

INTERNATIONAL

# Realtà MAPEI

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101

# Building a **SUSTAINABLE** future together



by **Guido Palmieri**  
Realtà Mapei International's  
Editor-in-Chief

## Major works as a key driver of economic growth

At a time when growth rates are rather asphyxiated, investment in major works can give a boost to the whole economy. Again in 2024 things will progress at a sluggish pace. According to the most recent forecast by the International Monetary Fund's World Economic Outlook, global growth will not go beyond 3.1%, mainly driven by emerging economies such as India (+6.5%) and higher-than-expected resilience on the part of the United States (+2.1%). It will, in contrast, be held back by the Eurozone (only +0.9%).

Against this general backdrop, which has to reckon with the complex geopolitical situation in various regions of the world, the construction of new infrastructures and renovation projects for old ones hold considerable potential. We are having to make consolidated strategic choices, used both to revive the economy after a period of economic crisis and to implement modernisation processes in countries with plenty of potential for growth. Suffice it to mention, in the latter instance, the ambitious investment plans being drawn up in India or China's spending 7% of its GDP on infrastructure compared to an average of 2% in Europe. Even strong economies (such as those of the United States and Canada) are engaged in a major effort to build and modernise their roads, bridges, railways and ports. Europe's NRRPs (National Recovery and Resilience Plans) have earmarked substantial resources in this direction. And it should not be forgotten - as economists point out - the knock-on effect of this type of investment capable of generating economic returns both in terms of increased GDP and higher employment. A spin-off for a country's entire economy. Mapei is continuing its internationalisation process

with new operations. It has taken over Bitumat, a Saudi Arabian company specialised in the manufacture and marketing of waterproofing systems, and opened a new manufacturing plant in Tabuk (Saudi Arabia) to boost its operations in the Middle East. The acquisition of Diaplas, a manufacturer of profiles, trims and moldings, has been completed in Canada, while Mapei also acquired a new facility in Denmark with a concrete admixture manufacturing plant, offices and a warehouse. In some fields, notably the services sector (hospitals,

commercial spaces and hotels), timing is a decisive factor in preventing work from getting blocked. This issue focuses on Mapei's rapid products that enable the construction of floors that can be opened to traffic in just a few hours, while also guaranteeing durability and mechanical resistances.

As usual, Mapei is always looking

ahead on a changing market as it maintains its commitment to sustainability and innovation. The latest example is the latest mortars for repairing concrete from the Zero range, an upgraded line capable of guaranteeing low environmental impact and increased performance.

Mapei is widely acknowledged for its quality and excellence, and these are also strong points of its activities in Serbia, where the Group is celebrating its 20<sup>th</sup> year in business and Mapei Serbia has drawn on these qualities to gain a leading position on the local market. The teamwork section of this issue of *Realtà Mapei International* is dedicated to the Group's subsidiary in Serbia, its history, plans and prestigious projects the company contributed to.

Enjoy your reading.

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### Cover story

This issue of Realtà Mapei International is dedicated to rapid solutions that can help shorten the operation times. The photo shows the stairs at the Olympic Port in Barcelona (Spain) that were repaired and coated with MAPECOAT TNS EXTREME.

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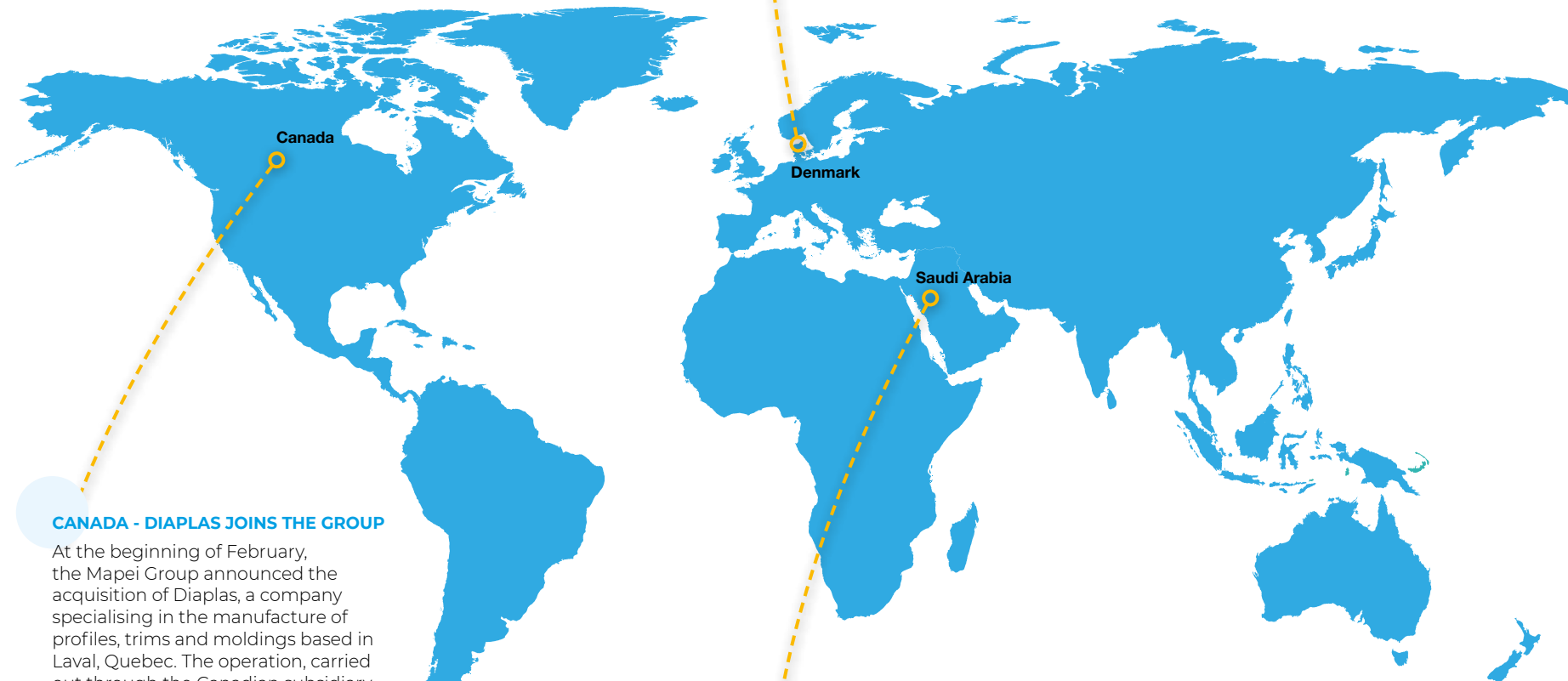
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# Mapei is boosting its overseas operations through three acquisitions

THE GROUP IS CONTINUING ITS PROCESS OF INTERNATIONALISATION WITH OPERATIONS IN DENMARK, CANADA, AND SAUDI ARABIA

If growth has always been part of Mapei's DNA, then internationalisation is at its very core. At least since 1978, when the opening of the Laval plant in Canada marked the beginning of the company's overseas operations through subsidiaries, manufacturing plants and local employees. Underpinning this internationalisation is a desire to work more closely with clients to be able to respond more effectively to the specific needs of each individual market, guaranteeing fast product delivery times and reducing the environmental impact of transport operations. Under the motto of "Italians in Italy, Americans in America, Chinese in China..." and so on, the Group has made internationalisation one of the cornerstones of its corporate policy producing exponentially positive results. Over the years, the Group's facilities, companies and people across all five continents have grown to take on truly global proportions. At the beginning of 2024, this trend accelerated: in about a month and a half, a production plant was made operational in Saudi Arabia and three acquisitions were completed in Denmark, Canada and Saudi Arabia.



## CANADA - DIAPLAS JOINS THE GROUP

At the beginning of February, the Mapei Group announced the acquisition of Diaplas, a company specialising in the manufacture of profiles, trims and moldings based in Laval, Quebec. The operation, carried out through the Canadian subsidiary Mapei Inc., which is also based in Laval, is in line with the Group's strategy of providing increasingly integrated and complete products for the construction industry, as well as its desire to continue to grow in North America. Diaplas's clients will be able to take advantage of Mapei's extensive distribution network and strong Research & Development capabilities. In turn, Mapei Canada will benefit from Diaplas's experience and manufacturing capacity based around high turnover items and articles.



## DENMARK - A NEW PLANT FOR CONCRETE ADMIXTURES

In January this year, Mapei Denmark, the Group's Danish subsidiary took over a new 15,000 m<sup>2</sup> facility in Vejle in southern Denmark (pictured on the right), complete with a concrete admixture manufacturing plant, offices and a warehouse. This new manufacturing unit will enable the company to meet the growing local demand for quality building materials more effectively, while reducing the environmental impact of transporting products. An investment, as Veronica and Marco Squinzi stated, the Group's CEOs, "in line with the Group's growth strategy in Nordic countries".

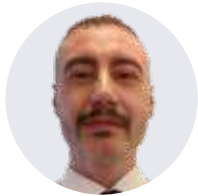


## SAUDI ARABIA - BITUMAT WAS ACQUIRED AND A NEW PLANT STARTED UP

Mapei's growth rate has doubled in Saudi Arabia. On the one hand, there was the acquisition of Bitumat, a leading company in the manufacture and marketing of waterproofing systems with a head office and a 100,000 m<sup>2</sup> manufacturing plant in Dammam on the east coast. The acquisition also included a manufacturing unit in Bahrain, as well as offices and warehouses in the cities of Riyadh and Jeddah, and sales offices in the United Arab Emirates and Oman. "The acquisition of Bitumat," so Marco Squinzi, Mapei's CEO, claims "enables us to strengthen our operations and manufacturing output in the region and also to get increasingly actively engaged in the "Vision 2030" government programme, which envisages the construction of infrastructure, tourism, residential and entertainment projects throughout the country, partly in view of the

forthcoming Asian Winter Games in 2029 and FIFA World Cup in 2034". On the other hand, Mapei, which already operates through its own subsidiary in Saudi Arabia, has set up a new plant in Tabuk in the north-west of the country, which extends over 10,000 m<sup>2</sup> and is devoted to concrete admixtures. As Veronica Squinzi, Mapei's CEO, stated, "Mapei is already actively supplying technical solutions and cutting-edge products for numerous projects throughout the country: from the futuristic region of Neom and the capital Riyadh (the site of Expo 2030) to coastal development work in the Red Sea and the preservation of the historical heritage of the archaeological site of Hegra". Thanks to the new facilities, Mapei will be boosting its operations in the Middle East area where it already has subsidiaries in the United Arab Emirates and Qatar.





Francesco Doria

# Infrastructures: driver for global construction

THE FORECAST FOR 2024 IS FOR A SLOWDOWN OF THE GLOBAL MARKET (+1% AGAINST +3.4% IN 2023), WITH MAJOR WORKS CONTINUING TO BE FRONTRUNNERS

In 2023 the global construction market registered an estimated growth of 3.4%, improving on 2022 which ended the year with an increase in investments of 2.4%. The growth in the building sector was slightly better with respect to growth in the global economy which last year, according to the International Monetary Fund, saw a growth of 3.1%. The graph in the facing page shows the historic trend in construction output and the forecasts up to 2025.

In 2023 the advanced economies showed a 0.5% increase in the value of the construction sector, while in the emerging countries growth in the building market was high at around 5.6%. The forecast for 2024 indicates overall growth in the global building sector of around 1%. The more mature markets should probably see a recession in investments in construction work of an estimated 1.2%, while in emerging countries there should be moderate growth of an estimated 2.6%. The rate of development hypothesised for the global construction sector should be noticeably lower than that of global GDP, and is estimated to be around 3.1%. The economic situation of the global construction market should improve in 2025 when the average annual increase in investments is expected to be 3.3%, with an estimated increase of 4% in emerging countries and of 2.3% in the more developed countries.

The scenario presented is subject to two main risk factors. The first one regards an escalation in the wars in Ukraine and the Middle East. In fact, as these conflicts



evolve, the repercussions they could have on the global economy and construction market are difficult to quantify. Another risk factor is the tightening of monetary policies. In fact, the increase in official interest rates and the resulting inflexibility of credit conditions for families and businesses represent a significant risk for maintaining growth.

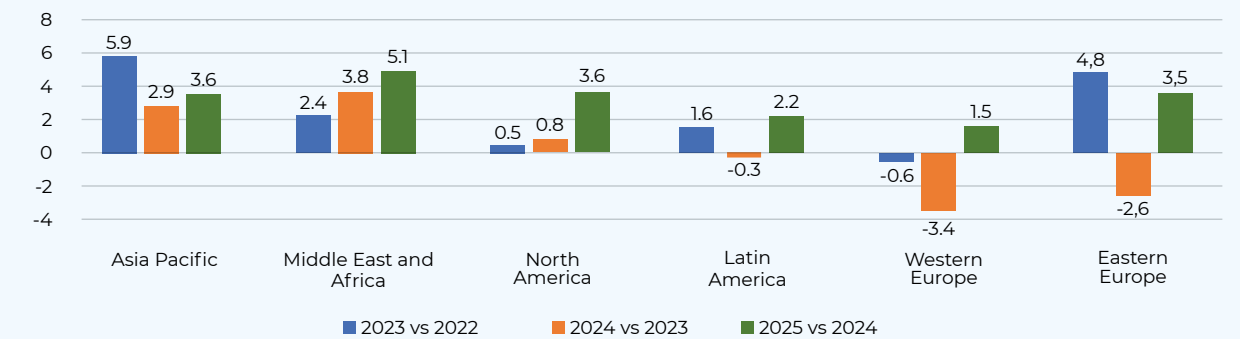
For the various components of the global construction market the trends are expected to differ. The energy and infrastructure sectors have benefitted over the course of the last few years from this positive trend. The infrastructure sector profited from the considerable public resources made available to relaunch the economy and the construction industry in the period following the pandemic. The outlook for the public works sector is positive up until 2027.

The forecast for the sector of the construction industry involved in energy projects is feeling the positive effect of funds allocated to promote environmental sustainability and ecological transition. Investments in the energy and utilities sector, therefore, should enjoy a positive economic situation in the long term.

For the non-residential sectors (commercial, industrial and institutional) there is expected to be moderate growth in investments, with its dynamic being directly influenced by the trend of the global economy.

The residential sector is the only one for which a contraction in global investments is expected in the two-year period 2023-2024. House building is going through

**Construction market trend**  
(% variation against the previous year)



Source: GlobalData

a rather modest economic situation in China, the US and Western Europe and modest growth in the sector is only expected from the following year.

## Asia Pacific

In 2023 this region, which accounts for 52% of the global building sector value, registered an estimated growth in construction output of almost 6%. The forecast for the current year indicates a net slowdown in the rate of development in the building market, which should remain lower than 3%. The forecast for 2025 indicates an increase in investments in construction work of 3.6%.

In China, the leading nation in the world when it comes to the value of investments in the construction sector, the building sector continued to grow in 2023 by 6.5%, slightly higher than the 5.5% registered in the previous year. In 2024 the construction market is expected to grow by 2.8%. Behind this restraint in the rate of growth is the recession in investments in the house-building sector, caused by measures taken by the Chinese government to prevent the real-estate bubble bursting due to an over-production of houses and excessive price rises. This negative economic situation in the house-building sector should be counteracted by a very positive dynamic in the infrastructure sector, sustained by massive investments in the transport sector and by funds from the green power transformation plan, a long-term programme to achieve ambitious ecological transition objectives. For next year there is a moderately positive outlook for the Chinese construction sector, with investments expecting to grow by 3.4%.

The Indian building market is the 3<sup>rd</sup> largest in the world in terms of size with a value of nearly 700 billion US dollars. In 2023 the Indian construction sector registered one of the best performances at global level; in fact, investments grew by almost 10%, with both the infrastructure sector and the residential sector benefitting from the positive economic conditions. It is believed that the

positive dynamic of the market could continue into the 2024-2025 period, during which an annual growth rate of a little lower than 6% is expected.

In Japan, the main market in the North-East Asia region, the building sector grew in 2023 by almost 1%, registering a performance in line with the average of the more mature markets. The economic situation of the building sector is expected to remain modest for the next

two years and the rate of growth in investments will not exceed 1%.

Last year the Australian building sector benefitted from a positive dynamic due to public spending in the infrastructure sector. The Australian market is 14<sup>th</sup> in the world in terms of investments, an estimated 171 billion dollars. For the next two-year period

average market growth should be around 1.6%, so maintaining a higher level than the average of the more mature markets, which is estimated to be just 0.6%.

## Western Europe

In 2023 this was the only region to have seen a decline in investments in construction work, measuring 0.6%. The three sectors of the building market had different trends: a net recession in the housing sector, stagnation in the non-residential sector and an increase in investments in the infrastructure sector.

For the current year, the dynamic for construction output should register a net contraction and there is expected to be a market recession of more than 3%. It is estimated that there could be a moderate growth in investments starting from 2025.

The five strongest economies in Europe generate more than 3/4 of the continent's construction output. The graph in the next page shows the most recent estimates for the construction sector for the area's top markets. Note that the variations are based on "constant values" and exclude the effects of inflation in the construction sector.

The Spanish building sector in 2023 was best performer in Western Europe's construction market, with invest-

ments growing by an estimated 3.5%. The outlook for 2024-2025 is positive and the construction sector could grow at an average annual rate of 1.5%. For the housing and non-residential sector growth is forecast to be modest, while a more positive dynamic for the infrastructure sector is hypothesised.

The UK building sector is considered to have had an overall positive trend in 2023. Investments in construction work increased by around 2%, against an average contraction of around 0.6% in Western Europe. The current year should register a recession in the building market of an estimated 2%, which will be, nonetheless, less intense compared with the average for Western Europe. The market could start growing again, albeit modestly, starting from next year.

The French construction market is the 6<sup>th</sup> largest in the world in terms of size and has an estimated value of 341 billion Euros. Last year the construction industry suffered a slight contraction in investments, which should continue and even worsen in 2024. The estimates for 2025 indicate moderate growth, in line with the levels forecast for the construction market in Western Europe. In 2023 Germany suffered the most marked recession in the construction industry amongst the major markets of the area. Estimates for 2024 and 2025 point to a continuation of this recessive phase in the building sector. The overall trend for the construction sector will be penalised by the housing sector, for which in the period being considered there is expected to be a net squeeze on investments.

Last year investments in construction work in Italy registered a drop of an estimated 2%. This figure should be read in the light of the particularly strong growth the market registered in 2022, when investments grew by more than 12%. In 2023 the home renovation sector contracted due to funds for tax incentives progressively running out. Investments in the non-residential sector saw a moderate decline, influenced also by the modest

economic situation (in 2023 GDP grew by 0.7%), whereas infrastructures was the most dynamic component of the market, registering an estimated 6% growth. Forecasts for 2024-2025 point to an average annual contraction in the construction sector of around 3.5%. The sector most in crisis will be that of home renovations, for which there is expected to be a “double-digit” contraction in both 2024 and 2025. Modest growth in investments is forecast for the non-residential sector, while strong growth in the public works sector should be maintained, thanks to funds from the PNRR (National Relaunch and Resilience Plan), at an estimated average rate of more than 7%.

Eastern Europe

Last year this region registered a high rate of growth in investments in construction work, an estimated 4.8%. This positive dynamic in the construction sector benefitted from the surprising growth capacity of the Russian market, the largest in the area and 11<sup>th</sup> in the world for value of investments. In fact, estimates point to an increase of 6.6% for Russian construction output in 2023. Starting from Q4 last year, however, the Russian construction sector seems to be suffering more heavily from the sanctions that have been imposed, along with the cost of raw materials and the rise in mortgage interest rates. As such, estimates for 2024 indicate a year of net recession.

In 2023 Poland and Turkey – the other two major markets in the area – registered a growth in construction output. For many years the Polish market was one of the most dynamic at European level. Last year, too, the value of the construction sector saw a modest increase and, based on recent estimates, the rate of growth in investments should progressively strengthen. The main market driver will be the infrastructure sector, for which the outlook is very positive. For the next two-year period, on the other hand, the housing sector should be facing

more modest economic conditions.

The Turkish construction market has an estimated value of 115 billion dollars, the second largest in terms of size in Eastern Europe. Last year investments in construction work in Turkey grew by 5.1%, a rate in line with the average for the eastern region. Analysts believe that a growth in interest rates and a devaluation of the Turkish Lira will make it more difficult to finance the country's ongoing large-scale infrastructure projects and, as a result, 2024-2025 should register more moderate rates of growth in investments for construction work, estimated to be 2.3% annually.

North America

The US and Canada are, respectively, the 2<sup>nd</sup> and 8<sup>th</sup> largest construction markets in the world with an estimated value of 1,579 billion US dollars for the US building sector and 294 billion US dollars for the Canadian sector. Analysts believe that, last year, the value of investments in construction work in the USA grew at a rate of 1%. Inflationistic pressures, high interest rates and an increase in the cost of construction work had a negative impact on output in the residential building sector. The public works sector, on the other hand, benefitted from a massive public investment programme in infrastructures. In 2024 the economic situation in the residential sector should also be impacted by the factors that conditioned growth last year. The overall value of the construction market will continue to register moderate growth, estimated to be 1.5%, thanks to the contribution for the infrastructure sector and the non-residential building sector. Analysts believe that, from 2025, the residential sector could start growing again, taking US construction output to a high growth rate of an estimated 4%. For the Canadian housing sector estimates point to a negative trend for 2023 and 2024, similar to that of the United States. In Canada indications also point to the public works sector as being the most dynamic in the building market but, unlike the USA, investments in infrastructures will not prevent an overall recession verified in the construction market in 2023, and which is also expected for the current year. Forecasts indicate that starting only from 2025 could Canadian construction output start growing again, albeit modestly.

Latin America

Last year this region registered a modest increase in investments in the construction sector with an estimated growth rate of 1.6%. In Brazil, the main market in the area and the 13<sup>th</sup> largest in the world, the recession in the construction sector weighed heavily on the economic situation of the region. In fact, it is estimated that, in 2023, the Brazilian construction industry contracted by

2.5%, the effect of high labour costs, high interest rates and restrictive fiscal policies. A further market contraction of around 2% is forecast for the current year. Only in 2025 could the Brazilian building sector be in a position to overcome this recessive phase.

The Mexican construction market is the 2<sup>nd</sup> largest in Latin America and the 16<sup>th</sup> largest at global level with an estimated value in 2023 of 146 billion dollars. Last year the Mexican building industry showed a highly positive dynamic, registering “double-digit” growth in investments. In 2014 the value of construction output is expected to contract due to several large infrastructure projects being completed and the effect of factors penalising the global building industry (inflation in the construction sector and high interest rates). For the current year the recession in the Mexican and Brazilian markets will lead to an overall fall in investments in the construction industry in Latin America.

The dynamic of the construction industry is also estimated to be modest in the other main markets in the region, Argentina, Colombia and Chile. The trend for investments in construction work in Argentina is due to the high level of uncertainty, and the possibility of an upturn in

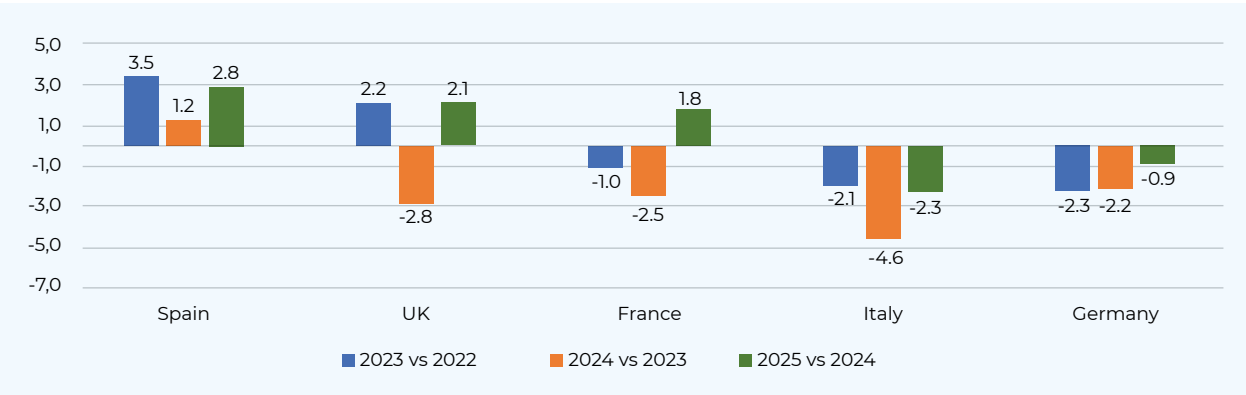
the market depends on the new President's capacity to overcome the serious economic crisis afflicting the country.

Middle East and Africa

Building activity in this region registered 2.4% growth in 2023. In the Middle East and Northern Africa area the positive dynamic in Egypt, Saudi Arabia and the Emirates was contrasted by a recession in Iran, due to the effect of international sanctions, and in Tunisia, which is going through a serious economic crisis. The Sub-Saharan building industry saw a high rate of growth, thanks especially to an upturn in the South African construction industry which, up until 2022, had gone through a long period of recession. Estimates of trends in the building market in the Middle East and African region obviously depend on the way current conflicts develop. Hypothesising a progressive moderation of military activities, in 2024-2025 investments in construction work could return to a more pronounced growth rate, with estimates pointing to an annual average of around 4.5%. In the Middle Eastern area all the main markets, with the exception of Israel, could benefit from a positive dynamic in the construction sector, while in Sub-Saharan Africa there should be a positive trend in building activities in South Africa and Nigeria.

Francesco Doria. Market Research Manager, Mapei SpA

In 2024 only Spain is bucking the trend  
(% variation against the previous year)



Source: Prometeia, GlobalData and European Commission



# When rapidity makes all the difference

MAPEI OFFERS NUMEROUS SOLUTIONS THAT CAN HELP REDUCE WORKING TIMES

Shopping centres, hospitals, airports, hotels: construction sites have to work at a fast pace in various settings in order to avoid putting important activities on hold. In such cases rapid products can make a difference, reducing waiting times that can last from just a few hours to several days or a night shift. It is an issue that goes across the board and is of interest to a multitude of applications: rapid does not only mean adhesives, for example, but can be applied to a complete cycle of building products. So this can also include binders for screeds, grouts for joints, waterproofers and coatings to ensure rapid and sound application and completion of works. On the following pages we will be presenting the various "families" of Mapei rapid products, with input from various experts and, as always, a roundup of numerous construction sites for which our systems were chosen.



Concrete admixtures



Products for building



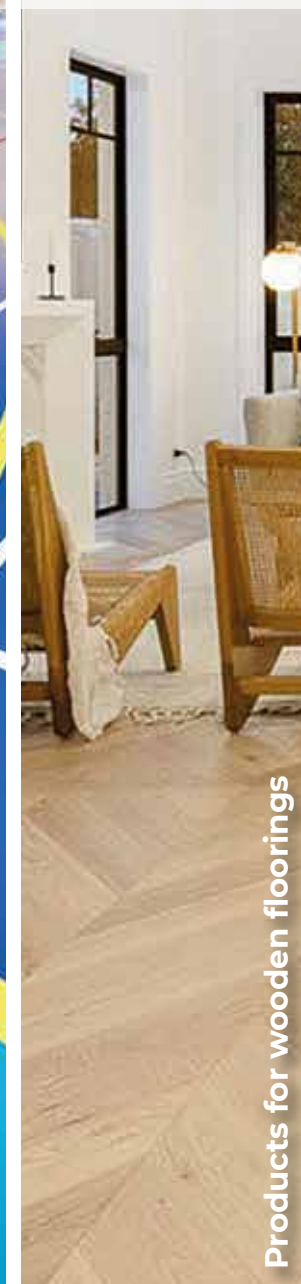
Products for ceramic tiles and stone materials



Products for resilient, LVT and textile materials



Products for sport surfaces



Products for wooden floorings



Products for resin and cementitious floors





Francesco Stronati

# From natural stone to ceramic tiles: the aim is to be quick

FLOORING FOR COMMERCIAL BUILDINGS, SHOPPING MALLS AND PRIVATE HOMES READY FOR TRAFFIC IN JUST A FEW HOURS

### Let us talk about rapid products for installing ceramic tiles and stone: shall we take a look at their story?

For Mapei, the story of these products dates back more than thirty five years when the need arose to overcome problems encountered when installing various types of natural stone (green marble, slate, Carrara marble, and Statuario marble to name just a few), problems such as deformation and/or staining of slabs due to the effect of absorbing water used for mixing traditional sand and cement adhesives. In fact, the products generally in use to install slabs more than 20-30 mm thick started to show problems when, thanks to new cutting technologies available, it became possible to cut quarried blocks into slabs just 10 mm thick.

To find a solution Mapei developed a method to evaluate deformation and criteria to classify natural stone according to the level of deformation caused by contact with a source of moisture, a method that is now recognised at international level and adopted by European standard EN 14617-2. Tests carried out according to this standard in Mapei Research & Development laboratories showed that movements of the stone, at times quite large after 10-12 hours, were slow and regular and could be easily prevented by using a rapid-setting adhesive with the ability to fix the material, even after 3-4 hours, thereby impeding further deformations. This is how GRANIRAPID was born, a special, two-component adhesive that was able to fix stone materials three hours after installation and,

unlike traditional systems, to be perfectly dry after 24 hours, because it is made using special hydraulic binders that are able to chemically bond with all the mixing water. This characteristic made the adhesive particularly suitable for bonding natural stone, also because it helps overcome the problem of surface efflorescence or staining, even on materials such as Carrara white marble, fine-grained crystal marble from Greece or Aurisina marble, well known for being sensitive to staining due to moisture in the installation bed, which often changes their appearance.

### Since then has Mapei developed other new products for rapid installation work?

Yes. When the market turned towards ceramic tiles, our adhesives were adapted to this new

requirement and enabled execution times of floor and wall coverings to be reduced. Today, in Mapei, we have various complete rapid systems for all the various stages of installing ceramic and stone flooring, from screed products to skimming compounds, from waterproofers to adhesives and from grouts to sealants. We can easily say that, since the first rapid product, GRANIRAPID, which is still part of our portfolio, we have come a long way and formulated products that meet a host of requirements, while also following the evolution of the market from ceramic tiles to natural stone. Among them, I would like to highlight ELASTORAPID high performance, highly deformable, quick-setting and drying cementitious adhesive which is especially suitable for large-size ceramic tiles and stone materials, and KERAQUICK MAXI S1, deformable, rapid-setting and hydrating, non-slip cementitious adhesive particularly recommended for stone, including thick, large format stone slabs.

### Where are these products used mainly?

Today, rapid products are required for sites where, because of commercial or private needs, renovation of flooring needs to be completed quickly. So, I am thinking about shopping centres, supermarkets, airports and all those commercial activities where work needs to be completed quickly, even overnight. In private settings, too, there may well be this requirement, such as if a client wishes to re-do the flooring or terrace in their home and complete the work in just a few hours.

### Could you give us an example of a Mapei rapid system and its

### installation times?

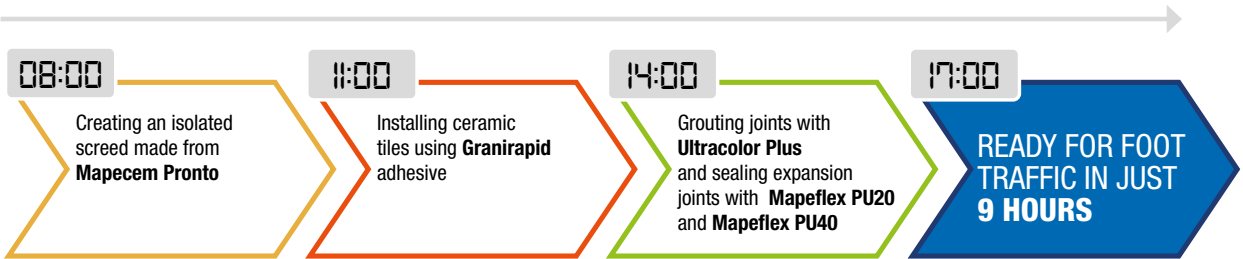
If we think, for example, about a commercial setting, our rapid system to renovate flooring allows a surface to be reopened to foot traffic after just 9 hours, using MAPECEM PRONTO pre-blended mortar for the screed, GRANIRAPID or another rapid adhesive to install the ceramic tiles, and ULTRACOLOR PLUS to grout the joints. If we think about waterproofing and installing ceramic on a terrace, on the other hand, the time required to obtain a dry surface ready to foot traffic is around 13 hours: we would use MAPECEM PRONTO to create the screed, MAPELASTIC TURBO mortar together with MAPEBAND rubber tape and MAPENET 150 fibre glass mesh for waterproofing the substrates, ELASTORAPID or another rapid-setting adhesive to install the tiles, ULTRACOLOR PLUS to grout the joints and MAPESIL AC to seal the expansion joints. As you can see, these times are extremely short if we compare them with the times required by traditional products, which are normally several weeks.

### Can these products be used at all temperatures?

Yes, our products for natural stone are widely used in the Middle East and South East Asia, where the temperature on site can be really high. But rapid systems are also used at low temperatures to reduce the waiting time required before putting a floor into service. Having said that, they cannot be used at any temperature. It is important that, at the moment of installation and when the adhesive is still in its fresh state, the surrounding temperature is above 0°C.

Francesco Stronati. Corporate Product Director - Ceramic Line and Corporate Technical Services Director, Mapei Group

## A RAPID SYSTEM FOR INSTALLING CERAMIC TILES



A rapid system for installing or renovating flooring in a commercial setting.

## Rapid products for ceramics and stone

### Mortars for screeds MAPECEM PRONTO TOPCEM PRONTO



### Waterproofing products MAPELASTIC TURBO MAPELASTIC AQUADEFENSE



### Adhesives KERAQUICK MAXI S1 ELASTORAPID GRANIRAPID ULTRALITE S1 FLEX QUICK



### Grout for joints ULTRACOLOR PLUS







Stefano Carrà

# Speed tests in the Lab

A GOOD UNDERSTANDING OF TECHNICAL AND MINERALOGICAL PRINCIPLES IS CRUCIAL FOR THE DEVELOPMENT OF HIGH-QUALITY RAPID PRODUCTS

Reducing execution times is undoubtedly one of the characteristics of today's building industry and regards not only new constructions, but also, and above all, restoration and refurbishment work, where we need to guarantee that environments may be quickly put back into service.

We are talking about cementitious formulations, such as those used for tile adhesives, grouts and self-levelling products in which the development of strength and resistance is due to hydration of the cement when a powdered product is mixed with water: it is on this chemical process that we need to focus. This may be achieved by adding an accelerating admixture or, to be more effective, using mixed binder systems that produce much faster reactions than those obtained with common Portland cement, to such an extent

that you can go from setting times of several hours – typical in normal systems – to just tens of minutes, a characteristic of rapid systems. Understanding the technical and mineralogical principles of rapid systems is crucial for the development of high-quality products for which the main problems are maintaining workability against rapid-setting

times, controlling the development of strength and resistance at different temperatures and controlling the aging of products which are highly sensitive due to their high reactivity. What is more, researchers need to understand the complex interactions that arise with set-retarding admixtures or with admixtures used to improve the development of mechanical properties.

A very special role is played by lithium carbonate which considerably improves strength and resistance at low temperatures, but over the last few years its procurement has become a battle because of its consumption for batteries for electric vehicles.

Controlling and accelerating setting times is normally achieved by using a mixture of Portland cement, calcium sulphate and alumina cement. Calcium sulphate and alumina cement may also be fed into the formula together in the form of aluminium sulphate cement.

## Cementitious formulas

Rapid cementitious formulas cover a wide range of applications: apart from the self-levelling mortars, tile adhesives and grouts mentioned previously, there are also rapid-setting repair mortars and waterproofing products.

These products may meet a variety of needs: putting environments back into service, quick cleaning of joints, providing the possibility of applying a second layer of product where necessary, a quick drop in moisture content (a requisite when installing floor coverings), making surfaces more resistant to abrasion and ensuring better dimensional stability due to lower shrinkage rates (crucial for those cases in which the product could crack or detach).

**Rapid cementitious formulas cover a wide range of applications: self-levelling compounds, tile adhesives, grouts, repair mortars, and waterproofing products**

In the case of cementitious grouts, more than twenty years ago Mapei developed new technology that does not require the use of Portland cement and that does not generate calcium hydroxide crystals during the hydration phase, which can then lead to the appearance of efflorescence on the surface: in so doing, it guarantees maximum colour stability.

ULTRACOLOR PLUS grout is based on this technology, which to this day is an unrivalled product and is available in a range of 40 colours, whose stability over time is guaranteed thanks to the chemistry it develops.

## Chemistry is the base for rapid products

The chemical element that forms mainly in mixed binder systems on which fast products are based is ettringite, which captures 32 water molecules. In fact, 47% of the weight of ettringite is given by the weight of the water captured, which is 50% higher than the amount captured during the hydration process of Portland cement. This "water crystallisation" process is very important when installing natural stone, which is often highly sensitive to moisture and easily stained, and prevents unsightly effects appearing in the stone, a phenomenon by no means rare if the wrong product is used. Adhesives



**PHOTO 1.** Electronic microscope image of ettringite crystals, the chemical species that forms in Mapei binders based on alumina cements. Their features are exploited to obtain rapid products.

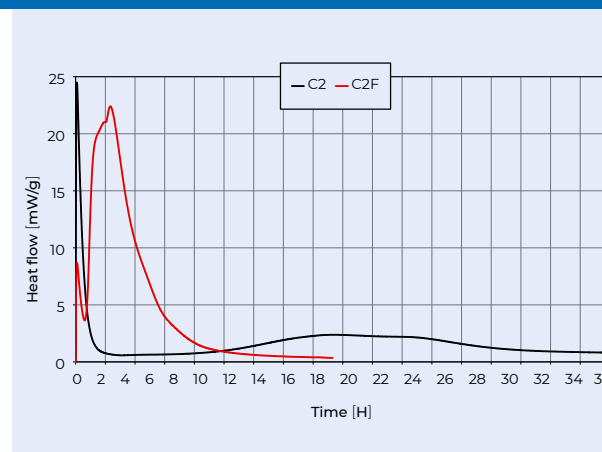
developed specifically for installing natural stone sensitive to water, such as GRANIRAPID and ELASTORAPID, exploit the chemical process described above to guarantee a surface that is immune to the problem of staining. From a chemistry perspective ettringite is an aluminate trisulphate of hydrated calcium. Ettringite crystals have a typical needle-like structure which is easy to identify with an electron microscope as one can see in the photo above.

Mapei Research & Development laboratories also use a technique by which it is possible to appreciate the various kinetics of the hydration process in rapid products compared with that of normal-setting products based on Portland cement only. This is called "isothermal calorimetry", in which a thermostatic bath is held at a constant and controlled temperature and small samples of products are inserted in the bath to measure the amount of heat generated by the hydration reaction over time. Graph no. 1 illustrates a comparison between the calorimetric profile of a rapid adhesive and a normal-setting adhesive, where we can observe that the first one has a far more intense and calorimetric curve than the second one.

This rapid characteristic is also included in European standards which describe adhesives and grouts for tiles (EN 12004 and EN 13888, respectively). In both standards rapid products are identified by the letter F (Fast), which requires their adhesion and mechanical properties to be measured after 6 hours: this is the point that specifies their minimum requirements, rather than the widely adopted 28 days for normal-setting products.

## Self-levelling mortars

Another important sector where rapid-setting binder technology is employed is for self-levelling mortars, the scope in this case being to improve the base material to be covered (screed or concrete) and guarantee continuity and uniformity throughout its entire volume. Self-levelling products may be covered to create the final



**GRAPH 1.** Comparison between the calorimetric profile of a rapid adhesive (C2F) and a normal-setting (C2) adhesive: the rapid adhesive has a far more intense and rapid calorimetric curve than the normal-setting one.

floor using a suitable adhesive (for ceramic tiles, resilient materials or wood) or remain exposed and protected, in certain cases, by a coat of resin. Since these mortars are not covered and protected during the hardening phase there is a risk – especially if applied when the surrounding temperature is high or in draughty surroundings – that the surface dries too quickly, the effect of which is to reduce surface hardness. Another problem is caused by excessive absorption of the substrate – when not primed sufficiently – which may lead to problems in the surface finish due to hydration water not being readily available for the hydration process, which then becomes irregular. In both cases the problems may be overcome by formulating binder systems that increase the formation of ettringite, which has a high capacity to bond with water.

This approach, however, may only be adopted for self-levelling products applied in internal surroundings because ettringite has a limited level of stability if used outdoors, particularly under the action of water and moisture.

With self-levelling mortars from the ULTRAPLAN line, the rapid development of mechanical properties and

the rapid drying of the product are exploited to enable them to be covered after just a few days, or even after just a few hours in the case of ultra-rapid products. What is more, the mix of components that make up the binder phase may be controlled as required in order to minimise any movements in the product (which take place due to the effect of hydration reactions) to prevent detachment and cracks.

Mapei is integrated upstream with the above-mentioned technologies thanks to Górk, a Polish manufacturer of alumina cement, which joined the Mapei Group in 2000. Over the years, this extraordinary synergy has enabled Mapei products to be constantly cutting-edge in the face of the progress made in construction technology.

**Stefano Carrà.** Tile adhesives, R&D Laboratories, Mapei SpA (Italy)

Göteborg (Sweden)  
Riverton Hotel

A COMPLETE SYSTEM TO SPEED UP INSTALLATION AND GROUTING OF CERAMIC TILES AND MOSAICS IN THE SPA AREA

The Riverton Hotel is located in the centre of Göteborg near the River Göta Älv, from which the city takes its name. Its position makes it the ideal place to stay for anyone wishing to explore the numerous attractions in what is, after Stockholm, the second most densely populated city in Sweden: the old centre in the Haga district, the restaurants and fish markets along the Rosenlund quayside, the elegant boutiques in Kungsgatan street, the Opera House and the Skansen Kronan fortress. The hotel is a family run business and, since the start of the 2000's, it has stood out for its welcoming style characterised by the particular attention paid to the well-being and relaxation of its guests. The reason why, for example, a new wellness centre was recently created in-

side the hotel featuring a swimming pool, a sauna with aromatherapy, a Turkish bath, sensorial showers and a relaxation area. Mapei also took part in the completion of this new area by providing support to the team commissioned to carry out the work, which had to overcome various challenges. One of these was having to work within the city itself and, as a result, reduce as much as possible the impact of noise in the area and install the floor and wall coverings within a short timeframe. To overcome this latter constraint Mapei AB, the Group's Swedish subsidiary, proposed a complete system which enabled installation of the ceramic tiles and mosaics in the spa area to be completed very quickly.



**IN THESE PAGES.**  
ELASTORAPID quick-setting and drying adhesive was used to install mosaics on the surfaces of the swimming pool and on several walls of the spa.



**Relaxation... rapidly**  
Before installing the ceramic tiles and mosaics, the substrates for the floors in the spa area, swimming pool and showers were waterproofed with MAPELASTIC cementitious elastic membrane reinforced with MAPENET 150 fibre glass mesh, while the control joints and corners between the horizontal and vertical surfaces were waterproofed with MAPEBAND EASY rubber tape. The white version of ELASTORAPID two-component, highly deformable, non-slip, quick-setting and drying adhesive was used to bond 20x20 mm mosaic tiles on the surfaces of the swimming pool and on the walls of various areas of the spa. ELASTORAPID was chosen for its capacity to guarantee a high bonding strength just 2-3 hours after application, thereby enabling floor and wall coverings to be put into service extremely quickly. The 1200x1200 mm ceramic tiles in the entrance to the spa, on the other hand, were installed with ULTRALITE S2 (available on the international market as ULTRALITE S2 FLEX), a one-component, lightweight cementitious adhesive which, thanks to its very high yield and high level of adhesion to all substrates normally used in the building industry, is particularly suitable for installing large format tiles. The low viscosity of the ULTRALITE S2 FLEX mix also means it can be applied quickly and easily, making it particularly recommended where rapid set to foot times are required. And again, to shorten the overall installation time, the joints in all the floor and wall coverings in the centre were grouted with ULTRACOLOR PLUS polymer-modified mortar, ideal for joints up to 20 mm wide. This product's water repellence and high resistance to mould (thanks

to BioBlock® technology) make it particularly suitable for use in areas in frequent contact with water, such as in the wellness area. And at the same time, because it is quick setting and drying, this product enabled a reduction in the waiting times before cleaning and finishing operations, while reducing the set to foot traffic time and the time before putting the wall and floor coverings into service. The joints in the surfaces of the swimming pool and the walls of the spa covered with mosaics, on the other hand, were grouted with KERAPOXY EASY DESIGN, a two-component, highly versatile, bacteriostatic and anti-acid epoxy mortar. Because of its decorative effect, this product is particularly suitable for joints from 1 to 15 mm wide in surroundings, such as the spa in the Riverton Hotel, with a particular aesthetic impact.

**The rapid product ULTRACOLOR PLUS**  
High-performance, anti-efflorescence, quick-setting and drying polymer-modified mortar free from Portland cement with water-repellent DropEffect® and mould-resistant BioBlock® technology for grouting joints up to 20 mm wide, with very low emission of volatile organic compounds and fully offset Greenhouse Gas Emissions



Find out more

**PROJECT INFORMATION**  
**Riverton Hotel**, Göteborg (Sweden)  
**Design:** Montecinos Franjola Design  
**Period of construction:** 2019-2021  
**Owner:** Magnus & Lotta Hedlund  
**Main contractor:** Vestia  
**Installation companies:** Kungälv Natursten AB and Ludwigs Bygg Pool and Wellness AB  
**Period of the Mapei intervention:** 2019-2021  
**Intervention by Mapei:** waterproofing substrates, installing ceramic tiles and mosaics  
**Project manager:** Tomas Axelsson

**Mapei distributors:** Kakelpalatzet Göteborg and Brukspecialisten Göteborg  
**Mapei coordinator:** Jan-Erik Johansson, Mapei AB (Sweden)  
**Photos:** MA Media Nol Sweden

**MAPEI PRODUCTS**  
Waterproofing substrates: Mapelastic  
Installing ceramic tiles and mosaics: Elastorapid, Ultralite S2 (now available as Ultralite S2 Flex)  
Grouting joints: Ultracolor Plus, Kerapoxy Easy Design  
[mapei.com](http://mapei.com) and [mapei.se](http://mapei.se)



Polignano a Mare (Province of Bari, Italy)

## Grotta Palazzese Beach Hotel

AN ELEGANT RESORT OVERLOOKING THE SEA REFURBISHED  
WITH CERAMIC TILES AND MARBLE MOSAICS

The Grotta Palazzese Beach Hotel is a luxurious resort that stands atop cliffs and offers direct sea access, just a few kilometres from Polignano a Mare, a renowned seaside town in the Apulia region of Southern Italy. The hotel offers suites and guesthouses with every creature comfort just a few metres from the sea.

Three years ago, the company that owns the structure decided to carry out a complete refurbishment and expansion of the various environments. New flooring was created in the guest rooms with large format ceramic tiles while Afion White marble slabs were installed in the shower cubicles and on the walls of the bathrooms for over a total of 1,200 m<sup>2</sup> of surfaces. The client and designers asked the main contractor to use high performance, long-lasting and, above all, rapid products for the work.

#### Quick and effective: installation of ceramic tiles in the guest rooms

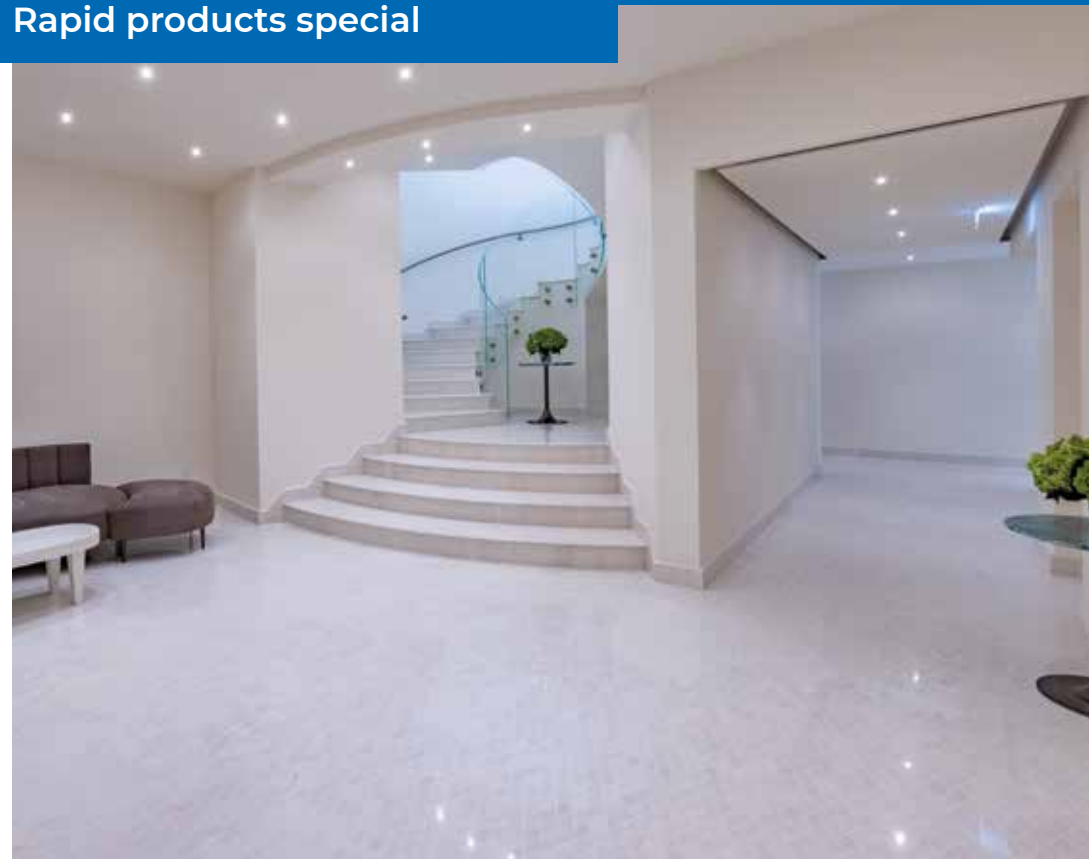
In the guest rooms, the first step in the renovation intervention was to create new screeds using TOPCEM PRONTO, a ready-to-use, normal setting, mortar that dries more quickly than normal sand-cement screeds. The product was mixed with MAPE-FIBRE ST30 structural polymer fibres, which may be used to increase the tensile strength of the screed mixes. For these areas the designers specified the use of ceramic tiles which were not only large format (300 x 100 x 0.6 cm), but also particularly thin. This is why it was recommended to apply MAPEGUARD UM 35 waterproofing, uncoupling and anti-fracture membrane that enabled ceramic and stone floor tiles to be in-

stalled, both internally and externally, without having to copy the layout of existing distribution joints, or to be installed on substrates with cracks or on substrates that are not fully cured. The membrane was installed with KERAQUICK MAXI S1 rapid-setting and hydrating adhesive. This is a white or grey powder composed of a blend of special cements, selectively-graded aggregates, synthetic resins and setting accelerators that develop high bonding strength only 2-3 hours after installing. The membrane was applied over the adhesive while still fresh, with the blue side facing upwards in order for the white felt backing to be completely impregnated with adhesive.

Ceramic tiles were installed after 24 hours using ULTRALITE S1, a one-component, deformable, lightweight, cementitious adhesive with extended open time and no vertical slip. This product, which is now available as ULTRALITE S1 FLEX ZERO, is ideal for installing large-size ceramic tiles and stone. Mapei Technical Services recommended installing the ceramic tiles using the double-buttering technique, that is, applying adhesive on both the substrate and on the back of the tiles to make sure they were fully wetted with adhesive. The joints, which were at least 2-3 mm wide were then grouted with ULTRACOLOR PLUS anti-efflorescence, quick-setting and drying polymer-modified grout. The expansion joints were sealed with MAPESIL AC pure acetic silicone sealant for movements of up to 25%, available in all the colours of the Mapei grouts range.

To waterproof the walls in the shower





cubicles it was recommended to use MAPELASTIC AQUADEFENSE ready to use, rapid-drying elastic membrane before installing the tiles.

#### Stone required particular attention during installation

For the reception, the corridors leading to the rooms, the communal

areas and the shower trays in the bathrooms, the designers chose to cover the surfaces with Bianco Sivec marble (a type of stone with an even, naturally transparent, white hue); for the wall coverings in the shower cubicles, on the other hand, the preference was to cover the surfaces with Afyon White marble. In the restaur-

ant Giallo Siena marble was used for the floors. White ELASTORAPID was recommended for installing all these types of marble, which are particularly elegant and sensitive to water. This product, classified C2FTE S2 according to EN 12004 standard, is a two-component, highly-deform-

able, quick-setting and drying cementitious adhesive with extended open time and no vertical slip, especially suitable for ceramic tiles and stone slightly sensitive to humidity. To install natural stone in the exterior areas, such as on the terraces of the suites and on the verandas in front of the restaurants, the designers preferred using KERAFLEX MAXI S1 adhesive. Joints were grouted with ULTRACOLOR PLUS while expansion joints were sealed with MAPESIL LM, a mould-resistant silicone sealant specifically formulated for sealing all sensitive materials such as marble, granite, sandstone and quartz to avoid any stain on the surfaces.

#### TOP OF THE PAGE, LEFT.

Before installing ceramic tiles with ULTRALITE S1, MAPEGUARD UM 35 waterproofing, uncoupling and anti-fracture membrane was installed on the substrates.

#### IN THE FACING PAGE.

Marble mosaic tiles were bonded with ELASTORAPID cementitious adhesive.

#### ABOVE.

Ceramic tiles were installed on the floors of the bedrooms with ULTRALITE S1. Joints were grouted with ULTRACOLOR PLUS quick-setting and drying mortar.

#### The rapid product ELASTORAPID

Two-component, high performance, highly deformable, quick-setting and drying cementitious adhesive with no vertical slip and extended open time for ceramic tiles and stone material.



Find out more

### VITO LO FRANCO

## Everything ready for the tourist season



#### The renovation of the Grotta Palazzese Beach Hotel was an important project. What were the most critical issues?

There were two main critical issues with this project: demolishing the floor slabs in a controlled manner,

with the reconstruction of the structures containing steel columns, and having to work to such a tight schedule. The client, in fact, required the work, which started in October 2020, to be finished by June of the following year in order for the hotel to be ready for the tourist season. So, we had to work at a really fast pace, with many people operating at the same time on site and working shifts, including bank holidays. We managed to finish in time and everybody was satisfied with the result.

#### How much did the technical support and the use of tried and tested products, such as the ones proposed by Mapei, really count?

The Mapei products were

fundamental. We used various rapid products such as TOPCEM PRONTO, which enabled us to avoid having to wait for the screeds to dry, and ELASTORAPID, an adhesive suitable for the types of high quality marble we had to install. Sivec and Avion White marble, in fact, tend to absorb water and, because of their transparent colour, they can easily stain. Using ELASTORAPID meant we could install them safely and without risk. In general, we often use Mapei products and we also really appreciate the technical support we receive on site, which enables us to be guided during every phase of the work by highly trained and helpful professionals.

CEO, Lo Franco Group

**PROJECT INFORMATION**  
**Grotta Palazzese Beach Hotel**, Polignano a Mare (Province of Bari, Italy)  
**Year of construction:** 1970  
**Period of the intervention:** 2020-2021

**Intervention by Mapei:** supplying products for building screeds, waterproofing substrates, and installing ceramic tiles and mosaics

**Owner:** Grotta Palazzese Srl  
**Design and works direction:** Nicola Giuliani and Nicola Stefanelli  
**Main contractor:** Lo Franco Group di Vito Lo Franco  
**Installation companies:** Lo Franco Group, Loconsole G. Pavimentazioni e Rivestimenti

**Mapei distributor:** Lentini Paolo Srl  
**Photos:** Michele Roppo  
**Mapei coordinators:** Alessandro Coscia, Vito De Benedettis and Achille Carcagni, Mapei SpA (Italy)

#### MAPEI PRODUCTS

**Building screeds:** Topcem Pronto, Mapefibre ST30  
**Waterproofing substrates:** Mapelastic AquaDefense,

Mapeguard UM35  
**Installing ceramic tiles and mosaics:** Keraquick Maxi S1, Ultralite S1 (now available as Ultralite S1 Flex Zero), Elastorapid  
**Grouting joints:** Ultracolor Plus  
**Sealing expansion joints:** Mapesil AC, Mapesil LM

For further information on products: [mapei.com](https://www.mapei.com)



# Ultra-fast installation of ceramic tiles

A SELECTION OF PROJECTS IN COMMERCIAL SPACES AND PRIVATE RESIDENCES



## Twin Vew Condo, Singapore

This luxurious condominium project situated by the waterfront consists of two high-rise buildings, each 36 storeys tall, and 520 housing units of varying size. It offers beautiful views of nearby Padan River and Singapore's southern coastline and provides residents with numerous green spaces and communal areas, two swimming pools and a tennis court. A rapid system by Mapei was used to install the ceramic floors in the

kitchens and halls, as well as ceramic tiles on walls and floors in the toilets. The screeds were prepared using TOPCEM PRONTO, a ready-to-use, quick-drying mortar, while the tiles were bonded with KERAQUICK S1, a rapid-setting and hydrating cementitious adhesive distributed in the Singaporean market by Mapei Far East and available in the international market under the tradename KERAQUICK MAXI S1.



## Best Dream showroom, Veszprém - Hungary

The Best Dreams mattress factory in Veszprém, in central Hungary, was completed in 2021. Apart from the waterproofing for the roofs and the thermal insulation for the façades, Mapei solutions were also employed to install ceramic tiles on the façades and on the floors of the showroom inside the factory. Systems that guaranteed work would be carried out quickly were chosen in both cases. For the façades, the stone slabs were bonded with ELASTORAPID quick-setting and drying adhesive, before grouting the joints with ULTRACOLOR PLUS anti-efflorescence mortar, which is also a quick-setting and drying product. In the showroom, the wood-effect ceramic floor tiles were bonded with KERAFLEX EXTRA S1 adhesive before grouting the joints with ULTRACOLOR PLUS and sealing the expansion joints with MAPESIL AC.

## Courtyard Hotel Waterfall City Midrand – South Africa

This new, 10-storey hotel, built between 2020 and 2021 inside the Nexus Waterfall City business park, has 164 rooms, 8 suites, various conference halls, a restaurant and a roof-top bar with a splendid view of the Magaliesberg mountains. Construction of the hotel was completed in a short space of time, thanks also to the use of rapid products supplied by Mapei South Africa, the Group's local subsidiary. The marble slabs on the façade were installed with KERAFLEX S1 EXPRESS rapid-setting adhesive, which is distributed on the South African market by Mapei South Africa. All joints in the ceramic tiles, both inside and outside the hotel, were grouted with ULTRACOLOR PLUS quick-setting and drying, anti-efflorescence mortar.







Paola Di Silvestro

# Resilient materials: maximum functionality

A RACE AGAINST TIME BUT ALSO DURABILITY AND COMFORT FOR SURFACES IN ENVIRONMENTS SUCH AS HOSPITALS AND HOTELS

**Resilient floor and wall coverings are often chosen for hospitals and healthcare structures. Which innovations are the most significant for their use in such settings?**

Hospitals seem to be non-stop building sites and in constant evolution: any renovation work needs to be carried out in as short a space of time as possible. Thanks to the wide variety of resilient materials currently available on the market, the most appropriate type can be chosen according to the various surroundings. For example, in corridors subjected to intense levels of traffic, or in areas where heavy instruments are standing, it is possible to opt for extra-resistant materials with the capacity to withstand much heavier levels of wear than normal. Their resistance, however, must not be to the detriment of comfort. And the fact that they are non-slip means they are also safer for hospital staff and patients.

Mapei has extensive experience in this sector and has developed a complete "Fast Track Ready" system for installing resilient floor which is being constantly updated with innovative products. The system is made up of MAPECEM PRONTO pre-blended mortar for screed, EPORIP SCR resin, ECO PRIM T PLUS primer, PLANIPATCH XTRA patching compound, ULTRAPLAN FAST TRACK levelling compound, ULTRABOND ECO FAST TRACK

adhesive and MAPECONTACT PLUS adhesive tape, respectively) which enable floors to be completely restored in just 48 hours and localised repairs to be carried out in just 2-7 hours.

Amongst the various products of particular interest for hospitals, we must also mention MAPECOAT WET&DRY R11 protective, non-slip transparent finish. Apart from being easy to apply and its non-slip properties (it is certified class R11 according to DIN 51130 and AS 4586 and class A+B according to DIN 51097 and AS 4586), this finish is characterised by high resistance to aggressive chemicals, as well as to cleaning products

**“Mapei has developed a system that enables floors in hospitals to be renovated in just 48 hours**

and disinfectants. Its formulation was recently improved by adding special, wide-spectrum biological protective agents with the capacity to contrast the deposit and proliferation of bacteria on surfaces, as well as to obtain long-lasting protection resistant to cleaning operations and mould. This finish is also available in a coloured version, PU GYM REFRESH, which is used to freshen up and even out the surface of floors in the event of localised repairs, such

as when patching up PVC or other resilient materials, even of a different colour.

**Hotels are often the subject of extension work and renovation projects. What is the Mapei approach to carry out renovation work quickly and, where possible, without demolition work?**

Hotels are often the subject of changes to the layout of rooms and any building work needs to be carried out as quickly as possible to prevent limiting services available to guests. Resilient and textile floor and wall coverings, particularly LVT (Luxury Vinyl Tiles) and decorative fiberglass or wallpaper, are the most adaptable materials to this use and need specific installation systems to be put into service very quickly. This is also why LVT is becoming more widely used in guest rooms. These new flooring materials replicate the look of wood, stone and ceramic tiles and have the advantage of being relatively thin, which means they can be used to overlay existing flooring. In addition, damaged areas may be replaced quickly and cheaply by using rapid installation systems. Mapei solutions for installing LVT and textile materials stand out for the completeness and high performance which enable corridors and rooms to be accessible within a very short space of time. Besides, if noisy, dusty demolition work is required, Mapei has a portfolio of "Fast Track

Ready" installation systems consisting of pre-blended screed mortars, primers, smoothing and levelling compounds, adhesives and complementary items so that floors can be installed and used very quickly.

**In what types of environments are you able to intervene with Mapei products without causing disruption?**

It is possible to intervene in any environment in a hotel and install materials with a low thickness, such as LVT or fiberglass and wallpaper, on existing floor and wall coverings that have become old and obsolete. Thanks to the new installation systems it is possible to operate in both dry and damp environments. To renovate bathrooms Mapei has developed SHOWER SYSTEM 4 LVT, a complete waterproofing and installation system for LVT and SPC in damp environments and showers, including the overlaying of existing ceramic tiles and stone. The key product of this system is ULTRABOND ECO MS 4LVT WALL silylated polymer-based adhesive, which is resistant to water and suitable for non-absorbent substrates. This adhesive stops LVT and SPC (Stone Polymer Composite) from slipping when installed on walls. Besides, Mapei proposes the DECOR line as an answer to the latest trend of using decorative fiberglass and wallpaper in damp environments and showers: complete solutions with no need to demolish or remove substrates and old covering materials. If you wish to "refresh" the look of ceramic tile coverings in a bathroom without having to remove them, you can apply a light coat of PLANIPREP 4LVT, a ready-to-use acrylic resin-based smoothing and levelling compound over the tiles and, after just two hours, bond decorative fiberglass or wallpaper with ULTRABOND ECO DECOR WET, a one-component, silylated polymer-based, reactive adhesive resistant to the type of moisture typically found in showers. Then, after a further two hours, you can

apply MAPECOAT DECOR PROTECTION, an aliphatic polyurethane finish which prevents surfaces from yellowing and protects against UV rays. After 24 hours the shower is then ready to be used again.

**In hotels wellbeing and comfort are fundamental. How do Mapei systems meet these requirements?**

Manufacturers of resilient and textile flooring have launched new types of products on the international market, highlighting the aspects that contribute to wellbeing and sustainability. Resilient flooring, for example, have emissions of 10 µg/m³ to 100 µg/m³, 10 to 100 times lower than the requirements of the German and French standards and 15 to 150 times lower than the requirements of CAM, the Minimum Environmental Criteria which are mandatory for tenders of public buildings in Italy. What is more, not only are they 100% "recyclable", in many cases they may also be "re-used" at the end of their service life as active compounds in the production of new resilient flooring. For its part, Mapei develops products and solutions that have a low impact on the environment and measures the effect they have during their entire life cycle by applying LCA (Life Cycle Assessment) methods and documenting the results with EPDs (Environmental Product Declarations). Mapei products can play a key role in the development of eco-sustainable building projects in compliance with the most widely adopted sustainable building protocols all around the world, such as LEED and BREEAM. The majority of Mapei adhesives have very low emission of volatile organic compounds (VOC) and are certified Emicode EC1<sup>PLUS</sup> by GEV, Blauer Engel by the German Federal Ministry for the Environment and M1, a Finnish certification awarded by Building Information Foundation RTS.

**Paola Di Silvestro.** Corporate Product Manager – Resilient Line, Mapei Group

## Rapid products for bonding textile and resilient materials

**Mortars for screeds**  
MAPECEM PRONTO

**Resins for sealing cracks**  
EPORIP SCR

**Primers**  
ECO PRIM T PLUS

**Repair and patching mortars**  
PLANIPATCH XTRA

**Self-levelling compounds**  
ULTRAPLAN FAST TRACK  
ULTRAPLAN XTRA  
PLANIPREP 4LVT  
PLANIPREP FAST TRACK

**Adhesives**  
ULTRABOND ECO FAST TRACK  
ULTRABOND ECO MS 4LVT WALL  
ULTRABOND ECO DECOR WET  
ULTRABOND ECO TACK TX+  
ULTRABOND ECO V4 EVOLUTION  
ULTRABOND ECO 388  
ULTRABOND ECO TX3  
ULTRABOND ECO 530

**Adhesive tapes**  
MAPECONTACT PLUS

**Protective coatings**  
MAPECOAT WET&DRY R11  
PU GYM REFRESH  
MAPECOAT DECOR PROTECTION





## Frankfurt (Germany)

## German Football Federation (DFB) Campus

SUSTAINABLE SOLUTIONS FOR RUBBER, LINOLEUM AND TEXTILE FLOORING IN THE NEW COMPLEX HOUSING OFFICES, TRAINING AREAS, ROOMS FOR PLAYERS

The German Football Federation (or DFB - Deutscher Fußball-Bund) has a new headquarters. Extending over 15 hectares of land, the site of a former racecourse, there is now a new, ultra-modern complex hosting both the Federation's administration offices and areas dedicated to the football academy's educational activities, as well as conference rooms, areas for press conferences, changing rooms, rooms for the players, internal courtyards, a canteen and an indoor football pitch. All the facilities are located within several buildings connected together by the white structure for the roof and by the "Sport Boulevard", a parallelepiped-shaped structure running north to south along the whole length of the complex, joining the various sections. With its airy spaces, numerous corridors and internal glass partitions, this section of the campus has been designed to encourage communication and discussions between all those who work and train here.

The backdrop of the complex is formed by five outdoor football pitches (three in natural grass, one in synthetic grass and one with a mixed playing surface) which are visible from many of the internal areas. Driving the architectural project, by the Kadawittfeldarchitektur design studio of Aachen (Germany), was the client's desire to bring everything "under one roof" and incentivise values such as transparency, trust, synergy, and open mindedness.



Resilient and textile floors were bonded in several areas of the campus with Ultrabond Eco 530, Ultrabond Eco V4SP and Ultrabond Eco Tack TX+.



#### Linoleum, rubber and textile floors for comfortable and sustainable surroundings

The choice of which materials to use for the internal flooring was based on precise instructions from the client, and particularly that of creating comfortable surroundings to promote the wellbeing of all those studying and working at the campus, with particular attention to sustainability. Also, because the complex was completely finished in just three years, in spite of the Covid-19 pandemic, the flooring had to be installed extremely quickly.

As a result, the choice went to several types of resilient (rubber and linoleum) and textile flooring in relaxing, neutral shades which were installed using rapid and eco-sustainable solutions by Mapei which, apart from guaranteeing high performances and durability, also enabled installation work to be completed quickly.

The substrates for the floors were treated with ECO PRIM T PLUS universal primer with very low emission of volatile organic compounds (VOC) prior to the application of

ULTRAPLAN XTRA self-levelling compound. The latter product is characterised by its ultra-fast drying properties, which also played a part in speeding up preparation of the substrates. In fact, after applying ULTRAPLAN XTRA, resilient flooring may be installed after around only 12 hours and after around just 6 hours if applied in layers up to 5 mm thick. The next step was to install 1400 m<sup>2</sup> of linoleum flooring in the offices using ULTRABOND ECO 530 adhesive, while the rubber flooring, characterised by a high level of resistance and durability, was bonded in the training areas with ULTRABOND ECO V4 SP adhesive, specific for PVC and rubber.

Both products are water-dispersed adhesives and are ideal for bonding flooring in areas subjected to both static and dynamic loads, including intense loads such as from traffic and chair castors according to EN 12529 regulations. What is more, apart from ensuring excellent peel strength and good dimensional stability, opting for these products was in line with the client's specifications regarding eco-sustainability: these

adhesives are, in fact, certified EMI-CODE EC1<sup>Plus</sup> by the GEV institute for their very low VOC emissions and also carry the Blauer Engel mark, awarded by Germany's Federal Ministry for the Environment to products with a low impact on the environment.

ULTRABOND ECO TACK TX+, on the other hand, was chosen for 9000 m<sup>2</sup> of textile flooring in some offices and sport areas, an acrylic-based tackifier specifically designed to allow carpet tiles to be removed and replaced as and when required. Apart from creating a permanently tacky film, this product is also rapid-drying, again helping to speed up installation work as required by the client.

So again, Mapei systems were also able to give a decisive drive to the execution of works leading to the creation of this new "temple" of German football.



Find out more  
**ULTRABOND ECO TACK TX+**

#### PROJECT INFORMATION

**DFB campus**, Frankfurt (Germany)

**Owner:** DFB, German Football Federation

**Period of construction:** 2020-2022

**Design:** Kadawittfeldarchitektur

**Main contractor:** Groß & Partner

Grundstücksentwicklungsgesellschaft mbH

**Works direction:** GP Con GmbH

**Installation company:** Straehuber AG

**Period of the Mapei intervention:** April - June 2020

**Intervention by Mapei:** supplying products to prepare

substrates and install resilient and textile floors

**Mapei coordinator:** Olaf Enke, Mapei GmbH (Germany)

#### MAPEI PRODUCTS

Preparing substrates: Eco Prim T Plus, Ultraplan Xtra

Installing linoleum floors: Ultrabond Eco 530

Installing rubber floors: Ultrabond Eco V4SP

Installing textile floors: Ultrabond Eco Tack TX+

For further information on Mapei products visit [mapei.com](http://mapei.com) and [mapei.de](http://mapei.de)



# Speed, resistance and safety for resilient floors

WITH MAPEI SYSTEMS INSTALLATION OPERATIONS WERE COMPLETED MORE QUICKLY IN VARIOUS TYPES OF BUILDINGS



## Helora Hospital, Jolimont, La Louvière (Belgium)

Founded in 1881, the Jolimont Hospital in La Louvière, Belgium is a medical centre of excellence. Starting from 1967, it underwent various extension works until its merger with the Ambroise Paré Teaching Hospital on 1<sup>st</sup> July, 2023.

Mapei rapid systems were used for renovation work on two of the operating theatres. Following removal of the damaged, existing skim coat, the surface was primed

with ECO PRIM T PLUS universal acrylic primer and then levelled off with ULTRAPLAN XTRA ultra-fast drying self-levelling compound, characterised by rapid-hardening properties. The last step was to install vinyl flooring with ULTRABOND ECO V4 EVOLUTION universal adhesive. Mapei products were also used for bonding 800 m<sup>2</sup> of vinyl floors in 4 new operating theatres.



## São Teotónio Hospital Viseu (Portugal)

Considered to be one of the best public healthcare centres in Portugal, the São Teotónio Hospital has been operational since the 18<sup>th</sup> century. In 2022 the intensive care unit was extended to accommodate more patients and to improve the working conditions of the medical staff and the conditions for patients while convalescing. The work included the installation of 5,000 m<sup>2</sup> of new vinyl flooring using a system which enabled the works to be completed quickly. The system consisted of repairing cracks in the substrates using EPORIP epoxy adhesive; levelling off the substrates with ULTRAPLAN ECO ultra quick-hardening smoothing compound; bonding the vinyl wall and floor covering with ULTRABOND ECO V4 EVOLUTION, an adhesive with fast and strong initial tack.

## American Community School Abu Dhabi (United Arab Emirates)

The American Community School has been operating in Abu Dhabi since 1972 and started off by welcoming children of American diplomats and businessmen from petroleum companies. Today it has 1200 pupils of 60 different nationalities between the ages of 14 and 18. In order to guarantee an education of the highest order the school decided to extend the campus to increase the number of classrooms, as well as the spaces dedicated to physical activities. 40,000 m<sup>2</sup> of rubber, vinyl and textile flooring was installed with a system that enabled works to be completed quickly: the screeds were consolidated with ECO PRIM PU 1K TURBO rapid-drying polyurethane primer and levelled off with ULTRAPLAN ECO ultra quick-hardening smoothing compound. The flooring was bonded with ULTRABOND ECO V4SP, an adhesive suitable for all types of resilient flooring.



## Sf Nectarie Department of Oncology, Craiova (Romania)

This private healthcare centre offers a range of integrated oncology services, including outpatient visits, diagnostics services, targeted therapies, day-hospital care and expert assistance from a team of competent and dedicated auxiliaries. During the course of the construction work, a complete and rapid system by Mapei was employed to install resilient flooring. Going into detail, the screeds were treated with ECO PRIM PU 1K TURBO rapid-drying polyurethane primer and then levelled off with ULTRAPLAN XTRA ultra-fast drying self-levelling compound, while PVC floor and wall coverings were bonded with ULTRABOND ECO V4 SP or MAPECRYL ECO multi-purpose adhesives with fast and tough initial bonding.



# Surgical unit: floors renovated over a single weekend



Enrico Barison

A RACE AGAINST TIME IN WHICH THE PEOPLE INVOLVED MAKE THE DIFFERENCE IN OVERCOMING EVERY TYPE OF EMERGENCY

Lots of national standards contain instructions covering the design, installation and maintenance of resilient floor coverings and are used for reference purposes when drafting project documents and tenders and to define installation and maintenance processes. They are process standards such as the Italian standard UNI 11515-1 (2020), entitled "Resilient and laminate floor coverings". For a better understanding of the true sense of a process standard it is important to consider what other participants or figures are involved. For example, let's consider renovation work on flooring in a hospital: in this case we have the head of the hospital's engineering department, a contractor, an installation team, a cleaning company and, in the case we are discussing, the medical staff from the surgical unit. The competence of the hospital's engineering department is required and there must be perfect harmony between the installation team and the doctors, who are "obliged to collaborate". We all know that a hospital never sleeps, that there are no set hours for people in need of care: this is one of the major complexities of hospitals and surgical units are the apotheosis of this complexity.

Renovating old flooring subjected to the daily activities of the medical staff is not a simple task. Renovating flooring in a surgical unit needs to be carried out at the weekend so that at least some of the operating theatres are always accessible. In fact, there is always the threat of an emergency that cannot be delayed or postponed: and this is precisely why you cannot adopt the usual approach when renovating a substrate; procedures and products need to be adapted to suit the circumstances.

## Doctors and installation team at work

It's 7 p.m. on a Friday when the installation team starts to remove the old flooring in the surgical unit: it's a delicate moment because only once this operation has been completed will it be possible to appreciate the condition of the substrate, and the condition is always "worse" than what installers are expecting.

The door leading to the operating theatre needs to be measured and then 50% of its width needs to be renovated to allow access to trolleys carrying patients requiring urgent care: renovating half a room at a time is not a

simple task. In this context people, products and processes work in unison and the harmony of these three words make the impossible, or even better the unforeseeable, possible. At the weekend there are a lot of people working in hospitals, but this time there is also the installation team and, like many healthcare workers, sleeping is a luxury they do not have: the medical staff has to take care of patients while the installation team has to complete work by Sunday evening, and the finished floor has to last decades. People, Patients, Processes, Products...these are the figures that enable these little masterpieces to be completed successfully, in which the ingenuity of the installers who mix products to repair cracks, hollows and, at times, even holes, brings out their harmonious dexterity borne out of experience, in turn reflected in the complexity of the situation. There's no time for uncertainty: time gives the countdown to the procedures and you always need to be on your guard for any emergencies, because time for those who find themselves on a trolley is an absolute priority. It's 9:30 on Saturday morning and the substrate/screed has been "rejuvenated": strengthened, restored, back to its high performing state. Forming the fillets proceeds without setbacks and enables the curved form of the resilient flooring to be recreated, making it easy to clean. Trowels move quickly as they spread the adhesive, guided by safe hands in precise motions. The adhesive also needs to be high performance, the stresses and loads the flooring will have to withstand are heavy and, above all, the daily routine.

The flooring bonds to the adhesive thanks to a systematic "massage" the installers perform over the entire surface, taking care to eliminate any small air pockets. These types of surroundings need monolithic flooring: which is why all the joints are milled and then heat-welded. I believe these lines reflect a situation in which it is the People that really make a difference. A heartfelt thank you to all those who keep hospitals alive...installers included. It is 9:30 on Sunday evening and all the rooms are ready to be used again.

**Enrico Barison.** Profipas CEO, Coordinator of Italian standard UNI 11515 parts 1 and 2 for Resilient and Laminate Flooring and member of the CT 033 (Technical Commission 033) working group.

## THE BEST SOLUTION FOR INSTALLING RESILIENT FLOOR AND WALL COVERINGS IN HEALTHCARE SETTINGS.



With its extensive range of products and systems for installing resilient floor and wall coverings in hospitals and healthcare centres, Mapei offers the most innovative solutions for their design and execution, with a particular focus on **sustainability** and **properties**, as well as **ease** and **speed of installation**.

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Elisa Portigliatti

# Time and timing in sport are fundamental

FROM CYCLE TRACKS TO ASPHALT SURFACES FOR RACING CIRCUITS:  
A LINE OF SPECIFIC PRODUCTS FOR SPORTS FACILITIES AND PLAY AREAS

In most modern sports the hands of a stopwatch establish who the winner is. This can be said for a 100-metre sprint in athletics, a 400-metre freestyle swimming race or for motorsport competitions such as the F1 and MotoGP world championships: often it's not a question of seconds, but of tenths, hundredths or even thousandths of a second that declare a victory or establish the winning margin.

But it is not in all sports – it must be noted – that the stopwatch decides the winning position. We just need to think about sports such as artistic and rhythmic gymnastics, diving competitions or boxing matches: in these sports a points system carries out this task, along with the athlete's timing.

*Time* and *timing* may very well have the same root, but they have very different meanings; they are two sides of the same coin.

On one side there is time: whoever completes a movement or a race in the lowest time possible conquers the top step of the podium. And on the other side there is timing: the ability of a boxer to choose the right moment to land an uppercut, or of a diver to leap into the air and twist and turn, in both cases claiming victory.

This concept of time and timing may also be extended to the construction of sports facilities. Today (*timing*), the Mapei sports line has a range of rapid (*time*) and economically sustainable solutions available for designers and clients for urban design and for refurbishing indoor sports surfaces and motor racing circuits. And in motor racing – especially with street circuits – it is clear that road markings and indications for runoff areas can only be painted just a few days before a race. This means that time and timing are part and parcel of all rapid products, along with performance and aesthetic properties of the highest order.

Elisa Portigliatti. Corporate Key Account Manager, Sport Flooring Line

The play area in the Don Nicola Mazza centre in Verona (Italy) was refurbished with products from the MAPECOAT TNS line.



## Rapid film-forming product for sustainable urban design

MAPECOAT TNS FAST is a one-component, waterborne acrylic coating specifically developed to create coloured coatings on surfaces with high volumes of footfall, such as tactical urbanism projects in cities, cycle tracks, sports facilities, playgrounds, etc. The characteristic that sets this product apart from traditional acrylic resin coatings is its rapid film-forming property, that is, the capacity to create an initial protective surface film really quickly once it has been applied on a substrate in asphalt or concrete. Depending on the surrounding temperature and level of humidity, coatings created using MAPECOAT TNS FAST are dust-dry in just 15 minutes, which means it can even be applied outside when the temperature is particularly low (+5°C).



## Rapid drying products for high traffic areas...and that's not all!

MAPECOAT TNS EXTREME and MAPECOAT TNS EXTREME SF are waterborne, epoxy-acrylic resin products used to create coloured coatings in areas with a high level of footfall, including those open to vehicles. One of the special characteristics of these products is their rapid-drying property, that is, the capacity to dry and harden in a short space of time, including when applied at particularly low temperatures. In fact, the chemical reaction-based technology of MAPECOAT TNS EXTREME and MAPECOAT TNS EXTREME SF enables them to be applied at temperatures down to 5°C and then dry out completely, even when the temperature is really low. This means users are able to work for longer periods, and in many cases avoid having to put site work on hold. The rapid and high performance technology found in the MAPECOAT TNS EXTREME product family, therefore, can be used not only in areas open to vehicles, but also to create playgrounds during cold weather.



## The topcoating for renovating and colouring indoor flooring

PU GYM REFRESH is a two-component, coloured polyurethane topcoating used for refurbishing indoor resilient sports flooring quickly and cost effectively. Gyms with rubber, PVC or linoleum flooring that has been worn due to intense use over time, and which have lost their functionality and non-slip properties, can be quickly refurbished by applying a coat of PU GYM REFRESH coloured finish. After cleaning the surface with ULTRACARE HD CLEANER detergent, the next step is to apply this new topcoating directly over the old flooring, thereby avoiding having to remove it beforehand. PU GYM REFRESH is available in an unlimited array of colours and gives surfaces treated with this product good slip resistance and protection against bacteria.



## The champion's choice in coloured resins

MAPECOAT TNS RACE TRACK is a waterborne, solvent-free, rapid film-forming, coloured acrylic resin with selected fillers, specifically developed for marking asphalt roadways of road racing circuits, protecting and marking access/exit routes in sports facilities, colouring and protecting concrete architectural elements on car and motorcycle racetracks, and marking out cycle lanes/tracks and pedestrian areas and areas accessible to light vehicle traffic. MAPECOAT TNS RACE TRACK has its own characteristics such as rapid film-forming, resistance to slip, including in wet conditions, and resistance to agents potentially harmful for the flooring (such as oil, fuel, etc.), making it the ideal solution for road markings at motorsports circuits. The product underwent the approval protocols of the motorsports governing bodies FIA (Fédération Internationale de l'Automobilisme) and FIM (Fédération Internationale de Motocyclisme) and passed the tests successfully, thereby obtaining approval for use on prestigious race circuits, such as those used for the F1 and MotoGP championships.







## Sepang (Malaysia)

# Petronas Sepang International Race Circuit

RAPID FILM-FORMING ACRYLIC RESIN FOR THE COATING USED FOR THE CIRCUIT THAT HOSTED THE MALAYSIAN MOTOGP

Completed in February 1998 and inaugurated in March 1999 by the Malaysian Prime Minister at the time, Mahathir Mohamad, the Sepang International Circuit (now known as "Petronas Sepang International Circuit") is a symbol of excellence on the Malaysian sports panorama and regularly hosts top level car, motorcycle and cycling events, such as the Formula 1 Grand Prix (F1), MotoGP, Super GT, World Touring Car Cup (WTCR), and Asia Road Racing Championship (ARRC).

The circuit, designed by the world-famous architect Hermann Tilke, has all the right ingredients to guarantee excitement and suspense for both the racers and the more than 170,000 spectators it can hold: with 5,543 m, 15 corners and 8 straights and 2 high-speed stretches, vehicles reach a speed of more than 300km/h during races.

### A fantastic return

For Mapei the Sepang circuit is an "old acquaintance". Between July 2013 and August 2014 Mapei Malaysia, the Malaysian subsidiary of the Group, took part in renovation work on one of the most important buildings at the circuit, which is located alongside the racetrack and hosts 33

boxes, the areas where vehicles are checked and parked during races, and the stands. Thanks to the specific waterproofing system proposed by the company (consisting of MAPELASTIC, MAPENET 150, and MAPEBAND) Mapei played a key role in overcoming the problem of water infiltrating through the roof.

Last autumn Mapei technology again played a key role at Sepang, taking part in the preparation of the circuit for the 2023 edition of the Petronas MotoGP Grand Prix of Malaysia. MAPECOAT TNS RACE TRACK coloured coating was chosen to protect the kerbs and runoff areas around the circuit. This is an acrylic waterborne, rapid film-forming, coloured coating specifically developed for marking asphalt roadways of road racing circuits. This product ensures the areas treated remain durable and resistant to slip and maintain their surface roughness over time, including in wet conditions. In fact, the mechanical properties of the film, combined with its high resistance to potentially harmful and aggressive chemical agents (oil and fuel), make MAPECOAT TNS RACE TRACK an ideal solution for protecting surfaces which are regularly cleaned to ensure the riders' safety.

## ADRIAN TEW ZENG GUANG

### Plenty of advantages and support to applicators



#### Which kind of installation works do you usually carry out? Which environments are usually involved?

We mainly work on waterproofing and flooring applications over residential and industrial buildings.

#### Which were the main challenges involved in the works at the Sepang International Circuit?

The main challenges were the limited time frame, as the project needed to be completed before the

MotoGP event that only left us with a time frame of 10 days, and the exposure of the surfaces to weather agents that were beyond our control.

#### In your opinion, what are the advantages of using MAPECOAT TNS acrylic coloured coating proposed by Mapei?

The main advantages were its easy application (even inexperienced workers for this product were able to apply it easily) and its fast-curing properties, which helped in this

project especially due to the short time frame left for application operations. Malaysia hot weather had increased the curing time as well, which made this property much needed at that point of time. Besides the product is approved by FIA, the International Automobile Federation, that helped in the specification of the project: Last but not least, MAPECOAT TNS RACE TRACK was able to ensure high durability.

#### What are the strengths of the collaboration with Mapei?

Technical support from Mapei was very good: Mapei experts helped and assisted us to do a good job. They also helped us in getting the surface preparation done correctly especially as for repair and patching and this saved our time in managing the project. A team of technical people came from Mapei SpA (Italy) to ensure we did the right application: that showed much commitment from Mapei

Group's mother company, which we appreciated very much. The wide range of products provided by Mapei also helped to accommodate any gap that arose and solve the repair issues. Besides, we highly appreciated that the price position of Mapei quality products is at a reasonable range.

LLT Specialists Sdn Bhd



Maximum safety... at maximum speed

The owner also chose this product because its formulation meets all the certification and safety standards required by FIA (Federation Internationale de l'Automobile) and FIM (Fédération Internationale de Motocyclisme) for products used to mark out the road surface of motor racing circuits.

Another criteria was just as decisive: rapidity, which guaranteed short application times for the coating and, as a result, shorter preparation times for the circuit. In fact, MAPECOAT TNS RACE TRACK technology is based on special components that help the product form a film very quickly so that surfaces may be opened to foot traffic much sooner than with traditional acrylic systems.

And lastly, colour: obtaining the right colour for this application was made possible thanks also to the extensive range of colours available and the ColorMap® automatic colouring system which allows any colour to be created.



ABOVE. MAPECOAT TNS RACE TRACK was applied on the kerbs and run-off areas of the circuit.



Find out more  
MAPECOAT TNS RACE TRACK

**PROJECT INFORMATION**  
**Petronas Sepang International Circuit,** Sepang (Malaysia)  
**Design:** Hermann Tilke  
**Period of construction:** 1998  
**Period of the Mapei intervention:** 2023

**Intervention by Mapei:** applying a protective colored coating on kerbs and runoff areas  
**Owner:** Sepang International Circuit Sdn Bhd  
**Coating contractor:** LLT Specialists

**Mapei coordinators:** Claire Wong Pek Yan, Lim Kean Meng and Lim Coco (Mapei Malaysia), Elisa Portigliatti and Marco Cattuzzo (Mapei SpA, Italy)  
**Photos:** Nicholas Yong & Farah Wahida

**MAPEI PRODUCTS**  
Protective coatings for kerbs and runoff areas: Mapecoat TNS Race Track  
  
For further information on Mapei products visit [mapei.com](http://mapei.com) and [mapei.com.my](http://mapei.com.my)

THAM HYOK HWEI

High level of effectiveness, durability and sustainability



What makes the Sepang circuit different from the other circuits?

The track layout includes high-speed sections, such as the long back straight, as well as technical sections with a variety of corners. This mix tests both the straight-line speed and the handling capabilities of the vehicles. Besides, it has a variety of corners with different radii and banking levels, which challenges drivers and teams to find an optimal setup. Finally, it is known for its wide runoff areas, providing a safety feature for drivers. The ample space allows for recovery in case of a mistake and reduces the likelihood of serious accidents.

How often do you carry out renovation works?

It depends on the state of the area. In most situations our aim is to carry out preventive maintenance.

What are your main requirements regarding products for renovation?

We especially request high levels of effectiveness and sustainability, which means long durability.

What did you appreciate most of the support provided by Mapei during the renovation of kerbs and runoff areas last autumn?

We especially appreciated the presence of the Mapei staff on site that shows the attention and focus being given to the project. That gave us the comfort that the project was monitored closely by Mapei experts.

Head of Track Management at Sepang

Wear-resistant sport surfaces

RAPID FILM-FORMING OR RAPID DRYING: A SERIES OF PROJECTS USING PRODUCTS FROM THE MAPEI LINE FOR SPORT SURFACES



FIBA Headquarters Basketball Court, Mies (Switzerland)

Apart from administration offices and a conference hall, the new headquarters of the International Basketball Association (FIBA) in Mies in the canton of Vaud also has an outdoor basketball court of around 190 m². The surfaces of the court were decorated with a painting by the Swiss artist Serge Nidegger in the colours gold and white and the painting also includes a number of symbols, such as a trophy and a basket, and phrases encouraging fair play and teamwork.

This was all made possible thanks to MAPECOAT TNS FAST, a coloured, waterborne acrylic resin-based coating product, ideal for protecting surfaces exposed to a high level of footfall. Apart from guaranteeing a high level of durability, resistance to slip and protection against potentially harmful substances, its rapid film-forming properties enabled overall work times to be reduced and allowed the court to be opened to foot traffic more quickly.





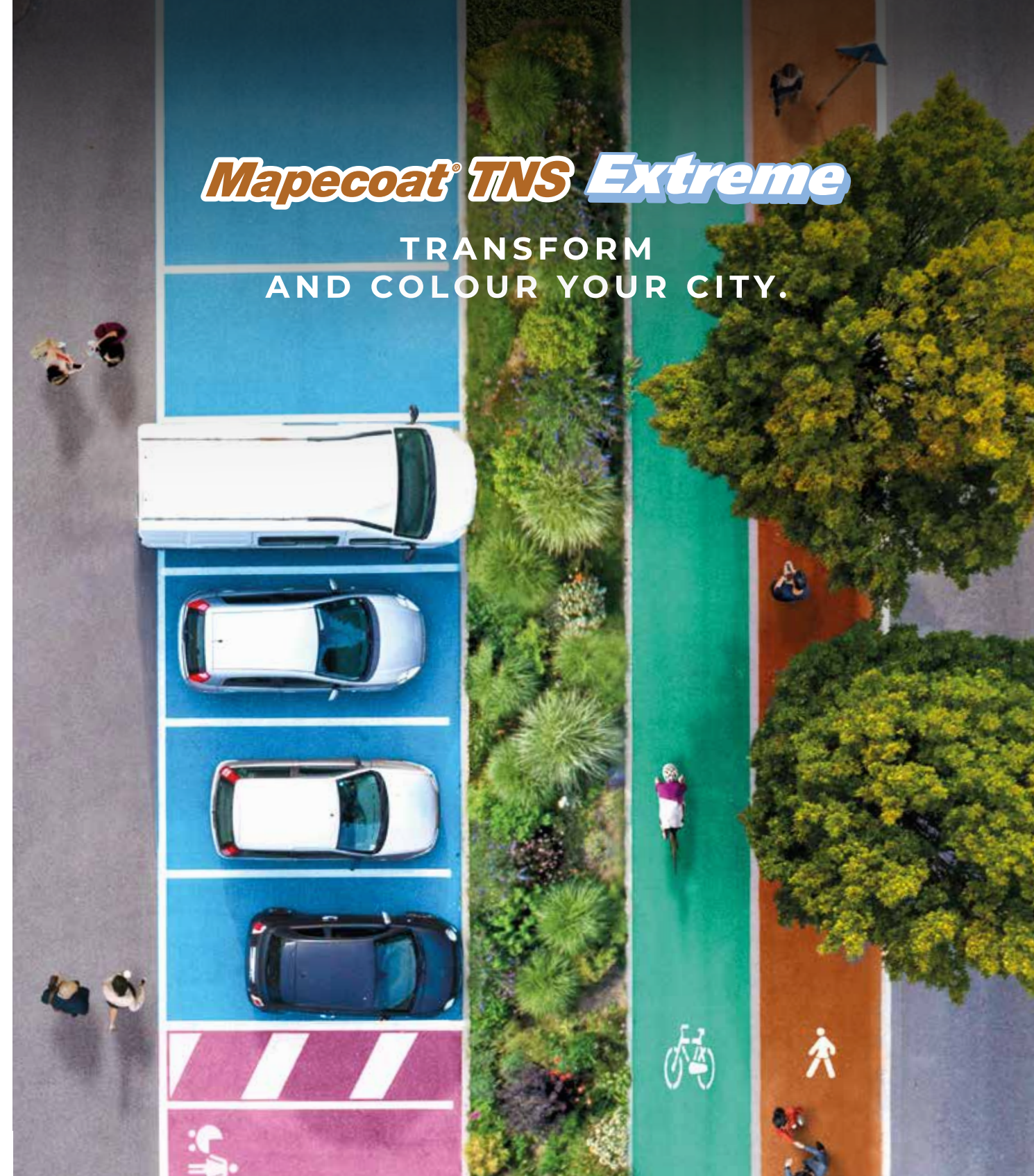


### Spectator stands at Olympic Port, Barcellona (Spain)

Built in 1991 as a marina for pleasure craft opposite the Olympic Village in Barcelona, the Olympic Port is now at the centre of a redevelopment project aimed at transforming the area into a reference point on the city's panorama, with new facilities and services for water sports, tourism and dining. The framework project included renovation work on the spectator stands at the Shelter Dam, which had been severely deteriorated by the action of atmospheric agents, water and sea spray and the carbonation of various portions of the concrete. After applying a complete system to repair the concrete (MAPEFER 1K, MAPEGROUT EASY FLOW and MAPEGROUT HI-FLOW), the surfaces were protected with two coats of MAPECOAT TNS EXTREME coloured epoxy-acrylic top coating which, thanks to its rapid drying properties, enabled execution times to be reduced. The product is CE marked according to EN 1504-2 standard as a protective product for concrete structures.

### Mapei Sport Research Centre gymnasium Olgiate Olona (Italy)

Since 1996 Mapei Sport has been carrying out scientific research into sports and supplying multi-sectorial support to professional and amateur athletes. Over the course of 2023 the floors in the gymnasium were renovated using PU GYM REFRESH, an innovative two-component, water-based, coloured aliphatic polyurethane topcoating which is used to protect and refurbish sports floors, making them more durable, non-slip and resistant to attack from bacteria. Work included cleaning the substrates with ULTRACARE HD CLEANER detergent, followed by the application of a first coat of PU GYM REFRESH on the floors and fillets between the floors and walls. After leaving it to dry for 2 hours, a second coat of PU GYM REFRESH was applied and, thanks to its fast-drying properties, the surfaces were opened to foot traffic after just 16 hours and put back into service after 24 hours.



**Mapecoat TNS Extreme** is the resin to renovate and colour urban spaces. Developed for coating and upgrading carparks, access ramps, cycle lanes, it is also resistant to the most intense vehicular traffic. Easy to apply and rapid-drying with a non-slip finish. **Mapecoat TNS Extreme transforms your city.**



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Bari (Italy)

# San Nicola Stadium

CONCRETE REPAIR MORTARS AND COATINGS FOR THE STEPS WERE USED DURING THE RENOVATION WORKS

For Italy, 1990 was the year of the World Cup and the Vittoria stadium in Bari was declared unsuitable to host matches. As a result, it was decided to build a brand-new stadium with Renzo Piano commissioned for its design, earning it the nickname of the "spaceship" due to its characteristic architectural conformation.

Built with several modifications with respect to the original design (for instance, an athletics track was added),

the stadium was handed over to the city authorities in May 1990.

The new stadium was named San Nicola, after the patron saint of the city. Apart from World Cup matches in 1990, over the years other important competitions have been held there, such as the final of the Champions League in 1991.

After thirty years of service the stadium needed significant renovation work, also to bring it into line with

new FIFA (International Federation of Football Association) standards.

The first part of the work started in January 2020 with the replacement of the seats in the east stand, the upper west stand, and the area reserved for visiting fans, along with restoration work on the steps and an upgrade to the emergency exits. The second phase of the work started in the spring of 2022, with new seats installed in various areas of the stadium,

the stands behind the goals, the west stand and the press box, as well as a complete overhaul of the pitch and the replacement of all the floodlights. The final phase of the work was carried out in 2023 with restoration work on the Teflon roof covering the entire stadium.

The renovation work has enabled the San Nicola Stadium to be compliant for international matches and to be a candidate for the final stages of

the 2032 European Championships. Also, after seven years away from the scene, in 2023 the Italian national team returned to playing in the stadium again.

## A winning match for Mapei

Mapei was involved in the work to modernise the stadium in Bari and to bring it line with the new safety standards. Various rapid products were proposed to ensure work was completed on schedule.

Work started with the removal of all the old seats from the upper east stand. It soon became clear, however, that it would not be possible to use the same holes to anchor the new seats in place due to the bolts being completely rusted. This is why it was decided to grout the old holes, fill the cracks with a specific resin (EPORIP) and then create new holes to position the seats using MAPEFIX EP 400 chemical anchor which is now available as MAPEFIX EP 100.

All the areas where the concrete for the steps had become degraded or detached were restored, after removing all the damaged concrete and carefully cleaning the substrates, by applying the fibre-reinforced mortars MAPEGROUT THIXOTROPIC, PLANITOP SMOOTH&REPAIR R2 and PLANITOP SMOOTH&REPAIR R4 (which have now been replaced by MAPEGROUT THIXOTROPIC ZERO, PLANITOP SMOOTH&REPAIR ZERO and PLANITOP SMOOTH&REPAIR R4 ZERO). The latter two products are thixotropic cementitious mortars, classes R2 and R4 according to EN 1504-3 standard respectively, characterised by their rapid-setting properties. They can be applied in thicknesses ranging from 3 to 44 mm. Protection of the exposed steel reinforcement rods was carried out using MAPEFER 1K one-component

GIULIO MORANDINI

## Rapid products for the building industry



### Let's talk about rapid products: what is in the Mapei portfolio amongst the numerous solutions for the building industry?

We propose various rapid-setting, easy to apply solutions. Among the repair mortars, we should mention PLANITOP SMOOTH & REPAIR ZERO and PLANITOP SMOOTH & REPAIR R4 ZERO, one-component, thixotropic cementitious mortars for repairing and smoothing concrete elements.

### Simple, quick application... but are they also sustainable?

They certainly are. Apart from having very low emission of volatile organic compounds (VOC), their CO<sub>2</sub> emissions are measured throughout the life cycle of products using Life Cycle Assessment (LCA) methodology. Their residual CO<sub>2</sub> emissions have been offset through the purchase of certified carbon credits in support of reforestation projects and biodiversity conservation.

### What other rapid products does Mapei offer for the building industry?

Here I would like to mention PLANITOP HCP FLOOR, a structural mortar reinforced with steel fibres for strengthening the extrados of floor beams without the need for electro-welded reinforcing mesh. PLANTIP FAST 330 is a quick-setting, fibre-reinforced cementitious mortar for levelling off concrete surfaces. And lastly, for repairing concrete and fixing street furniture, I would like to mention MAPEGROUT SV, a rapid-setting and hardening, hi-flow cementitious mortar.

Corporate Product Line Director, Building Products & Structural Strengthening, Mapei Group







1. MAPEFER 1K (now available as MAPEFER 1K ZERO) was used to protect the steel reinforcing rods.
2. The joints between precast concrete elements were sealed with MAPEFLEX PU S 15.
3. PLANITOP FAST 330 was used to level off concrete surfaces.
4. A view of the seats after completion of the works.

mortar (now replaced by MAPEFER 1K ZERO). MAPEBAND TPE waterproof elastic tape was applied on the horizontal structural joints on the steps, a product recommended for the flexible waterproofing seal of expansion joints subjected to movements of up to 10 mm. The tape was bonded with ADESILEX PG4 two-component, thixotropic epoxy adhesive. After being thoroughly cleaned, the horizontal surfaces were then levelled off with PLANITOP FAST 330 fibre-reinforced, rapid-setting, cementitious mortar.

To make sure the joints were water-tight and perfectly sealed the product employed was MAPEFLEX PU S 15, a low-modulus, paintable polyurethane sealant for movements of up to 25%. To obtain the correct depth of the MAPEFLEX PU S 15 layer and prevent it sticking to the bottom of the joints, MAPEFOAM closed-cell, foam polyethylene cord was inserted in the joints beforehand. The edges of the joints were then primed with PRIMER A, one-component, ready-to-use primer for polyurethane

sealants, MAPECOAT TNS RACE TRACK was applied to protect and finish off the access steps to all stands, a coloured, waterborne, rapid film-forming, acrylic resin-based coating product used to protect concrete and asphalt surfaces subjected to high volumes of footfall and vehicles. Before applying the protective coating, the surfaces were treated with MAPECOAT TNS PRIMER EPW solvent-free epoxy primer.

**The rapid product  
PLANITOP FAST 330**

Quick-setting, fibre-reinforced levelling cementitious mortar, for internal and external floors and walls, applied at thicknesses from 3 to 30 mm to smooth out irregularities



**ANTONIO TORITTO**

**Work completed ahead of schedule**



**What did it mean to the city of Bari to be able to offer its inhabitants and the world of sport a renovated stadium?**

This was a really important project for the local authorities and for the city as a whole, which enabled us to reappraise a structure, designed by Renzo Piano, of enormous symbolic and architectural value. The work was highly appreciated by the FIGC (Italian Football Association) and, not only were we able to nominate the stadium for the 2032 European Football Championships, but we can also now host great events, concerts and other shows again and have the stadium fully available for the enjoyment of local citizens who feel such a strong sense of belonging towards it.

**What were the major challenges with this particular project?**

There were various important interventions, such as the restoration of the roof, the installation of new floodlights and new scoreboards and renovation work on the steps, with the installation of new seats. We also had to deal with water infiltrations problems on the steps in the joints between precast concrete elements. And all these interventions were successfully completed thanks also to the excellent technical support we received from the various contractors and suppliers of materials.

**How much did the technical support and the use of tried and tested products, such as the ones proposed by Mapei, really count?**

They were a great help, because it isn't sufficient to just buy materials; you need to know how to apply them and have support on site. With Mapei we had complete, all-round support, from choosing the right products right up to the actual site work and then the after-sales service. I have worked on previous

occasions with Mapei products and always been satisfied with them.

**The mortars used, such as PLANITOP SMOOTH & REPAIR R4 to renovate the steps and PLANITOP FAST 330 to level off the slopes between the steps and east stand, are rapid-setting products. Was there a tight schedule for these interventions?**

Yes, we had to keep to a really tight schedule. We even managed to complete the site and hand over the work ahead of schedule, with enormous satisfaction and gratification. We worked to schedule without interruptions, it was a great team effort from the engineers from the local Council, the contractor and everyone else involved. Regarding the work carried out on the steps, in 2022 we carried out a series of tests and then, once we had made sure the systems were good to go, we started in March 2023 and completed all the work in July. A job carried out really quickly, in which rapid products made a truly valid contribution.

Head of the Allocation of Infrastructures, Mobility and Public Works, Secondary Urbanisation Sector, Bari City Council

**PROJECT INFORMATION**  
**San Nicola stadium, Bari** (Italy)  
**Design:** Renzo Piano  
**Period of construction:** 1987-1990  
**Period of the intervention:** 2020-2023  
**Intervention by Mapei:** supplying products for repairing damaged concrete, protecting reinforcing rods, sealing joints, coating surfaces  
**Owner:** Bari City Council  
**Infrastructures, roads**

**and public works**  
**direction:** Claudio Laricchia  
**Project manager:** Antonio Toritto  
**Works direction:** Fernando Ciavarella  
**Safety management:** Pietro Fiorino, Francesco Bello, Giorgio Bellomo  
**Site technical direction:** Nicola Toscano (Toscano Srl), Vito Suriano (Vira)  
**Contractors:** Toscano Srl, Vira Srl, Costruzioni Ferrarese Srl

**Mapei distributors:** D'Ambrosio Edilizia Srl; Particolori Srl  
**Mapei coordinators:** Giammario Dispoto, Michelangelo Occhiogrosso, Angelo Coco, Achille Carcagni, Mapei SpA (Italy)  
**MAPEI PRODUCTS**  
**Concrete repair:** Eporip, Mapefix EP 400 (now available as Mapefix EP 100), Mapefer 1K, Mapegrout Thixotropic,

Planitop Smooth& Repair R2, Planitop Smooth & Repair R4, Planitop Fast 330  
**Protecting and coating sport surfaces:** Mapecoat TNS Primer EPW, Mapecoat TNS Race Track  
**Sealing joints:** Primer A, Mapeflex PU S 15, Mapefoam, Mapeband TPE, Adesilex PG4  
  
For further information on Mapei products visit [mapei.com](https://www.mapei.com)



Bari (Italy)

# Kursaal Santalucia Theatre

A THEATRE FROM THE EARLY 1900'S HAS BEEN RESTORED AND GIVEN A NEW LEASE OF LIFE

In the 1920's Bari became famous all over Italy for its theatres and one of them was the Santalucia Theatre. Designed and built by Orazio Santalucia in a late Liberty style in 1924, it featured decorative frescoes and stuccoes. In 1950 it was renamed the Kursaal Santalucia, which it maintains to this day, and used mainly as a cinema. In 1981 it was bought by the company Fabris, which commissioned the ar-

chitect Paolo Portoghesi to carry out extensive restoration work. It reopened in 1991 and up until 2011 was popular with the public acclaim and attracted well-known theatre companies. In that year, however, the owner's financial difficulties led to the theatre closing its doors again. After being closed for 10 years, two of which were spent restoring the structure, the Kursaal reopened its doors to the public in September 2021 and reclaimed its role as a meeting place for tourists and local residents with a theatre, ballroom and coffee-shop.

### The rebirth of a theatre

Mapei supplied products for the structural strengthening work on the extrados of the floor slabs, to strengthen the load-bearing walls, to restore the joists of the reinforced concrete floors and to install wooden flooring in several areas of the theatre. A FRC (Fibre Reinforced Concrete) system was used to strengthen the extrados of the floors of the Giuseppina Hall on the first floor, consisting of PRIMER 3296 and PLANITOP HPC FLOOR 46 micro-concrete reinforced with metal fibres, a high ductility free-flowing product with high mechanical properties. Localised strengthening work was carried out on the extrados of other floors on the second floor by applying, again, PRIMER 3296, but this time together with PLANITOP HPC FLOOR one-component, highly fluid, shrinkage-compensated cementitious mortar reinforced with steel fibres, characterised by being easy and, above all, quick to apply. Before applying the FRC system, 10 mm rebar was anchored in place with MAPEFIX EP 385 chemical anchor (now available as MAPEFIX EP 100) and MAPEFIX VE SF 420 chemical styrene-free vinyl ester anchor to

BELOW. PLANITOP HPC FLOOR 46 reinforced micro-concrete was used to strengthen the extrados of the floors of the Giuseppina Hall on the first floor.



provide additional reinforcement. An FRM (Fibre Reinforced Cementitious Matrix) system was used to improve the shear and tensile strength of the load-bearing walls, consisting of PLANITOP HDM RESTAURO pre-blended, fibre-reinforced, high-ductility mortar and MAPEGRID G220 glass fibre mesh, along with structural connections made from MAPEWRAP G FIOCCO carbon fibre cords. Reinforcement rods were protected by applying MAPEFER 1K (now available as MAPEFER 1K ZERO) anti-corrosion mortar. MAPEGROUT

THIXOTROPIC (now available as MAPEGROUT THIXOTROPIC ZERO) and PLANITOP SMOOTH & REPAIR R4 (now available as PLANITOP SMOOTH & REPAIR R4 ZERO) mortars to reintegrate the reinforced concrete that had been removed from the joists. The main contractor also chose Mapei products to install wooden floors in various areas of the theatre. ULTRABOND P913 2K PLUS adhesive was used to bond oak flooring on the stairway on the first floor, while in the foyer, the orchestra pit and the stalls, parquet was installed with LIGNOBOND adhesive.

### The rapid product PLANITOP HPC FLOOR

Fibre-reinforced, shrinkage-compensated, high-strength, high-ductility, highly-fluid cementitious mortar.



Find out more

**PROJECT INFORMATION**  
**Kursaal Santa Lucia Theatre, Bari (Italy)**  
**Original design:** Orazio Santalucia  
**Period of construction:** 1924-1927  
**Year of the renovation:** 2021  
**Intervention by Mapei:** supplying products for strengthening the floor slab, the bearing walls and installing wooden floors  
**Design for the renovation project:** Anita Guarnieri

and Michele Masciavè  
**Owner:** Apulia Regional Council  
**Works direction:** Michele Carella  
**Site technical direction:** Domenico Barozzi and Michele Fuzio (Cobar SpA)  
**Site coordination:** Francesco Giannelli (CSE)  
**Operational site direction:** Giuseppe Festa, Leonardo Leone (Cobar SpA)  
**Main contractor:** Kursaal Bari Scarl (Cobar SpA and

Neos Restauri)  
**Contractor for wooden floor:** Gravina Parquet Group Srl  
**Mapei coordination:** Gianmario Dispoto, Michelangelo Occhiogrosso, Angelo Coco, Gianni Villani, and Achille Carcagnì (Mapei SpA, Italy)  
**MAPEI PRODUCTS**  
**Structural strengthening:** Mapefix EP 385, Mapefix VE SF 420, Planitop HDM

Restauro, Planitop HPC Floor, Planitop HPC Floor 46, Primer 3296  
**Strengthening load-bearing walls:** Mapefer 1K, Mapegrid G220, MapeWrap 21, MapeWrap 31, MapeWrap G Fiocco, Planitop Smooth & Repair, Mapegrout Thixotropic  
**Installing wooden floors:** Lignobond, Ultrabond P913 2K Plus  
For further information: [mapei.com](http://mapei.com)





Giovanna Novella

# Mapei's seamless floors: rapid installation and durability

MAPEFLOOR CPU+ IS A COMPREHENSIVE RANGE OF COATING MATERIALS AND OFFERS DIVERSIFIED SOLUTIONS FOR ALL ENVIRONMENTS

In the increasingly dynamic seamless flooring sector, rapid installation is one of the fundamentals in guaranteeing competitiveness and efficiency in work environments.

The importance of this requirement goes beyond the industrial sector. In domestic environments and commercial spaces, too, the possibility of installing a new floor quickly means reducing any inconveniences to those who live and work in these spaces to a minimum. Installing floors quickly has become crucial in order to maintain productivity and guarantee client satisfaction. Mapei seamless floors, be they in resin or cement-based, have become the preferred solution to meet these needs thanks to their capacity to be installed quickly, to reach their specified performance characteristics in a very short space of time and to withstand the demands of the surrounding environment.

Going into detail, the MAPEFLOOR CPU+ range by Mapei fits perfectly into this context, offering solutions to create flooring that combine speed, resistance and durability to meet the needs of a wide range of industrial sectors: from food and drinks plants to mechanical, chemical, pharmaceutical, tanning and textile industries. Products from the

MAPEFLOOR CPU+ range are widely used to put into service floors at an unprecedented speed, especially in areas used for processing and transforming foodstuffs (meat, fish, dairy products), in bottling plants, in industrial kitchens, in areas where ready meals are processed and in refrigeration cells, to name just a few.

**When we talk about polyurethane-cement flooring systems by Mapei, reference is made to their installation on "green concrete". What does this mean exactly and what advantages are there regarding installation times?**

Thanks to its innovative technology MAPEFLOOR CPU+ can be applied on "green concrete", that is, young concrete just 7 days old. This type of flooring sets to foot traffic in just 8 to 12 hours, so areas can be quickly opened again, improving operational flexibility and reducing down times to a minimum. Also, after just 24 hours, flooring can be reopened to light vehicles, while after 48 hours it is fully resistant to traffic, thermal and chemical stress, so offering exceptional performance characteristics right from the very first moment of use.

**What are the main strategies adopted by Mapei to guarantee maximum operational continuity**



**and to reduce production plant down times to a minimum during the installation of industrial floorings?**

Mapei's philosophy in this sector can be summed up as *"Maximum operational continuity and minimum down times"*. Plant downtime, that is the period of inactivity while a floor is being installed, can be limited considerably thanks to how rapidly MAPEFLOOR CPU+ floors can be installed. We are fully aware that it isn't always easy to stop a production line, so many of our systems can be installed over the course of a weekend or even at night, thereby reducing a company's inactivity to a minimum. This practice reduces dead times, ensuring the continuity of production operations.

**When looking at Mapei solutions, their reliability over time is often highlighted. However, when it comes to floors from the MAPEFLOOR CPU+ range, rapid installation may not be a direct indicator of their longevity. So one may rightly ask: what are the other factors that influence the durability of this type of floor?**

Floors from the MAPEFLOOR CPU+ range stand out for their durability, thanks also to their formulation based on in-depth research and continuous technical support before, during and after installation. The technical support guarantees that installers are supported in every phase of a project, contributing in maximising the floor's durability and performance properties over time.

This attention to detail during the development and installation process ensures that floors are created using only materials of the highest quality, in line with best practices in the sector.

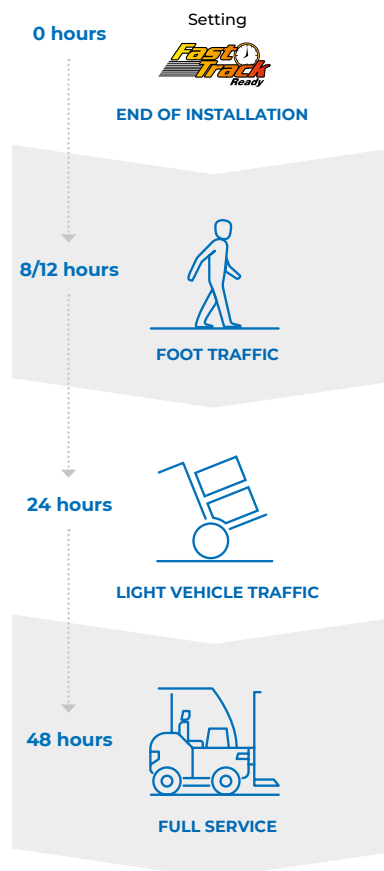
What is more, the intrinsic resistance of this type of material when faced with temperature variations and aggressive chemical substances underlines even further

their reliability over time. The combination of research, quality materials and technical support, therefore, gives these types of floor exceptional durability, thereby reducing the need for maintenance to a minimum and guaranteeing a long service life.

**Is it possible to explore the specific characteristics of the products in this range?**

MAPEFLOOR CPU+ consists of a vast range of polyurethane-cement based products with different thicknesses and finishes that have an influence on the floors' resistance to chemicals and thermal shock, and with various degree of non-slip finish to make them suitable for various types of surroundings. They are available in a wide range of colours, offering versatile solutions for a wide range of industrial environments. Their rapid-hardening properties, combined with long term durability, chemical and thermal resistance, makes them the ideal choice and solution for a multitude of industrial environments. They are also renowned for their mechanical properties, as well as for their anti-bacterial properties that contribute to create safe and hygienic, fully certified environments. This makes them an ideal choice for all those companies looking for highly performing, and functional industrial floors. Thanks to their proven reliability and durability, these types of flooring guarantee not only rapid installation and high efficiency when it comes to being put into service, but also consistent performance over time. This ensures companies a safe, productive and enduring work environment, while simultaneously meeting the requirements of high quality and assured productivity.

## PLANT DOWNTIMES



Find out more  
MAPEFLOOR CPU+ range



Giovanna Novella, Corporate Technical Assistance, Resin & Cementitious Flooring Line, Mapei Group





## Munich (Germany)

# Criminal Justice Centre

WOODEN FLOORING USED FOR ALMOST ALL THE INTERNAL SURFACES OF THIS BUILDING

A new Criminal Justice Centre is currently under construction in Munich. It will accommodate around 1,300 court officials and 7 courts, 4 of which will be dedicated to the various court proceedings and 3 will be for the offices of the Munich Public Prosecutors. There will also be various buildings from 5 to 7 storeys high and three internal courtyards, one of which will be accessible to visitors from the outside. Around the largest courtyard there will be 54 courtrooms extending over a surface area of around 5,100 m<sup>2</sup> featuring the latest technology and designed to guarantee tight security.

In April 2013 the architecture firm

Plan2 was awarded the tender to design the Criminal Justice Centre. The architectural design clearly took into consideration both the functional needs of the building and its symbolic value. "The wisdom of justice must also be visible from the outside", declared the architect Markus Frick from Plan2. Stone was widely used for the façade, making the building more imposing and up to the important functions carried out inside, as well as glass to bring in more light for the various internal areas and to represent the transparency which must always prevail during judicial proceedings. For the internal floors, on the other hand, the choice was to use

mainly wood: in the corridors, courtrooms and communal areas visitors and court officials walk almost exclusively on solid oak floors.

### Wood flooring, everywhere, in record time

For almost all the floors in the Munich Criminal Justice Centre (35,000 m<sup>2</sup>) it was decided to use two types of wood flooring by Bembé Parkett, which since 1870 has been manufacturing, installing and caring for wood surfaces. Thanks to its experience and a network of 300 specialists all over Germany, every year the company installs more than 1 million m<sup>2</sup> of wood, vinyl and laminate flooring



**ABOVE.** The new Criminal Justice Centre in Munich will accommodate around 1,300 court officials and 7 courts.

**LEFT.** Two types of wooden floorings supplied by Bembé Parkett were installed on 35,000 m<sup>2</sup> of floors in the Munich Criminal Justice Centre with the rapid-hardening adhesive ULTRABOND ECO P909 2K FAST.

to an impeccable standard. The two types chosen for the Munich Criminal Justice Centre were "Stabilo", solid oak flooring with a thickness of 23 mm, and "Stabparkett", solid plank flooring with a thickness of 22 mm. Both types of flooring are suitable for use in both residential settings and in public and commercial buildings. Mapei also contributed to the creation of these highly attractive, sound, wood floors resistant to the volume of foot traffic typically found in a justice centre by supplying a solution to safely install wooden flooring through its German subsidiary, Mapei GmbH. And that's not all: installation had to be completed in a very short space of time. Therefore, it was decided to use ULTRABOND ECO P909 2K FAST two-component polyurethane adhesive which is suitable for bonding any type and format of wooden flooring. Thanks to its rapid-hardening properties (around 12 hours at room temperature) it forms a strong film with high bonding strength to all types of substrates, including non-absorbent substrates.

### The rapid product ULTRABOND ECO P909 2K FAST

Two-component, solvent-free, rapid polyurethane adhesive with very low emission of VOC.



Find out more

## ANGELO GIANGIULIO

### Wooden floors bonded in a few hours



### What Mapei solutions enable wooden flooring to be installed rapidly?

Within the line of materials specifically developed by Mapei for installing wooden flooring there are mainly two products that enable installation operations to be carried out quickly. The first one is ECO PRIM PU 1K TURBO one-component, moisture-curing polyurethane primer. Thanks to its rapid-drying properties, this product is particularly recommended for consolidating and waterproofing both concrete and anhydrite screeds (including heated screeds) when you need to complete preparation of substrates quickly before installing wooden flooring. The second one is ULTRABOND ECO P909 2K FAST two-component polyurethane adhesive, which guarantees rapid hardening: around 12 hours at ambient temperature. After application, this adhesive forms a strong film with high bonding strength to any type of substrate, including non-absorbent substrates.

### What environments and what conditions are these products recommended for?

They may be used in both residential and commercial environments where floors need to be installed quickly. In particular, the combined use of these two products (ECO PRIM PU 1K TURBO and ULTRABOND ECO P909 2K FAST) ensures rapid, simple installation, such as when wooden flooring needs to be installed in a special pattern, for example herringbone. In fact, using this system enables wooden elements installed in the middle of a space to become bonded after a short space of time so that the other wooden elements can then be installed quickly in the adjacent areas.

### Simple installation, quick... and also sustainable?

Absolutely, this is also a highly sustainable solution because both products are certified EMICODE ECI<sup>plus</sup> for their very low emission of volatile organic compounds (VOC) by GEV, the German Association for installation materials with controlled emissions. What is more both products are solvent-free, so particularly safe for both installers and end users of wooden flooring. Materials that contribute highly effectively in creating a high level of comfort in internal spaces where they are used.

Corporate Product Manager, Wooden Flooring Line, Mapei Group

### PROJECT INFORMATION

**Criminal Justice Centre,** (Munich, Germany)  
**Period of construction:** 2015-2023  
**Period of the Mapei intervention:** 2023  
**Mapei intervention:** supplying a complete

system to install wooden flooring rapidly  
**Owner:** Munich City Council – Building department  
**Design:** Frick Krüger Nusser Plan2  
**Flooring contractor:** Bembé Parkett

**Photos:** Thomas Winszcyk, Frick Krüger Nusser - Plan2 Architekten / Visualisierung: archlab  
**Mapei Coordinator:** Stefan Eimer, Mapei GmbH (Germany)

### MAPEI PRODUCTS

Preparation of substrates: Eco Prim T Pro, Planipatch Xtra  
Installation of wood floorings: Ultrabond Eco P909 2K Fast  
Grouting: Ultracoat Binder [mapei.com](http://mapei.com), [mapei.de](http://mapei.de)



# The challenge of the sheer size overcome

HANS-JÜRGEN SCHMITZ, MANAGING DIRECTOR AND SALES MANAGER FOR BEMBÉ PARKETT, TELLS US ABOUT THE STRONG POINTS OF A COMPANY SPECIALISED IN THE MANUFACTURE AND INSTALLATION OF PARQUET

**Bembé Parkett is a company with a long tradition in the manufacture and installation of various types of wooden flooring. What types of building is your parquet mainly used in?**

Thanks to our 245 year traditions, we can say we have installed wooden flooring in every type of building. Our portfolio is so extensive that we can supply a suitable solution for any area of use. Obviously residential environments are where our wooden floorings are most frequently used, but it's also used in museums, public administration offices, showrooms, shopping centres and hotels.

**“Thanks to the longstanding collaboration with our Mapei contacts, who we have known personally for a number of years, we were able to tackle the project with confidence**

**What led to so much wood flooring being used in the new Munich Criminal Justice Centre? And why exactly were “Stabilo Hochkantlamelle“ and “Stabparkett“ chosen?**

They were chosen by the design studio which took into consideration important criteria such as sustainability, the use of natural materials, an analysis of the life cycle of wood flooring and materials connected to its use, CO<sub>2</sub> emissions and also the possibility of renovating and frequently repairing wooden flooring.

**What challenges were you faced with when installing wooden flooring in the Munich Criminal Justice Centre? For example, was time a determining factor?**

Apart from the time factor, the biggest challenges with the Justice Centre were its sheer size (around 35,000 m<sup>2</sup>), coordinating the work divided into sections and the existence of features and elements such as steps and sills. The large dimensions obviously brought with

them the challenge of supplying large quantities of wooden flooring and relative installation materials, as well as to mobilise enough professional installers and coordinate installation operations.

**In what way did Mapei products help in overcoming these challenges?**

Thanks to the longstanding collaboration with our Mapei contacts, who we have known personally for a number of years, we were able to tackle the project with confidence: this collaboration has turned us into experts in the use of Mapei products. For example, in this case, we used ULTRABOND P909 2K FAST adhesive for which we know its setting times really well.

**How important is it to be able to count on the technical support provided by Mapei, which is able to guarantee the availability of experts on site and also, when required, sufficient training on how to use its installation materials?**

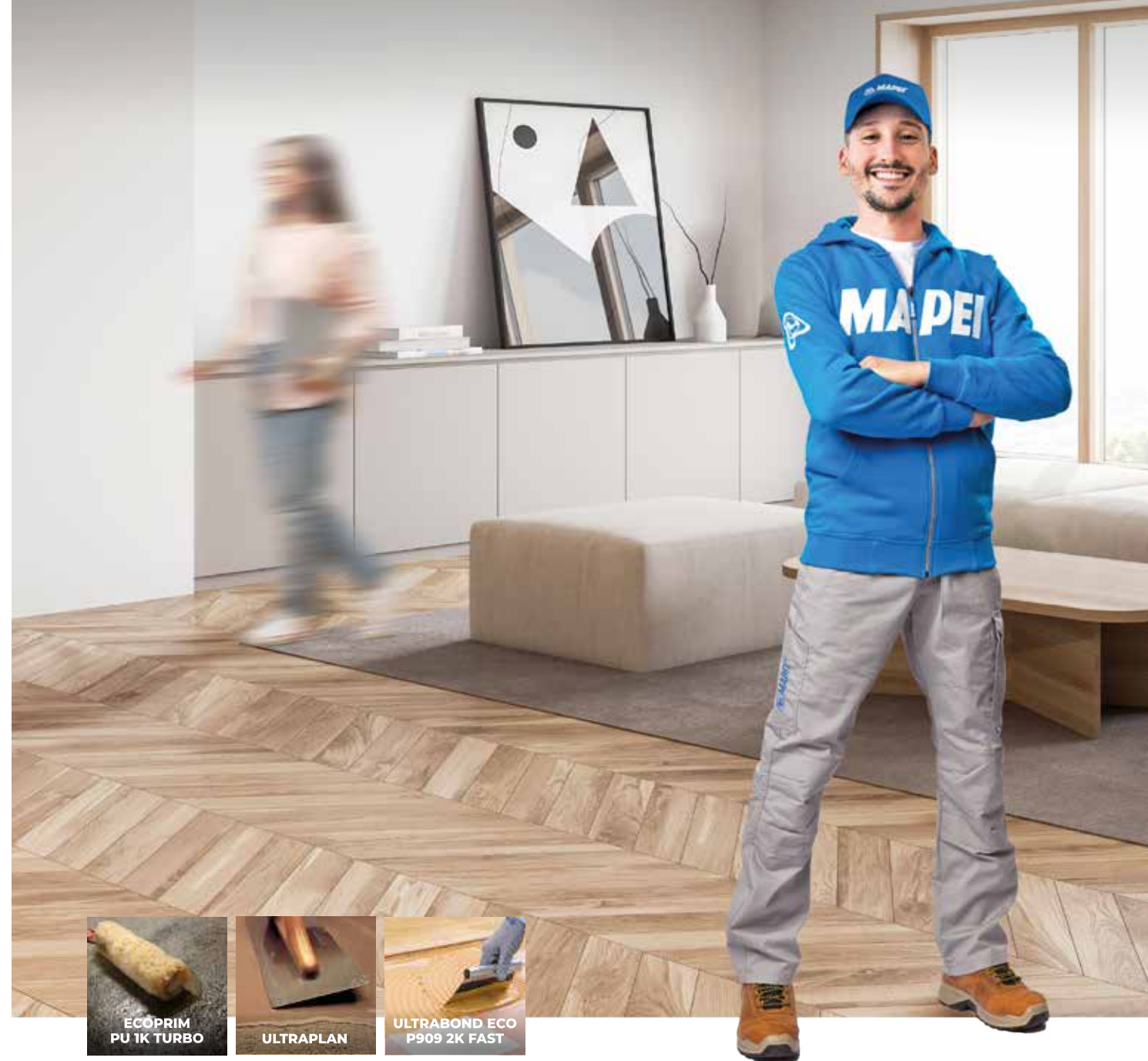
It was undoubtedly important, but also we at Bembé, thanks to our long tradition, have a great deal of technical skill and experience which we share with the collaborators from our work partners, thereby guaranteeing mutual benefit and great synergy.

## BEMBÉ PARKETT

Bembé Parkett is a parquet manufacturer whose headquarters are in Bad Mergentheim (Germany). The company has been in existence since 1780 and has played a major role in shaping today's parquet market. They produce a large proportion of their parquet, providing clients with expertise and install their floor as required, taking the utmost care from the selection of the wood to the installation. Across Germany, over 300 professional installers from 45 Bembé studios install more than 1 million m<sup>2</sup> of flooring such as parquet, floorboards, vinyl or laminate every year.



FOR BEAUTIFUL LONG-LASTING WOOD FLOORS  
THE SOLUTION IS MAPEI.



Wood floors can enhance surroundings and provide a long-lasting surface. Innovative, fast, effective and easy-to-install Mapei products can easily be used to create healthy, sustainable and long-lasting floors.

EVERYTHING'S OK  
WITH MAPEI

Learn more on [mapei.com](https://mapei.com)







Gianluca Bianchin

# Perfect curing

MAPECUBE 1 ACCELERATES MANUFACTURING TIMES AND IMPROVES THE PERFORMANCES OF CONCRETE

In the world of building, every minute counts. The necessity to accelerate construction times is increasingly critical and professionals from the sector are constantly looking for innovative solutions to achieve this objective. MAPECUBE 1 is a trustworthy ally, offering a real chance of accelerating the curing process and improving the performance and durability of concrete.

MAPECUBE 1 is an admixture made from nanoparticles of complex hydrated silicates in water suspension obtained by means of an exclusive synthesis procedure patented by Mapei.

MAPECUBE 1 has the ability to enhance the performance of cement, including cement with low clinker content, in order to achieve maximum mechanical properties, even after short curing cycles (6-18 hours). In fact, its advanced chemical formula means it reacts rapidly with cement, considerably accelerating the hydration phase of the cementitious paste as soon as the curing phase begins.

MAPECUBE 1 is suitable for use in any ready-mix and precast concrete mix where particular requirements are specified, such as:

- high mechanical strength after brief curing cycles;
- reduction or elimination of steam-curing cycles;
- reduction of cracking due to thermal gradients;
- applications with ambient temperatures below 10°C;
- optimisation of production cycles in precast concrete plants;
- acceleration of formwork removal times;
- use of cement with reduced clinker content.

These characteristics help achieve the following:

- completion of construction phases more quickly without compromising the quality of structures;
- maximisation of site productivity and optimisation of resources;

- planning and carrying out work with higher operational flexibility;
- reduction of environmental impact and CO<sub>2</sub> emissions from concrete mixes;
- reduction in the production costs and CO<sub>2</sub> emissions from forced curing cycles in precast concrete plants.

MAPECUBE 1 may be applied in a vast range of projects, such as construction of residential and commercial building; road infrastructures and bridges, precast concrete structures.

In the precast concrete sector in particular, where accuracy, deadlines and quality are essential requisites, MAPECUBE 1 enables production times to be optimised for elements such as beams, pillars, tunnel segments and structural panels. Not only does this reduce overall production times, it also allows for more flexibility when scheduling the delivery of materials,

thereby meeting the needs of more complex projects and tight deadlines.

What is more, using MAPECUBE 1 guarantees that precast concrete elements maintain the same standard of resistance specified, ensuring the safety and reliability of completed structures.

MAPECUBE 1 can be seen, therefore, as an important resource for all those working in the construction sector and industrial-scale precast concrete industry.

Its capacity to accelerate curing times and improve the performances of concrete makes it a key element in optimising production processes and guaranteeing project deadlines.

**Gianluca Bianchin.** Corporate Product Manager - Admixtures for Low Carbon Concrete, Mapei Group

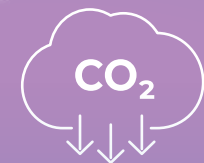
## MAPEI SOLUTIONS FOR LOW CARBON CONCRETE.



ROBUSTNESS



STRENGTH  
ENHANCEMENT



CO<sub>2</sub> REDUCTION



From Mapei research, innovative solutions and services to help **reduce the environmental impact** of concrete production, maintaining concrete performance at all stages.



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CONCRETE INDUSTRY SOLUTIONS





Giulio Morandini

# Zero repair mortars: an updated range

THE NEW PRODUCTS FROM THE ZERO LINE ARE A BLEND OF DURABILITY  
AND SUSTAINABILITY IN ONE SINGLE CONCEPT

**Let's talk about mortars from the Zero<sup>1</sup> Line: is this a new step towards sustainability?**

Absolutely, this new range of products, dedicated mainly to the repair of concrete structures, is an important part of a more extensive framework: the commitment to sustainability the whole of Mapei Group has been promoting for a number of years on various fronts.

**What contribution do these products make towards a more sustainable building industry?**

For Mapei sustainability is, first of all, durability: you need to extend the

service life of structures in order to really reduce their impact on the environment. Increasing durability by using high performance products also enables you to reduce the impact they have on the environment with regards to CO<sub>2</sub> emissions by minimizing the need for repair and renovation interventions. With this approach it is possible to reduce material waste, labour costs and all other activities that could give rise to the emission of carbon dioxide into the atmosphere. In so doing, one looks not only at the emissions from a single product, as often happens:

one thinks more in terms of the total amount of emissions for the whole intervention. In fact, with products from the Zero line, we have, first and foremost, optimised their formulas to reduce CO<sub>2</sub> emissions as much as possible, while at the same time guaranteeing high performance properties to help structures achieve a higher level of durability. The residual emissions were then offset by applying standardised LCA (Life Cycle Assessment) methods. For every product, its impact on the environment has been evaluated throughout every stage of its life.

“A reduction in CO<sub>2</sub> emissions combined with highly durable materials

**How did this range come about?**

We singled out a series of products from the family of repair mortars which, as we mentioned previously, were then re-formulated. Following that, to demonstrate they also have high performance properties, they were tested to verify their resistance to cracking, including when having to withstand cycles of dynamic loads. In fact, all structures, from civil buildings to infrastructures, are subject to vibrations. These vibrations may be small, due to the presence of a road or building site nearby for example, or more intense, such as those generated by an underground railway line or by areas with intense traffic. These types of vibrations, apart from in special cases, do not have a structural effect, but rather affect durability as they provoke cracks and micro-cracks that become preferential routes for the ingress of

aggressive agents, such as carbon dioxide or chlorides, which, over time, damage the structure. The aim of mortars from the Zero line is precisely this: to prevent premature cracking in substrates, thereby increasing the overall durability of the structure.

**So were targeted tests carried out?**

Yes, we carried out a series of test in collaboration with the Federico II University of Naples: by faithfully simulating the conditions of a real situation we demonstrated that, apart from having a lower carbon footprint and high quality standards, the products from this range have excellent resistance to dynamic loads and stresses. To sum up, by choosing mortars from the Zero Line, users will have products they already have experience of, but ones that now

have enhanced performance properties from a mechanical and sustainability perspective.

**Are you planning on extending the range in the future?**

Yes, we have numerous projects and we are extending the range of sustainable products for repair work in order to complete the entire cycle of an intervention, which is why we recently added MAPELASTIC GUARD ZERO flexible, protective cementitious membrane to the range. And shortly we will also be introducing new technologies to the market based on the same approach – durability and low impact on the environment – which will cover other families of the Building Products Line.

**Giulio Morandini.** Corporate Product Line Director, Building Products & Structural Strengthening, Mapei Group

<sup>1</sup>CO<sub>2</sub> emissions measured throughout the life cycle of products from the Zero line in 2024 using Life Cycle Assessment (LCA) methodology, verified and certified with EPDs, have been offset through the acquisition of certified carbon credits in support of forestry protection projects. A commitment to the planet, to people and to biodiversity.

## Repairs mortars heading to sustainability

**Mapegrout Thixotropic Zero**  
Shrinkage-compensated, fibre-reinforced mortar for concrete repair.



**Mapegrout Hi-Flow Zero**  
Shrinkage-compensated, highly fluid, fibre-reinforced mortar for concrete repair.



**Planitop Smooth&Repair Zero**  
Structural R4-class, rapid-setting, shrinkage-compensated, thixotropic, fibre-reinforced, cementitious mortar for repairing and smoothing concrete.



**Planitop Smooth&Repair R4 Zero**  
Quick-setting, fibre-reinforced, shrinkage-compensated, thixotropic cementitious mortar for repairing and smoothing concrete.



**Mapefer 1K Zero**  
One-component, anti-corrosion cementitious mortar for protecting steel reinforcement rods.



**Mapegrout Easy Repair Zero**  
Normal-setting thixotropic mortar for repairing deteriorated concrete.



**Mapefill Zero**  
Fluid mortar with positive internal tension for repairing damaged structures that require the use of free-flowing mortars.



**Mapegrout 430 Zero**  
Fine-grained, fibre-reinforced, normal-setting thixotropic mortar for concrete repair.



**Mapelastic Guard Zero**  
Two-component, flexible cementitious mortar for protecting large concrete structures subject to high stress.



Download the brochure







Simone Barile

# A sustainable solution for repairing concrete

MAPEGROUT EASY FLOW ZERO UNDERWENT FATIGUE TESTS AT THE FEDERICO II UNIVERSITY OF NAPLES TO TEST ITS EXCELLENT RESISTANCE TO DYNAMIC LOADS

Over the years, the concept of durability in structures has taken on an increasingly important and central role when talking about repairing concrete. For instance, according to the Italian regulations called "Technical Construction Standards" dating 2018, the term durability refers to "The capacity of a construction, over the course of its nominal design life, to maintain the level of performance for which it was designed, taking into consideration the characteristics of the environment in which it is located and the expected level of maintenance". The term durability also goes perfectly hand in hand with the concept of environmental sustainability, an issue that has become of primary importance in all sectors and, above all, in the construction sector.

The durability of concrete structures and infrastructures

is often undermined by cracking phenomena arising from the onset of dynamic cyclic loads. This leads to the creation of preferential access routes for aggressive agents that put the integrity of the structures themselves at risk.

This is why Mapei formulated MAPEGROUT EASY FLOW ZERO sulphate-resistant, thixotropic mortar with high resistance to cracking and with CO<sub>2</sub> emissions offset for its entire life cycle<sup>1</sup>. The following text is a report of results obtained from tests carried out on this product.

## Restoring infrastructures using a mortar with high resistance to fatigue

The test campaign carried out at the Federico II University of Naples aimed to determine the behaviour of concrete elements subjected to cyclical dynamic

flexural loads and repaired with MAPEGROUT EASY FLOW ZERO.

Three different series of samples were used for these tests: the first and second series, consisting of concrete elements with a compressive strength of 30 MPa and 60 MPa, respectively, and a third series of concrete elements with a compressive strength of 30 MPa and repaired with MAPEGROUT EASY FLOW ZERO.

The fatigue behaviour of the elements was analysed by creating their relative S-N diagrams, with each diagram representing analytical curves on a logarithmic scale for each series of samples, where S represents the amplitude of the loads and N is the number of load cycles. To this scope, four point bending tests were carried out. The samples were initially loaded statically to failure point to determine the ultimate flexural strength of the material  $\sigma_u$ , and then dynamically by applying loads in steps (50,250 cycles each) with increasing amplitude. The Palmgren-Miner rule was then applied to determine the S-N curves and to estimate the fatigue strength of each element.

As shown in Figure 2, the concrete samples with Rck 30 MPa and repaired with MAPEGROUT EASY FLOW ZERO have better fatigue behaviour with respect to that shown by the sample in concrete as is with a compressive strength of 30 MPa. What is more, this behaviour is comparable to that of concrete with a characteristic compressive strength of 60 MPa.

## Tests on full-scale restored and non-restored beams

Apart from this experimental campaign on scale-sized samples, dynamic cyclic flexural tests were also performed on full-scale repaired and non-repaired concrete beams.

These tests were designed using a bespoke experimental procedure based on:

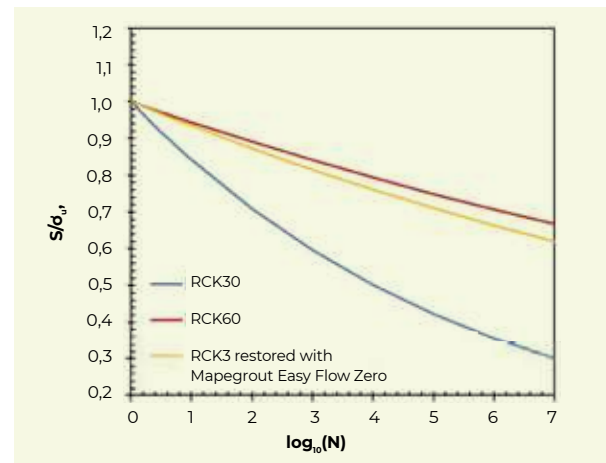
- accelerated corrosion;
- structural repairs with MAPEGROUT EASY FLOW ZERO;
- application of dynamic loads.

The fatigue behaviour of the tested beams and the type

of cracking resulting from the tests were correlated with the level of corrosion reached and the effectiveness of the repair work carried out using MAPEGROUT EASY FLOW ZERO. Four reinforced concrete beams were made for these tests. The first beam was denominated B1\_R, where "R" stands for "reference" because it was the only beam that was tested without applying repair mortars following accelerated corrosion (3%). The other beams, B2\_8%, B3\_6% and B4\_3%, were repaired on the intrados with MAPEGROUT EASY FLOW ZERO and had different levels of corrosion; the percentage indicates the level of corrosion, which varied from 3% to 8%, expressed as a (theoretical) loss in mass of steel. All the beams were designed according to the prescriptions of the Italian Technical Construction Standard (NTC2018) for structural analysis. Once the accelerated corrosion process had been completed, the concrete cover of beams B2\_8%, B3\_6% and B4\_3% was removed by chiselling before applying the repair mortar. The concrete cover was then repaired by applying a 5 cm thick layer of MAPEGROUT EASY FLOW ZERO. All the beams were subjected to dynamic flexural tests in four points, as shown in Figure 3. The flexural load was applied using a large-scale steel testing frame



1. Repaired concrete samples subjected to dynamic loads.



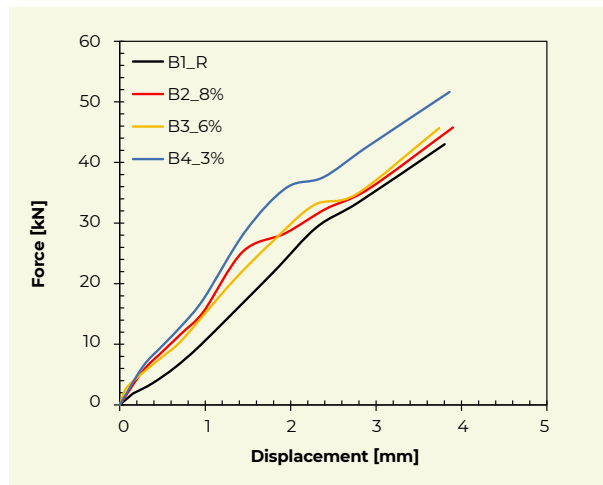
2. Diagram of the S-N curves of the 3 series of concrete samples. S represents the amplitude of the loads and N is the number of load cycles.



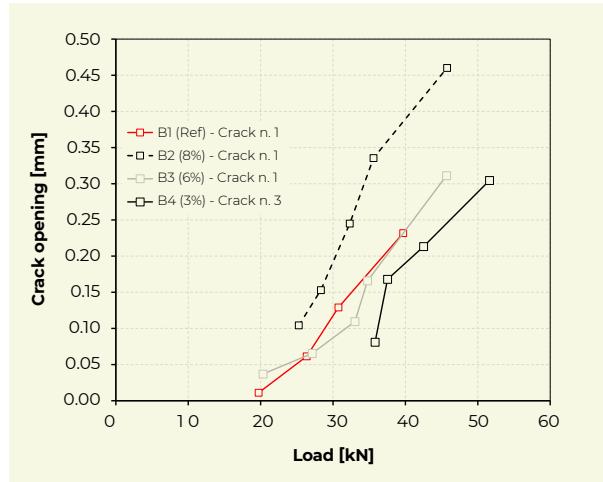
3. Test set up.



# Building a **SUSTAINABLE** future together



4. Fatigue curve envelope of the 4 beams.



5. Crack opening versus load comparison.

equipped with a servo-hydraulic actuator with a 200 kN load capacity.

The graph in Figure 4 correlates the force and displacement recorded during the tests and was obtained by superimposing the fatigue curve envelope for the four beams with three different levels of corrosion.

Important considerations were made by analysing how cracking propagated during the tests.

- For beams with a similar level of corrosion, from low to moderate, the restoration of the damaged concrete cover with Mapegrout Easy Flow Zero tends to increase the first cracking load of the beam in comparison with the non-repaired counterpart; the application of mortar is able to stabilise crack openings and prevents them appearing longitudinally, as shown in the lower surface of beam B1\_R;

- In the cases of higher levels of corrosion, the restoration of the concrete cover with MAPEGROUT EASY FLOW ZERO is able to induce a positive multi-cracking configuration under dynamic cyclic loads. The higher the number of cracks, the smaller their openings.

Figure 5 shows the progression of cracks with the maximum opening according to the load applied. Comparing reference beam B1\_R and repaired beam B4, both having the same level of corrosion, crack opening occurs at much higher loads for the repaired beam. Also, analysing the behaviour of beam B2 with 6% corrosion, twice that of the reference beam, the progression of crack opening is similar, even though it has a considerably higher level of corrosion. Structures and infrastructures with damaged concrete, therefore, may be restored with a highly durable and sustainable approach, thanks to the application of a structural repair mortar with excellent resistance to dynamic loads and CO<sub>2</sub> offset for its entire life cycle<sup>1</sup>.

**Simone Barile**, Technical Services - Building Products Line, Mapei SpA

<sup>1</sup>CO<sub>2</sub> emissions measured throughout the life cycle of products from the Zero line in 2024 using Life Cycle Assessment (LCA) methodology, verified and certified with EPDs, have been offset through the acquisition of certified carbon credits in support of forestry protection projects. A commitment to the planet, to people and to biodiversity.



## NOW YOU CAN CHOOSE PRODUCTS WITH FULLY OFFSET CO<sub>2</sub> EMISSIONS

When repairing, skimming and protecting concrete, choose mortars and cementitious systems with fully offset residual CO<sub>2</sub> emissions through reforestation projects and protection of biodiversity. A valid choice for new constructions and increasingly sustainable redevelopment projects by focusing on the wellbeing of the environment, the planet and future generations. **Choose sustainability for all your projects, with Mapei.**



CO<sub>2</sub> emissions measured throughout the life cycle of products from the **ZERO** line in 2024, using Life Cycle Assessment (LCA) methodology, verified and certified with EPDs, have been offset through the acquisition of certified carbon credits in support of forestry protection projects. A commitment to the planet, to people and to biodiversity.



EVERYTHING'S OK  
WITH **MAPEI**

Learn more on [zero.mapei.com](https://zero.mapei.com)







Mikaela Decio

# Making sustainability part of every project

SOLUTIONS FROM THE ZERO LINE WITH FULLY OFFSET CO<sub>2</sub> EMISSIONS

This has been another abnormal winter in Southern Europe: very little snow and freezing temperatures only at an altitude of 3,500 m in February, figures we normally expect in spring. What is causing all this, as we now know, is the climate change we are experiencing, caused by Greenhouse Gas (GHG) emissions. European Union is asking its citizens to drastically reduce all emissions (expressed in terms of CO<sub>2</sub> emissions), in order to reach a situation defined as “climate neutrality” in 2050.

With a view to reducing CO<sub>2</sub> from the viewpoint of processes, Mapei has taken action by installing photovoltaic panels at its manufacturing plants, thereby making the transformation of raw materials into finished products even less impactful.

As far as products are concerned, since last year numerous ranges have been developed in the Research & Development laboratories, maintaining the kind of durability and quality that have always been Mapei's hallmark while, at the same time, reducing environmental impact. But it's impossible to reach the “zero emissions of CO<sub>2</sub>”, that's why the so called “offset of CO<sub>2</sub> emissions” can be achieved by purchasing carbon credits. This operation balances the

GHG emissions emitted during the life cycle of a product in other areas or sectors.

## Measurement, reduction and offsetting: how it works

The process involves several stages:

- **Measuring emissions:** the Mapei Corporate Environmental Sustainability team calculates greenhouse gas emissions using the standardised LCA (Life Cycle Assessment) methodology throughout the life cycle of products from cradle to grave. The environmental impacts calculated are then verified and certified by a third party through EPDs (Environmental Product Declarations).
- **Reduction of emissions:** thanks to the work carried out by Research & Development laboratories, emissions are reduced through the optimisation of product formulas, the use of renewable energy sources, and the choice of local suppliers.
- **Offsetting:** residual emissions that cannot be reduced are offset through the purchase of carbon credits. These credits represent verified and certified emission reductions through reforestation, biodiversity protection, and renewable energy projects. There are standards and protocols

for certifying the validity and effectiveness of CO<sub>2</sub> emission reductions.

It is worth emphasising that the offset does not replace the need to directly reduce our own CO<sub>2</sub> emissions: indeed, Mapei is continuing to pursue strategies to reduce emissions, along with the purchase of carbon credits, by drawing on reliable sources and engaging in sustainable projects.

## The Zero Line

This commitment has resulted in the Zero Line: a range of products optimised by Mapei to be durable and with reduced environmental impact, whose residual CO<sub>2</sub> emissions are totally offset.

The idea of having “zero” products is nothing new: over 10 years ago Mapei began measuring and then offsetting residual CO<sub>2</sub> emissions associated with the manufacturing process of one of Mapei's best-selling adhesives for ceramics, KERAFLEX MAXI S1, making it totally offset through the purchase of certified environmental credits to encourage the implementation of renewable energy projects. From 2022 onwards, the product range has been expanded: adhesives, waterproofing compounds, building mortars, mortars for concrete repair, cleaners, wall coatings, and mortars

for masonry restoration. And we will not be stopping there. But how do we choose compensation projects? Projects must have certain distinctive traits:

- they must be “intentional” (“directly human-induced”), i.e. they must be activities carried out voluntarily in the form of human (and not natural) intervention;
- they must be “additional” (additionality criterion), i.e. the reduction in emissions must be in addition to what would happen without the project;
- it must be possible to quantitatively assess the emissions that have been prevented through measurements, estimates or other officially recognised methods.

The projects must have a significant and sustainable impact on development in emerging and developing countries that goes far beyond the reduction of CO<sub>2</sub> emissions: this kind of impact meets many of the UN SDGs (Sustainable Development Goals) for sustainable growth from a social, economic and environmental viewpoint.

All the projects chosen by Mapei are certified by third-party international bodies, which guarantee their

compliance and regularly measure the emissions that have been prevented.

## The Mai Ndombe project

Chosen by Mapei for 2024, the Mai Ndombe project aims to protect 300,000 hectares of critical habitat in the Congo Basin, the second largest intact rainforest in the world. This project is focused on protecting chimpanzees and elephants, reducing deforestation and investing in local communities, among the least developed in the world. The project also supports the building of schools, access to health services and food security, as well as promoting agricultural diversification and enhancing the capabilities of local communities. The Mai Ndombe project has stopped deforestation, regenerated affected areas and promoted sustainable growth using the proceeds from the sale of CO<sub>2</sub> emission reductions to fund local development programmes. Since its launch, the project has made significant progress in working with local communities, providing social services and protecting the environment, while enabling biodiversity and wildlife to thrive.

## Effective offsetting

Some critics argue that carbon

offsetting can be seen as an ‘easy’ option for people and businesses interested in reducing their environmental impact, but it does not address the underlying causes of carbon emissions. The US singer Taylor Swift has recently been criticised for CO<sub>2</sub> emissions generated by her frequent flights on a private jet to watch her boyfriend Travis Kelce play for the Kansas City Chiefs. In actual fact, the pop star purchased carbon credits to offset all the CO<sub>2</sub> emitted from her air travel, attracting the attention of her more climate-conscious fans, who complained about the huge quantity of emissions the pop star could have avoided (or at least reduced) instead of simply resorting to offsetting.

What makes CO<sub>2</sub> offsetting effective in tackling climate change is that it is used in conjunction with significant efforts to reduce direct emissions and promote the adopting of renewable energy sources and sustainable practices: that is why Mapei's Research & Development is constantly striving to find durable, quality products causing less environmental impact. To regulate green claims and environmental declarations, the European Commission has published a directive to prevent misleading or deceptive advertising, ensuring that environmental claims are accurate, verifiable, and meaningful.

This makes it vital for Mapei to have an EPD (Environmental Product Declaration) for every plywood product: these environmental declarations are, in fact, certifications based on the standardised LCA (Life Cycle Assessment) scientific methodology.

**Mikaela Decio.** Corporate Environmental Sustainability Manager, Mapei Group



The Mai Ndombe project is the project chosen by Mapei for 2024 to compensate for CO<sub>2</sub> emissions: it aims to protect 300,000 hectares of critical habitat in the Congo Basin.





Davide Bandera

# From tradition to innovation

REFURBISHING AND RESTORING USING LIME,  
AN ENVIRONMENTALLY SUSTAINABLE MATERIAL

*"There's something magical about picking up a stone from the ground, breaking it down with fire, modelling it with water using craft and ingenuity, and obtaining something solid and tough like it used to be under the influence of the air: a building practice and a philosophy as ancient as mankind".*  
Empedocles (482-426 B.C.),  
*On Nature*

In the last few years sustainability in the building industry has become such an increasingly important topic at international level that it now features as one of the sustainability goals of the United Nations (UN) 2030 Agenda. In many countries too, sustainability and environmental issues in general are a primary objective of the building process, thanks to the increasing amount of attention and awareness of public opinion, governments and of all the stakeholders, from owners right up to end users, along with the designers, installers, and restoration and building companies involved in the process. The building industry, which is responsible for 50% of raw materials extracted in the whole of Europe, 36% of CO<sub>2</sub> emissions, 40% of energy consumption and 21% of water consumption, has high margins for improvement before becoming



truly "green", not only by definition but, above all, through the approaches and behaviour it needs to adopt. This change, which must be extended across both the entire lifecycle of a building and the ecosystem in which it is located, may be achieved by making decisions that can help make the construction sector more sustainable. Being more selective when choosing construction methods, technologies and materials is a fundamental step towards a more sustainable building sector. The use of materials with a high

content of recycled materials, with very low emissions of volatile organic compounds (VOC), manufactured in efficient production plants powered by renewable energy, are the basis for the journey Mapei is undertaking in the field of sustainability.

## Solutions based on pure natural hydraulic lime

A concrete example of this commitment are the products from the MAPE-ANTIQUE NHL ECO range: cement-free products made from pure, natural hydraulic lime and recycled materials. Let's focus on two products.

■ MAPE-ANTIQUE NHL ECO RISANA is a one-component dehumidifying render applied in a single layer to restore masonry with rising damp. It is recommended for listed buildings and buildings of architectural interest – to meet constraints imposed by Local Heritage authorities – but also for new buildings and for the green building sector. Apart from having all the most important characteristics of dehumidifying mortars (good breathability, macro porosity and chemical and physical resistance to soluble salts present in masonry), this eco-sustainable mortar has a high content of recycled materials and is compatible with all types of masonry. It may be applied directly on substrates without having to apply a scratch-coat beforehand, and may be applied by trowel or with a rendering machine for applications over large areas. Apart from complying with European standard EN 998-1 (R-CSII – Rendering mortar), it was awarded the EMICODE EC1<sup>Plus</sup> certification by GEV due to its very low emissions of volatile organic compounds which guarantees excellent air quality, including when applied on internal walls.

■ MAPE-ANTIQUE NHL ECO RESTAURA is a breathable, multi-purpose mortar applied in layers 2 to 20 mm thick for restoring and levelling off substrates, render and coated surfaces. It is recommended for skimming, including over old paintwork, and also for compensation render for "old" render and mineral coatings on all types of both listed building and new builds. It also has excellent breathability, which means it may be applied as a skim coat for dehumidifying render such as MAPE-ANTIQUE NHL ECO RISANA. This multi-purpose eco-sustainable mortar has a high content of recycled materials, as well as being compatible with all types of substrate. MAPE-ANTIQUE NHL ECO RESTAURA complies with EN 998-1 standard and is classified GP: "General purpose mortar for internal/external render", Category CS II. The product is also classified T according to EN 998-2 standard: "Thin layer masonry mortar", Class M 2.5. CO<sub>2</sub> emissions from the manufacturing process of both MAPE-ANTIQUE ECO RISANA and MAPE-ANTIQUE ECO RESTAURA were measured throughout their life cycle using Life Cycle Assessment (LCA) methodology. In 2023 residual

emissions have been offset through the acquisition of certified carbon credits in support of renewable energy and forestry protection projects. In 2024 we will do the same. Sustainability also means managing site activities with more awareness using fewer materials and reducing wastage: the versatility of materials, therefore, has become an important element. We also opted for recyclable paper and cardboard packaging materials, as shown by the Aticelca logo stamped on all bags of products from the MAPE-ANTIQUE NHL ECO range. This helps reduce costs and consumption when disposing of packaging.

**Davide Bandera.** Product Manager, Restoration systems for historical buildings, Mapei Group

## Find out more

- MAPE-ANTIQUE NHL ECO RESTAURA
- MAPE-ANTIQUE NHL ECO RISANA
- And all Mapei products for masonry restoration





# New technologies showcased at US trade fairs

MAPEI MAKES ITS MARK AT THE MOST RECENT NORTH AMERICAN EXHIBITIONS WITH ITS SOLUTIONS FOR CONCRETE AND COVERINGS

## THE WORLD OF CONCRETE (WOC)

23<sup>rd</sup> – 25<sup>th</sup> January 2024  
Las Vegas (Nevada, USA)

An anniversary to remember. The fiftieth edition of WOC, one of the most important trade fairs in North America for the concrete industry, was celebrated by around 48,000 professionals from the sector who flocked to the Las Vegas Convention Center to find out more about the latest developments in products, technologies, equipment and services exhibited over an area of more than 65,000 m<sup>2</sup>.

One of the exhibitors was Mapei which, through its US subsidiary Mapei Corporation, was present again at the event with a booth and demonstration stage that attracted numerous visitors.

And here they were able to get to know first-hand the solutions developed by the company to overcome specific problems in various segments of the sector, including technologies for underground work, products for recycling returned concrete, fibers for concrete industrial floors, systems for cementitious and resin floors, as well as more innovations.

### Live demonstrations were a great success

The booth had a large area dedicated to product demonstrations that enabled the public to “see with their own eyes” the advantages of Mapei’s materials. Experts from UTT (Underground Technology Team) showed waterproofing systems, injection mixtures for underground works as well as solutions for soil conditioning and backfilling for TBM (Tunnel Boring

Machine) tunnels.

Also in the spotlight was the MAPEFIBRE range of structural macrofibers, both polymeric and steel, and microfibers for concrete floorings. To best demonstrate the effectiveness of these materials, a football was filled with concrete and dropped on a concrete floor containing fibers, and then on a concrete floor without fibers. The result showed unequivocally the durability and strength of mixes “enriched” with products from the MAPEFIBRE line.

### Sustainability at the forefront

Mapei’s commitment to sustainability in the concrete industry was also showcased with various demonstrations dedicated to solutions developed by Mapei to support concrete manufacturers on the journey towards lower CO<sub>2</sub> emissions. Gianluca Bianchin, Mapei Group’s Corporate Product Manager for Admixtures for Low Carbon Concrete, highlighted Mapei’s integrated portfolio of admixtures. Bianchin discussed how these products ensure that concrete mixes formulated using cement with low clinker content maintain their high mechanical properties. Sven-Henrik Norman, Mapei Group’s Corporate RE-CON Line Product Manager, spoke about admixtures from the RE-CON line, specifically developed for reusing returned concrete and enabling concrete mixers to be cleaned more sustainability.

## THE INTERNATIONAL SURFACE EVENT (TISE)

24<sup>th</sup> - 26<sup>th</sup> January 2024  
Las Vegas (Nevada, USA)

Again this year, 20,000 professionals from more than 100 countries made it to this exhibition in Las Vegas where, from 24<sup>th</sup> to 26<sup>th</sup> of January, the annual edition of The International Surface Event (TISE) was held, a large event the North American tile, stone and floor covering industry dedicates to the world of ceramic, wood, natural stone, textile and resilient floor and wall coverings. 1100 exhibitors took advantage of the event to showcase the latest developments and technologies for the production, use and maintenance of these materials.

In keeping with tradition, Mapei Corporation, US subsidiary of the Group, was also present at this important trade fair with a booth of almost 190 m<sup>2</sup>, showcasing the company’s extensive portfolio of solutions for installing various types of floor and wall coverings, as well as for the preparation of substrates and for the care, finish and maintenance of finished surfaces.

### Not only installation, but also care

The beating heart of the booth was the demonstration area, where a team of Mapei Corp. specialists, led by Sam Biondo, the company’s National Technical Presenter, drew in crowds of visitors who were able to get a first-hand view of these innovative products at work and test for themselves their high-performance capabilities and ease-of-use. Among the demonstrated products that sparked most interest were the adhesives from the KERAFLEX

family and the new colours from the “Sound of Color” collection of grouts for joints of ceramic tiles and stone; protective products and cleaners from the ULTRACARE line, specifically developed for cleaning, maintaining and protecting ceramic and stone surfaces; and levelling systems (featuring various caps, wedges, and spacers) from the MAPELEVEL line to make installation work easier.

The demonstration team also showcased two complete systems for installing resilient and wood flooring, distributed on the US market by Mapei Corp., for preparing substrates and for bonding and finishing off floor and wall coverings.

The spotlight also focused on Mapei’s commitment to sustainability and the new range of profiles for floor and wall coverings that Mapei Corporation now offers to the US market.



**LEFT.** The Mapei Corporation booth at WOC 2024.

**RIGHT.** Various demonstrations and presentations were held on the company’s booth by Mapei experts.



**ABOVE.** The Mapei booth at TISE 2024.



**RIGHT.** The MAPELEVEL line of levelling systems for installing ceramic tiles was also showcased at TISE.





The headquarters of Mapei Serbia are located in Leštane, in the outskirts of Belgrade. Its warehouse has an average of 1,100 tons and 1,050 products in stock.

## 20 years of Mapei in Serbia

# A leading player for its quality and excellence

NENAD CVETKOVIĆ, GENERAL MANAGER OF MAPEI SERBIA: THE STRENGTH OF OUR BRAND IS RECOGNISED THROUGHOUT THE BUILDING INDUSTRY



Nenad Cvetković,  
General Manager of Mapei Serbia

**In extremely competitive building industry, which are the sectors where Mapei has already established itself and which will it be investing in and focusing on in the future?**

The company has found a great niche at the high end of the Serbian building industry, the quality products sector. Over the years, our aim has always been to meet the needs of the market by working closely with the professionals who use our materials. We have created synergies between Mapei and the main players in the building industry, gaining the trust of our business partners. Mapei Serbia is now recognised as being a reliable partner that can offer a wide range of products. As far as the future is concerned, we count on being able to stand out even more as a leading player in the sector by launching innovative technological solutions developed in our Research & Development laboratories.

**What are Mapei products most widely used for in the private and**

**housing construction sector: the reconstruction and renovation of houses or new builds?**

In Serbia, our products are mainly involved in high-rise projects, apartment blocks or large residential complexes. However, they are also used for infrastructures. We do not intend to confine ourselves to any single sector: we operate in every realm of the building industry and are willing to work with everyone who appreciates quality, recognising the excellence of our products and services.

**Serbia has ambitious plans in the field of infrastructure involving the construction of new motorways and the modernisation of rail transport: what opportunities are opening up for Mapei?**

Serbia has been investing, and will continue to invest, significantly in infrastructures for some time now: motorways are being built and the railway network is being modernised to cater for high-speed trains. Building is in fact

**“ Belgrade has ambitious plans for investment in infrastructures: this prospect offers great opportunities for us**

the driving force behind our economy and our country, due to its geographical position at the centre of the Western Balkans. There is, understandably, plenty of investment in infrastructures to improve links with neighbouring countries and transport within our own land. This means there are exceptional opportunities for Mapei to be involved in the development of roads and railway lines.

**Mapei has no manufacturing plants in Serbia: from a business viewpoint, could it be a hub for distribution in this region of the Balkans?**

As already mentioned, Serbia's geographical position puts it at the crossroads of important transport routes. In addition to this strategic geographic advantage, Serbia's excellent relations with its neighbours are also worthy of note. Given these factors, it is clear that Serbia functions as a central hub for the distribution of Mapei products in most of the territories in the Western Balkans.

## A PASSION FOR SPORT WORKING WITH REDBULL AND MILOŠ TEODOSIĆ



Serbia is a country represented by successful athletes in international competitions. Thanks also to the wide range of products developed for the construction and maintenance of sports surfaces, Mapei Serbia also "plays" a key role in the realm of sports, where it is undergoing notable growth. In

order to promote Mapei products in this market segment, the subsidiary launched its "Prvi na terenu - First in the field" campaign in 2020, which saw the involvement of Miloš Teodosić (pictured on top of the page), a famous basketball player and former captain of the Serbian national team, who shares with Mapei a passion for top-notch performance. Teodosić's excellent reputation has helped demonstrate very clearly to the Serbian market how important it is for professionals and amateurs alike to play on high-performance surfaces that can guarantee comfort, safety and durability for athletes.

Mapei Serbia has also recently worked with Red Bull on the Red Bull Half Court project, an innovative initiative that has extended beyond the sports arena and given the company the chance to interact with a community of passionate basketball fans. Red Bull Half Court is an international 3x3 basketball tournament that fully reflects the spirit of street basketball: a great event dedicated not only to sport, but also to art and music. The finals of the tournament were held last 16<sup>th</sup>-17<sup>th</sup> September in Belgrade: more than 200 professional athletes from 25 different countries competed on courts refurbished using Mapei technology based on MAPECOAT TNS RACE TRACK acrylic-resin coating and decorated with drawings by local artists, as you can see in the picture below. Thanks in part to these special events and projects, Mapei Serbia continues to make a significant contribution to sport and project the image of a company with a wonderful combination of passion, sport and culture in its DNA.



© Predrag Vuckovic



**In 20 years in business (and 10 years with a subsidiary), Mapei has contributed to prestigious building and renovation projects in Serbia. Could you share some of them with our readers?**

As I have been with the company since it was first established, I can remember many projects and works carried out at various times in the history of Mapei in Serbia. In the early days, we took part in the reconstruction of the Administrative and Appeals Court in Belgrade and the redevelopment of the building housing the Faculty of Law. We were then involved in the renovation of "25. May - Gale Muškatirović" Sports Centre, helping with the renovation of the outdoor swimming pools. This was followed by the reconstruction of the TV tower on Avala Mountain in Belgrade, for which we supplied super-plasticising concrete

admixtures that helped reduce the time required to complete the work. We also worked on numerous hotels, such as the Crown Plaza in Novi Beograd, and various infrastructure projects such as the famous Ada bridge and the renovating of the paving in Karađorđeva Street in the centre of Belgrade. Among the hundreds of projects we can claim as 'references', a special mention goes to the renovation of St Sava Temple in Belgrade.

**Mapei materials have been used for monasteries, churches and other religious buildings, all of which are now recognised as part of the nation's historic-artistic heritage. What does it mean for Mapei Serbia to be involved in these projects?**

Our involvement in buildings of

great cultural importance is partly thanks to the support we have received from our parent company, Mapei SpA, which has been developing specific products for the renovation of historical buildings for many years. We have taken advantage of their experience and expertise, which we make available to our clients not just in the form of our products but also through specific solutions and systems. We gauge the compatibility between modern products and (often very) old surfaces, offering the most technically viable solutions. In addition to the renovation of St. Sava Temple, we have also contributed to the renovation of the Hilandar Monastery in Sveta Gora, which had been damaged by a major fire, the reconstruction of monastery buildings in Visoki Dečani in Dečani, Kosovo and the

## MAPEI ACADEMY

One of Mapei Serbia's flagship projects is the Mapei Academy, a training centre opened in 2017 at the subsidiary's headquarters in Leštane and used ever since then for offering its staff and business partners the chance to extend both their practical and theoretical knowledge. An important ongoing operation that was not even interrupted by the pandemic. The courses, seminars, workshops and webinars held at the Mapei Academy are not just for training representatives

of building companies, they are also attended by designers, consultants and distributors. They are shown how Mapei products can make their work easier and more effective and how it can make the structures they work on last longer. Demonstrations are also intended to show the proper use of the company's materials. In 2023, around 300 professionals took part in the 22 training courses organised by Mapei Serbia, and it is estimated that this number will continue to rise in 2024.

reconstruction of the monumental stairways in Kalemegdan Park and the restoration of the façades of King's Church in Studenica Monastery.

**What marketing strategies do you adopt to strengthen the Mapei brand in Serbia?**

Our main aim is to gain the trust of people working in the Serbian building industry. The greatest contribution to achieving this goal comes from the Mapei Serbia team, which over the years has helped create the great image Mapei now has in the Serbian building industry. When we ask our clients why they chose to work with us, the answer comes immediately: for the reliability of our team and our products/solutions. I believe that the greatest success we have achieved over the last 20 years is the team

we have 'built'. Our goal is to train people who will continue this work in the future, continuing to improve our business model. When we select aspiring candidates for positions in our team, we look for people who are interested in teamwork because, without this distinctive trait, we could not achieve the results we aspire to. My motto is "A team is not a group of the best people but a group of people who work best together". This is precisely why we are seen as a desirable, authentic employer on the Serbian market that is genuinely interested in the professional careers of its staff. Belgrade has ambitious plans for investment in infrastructure: this prospect offers great opportunities for us. Due to its geographical location, Serbia is an important hub for the distribution of Mapei products in the Western Balkans.

**“ Due to its geographical location, Serbia is an important hub for the distribution of Mapei products in the Western Balkans**

## Mapei's contribution to important building projects



**FROM LEFT ON.** Mapei contributed to numerous prestigious projects in Serbia such as the renovation of the paving in Karađorđeva Street in the centre of Belgrade, the restoration of the Hilandar Monastery in Sveta Gora, and the reconstruction of the TV tower on Avala Mountain in Belgrade.

## MAPEI IN SERBIA

**2004**  
A REPRESENTATIVE OFFICE  
WAS OPENED

**2013**  
MAPEI SERBIA WAS  
FOUNDED

**1**  
HEADQUARTERS WITH  
WAREHOUSE  
IN BELGRADE

**42**  
STAFF

**16.4**  
MILLION EUROS  
REVENUE IN 2023

**50**  
TONS/DAY  
PRODUCTS DELIVERED TO  
CUSTOMERS





## Belgrade

# Kula Belgrade and Belgrade Waterfront

UNVEILING BELGRADE'S URBAN MARVEL: VARIOUS MAPEI PRODUCTS WERE USED FOR WATERPROOFING AND INSTALLING CERAMIC TILES

Over the course of the last few years, Belgrade's skyline along the Sava river has undergone a remarkable transformation thanks to the Belgrade Waterfront, an urban development project that brought more than 20,000 residents of the city to the banks of the river. With an investment of almost 3 billion Euros, this initiative is breathing new life into an area that had been neglected for such a long time. Often referred to as the region's most exciting urban development, Belgrade Waterfront transformed the neighbourhood by implementing the principles of sustainable development, creating new public spaces, introducing benefits for pedestrians and bringing cultural opportunities to the heart of Belgrade. The whole project is the second largest mixed-use complex under construction in Europe. It includes residential buildings, hotels, retail outlets, the largest shopping mall in South Eastern Europe and public buildings. The total construction area is 1.8 million m<sup>2</sup>.

Mapei has been involved in numerous residential building projects through its subsidiary Mapei Serbia, including the most distinctive, Kula Belgrade. Within this complex Mapei played a role in creating high-quality residential spaces.

### The tallest building in Serbia and in the Western Balkans

Kula Belgrade is a modern building that provides a special place to live, with a superb design and awesome views. It is the most prestigious and exclusive building under construction in this part of Europe. With its unique appearance and futuristic architectural form, it serves as a link between the old, classic Belgrade and the modern capital of the 21<sup>st</sup> century. This skyscraper reaches a height of 168 m and has 42 floors, with the residential section occupying 26 floors, the St. Regis Belgrade hotel on 11 of its floors and an observation deck with a pano-

ramic, 360-degree view on the top level. Upon completion of the outer structure in 2022, it became the tallest building in Belgrade, Serbia, and the Western Balkans. Mapei actively contributed to crafting premium spaces in the Kula Belgrade, showcasing its know-how and innovative solutions.

### Innovative solutions for an ultramodern skyscraper

The investor's requirements, as well as the tight construction schedule for such a large development, required the use of first-class, reliable and rapid solutions, such as those supplied by Mapei. The request for the installation of 40,000 m<sup>2</sup> of cementitious screeds across a total of 42 floors posed a significant challenge for everyone involved. In the end, the rapid-drying properties of TOPCEM hydraulic binder proved decisive, for both bonded and unbonded screeds.

For nearly 7,000 m<sup>2</sup> of bathroom spaces, a comprehensive solution was adopted using TOPCEM hydraulic binder to make the screeds, ULTRABOND ECO V4 SP adhesive to apply MAPESONIC CR4 soundproofing membrane, MAPECOAT I600 W epoxy primer to treat the substrates and MAPELASTIC membrane to waterproof the substrates.

Ceramic tiles were installed using ADESILEX P9 FIBER PLUS, an elastic adhesive distributed on the Serbian market by Mapei Serbia, while ULTRACOLOR PLUS mortar was used to grout the tile joints and MAPESIL AC was used to seal the expansion joints.

### Waterproofing solutions for different surroundings

Damp areas in the building were waterproofed by applying MAPELASTIC two-component cementitious mortar, covering a total area of 25,000 m<sup>2</sup>. The substrates on the terraces were waterproofed using PURTOP EASY elastic polyurethane membrane, which provides not only reli-



ble waterproofing but also enhances their durability. The multifunctional podium, covering an area of 8,000 m<sup>2</sup>, seamlessly connects the open space with the building, extending towards the river, Sava Promenade and the adjacent structures. A third of this area was beautified with lush vegetation so needed an effective waterproofing solution. This was achieved by treating the substrate with POLYPRIMER adhesion promoter and by applying a first layer of POLYBOND HP P 4 mm elastic-plastomeric bituminous membrane and a second layer of ANTIRADICE PE P 4 mm distilled bitumen waterproof membrane, which forms a chemical barrier to prevent being perforated by the roots of plants. On the pedestrianised area with stone paving a double layer of POLYBOND HP P was applied. POLYBOND HP P was also chosen to waterproof the floor below ground level. The roof of the building, with floating flooring for pedestrian use, was waterproofed with other Polyglass products, such as POLYVAP RADONSHIELD P-AL, FLEXO S6 PREMIUM and FLEXO LIGHT P applied over a total area of around 3,000 m<sup>2</sup>. To ensure waterproofing for the substrates of the technical room located directly above the St. Regis Hotel, a system based on pure polyurea PURTOP 1000 N was chosen, ensuring high mechanical resistance and durability.



Find out more  
MAPELASTIC



**ABOVE.** Mapei products were used for waterproofing substrates and installing ceramic tiles in several areas of the project.

#### PROJECT INFORMATION Kula Belgrade, Belgrade (Serbia)

**Owner:** BW Kula d.o.o.

**Design:** Skidmore, Owings & Merrill LLP, Energoprojekt Urbanizam i Arhitektura a.d. and Agatina Jordanova Pavlović  
**Main contractor:** Pizzarotti Millenium d.o.o.

**Works direction:** Stefan Maksimović

**Waterproofing contractor:** Waterproofing, Belgrade

**Mapei distributor:** Kopaonik AD

**Mapei Intervention:** preparation of substrates, waterproofing, laying of industrial flooring, installation of ceramic tiles, sealing, acoustic insulation  
**Mapei coordinator:** Zoran Babić, Mapei Serbia  
**Photos:** Marko Edge

#### MAPEI PRODUCTS

Preparing substrates:

Topcem

Waterproofing substrates:

Mapelastic, Purtop Easy, Purtop 1000 N  
Waterproofing roofs: Polyvap Radonshield\*, Flexo S6 Premium P\*, Flexo Light\*

Waterproofing the podium: Polybond HP4\*, Antiradice PE\*

Coating substrates:

Mapecoat I600 W

Installation of ceramic tiles:

Adesilex P9 Fiber Plus\*\*

Grouting joints: Ultracolor Plus

Sealing expansion joints:

Mapesil AC

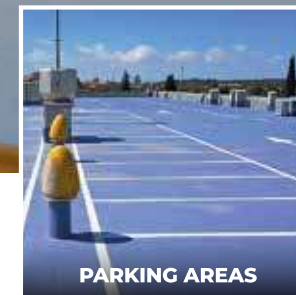
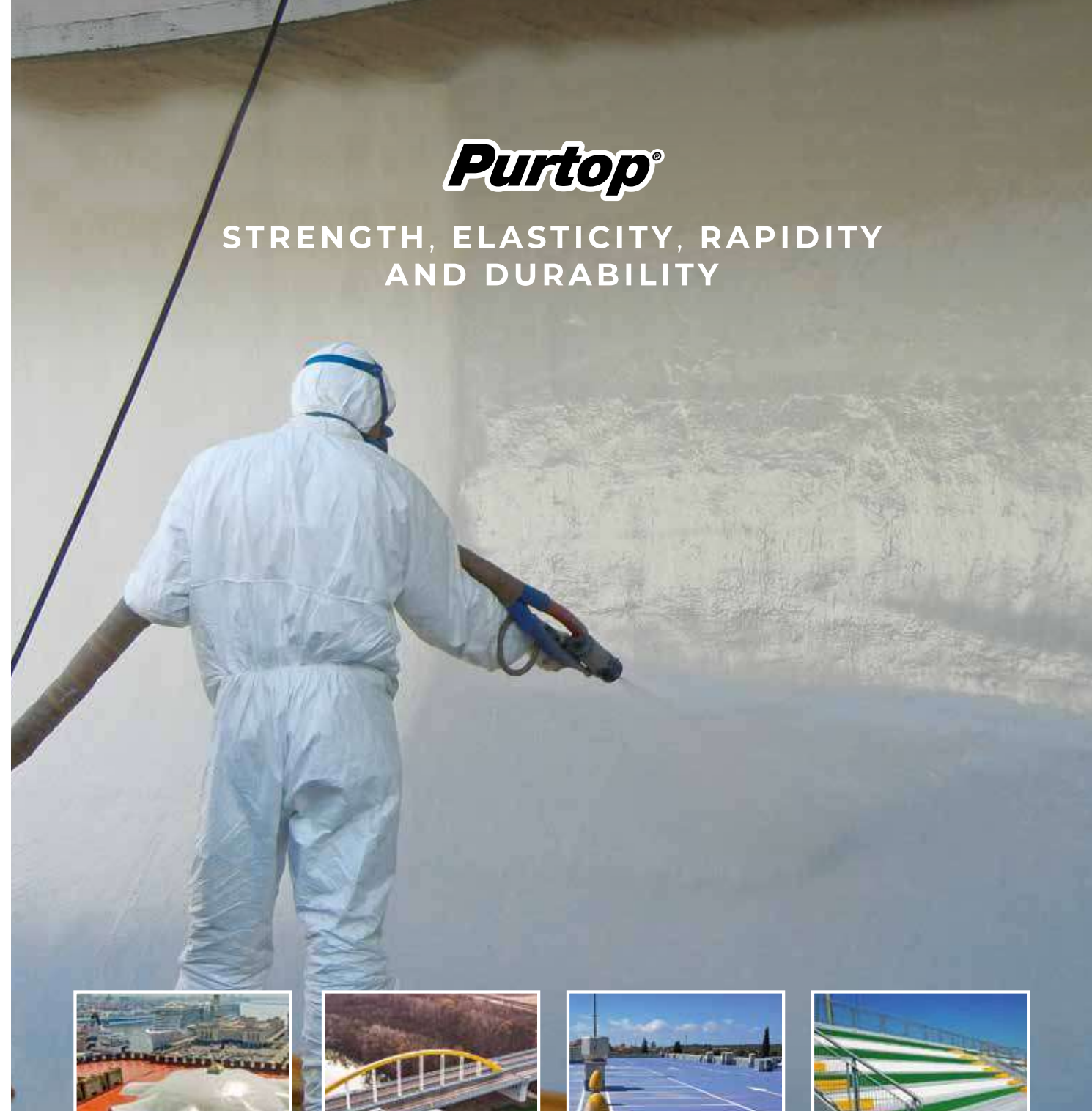
\*\*This product is distributed on the Serbian market by Mapei Serbia

\*These products are manufactured and distributed by Polyglass (Mapei Group)

For further information visit [mapei.rs](http://mapei.rs), [mapei.com](http://mapei.com) and [polyglass.com](http://polyglass.com)

# Purtop®

## STRENGTH, ELASTICITY, RAPIDITY AND DURABILITY



**Purtop** is a range of solvent-free polyurea waterproofing membranes which, once applied by spray, make surfaces immediately waterproof and ready for use. Thanks to their high mechanical characteristics and exceptional elasticity, they may be applied in various surroundings and on various substrates to create a strong, elastic waterproof layer that remains resistant over time.

EVERYTHING'S OK  
WITH **MAPEI**

Learn more on [mapei.com](http://mapei.com)





# Projects across the board

CULTURAL CENTRES, OFFICES AND RESORTS WERE COMPLETED  
WITH INNOVATIVE TECHNOLOGIES AND ECO-SUSTAINABLE MATERIALS

## Green Heart, Belgrade

Green Heart is a modern business center in the Novi Beograd district of the Serbian capital. Mapei Serbia took part in the construction of the last of the five buildings, and the one regarded as the most eye-catching, where ceramic wall coverings were installed using the KERABOND T + ISOLASTIC adhesive system after waterproofing the substrates with MAPELASTIC TURBO. Textile floorings in some of the areas were bonded with the adhesives ULTRABOND ECO FIX and ULTRABOND ECO TACK after treating the screeds with ECO PRIM T and then levelling them off with ULTRAPLAN ECO. Polished floors with a "Terrazzo alla Veneziana" effect in some areas were created with ULTRATOP SYSTEM, ultra-fast setting cementitious system. Flat roofs and and spacious curved terraces were waterproofed with solutions from the MAPEPLAN line supplied by Polyglass (Mapei Group)..



## Covid Hospitals, Belgrade, Kruševac, Novi Sad

In the autumn of 2020, the Serbian government ordered three hospitals to be built to cope with the Covid-19 pandemic, which today are still used for medical services. For the floors in the corridors and patient wards, the MAPEFLOOR SYSTEM 33 self-levelling epoxy system was chosen to create surfaces highly resistant to chemicals, impermeable to oil and aggressive substances and resistant to frequent washing. For the intensive care unit, where anti-static, conductive flooring had to be installed, the MAPEFLOOR SYSTEM AS self-levelling epoxy system was used. Ceramic tiles in the corridors and along the stairs were bonded with ADESILEX P9 EXPRESS adhesive, before grouting joints with ULTRACOLOR PLUS.



## Chinese Cultural Center Belgrade

This cultural centre extends over an area of 32,300 m² and was built in 2020 with the aim of strengthening cultural and economic relationships between Serbia and China. The centre was designed according to LEED certification criteria and, apart from offices, exhibition halls and libraries, it also has a hotel and a restaurant. White marble floor and wall coverings were installed in the large entrance hall and corridors with a specific system for stone materials, consisting of KERAFLEX MAXI S1 adhesive, ULTRACOLOR PLUS grout for joints and MAPESIL LM to seal expansion joints. In the bathrooms, on the other hand, ceramic tiles were bonded with ADESILEX P9 FIBER PLUS\* after waterproofing the substrates with MAPELASTIC.

\*This product is distributed on the Serbian market by Mapei Serbia.



## Fruške Terme resort, Vrdnik

This resort offers its guests eight thermal pools, over 400 rooms, conference halls and bars, a spa, and a restaurant. In two of the pools, ceramic mosaic tiles were installed using the ADESILEX P10 + ISOLASTIC adhesive system after levelling off the concrete substrates of the sides with PLANITOP FAST 330 mortar; screeds were formed at the bottom of the pools using TOPCEM hydraulic binder; the surfaces were then waterproofed with MAPELASTIC membrane reinforced with MAPENET 150 mesh. In the wellness area, various mosaic wall coverings were installed with ADESILEX P10 + ISOLASTIC and grouted with KERAPOXY DESIGN decorative epoxy mortar. The adhesive chosen to install the flooring in the corridors of the hotel and in the restaurant, bars and lobby was KERAFLEX EXTRA S1, the ideal product for bonding large format tiles.



MORE THAN 140,000 SPECTATORS AND CYCLING FANS TO THE REGION ACROSS THE FOUR DAYS TO SEE THE RACES OF THIS BIG SPORT EVENT SPONSORED BY MAPEI



## Cadel Evans Great Ocean Road Race

On 24<sup>th</sup>- 28<sup>th</sup> January, the Cadel Evans Great Ocean Road Race returned to Australia's summer cycling calendar with exhilarating competitions and enthusiastic crowds. The race is the first of its kind in Australia and has become part of Australian cycling history since 2015, when spectators took to the streets of Geelong in 2015 for the last chance to see Australia's most decorated cyclist compete before retiring from professional cycling. Cadel Evans is the only Australian to win the Tour de France. He joined the Mapei Professional Cycling Team back in 2002 and continued to train at the Mapei Sport Research Centre in Italy. Cadel also won the UCI Road World Championships in 2009. Mapei's relationship with him continues to this day and the company has been a Main Sponsor of the Cadel Evans Great Ocean Road Race since its inception. The race has been rapidly embraced at a local and international level as an outstanding competition and spectator experience. This year the event welcomed more than 140,000 spectators and cycling fans to the region across the four days, enjoying two thrilling races in the UCI WorldTour Men's Elite Road Race and Deakin University Women's Elite Road Race, as well as the beaming smiles on more than 750 faces of the Geelong Port Family riders and 3000 TAC People's Ride participants. The races were broadcast live across the free-to-air Seven Network, a major Australian television network. International viewers across Europe, USA, Canada and APAC were able to tune into the race on Eurosport, Flosports, Sports 5 and other global broadcasting networks.

### Lots of special opportunities for Mapei guests

Mapei Australia welcomed 390 customers and contacts to enjoy the 2024 Cadel Evans Great Ocean Road Race across a two-day event. Mapei guests enjoyed the opportunity to watch the Women and Men's Elite riders as they navigated the course from a reserved area at Novotel Geelong, a waterfront hotel with a direct view of the race start/ finish line. Several guests also seized the opportunity to have their photo taken with Cadel Evans, conversed with a few sporting legends, and participated in a live cross between Jack Haig, a professional road cyclist, and the race director for live updates on the race.

**ABOVE.** Several Mapei guests and employees participated in the TAC people's ride while others participated in a live cross between Jack Haig, a professional road cyclist, and the race director.



## Sassuolo's business model for integrating young foreign players

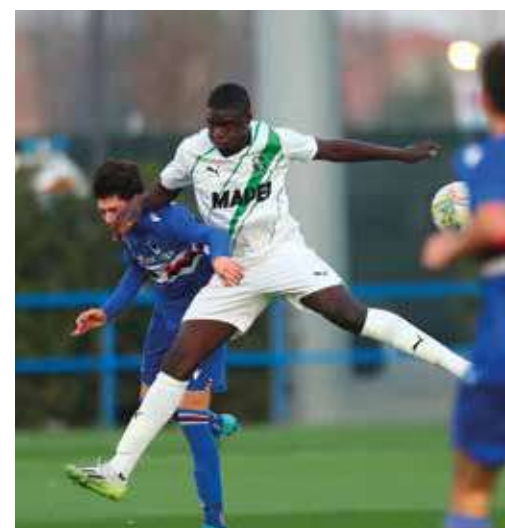
THE CLUB HELPS PLAYERS COMING FROM ABROAD WITH THEIR EDUCATION AND EATING HABITS

"Brothers around the world" is a slogan that could fit the philosophy of Sassuolo football club perfectly. The number of foreigners playing in the Sassuolo men's and women's teams from the first team to the youth teams is increasing. For young Italians and foreign players, Sassuolo is proving to be a school of life even more than a sports club. Foreign players are welcomed to the first team and, first and foremost, assisted by the Team Manager Massimiliano Fusani and the sports staff. The first problems to be taken care of for the players concern housing. "Our club", so Andrea Fabris, Organizational Director assured us, "makes itself available for house hunting and solves even such trivial problems as arranging electricity, water and gas contracts and paying condominium expenses and other

related matters. We also help find schools for their children". Of course, Sassuolo football club also provides foreign footballers with teachers to speed up their learning of the Italian language. As regards the youth teams, players of foreign origins mainly come from Italy in compliance with international regulations concerning signings. But there are also some who come from their home nations, often from other continents. "For them," so Mr. Fabris says, "we provide tutors. They are housed in Sassuolo and we always try to support them in their education. This also applies to the girls in our first team and youth teams who come from abroad". On training camps, they mostly speak Italian. "Sometimes," so Mr. Fabris points out, "our team managers also give explanations in English. However, after two or three months, the boys get used to the Italian language. Some of the players coming to us are already 18-20 years old and quite independent. Being away from their families is less of an issue. There may be a few extra issues for foreigners: for example, they may have to make a bit more effort to adapt their eating habits. In any case, even Italian boys, who are already professionals, find themselves in a new environment and they, too, need to get used to it". Sassuolo's corporate setup includes a cook, who assists them and prepares the food. "Logically, the cook is in constant contact with the Sassuolo nutritionists," so Mr. Fabris assures us, "to adjust their diet. The



Bénédicte Simon is a French professional footballer playing as a defender for Sassuolo. On the left: Sonosi Damir Daldum, playing for the Under 17 team.



student players are taken to school in the morning; they attend schools in Modena or Sassuolo. The staff required to manage the pool of athletes for the youth sector is much bigger than those for the other sectors. Each individual boy has his own distinctive characteristics and traits, and it is much trickier to manage young players than members of the first team squad. With young people there are problems related to shaping their overall character and the work involved extends well beyond the training ground. This side of matters explains why many more people are needed to manage the Youth Sector".





## QUESTIONS & ANSWERS

SUITABLE FOR DAMP SUBSTRATES AND FOR CONTACT WITH DRINKING WATER, WITH ANTI-STAIN PROPERTIES: THE NEW MAPEFLEX MS 55



Fabio Guerrini

# Bonding and sealing using a hybrid product

For bonding and sealing activities Mapei proposes various products to meet all the needs of end users. The latest product is MAPEFLEX MS 55, a hybrid, multi-purpose adhesive and sealant suitable for both internal and external applications. Let's take a look at its main characteristics.

### Mapei presented MAPEFLEX MS 55: what is it exactly?

MAPEFLEX MS 55 is a hybrid adhesive and sealant with a high modulus of elasticity created for routine maintenance work in both professional and residential settings. With this product it is possible to bond the most widely used building materials and to seal joints and cracks. It is the latest evolution from Mapei as for products with hybrid technology, that is, formulas that combine the typical benefits of silicone and polyurethane products to offer numerous advantages, such as being easy to apply and smooth over, suitable for both dry and damp substrates as well as highly durable and having low impact on the environment.

### Over the years Mapei has got us used to highly specialised products for specific applications: why now a multi-purpose product?

With this multi-purpose product, we are targeting quite a large slice of the market with the aim of meeting the needs of professional users, but also non-professionals who, nonetheless, expect guaranteed results, and are looking to bond construction elements made from different materials both internally and externally. Its main characteristics as an adhesive are its initial "sucker effect" and high final mechanical strength. When used as a sealant, on the other hand, it is an elastic product that can then be painted

over after application and is used for filling joints and cracks in floors and walls to stop the passage of air, water, heat, dust and noise: very important characteristics that make it versatile and suitable for various areas of use.

### Are there other performance properties we should highlight?

The formulation technology adopted for MAPEFLEX MS 55 enables us to achieve properties unheard of until now, such as being suitable for contact with drinking water and being able to use the product without the risk of staining absorbent substrates, such as stone and bricks. In fact, we have been awarded specific certification for these characteristics. And last but not least, it is a product with very low emission of volatile organic compounds (VOC).

### Apart from the traditional cartridge-type unit, MAPEFLEX MS 55 also comes in a smaller size. Why is that?

Apart from the traditional cartridge size, we decided to introduce a new, smaller format aimed mainly at occasional users and DIY enthusiasts, so they don't need to use a special extrusion gun. The format is a handy size and is suitable for small jobs, but it is still easy to extrude and very precise.

### Where can you buy this new product?

MAPEFLEX MS 55 can be bought through the same distribution channels where other products from the same line can be found, that is, professional retailers and large, specialised distribution chains. In fact, more and more often these spaces have areas where users can browse and choose the most suitable product for their needs.

Corporate Product Manager, Elastic Sealing & Bonding, Mapei Group



## WORK TOOLS ON MAPEI WEBSITE



# Mapei Design Fix

FREE SOFTWARE FOR DESIGNING ANCHORS USING THE MAPEFIX ADHESIVE PRODUCT RANGE

Thanks to their practicality and versatility, the market for chemical anchoring products is growing. For this sector Mapei proposes the MAPEFIX range, certified according to ETA Standards and CE marked.

To help simplify the work of technicians and designers, Mapei has a free software tool available on its website: the Mapei Design Fix which can be used to calculate the size of anchors made from threaded rods and post-installed rebars bonded with epoxy, urethane-methacrylate,

vinylester and polyester chemical anchors from the MAPEFIX range. The tool is highly flexible, allowing the user to calculate single or multiple anchors and post-installed rebars by choosing from amongst a wide range of diameters and embedment depths available. It returns reliable results, making it possible to evaluate the characteristics and performance properties of each single anchor. It also complies with current European standards (Eurocode).

### How is it used?

The tool is free-of-charge and available in English language. It may be downloaded from [mapei.com/it/en/mapei-design-fix](https://mapei.com/it/en/mapei-design-fix). After registering at the MyMapei area, Mapei Design Fix features an intuitive graphic interface that enables you to enter data and receive results quickly. Each time you access the tool, the software allows you to update the version installed on your computer.

Mapei Design Fix has various calculation modules covering all design situations: anchoring threaded bars and rebars. The software gives technicians and engineers maximum flexibility in terms of use, thanks to them being able to freely choose numerous variables typically found in strengthening and structural connection work: anchors in tension and compression zones, interventions in seismic areas, the type and quality of the substrate, the method adopted to make holes and the length, diameter and grade of the metal bars to be used.

Apart from verifying the design data entered, Mapei Design Fix allows you to carry out a detailed check of each step of the calculation so that all intermediate values and the calculation criteria adopted can be shared with others. Once the calculation has been completed, a personalised report is generated that you can then download and print off.



Login or register to download the software





## 3 PRODUCTS IN THE SPOTLIGHT

REMOVING RUST STAINS FROM CERAMIC TILES AND  
STONE, PATCHING SUBSTRATES, SKIMMING INTERIOR  
WALLS: A FEW SOLUTIONS BY MAPEI

# 1

### Planipatch Xtra



#### FOR LOCAL REPAIRS AND SKIM COATING OF SUBSTRATES IN VERY RAPID TIMES

Fine-grained, ultra-fast drying thixotropic cementitious patching compound classified as CT-C35-F7-A, according to European standard EN 13813. It is suitable for locally repairing and skim coating, even down to a "feather edge", interior floors, walls, steps and corners where quick hardening and drying, together with a particular smooth final surface, are required. PLANIPATCH XTRA can be used before the final smoothing of surfaces with suitable self-levelling compounds or direct installation of floor coverings. Suitable for surfaces in residential, commercial and industrial areas, it has very low emissions of VOC and ensures a quick job.

# 2

### Ultracare Rust Remover



#### REMOVING RUST STAINS FROM ACID-SENSITIVE MATERIALS

Fast-acting, acid-free, thick consistency cleaner in aqueous solution, with slightly alkaline pH, specifically formulated for removing rust stains also from acid-sensitive materials such as limestone, including when polished. The thick consistency of the product optimizes its efficiency, thus reducing waste. The gradual reaction of ULTRACARE RUST REMOVER makes it possible to easily define the actual contact time needed for the removal of both surface and deep rust stains. Thanks to its special formulation, the product can be applied repeatedly with no damage risks for the material to be treated. One 125 ml bottle of ULTRACARE RUST REMOVER can clean approximately 0.5 m<sup>2</sup> of surface.

# 3

### Dursilite Level



#### SKIMMING, FILLING AND LEVELLING WALLS IN INTERIORS

White acrylic filler and levelling paste for internal use. It is ideal for filling small features or skimming entire walls, solve all filling and levelling requirements on substrates prior to a painting cycle. The product has excellent workability and is easy to sand down without shrinking, flaking or cracking. It allows coating works to be completed more quickly. It is excellent to sand and ensures accurate finishing. It can be used to level off and even out rough-finish or finished walls and ceilings, plasterboard, and fibre cement boards. It is a very sustainable product due to its low emissions of VOC (Volatile Organic Compounds) with a packaging made of recycled materials.



**Mape-Antique NHL ECO RESTAURA** is the **multi-purpose mortar** made from **pure natural hydraulic lime** and **recycled materials**, applied in layers 2-20 mm thick, particularly recommended for rebuilding and levelling off substrates, render and mineral-based coverings in all buildings, including prestigious buildings and on existing coatings.



EVERYTHING'S **OK**  
WITH **MAPEI**

Learn more on [mapei.com](https://mapei.com)





# ReStelvio MAPEI 2024

**SUNDAY, 14<sup>th</sup> JULY**

**BORMIO - STELVIO PASS**

**8.50 A.M.** **21 KM RUNNING RACE**  
(only open to members of FIDAL and promotional associations)

**9.00 A.M.** **RUNNING EVENT OPEN TO ALL**

**9.10 A.M.** **NON-COMPETITIVE E-BIKE RIDE  
WITH A DEDICATED START GRID**

**9.15 A.M.** **RE STELVIO - MAPEI COMPETITIVE CYCLE RACE  
39<sup>TH</sup> EDITION**  
(for FCI's and Italian National Cycling  
Commission' members only)  
Start for the Women's Cycle Race

**9.30 A.M.** **RE STELVIO - MAPEI COMPETITIVE CYCLE RACE  
39<sup>TH</sup> EDITION**  
(for FCI's and Italian National Cycling  
Commission' members only)  
Start for the Men's Cycle Race

**AFTERWARDS** **"ALDO SASSI" MEMORIAL BIKE RIDE**  
(for all those interested, alongside other sport VIPs)  
TWINNED WITH "PEDALA CON ALDO"

**1.30 P.M.** **TIMELIMIT FOR ALL PARTICIPANTS**

**4.00 P.M.** **PRIZE-GIVING CEREMONY IN BORMIO SPORT CENTRE**

**A FREE TRAINING SCHEDULE FOR RUNNERS  
AND CYCLISTS IS AVAILABLE FROM: [www.mapeisport.it](http://www.mapeisport.it)**

## COURSE

**A 21.097 km climb from BORMIO (1,225 m a.s.l.)  
to the STELVIO PASS (2,758 m a.s.l.)**  
Difference in level: 1,533 m.

STARTING LINE: VIA AL FORTE (BORMIO CITY CENTRE)  
RETURN FROM STELVIO PASS TO BORMIO  
STARTING FROM 2.00 P.M.

**+ STELVIO × TUTTI**



organized by:  
**USB**  
BORMIO

**E-BIKE RIDE WITH  
A DEDICATED START GRID**

Thanks to: Parco Nazionale dello Stelvio

## ENTRIES

**FROM MARCH 1<sup>ST</sup> TO JULY 11<sup>TH</sup>**

at the web site [www.usbormiese.com](http://www.usbormiese.com) or else at the  
Unione Sportiva Bormiese headquarters, Via Manzoni, Bormio

Maximum amount of entries: 3,000

Entry fee:

**50 euros**, for entries from 1<sup>ST</sup> March to 1<sup>ST</sup> June

**60 euros**, for entries from June 2<sup>ND</sup> to July 11<sup>TH</sup>

The fee includes:

- **Re Stelvio-Mapei jersey, which you are kindly requested to wear**
- Clothes transport service up to the Stelvio Pass
- Refreshment points alongside the course and at the finish line
- Shuttle bus service from the Stelvio Pass to Bormio (for athletes)
- Pasta Party in Bormio
- Commemorative medal
- Photo and race certificate, both available and downloadable
- Personal race time

**N.B. Free entry on the website [www.mapei.it](http://www.mapei.it)**

for Mapei customers using their customer code  
and for readers of Realtà Mapei using their  
Realtà Mapei code

## HOTEL INFO

Phone: +39 0342 903300  
[booking@bormio.eu](mailto:booking@bormio.eu)  
[www.bormio.eu](http://www.bormio.eu)



**MAPEI**

**MAPEI SPORT**

