



TECNOCOAT P-2049 EL - STRETCHABLE POLYUREA MEMBRANE 100% PURE FOR WATERPROOFING AND COATING (>600%)

The 100% pure and elastic polyurea TECNOCOAT P-2049 EL system was developed as a single coating suitable for waterproofing, protection, and sealing, especially in elements with structural movements. The pure polyurea TECNOCOAT P-2049 EL membrane is made up of two high reactive liquid components, isocyanates, and amines, which are mixed together using spray equipment. TECNOCOAT P-2049 EL is an aromatic high density and elastic pure polyurea and excellent elasticity.



USES

For waterproofing and protection of:

- Metal roofs (zinc,...).
- Construction element on civil works (bridges)
- Asbestos roofs.
- In general, structural elements or surfaces that may have high expansion movements due to temperatures

NOTE: call our technical department about the application to other supports or situations

recommended minimum thickness	±1,5 mm
tack-free time at 23°C	± 13-25 secs
tensile strength at 23°C	± 13 MPa
elongation at 23°C	> 600%
elongation at -40°C	>350%
hardness Shore A at 23°C	>75%
hardness Shore D at 23°C	>35
VOC(volatile organic compounds)	0 (100% solids)
application method	spray equipment



COLORS

	White
	Gray
	Black
	Red



GENERAL FEATURES:

- TECNOCOAT P-2049 EL is a very elasticity and hard-wearing product that, once applied, offers great stability and durability.
- the application and training are done by our spray equipment TC2049 (spray-equipment.tecnopolgroup.com) or similar
- thanks to its versatility and its drying time of between 13 and 15 seconds TECNOCOAT P-2049 EL adapts to any surface, making it the ideal product for application on uneven surfaces and in areas of any shape, whether curved or squared.
- its application is recommended directly on the structural concrete slabs. The product is certified to be applied at zero slopes. In this way, the execution of slopes of mortar or other protective materials is not necessary to do.
- it is free from harmful to the ozone layer, so do not promote the greenhouse effect (NOT contain HFCs, HCFCs, VOCs, etc ...).
- TECNOCOAT P-2049 EL system is 100% recyclable by mechanical means friendly to the environment
- no gas collection for recycling and/or destruction is required
- it does not emit any substance to the environment once installed.
- applying TECNOCOAT P-2049 EL saves in seals and any other kind of joins, as the finish is uniform and makes up a single layer, providing a surface with optimum maintenance and cleaning properties.
- The elongable TECNOCOAT P-2049 EL pure polyurea membrane system 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, consult the technical specifications of our primers where the maximum humidity ranges are specified or our Technical Handbook Manual of Application Manual for TECNOCOAT P-2049.
- TECNOCOAT P-2049 EL system requires solar radiation protection (UV rays) to ensure it does not lose its properties, given that it is an aromatic membrane. The system incorporates a protective varnish, TECNOTOP 2C, for use in the absence of other physical protection elements.
- the reaction of TECNOCOAT P-2049 EL upon application provides great stability in seconds and it may be walked on and guarantees to waterproof in less than 6 hours. This polyurea reaches its optimum conditions after approximately 24 hours.
- TECNOCOAT P-2049 EL system's properties enable it to bond to any surface, such as cement, concrete, polyurethane, wood, metal, etc. Furthermore, due to its resistance, it can be walked on and it will accept a rough finish to make it non-slip.

PACKAGING

Metal drums of 225 kg each component

SHELF LIFE

12 months at temperatures between 5° C and 35° C, provided it is stored in a dry place. Once the tin has been opened, the product must be used immediately. Once opening drum, slightly mix mechanically component B (amines), for good mixing of their components.

APPLICATION

In general, the following aspects should be dealt with prior to spraying:

- repair the surface (fill in depressions, eliminate unevenness, eliminate any old waterproofing, etc.).
- the surface has to be enough compressive strength of adhesion of the membrane. If it were not so, we will proceed to apply our primers resins to achieve this target
- the pull-off strength of the membrane will be minimal 1, 5 N/mm²(MPa)



- clean up the surface or substrate, removing any dust, dirt, grease or efflorescence.
- in case of doubt of all above, apply before in a restricted area and to check

The TECNOCOAT P-2049EL elongable and pure polyurea system can be applied to many different surfaces and the procedure will vary depending on its nature or state.

Below we set out some of the applications for the most common surfaces; for other surfaces not described, please contact our technical department.

Concrete substrate

- any depressions or voids should be repaired using a mix (ratio of 1:4) of our epoxy resin PRIMER EP-1020 mixed with silica sand.
- the 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.
- any concrete laitance or release agents should be eliminated and an open the pore surface achieved by grit blasting, milling or sanding.(to achieve a Concrete Surface Preparation index -CSP- 3 to 6, depending on the final use)
- next, clean and eliminate all contaminants from the elements, such as dust or particles from the previous processes.
- apply the primer in the conditions and with the parameters indicated in the technical specifications for these products. In general, the dual-component polyurethane PRIMER PU-1050 should be used.
- application of the TECNOCOAT P-2049 EL pure polyurea membrane..(recommended 2 mm)
- application of the polyurethane resin TECNOTOP 2C, in consumption and desired thicknesses in the case of no protection against UV rays. This application can be done by short hair roller type equipment "airless" (see the conditions of application in the product datasheet TDS)

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.
- apply prior priming using a 100% solids epoxy resin PRIMER EP-1040 or a water-based epoxy resin PRIMER EPw-1070, to improve surface leveling and bonding. Consult the technical specifications of this product.
- application of the TECNOCOAT P-2049 EL pure polyurea membrane. .(recommended 1,5 mm)
- application of the polyurethane resin TECNOTOP 2C/S-3000//1C, in consumption and desired thicknesses in the case of no protection against UV rays. This application can be done by short hair roller type equipment "airless" (see the conditions of application in the product datasheet TDS)

Notes:

- Consult in all cases the waiting times, drying time, singular points treatment, conditions of application of all the products through the technical data sheets of each product, the technical handbook of application of TECNOCOAT, or consult our technical department.
- For other types of supports/substrates, for further information on the execution application procedure, for any additional questions, please, consult the technical data sheets (TDS) of these products, or our technical department.
- These guidelines are valid although they can be modified, according to the situation of the supports, conditioning of the bearing structures of the elements to be waterproofed, external climatology or situation at the time of application



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 (50-100 g/m²) of polyurethane resin PRIMER PU-1000
- light spread SILICA SAND over the wet primer applied before
- wait for the total drying
- apply TECNOCOAT P-2049 EL, TECNOCOAT CP-2049 or DESMOPOL
- apply TECNOTOP S-3000/2C/1C, in consumption and desired thicknesses in the case of no protection against UV rays. This application can be done by short hair roller type equipment "airless" (see the conditions of application in the product datasheet TDS)

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 (50-100 g/m²) of polyurethane resin PRIMER PU-1000.
- light spread SILICA SAND over the wet primer applied before
- wait for the total drying
- apply TECNOCOAT P-2049 EL, TECNOCOAT CP-2049 or DESMOPOL
- apply TECNOTOP S-3000/2C/1C, in consumption and desired thicknesses in the case of no protection against UV rays. This application can be done by short hair roller type equipment "airless" (see the conditions of application in the product datasheet TDS)

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:±78°C
- Amine heater temperature:±65 °C
- Hose temperature:±72°C
- Pressure: 2.700 psi ~ (185 bar)
- Mixing chamber: GU-07008-1

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 a responsibility of the applicator values in each case the option to choose.



HANDLING

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 generation should be avoided or minimized. Incinerate under controlled conditions in accordance with local laws and national regulations.

Anyway, consult the material and safety data sheet (MSDS) of the product.

COMPLEMENTARY PRODUCTS

The TECNOCOAT P-2049 EL system may be complemented with the following products as a means of protection or to improve its physical-mechanical properties depending on its exposure, the desired finish or the type of substrate.

- PRIMER EP-1020: Mixed with silica sand in a ratio of 1:4, this is used to fill in depressions in concrete surfaces, rapidly providing a firm and fast drying even base.
- PRIMER PU-1050 | PRIMER EPw-1070 | PRIMER EP-1040 | PRIMER PUC-1050 | PRIMER EP-1020: This primer is applied on the substrate beforehand to improve bonding and level the surface, as well as regulating the humidity in the substrate (see permitted levels in their technical specifications).
- TECNOCOAT CP-2049: self-leveling, cold polyurea for manual application, for small applications on TECNOCOAT P-2049EL, repairs.
- TECNOTOP 2C: Dual-component colored aliphatic polyurethane varnish used to protect roofs and floors or ground against UV rays when there is no other protection.
- TECNOTOP 2CP: dual-component colored aliphatic polyurethane resin used to protect against UV rays and chlorinated water when waterproofing swimming pools, lakes, and aquariums.
- TECNOTOP 1C: single component colored aliphatic, used to protect non-walkable roofs or only for maintenance, against UV rays when there is no other protection
- TECNOTOP S-3000: two-component, aliphatic, colored, cold polyurea resin for protection against UV rays, in situations of decks or floors without additional protection. Excellent for vehicular cover applications, quick-drying, and setting up.
- TECNOPLASTIC: This plastic powder, once mixed with Tecnotop 2C, forms a rough surface, conforming even to norm ENV 12633:2003 (floors slipperiness), to achieve Class 3 (>45 slip resistance), depending on dosage (consult our technical department).
- TECNOBAND 100: the 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.
- MASTIC PU: Polyurethane mastic for filling joints (use together with Tecnoband 100 when necessary).



TECHNICAL DATA

PROPERTIES	RESULT
Density at 23 °C ISO 1675	1,15 g/cm ³
Isocyanate viscosity at 23°C	±1200 cps
Amines viscosity at 23°C	±650 cps
Initial dry time at 23°C	±13~25 sec
Cured time at 23°C	±12 hours
Elongation at break at 23 °C ISO 527-3	>600%
Elongation at break at -40 °C ISO 527-3	>350%
Tensile strength at 23 °C ISO 527-3	±13 MPa
Tensile strength at -40 °C ISO 527-3	±23 MPa
Max. tensile strength ISO 37 at 7 days internal test	12,8 MPa
Max. elongation ISO 37 at 7 days internal test	590%
Modulus 100% ISO 37 at 7 days internal test	3,4 MPa
Hardness (Shore A) at 23 °C DIN 53.505	>75
Hardness (Shore D) at 23 °C DIN 53.505	>35
Climatic zone	S (severe)
Support temperatures	-20 °C~ 90 °C
Constructive element slope	S1~S4 (<5%~ >30%) zero slope
Fire reaction	NPA
VOC (volatile organic compounds)	0 (solids content 100%)
Adherence to concrete	>2 MPa

These values in this table are approximate and can vary depending on the situation of the carrier or application methodology employed

TECHNICAL DATA OF COMPONENTS

PROPERTIES	COMPONENT A	COMPONENT B
Specific gravity at 23°C ISO 1675	1,12±5%/cm ³	1,09-1,12 ±5%/cm ³ *
Viscosity (S63, 30 rpm at 23 °C) ISO 2555	1200±50 cps	650±50 cps *
Mix ratio – in weight	100	102



Mix ratio – in volume	100	100
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*: these data only in a neutral color; for other colors, this data may vary, please check COA

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