



TECNOCOAT P-2049 EL - STRETCHABLE PURE POLYUREA MEMBRANE (>600%) FOR WATERPROOFING AND COATING

Two component, hot-spray, stretchable pure polyurea membrane for waterproofing, protection and sealing. It is made up of two highly reactive liquid components, Tecnocoat P-2049-EL/A (isocyanates) and Tecnocoat P-2049-EL/B (amines), mixed together using our specific proportioner TC2049 or similar, to form a solid, durable and aromatic pure stretchable polyurea membrane, completely adhered to the substrate, without joints or overlaps, watertight and waterproof, **especially in elements with structural movements.(metal roofs...)**



USES

For application in the following situations

- Metal roofs (zinc, copper...).
- Construction element on civil works (bridge structures, concrete decks, retaining walls, and foundations) (EN-1504)
- In general, structural elements or surfaces that may have high expansion movements due to temperatures
- ROOFING: Sloped/flat walkable roofs, IRMA, balconies, and overhangs.
- 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

Minimum thickness	1.5 mm
Tack-free time	±20 secs
Tensile strength	>13 MPa
Elongation at 23°C / -40°C	> 600% / >350%
Hardness Shore A/D	>75% / >35
Application method	Spray equipment



COLORS

	White
	Gray
	Black



GENERAL SPECIFICATIONS

- Two component, 100% solids content, aromatic pure polyurea that once applied, forms a high-stretchable, continuous, seamless, waterproofing, and solid membrane that offers a certified waterproofing, watertight behavior in elements with large structural movements such as metal roofs (galvanized steel, zinc, copper, pre-lacquered plates...)
- It is also possible to apply it on flat or inclined walkable roofs, pedestrians, concrete slabs, foundation walls.
- The application and training are done by our spray equipment TC2049 (spray-equipment.tecnopolgroup.com) or similar
- It has CE marking on the basis of a statement made DoP Declaration of Performance (DoP) conforms to the regulations UE305/2011.
- 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)
- Thanks to its versatility and its tack-free time of around 20 seconds, allows the adherence to any surface, making it the ideal product for application on uneven surfaces and in areas of any shape, whether curved or squared.
- 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.
- Has properties to allow it to adhere to most surfaces 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 and sound (*concrete pull-off strength >1.5 MPa*), clean, and dry when the products are applied. Recommended applying directly on the concrete deck.
- Free from harmful VOC compounds, therefore, it does not hurt the ozone layer (VOC's zero). It's 100% recyclable by mechanical means friendly to the environment; no gas collection for recycling and/or destruction is required; it doesn't emit substance to the environment once installed..
- 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.
- It is an aromatic membrane and, even though it is stable against solar radiation it requires solar radiation protection (UV rays) to do not lose its physical and mechanical properties. Therefore, our system incorporates a protective polyurethane colored aliphatic resin, Tecnotop 2C, for use in the absence of other physical protection elements. You can apply Tecnotop S-3000, Tecnotop 2CP or Tecnotop 1C also.

YIELD

The recommended minimum thickness is 1,5 mm. (60 mils DFT), total yield is 1,7 kg/sqm, applied in various coats. The total thickness may vary according to substrate or climatological conditions.

PACKAGING

Metal drums of 225 kg each component (B side: amines and A side: isocyanates)

STORAGE AND SHELF LIFE

12-months shelf life is stored in original containers in a dry environment at a temperature between 5-35 °C (41-95°F). Keep away from direct sunlight, extreme heat, cold or moisture. Prior to application, B side must be thoroughly mixed with a drum mixer before inserting the transfer pumps and use. This step is very important, please consult your representative for recommendations.

APPLICATION METHOD

Metal substrate: Metal surfaces should be prepared using sand-blasting, in order to improve the surface's mechanical fixation properties. (in situations as metal tanks or similar, must achieve an SP10 according to SSPC norms/NACE



2/2nd quality according to UK norm/DS 2.5 french norm/SA 2 1/5 Sweden norm). Check the seals and overlaps and where necessary seal with MASTIC PU mastic or TECNOBAND 100 in combination. For rapid and efficient cleaning of the surface using a ketone-based solvent. PRIMING: use Primer EP-1040, total yield 100-150 g/sqm, or Primer EPw-1070, total yield 150-200 g/sqm. Apply/spray the membrane evenly and in several layers until the dry film thickness required by the project is achieved. Application of the aliphatic polyurethane resin for protection against UV rays Tecnotop 2C/2CP/1C.

Cement or concrete substrates: 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 be strong, cohesive and dry, having a correct planimetry, high surface resistance, eliminating laitance, graise, oils 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 substrate according to ICRI Guide 03732, CSP values 3 to 5. Existing holes or areas with a lack of material must be repaired using some of our epoxy resins: Primer EP-1020/Primer EP-1010. Mastic PU must be used on fissures or small cracks on the surface. In joints (width < 15 mm): remove old material, clean and fill with Mastic PU. In joints (width >15 mm): remove old material, clean and fill with Mastic PU. Complement with a Tecnoband 100 band on the upper part. In structural/expansion joints: remove old material, clean and fill with Mastic PU. Complement with specific elastic bands and Tecnoband 100. General cleaning of the substrate. PRIMING: use Primer PU-1050/Primer PUC-1050, Primer EP-1020, Primer EP-1010 or Primer WET, depending on the existing moisture in the substrate. Apply/spray the membrane. Aliphatic polyurethane as an aliphatic topcoat: Tecnotop 1C/2C/2CP.

NOTE: For other types of supports, weather conditions or the substrate to be applied, consult our technical department.

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. 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-1030, Primer PU-1050, Primer PU-1000. Light spread Silica Sand over the wet primer applied before. Wait for the total drying. Apply/spray the membrane evenly and in several layers until the dry film thickness required by the project is achieved. Application of the aliphatic polyurethane resin for protection against UV rays Tecnotop 2C/2CP/1C

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-1030, Primer PU-1050, Primer PU-1000. Light spread Silica Sand over the wet primer applied before. Wait for the total drying. Apply/spray the membrane evenly and in several layers until the dry film thickness required by the project is achieved. Application of the aliphatic polyurethane resin for protection against UV rays Tecnotop 2C/2CP/1C

APPLICATION REQUIREMENTS (SPRAY EQUIPMENT)

It is necessary to mix the two initial liquid components using a high-pressure plural component proportioner; isocyanates and amines must be mixed 1:1 in volume using our spray equipment TC2049 (spray-equipment.tecnopolgroup.com) or similar (proper maintenance and cleaning it is recommended). The general parameters for material area as follows:



- Isocyanate heater temperature: 78-80°C (173°F to 176°F)
- Amine heater temperature: 65-70 °C (149°F to 158°F)
- Hose temperature: ±70°C (162°F)
- Working pressure: 2,500 - 3,000 psi (170 to 205 bar)
- Recommended mixing chamber: GU-07008-1

These temperatures and pressure parameters must be valued, ratified or slightly varied by the applicator, depending on the conditions of each climatic zone, weather situation or according to the specifications of the projection equipment. It is the responsibility of the owner / applicator of the equipment to keep it in perfect condition in order to maintain the correct mixing ratio of the two components that Tecnopol delivers separately, by periodically updating its maintenance controls. During the execution of the application, it may be necessary to correct these parameters according to changing external conditions, as well as to verify the correct operation of the machine (pressure and temperature). The part B must be thoroughly mixed with a mechanical mixer before inserting transfer pumps. Isocyanate are sensitive to moisture, ensure the drums and spray equipment are protected from moisture during storage and application. Store and clean proportioner by manufacturer's suggested guidelines.

HEALTH AND SAFETY

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. 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. Dispose waste in accordance with star or/and local regulations.



TECHNICAL AND CHEMICAL PROPERTIES

PROPERTIES	RESULT
Density ISO 1675	1.15 ±0.03 g/cm ³
Density compounds* A/B ISO 1675	1.12 ± 0.03 g/cm ³ / 1.09 ±0.03 g/cm ³
Viscosity compounds* A/B (at 12 rpm) ISO 2555	1,200±50 cps / 1,000±150 cps
Mixing ratio (weight - volume)	100/102 - 100/100
Tack-free time /recoat time	±20 secs / 20 secs ~ 48 hours
Use temperature range (environment)	-20~80 °C (-4 to 194°F)
Application temperature range (substrate and environment)	5~ 35 °C (41 to 95°F)
Maximum environmental humidity	±85%
Watertightness EN-1928	PASS: Watertight
Tensile strength ISO 527-3	>13 MPa
Tensile strength at -40 °C ISO 527-3	±23 MPa
Elongation at break ISO 527-3	>600%
Elongation at break at -40 °C ISO 527-3	>350%
Hardness Shore A/D DIN 53.505	>75 / >35
Solid content ISO 1768	100%
VOC content	0
Roof slope	zero slope, ponding water admitted
Fire reaction EN-13501	Euroclass E
Abrasion resistance (Taber) EN ISO 5470-1	292 mg (weight loss <3.000mg)
Carbon dioxide (CO ₂) permeability EN 1062-6	4.8 g/sqm*day
Diffusion-equivalent air layer thickness EN 1062-6	S d= 52m
Diffusion resistance number EN 1062-6	μ= 49,369
Determination of crack bridging properties UNE-EN 1062-7 Static Method	Class A5 (-10°C)
Determination of crack bridging properties UNE-EN 1062-7 Dynamic Method	Class B.3.2 (23°C)
Determination of liquid water permeability, EN 1062-3	< 0.010 kg/sqm*h0.5



Bond strength by pull-off EN 1542	2.2 MPa
Falling-weight test EN ISO 6272-1	24.5 Nm (Class III)
Diffusion-equivalent air layer thickness EN ISO 7783	Sd<1m (Class I)
Water-vapor resistance factor EN ISO 7783	$\mu= 915$
Water-vapor transmission rate EN ISO 7783	V= 20.5 g/sqm*day

Results performed in the laboratory at 25°C (73°F) and 50% RH, under controllable conditions. These values may vary depending on the application, climatology, or substrate conditions.

* Data for component B pigmented in gray. For other colorations or neutral, consult the official COA issued by Tecnopol (Certificate of Analysis for each batch delivered). Results were performed in the laboratory at 23°C and 50% RH, under controllable conditions.

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