



**TECNOCOAT P-2049 EX - HIGHLY EXPANDABLE  
100% PURE POLYUREA MEMBRANE FOR  
WATERPROOFING, WITH THERMAL BEHAVIOR**

TECNOCOAT P-2049 EX has developed as a single coating suitable for waterproofing, thermal isolation, protection and sealing in general. It forms a continuous and solid, continuous, and protective coating without joints or overlaps. This polyurea once applied, expands between 5 and 7 times its volume. The pure polyurea TECNOCOAT P-2049 EX membrane is made up of two high reactive liquid components, isocyanates, and amines, which are mixed together using spray equipment (TC2049 <http://spray-equipment.tecnopolgroup.com/>)



## USES

For waterproofing and protection of concrete decks or metallic supports on:

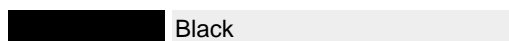
- Sloped roofs, terraces, balconies and overhangs
- Retaining walls and foundations.
- Asbestos roofs.

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

recommended thickness	10 mm ( $\pm 2$ kg/m <sup>2</sup> )
tensile strength at 23 °C	$\pm 2$ MPa
elongation at break at 23 °C	>180%
hardness Shore A at 23 °C	>50
tack-free time at 23 °C	$\pm 3\sim 5$ sec
VOC(volatile organic compounds)	0 (100% solids)
application method	spray equipment



## COLORS



Black



## GENERAL FEATURES

- TECNOCOAT P-2049 EX forms a wearing product that, once applied, offers great stability and durability.
- It's a very elongable product that, once applied, offers great stability, durability, waterproof and seal, and a thermal isolation behavior
- the application and training is done by our spray equipment TC2049 ([spray-equipment.tecnopolgroup.com](http://spray-equipment.tecnopolgroup.com)) or similar
- 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 are not necessary to do
- Thanks to its versatility and its drying time of between 3 and 5seconds TECNOCOAT P-2049 EX adapts to any surface, making it the ideal product for application uneven surfaces and in areas of any shape, whether curved or squared.
- Applying TECNOCOAT P-2049 EX 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.
- TECNOCOAT P-2049 EX 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 of application of TECNOCOAT
- The fast reaction of TECNOCOATP-2049 EX upon application provides great stability in a few seconds and it may be walked on and guarantees to waterproof in less than 3 hours. This polyurea reaches its minimum conditions after approximately 24 hours.
- The TECNOCOAT P-2049 EX system's properties enable to bond to any surface, such as cement, concrete, polyurethane, wood, metal, etc.

## YIELD

Consumption is about 2 kg/m<sup>2</sup> of 8–10 mm. thickness.

## PACKAGING

Metal drums of 225 kg each component(amines and isocyanates)

## SHELF LIVE

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 METHOD

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.).
- Clean the surface or substrate, removing any dust, dirt, grease or efflorescence.



The TECNOCOAT P-2049 EX 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  $\pm$  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.
- clean and eliminate all contaminants from the elements, such as dust or particles from the previous processes.
- application of the TECNOCOAT P-2049 EX polyurea membrane.
- application of the aliphatic resin TECNOTOP S-3000/2C/2CP, 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.
- 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 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 EX polyurea membrane.
- application of the aliphatic resin TECNOTOP S-3000/2C/2CP, 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)

#### Ceramic substrate:

- ceramic surfaces should not have empty joints or loose elements or parts. These should be filled with MASTIC PU mastic, complemented with TECNOBAND 100 on the joints if necessary.
- for rapid and efficient cleaning of the surface use pressurized water and check that it evaporates completely. Also, verify that all dust and other physical contaminants have been eliminated.
- next, apply the required primer; in these cases of non-porous surfaces use the water-based epoxy PRIMER EPw-1070.
- application of the TECNOCOAT P-2049 EX polyurea membrane.
- application of the aliphatic resin TECNOTOP S-3000/2C/2CP, 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)

#### Sheets substrate:

- The existing sheet surfaces (asphalt, bitumen...) must not show surface areas raised or not in good condition. He withdrew in poor areas.
- There shall be cleaned with water, ensuring complete evaporation.
- Next, apply the required primer; in these cases of non-porous surfaces use the water-based epoxy PRIMER EPw-1070 or polyurethane solvent-based PRIMER PU-1000
- application of the TECNOCOAT P-2049 EX polyurea membrane.
- application of the aliphatic resin TECNOTOP S-3000/2C/2CP, 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 ( $\pm 80$  g/m<sup>2</sup>) 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 EX
- apply TECNOTOP S-3000/2C/2CP, 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 ( $\pm 80$  g/m<sup>2</sup>) 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 EX
- apply TECNOTOP S-3000/2C/2CP, 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](http://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:  $\pm 65-70$  °C
- Amine heater temperature:  $\pm 75-80$ °C
- Hose temperature  $\pm 75$  °C
- Pressure: 2.500 to 2.700 psi (172 to 185 bar)
- Mixing chamber(recommended): GU-07008-1

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

Anyway, consult the safety and material data sheet of the product, are publicly available.

## COMPLEMENTARY PRODUCTS

The TECNOCOAT P-2049 EX 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  $\pm 1:4$  or calcium carbonate in ratio  $\pm 1:2$  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 PUc-1050: These primers are 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). Consumption may vary depending on the type of support, nature or surface texture. Consult the technical specifications of each product or our technical department.
- PRIMER EP-1040: 100% solid content, epoxy resin, for metal surfaces
- TECNOTOP 2C: dual-component colored aliphatic polyurethane resin, used to protect roofs and floors or ground against UV rays when there is no other protection. (according to ETA 10/0121 and BBA 16/5340)
- 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 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
- 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).



## MEMBRANE PROPERTIES

PROPERTIES	RESULTS
Density at 23 °C ISO 1675	±250 kg/m <sup>3</sup>
Isocyanate viscosity at 23°C UNE-EN ISO 2555	±900 cps
Amines viscosity at 23°C UNE-EN ISO 2555	±650 cps
Initial dry time at 23°C	±3~5 secs
Recoat time at 23°C	±10 min.
Total cured time at 23 °C	3 days
Elongation at break at 23 °C ISO 527-3	>180%
Tensile strength at 23 °C ISO 527-3	±2 MPa
Hardness Shore A a 23 °C DIN 53.505	>50
Watertight EN1928:2000 Method A	conformity
Thermal conductivity EN 12667:2002	0,081W/mK
Fire reaction	NPA
Thermal resistance EN 12667: 2002	0,74 m <sup>2</sup> K/W
VOC(volatile organic compound) ISO 17680	0
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	1,11±5%/cm <sup>3</sup>	1,09-1,12 ±5%/cm <sup>3</sup> *
Viscosity (S63, 30 rpm at 23 °C) ISO 2555	900±50 cps	650±50 cps *
Mix ratio – in weight	100	102
Mix ratio – in volume	100	100

\*: these data only in a neutral color; for other colors, this data may vary, please check COA

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