TECNOCOAT P-2049 HR - HIGH-STRENGTH PURE POLYUREA MEMBRANE FOR WATEPROOFING AND COATING

Two component,hot-spray pure polyurea membrane for waterproofing, protection and sealing. It is made up of two highly reactive liquid components, Tecnocoat P-2049-HR/A (isocyanates) and Tecnocoat P-2049-HR/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, with high mechanical qualities, **high hardeness and especially in applications where chemical and mechanical resistance are required.**

0 VOC EMISSIONS

USES

For waterproofing and protection of:

- Vehicle linings and offshore coatings
- Tanks and irrigation canals
- Concrete decks, retaining walls, and foundations
- Power, recycling, waste and water treatment and storage plants, and petrochemical plants

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

Minimum thickness	1.5 mm (depending on the chemical contact)
Tack-free time	±20 secs
Tensile strength	±23 MPa
Elongation at break	>171 %
Hardness Shore A/D	>97 / >60
Application method	Spray equipment

COLORS

	Gray

Tecnopol
Finlàndia, 33 · 08520 Les Franqueses del Vallès · Barcelona (Spain)
(+34) 93 568 21 11 · info@tecnopol.es · www.tecnopol.es

GENERAL SPECIFICATIONS

- Two-component, 100% solids content, aromatic, pure polyurea that once applied, forms a sturdy hard-wearing continuous, seamless, waterproofing, and solid membrane that offers a waterproofing, and watertight behavior on any element that requires high chemical and abrasion resistance
- The application and training are done by our spray equipment TC2049 (spray-equipment.tecnopolgroup.com) or similar
- Thanks to its versatility and its tack-free time of around 3-5 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.
- 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 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.
- 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.
- The membrane may be in contact with chemical elements. Consult to the our technical department the table of chemical resistance, to know the type of exposure, temperatures and type of chemical element.

YIELD

The recommended minimum thickness is 1.5 mm. (60 mils DFT), total yiedl is 1.7 kg/sqm, applied in various coats. The total thickness may vary according to substrate or climatological conditions.

PACKAGING

Metallic drum kit 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 ºF)*, 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 relielease 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.

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, substrate humidity value; ketones applicability based solvents for reducing this type of surface cleaning
- Apply a thin layer (100-150 g/sqm) of polyurethane resins 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 substrate humidity value; ketones applicability based solvents for conducting this type of surface cleaning
- Apply a thin layer (100-150 g/sqm) of polyurethane resins 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.
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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: 70-75 ºC *(158ºF to 167ºF)*
- Amine heater temperature: 70-75 ºC *(158ºF to 167ºF)*
- Hose temperature:± 70ºC *(158ºF)*
- Working pressure: 2.500 - 3.000 psi *(172 to 205 bar)*
- Recommended mixing chamber: GU-07008-1 or GU-07008-2 (*use mechanical purge chamber)*

Anyway, these parameters for adjusting the projection equipment are approximate and may change depending on the weather conditions of the environment at the moment to apply, therefore, it is the responsibility of the applicator values in each case the option to choose.

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	1.10 ±0.03 g/cm³
Desity of compoundss A/B* ISO 1675	1.12±0.03 g/cm³ / 1.09 ±0.03 g/cm³
Viscosity of compounds A/B (at 12 rpm) ISO 2555	1,200±50 cps / 1,000±150 cps
Mixing ratio (per weight/per volume)	100/102 - 100/100
Tack-free time	±20 secs
Recoat time	20 secs ~ 24 hours
Use temperature range (environment)	-10 ~ 80 ºC *(14 to 176ºF)*
Application temperature range (substrate / environment)	5 ~ 35 ºC *(41 to 95ºF)*
Maximum environmental moisture	±85%
Elongation at break ISO 527-3	>171%
Tensile Strength ISO 527-3	>23 MPa
Hardness Shore A/D DIN 53.505	>97 / >60
Adhesion to concrete	>1.5 MPa
VOC content(volatile organic compounds)	0
Solids content ISO 1768	100%
Constructive element slope	zero slope, ponding water admitted
Fire reaction	NPA

Results were performed in the laboratory at 23ºC (73ºF) 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 23ºC and 50% RH, under controllable conditions.*