



**TECNOCOAT P-2049 EX - HIGHLY EXPANDABLE
PURE POLYUREA MEMBRANE FOR
WATERPROOFING, WITH THERMAL INSULATION
PROPERTIES**

Two component, hot-spray expandable pure polyurea membrane for waterproofing, protection and sealing. It is made up of two highly reactive liquid components, Tecnocoat P-2049-EX/A (isocyanates) and Tecnocoat P-2049-EX/B (amines), mixed together using our specific spray equipment TC2049 or similar, to form a solid pure and aromatic pure polyurea membrane, completely adhered to the substrate, without joints or overlaps, elongable, watertight and waterproof. **This polyurea once applied, expands between 5 and 7 times its volume.**



USES

For application in the following situations:

- Asbestos /metal roofs.
- Non-walkable sloped/flat roofs
- Concrete decks, retaining walls, and foundations.

NOTE: call our technical department about the application to other substrates or scopes of use

Minimum thickness	±10 mm (consumption ± 2 kg/m ²)
Tack-free time	±10 secs
Tensile strength	±2 MPa
Elongation at break	>180%
Hardness Shore A	>50
Application method	Spray equipment



COLORS

	Black
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GENERAL SPECIFICATIONS

- Two-component, 100% solids content, aromatic highly expandable pure polyurea that once applied, forms a continuous, seamless, waterproofing, and solid membrane that offers a waterproofing, and watertight behavior to be applied in irregular substratas as concrete, metal roofs or asbestos
- Once applied offers also a thermal isolation behavior
- The application and training is done by our spray equipment TC2049 (spray-equipment.tecnopolgroup.com) or similar
- Thanks to its versatility and its drying time approx. 10 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, 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, this system needs 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 10 mm. (400 mils DFT), total yiedl is 2 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).

SHELF LIFE

12 months at temperatures between 5 and 35° C (41 to 95 °F), provided it is stored in a dry place. Once the tin has been opened, the product must be used. B side must be agitated mechanically before inserting the transfer pumps and use.

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 reliease 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 or 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 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 substrate 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.
- 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
- 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/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

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

APPLICATION REQUIREMENTS (SPRAY EQUIPMENT)

For the formation, it is necessary to mix the two initial liquid components, isocyanates and amines by our spray equipment TC2049 (spray-equipment.tecnopolgroup.com) or similar (proper maintenance and cleaning it is recommended). The general parameters for this material will be the following:

- Isocyanate heater temperature: 65-68 °C (149°F to 155°F)
- Amine heater temperature: 68-73°C (153°F to 163°F)
- Hose temperature $\pm 65^{\circ}\text{C}$ (149°F)
- Working pressure: 2.500 to 3.000 psi (172 to 205 bar)
- Recommended mixing chamber: GU-07008-1 (use mechanical purge chamber)

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).



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.

Consult the material and safety data sheet of the products of the system.



TECHNICAL AND CHEMICAL PROPERTIES

PROPERTIES	RESULTS
Density ISO 1675	±0.25 g/cm ³
Density compounds* A/B ISO 1675	1.11 ±0.05 g/cm ³ / 1.10 ±0.05 g/cm ³
Viscosity (at 12 rpm) ISO 2555	850±50 cps / 950±50 cps
Mixing ratio (per weight-per volume)	100/102 - 100/100
Tack-free time	±10 secs
Recoat time	10 secs~ 48 hours
Use temperature range (environment)	-20~ 80 °C (-4 to 176°F)
Application temperature range (substrate / environment)	5 ~ 35 °C (41 to 95°F)
Maximum environmental humidity	±85%
Elongation at break ISO 527-3	>180%
Tensile strength ISO 527-3	±2 MPa
Hardness Shore A DIN 53.505	>50
Adhesion to concrete	>1.5 MPa
Solid content ISO 1768	100%
VOC content (volatile organic compounds)	0
Watertight EN1928:2000 Method A	PASS
Thermal conductivity EN 12667:2002	0.081W/mK
Thermal resistance EN 12667: 2002	0.74 sqm* K/W
Roof slope	Zero slope, ponding water admitted
Fire reaction	NPA

Results were 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.

* Data for component B pigmented in black 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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