



TECNOCOAT H-2049 EL - ELONGABLE POLYUREA MEMBRANE FOR WATERPROOFING AND COATING

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



USES

For application in the following situations:

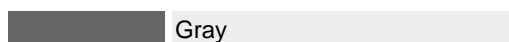
- Metal roofs (zinc, copper...)
- Construction element on civil works (bridges, beams, concrete decks, retaining walls, and foundations ...)
- Sloped/flat walkable roofs, IRMA, balconies, and overhangs
- Retaining walls and foundations, concrete decks (EN-1504)
- Vehicle and boat coatings (bed liners)
- Furniture and thematizations
- Asbestos roofs rehabilitation (use with TECNOFOAM)
- As a protection for an SPF (spray polyurethane foam TECNOFOAM)

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

Minimum thickness	1.5 mm.
Tack-free time	±15 secs
Tensile strength	> 20 MPa
Elongation at break	>450%
Hardness Shore A/D	>85 / >55
Application method	Spray equipment



COLORS



Gray



GENERAL SPECIFICATIONS

- Two component, fast setting, 100% solids content, aromatic pure polyurea that once applied, forms a stretchable, continuous, seamless, waterproofing, and solid membrane that offers a certified waterproofing, watertight behavior. on elements with structural movements such as metal roofs (galvanized steel, zinc, copper, pre-lacquered plate...)
- 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.
- Thanks to its versatility and its tack-free time of approx. 15 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 Tecnoelastic range aggregates)
- A ceramic floor can be placed on top. In this case, we recommend applying a thin coat of Primer PU-1030, 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.
- 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, 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 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: resins 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

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.

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.

Ceramic tiles substrate: Ceramic surfaces should not have empty joints or loose elements or parts. These should be filled with Mastic P-2049 mastic or mortar, according to their size. Existing joints or seals: remove the old material, clean up and fill with Mastic P-2049. Sanding with specific equipment. Thereby, to remove moss or solids particles bonded to the substrate, and opening the pore. Clean up, using a vacuum method. PRIMING: use Primer EP-1040, Primer EP-1010 or Primer EPw-1070, 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 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, 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 (PROPORTIONER)

It is necessary to mix the two initial liquid components using a high-pressure plural component proportioner; isocyanates and resin 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: 70-75 °C (158°F to 167°F)
- Resin heater temperature: 70-75 °C (158°F to 167°F)
- Hose temperature: ±70 °C (158°F)
- Working pressure: 2.500 - 3.000 psi (170 to 205 bar)
- Recommended mixing chamber: GU-07008-1/GU-07008-2

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 Tecnopól 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	1.11±0.05g/cm ³ / 1.10 ±0.05 g/cm ³
Viscosity compounds* A/B (at 12 rpm) ISO 2555	850±50 cps / 1.300±50 cps
Mixing ratio (weight - volume)	100/102 - 100/100
Tack-free time / recpat time	±15 secs / 15 secs ~ 48 hours
Use temperature range (environment)	-10 ~ 90 °C (14 to 194°F)
Application temperature range (substrate and environment)	5~ 35 °C (4 to 95°F)
Maximum environmental humidity	±80%
Watertightness EN-1928	PASS: watertight
Elongation at break ISO 527-3	>450%
Tensile strength ISO 527-3	>20 MPa
Hardness Shore A/D DIN 53.505	>85 / >55
VOC content(volatile organic compounds)	0
Solid content ISO 1768	100%
Constructive element slope	zero slope, ponding water admitted
Fire reaction EN-13501	Euroclass E
Abrasion resistance (Taber) EN ISO 5470-1	295 mg (weight loss <3.000mg)
Carbon dioxide (CO ₂) permeability EN 1062-6	3.5 g/sqm*day
Diffusion-equivalent air layer thickness EN 1062-6	S _d = 71.2m
Diffusion resistance number EN 1062-6	μ= 105,707
Determination of crack bridging properties Static Method UNE-EN 1062-7	Class A5 (-10°C)
Determination of crack bridging properties Dynamic Method UNE-EN 1062-7	Class B.3.2 (23°C)
Determination of liquid water permeability, EN 1062-3	< 0.002 kg/sqm*h0.5
Bond strength by pull-off EN 1542	2.4 MPa
Falling-weight test EN ISO 6272-1	24.5 Nm (Class III)
Diffusion-equivalent air layer thickness EN ISO 7783	S _d <3.1m (Class I)
Water-vapor resistance factor EN ISO 7783	μ= 4,886
Water-vapor transmission rate EN ISO 7783	V= 6.9 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.

ASTM

PROPERTIES		VALUES
Initial tensile strength	ASTM D412	3,318 psi
Final tensile strength	G-154 envejecimiento acelerado 500 h	2,949 psi
Initial tensile strength	at 90 days/ 70°C(158°F)	2,388 psi
Tensile tensile strength initial modulus at 100% 200%/300%	ASTM D638	1,148 psi / 675 psi / 544 psi
Initial elongation at break	ASTM D412	656%
Final elongation at break	G-154 accelerating weathering 500 h	689 %
Final elongation at break	90 days/70°C(158°F)	510 %
Hardness Shore A/D	ASTM D2240:2015	94/48
Water absorption (% mass)	ASTM D-570	1.6 %
Permeance	ASTM E96	1.2 perms
Puncture resistance	ASTM D4833	117 lbf
Abrasion resistance (H18 wheel, wear index / H22 wheel, wear index)	ASTM D4060	413 mg / 307 mg
Crack-Bridging	ASTM C1305	No cracks after 10 cycles at -26°C(-15°F)
Pull off strength on steel / concrete	ASTM D4251	997 psi / 817 psi

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

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.

No warranties of any kind, either expressed or implied, including warranties of merchantability or fitness for a particular purpose, are made regarding products described or designs, data or information set forth, or that the products, designs, data or information may be sued without infringing the intellectual property rights of others. In no case shall the descriptions, information, data or designs provided be considered a part of Tecnopol Sistemas S.L.U. terms and conditions of sale. Further, the descriptions, designs, data, and information furnished by Tecnopol Sistemas S.L.U. hereunder are given gratis and Tecnopol Sistemas S.L.U. assumes no obligation or liability for the description, designs, data or information is given or results obtained, all such being given and accepted at the reader's risk.

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.

The liability of Tecnopol Sistemas S.L.U. and its affiliates for all claims is limited to the purchase price of the material.

Products may be toxic and require special precautions in handling. Users should obtain detailed information on toxicity, together with proper shipping, handling and storage procedures, and comply with all applicable safety and environmental standards.

No freedom from any patents or other industrial or intellectual property rights is granted or to be inferred.

