



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

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



USES

For waterproofing and protection of:

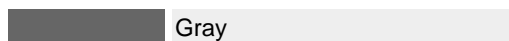
- Metal roofs (zinc, copper...).
- Construction element on civil works (bridges, beams...)
- Concrete roofs or slabs
- Asbestos roofs.

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

recommended thickness	± 1,5 mm.
tack-free time at 23°C	± 15 secs
tensile strength at 23°C	> 20 MPa
elongation at break at 23°C	>450%
Hardness Shore A	>85
application method	spray equipment
VOC(volatile organic compounds)	0



COLORS



GENERAL FEATURES:

- TECNOCOAT H-2049 EL is a very elasticity and hard-wearing product that, once applied, offers great stability and durability.



- 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 of between 13 and 15 seconds TECNOCOAT H-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.
- Applying TECNOCOAT H-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 H-2049 EL 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 of application of TECNOCOAT
- The TECNOCOAT H-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 H-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.
- The TECNOCOAT H-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.

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 is >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 H-2049 EL elongable and 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 latencies or release agents should be eliminated and open the pore surface achieved by grit blasting, milling or sanding.
 - 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 H-2049 EL polyurea membrane.
 - application of the aliphatic polyurethane 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 H-2049 EL polyurea membrane.
- application of the aliphatic polyurethane 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, 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 H-2049 EL, TECNOCOAT CP-2049 or DESMOPOL
- 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(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 H-2049 EL, TECNOCOAT CP-2049 or DESMOPOL
- 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) or similar (proper maintenance and cleaning it is recommended). The general parameters for this material will be the following:

- Isocyanate heater temperature: $\pm 70^{\circ}\text{C}$
- Amine heater temperature: $\pm 70^{\circ}\text{C}$
- Hose temperature $\pm 65^{\circ}\text{C}$
- Pressure: 2.700 psi (185 bar)
- Mixing chamber (recommended): GU-07008-1/GU-07008-2

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.

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.



- The 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 H-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 PUC-1050: 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).
- PRIMER EP-1040: 100% solid content, epoxy resin, for metal surfaces
- TECNOCOAT CP-2049: self-leveling, cold polyurea for manual application, for small applications on TECNOCOAT H-2049 EL, 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.
- TECNOPLASTIC F/C: 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
Ysocioanate viscosity at 23°C UNE-EN ISO 2555	±900 cps
Resin viscosity at 23°C UNE-EN ISO 2555	±650 cps
Tack free time at 23°C	±15 sec
Cured time at 23°C	±12 hours
Elongation at break at 23 °C ISO 527-3	>450%
Tensile strength at 23 °C ISO 527-3	>20 MPa
Initial dry time at 23°C	13~17 sec
Hardness (Shore A) at 23 °C DIN 53.505	>85
Hardness (Shore D) at 23 °C DIN 53.505	>55
Climatic zone	S (severe)
Constructive element slope(minimum)	zero slope
Fire reaction	NPA
pull off strength(on concrete)	>1, 5 MPa
Permissible relative humidity	max. 85%



Crack bridging (internal test)	1,8" (3,17 mm)
Water absorption(internal test)	< 0,1 kg/m2 *h0,5
VOC(volatile organic compounds)	0

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 ³	1,09-1,12 ±5%/cm ³ *
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

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.

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