TECNO MAGAZINE by TECNOPOL

WE PRESENT
Our new range of products for 2016 with added features and new packaging design

DESIGNED FOR: AREAS OF ROAD TRAFFIC
Roads, car parks, access ramps ... our range of solutions

CASE STUDIES
Renovation of above-ground car parks

No. 5 January-March 2016

SUMMARY

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WE PRESENT

OUR NEW RANGE OF PRODUCTS FOR 2016 WITH ADDED FEATURES AND NEW PACKAGING DESIGN

This year has seen a whole series of changes at all levels of our organization in line with the commitment to evolution and innovation which has been part of our philosophy since we started out in business.

Over the first half of the year we will launch the new range of products we have been developing designed to provide added value and a quality of service you can always rely on. We will also be opening new communication channels allowing us to share our knowledge more effectively and have updated our brand image and the design of our products.

A process of thorough renovation always involves challenges in terms of application and implementation and timing and presentation are of the essence. The moment has now arrived to introduce the first of our new surprises: our new range of products and packaging design.

2016 will see changes which will affect almost all levels of the business. The design and presentation of the product range will be the first of these.

tecnocoat
HOT SPRAY COATINGS

TECNOCOAT products are a range of high quality waterproof membranes produced by subjecting their liquid component to high temperatures and pressure. Their excellent mechanical properties have made them one of the most widely used membranes for construction work involving demanding technical specifications.

tecnocoat P-2049
Membrane 100% pure polyurea

tecnocoat P-2049 EL
Stretchable membrane 100% pure polyurea (>600%)

tecnocoat P-2049 LV
Low viscosity membrane 100% pure polyurea

tecnocoat CP-2049
Cold polyurea membrane

desmopol
LIQUID MEMBRANES

The **DESMOPOL** range of products are supplied in liquid format and produce even, elastic and completely waterproof membranes with properties which make them an excellent choice for all types of surface - whether new constructions or the renovation of large and small scale projects.

desmopol PU
Polyurethane waterproofing membrane

desmopol·t PU CLEAR
Aliphatic membrane of transparent polyurethane

desmopol·2cb PU BITUMEN
Bitumen/polyurethane membrane for waterproofing and renovating

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tecnofloor
FLOORING SYSTEMS

TECNOFLOOR continuous industrial floorings are designed to meet the most demanding requirements of intensive use. We have developed this range of flooring specifically for applications requiring a durable, resistant and visually attractive finish.

tecnofloor PU-3010
Polyurethane base coating

tecnofloor T-3020
100% solids epoxy coating

tecnofloor Tw-3040
Water based epoxy coating

tecnofloor PU-3060
100% solids polyurethane base coating

tecnofoam
POLYURETHANE FOAMS

TECNOFOAM is a range of polyurethane foams specially designed for projection and injection in residential, commercial and industrial construction projects. The range of densities available is designed to cover all of your specific requirements.

tecnofoam G-2008
Polyurethane foam density 8 kg/m³

tecnofoam G-2035
Polyurethane foam density 35 kg/m³

tecnofoam G-2040
Polyurethane foam density 40 kg/m³

tecnofoam G-2040 FR
Polyurethane foam density 40 kg/m³ density and fire properties

tecnofoam G-2050
Polyurethane foam density 50 kg/m³

INJECTION FOAMS

tecnofoam I-2008
Polyurethane foam density 10 - 15 kg/m³

tecnofoam I-2035
Polyurethane foam density 35 - 40 kg/m³

PRIMERS

primer AS-1010
Epoxy primer with special graphite filler

primer PU-1000
Single component solvent based polyurethane primer

primer PU-1050
100% solid polyurethane primer

primer PUc-1050
100% solid polyurethane low temperature primer

primer EP-1020
100% solid epoxy primer

primer EPw-1070
Water based epoxy primer

primer WET
Bi-component epoxy primer for damp conditions

primer·t CLEAR
Impregnating primer in alcohol solution with adhesion promoters

ALIPHATIC TOPCOATS

tecnotop 2C
Aliphatic polyurethane resin

tecnotop 2CP
Aliphatic polyurethane resin suitable for full immersion

ADDITIVES

desmoplus 1 LAYER
Additive for the application of DESMOPOL in just one coat

desmosolvent DILUTION & CLEANER
Special solvent for diluting DESMOPOL and TECNOTOP

desmothix LIQUID
Additive for the application of DESMOPOL on vertical surfaces

pigments COLOR
Special ink for TECNOTOP varnishes range

ACRYLIC MEMBRANE

setipol ACRYLIC
Acrylic waterproofing membrane

SUPPORT PREPARATION

g80 MESH
Mesh for reinforcing of waterproofing membranes

mastic PU
Mono-component polyurethane mastic

tecnoband 100
Support and reinforcement band

CHARGES

silica SAND
Antislip finishes

tecnoplastic F
Decorative antislip finishing 0,25 mm

tecnoplastic C
Decorative antislip finishing 0,125 mm

Being TECNOPOL customer guarantees maximum added value with each product

EXCLUSIVE TECHNICAL ADVICE SERVICE

As a TECNOPOL customer you can enjoy the assistance of a personal technical advisor who will help to ensure that your project is a guaranteed success. We will provide all the necessary information, technical specifications and certificates for the products best suited to your specific needs and at any time before, during and after the work is performed.

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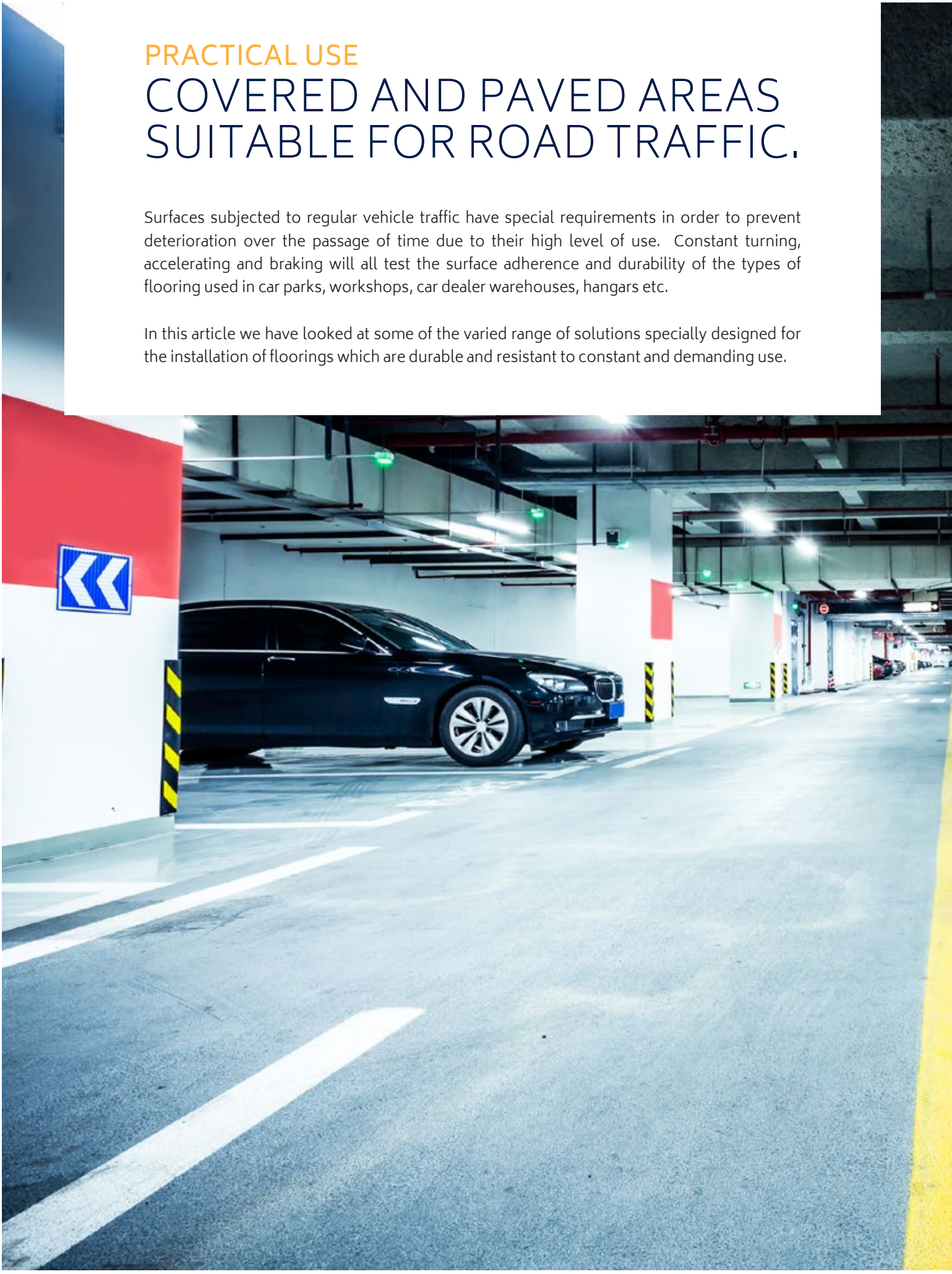
PRACTICAL USE

COVERED AND PAVED AREAS SUITABLE FOR ROAD TRAFFIC.

Surfaces subjected to regular vehicle traffic have special requirements in order to prevent deterioration over the passage of time due to their high level of use. Constant turning, accelerating and braking will all test the surface adherence and durability of the types of flooring used in car parks, workshops, car dealer warehouses, hangars etc.

In this article we have looked at some of the varied range of solutions specially designed for the installation of floorings which are durable and resistant to constant and demanding use.



VEHICLE TRAFFIC SYSTEMS
WITH OR WITHOUT WATERPROOFING?

This is the first question we need to ask before commencing a project of this type. The answer will determine whether the process should include a waterproof coat or not.

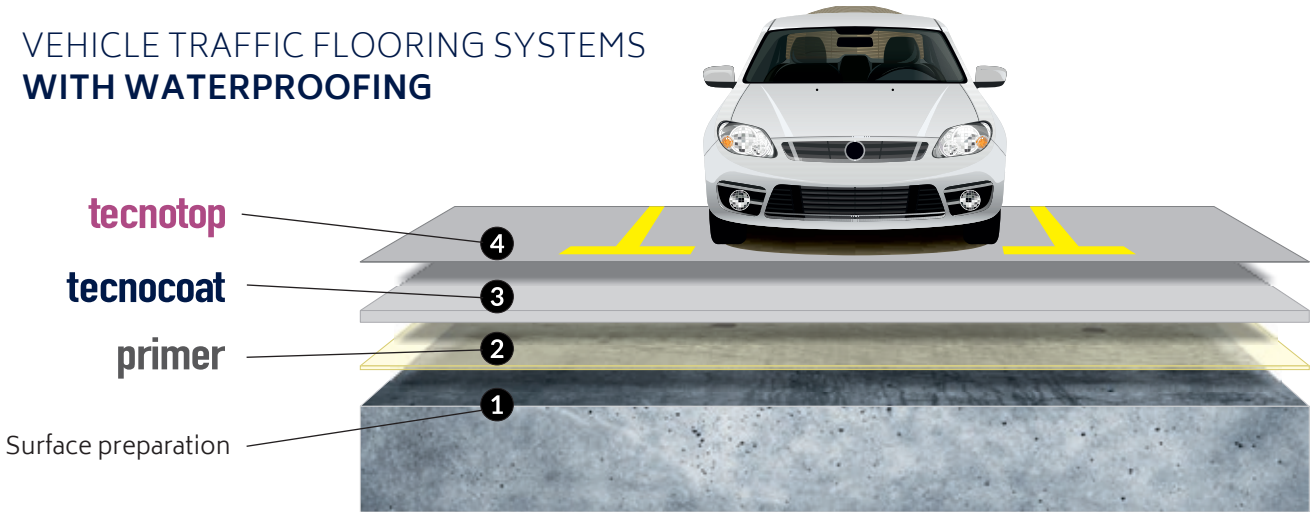
If the answer is YES we would suggest using a TECNOCOAT continuous membrane (coat No. 3 in the diagram) which provides excellent properties in terms of resistance to traction (23 MPa), surface adherence (>50Kpa), hardness (>90) and elongation (>300%), followed by a final coat (coat No. 4) using an aliphatic polyurethane resin from the TECNOTOP range.

If the answer is NO, we would leave out the waterproof coat. This allows us to apply the flooring directly using TECNOTOP aliphatic polyurethane. Alternatively we could opt for an epoxy resin from the TECNOFLOOR range.

Below we will look at the various finish options, their individual properties and suggestions for use.

We will go on to offer a general guide for the application process (although we remind you that each product is fully supplied with specific technical information and instructions). Furthermore, TECNOPOL provides all our customers with the assistance of a personal technical advisor who will help to ensure that your project is a guaranteed success.

VEHICLE TRAFFIC FLOORING SYSTEMS **WITH WATERPROOFING**



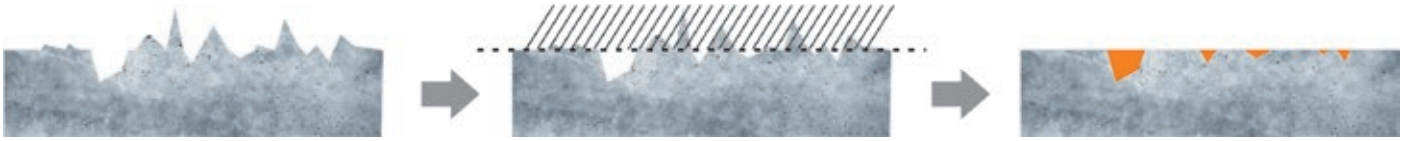
VEHICLE TRAFFIC FLOORING SYSTEMS **WITHOUT WATERPROOFING**

1 SURFACE PREPARATION

Correct preparation of the surface is an essential part of the process in order to avoid subsequent problems such as the appearance of pinholes, excessive consumption of the material, cracks and uneven areas which might require costly or time consuming repairs later. For this reason we always recommend investing the necessary time and care to this stage of the work. Our experience has shown that problems can often occur when the surface has not been properly prepared.

In the case of concrete surfaces these need to be completely dry (at least 28 days) and any surface grouting removed by a sanding down process leaving a regular and open pore surface. All cracks and uneven areas should also be filled in at this point to ensure a smooth and flat finish.

IT IS IMPORTANT TO ENSURE AS EVEN A SURFACE AS POSSIBLE

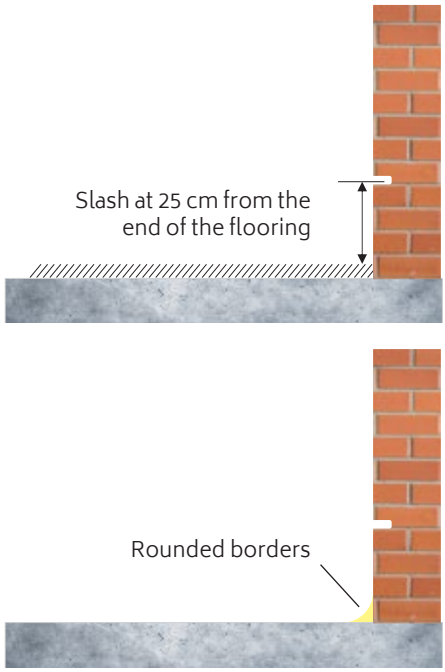


Concrete enlarged section view | sanding process | filling cracks

In systems with waterproof membranes special care needs to be taken around the edges of the surface area where possible leaks may be produced in the future. To avoid this one solution is to make a horizontal slash at about 25 cm from the end of the flooring in which the membrane will be housed.

Where floors meet walls around the perimeter rounded borders should be made to avoid sharp angles which might damage the membrane and also to make the cleaning process easier once work is completed.

Lastly the whole surface should be cleaned to remove any dust or other particles produced during the preparation process.



2 PRIMER COAT

Regardless of whether we use a waterproof or non-waterproof coating it is essential to first apply a coat of primer to ensure better adhesion to the surface and cover any pores and tiny imperfections which might exist.

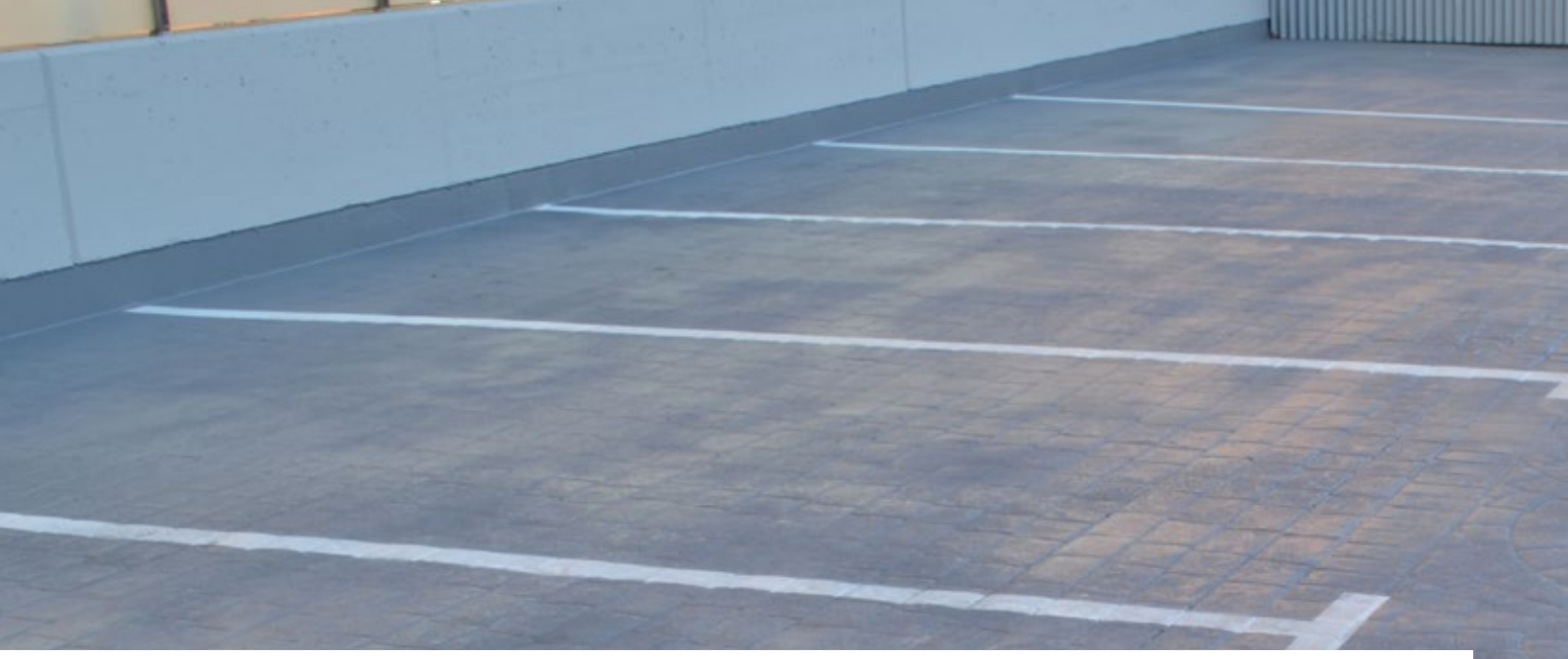
We should apply PRIMER Pu-1050 (or PRIMER Puc-1050 in low temperature locations) using a roller. Once the primer is completely dry we can apply the second coat.

3 WATERPROOF COAT

We are often confronted with projects which require a floor surface which is not just resistant to the constant wear and tear of vehicle traffic, but also requires excellent waterproofing properties.

In such cases the best option is to apply a coat of 100% pure polyurea TECNOCOAT P-2049, a product which provides unbeatable results for floorings subject to extreme conditions: traction resistance (23 MPa), surface adhesion (>50Kpa), hardness (>90) and elongation (>300%).

Furthermore TECOCOAT P-2049 dries in just 3 seconds, allowing fast application in areas with unstable climates and frequent rain.



4 FINISH COAT AND FLOORING

Finally we reach the last stage of the process - the visible coat which will need to resist the wear and tear of regular vehicle use as well as potentially demanding climatic conditions. We should look at the various finishes available before deciding which one is best suited to the budget and requirements of the project.

FLOORING SYSTEM WITH WATERPROOFING

The TECNOCOAT P-2049 membrane which we have used for the waterproofing coat has more durable characteristics than those normally required for surfaces designed for vehicle traffic.

We simply need to apply an aliphatic product to protect the TECNOCOAT P-2049 membrane from sun rays given that we are dealing with an aromatic product.

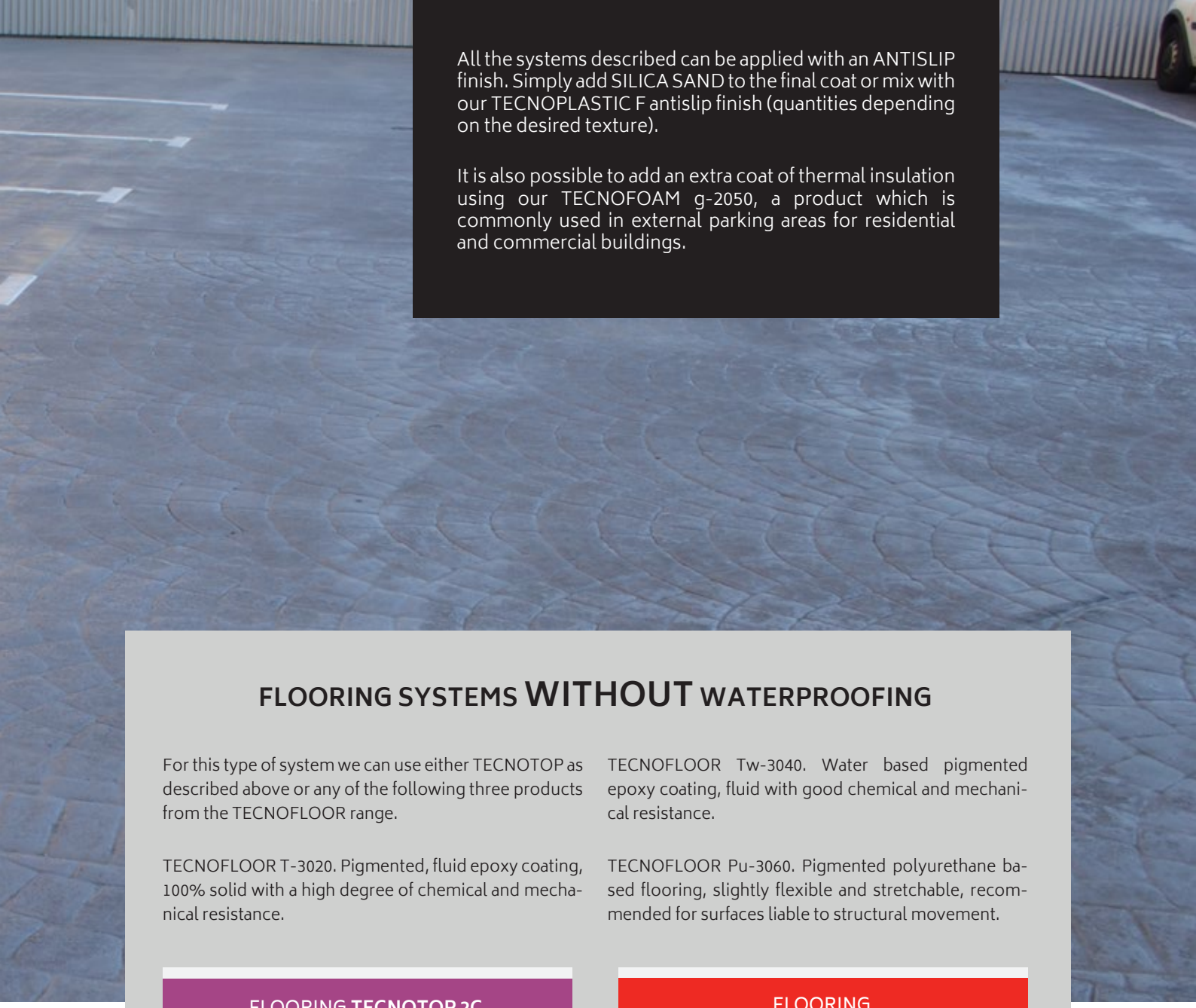
TECNOTOP 2C is an aliphatic polyurethane resin which offers great durability at a very economically price. It is ideal for use on surfaces requiring normal resistance to everyday car and truck traffic (car parks, garages, workshops, etc).

We can supply an infinite range of finishes as TECNOTOP 2C can be manufactured in almost any colour.

TECNOTOP 2C can also be supplied in an ANTISLIP finish by mixing in silica sand or TECNOPLASTIC micronized plastic texture.

FLOORING WITH WATERPROOFING AND TECNOTOP 2C FINISH

1. Support preparation
2. **PRIMER PU-1050**
3. **TECNOCOAT P-2049**
4. **TECNOTOP 2C** applied with a roller or airless sprayer. At least two coats recommended.



All the systems described can be applied with an ANTISLIP finish. Simply add SILICA SAND to the final coat or mix with our TECNOPLASTIC F antislip finish (quantities depending on the desired texture).

It is also possible to add an extra coat of thermal insulation using our TECNOFOAM g-2050, a product which is commonly used in external parking areas for residential and commercial buildings.

FLOORING SYSTEMS **WITHOUT** WATERPROOFING

For this type of system we can use either TECNOTOP as described above or any of the following three products from the TECNOFLOOR range.

TECNOFLOOR T-3020. Pigmented, fluid epoxy coating, 100% solid with a high degree of chemical and mechanical resistance.

TECNOFLOOR Tw-3040. Water based pigmented epoxy coating, fluid with good chemical and mechanical resistance.

TECNOFLOOR Pu-3060. Pigmented polyurethane based flooring, slightly flexible and stretchable, recommended for surfaces liable to structural movement.

FLOORING **TECNOTOP 2C**

1. Support preparation
2. **PRIMER PU-1050**
3. **TECNOCOAT P-2049**
4. **TECNOTOP 2C** applied with a roller or airless sprayer. At least two coats recommended.

FLOORING **TECNOFLOOR T-3020**

1. Support preparation
2. **PRIMER PU-1050**
3. **TECNOFLOOR T-3020** applied as a paint (one coat), as a multi-coat system or self levelling system.

FLOORING **TECNOFLOOR Tw-3040**

1. Support preparation
2. **PRIMER PU-1050**
3. **TECNOFLOOR Tw-3040** applied as paint (one coat) or a multi-coat system.

FLOORING **TECNOFLOOR PU-3060**

1. Support preparation
2. **PRIMER PU-1050**
3. **TECNOFLOOR PU-3060** applied as paint (one coat) or a multi-coat system.

CASE STUDIE

CAR PARK LEIOA PAÍS VASCO

Above ground car park built by the company GRUPO IRACO ADVANCED COATING SYSTEMS based in BARCELONA, who have been offering waterproofing technical services since 1984 and been involved in a large number of major construction projects throughout Spain.

SURFACE PREPARATION
The area was carefully prepared prior to application of the flooring system. This process included blasting the surface to open the pores, filling any cracks, preparing the joins, adding a horizontal slash 20cm from the floor where necessary and creating rounded borders where the floor meets the vertical perimeter edges.

PRIMING
Application of several coats of PRIMER PU-1050

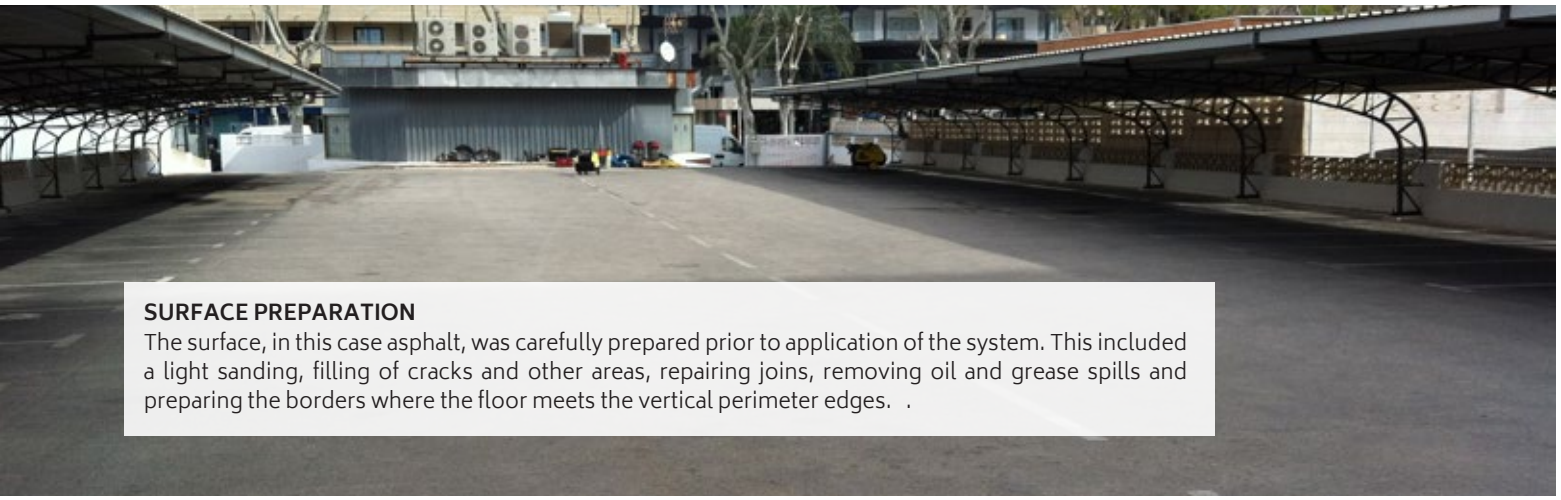
WATERPROOFING
Projection of TECNOCOAT P-2049

FINISH
Application of TECNOTOP 2C + TECNOPLASTIC
For a resistant, visually attractive and anti-slip finish.

CASE STUDIE

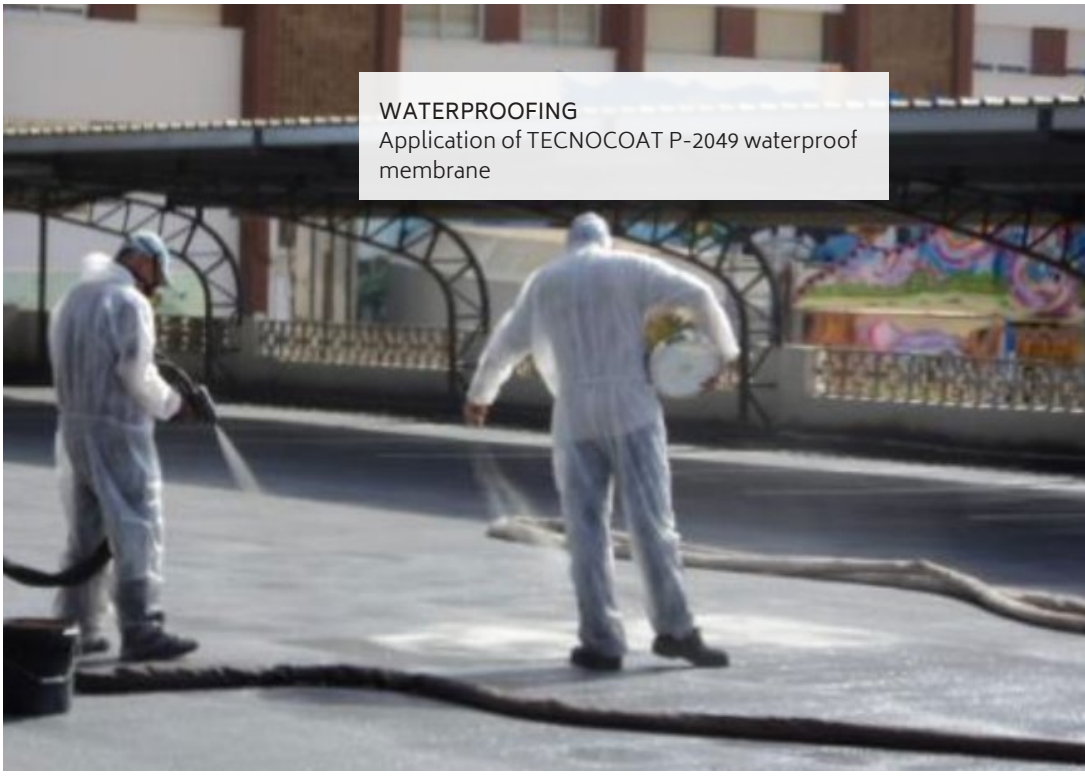
CASTELLON PUBLIC CAR PARK

Above ground car park built using TECNOPOL products by APL AISLAMIENTOS Y PROYECTADOS LEVANTE, a company based in the CASTELLON region and founded in 2007 which specializes in waterproofing, fireproofing and acoustic insulation.

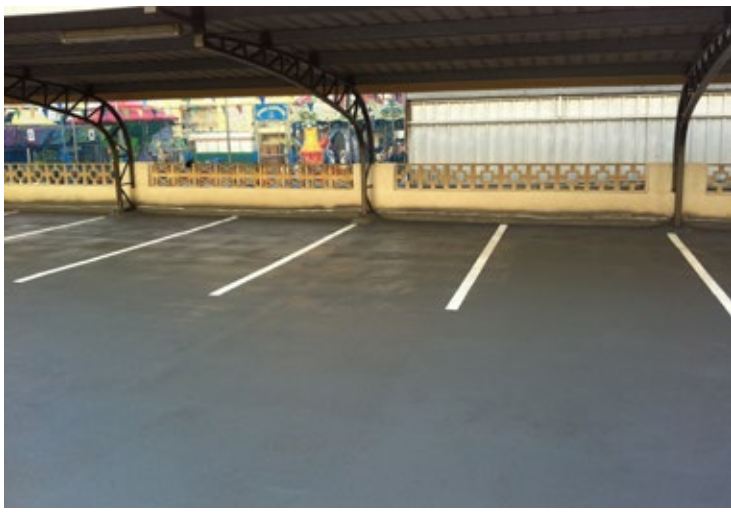


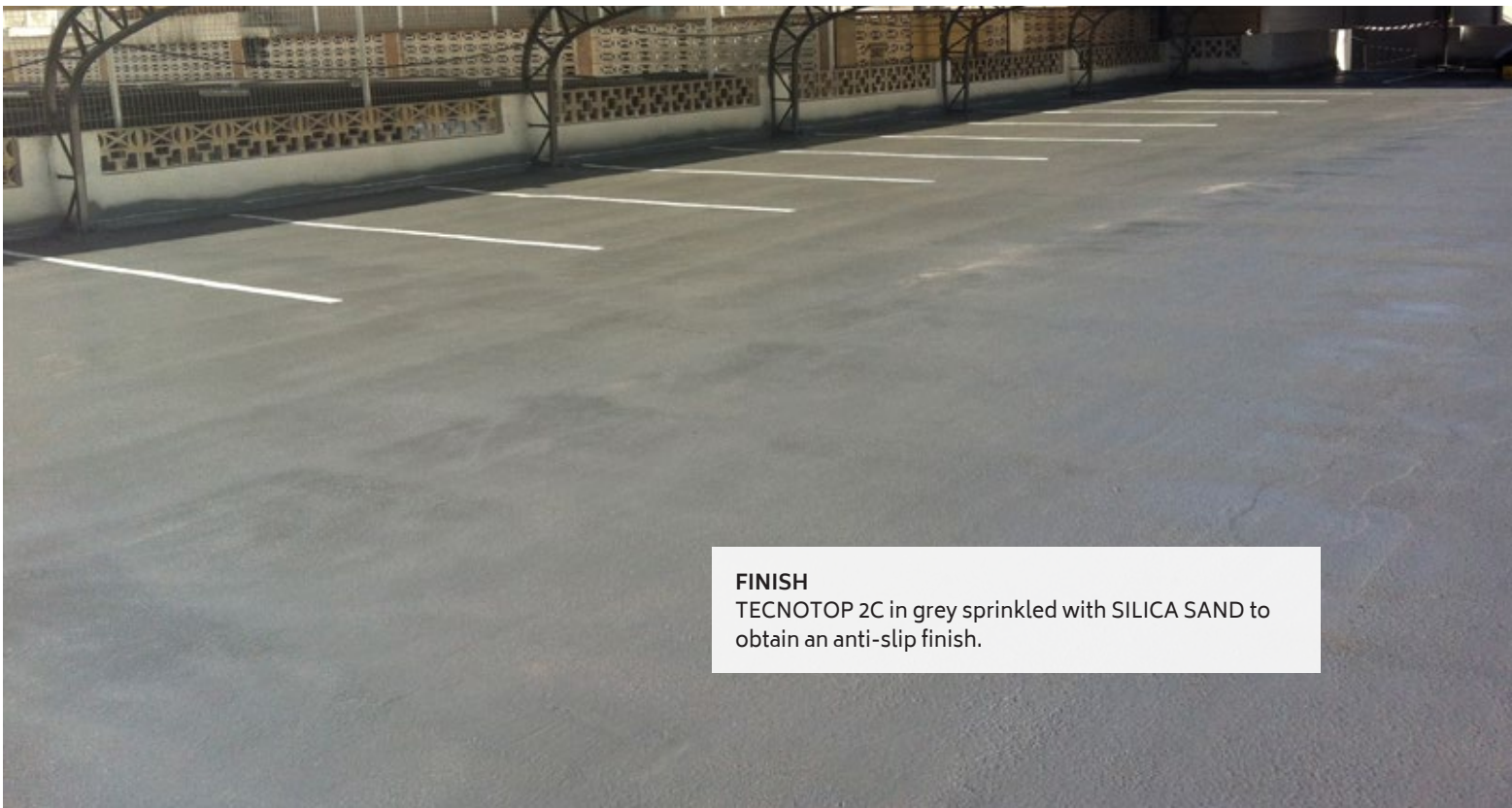
SURFACE PREPARATION
The surface, in this case asphalt, was carefully prepared prior to application of the system. This included a light sanding, filling of cracks and other areas, repairing joins, removing oil and grease spills and preparing the borders where the floor meets the vertical perimeter edges. .

PRIMING
Application of several coats of PRIMER EPw-1070



WATERPROOFING
Application of TECNOCOAT P-2049 waterproof membrane





FINISH
TECNOTOP 2C in grey sprinkled with SILICA SAND to obtain an anti-slip finish.

NEAR FUTURE

LEVITATING BUILDINGS TO PROTECT AGAINST EARTHQUAKES

A group of researchers from the Arx Pax company have begun work on a project entitled MFA (magnetic field architecture). Initially it might sound like something from the realm of science fiction, as the idea is to develop an electromagnetic technology capable of making large objects as heavy as buildings float above ground. The system is based on the same theory as used in maglev high speed train design.

In an interview for 'Forbes', Greg Henderson, founder of Arx Pax, explained that the idea came to him as a solution for levitating buildings during earthquakes. Previous experiments in the field had always revolved around objects in motion, until Henderson asked himself: "if you can levitate a train which weighs 50 tons, why not a house?" .

The company's idea is to build over a copper or aluminium base with magnets incorporated. When an earthquake occurs the magnets are activated to raise the building a few centimetres above the ground, sufficient to avoid the consequences of this type of natural disaster.

We do not know if this was inspired by the Pixar movie "UP" in which a 78 year old balloon salesman achieves his life's dream by attaching thousands of balloons to his house and sets off to fly to South America. What we can say is that if the project works it could save many lives in the future.

BUSINESS

IRAN INVESTS IN SPAIN FOR THE CONSTRUCTION OF AN OIL REFINERY

Iran is currently negotiating with Spanish companies for the construction of a large oil refinery with a capacity to process 200,000 barrels of crude per day. If the plant goes ahead, it will be located in Spain and would be used to guarantee sales of Iranian hydrocarbons abroad.

Investment in foreign based oil refineries is one of the most common means employed by producer countries to promote crude oil exports. Iran is investing in similar projects in countries such as Indonesia, Brazil and India.

The cost of the investment in the project would be shared equally between Iran and a number of Spanish investors.

Since the announcement of this agreement last July, there has been renewed contact and ongoing negotiation processes between Iran and Spain in relation to the Iranian hydrocarbons sector, both oil and gas.

TECNOLOGY

LASER METERS WITH CONNECTIVITY

There is a growing trend in modern construction technology to include devices designed to improve productivity. One of the latest examples is the laser distance meter.

Models such as the GLM 100 C distance meter enable a Bluetooth connection between the measurer and a smart phone or tablet device which can translate into significant time saving and prevent errors resulting from manual notations.

The operation is very practical; we start by taking a photo of the area for measurement using the camera application and then mark the required distances on the photo. Measurement is then made by the meter and transmitted to the smartphone. This information can then be immediately sent by E-mail to other individuals or departments involved in the construction. The measurement values can be easily listed and stored on project files with times, dates and other information. This simple operation can then assist in the calculation of, for example, surface areas and volumes.

ECOLOGY

IN GERMANY RENEWABLE ENERGY SOURCES COULD SEE THE END OF TRADITIONAL GAS AND COAL PLANTS

Current German energy policy is resulting in recently built power plants now becoming abandoned sites that may never produce electricity.

This new scenario, in which solar and wind power are becoming more and more popular, is making large scale coal and plants obsolete.

The two biggest losers on this year's German DAX index (RWE and E.ON) will need to adjust their business to the policy of Angela Merkel which is based on increasing the renewable energy market share to 45%.

RWE has seen its market value fall by more than 50% this year and they have announced that completing their Westphalia plant is no longer "economically viable". Meanwhile E.ON is planning to close two non profitable plants in Bavaria. Work on another large E.ON plant is now five years behind schedule.

In addition, once the cost of large scale power storage is reduced and ecological plants can economically save the excess energy produced on sunny or windy days for later use, the conventional plants will be threatened with ultimate extinction.

EXPERIENCE ARCHITECTURE

POSEIDON UNDERSEA RESORT

Poseidon Undersea Resort is the first five star underwater holiday resort in the world, offering the unique experience of spending a few nights in one of its 24 exclusive luxury suites located 40 metres below sea level. The Resort is situated on a private island surrounded by 5,000 acres of crystal clear lagoon in Fiji and is only accessible by a special elevator.

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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