TECNO MAGAZINE by TECNOPOL

Construction challenges in Latin America

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TECNOPOL'S PRESENCE **IN LATIN AMERICA**

In a global world, the ability to manufacture advanced, high-quality construction products is the best first step to take in achieving rapid expansion and internationalisation. After almost twenty-five years, **Tecnopol** is now present in five continents, and although its headquarters are based in Europe and the company is in a dominant market position there, that doesn't make its presence less relevant in other areas of the world.

In this issue of TecnoMagazine we wanted to focus on our presence in Latin America. Although the projects undertaken are important, as they are the final destination of the construction materials we manufacture, we wanted people to be the guiding principle of our story. Due to time and space we have only been able to collect the statements of a few professionals, but it is clear that the key to success in any project is based on continuous communication with distributors, architects, engineers, technicians and all the parties involved in the construction process.

Our future goal is to continue showing more examples of "**Tecnopol**'s presence in the world" and to continue going into more depth on the problems that affect us. In this issue we tackle problems as wide-ranging as the integration of sustainable features of different projects. We talk about the advantages of using the TC2049 polyurea and polyurethane spray equipment. We provide an answer to the question "What is Polyurethane?" and much more...

Interview with Marcelo Ghio

Sales Manager Latin America & Caribbean
Tecnopol Sistemas

MARCELO GHIO

Marcelo has worked in the building materials industry for a long time and possesses extensive knowledge of the Latin American market. It is difficult to talk about such a large market without indulging in generalities, but are there common elements that differentiate the way we design and build in Europe or the United States?

Latin America has its way of doing things, on the basis of its ethnic multiculturalism, in different areas within the same region. If we look at the way building is carried out in the United States (especially family homes) with lightweight structures, it is not the overriding pattern in Latin America, with the European style of traditional construction being the most common type in this region. Although it is also true that lightweight construction is not widespread, it has gained a sizeable market share in markets that can maintain higher labour costs. In the industrial sector, U.S. products are highly integrated in the GDP of Central America, the Caribbean and especially Colombia, where the traditional waterproofing and thermal insulation systems used in the U.S. have greater influence. Although attempts to gain ground are being made by European companies based in this area. If we go to the South (Chile, Argentina, Brazil, Uruguay, Paraguay, Bolivia) European construction is predominant with a significant share of European companies in the area.

While it is true that in markets such as Mexico, Peru, to a lesser extent Chile, Colombia, Central America, the Caribbean and also in part Brazil, some ASTM standards are followed that compete with European standards, I believe that in this segment Europe should strengthen its regulatory structure to gain more acceptance in the area. Big countries such as Mexico, Brazil, Argentina and Colombia have their own regulations, in some cases based on ASTM standards.

Do you think that the construction sector is very familiar with the applications of products such as polyurea?

No, it is an emerging niche market. It has great opportunities for growth because it is versatile, resistant to chemicals and reliably water repellent as shown by the hundreds of thousands of m2 applied over the last 20 years.

For our part we have a great job to do to make specifiers, builders, applicators, etc., aware of the benefits of using Tecnocoat polyurea as an integral waterproofing system. In my opinion, polyurea is at the top of the waterproofing pyramid, being the first-rate solution above any other solution or system.

Have the recent changes in residential dynamics and the normalisation of teleworking proven to be an opportunity for the rehabilitation of all types of buildings and boost the industry?

The answer is yes. The pandemic and teleworking in the Latin American area was a great opportunity for our company, considering that many people with restricted availability pre-pandemic did not have much time available. The pandemic helped us to change our professional habits and also to change our list of priorities. Together with David our Technical Director, we used teleworking a lot to organise a huge amount of "technical and commercial talks" in different markets and with different actors. We used this format in Mexico, the Dominican Republic, Guatemala, Costa Rica, Colombia, Venezuela, Peru, Bolivia, Argentina, Brazil, Ecuador, Paraguay, etc. IT support tools such as Teams which we were offered through the company, was key to developing this strategy which has had excellent results.

Buildings have to be more eco-efficient due to climate change, is this factor considered in new projects?

Look, in Latin America there is wide range of views with respect to this issue. Personally, when we analyse a market, I have a premise which is the following: "When a country exceeds 6,000 euros per capita it starts to waterproof better, when it exceeds 9,000 euros it starts to insulate better thermally and when it exceeds 12,000 euros it starts to insulate better acoustically". In Latin America, from Mexico to Argentina there is a wide range of differences in income, consequently, as a variable which to a certain degree is constant, there are some sectors, both for residential housing and for the housing of industrial units, that are able to comply with eco-efficiency, but many do not.

Regulations and certifications change from country to country. Is this an obstacle or a competitive advantage for Tecnopol products?

As I mentioned in one of the previous answers, I think that the European Union should work harder on the opportunity that European regulations provide it with. These regulations form the basis of the national regulations in the different countries of Latin America, especially in those with the highest GDP such as Mexico, Brazil, Argentina, Colombia and Chile. Our Tecnocoat system, it is the one which possesses the highest number of technical documents issued by independent bodies and this situation has a positive influence on works of relevance due to the security it brings to specifiers.

Of the projects on which you have collaborated, which would you highlight because of its significance in terms of architecture, symbolism or complexity?

As far as our Tecnocoat system is concerned, a project is not complex if the application parameters we suggest are met, due to the versatility thereof, the reliability and speed for the implementation of the work. If I may, regarding its symbolism, I would choose a square of approximately 11,000 m2 that we waterproofed with Tecnocoat behind the Casa Rosada (President's Office) in Argentina, which houses a parking lot with official cars and is part of the historical heritage in this country.

Does digitisation make it easier to provide technical service in an efficient way on all types of construction sites?

Totally and I think that through innovation from the marketing and technical area our company leads this segment (videos on application, Instagram, Linkedin, Facebook, etc., group and individual talks via Teams, etc.) collaborating a lot with our area. When the technical and marketing area participates in any of the projects we manage, the result always easily exceeds expectations.

TECNOPOL IN CHILE

Normally we address practical case studies concerning the application of our own products or constructive solutions within a certain context. However, we wanted to highlight the synergy achieved with another company in the execution of this particular project. This is about **Tecnopol**'s relationship with the company APV, a distributor in Chile. APV has been representing **Tecnopol** in the field of waterproofing systems since they incorporated their high-performance building materials division in 2014.

The alliance between the two companies is worthy of study because in the last six years they have carried out multiple varied and highly complex projects that have different construction requirements. Most interestingly, the company has a huge back catalogue of completed projects which is particularly valuable in Chile thanks to its extreme climates and environments. Furthermore, when we add the diversity of the projects and contracts into the mix, the result is a good sample of the quantity and quality of existing buildings in Chile.

Specifically, we are talking about almost all possible types of existing buildings, from institutional buildings, shopping centres, residential complexes, innovation centres, temples of prayer, universities, or the emblematic Tupahue swimming pool in Providencia. Construction has been limited to two weeks. Considering that health reasons could easily have been used to prolong the "hibernation", a good part of the sector has managed to avoid the bulk of the impact of inactivity.

If you want to know more about APV you can find out more by clicking the following link https://tecnopol.es/landings/tecnopol-chile-apv

APV-Templo Bahaí

APV- Cámara Chilena

PRESENCE OF TECNOPOL IN URUGUAY

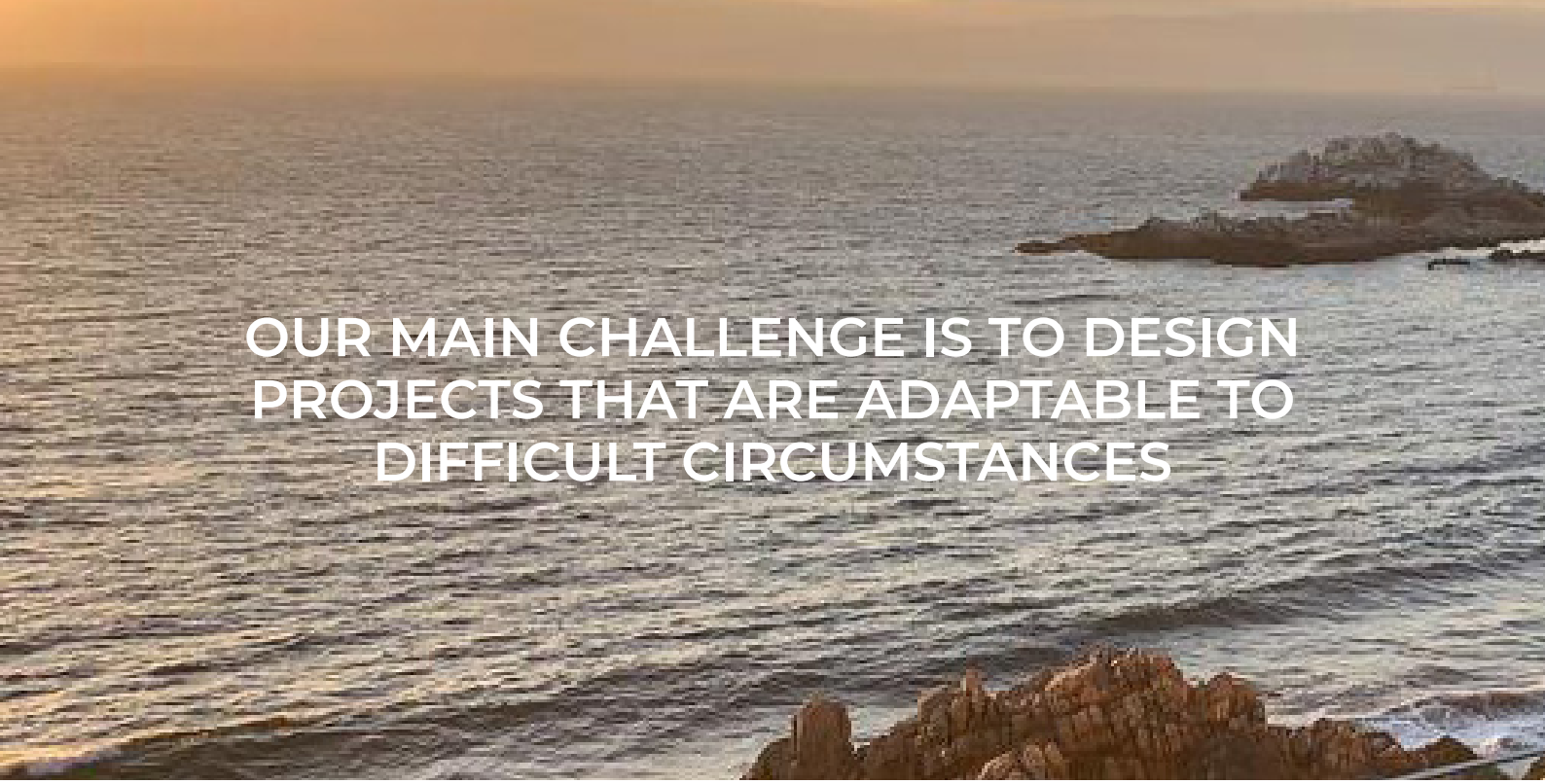
INTERVIEW WITH CRISTIAN HENRÍQUEZ

BIO

Cristian Henríquez

Sales Manager of APV, a company with more than 40 years of experience, leader in the supply of equipment for the application of varnishes, paints, textures, coatings, and **Tecnopol** distributor in Chile.

With more than 40 years of experience, leaders in the Chilean market, in the supply of equipment for the application of varnishes, paints, textures and all types of coatings. If you require a solution for the movement of fluids, adhesives, sealants, pastes and others. APV provides professional solutions and represents the main equipment manufacturers in the world.



OUR MAIN CHALLENGE IS TO DESIGN PROJECTS THAT ARE ADAPTABLE TO DIFFICULT CIRCUMSTANCES

APV has carried out a large number of projects in recent years which integrate Tecnopol's solutions, products and technology, how would you assess the evolution of the collaboration?

It was a very good experience. From the first minute we established a relationship of mutual trust, which has grown stronger over the years. It's already been 6 years and we believe the years to come will be even better.

Throughout the years you have participated in many projects, which ones would you highlight for their architectural importance, symbolic importance or complexity of the work done?

Every project has its complications but I would highlight a residential building called "Terrazas de Cochoa", located in the Reñaca on the coast of central Chile. It was a complex challenge, not only due to its staggered structure, which posed waterproofing challenges at all levels, but also because of the many different areas of application for our materials. A separate note is the complexity of the structural construction of this building as it was located on sand dunes.

Is there any project that, due to its characteristics, represented a technological challenge or required outstanding innovation?

There are urban concepts that are constantly under construction in Chile and they all face a similar huge challenge, "Earthquakes". We constantly have telluric movements of different magnitudes, which means that each construction must be governed by strict regulations and the materials used must be able to resist them. This is where high quality products come into play, and we are able to design projects that can face difficult circumstances.

Waterproofing, insulation, continuous flooring and spray equipment, a whole world of solutions for different types of construction deterioration. Do you think there is a good building mainte-

nance culture in Chile?

Yes, and it's getting better and better. The needs of the construction industry make it necessary to professionalise the project, mechanise applications and work with first class products. More and more we see proactive people looking for better solutions to their problems. Biotechnology.

Chile is characterised by the diversity of its landscape and its well-known, high-quality architecture. Are sustainability and the right choice of materials increasingly being taken into account?

It is difficult to speak in absolutes, generally speaking I would say yes, the right choice of materials and sustainability of products is increasingly taken into account, however, the spectrum of people is very wide.

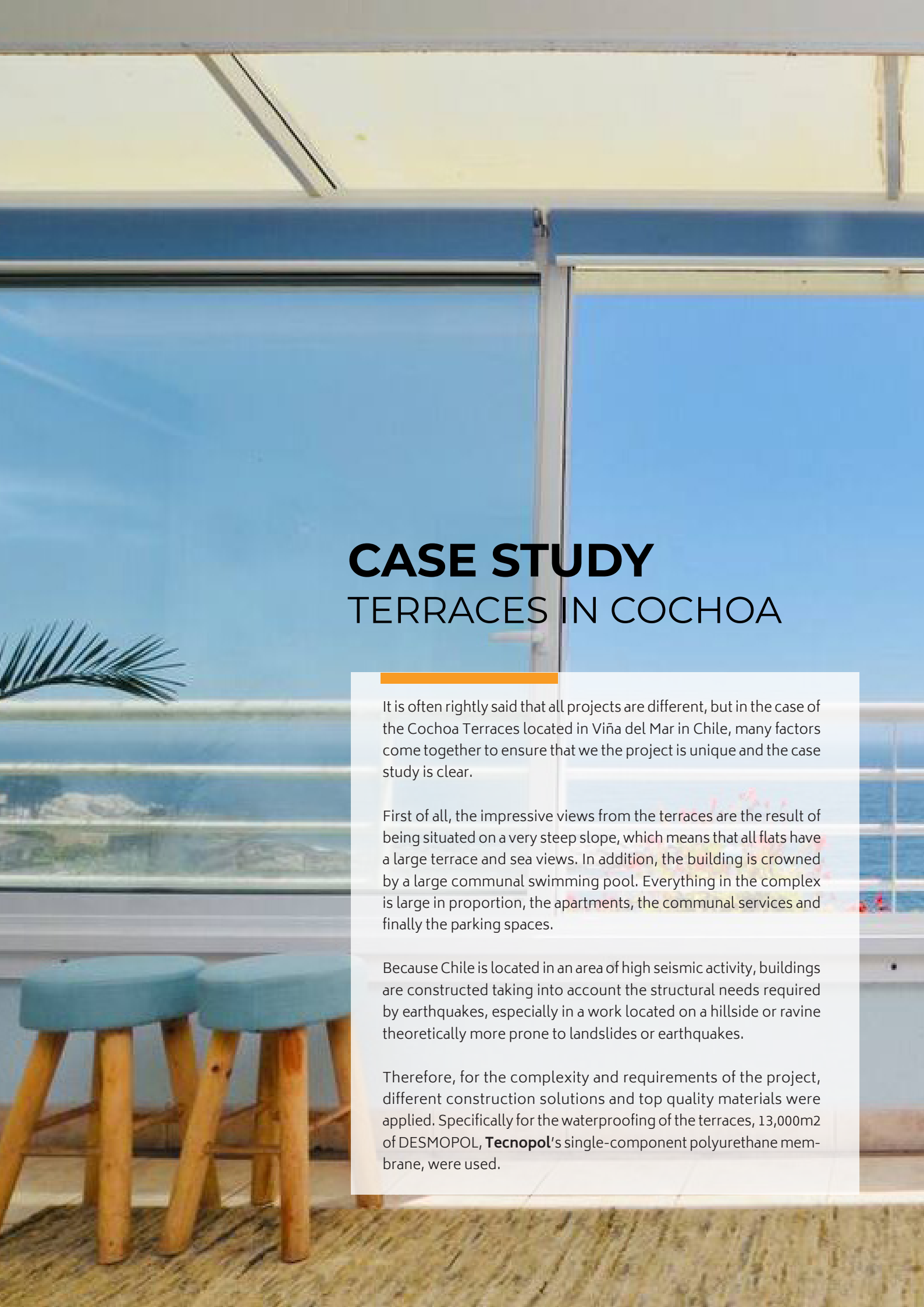
There are customers, whether applicators, architects, builders who are always looking to be at the forefront. They are extremely concerned about these issues, but much of what we find in the marketplace don't factor those issues in, and part of our mission is to educate so that more and more appropriate and sustainable materials are used in construction.

Direct collaboration in projects with APV's technical service is one of the keys to their success. Do the market influencers value this?

Technical assistance is fundamental and undoubtedly one of the keys to success, without it, the market influencers really remain in the past or offer inadequate solutions for the work, it is the best way to keep the market updated with the latest product offer. So yes, it is highly valued.

How do you see the future of construction?

It has been an extremely difficult year, with the pandemic virtually all projects underway were halted in their construction, and project starts that were in the pipeline have been re-evaluated. However, the related guilds are developing reactivation plans, which could give a boost when activities can be resumed in a more normal way. Pandemic aside, I believe that construction is a pillar in most countries, and is in constant need in places in which development and innovation is fundamental. It is important to remember this, to be present, to innovate and to stay aligned with market requirements.



CASE STUDY
TERRACES IN COCHOA

It is often rightly said that all projects are different, but in the case of the Cochoa Terraces located in Viña del Mar in Chile, many factors come together to ensure that we the project is unique and the case study is clear.

First of all, the impressive views from the terraces are the result of being situated on a very steep slope, which means that all flats have a large terrace and sea views. In addition, the building is crowned by a large communal swimming pool. Everything in the complex is large in proportion, the apartments, the communal services and finally the parking spaces.

Because Chile is located in an area of high seismic activity, buildings are constructed taking into account the structural needs required by earthquakes, especially in a work located on a hillside or ravine theoretically more prone to landslides or earthquakes.

Therefore, for the complexity and requirements of the project, different construction solutions and top quality materials were applied. Specifically for the waterproofing of the terraces, 13,000m2 of DESMOPOL, **Tecnopol**'s single-component polyurethane membrane, were used.

TECHNICAL DATA SHEET

LOCATION
Municipality of Reñaca (Chile)

REAL ESTATE DEVELOPER
Numancia

CONSTRUCTION COMPANY
Icafal Ingenieria y construccion S.A.

TYPE OF CONSTRUCTION
Terraced residential building of 25 floors

❶ Surface | ❷ Priming
❸ Waterproofing Membrane | ❹ Finishing and protection layer

PRIVATE TERRACES

PRIMER EPw-1070 · DESMOPOL · Acabado Cerámico

13.000 sqm

ROOFS AND PARKING ROOFS

PRIMER PU-1050 · TECNOCOAT P-2049 · TECNOTOP 2C

5.000 sqm

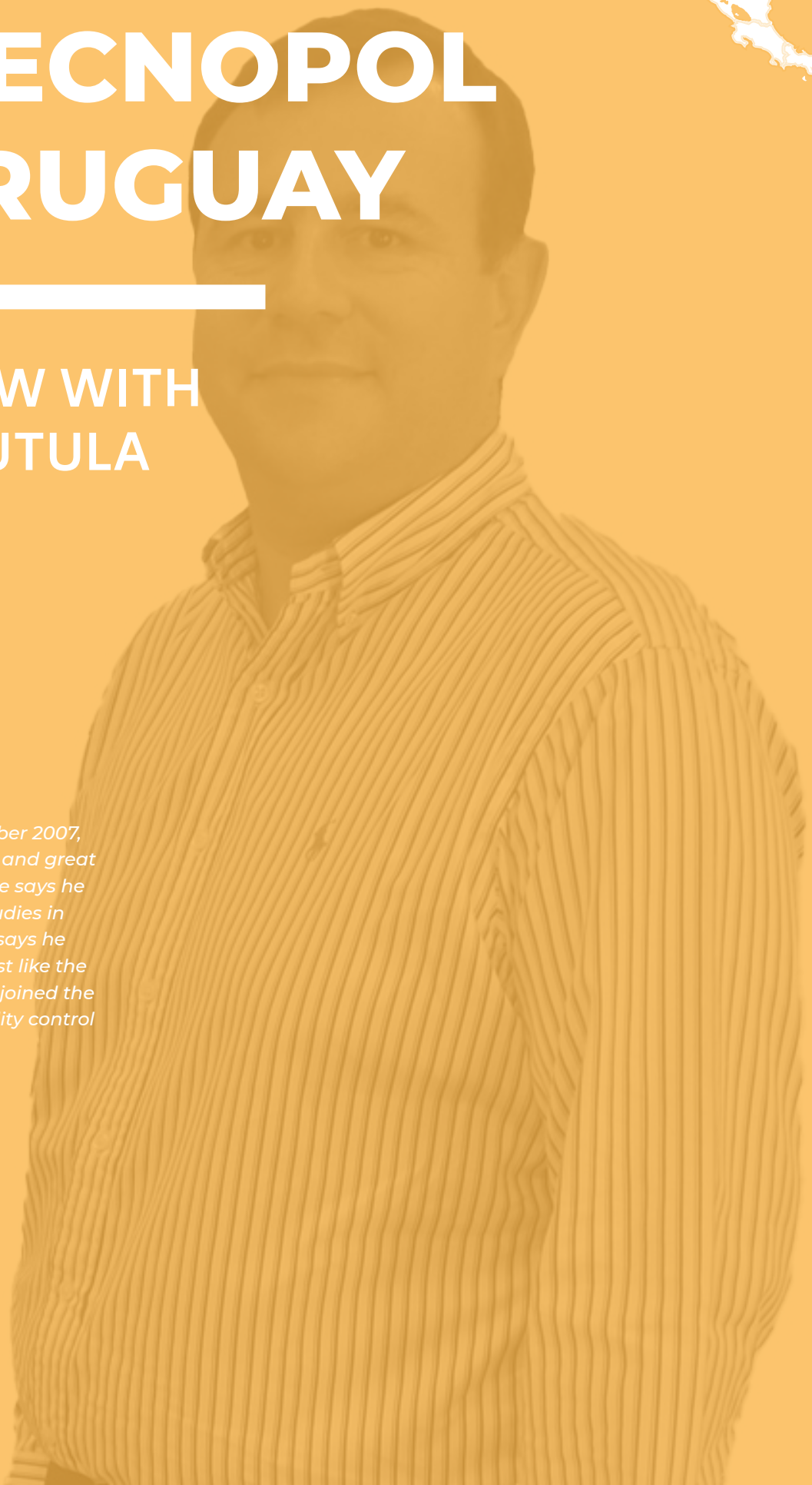
POOL

PRIMER PU-1050 · TECNOCOAT P-2049 · TECNOTOP 2CP

250 sqm

PRESENCE OF TECNOPOL IN URUGUAY

INTERVIEW WITH JAVIER BUTULA



BIO

Javier Butula

Sales Manager since October 2007, which fills him with "pride and great responsibility". Although he says he has not yet finished his studies in chemical engineering, he says he knows the company almost like the back of his hand, since he joined the company in 1997 as a quality control inspector for the material.

To say that Uruguay's society and economy are very dynamic isn't anything new. However, if we talk about the prestige gained by the country's construction sector beyond its borders, and we qualify it by using the media's claims that it is one of the main engines of the country's growth, we are already getting a little closer to the real importance of those who work on the building site in Uruguay. This is especially the case in the current times given the emergence of covid-19.

Tecnopol has carried out multiple projects in Uruguay with the help of a specialist, **Javier Butula**. The importance of combining the knowledge gained from studying chemistry, the characteristics of **Tecnopol** products and its extensive knowledge of the construction sector has facilitated the planning and subsequent execution of a number of works, among which we can mention the Forum Building, Aguada Park. Crystal View Solanas, Araucaria, Nostrum Tower or Campiglia Pilay Towers.

The title of the interview that you can read below summarises both **Javier Butula**'s statements and **Tecnopol**'s feelings about polyurea, the importance of our presence in **Uruguay** and most of our building solutions.

"POLYUREA IS A ONE-WAY STREET. THE ARCHITECT, BUILDER OR CLIENT WHO HAS TRIED THE PRODUCT, DOES NOT GO BACK."

Edificio FORUM (Montevideo)

You have a great knowledge of construction solutions and materials, having applied them in many projects and as a chemist, what do you think about the evolution of Tecnopol's construction materials?

Tecnopol is a very innovative company, they are constantly launching new products, and clearly what they are looking for with them, is to meet the needs of applicators and end customers. It is evident in every new product, that the aim was to listen to the customer, meet their requirements and facilitate the application tasks.

Which of the projects in which you have collaborated would you highlight for their architectural value or for the solutions applied?

We have been supplying **Tecnopol** materials to the construction industry in Uruguay since 2014. We have been a part of many, many projects, but to mention a few: The Forum Building, British Hospital Parking Structure, Catholic University Parking Structure, More Echevarriarza Construction Project, Aguada Park, Crystal View Solanas, Araucaria, Nostrum 18, Nostrum Tower and Campiglia Pilay Towers.

Do you have any anecdotes about any projects that you've been a part of, which may be of special interest to the readers of Tecno Magazine?

Our main markets are insulation and waterproofing of slabs and parking structures. But we have been part of a few unconventional projects, which is the coating of fuel tanks for service stations. The work consists of coating them with polyurea but without the coating adhering to the tank. The idea is to form a chamber between the tank and the polyurea, thereby creating a vacuum meaning we are able to check that the pressure is maintained. This way, if there is any leakage in the tank, the pressure varies and the leakage is quickly detected.

> *"Customers increasingly value sustainable products and prioritise their use on construction sites."*

Good waterproofing and proper insulation are key to good maintenance, do you collaborate with other industry opinion leaders in this regard?

Absolutely. Our involvement in the specification of products and work to be carried out is growing continuously. In doing so, the project can be optimized, making the best use of the products and plans, and saving on high construction costs.

The evolution of national and international regulations, material and work system certifications and finally the application of sustainability from the project phase due to climate change force us to continuously improve, do you think that the sector is conscious of the continuous effort on the part of the industry?

More and more so. Customers increasingly value sustainable products and prioritise their use on construction sites. Today, many customers are opting for sustainable products (such as our water-based polyurethane foams or HFOs) out of choice, even though this is not yet required by the regulations in force here.

Working directly with designers in the field and in the laboratory allows you to create new solutions and improve on existing ones. How would you assess the evolution of materials such as polyurea?

Polyurea is a one-way street. An architect, builder or customer who has tried the product will never go back to a more basic system. Polyurea is a safe and durable solution, and the initial investment required is quickly earned back over time.

How do you see the future of construction in Uruguay?

Construction in Uruguay is not going to stop growing and evolving. Increasingly, customers value and demand technological solutions that provide return on their investments and that minimise maintenance over time. And to this end, **Tecnopol** has developed many solutions over the years to meet the needs of the task at hand.

Britanic Hospital

Nostrum Tower

CASE STUDY

PROYECTO SOLANAS CRYSTAL VIEW

There are projects in which the correct technical solution plays a role in defining the success of the project.

At **Tecnopol** we are used to challenges and it is our many years of experience that gives us the confidence to be able to carry out projects with precise characteristics and demands through our experienced clients.

The case in question is a high-rise residential construction in a summer resort area. It was necessary to waterproof large areas with the use of landscaped areas at the top, therefore, a material was required that was resistant to root penetration and that offered maximum waterproofing security with the maximum useful life time. This product would help us to avoid possible leaks in the future that, should they occur, would require high repair costs.

Our experienced representative/distributor in Uruguay decided that the application of the Tecnocoat P-2049 polyurea system would be most suitable since it has been a success in all the previous projects carried out over our last ten years of cooperation.

We are very satisfied with the work done, in addition to its excellent design it is a totally sustainable project being part of one of the most important forest reserves in the Department of Maldonado.

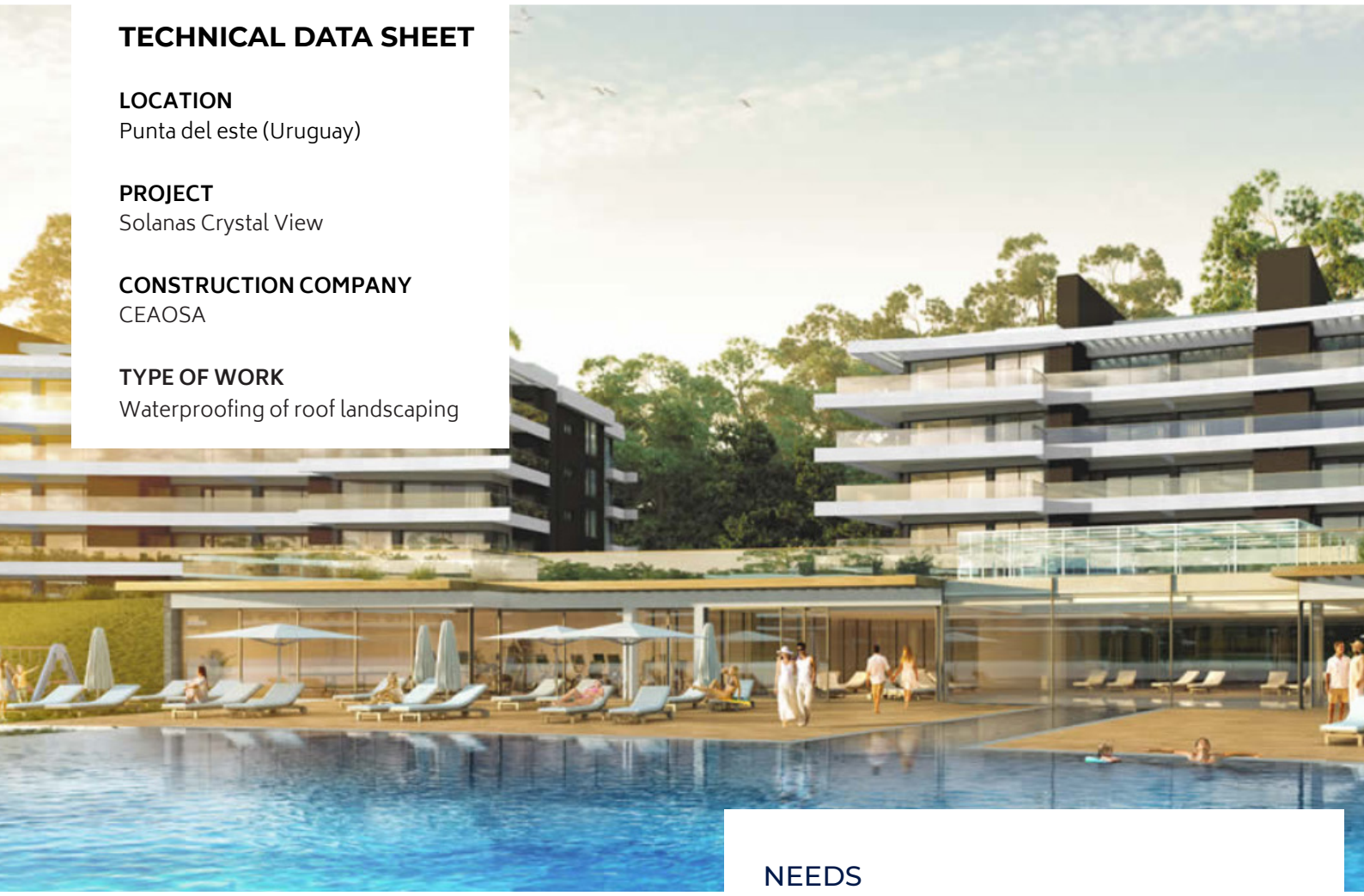
TECHNICAL DATA SHEET

LOCATION
Punta del este (Uruguay)

PROJECT
Solanas Crystal View

CONSTRUCTION COMPANY
CEAOSA

TYPE OF WORK
Waterproofing of roof landscaping



NEEDS

- Complete watertightness of concrete slabs.
- Minimal overall execution time.
- Possibility of easily performable, low risk re-waterproofing work that could be carried out a posteriori.
- Continuous waterproofing without seams or overlaps.
- Certified resistance to root penetration.

In the waterproofing project, the aim was to make the upper concrete slab of the caisson completely watertight.

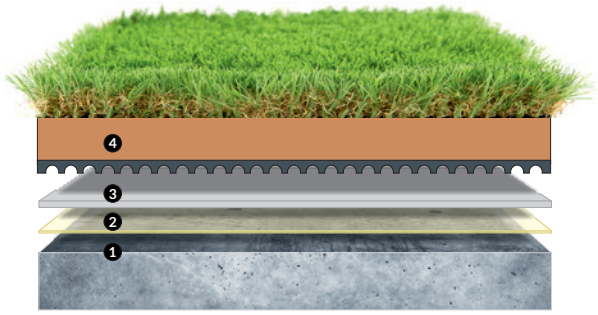
The project specifies that the upper section has: paved areas for communal use, landscaped green areas and internally, numerous passages or complex channelling with passage of communications facilities.

As can be seen in the pictures, in many cases concrete pipes were re-waterproofed after the first main layer on the surface, concentrating in all cases on the watertightness of the whole.

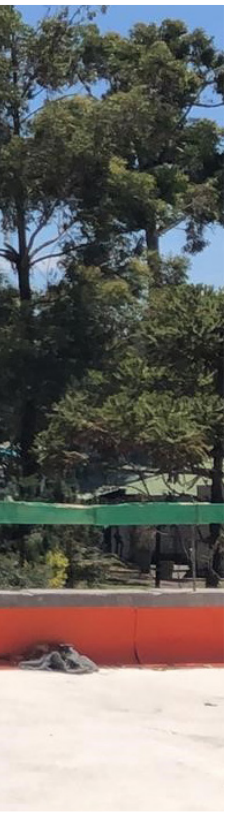
LANDSCAPED ROOF

PRIMER PU-1050 + TECNOCOAT P-2049

2.400 sqm



1. Surface preparation
2. Priming
3. TECNOCOAT P-2049 Membrane
4. Finishing chosen landscaping system



PRESENCE OF TECNOPOL IN ARGENTINA

ENTREVISTA A JUAN PABLO SICA

BIO

Juan Pablo Sica

Director of Grupo Silat, a construction engineering company. Engineering company specialized in the management and execution of thermal insulation, waterproofing and surface treatment projects.

Grupo Silat is formed by a highly qualified professional team made up of architects, engineers, technicians and specialized collaborators. Grupo Silat is committed to quality of service, implementing a management system that includes the research of new products and techniques, environmental protection, risk prevention, ongoing staff training, and customer satisfaction.

Grupo Silat is an engineering company specialised in the management and execution of thermal insulation, waterproofing and surface treatment projects that collaborates regularly with Tecnopol in Argentina. Of the jobs you have collaborated on together, which would you highlight?

Each job has its own specific features, but if I have to mention one that set the tone for the relationship with Tecnopol and its head for Argentina, it was the Official Car Park of the Presidency of the Nation and the Bus Transfer Centre "Parque del Bajo" which is part of the "Paseo del Bajo" complex an iconic project and without doubt the most significant infrastructure work of the last 30 years in the City of Buenos Aires. The building is an underground car park that at street level is transformed into a park, the structure at level zero is a large 15,000 m2 slab with a small slope, on which a variety of different situations are created such as the transit of public vehicles, pedestrian traffic and green areas. The prominence of this work is due to two aspects. The first was the synergy between Tecnopol and Grupo Silat to achieve a change of specification, since the specifications did not stipulate polyurea as waterproofing and after months of joint work by the technical and commercial areas of Tecnopol and Grupo Silat, we managed to convince the construction company that the best technical solution for this project was polyurea. Then, with the construction company convinced, we had to convince the studio that was in charge of the project, and finally we had to get the approval of the authorities of the Government of the City of Buenos Aires for the specification change to take place. At that time in Argentina polyurea was not well known and there were some bad experiences involving badly applied polyurea due to using machines that were not suitable or because it was being applied in minimal thicknesses. Therefore, in order to get all of the permits, we carried out an enormous amount of work and yet we still had not started the work itself. And that is the other remarkable aspect; the work presented two great challenges, the first one was the limited work times, so we decided to get all the material on site from the beginning of the agreed time, which gave us the freedom to move forward as well as the certainty of being able to finish the waterproofing on time. The second was a technical issue to do with the structure itself, the movements that occurred in the joints between the different sections of the slab were very noticeable, much more than expected. Thus, we had to find a solution for these joints and there, once again, we had the support of the technical department of Tecnopol, and we designed a final solution that to date has not presented any problems.

The system worked so well (as it still does) that today when a customer has doubts about polyurea we take him to visit that work, obviously the polyurea can not be seen because it was buried under the concrete and soil, but the most important thing is that no leaks of any kind are observed.

Logramos convencer a la empresa constructora que la mejor solución técnica era la poliurea.

From a technical perspective, is there any work that is especially interesting because of its complexity, volume or any anecdote that you would like to share with Tecno Magazine readers?

We recently finished the thermal insulation and waterproofing of the new Northlands School Auditorium in Olivos, in the Province of Buenos Aires. The Auditorium is a 1600 m2 building that consists of a series of walkable ramps with steep slopes as part of the structure of the auditorium and also act as a "green promenade", topped by a large roof garden. The complexity of this work lay in the fact that the building occupies the entire plot and there were no suitable spaces for storing the building materials and carrying out the formwork. What was decided was to enable a space on which polyurea had previously been applied in order to resist the "mistreatment" to which it was subjected during the work.

Another interesting aspect of this work was that the studio in charge of project management had a very active role when it came to information and training regarding the properties of polyurea, its characteristics and its correct application, this training was carried out by the technical department of Tecnopol in conjunction with its sales manager in Argentina. The knowledge gained by the project management enabled their presence to be felt at the time of application, such control (even of the temperature and pressure in the hoses!) helped us to continue improving the application process and achieve the highest standards expected by the customer. In short, it was a complex job, but in the end I think we grew in terms of capability, especially on a technical level thanks to the demands of project management and the support of Tecnopol.

Polyurea has a prominent position among the waterproofing solutions on your company's website. Is it easy to explain its advantages and uses to specifiers?

Definitely yes. Currently in Argentina, a generation of architects and engineers are reaching decision-making positions and are eager to learn about new technologies. I believe that this willingness to get to know new materials together with an interest in making construction processes more efficient and sustainable, together with the extraordinary characteristics of polyurea make its diffusion and acceptance ever easier.

Have you noticed an uptick in building rehabilitation in Argentina as a result of the pandemic and the fact that people are spending more time in their homes?

A considerable increase in the rehabilitation of buildings in Argentina has not been experienced due to the pandemic, in fact, such uncertainty led to the stopping of many roof rehabilitation projects in industrial and commercial buildings. As for the rehabilitation of residential roofs, I would say that the knowledge on the part of potential customers is still marginal.

Proper waterproofing and insulation are fundamental for the conservation and maintenance of building roofs. Do you think more work is necessary to better disseminate and educate owners regarding the maintenance possibilities available to them?

Owners often only see the cost of the work and not the benefits generated in terms of comfort and economy over the medium and especially the long term. For example, today in Argentina energy to heat or cool homes is remarkably cheap, so amortising good polyurethane foam insulation in roofs and walls (or in the case of installing hermetically sealed double glazed windows (DVH) in openings) takes place over an excessively long time, which discourages owners from making larger initial investments. The same goes for the issue of maintenance, it is difficult for the average home owner with no construction knowledge to measure the costs (and headaches) of poor waterproofing. This is why I think it is essential to educate professionals (architects and engineers) and thus disseminate this information among them as they have a closer relationship with customers. In general customers trust professionals, so if the professionals are convinced of the suitability for use of polyurea or polyurethane foam, they are the best people to communicate this to customers.

CASE STUDY

PARQUE DEL BAJO PORTEÑO

A continuous waterproofing system using the Tecnocoat H-2049 polyurea system was implemented on a 15,000 m² reinforced concrete slab surface which is part of the large redevelopment project, which has a total area of 102,000 m² located in the centre of the city of Buenos Aires (Argentina) called “Parque del Bajo Porteño” and which comprises the creation of areas for public use.

In this case, our Tecnocoat H-2049 polyurea system was used to waterproof the covering of a lower car park for buses and official vehicles of the Argentine government (the Casa Rosada, the official residence of the president of the country’s government, is located in the area).

The framework of the Tecnopol system applied in this case to obtain a waterproof, watertight surface and at the same time be suitable for receiving the landscaping soils and hard paving areas for pedestrian traffic was as follows:

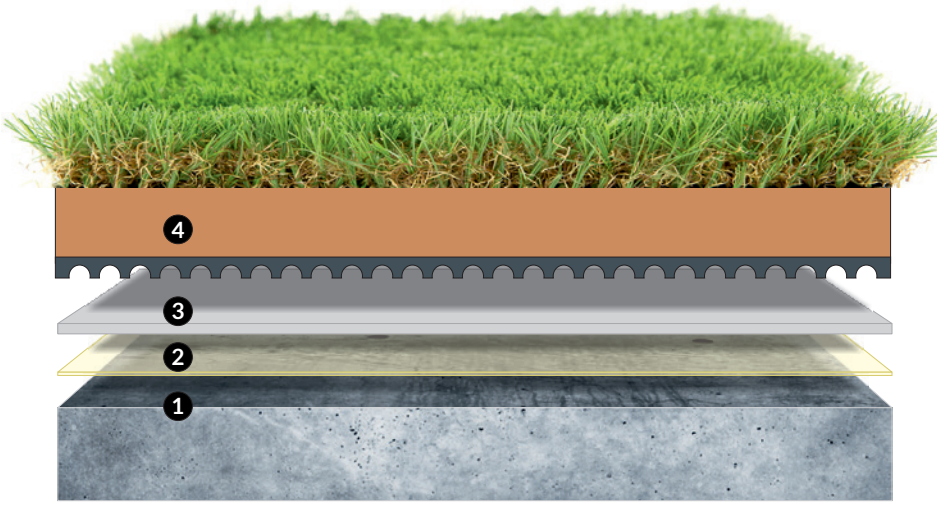
The existing building’s concrete slab, PRIMER PU-1050, primer resin, TECNOCOAT H-2049, polyurea for waterproofing and the land area for public landscaping/urban paving.

ADVANTAGES OF THE SPECIFIED/APPLIED SYSTEM

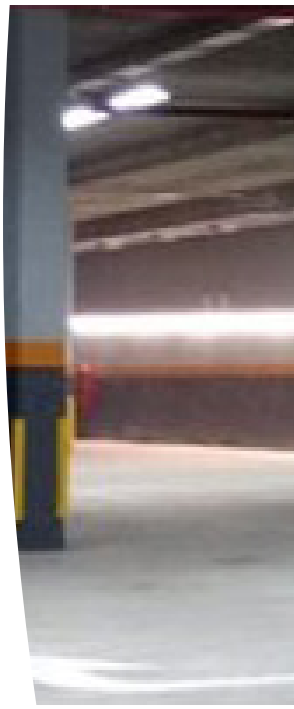
As it is applied in a continuous fashion without joints or overlaps, it offers optimal waterproofing on top of the entire surface and butts up with existing elements such as perimeter contour walls, drainage areas, etcetera. It also offers great speed of execution, optimising overall construction costs and high resistance to puncturing and abrasion, which ensures its watertightness in cases such as the one we are dealing with: a large surface that is used to stockpile material on areas during the execution of the final paving finishes, and which is suffering from the transit of loading and unloading forklifts, at the same time as subsequent masonry work may be undergoing, reducing the risk of tearing.

It is also...

Resistant to continuous water contact, in other words, it is not reliant on the spreading of layers of mortar beforehand and it can be applied quickly without the need for complicated auxiliary work.



1. Surface preparation
2. Priming
3. TECNOCOAT P-2049 Membrane
4. The finish for the chosen landscaping system



POLYUREA SURFACES:

Tecnocoat H-2049

15.000 sqm


SUSTAIN
ABILITY

The waterproofing of roofs, the key to the eco-efficiency of the building

Around the world and especially in the European Economic Community, technical building codes driven by technical building institutes and endorsed by governments, together with global strategies to reduce the impact of climate change, are driving a new method of architecture and building in a more eco-efficient and sustainable way. Waterproofing is an important part of achieving these objectives.


SUSTAINABLE
ROOFS

The capacity for innovation has always been one of the keys to the success of Tecnopol's materials and building systems. It may seem rhetorical to say that when you buy **Tecnopol** products and apply Tecnopol building systems you can be sure that they are safe, sanitary, environmentally friendly, sustainable and high-quality, but nothing could be further from the truth. **Tecnopol**'s product and management system certifications provide the guarantees and confidence that all designers, distributors and applicators are looking for.

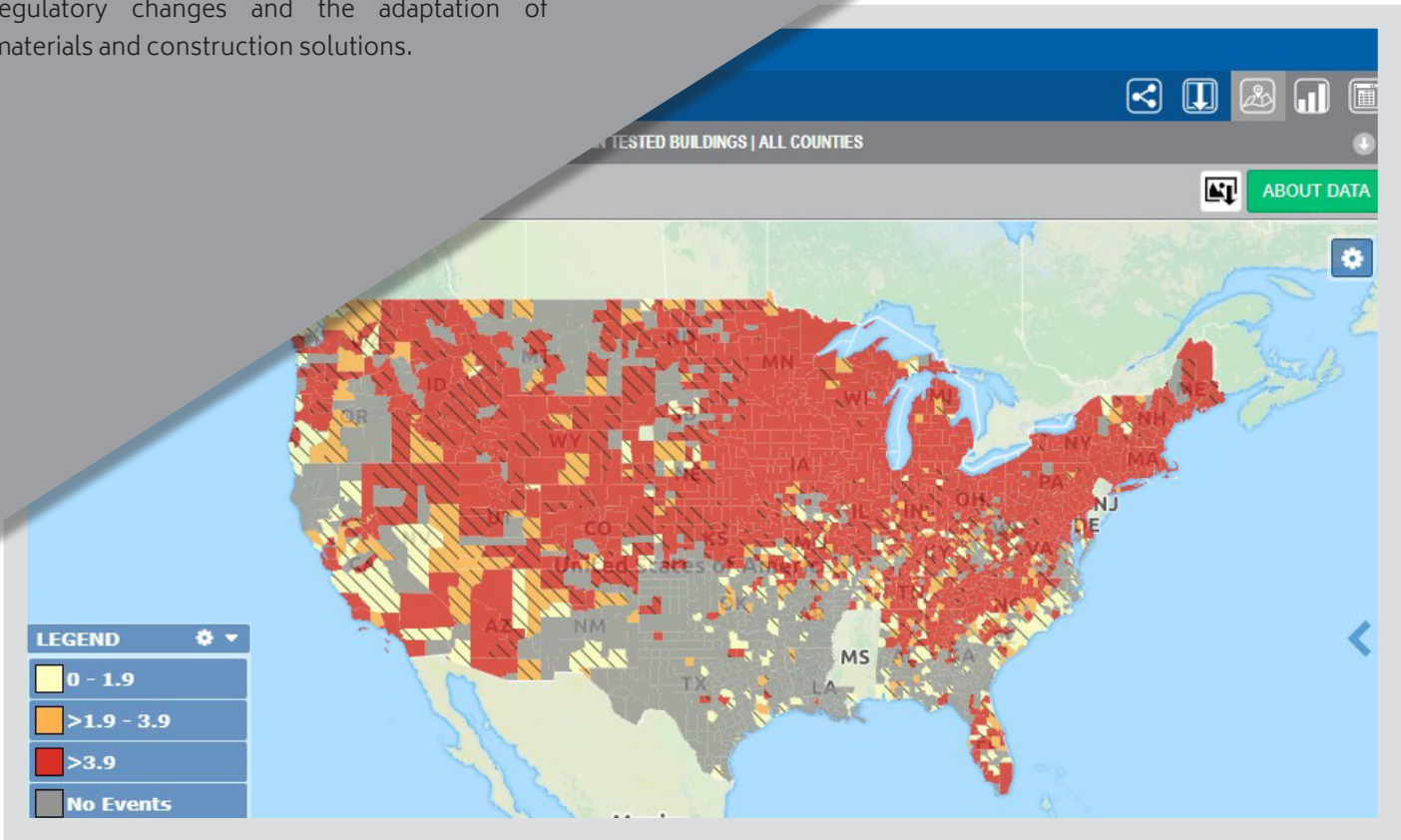
And if we mention sustainability, there are many examples, from green roofs waterproofed by **Tecnopol**'s constructive solutions, to all types of roofs, flat and sloping, in all types of climatic conditions and locations. In very demanding infrastructures such as the water tank of a hydraulic installation, or a route under the duress of the continuous passage of people or vehicular traffic, as would be the case of a car park.

The key is to properly integrate the materials into each project, making sure they are used correctly, following specifications, consulting Tecnopol's technical office and remaining aware of the appropriate certifications for each product at all times. The global challenge is to improve on building, and to do so sustainably throughout all project phases while taking into account the increasingly widespread concepts of the so-called circular economy.

PRACTICAL

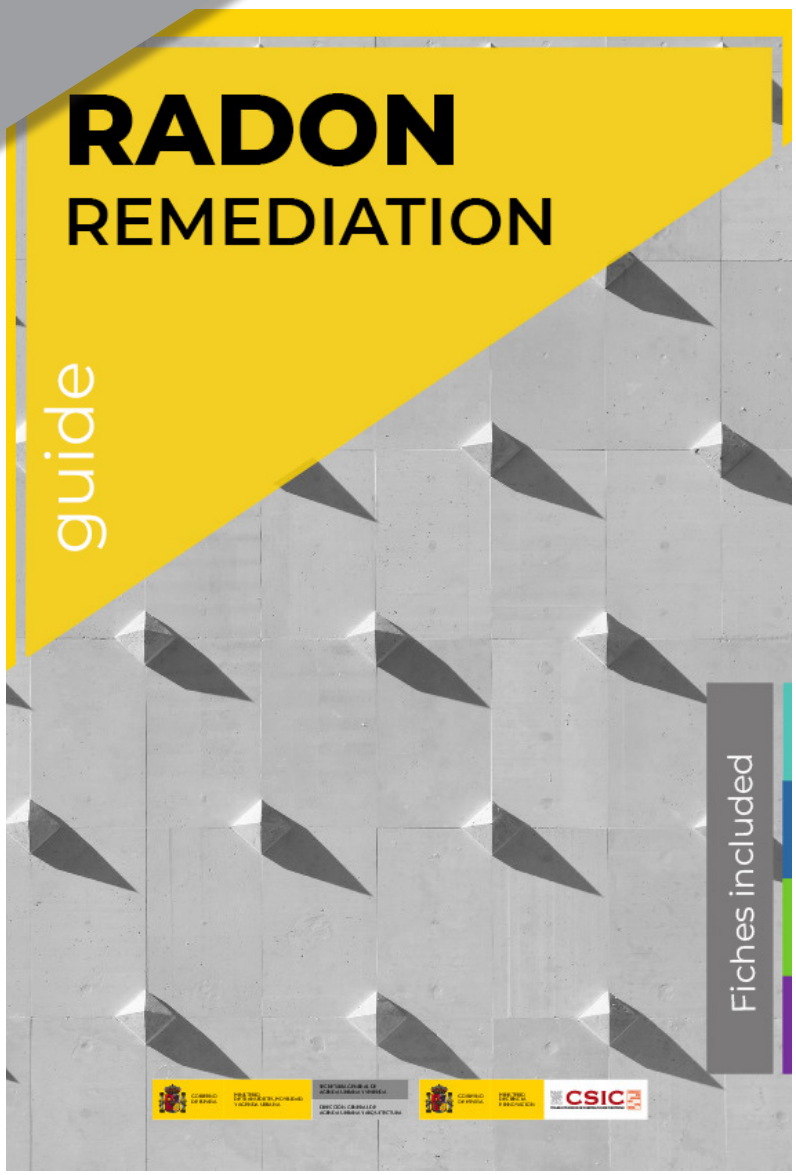
TECNOPOL, HEALTH AND RADON GAS

Radon gas can be an invisible enemy, according to the WHO Radon is the second most common cause of lung cancer after tobacco. The growing awareness of the problem is generating regulatory changes and the adaptation of materials and construction solutions.



Tecnopol has been researching the subject for some time now and carrying out tests to provide its waterproofing products with the appropriate characteristics so that its polyurea and polyurethane membranes comply with the new national and international regulations.

But what is Radon Gas? Radon is a naturally occurring radioactive gas. This gas has a tendency to concentrate indoors in buildings such as homes, schools and workplaces. Radon is produced through the natural radioactive decay of uranium. It is found in our ecosystem in granitic soils and rocks although it can also be found in water. Radon readily emanates from the soil and passes into the air. Once in the air, it disintegrates and emits radioactive particles. In the environment, it dilutes quickly as the concentration is very low and does not pose any health risk.



The problem is in enclosed spaces. Radon enters homes through cracks in the floor, cracks between floors and walls, spaces near pipes or cables, pores in hollow concrete walls, drains and sewers. This is why radon has been found to have higher concentrations in basements, cellars, and living spaces that are directly in contact with the ground.

It can also appear inside the home due to emissions from building materials, both from the concentration of radium in the materials and the fraction of radon produced that is released, as well as the porosity of the material, surface preparation and wall finish.

To reduce the concentration of radon in interiors, both in new and existing homes, we must on the one hand prevent its filtration and on the other hand ensure the refreshment indoor air so that it does not stagnate.

To do so, the **WHO recommends**: Improving the ventilation of slabs. Installing a mechanical extraction system in basements, flooring slabs or basement slabs to remove radon from areas of highest concentration. Preventing seepage from the basement into the rooms by depressurising the space between the base of the building and the ground. Sealing the floor and walls. Generally improving the ventilation of the house.

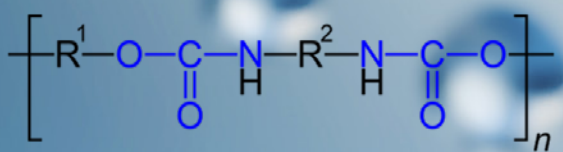
In Spain, the Council of Ministers approved, at its meeting on 20 December, the Royal Decree amending the **Technical Building Code**, which will serve to improve the energy efficiency of buildings and which includes, among other issues, the new **"Basic Energy Saving Document"** and the new section of the "Basic Health Document" concerned with the protection of buildings against exposure to radon gas.

https://www.codigotecnico.org/index.php/menu-actualidad/390-aprobacionRD.html

The **"New Radon Remediation Guide edited by the CTE"** was recently published https://www.codigotecnico.org/Guias/GuiaRadon.html

INTRODUCING:

What is polyurethane?



According to Wikipedia, polyurethane is a polymer obtained from hydroxyl bases combined with diisocyanates (usually TDI or MDI). Polyurethanes are classified into two groups based on their chemical structure, differentiated by their behaviour in certain temperatures. This separates them into two types: Thermosetting polyurethanes or thermoplastic polyurethanes (depending on whether they degrade before flowing or flow before degrading, respectively).

The most common thermosetting polyurethanes are foams, widely used as thermal insulators and strong foams.

The most common thermoplastic polyurethanes include those used in elastomers, high-performance adhesives and sealants, shoe soles, paints, textile fibres, sealants, packaging, gaskets, preservatives, automotive components, in the construction industry, furniture and many other applications.

Two of the main ranges of products manufactured by Tecnopol are made from Polyurethane.

DESMOPOL

Continuous, elastic and completely waterproof membranes whose properties make them excellent for application on all types of surfaces, whether in new construction or the renovation of large and small projects.

TECNOFOAM

A range of polyurethane foams specially designed for spraying and injection in residential, commercial or industrial applications. The polyurethane spray is one of the most effective thermal insulation systems that exists.

MACHINE TC-2049

“Our Technical Department reveals the advantages of the

Tecnopol TC-2049 hydraulic spraying equipment”

“THE TC-2049 OFFERS SUPERIOR PERFORMANCE, OPTIMISING EVERY WORK DAY”

ach project is different, but the decisions surrounding the materials we use and their correct application are vitally important to ensuring the achieving our goals. Why is the use of a hydraulic dosing unit like the TC-2049 so important in the application of polyurea and polyurethane?

The answer could be summed up in three words: “reliability, toughness and precision”. Hydraulic versions prove to be the most reliable, tough and least likely to fail. These machines are ideal for applicators who have to spray large volumes; specifically it is designed to reduce downtime, achieving high daily productivity in large work cycles while maintaining stable spraying performance.

How is the mixing quality ensured in the application of two-component polyurea and polyurethane systems where high precision is required?

By means of a programmable tool called RATIO CONTROL that controls the imbalanced pressure between component A and B, it constantly controls pressure deviation when spraying; in fact it is possible to adjust the deviation range from 0% to 20% (maximum recommended), the percentage is based on the programmed spraying pressure.

As soon as the tool detects an imbalance in the pre-programmed range, it stops spraying and the applicator can correct the imbalance simply and intuitively through the machine’s control panel by following the device’s built-in guide.

What does the formula system consist of?

We call the application parameters of each polyurethane and polyurea foam system stored in the machine’s memory “formulas”; the “parameters or formulas” reflect the different construction systems developed over the years by **Tecnopol**’s technical department. Since it comes as standard, you can always restore the original settings. The formulas save time and avoid possible mistakes.

Is the machine easy to operate?

Yes, it can be used very intuitively. Should the machine detect an error, it proposes a series of solutions in a logical order, so that the operator can easily diagnose the problem; all through texts and graphic images, available in a large number of languages built into in the TC2049 software. This is an important advantage over other types of machines that are not autonomous and require a connection to the network and external platforms.

Is it designed to be used on site and make it easy to transport?

Compared to other similar models on the market, the TC2049 is one of the most compact, it can be installed even in small vehicles such as vans or trailers; it also incorporates 4 sturdy removable wheels onto its chassis to facilitate the transfer of the machine, even in very narrow spaces.

¿Qué tipo de formación tienen que recibir los técnicos que la manipulen?

Any operator with basic knowledge of the use and application of the products for which it is designed can use the machine after seeing the simple indications on the control panel.

What is the PROMIX I air venting gun used for?

The air purge spray gun allows spraying of a wide range of materials such as polyurethane foam or elastomers used to make polyurea coatings.

It's easy to use and maintain. The nozzle is cleaned by air blasting, which reduces build-up in the air diffuser and nozzle clogging. The design of the Promix gun simplifies maintenance, assembly and disassembly, thanks to its quick injection grease port, daily lubrication is done in a matter of seconds; it also incorporates a stainless steel mixing chamber.

And is it hard to maintain?

It is actually very simple, after each use you have to clean the gun, check the seals and keep it lubricated. In addition, it is necessary to take into account the periodic maintenance of the machine, which consists of changing the lubricating oil of the piston of the isocyanate pump and the hydraulic oil every 2 years.

If out of service for long periods of time, the circuits of each component must also be cleaned and filled with plasticising oil.

Let's talk about cost, does the use of TC-2049 save time and money to the promoters of the works?

Yes, thanks to its toughness, the reliability of its construction and the high capacity of the hydraulic tank, the TC2049 can work for several consecutive hours with a high spraying performance without overheating or loss of pumping power. With a maximum flow rate of 12 kg /min it can spray an area equivalent to 5,760 kg / in 8 hours and approximately 2,880 m2 at a rate of 2kg /m2.

On a practical level and taking into account the downtime for changing drums, breaks, checks and changing positions, the total sprayed surface is reduced to a maximum of 1,500m2 / in 8 hours; which is "a huge surface every day", if we compare it with other insulation or coating systems.

DO YOU KNOW ABOUT TECNOPOL'S SOCIAL NETWORKS?

There is no society without the internet. Could you imagine not Googling things or staying connected with your friends and family? Surely not. In this hyper-connected world, social networks have multiple functions, they are above all a space in which to share our day-to-day work, construction systems, tips , news, and the evolution of the brand across five continents. If you want to interact with Tecnopol you can do so in multiple ways, and you can also be part of our community on Linkedin, Instagram, Facebook, Twitter and YouTube.

Follow us!

coverage

TECNOPOL's web application will help you to make product usage and performance calculations.

Find out more about it at www.tecnopol.es/coverage

www.wedevelopvalue.com

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