/5340. The application of the Tecnotop 1C/2C can be done by short nap acrylic wool roller type equipment "airless".

Metal substrate

- 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.
- Primer application using Primer EP-1040, total yield 100-150 g/sqm, or Primer EPw-1070, total yield 150-200 g/sqm
- Apply Desmopol : **Mechanical application, "airless" equipment**
- UV rays protection: aliphatic polyurethane (Tecnotop 1C/2C or fill with a green roof or apply ceramic tiles on top...)according to the ETA 10/0121 and BBA 16/5340. The application of the Tecnotop 1C/2C can be done by short nap acrylic wool roller type equipment "airless".

Ceramic tiles substrate

- 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.
- Primer application using Primer EP-1040, total yield 100-150 g/sqm, or Primer EPw-1070, total yield 150-200 g/sqm
- Application of Desmopol: **Reinforced system with Tecnomesh 100**
- UV rays protection: aliphatic polyurethane (Tecnotop 1C/2C or fill with a green roof or apply ceramic tiles on top...)according to the ETA 10/0121 and BBA 16/5340.. The application of the Tecnotop 1C/2C can be done by short nap acrylic wool roller type equipment "airless".

Bitumen Membranes

- 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 well and eliminate all contaminants from the elements, such as dust or chippings, using dry methods preferably.
- Primer application using Primer EPw-1070, total yield 150-200 g/sqm
- Apply Desmopol: **Reinforced system with Tecnomesh 100**
- UV rays protection: aliphatic polyurethane (Tecnotop 1C/2C or fill with a green roof or apply ceramic tiles on top...)according to the ETA 10/0121 and BBA 16/5340. The application of the Tecnotop 1C/2C can be done by short nap acrylic wool roller type equipment "airless".

REPAIR AND OVERLAPS PROCESSES

REPAIR

In cases where the membrane repair 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
- Clean up well and eliminate all contaminants from the elements, such as dust or chippings, using dry methods preferably.
- 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 adding Desmoplus or Desmoplus 700.



- Apply Tecnotop 2C/2CP/1C, in consumption and desired thicknesses in the case of no protection against UV rays.

OVERLAPS

In cases has been exceeded 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 adding Desmoplus or Desmoplus 700
- Apply Tecnotop 2C/2CP/1C, in consumption and desired thicknesses in the case of no protection against UV rays.

HEALTH AND SAFETY

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 in accordance with local laws and national regulations.
- Re-occupancy of the work site without respiratory equipment is minimum 24 hours providing the correct ventilation for the area sprayed.
- Contractors and applicators must comply with all applicable and appropriate guidelines for storage and safety guidelines.

Anyway, consult the material and safety data sheet of the products of the system.

COMPLEMENTARY PRODUCTS

The following products can be applied as complements to their use. In this way, its physical-mechanical characteristics are protected and improved depending on its exposure, desired finish, or type of substrate:

- PRIMER EP-1010: epoxy resin with charges for filling existing holes in concrete or ceramic surfaces, to be applied in a single coat
- PRIMER EP-1020: epoxy resin to apply on concrete or ceramic substrates, improving adherence, absorbing substrate moisture, and regularizing the planimetry of the substrate.
- PRIMER PU-1050/PUc-1050: solvent-free polyurethane resin to apply on concrete, improving adherence, absorbing substrate moisture, and regularizing the planimetry of the substrate.
- PRIMER EP-1040: epoxy resin to apply on metal or ceramic substrates, improving adherence, absorbing substrate moisture, and regularizing the planimetry of the substrate
- PRIMER EPw-1070: water-based epoxy resin to apply on concrete, asphalt, metal, or ceramic substrates, absorbing substrate moisture and regularizing the planimetry of the substrate.
- PRIMER WET: epoxy resin to apply on very wet concrete or ceramic substrates, improving adherence, absorbing substrate moisture, and regularizing the planimetry of the substrate.



- **TECNOTOP 2C:** two-component, glossy, and colored aliphatic polyurethane resin, to protect walkable and vehicular roofs and floors against UV rays when there is no other protection.
- **TECNOTOP 2CP:** two-component, glossy, and colored aliphatic polyurethane resin to protect against UV rays and chlorinated/salted water in swimming pools, lakes, and aquariums when there is no other protection.
- **TECNOTOP 1C:** single-component, glossy, and colored aliphatic, for non-walkable/maintenance roofs against UV rays when there is no other protection
- **TECNOTOP S-3000:** two-component, polyaspartic, aliphatic, colored, fast-curing resin for coating for protection against UV rays, quick dry time, and excellent chemical and mechanical characteristics.
- **TECNOPLASTIC F/C:** plastic particles (two different weights) that, once mixed, form a rough surface, even complying with the CTE DB SUA1 (Slipperiness of floors), until achieving a CLASS 3 classification (Rd>45) UNE-ENV 12633:2003, according to its dosage (ask our technical department).
- **TECNOBAND 100:** 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.
- **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 thyratrophic properties, specifically designed to be mixed with
- **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 FEATURES (ACCORDING TO ETA 10/0121 AND BBA 16/5340)

PROPERTIES	VALUES
Density ISO 1675	1,40 ±5 g/cm ³
Viscosity ISO 2555	2.500 ~ 6.000 cps
Dry extract at 105 °C % weight EN1768	85± 5 g/cm ³
Ashes at 450 °C % weight	42~47%
Initial dry time (<i>without Desmoplus / with Desmoplus / with Desmoplus 700</i>)	5~6 hours / ±1,5 hours / ±3 hours
Recoat time (<i>without Desmoplus / with Desmoplus / with Desmoplus 700</i>)	5~48 hours / 1,5~24 hours / 3~24 hours
Application temperature range (substrate and environment)	3 °C~35 °C (37°F to 95°F)
Use temperature range (environment)	-20 °C~80 °C (-4°F to 176°F)
Solid content ISO 1768	80 ~ 90%
VOC content (volatile organic compounds)	210 ~270 g/l
Tensile strength (<i>without Desmoplus / with Desmoplus / with Desmoplus 700</i>) ISO 527-3	2~3 MPa / 4~6 MPa / 4~6 MPa
Elongation at break (<i>without Desmoplus / with Desmoplus / with Desmoplus 700</i>) ISO 527-3	400~600% / 400~600% / 400~600%
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
Adherence to concrete/Steel/Polyurethane	1,9MPa / 1,6MPa / 0,2MPa
Anti roots certification EN 13948	PASS
External fire performance EN 13501	Broof classification (t1)+ (t4)
Fire reaction EN 13501	Euroclass E
Working-life (<i>according to the EOTA and BBA</i>)	W3 25 years (1,2 mm minimum thickness)
Climatic zone	S (hard weather)
Water vapor resistance EN 1931	μ=2.455
Water-vapor permeability EN 1931	14 g/sqm/day
Roof slope	S1~S4, zero slope, ponding water admitted
Temperatures / User loads	<ul style="list-style-type: none"> • P4:TH2// P3:TH4, concrete • P1:TH2, PU (Spray polyurethane foam)
Maximum environment humidity	80%

Results performed in the laboratory at 23°C (73°F) and 50% RH, under controllable conditions. These values may vary depending on the application, climatology, or substrate conditions.



ASTM

PROPERTIES		VALUES
Initial tensile strength	ASTM D412	593 psi
Final tensile strength	G-154 envejecimiento acelerado 500 h	582 psi
Initial tensile strength	at 90 days/ 70°C(158°F)	695 psi
Tensile tensile strength initial modulus at 100%	ASTM D638	567 psi
Tensile tensile strength initial modulus at 200%	ASTM D638	262 psi
Tensile tensile strength initial modulus at 300%	ASTM D638	180 psi
Initial elongation at break	ASTM D412	507 %
Final elongation at break	G-154 accelerating weathering 500 h	486 %
Final elongation at break	90 days/70°C(158°F)	391 %
Hardeness Shore A/D	ASTM D2240:2015	86/33
Water absorption (% mass)	ASTM D-570	2,7 %
Permeance	ASTM E96	1,7 perms
Puncture resistance	ASTM D4833	37 lbf
Abrasion resistance (H18 wheel, wear index)	ASTM D4060	2.477 mg
Abrasion resistance (H22 wheel, wear index)	ASTM D4060	1.719 mg
Crack-Bridging	ASTM C1305	No cracks after 10 cycles at -26°C(-15°F)
Pull off strength on steel / concrete	ASTM D4251	514 psi / 502 psi

Results performed in the laboratory according to conditions specified in the issued documents.

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