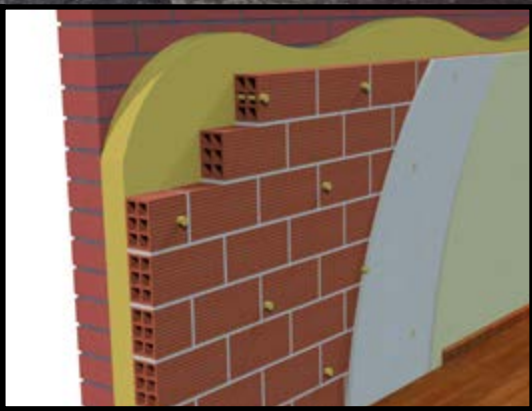
TECNO MAGAZINE

by TECNOPOL

DESMOPOL

MANUAL WATERPROOFING WITH THE BEST QUALITY/PRICE RATIO



Case Studie

Water parks with TECNOCOAT P-2049

The resistance and versatility of TECNOCOAT P-2049 pure polyurea makes it ideal for this kind of application.

Certificates

TECNOFLOOR Tw-3040

We have obtained certification for contact with foodstuffs and drinking water, as well as for concrete protection

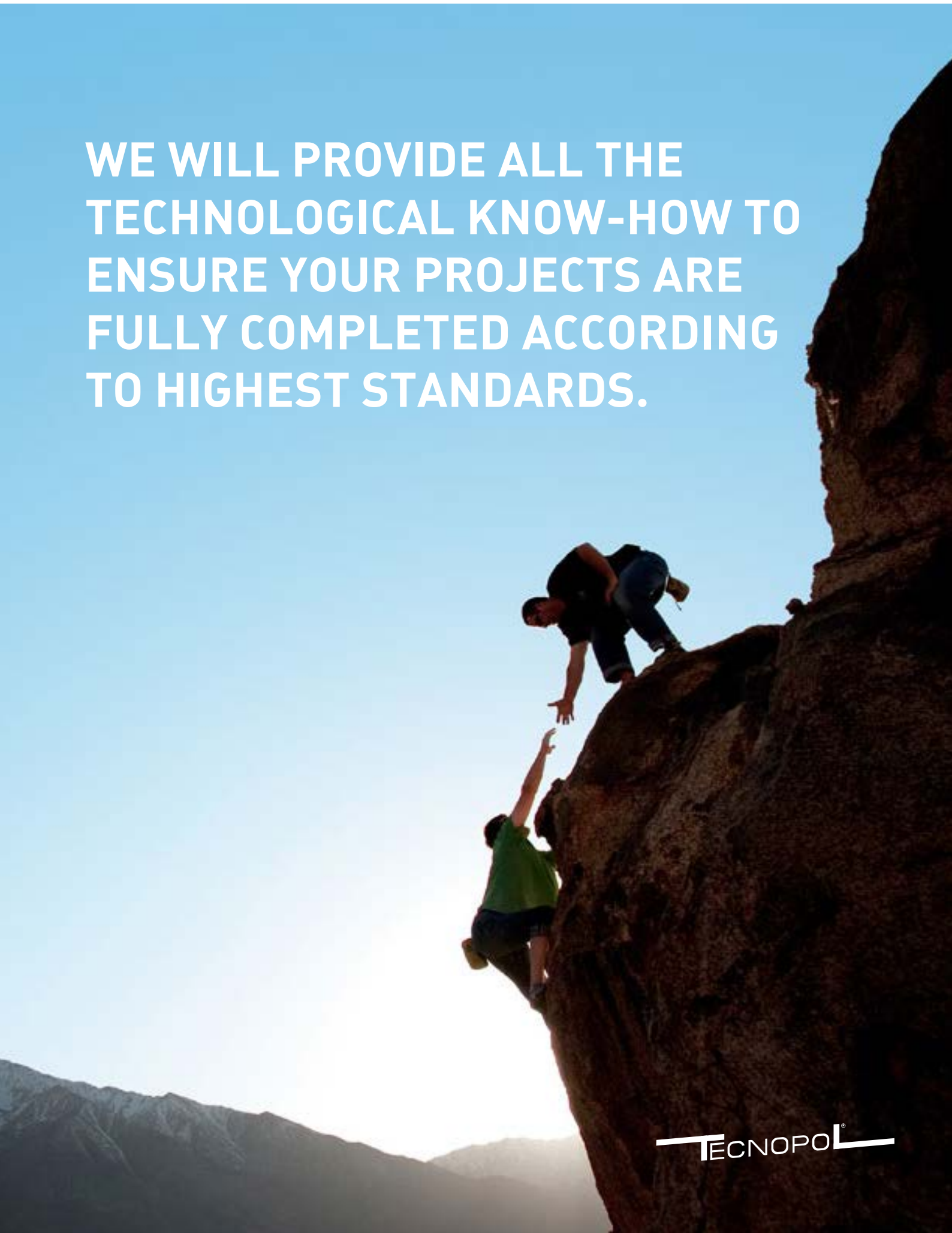
Comparison

Thermal insulation in buildings

We have tested different thermal insulations, discovering which of them provide the greatest energy savings

Nº 2. April - June 2014

WE WILL PROVIDE ALL THE TECHNOLOGICAL KNOW-HOW TO ENSURE YOUR PROJECTS ARE FULLY COMPLETED ACCORDING TO HIGHEST STANDARDS.



SUMMARY

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OUR PRICE LIST FOR 2014
IS AVAILABLE ON THE WEBSITE
REQUEST IT

TECNOCOAT P-2049 LV, pure polyurea for protecting and waterproofing polyurethane foam

Low viscosity pure polyurea

PRESENTATION

We present the new **TECNOCOAT P-2049 LV** pure polyurea membrane, designed specifically for protecting and waterproofing roofs that have been thermally insulted with polyurethane foam.

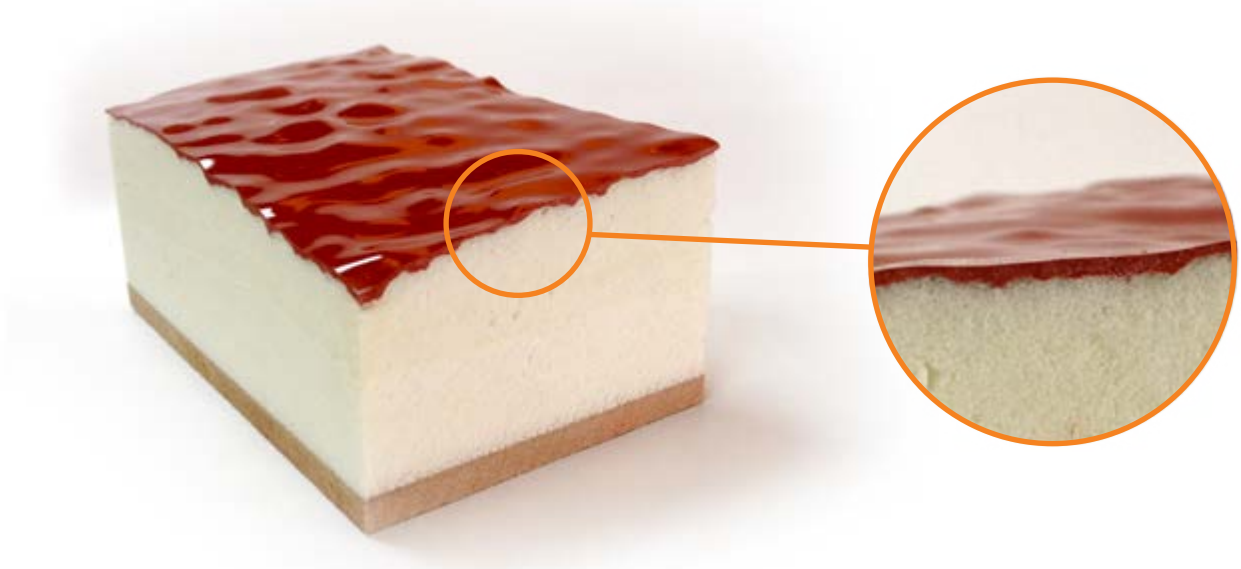
The initials "LV" are the abbreviation of "low viscosity" and they refer to the main characteristic that differentiates this polyurea from the rest of the **TECNOCOAT P-2049** range, given that once it has been applied it forms a membrane with greater elasticity and elongation, providing better stability and durability.

TECNOCOAT P-2049 LV's versatility and the fact that it dries in 3 to 5 seconds, means it adapts to any surface, making it the ideal product for application on uneven areas of any shape, whether curved or with corners.

APPLICATION

TECNOCOAT P-2049 LV is applied using high pressure and temperature spray equipment; however, its great advantage is that it can also be applied using a polyurethane foam spray machine.

TECNOCOAT P-2049 LV can be sprayed directly on **TECNOFOAM** foam provided no more than 48 hours have elapsed since its application. If more than 48 hours have elapsed, simply apply a thin coat of **PRIMER EPW-1070** primer.



TECHNICAL DATA

PROPERTIES	RESULT
Density	1.150 kg/m^3
Elongation at break at 23º C	>250 %
Tensile strength at 23º C	>13 MPa
Hardness (Shore A)	85 ~ 90
Hardness (Shore D)	45 ~ 50
Substrate temperature range	-20ºC ~ 90ºC
Fire reaction	Euroclass F
Gel time	± 3 ~ 5 seconds
Subsequent curing time	±12 hours
Solids content (zero VOCs)	100%

ADVANTAGES

- **Low viscosity - it can b applied using the same machine as the one used to apply the polyurethane foam**
- Stable and long-lasting product
- Adheres fully to the surface
- High tensile strength
- Continuous finish, with no joins or overlapping
- Adapts to any shape
- Dries quickly (3.5 seconds)
- Great elasticity
- Quickly ready for use

DESMOPOL, the manual waterproofing system with the best quality/price ratio

Easy-to-apply single component polyurethane membrane

PRESENTATION

DESMOPOL is one of those systems that when you try it for the first time you will be amazed at its ease of use, versatility, quality finishes and, above all, the results achieved.

DESMOPOL is a pure polyurethane elastomer that, following application, forms a continuous membrane, with no joins or overlapping, completely adhered to the surface, which gives it excellent waterproofing and airtight characteristics.

EASY TO USE

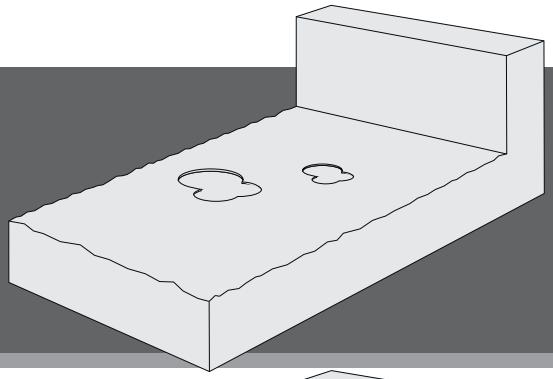
DESMOPOL is easy to apply, for several reasons. First of all, it is a single component product, with which it is simple to prepare: just open, stir gently and it is ready to go. Secondly, no special skills are required; the 5 steps we recommend are common to many of the other systems existing in the market and any experienced user who has previously carried out such applications will almost certainly be familiar with them.

1

PRELIMINARY VERIFICATIONS

The environmental conditions and those of the substrate must be suitable to ensure the system's correct adherence:

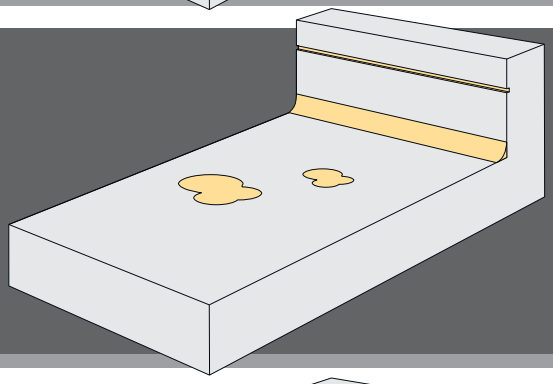
- Dry substrate (humidity below 8%)
- Temperature above 3º C
- No possibility of any filtrations from the rear side of the substrate



2

SUBSTRATE PREPARATION

In general, sand or sand blast the surface, fill and seal expansion joints, fissures, hollows, cracks, etc. to achieve the flattest and smoothest possible surface, with no ridges or sharp edges that could damage the membrane. It is also extremely advisable to install coving around the joins of vertical surfaces. To ensure air-tightness, cut a horizontal recess at a height of approximately 20-25 cm around the entire perimeter



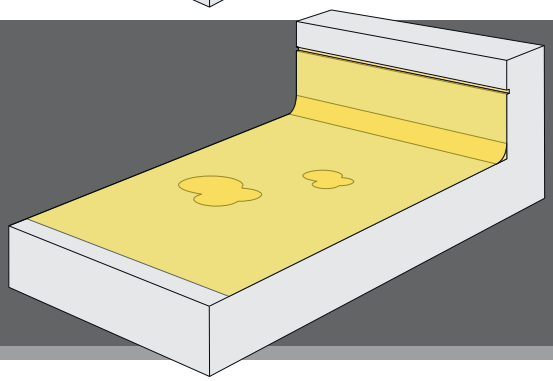
3

PRIMER

The system has a range of 3 primers and one or another should be used, depending on the type of substrate. All of them can be applied with a roller or airless equipment.

Rough surfaces: PRIMER PU-1050 (polyurethane), PRIMER PUc-1050 (low-temperature polyurethane) and PRIMER EPw-1070 (water-based epoxy).

Smooth surfaces: PRIMER EPw-1070.



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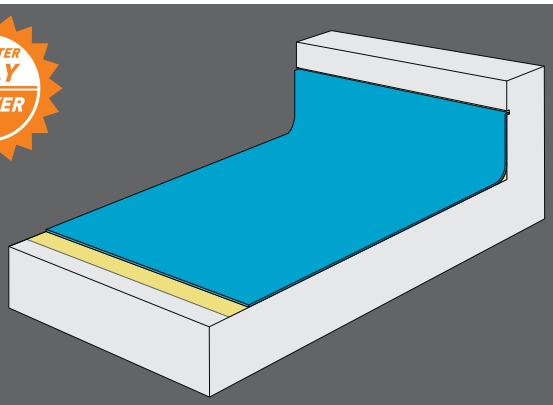
DESMOPOL MEMBRANE

There are 3 possible application methods:

- **Self-levelling in a single coat:** By adding **DESMOPOL ACELERADOR** accelerator, the product may be applied in a single coat, achieving the necessary thickness and with no bubbles.
- **Manual application in several coats:** Apply as many coats are required using a roller or brush until the desired thickness has been achieved.
- **Mechanical application:** Use suitable airless equipment.

In any case a minimum thickness of 2 mm is recommended.



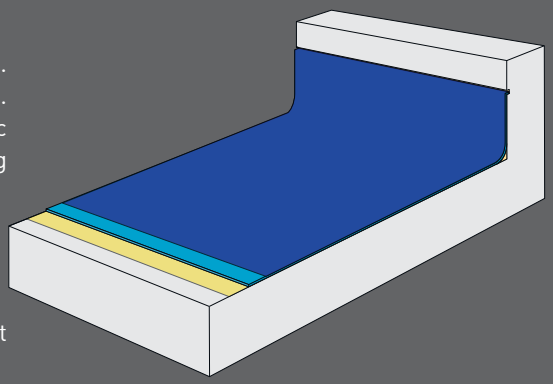
5

FINISH OR PROTECTION

Given that it is an aromatic membrane, it needs to be protected from UV rays. For "exposed" finishes, protect with TECNOTOP aliphatic polyurethane resin. TECNOTOP is also useful for surfaces that need to be resistant to vehicle traffic and it is essential in the case of non-slip finishes and when waterproofing swimming pools, aquariums and ponds, etc.

There are two protective resins available:

- TECNOTOP 2C, for roofs, terraces, industrial flooring, etc.
- **TECNOTOP 2CP**, for swimming pools, aquariums, ponds, fountains, etc. It can be applied using a roller or airless equipment.



DESMOPOL ADDITIVES

Potentiate the membrane's possibilities for easier application

Together with **DESMOPOL** we have developed two additives that give the membrane even more special properties

- **DESMOPOL ACELERADOR** accelerator allows application of **DESMOPOL** in 1 single coat of the desired thickness, recommending a minimum thickness of 2 mm.

  This single coat application notably reduces application time and costs. **DESMOPOL ACELERADOR** is also used as an additive for applications in cold environments.

- **TIXOPOL** is an additive that allows application of **DESMOPOL** on vertical and sloped surfaces as it prevents the membrane from peeling away.

DESMOPOL COMPLEMENTARY PRODUCTS

Complete the system with our range of complementary products

TECNOBAND 100

TECNOBAND 100 is an excellent complementary product that should always be taken into consideration with a view to optimising waterproofing membranes' performance.

Its use is recommended to ensure air-tightness in seals or joins of humid elements, such as drains or sumps. It is also used to form coving on metal substrates.

DESMOSEAL MASILLA-PU MASTIC

DESMOSEAL MASILLA-PU is a single-component polyurethane mastic that cures quickly in contact with atmospheric humidity, forming a hard and elastic seal, with high to medium strength elasticity. It is free from solvents and PVC and can be used to seal both vertical and horizontal joins.

TECNOPLASTIC

TECNOPLASTIC is a micronized particle polyamide for mixture with **TECNOTOP 2C** and **TECNOTOP 2CP** protection varnishes to achieve a medium to high level of roughness, depending on the product used and the mix proportions. **TECNOPLASTIC** comes in two thicknesses, depending on the desired finish roughness: **TECNOPLASTIC F** (particle diameter = 150 µm ~ 280 µm) and **TECNOPLASTIC C** (particle diameter = 290 µm ~ 500 µm).

DESMOPOL SPECIFICATIONS SHEET

GENERAL DATA

CONCEPTS	VALUES
Formats	6 & 25 kg. tins
Yield	1.5 to 2 kg./m2 with a thickness of 1.4 mm, applied in 2 coats
Colours	Grey, terracotta and white
Tin life	12 months at a temperature of 5º C to 25º C in a dry place. Once opened the product should be used immediately.
Cleaning	Clean materials using Desmopol Solvent

TECHNICAL DATA

CONCEPTS	VALUES
Specific weight (kg/m^3)	1.320 ~ 1.420
Viscosity at 25º C	2.650 cps
Dry extract at 105º C % weight	> 90
Flash Point	42ºC
Substrate temperature ~ambient	5ºC ~ 35ºC
Hardness Shore A	> 75
Drying time at 25º C & 55% RH	4 ~ 5 hours
Re-application time without DESMOPOL ACELERADOR	5 ~ 48 hours
Re-application time with DESMOPOL ACELERADOR	5 ~ 24 hours
Tensile strength at 23º C	5 ~ 7 MPa
Elasticity percentage at 23º C	±600 ~ 750 %
Steam transfer resistance	0,8 g/m^2 * hour
Adherence on concrete	> 2 MPa

ETA DATA (EUROPEAN TECHNICAL APPROVAL)

CONCEPTS	VALUES	CLASSIFICATION
Minimum guaranteed product life	10 years	W2
Minimum guaranteed product life	25 years	W3
Climate zone	Severe	S
Roof gradient	< 5%	S1
Minimum substrate temperature	-20 ºC	TL3
Maximum substrate temperature	60 ºC	TH

CASE STUDIE

TECNOCOAT P-2049, THE 100% PURE POLYUREA SYSTEM FOR **WATER PARK** CREATION OR RESTORATION

For waterproofing systems, water parks are one of the most demanding types of constructive elements: contact with chlorinated water, irregular shapes, different substrates, high levels of pedestrian traffic and, above all, the safety requirements demand the very best in terms of value and efficiency from whatever system is used.

TECNOCOAT P-2049 is a system that seems specifically designed for this purpose; the excellent technical and mechanical properties of 100% pure polyurea make its application in water parks extremely effective, providing confidence to the constructor, the user and the end client.

DESCRIPTION OF DEPLOYMENT

Waterproof coating of the insides of swimming pools and neighbouring wet areas with pedestrian traffic that have also been treated with a non-slip product.

APPLICATION METHOD

1. Substrate preparation: Removal of existing paint layers and general cleaning of dust and grease to ensure the system's complete adherence to the surface.

2. PRIMER PU-1050 primer: Applied manually over the entire surface using a roller; it improves adherence on the substrate and prevents the formation of bubbles.

3. TECNOCOAT P-2049 waterproofing membrane: 100% pure polyurea membrane applied using high pressure airless equipment that controls the mixture, temperature and pressure of the liquid components. It is applied directly over the primer in several continuous coats until the thickness required by the project management has been achieved.

4. TECNOTOP 2CP protective varnish: Polyurethane varnish coloured with the RAL colour indicated by the owner; it protects the TECNOCOAT P-2049 pure polyurea against the sun's rays and the cleaning and hygiene products used in pools.

5. TECNOPLASTIC F, micronized plastic for mixing with TECNOTOP 2CP: The use of this solid additive provides roughness to wet surfaces, pursuant to Technical Building Code - Basic Document SUA 1 , with slip/slide results in laboratory of Rd↑3, under the European EN 12633:2003, Standard, Annex A.

ADVANTAGES OF THE **TECNOCOAT P-2049** SYSTEM

- Optimum waterproofing of all surfaces, with 25 year ETA certification.
- High quality finishes, long-lasting and easy to maintain.
- Adaptable to any existing architectural shape.
- Can be given any colouring.
- Continuous application without any joins or overlapping.
- Rapid application.
- Highly resistant to puncturing and abrasion.
- Application on S1-S4 class gradients, that is, on surfaces with zero slope (ideal for use in swimming pools and constantly wet areas).

TECNOFOAM G-2008 OBTAINS ATEX TYPE A CERTIFICATION

Polyurethane foam **TECNOFOAM G-2008** obtained 'Technical Experimental Assessment' ATEX Type A made by the Expert Committee on CSTB wall insulation timber frame and traditional masonry, under reference number 2038 ATEX.

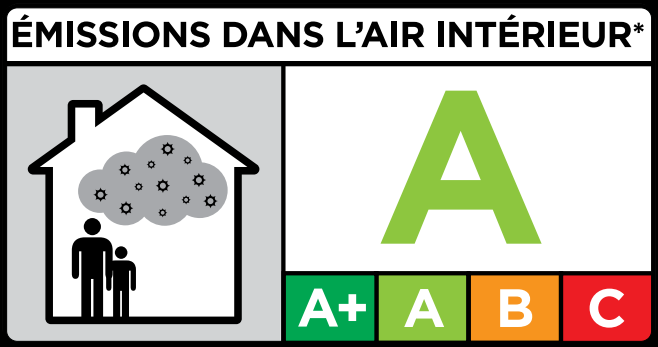
This certification regulates the volatile contaminant emissions of products used in construction and decoration.

The product's level of emissions is indicated by a scale that goes from A+ (very low emissions) to C (high emissions), which is based on a similar principle to that already used for electrical appliances.

TECNOFOAM G-2008 has been awarded type A certification (low emissions).

This means that users have clear information that could constitute a further selection criterion, as it has a direct effect on their health and that of the future inhabitants of the building. Likewise, project owners can take into consideration the air quality in interiors as a feature in their building and building restoration offers.

From now on the tins of **TECNOFOAM G-2008** will carry a label indicating the product's low level of volatile contaminant emissions.



TECNOFLOOR Tw-3040 EPOXY COATING, NEW CERTIFICATIONS

The **TECNOFLOOR TW-3040** water based epoxy coating has received the following certifications

- **EN 1504-2** : "Products and systems for the protection and repair of concrete structures - Definitions, requirements, quality control and evaluation of conformity - Part 2: Surface protection systems for concrete".
- **RD 140** conformity for contact with drinking water.
- Overall migration test under COMMISSION REGULATION (EU) No. 10/2011, dated 14 January 2011 on plastic materials and articles intended to come into contact with food and pursuant to EN 1186-1:2002, EN 1186-3:2002 and EN-1186-14:2003 Standards.

DATA

COMPARISON: THERMAL INSULATION IN BUILDING

Thermal insulation materials are characterised by their high thermal resistance and they work by offering greater heat flow resistance than other materials. Each thermal insulation material has unique characteristics, which should be taken into account when carrying out a project.

The following table contains a comparison of the insulation materials most commonly used in building, which shows that polyurethane foam is the material with the least thermal conductivity or, in other words, it is the most insulating material and the one that enables greater reduction in the energy demands of the building's future inhabitants.

Material (1m²)	Thickness (mm)	Conductivity (W/m•K)	Energy savings (MJ)
Polyurethane foam	100	0,023	21865
Extruded polystyrene	100	0,036	14634
Glass wool	100	0,035	14369
Rock wool	100	0,037	14239
Cotton fibre	100	0,039	5761
Cellulose panel	100	0,039	5761
Linen plaques	100	0,040	5617
Hemp wool	100	0,042	5350
Cork agglomerate	100	0,045	4993
Expanded polystyrene	100	0,046	4885
Expanded perlite	100	0,050	4494
Wood fibres-EPS	100	0,060	3745

TECHNOLOGY

THERMOGRAPHIC CAMERAS, THE SOLUTION TO DETECTING INSULATION PROBLEMS NOT VISIBLE TO THE NAKED EYE.

Any object with a temperature above absolute zero (0 Kelvin = -273.15° C) emits infrared radiation invisible to the naked eye. The thermal camera's sensors detect these radiations and, based on their intensity, determine the temperature of the surface of the object, displaying it as a thermal image. This process is called thermography.

This is particularly useful in building, providing an essential aid for resolving thermal insulation problems and other anomalies that would not otherwise be visible.

The use of thermal imaging, alone or in combination with other methods, considerably speeds up work, as it establishes with great precision where the energy saving efforts should be concentrated, without the need to carry out any invasive testing.

There are more and more manufacturers and models on the market, which is bringing down their costs, and a professional thermal camera can currently be acquired from around €800.

WEB

BARCELONA ARCHITECTURE WALKS - BAW. DISCOVER THE CITY'S ARCHITECTURE WITH ROUTES GUIDED BY ARCHITECTS

Barcelona Architecture Walks are urban routes in which you will discover, from a critical perspective, the architectural works of this great city and their creators.

The BAW routes are run by different contemporary architects who will guide you through the different itineraries: BAW 1 ENRIC MIRALLES, BAW 2 ANTONI GAUDÍ, BAW 3 ILDEFONS CERDÀ, BAW 4 BARCELONA Y EL MAR, etc.

The BARCELONA ARCHITECTURE WALKS are inspired in the SYDNEY ARCHITECTURE WALKS, run by EOGHAN LEWIS, who shows the city of SYDNEY from a different perspective www.sydneyarchitecture.org.

For more information:
www.barcelonarchitecturewalks.com

GREEN UPDATE

EARTHSHIPS, HOUSES WITH AFFORDABLE BUILDING COSTS

An "Earthship" is a passive dwelling made of natural o recycled materials.

Earthships are generally self-sufficient homes that minimise energy and fossil fuel consumption. These buildings are built to use locally available resources, especially the sun. For example, the windows facing the sun are walls that let in heat and light, and the buildings are usually horseshoe shaped to maximise the natural light and gain more light during the winter months. The dense interior walls provide thermal mass and regulate and insulate the temperature inside from the hot or cold exterior temperatures. Non load-bearing interior walls are usually constructed using panel structures made from recycled cans.

The roofs of these houses are well insulated – frequently with soil or adobe – for greater energy efficiency.

WE WOULD LIKE TO BE YOUR TECHNICAL ADVISOR!!

We are inaugurating a new section with which we seek to help or provide solutions for any queries our readers may have.

If you are not sure how to apply a product, how to deal with a specific aspect, how to prepare a substrate, what **TECNOPOL** best suits your needs, etc., send us your query and we will answer you as quickly as possible. We are looking to provide a speedy and efficient service.

Furthermore, we will publish the queries we think hold the greatest interest, together with the answer, in the following number of **TECNONEWS**.

SEND YOUR QUESTIONS! news@tecnopol.es

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