

[Realtà MAPEI]

INTERNATIONAL

ISSUE 56



THE POWER OF TRANSPARENCY

Dear readers,

I would like to talk about transparency.

Several times in the past I have taken the opportunity to draw your attention to the issue of communication/information and truthful-transparent behaviour.

This column is the ideal place to do so, because it comes at the beginning of the issue and sets the general tone.

This is also the year's first issue, a year when our industry really needs to start growing again. This issue also contains some important articles, such as the one written by Mapei's CEO, Giorgio Squinzi, and it outlines, in about 90 articles on projects, how successful Mapei products and proposals are worldwide, emphasising the popularity and widespread admiration for the solutions developed by our R&D laboratories to deal with all the different problems arising in the building industry.

I am talking about truthful and transparent communication, because this very specific obligation marks the culmination of the entire process of research, manufacturing, distributing and marketing for all products and it is an absolute duty we have towards installers and customers.

Over recent years official international certification bodies have left less room for "fanciful enterprises".

The regulations now clearly indicate the characteristics specific products must have. And the bodies in charge of checking and verifying them, which are unbiased and independent from both manufacturers and consumers, perform their duties effectively and make all the necessary checks.

Everything usually proceeds normally, but every now and again checks reveal a lack of conformity between the characteristics as they are stated and what they actually turn out to be.

This is certainly difficult for everybody, but we all know that it is our duty towards the market, our customers and contractors, who expect to buy (or include in their specifications) the right product for their building work at the right price. Over the last few years, thanks to the intensifying of these checks, we have seen various cases of the successful blocking of incorrect information about all kinds of different building materials. The companies involved have, of course, immediately taken due action to correct the characteristics of their



ADRIANA SPAZZOLI.
Realtà Mapei International's
Editor-in-Chief.

products, as well as their prices and all related information.

I must say that this has happened more frequently in Italy than abroad, possibly because the various operators in the sector have been less attentive while control bodies have been stricter and more vigilant.

Nevertheless, there have been cases of efficient monitoring abroad, too. For example, associations operating in this sector and control institutes have taken action in various different instances in Spain, Portugal, Germany and UK.

Action has been taken promptly in the countries in question with international repercussions (and, therefore, affecting Italy, too) in terms of safeguarding consumers.

We have seen (and we are still seeing) some very strange breeds. We have seen a veritable zoo full of weird creatures: parrots losing their feathers, crocodiles tearfully crying out their excuses, donkeys with droopy ears, chameleons changing colour, and snakes losing their skin. And there were even some characters from Star Wars.

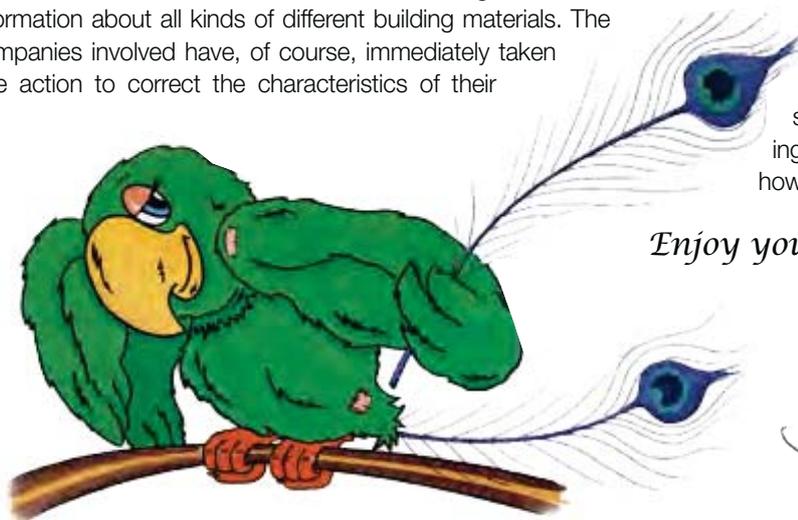
What we can see, you can see, too, and so I know that what I just said will make you smile, unless it makes you angry because you feel as if you have been duped, because you paid a high price for a product that was supposed to be the best, but actually turned out to have no guarantee and be of a lower overall performance standard.

Transparency and honesty come at a cost, because they are such important values.

To keep our place on the market and carry on growing, we believe we need to be able to count on your trust, which has been built up through so many years of hard work on so many different markets.

I would like to take this opportunity to say: look to the future with confidence. The market for building products is of the highest quality worldwide and its credibility certainly cannot be undermined by cases of "accidents along the way" or "chemical fantasies"; for our part, we promise to carry on working as we always have done. And let you know how things really are.

Enjoy your reading!



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COVER STORY

This issue comprises over 90 pages devoted to the most prestigious projects Mapei was involved in 2015 all over the world.

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"Responsible Care" is the world chemical industry's voluntary program based on implementing principles and lines of action concerning staff health and environmental protection.

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2016 WILL BE
ANOTHER YEAR
PUTTING US
TO THE TEST

As one of the world's leading companies in the manufacturing of chemical products for the building industry, Mapei constantly sets new quality standards through its innovative products and desire to compete and excel on a global scale.

Together with the enthusiasm of its staff and the team spirit inspiring everything we do, this is the real strength of a group that is heading into the future with determination and confidence.

The Mapei Group, which always focuses on a medium/long-term growth strategy, pays very careful attention to its customers, markets and new technologies.

With great faith in the fact that we of-

fer every market on which we operate products of the very highest standard and quality, 2015 was a good year for Mapei as the company grew worldwide at a rate of almost 13%.

This figure needs to be interpreted in conjunction with various different local situations, bearing in mind both those countries with depressed markets - such as Italy and France - and worldwide regions like North America and the Asia-Pacific area, where growth was as high as 20%. The Group also performed well in nations like Germany, Great Britain, Hungary and Scandinavian countries.

These results were due to the fact the Group is so competitive on the global



Mapei's commitment to protecting health and the environment is also embodied in our design work, such as the construction of manufacturing plants using local and eco-sustainable materials.

In this respect, too, we are global in the right way, because Mapei's internationalisation has deep roots entrenched in an awareness of being able to design and manufacture the very best that can be offered to building markets around the world based on extremely high specialisation offering innovative ideas and solutions ideal for every individual market.

In 2015 the Group continued to expand across all five continents from a commercial, manufacturing and organisational viewpoint, creating new industrial units, reinforcing those already in operation and increasing the number of staff it employs.

Extraordinary growth at a time of global recession that is a source of great satisfaction for the over 9000 staff and workers currently employed by the Mapei Group.

Although it is true that the global building industry is expected to improve in 2016 – growth is forecast to be 3.6% - the overall economic situation at the beginning of this year is not all roses for various different reasons, including the drop in the price of oil.

Although we are bound to be happy the price of oil is dropping, because this inevitably means our energy bills will be lower, it is worth remembering that the drop in the price of oil is a real problem for a number of our client-nations, which are both small and medium-sized oil producers, meaning that they will probably have less money available for buying our products.

Although we are still optimistic and positive about the year that has just begun, there are so many uncertainties that we

cannot hide; some things are very positive but others, on the other hand, still are not working as they should.

Ultimately this will be another tough year, which means we will have to draw on all our skill and expertise.

Nevertheless, we are still confident of achieving great results through investments in research, reinforcing our existing manufacturing facilities and building new plants.

At the moment design work is well

2015 WAS A GOOD YEAR FOR MAPEI AS THE COMPANY GREW AT A RATE OF ALMOST 13% WORLDWIDE AND 3% IN ITALY

underway on nine new plants that will soon be built. A new manufacturing plant in Australia and another in India will come into operation this year, while other investments will be completed in 2017. Our aim is to raise our capacity to compete globally, while at the same time creating new jobs.

We are used to fighting and also winning, because Mapei's real strength lies in teamwork and in the endless resources each of us manages to draw on when required.

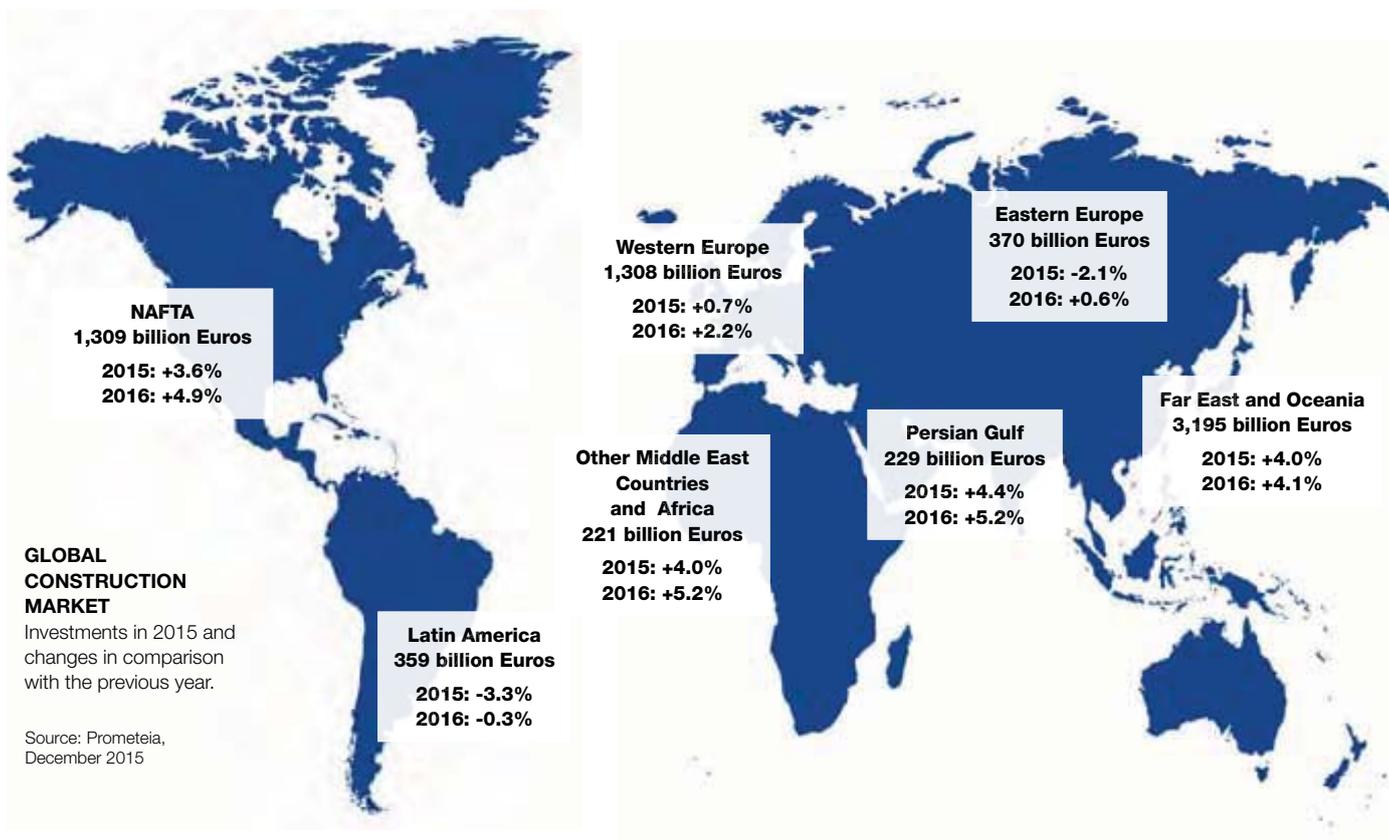
So it is our hope that all Mapei's friends, customers and staff, both in Italy and around the world, can make their dreams come true and continue to think and work on a grand scale, while keeping their feet firmly on the ground. This will allow everybody to grab any opportunities that arise and turn them into real chances to grow and improve, something Mapei strives to do all over the world.

Giorgio Squinzi.
CEO and President of the Mapei Group

market but they can also be attributed to Mapei's constant commitment to its three key strategies: research, internationalisation and specialisation.

Investments in Research and Development into new products and technologies have also increased and are always aimed at meeting the demands of every single market on which we operate, as we set ourselves the ambitious task of becoming the leading player on all these markets.

All this while reinforcing our commitment to developing industrial processes and products in a sustainable way, creating products designed to reduce energy consumption and VOC (volatile organic compounds) emission levels that are also safe for the environment, production staff, installers and end-users.



TRENDS IN THE GLOBAL BUILDING INDUSTRY

THE FORECAST FOR 2016 IS FOR A GLOBAL GROWTH OF 3.6%

In 2015, the global construction market reached a value of around 7,000 billion Euros, registering an estimated growth of 2.6% compared with 2014. The trend for the global construction industry, therefore, was slightly lower than the rate of growth in the overall global economy which, according to estimates by the International Monetary Fund, grew by 3.1%. The forecast for 2016 is for a general improvement in conditions for the global building industry, which is expected to grow by 3.6%.

WESTERN EUROPE

Investments in the construction sector in this area had an overall increase of 0.7% in 2015, while for the residential sector the growth was around 1%. Over the last years this region had a much lower impact on the global construction market and is currently estimated to be worth around 19%. The development of the building market was lower than that of the overall economy for the area, which was 1.6%. During the current year, the construction sector could grow by

more than 2%, which would mean a better performance compared with that of the economy in general, which is expected to be 1.4%. Estimates for 2017 indicate that growth in the economy should be consolidated although remaining at a moderate level (+1.7%), while in the building sector growth is expected to be stronger with investments forecast to increase by around 3%.

The trends for the five main countries in the region are a mixed bag. In 2015, the German building sector slowed down compared with the previous year and had a moderate growth of around 1%. The market should take off again during the two-year period 2016-2017, when the average rate of growth in investments could be around 2.5%.

In 2015, the French building sector went through another serious recession with a drop in output of more than 3%, due mainly to the particularly weak trend in the housing sector. Analysts believe that 2016 will be another difficult year for the French building industry with a slight fall in investments and there is not expected to be an upturn until next year.

In Italy, 2015 was characterised by a stagnation of investments in the construction sector according to Cresme (Italian Research Centre on Economics, Society and Market for Building and Environment), while other forecasts suggest there was a further drop in this sector. The market benefited from a positive trend in investments for home renovation, which had a net growth. The forecast for 2016 is moderately positive and a growth in investments has been forecast of between 1% and 1.8%. During the current year all market sectors should go through a period of growth, except for the new housing sector, for which an upturn is not expected until 2017.

Last year the UK building sector slowed down compared with the period of record growth that had been registered up until 2014, but analysts believe that, from 2016, the construction sector will start growing again at a rate of around 4%. The country, which has excellent prospects for economic growth, will benefit from a widespread increase in investments in the housing sector, the non-residential sector and in the infrastructure sector.

2015 was the year of the long awaited re-launch of the Spanish building sector, which after a long, hard-hitting recession, witnessed an estimated increase in investments of 4.6%. A re-launch of the housing sector in particular was behind the growth in the market, which had been the hardest hit by the economic crisis. The period of expansion in the building market should also continue during the two-year period 2016-2017, which should be characterised by an average annual rate of growth of more than 4%.

EASTERN EUROPE

Last year the economy in this area remained more or less stagnant and was negatively influenced by the net recession

FROM 2016, THE CONSTRUCTION SECTOR IN THE UK WILL START GROWING AGAIN AT A RATE OF AROUND 4%



IN 2016, THE RECESSION IN THE BRAZILIAN ECONOMY WILL CONTINUE, WITH AN ESTIMATED DROP IN GDP OF -3.5% COMPARED WITH 2015

sion in Russia, where GDP fell by 3.7%. The collapse of the Russian construction sector (which lost more than 9% of its value) hit both the housing sector and the infrastructure sector. The recession in the most significant market in the region explains why there was a fall of around 2% in the value of investments in the construction sector in Eastern Europe. In 2015, the weight of Eastern Europe's share of the world construction market fell to less than 6%. The overall decline in the market for this area was tempered by the positive trend in the countries of Central Eastern Europe, especially Poland, which last year had very high economic growth and a boom in the building sector (+5.6%), along with the added support of infrastructure projects.

The forecast for the Russian economy in 2016 is for another period of moderate recession, further penalising the overall development of GDP in Eastern Europe. During the current year the Russian building industry could suffer a further drop in investments, estimated to be around 4%. The recession in the Russian construction market will be tempered by sustained development in all the main markets in the region, which will benefit from easier access to credit and from heavy investments from the European Union for the infrastructure sector. In 2016 analysts believe that, once again, Poland will be the best performer in the Eastern Europe area, thanks to an increase in investments of more than 7%. The growth in the Polish building industry will be particularly strong in the civil engineering sector, for which "double-figure" growth is expected. For the current year, the Turkish building industry, on the other hand, is expected to be more or less stagnant. Turkey is a country with enormous potential (it is one of the most important producers and consumers of cement and ceramic tiles in the world) and, up until 2014, had gone through a period of high economic growth in the construction market. Tensions within the country, however, along with terrorism and conflicts with other countries in the region, have had a negative influence on the outlook for the Turkish building industry. Overall, the building sector in Eastern Europe will probably have one of the worst trends in the world in 2016, with an estimated growth in investments of just 0.6%.



NORTH AMERICA

In 2015 the overall growth of the North American economy reached 2.3%; GDP rose by an estimated 2.5% in the USA and 2.3% in Mexico, while the Canadian economy grew by a more modest 1.2%. The strong growth of the residential sector in the USA and Mexico has sustained the overall development of building activities in the region, while the trends for the market were rather more modest in Canada. Overall, estimates indicate there was a 3.6% increase in investments in the construction industry in this area in 2015. After the collapse of the building market between 2006 and 2011 the upturn, which started in 2012, led to a partial recovery in terms of volumes, and today investments in the construction industry in North America account for around 19% of the global building market.

In 2016 the rate of growth for GDP in the region should not be significantly different to the levels achieved in 2015, except for a partial strengthening of economic trends in Canada. Analysts believe that the boom in the residential building sector in the USA and Mexico could also continue into the current year and sustain the growth of the entire building market; investments in the construction industry in the USA in particular could grow by more than 5%. In Canada, an overall improvement in the economic climate should be joined by better trends in the building market, with investments expected to increase by an estimated 2.6%. Overall, in the NAFTA region, market growth for 2016 is expected to be around 5% and, as a result, building activities in this area will be amongst the most dynamic in the world.

LATIN AMERICA

Brazil, the most important market in Latin America, went through a period of serious recession in 2015. GDP fell by 3.8%, one of the reasons being the effect of restrictive economic policies and lower income from the export of raw materials. Other countries that are net exporters of raw materials, first and foremost Peru and Chile, had rather modest

economic growth last year, too. Overall, GDP in the Latin America region fell by more than 1%. The economic climate in the construction sector was even more negative and the fall in investments is estimated to have been 3.3%, the worst performance in the world. The trend for the building market was particularly negative in Brazil, where an erosion in buying power for families, and the difficulty in obtaining credit, had a negative influence on output in this sector. A series of political scandals further contributed to the delay in the development of important infrastructure projects, which contributed in worsening the crisis in the Brazilian building industry. The positive evolution of the Colombian and Argentinean markets slightly helped temper the overall fall in output in the building industry for the area as a whole.

In 2016, the recession in the Brazilian economy will probably continue, estimates for the drop in GDP are of -3.5% compared with 2015. Apart from the Brazilian economy, it would seem that the Venezuelan and Argentinean economies will also go through a period of recession. For other countries on the other hand, such as Colombia, Chile and Peru, the outlook for growth in GDP is brighter. Overall, 2016 is expected to be a period of economic stagnation in the Latin America region. For the current year, the recession in the Brazilian building industry (which is the dominant market in the area) will negatively influence the general trend of investments in the construction industry, which could even fall slightly. In brief, Latin America will continue to be the area with the worst performance in the building market at a worldwide level.

PERSIAN GULF NATIONS

In 2015 the most significant economies in the region – Saudi Arabia and the United Arab Emirates – had a lower rate of economic growth than in 2014, which was due to a fall in income from oil exports. The estimated rate of growth in GDP in Saudi Arabia and the United Arab Emirates was between 3 and 3.5%, while in Iran it was less than 1%. The construction sector was only partially affected by the fall in the price of oil (and, as a result, lower incomes for the exporting nations). The financial reserves accumulated during the oil industry's boom period allowed the development of important infrastructure and housing projects that were already underway to continue, especially in Saudi Arabia and the United Arab Emirates. Estimates indicate that overall growth in investments in the construction industry in 2015 was around 4.4%. In 2016, economic growth in all the main countries in the re-

**THE INVESTMENTS
IN THE
CONSTRUCTION
INDUSTRY IN THE
NAFTA COUNTRIES
MIGHT GROW BY
5% IN 2016**



THE FAR EAST AND OCEANIA AREA ACCOUNTS FOR MORE THAN 45% OF THE GLOBAL BUILDING INDUSTRY AND, IN THE NEAR FUTURE TOO, THE AREA WILL PROBABLY CONTINUE TO BE THE MAIN DRIVING FORCE BEHIND GROWTH IN THE GLOBAL BUILDING INDUSTRY



gion is expected to strengthen and, as a result, the construction sector could benefit from the improved economic climate. Forecasts indicate that the market could grow by more than 5%, returning to the levels of growth seen in 2014. In this region, however, there is a feeling of uncertainty regarding a further drop in the price of crude oil and the recent growing tension between Saudi Arabia and Iran. These factors could lead to a high level of instability in the area and condition its overall development.

OTHER MIDDLE EASTERN NATIONS AND AFRICA

This region is characterised by one of the highest levels of instability on the entire planet. Estimates regarding trends in the construction sector are obviously highly dependent on the development of the political scene and the ongoing turbulence in the area. In 2015 economic development was quite strong for both the main North African markets (especially Egypt and Morocco) and the sub-Sahara region, in spite of a slower rate of growth than in 2014. Estimates for last year indicate that investments in the construction market might have grown by as much as 4%. Even though the rebuilding process in Libya is behind schedule, the market benefited from the development of infrastructure and housing projects, sustained by urbanisation processes and by plans for public building projects.

The acts of terrorism carried out recently in a number of North African countries could have a highly negative effect on the economic development of the entire region. The tourist industry in Egypt and Morocco in particular could suffer, one of the key sectors for local economies. For the sub-Sahara region, estimates indicate economic growth of more than 4%, which should be especially stimulated by Nigeria, the most important market in the area. If there are positive developments on the social-political scene and less turbulence in the area, the building market in 2016 could strengthen its rate of growth and record an increase in investments in the construction industry of more than 5%. The African region has a great deal of potential and is able to attract enormous financial resources – especially from the Asiatic nations – aimed at the infrastructures market (a key sector to guarantee the overall development of the economy). If the problems that threaten the development of the African continent do not worsen over the next few years, the construction sector, in the medium to long-term, could register one of the highest rates of growth in the world.

FAR EAST AND OCEANIA

2015 was characterised by a slowdown in the rate of economic growth in China, which suffered also due to an increase in the tensions felt by the financial and exchange markets. India, on the other hand, registered a very high rate of growth, more than 7%. Amongst the more mature markets, the increase in GDP in Japan was quite modest and remained lower than 1%, while in Australia the rate of growth was around 2.5%. Last year the building market in the region registered an estimated rate of growth of 4%. Growth, therefore, continued, but at more sustainable and much lower rates than those seen in recent years.

If the economic and financial outlook for China becomes more stable, the growth in GDP and in the construction sector in this region could be similar in the current year to that of the previous year. A slowdown in the Chinese residential sector could be partially counterbalanced by the strong development expected in the Indian building industry. The outlook for the construction market in India is extremely positive, both in the housing sector and in the civil engineering sector. The residential sector is benefitting from an increase in demand in the housing sector, fed by a growing middle class, while growth in the infrastructure market is guaranteed by the investments already planned by the Government. In fact, the modernisation programme for the transport systems is an absolute priority to guarantee growth in the Indian economy. Indonesia, the Philippines, Malaysia are other markets in which building activity should reap the benefits of the strong growth which is expected, particularly in the infrastructure sector.

Overall, in spite of more moderate rates of growth in the building market, Asia confirms once again that it is the mainstay of the world's construction industry. The Far East and Oceania area accounts for more than 45% of the global building industry and, in the last few years, has constantly increased its slice of the world's total construction output. The Asian Pacific area includes six of the most important construction markets in the world and absorbs a large part of the world's total cement consumption. And in the near future too, the area will probably continue to be the main driving force behind growth in the global building industry and influence the overall trend in the global construction market.

Francesco Doria. Mapei Market Research Manager



THE CHEMICAL INDUSTRY REALLY IS SUSTAINABLE

3RD CONFERENCE ON SUSTAINABLE
CHEMICALS ORGANISED BY THE ITALIAN
FEDERATION OF THE CHEMICAL INDUSTRY



The 3rd National Conference on Sustainable Chemicals was held on 10th December organised by Federchimica, an association belonging to the Confederation of Italian Manufacturing and Service Companies (Confindustria) whose members include Mapei and which represents about 1400 large, medium-size and small companies in Italy employing a total of 109,000 staff. The Conference provided the opportunity to present experimental sustainability projects and joint public-private enterprises, with international guests also in attendance.

It is now an established fact, well known to the general public and businesses, that sustainable chemicals will be decisive for the future of the planet in the battle against global warming - which was at the focus of proceedings at the 2015 United Nations Conference on climate change in Paris (see the dedicated article on this issue of the magazine).

The message conveyed in the speeches given by various people taking part was quite clear and shared by everybody: re-

search and innovation have definitely taken up the challenge to reduce the environmental impact being caused by products and processes and has already achieved satisfactory results. With 71% of its companies being innovative businesses, the chemicals sector not only has the highest share of industries of this kind in Italy, it also holds the record in terms of promoting research. Spending on Research & Development in 2015 reached a figure of 475 million Euros in Italy, equal to 5% of what it is worth.

The chemicals industry is a "diffused innovation" sector in which not only large businesses but also lots of small and medium-sized companies are engaged in research, setting up scientific partnerships with Research and University bodies and helping create value through the results of this research. Bearing in mind that human resources devoted to R&D in this sector correspond to 4.2% of total staff, compared to 2.6% in other industries, and represent a total of over 4900 workers in Italy. The 3rd Conference on Sustainable Chemicals aimed at outlining the "best practices" in this fundamental industry supplying intermediary goods to all production sectors and transferring its own innovative traits to consumer goods, aimed at improving people's quality of life.

THE WORLDWIDE CHEMICAL INDUSTRY IN 2016

The chemical industry is still one of the driving forces worldwide. Despite the crisis in 2008-2009, worldwide chemicals sales are continuing to increase at very fast rates (+2.9% in 2000-2014). From a medium-and long-term perspective, the world demand for chemicals will keep on growing.

On one hand consumption of chemicals in emerging nations will continue to escalate and, on the other, the drive towards sustainable growth will also boost chemical consumption in advanced nations not just in terms of value (due to the increasing technological content of chemical products), but also in terms of volume (due to a boom in the use of chemical products in user industries).

Europe is still the world leader in terms of investments in R&D. Nevertheless, R&D costs in relation to overall spending is showing a downward trend not only in Europe but also in other advanced regions of the world (USA and Japan). However, this trend does not cover all chemical products and is not unstoppable. On the contrary, the latest technological innovations - ranging from sustainability and chemicals from renewable resources to nanotechnologies and biotechnologies - could inject fresh life into R&D in the chemicals industry. According to a report on the latest trends in the European chemical industry published by Cefic (European Chemical Industry Council), the worldwide demand for chemicals in 2016 will keep on increasing at a relatively stable rate equal to 2.5%. China is slowing down but, at the moment, not in a dramatic way and possible overcapacity situations are only affecting certain specific sectors. Production output in the USA is continuing to increase at healthy rates (+3.1%) thanks to the nation's solid economic recovery.

The European chemical industry is expected to improve but only gradually (between 1.0 and 1.5%) after expanding to a small extent in 2015 (+0.5%). The revival in the manufacturing industry will continue to be affected by uncertainty, while the



euro/dollar exchange rate will support exports and help reduce pressure on imports in conjunction with low oil costs that will counteract the cost benefit of gas-powered production in North America and the Middle East.

MAPEI AMONG THE COMPANIES AWARDED THE 2015 RESPONSIBLE CARE PRIZE

Involvement of social players, distribution and transportation of chemical products, energy efficiency, protecting the environment, health and safety at the workplace, safety during the manufacturing process, product responsibility, controlling and safeguarding the production facilities.

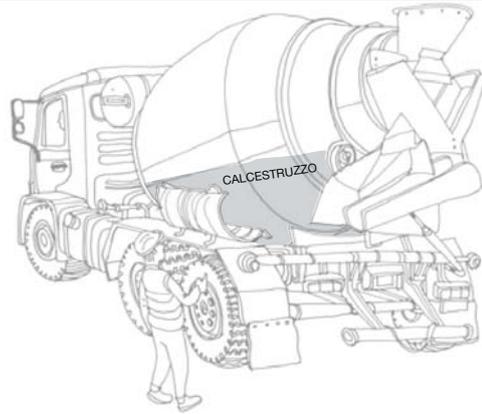
These are the eight realms of management for which Federchimica awarded its 2015 Responsible Care Prize on 14th December last year.

Six companies were awarded prizes: Bayer SpA, Infineum Italia Srl, Mapei SpA, Nuova Solmine SpA, Pink Frogs Srl and Versalis SpA. All these firms had achieved important results in terms of sustainability in one or more of the aforementioned fields. Having now reached its eleventh edition, the Prize is an important project aimed at concretely demonstrating the chemical industry's ability to develop sustainably. An issue to which the Italian Federation pays very careful attention, as emerged both from the proceedings of its recent Third Conference on Sustainable Chemicals and the *Fourth Yearly Report on Research into Sustainable Chemicals*, with attention focusing once again on "best practices" in the industry.

The six joint-winners were chosen by a panel of judges composed of four experts (representing universities, unions, NGOs, industry), who studied the 17 projects entered by companies belonging to the Responsible Care Programme. Due to the high standard and number of entries, this year the panel of



RE-CONzerø



judges decided to award six joint-prizes instead of the usual three.

Mapei SpA was awarded a prize for RE-CON ZERØ, a sustainable solution for saving and reusing returned concrete. Ten billion cubic metres of concrete are manufactured worldwide every year and, at the end of works, over 200 million are left over because they have not been used for building purposes. The material is taken back to the manufacturing plant in mixer trucks (the so-called "returned concrete") and then disposed of as waste. RE-CON ZERØ is the most sustainable method of recycling the returned concrete, by transforming it into a granular material that can be used as aggregate for the production of new concrete. It does not generate either solid or liquid waste, reduces the amount of natural aggregate used and the amount of road transport involved, and can be used easily. Furthermore, RE-CON ZERØ reduces both the costs of waste disposal and the supplies of natural aggregates at the ready-mix concrete plant.

2ND NATIONAL CONFERENCE ON "HOW TO FIGHT POVERTY WITH LOW CARBON PROJECTS IN LESS DEVELOPED COUNTRIES"

There will be 100 million more poor people in 2030 due to climate change: this warning was recently issued by the World Bank in a study relating poverty to climate change. An emergency that affects everybody, but has most impact on developing nations, where often prohibitive living conditions impose lifestyles that are harmful to both people and the environment. Macro-factors like deforestation, the everyday practice of cooking food using rudimentary and toxic utensils and, generally speaking, the lack of any market economy capable of investing in eco-sustainable projects makes these regions even more vulnerable.

The latest technology used in crisis areas, together with sustainable growth and corporate responsibility, were at the focus of the second national conference on "How to Fight Poverty Using Low Carbon Technology" organised in Milan on 18th November, 2015, by the Italian Federation of the Chemical Industry (Federchimica).

The chemical industry, which is at the very cutting-edge in terms of environmental sustainability, can claim to have made significant progress in reducing greenhouse emissions and also in carrying out ongoing research into increasingly efficient manufacturing products and processes in terms of energy expenditure, which could also be exported to the poorest parts of the world.

As regards the need to take action in developing nations to reduce

air pollution, during the Conference a number of chemical industries, including Mapei, talked about their own experience in the most backward regions of the earth working in partnership with NGOs and local authorities.

Cooking sustainably with LPG (Liquefied Petroleum Gas), financing the construction of hydroelectric power stations, encouraging ethical finance, and introducing biotechnologies and innovation, are just some of the main enterprises the chemicals industry is engaged in and which were outlined during the proceedings. Roberto Leoni spoke on behalf of Mapei outlining "Mapei's Commitment to Social Responsibility and its Way of Generating Financial Leverage through Carbon Credits".



FASHIONABLY GREEN FOR OVER 30 YEARS

THE 14 CONCRETE EXAMPLES OF MAPEI'S GREENNESS

1 A HISTORY OF COMMITMENT

Certified products for the building industry with full respect for the wellbeing of the environment and the final user.

2 BIOBLOCK TECHNOLOGY

Innovative technology to avoid the formation of mould.

3 LOW DUST TECHNOLOGY

This technology considerably reduces the amount of dust released into the environment during production and use.

4 ULTRALITE TECHNOLOGY

This technology allows lightweight adhesives to be produced, offering higher yield, less effort and less environmental impact due to transport.

5 PRODUCTS SAFEGUARDING THE ENVIRONMENT

70% of our R&D investments is devoted to the development of products which respect the environment.

6 RESEARCH & DEVELOPMENT FOCUSED ON THE INDOOR AIR QUALITY

Formulation of solutions with very low volatile organic compounds emissions.

7 GREEN EDUCATION STRATEGIES

Targeted training courses for professional installers for a correct use of Mapei eco-sustainable materials.

8 GLOBAL ENVIRONMENTAL MANAGEMENT

Mapei is a member of the chemical industry's global Responsible Care programme.

9 CONSTRUCTION OF GREEN BUILDINGS

Mapei's most recent production facilities are designed and built according to LEED certification criteria.

10 LOGISTICS AND SHIPPING STRATEGIES

Reduction in the consumption of fuel and pollutants by promoting the use of rail transport instead of road transport.

11 "REDUCE, REUSE, RECYCLE" STRATEGIES

Reduction of solid waste and wastewaters production and the use of recycled materials in the composition of many products.

12 ENERGY SAVING STRATEGIES

Rationalization of energy consumption and solutions for construction of energy-saving buildings.

13 SUPPORTING GREEN PROGRAMMES WORLDWIDE

Mapei products give an important contribution to Green Building Council programmes all around the world.

14 EVALUATION OF THE LIFE-CYCLE OF PRODUCTS

Dedicated team specialized in evaluating the environmental impact of the whole life cycle of our products.





PERFORMANCE CHARACTERISTICS OF CEMENTITIOUS ADHESIVES: THE NEED FOR MORE CLARITY AND TRANSPARENCY

The ceramics market has been constantly evolving over recent decades, both in terms of the types of materials employed and especially the sizes now used, particularly in the last few years. We are now at a point where, as far as absorption and size are concerned, tiles are comparable to sheets of glass.

The development of ceramics has encouraged a parallel development in adhesives technology to such an extent that, as far back as 2001, a specific classification standard had to be drawn up by CEN: EN 12004.

This standard has now been adopted by all European countries, which is also due to the fact that CE marking on adhesives for ceramics has become obligatory for any company marketing their products within the European Union.

EN 12004 standards define a product classification system based on a series of fundamental (obligatory) and optional classifications and sets test limits and criteria to assess which of these classifications each individual adhesive belongs to. The main advantages of this classification system is that the performance characteristics of different products may be compared directly and, as a result, you may quickly identify which are the

most suitable areas of use for a given product. Also, since the 1st of July 2013, new regulations covering construction products have made it obligatory to provide a product's Declaration of Performance (DoP): for every product carrying the CE mark, the manufacturing company must issue a DoP that indicates its performance characteristics according to the relative standard.

For Mapei, complying with standards covering the declaration of an adhesive's characteristics, whether they are obligatory or optional, is a fundamental requirement, synonymous of the quality and transparency with which the Company is presented to the market and to each and every one of their clients. Production controls and checks carried out constantly by Mapei Research and Development laboratories monitor the processes and ensure that the quality parameters of Mapei adhesives remain constant and reliable.

Nowadays, EN 12004 standards are well known not only by designers, but also by all those working in this sector, and the need to declare a product's performance characteristics is not only a requirement of the standards, but also something the market requires and expects, and

even the optional deformability classes (S1 and S2), as well as the fundamental ones related to adhesion, play a vital role when choosing the right product.

Knowledge and awareness of the standards has been spread by those operating in this sector, while the publication of specific installation standards in Italy for ceramic tiles (UNI 11493) and natural stone (UNI 11322), which have been developed and written to the benefit of the entire sector, has also helped spread this knowledge.

Until today, at European level there are still no regulatory standards similar to those developed in Italy. This is why the publication of these standards for the design, installation and maintenance of coverings has aroused great interest abroad, representing quite a revolution with official documents that introduce concepts which, until then, had been left to the experience of technicians and engineers.

These standards always refer to European ones such as EN 12004, giving specific indications about how to choose an adhesive in terms of its classification, including the deformability classes S1 or S2.

We would like to remind our readers that

the deformability of an adhesive is the property that provides an extra safety margin whenever there are different movements between tiles and the substrate, such as when bonding tiles outdoors, bonding large size tiles, bonding on slightly deformable substrates, etc. A specific example is that UNI 11493 requires the use of cementitious adhesives in deformability class S1 or S2 for large format tiles.

Another important innovation introduced by the Italian standards is the necessity to develop a traceability document filled by the tile installer. He has to indicate the type of adhesive used and its classification, including its optional classes.

This document may then be used in the event of problems or complaints to make sure all the right products have been used.

Leaving aside the above mentioned standard, it is clear how important it is for the manufacturers of adhesives, in order to safeguard the rights of their clients, to be open and completely transparent when declaring the correct classification, including the optional classes, of the products they market.

Mapei has always believed that open, transparent communication forms the basis of a company policy which focuses on quality and a highly professional relationship with their customers.

This approach is clearly demonstrated through all the technical documents covering Mapei adhesives, in which a product's real classification, including its optional classes, is indicated with undeniable clarity.

In order to meet all requirements, Mapei's range of adhesives includes a number of products classified as S1 or S2 as one can see in the table below.

Class S1	Class S2
Keraflex Maxi S1 and Keraflex Maxi S1 Zerø	Elastorapid
Ultralite S1	Ultralite S2
Ultralite S1 Quick	Ultralite S2 Quick
Keraquick S1	
Granirapid	

Francesco Stronati and Stefania Boselli.
Mapei SpA Technical Services Department

SOME HIGH PERFORMANCE MAPEI ADHESIVES

Today we would like to focus our attention on four specific products, which may be considered to be Mapei's most widely used adhesives on the market thanks to their excellent performance characteristics and wide areas of use: **KERAFLEX MAXI S1, KERAFLEX MAXI S1 ZERØ, ULTRALITE S1 and ULTRALITE S2.**



KERAFLEX MAXI S1 ZERØ is classified as **C2TE S1** and is a grey, one-component, deformable cementitious adhesive, suitable for most of the more common applications in the building industry. It is extremely easy to use and its consistency is such that it may be applied in thicker layers compared with normal cementitious adhesives. This helps absorb the deformation of the substrates and, at the same time, prevents even heavy tiles from slipping. Its "Zero" denomination is derived from the fact that the product has zero climate-change impact (greenhouse gas emissions have been completely offset by purchasing environmental credits). The white version of the adhesive is available under the name **KERAFLEX MAXI S1**. Thanks to the new formulation used for the product, this version is characterised by an ultra-white colour which sets it apart from normal white adhesives, further improving its excellent workability characteristics. Both versions are characterised by their high thixotropy which prevents even large wall tiles from slipping. It also has Low-Dust technology integrated into the formula which drastically reduces the amount of dust given off when handling the bags and when mixing the adhesive.

ULTRALITE S1 (class **C2TE S1**) and **ULTRALITE S2** (class **C2E S2**) are lightweight, one-component cementitious adhesives which are deformable and highly deformable, respectively. These adhesives, characterised by their excellent workability, are suitable for bonding all types of ceramic (including thin porcelain tiles), mosaic and natural stone not sensitive to moisture on all substrates normally used in the building industry.

These adhesives are part of the wider ULTRALITE range, a series of lightweight products that represent the most recent development in this sector. They are characterised by their easier application compared with traditional adhesives. Their special formulation includes recycled silica micro-spheres and natural aggregates which, apart from improving their trowelability, increase their wetting effect on the back of tiles. All these products are available in bags weighing just 15 kg and their yield is around the same as a 25 kg bag of traditional adhesive. Also, thanks to their practical hand grips, the bags are easier to handle.



THE PROBLEM OF “CLIMATE CHANGE”

AND A NEW APPROACH IN THE BUILDING INDUSTRY

PROBLEMS AND SOLUTIONS PROPOSED DURING THE PARIS CONFERENCE AND HOW THE BUILDING SECTOR CAN CONTRIBUTE

The first step was the Kyoto Protocol, the first binding agreement to reduce greenhouse emissions, which was signed in 1997 by just 37 nations and the European Union. Last year, at the 2015 United Nations Climate Change Conference held in Paris from the 30th of November until the 11th of December, after long negotiations, delegates from the 196 nations taking part at the summit undertook a commitment to draw up a joint, binding agreement to limit global warming and reduce emissions that cause climate change.

Official data confirms that the level of climate-changing, greenhouse gas emissions around the world is constantly increasing, with disastrous consequences for the environment and an inevitable impact on our towns and cities.

The President of Cop21 (the 21st Conference of the Parties to the United Nations Framework Convention on Climate Change), Laurent Fabius, optimistically defined it as a “Fair, long-lasting and balanced agreement” and stressed the importance of some of the main points agreed on during the Conference held in Paris: to limit global warming to less than 2°C and to help finance developing nations.

Even though the decisions reached were not to everyone’s complete satisfaction, such as those expecting “decarbonisation” at a worldwide level, that is, to completely abandon fossil fuels, the agreement still marks a historical turning point.

As underlined by the Secretary-General of the United Nations, Ban Ki-Moon: “We are entering a new era of global cooperation and facing up to one of the most complex issues mankind has ever had to come to terms with. For the first time, all the countries in the world have undertaken a commitment to reduce emissions, strengthen their resilience and come together for the common cause of climate change”.

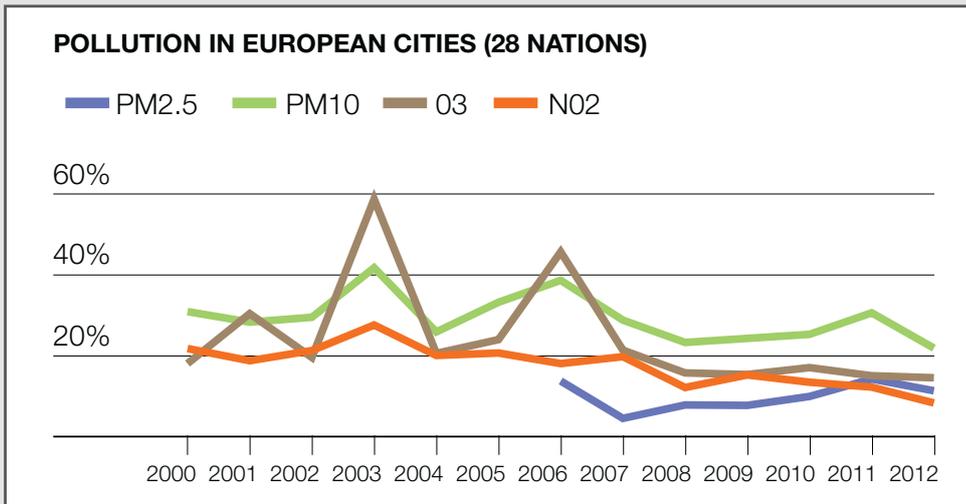
The document agreed upon is based on the premise that “Climate change represents a pressing, potentially irreversible threat to mankind and our planet”, and requires “The highest level of cooperation possible between all nations”, aimed at “Accelerating the reduction in greenhouse gas emissions” and acknowledged that this is just the start of a long journey, one that has now become essential.

KEY POINTS OF THE PARIS AGREEMENT

- *Limit global warming to less than 2 °C.*

This important point was unanimously accepted as part of the final agreement. It means keeping the rise in average global temperature to less than 2°C compared to pre-industrial times and to continue with the efforts already made and strive to reduce or limit global warming to 1.5 °C, “acknowledging that this would significantly reduce the risks and impact of climate change”.





LEFT. The graph shows the pollution in the European cities of 28 nations in the last decade.

• *Financial aid for developing nations.*

A non-binding invitation is part of the agreement for developed nations to increase their level of financial support, according to a concrete roadmap aimed at reaching a combined target of 100 billion US dollars annually by 2020 for “mitigation and adaptation purposes, thereby increasing significantly the level of aid with respect to current levels and to provide appropriate technological support and create expertise”.

In other words, the more developed nations must supply developing nations with the appropriate instruments so they may follow the same path.

• *Reduction of CO₂ emissions.*

The aim of the agreement is to reduce emissions rapidly “using all scientific knowledge currently available, to reach a balance between emissions into the atmosphere and emissions persistently absorbed by biomasses – forests, the ground, etc. – or captured and stored underground”. Critics of the agreement have focused on this point in particular: in fact, according to experts, this may help reduce emissions, but it is not a substitute for the need to reduce polluting emissions to zero.

The nations that suffer most from the impact of climate change, and many environmental bodies, asked that everybody made a clear commitment to the problem, but India and China have asked for this obligation to be cancelled, or at least postponed, claiming they have a right to burn coal.

This is why the agreement, that binds those nations that have undersigned it, does not mention “carbon neutrality” and does not specify the target for reductions by 2050.

• *Five-year revision of commitments undertaken.*

Every five years, the nations that have signed the agreement must renew their commitment to reach the objectives set in the agreement

and commit themselves to future objectives.

• *Commitment to renewable energy sources.*

The agreement does not explicitly mention “More widespread use of renewable energy sources”, but experts on this subject have stressed how the objectives for long-term temperatures and for a reduction in greenhouse gas emissions, will force every nation to offer incentives for the production of clean energy in order to meet the targets agreed upon.

LESS LAND CONSUMPTION, INCREASED UPGRADING

This could be the slogan for the new direction of the construction industry.

The possibility of reducing climate-changing emissions, and the damage and disasters caused by drought, flooding and geological catastrophes, place even more emphasis not only on the consequences, but also on the remedies, especially when considering protection for homes and buildings in general.

The technological developments that provide effective solutions for building sites, along with intelligent national policies to

contain energy consumption, could help not only to limit the damage caused by climate change, but also help fight the economic recession and create new jobs.

One of the key players in these new energy policies is certainly the building industry and, more in general, energy efficiency.

According to an analysis carried out by the European Commission, in order to reduce emissions by 40% by 2030, 38 billion Euros will need to be invested annually, with half of that amount destined for the building upgrading sector.

The worrying outlook for the building sector, which between 2008 and 2015 witnessed the closure of

KEY FIGURES FROM THE PARIS AGREEMENT

195 NATIONS THAT SIGNED THE AGREEMENT REPRESENTING 97% OF THE WORLD'S POPULATION

95% CLIMATE-CHANGING GASES ATTRIBUTED TO THE NATIONS THAT SIGNED THE AGREEMENT

40% CUT IN CO₂ EMISSIONS THE EUROPEAN UNION MEMBER STATES HAVE COMMITTED TO

1.5°C AVERAGE TEMPERATURE INCREASE AROUND THE WORLD MUST BE KEPT TO LESS THAN 1.5°C

10,773 COMMITMENTS TO REDUCE EMISSIONS SIGNED BY LOCAL BODIES, COMPANIES, INVESTORS AND SOCIETY REPRESENTATIVES

RIGHT. The cogeneration plant at the Vinavil plant in Villadossola (Italy) and, below, the photovoltaic panels installed at Mapei plant in Robbiano di Mediglia (Italy).



thousands of building companies and the loss of many jobs, is gradually showing timid signs of an upturn, thanks particularly to building renovation and upgrading projects and bonus incentives supplied by the governments.

IF IT IS SUSTAINABLE, THE BUILDING INDUSTRY WILL TAKE OFF AGAIN

According to a report presented by Cresme (Italian Research Centre on Economics, Society and Market for Building and Environment), which discusses the economic impact of tax benefits for building renovation projects and projects to upgrade the energy efficiency of building stock, thanks to new energy policies and tax benefits, such projects are managing to drive the Italian construction market.

The analysis carried out by Cresme also highlights that, in the first half of 2015, tax benefits of 50% for renovation projects and 65% for energy saving projects (known as Ecobonus), have led to investments of almost 16 billion Euros, while the forecast for the whole of 2015 is for a total of 23.5 billion Euros, which means around 351,000 new jobs between directly employed people and supply industries.

These figures are a clear indication of the success of the tax benefits system in Italy. The scheme was first implemented in 1998 and, up until 2015, there had been more than 12 million applications to take part in the scheme, which accounted for 50% of all Italian families and 40% of all Italian homes.

Not only did the Chairman of the Italian Government's Environment Commission, Ermete Realacci, stress the importance and need to establish the bonus scheme for urban renovation and energy efficiency projects, but also the importance of extending the scheme to include seismic upgrading projects and the asbestos removal programme.

These measures are important because, apart from re-launching the economy by investing in quality building work that does not consume more land, they focus on innovation and safety in buildings and face up to the problems caused by climate change. It is important to highlight that around one third of energy consumption and CO₂ emissions in Italy are currently due to sub-standard buildings.

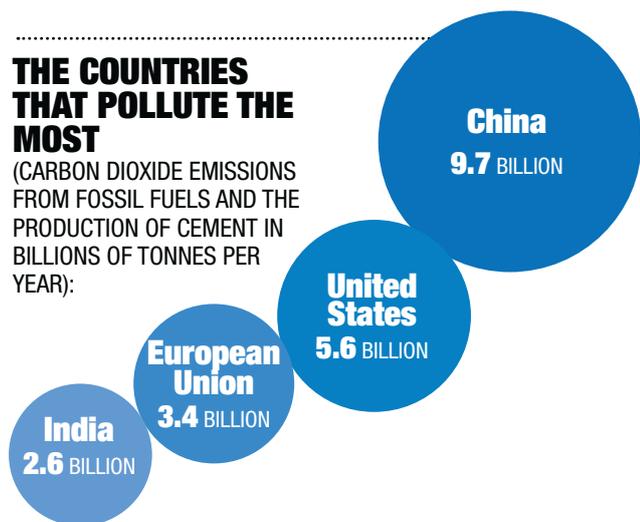
In fact, according to research carried out by Nomisma (an independent company that carries out economic research and consulting), in Italy there are at least 8 million residential buildings out of a total of 12 million that have an energy rating of G which, if we bear in mind the rating goes from a top rating of A+ to the lowest rating of G, means they all have the lowest rating. This means they have very high levels of consumption for heating purposes and then for cooling them down in the summer. More than 60% of the buildings are over 40 years old and their owners spend 45 billion Euros every year on heating and electricity.

If renovation and upgrading work was carried out on the oldest portion of the Italian building stock (around 2 million buildings), it would cost the owners around 100 billion Euros but, thanks to the bonus scheme with tax breaks of 65% spread over 10 years, they would have a return on their investment within an average of 7 years, which means a benefit for their own pockets but also for the environment.

There would also be no more land used up and the annual energy savings would be the equivalent of 3.4 million tonnes of oil.

THE COUNTRIES THAT POLLUTE THE MOST

(CARBON DIOXIDE EMISSIONS FROM FOSSIL FUELS AND THE PRODUCTION OF CEMENT IN BILLIONS OF TONNES PER YEAR):



GREENHOUSE GAS EMISSIONS AROUND THE WORLD

- +2.4%** ANNUAL INCREASE IN THE LAST DECADE
- +0.6%** INCREASE IN 2014
- 0.6%** ESTIMATED DROP IN 2015

MAPEI PRODUCTS

FOR RENOVATION AND UPGRADING PROJECTS

A few weeks ago the new Feed-in Tariff 2.0, which will free up 900 million Euros already allocated two years ago for energy saving but so far unused, was officially ratified in Italy. The money will be allocated as follows: 200 million Euros for schools, hospitals and public offices and the remaining 700 million Euros to private parties, both businesses and families, so that they can convert their heating systems. This money could be used to replace old boilers with energy-saving boilers and also to convert existing systems resorting to renewable sources, such as solar panels for hot water or photovoltaic systems for generating electricity.

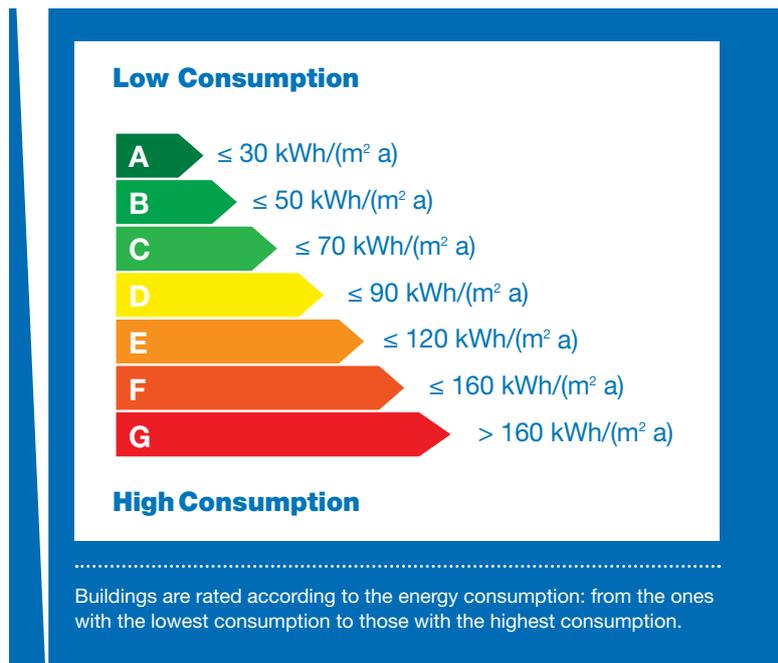
It is worth pointing out that 40% of fine particulates is due to heating.

But in addition to more modern systems that are less polluting and perhaps based on renewable sources, energy-saving will also come from proper insulation in buildings: roofs, doors and window frames and, above all, façades, since thermal insulation systems will provide instantaneous benefits, particularly in terms of reducing energy consumption not just in winter but also during the summer months.

Mapei and its products also make a contribution on building sites carrying out renovation and energy upgrading work, with thermal insulating and soundproofing systems and anti-seismic upgrading systems for buildings.

The development and innovation of cutting-edge products and systems that comply with the requirements of clients are basic requisites of the building renovation and upgrading sectors.

For years the Mapei Group and its R&D division, which studies and tests new systems in their laboratories, have been proposing technologically advanced products that provide a solution to the problems and requirements of designers and building sites working on renovation and upgrading projects. Mapei has also been supporting for two years the Green Economy Observatory, organized by IEFÉ, Bocconi University of Milan. The main goal of the Observatory is to create a chance for dialogue,



debate and collaboration on environmental issues among the academic world, the institutions and firms.

CONSTANT COMMITMENT TO THE ENVIRONMENT

Mapei has been growing for a number of years by respecting the environment while knowing well that a company's products cannot be considered truly eco-sustainable if the company itself is not eco-sustainable. Mapei products contain recycled materials, have very low emission levels of volatile organic compounds and do not contain any other high-risk substances. Mechanical performance and durability are being improved continuously so that the service life of structures is much longer, another important contribution to sustainability.



A SOLUTION FOR ANY KIND OF PROBLEM

The *Guide for Choosing Mapei Solutions for the Building Industry* offers solutions for both new and old buildings for anti-seismic structural strengthening applications (MAPEWRAP system), thermal insulation interventions (MAPETHERM system) and soundproofing applications (MAPESILENT system).

The MAPEWRAP SYSTEM is suitable to repair reinforced concrete elements damaged by physical-mechanical action, for the confinement of axial loaded or bent concrete elements and for seismic strengthening of structures in earthquake zones. It includes primers, epoxy grouts, carbon fibre fabrics, adhesives, and impregnating resins.

To reduce the level of danger during seismic activity the MAPEWRAP EQ SYSTEM, has been developed, an innovative, anti-seismic protection system in the form of “seismic wall-

MAPEWRAP





MAPETHERM

paper” that increases the time available to evacuate buildings during earthquakes.

This system comprises:

- ✓ **MAPEWRAP EQ ADHESIVE:** one-component, polyurethane-based adhesive for impregnating MAPEWRAP EQ NET.
- ✓ **MAPEWRAP EQ NET:** bi-directional, primed glass fibre fabric to protect secondary partition walls in buildings from seismic activity.

MAPETHERM thermal insulation system comprises:

- ✓ **MAPETHERM AR1:** one-component cementitious mortar for bonding and levelling insulation panels and for thermal insulation systems.
- ✓ **MAPETHERM BA:** aluminium starting profiles with drip channel, available in sizes of 40, 50, 60, 80 and 100 mm.
- ✓ **MAPETHERM FIX:** Stud for fixing insulating panels and composite insulating systems in place, with a plug with a metal/nylon pin and polypropylene body.
- ✓ **MAPETHERM NET:** alkali-resistant glass fibre mesh suitable for reinforced skimming layers when repairing façades, or for the execution of thermal insulation systems.
- ✓ **MAPETHERM PROFIL:** pre-mounted aluminium angle iron incorporated with alkali-resistant glass fibre mesh.
- ✓ **MAPETHERM XPS:** polystyrene insulating panels for thermal insulation systems.

The soundproofing MAPESILENT system comprises:

- ✓ **MAPESILENT BAND R:** closed-cell, expanded polyethylene adhesive band.
- ✓ **MAPESILENT PANEL:** tiles with a bitumen and special polymer-based elasto-plastomeric membrane with poly-



MAPESILENT



ter reinforcement, sandwiched to a resilient layer of polyester fibre.

- ✓ **MAPESILENT ROLL:** sheets with a bitumen and special polymer-based elasto-plastomeric membrane with polyester reinforcement.
- ✓ **MAPESILENT COMFORT:** dry soundproofing system for floating screeds made from high density, closed-cell foam polyethylene sandwiched to a special protective film.
- ✓ **MAPESILENT UNDERWALL:** elasto-plastomeric soundproofing strip made from bitumen and special polymers.



You can download the brochure *Guide for Choosing Mapei Solutions for the Building Industry* from www.mapei.it



SASSUOLO'S RECORD-BREAKING FIRST HALF OF THE SEASON

"Sassuolo plays fast and attractive football and has a lot of interesting players. I really like the team". These compliments come from Gabriele Orioli, the team manager of the Italian national football squad.

In its third season in Italy's top football division, the Mapei Group's football team is right up in the top half of the table and, after drawing against Torino, finished the first half of the season in fifth place with 32 points. At the halfway point in this year's football season Sas-

THE TEAM FINISHED THE FIRST HALF OF THE SEASON WITH 32 POINTS

suolo was on level terms with big teams with ambitious goals in mind. Only Napoli, Juventus, Inter Milan, Fiorentina and Roma were ahead of Sassuolo. And it could have turned out even better, because, in certain matches, the team did not make the most of home

advantage, drawing at the Mapei Stadium in Reggio Emilia (Italy) against less highly rated teams. The team owned by Giorgio Squinzi, CEO of the Mapei Group, has been unbeatable in head-to-head matches against the top five in the league, winning 11 points out of a possible 15: it won at home against Napoli and Juventus and also beat Inter Milan at the Meazza Stadium in Milan. The team also drew against Roma at the Olympic Stadium in Rome and against Fiorentina at Mapei Stadium. Its 1-0 win at the



TROTTA SIGNS FOR SASSUOLO

Sassuolo has bought the striker Marcello Trotta from Avellino and the Brazilian full-back Rogerio Oliveira Da Silva from Inter-national Porto Alegre. The strikers Sergio Floccari and Antonio Floro Flores, as well as the defenders Lorenzo Ariaudo and Leonardo Fontanesi have all been sold. Stefano Sensi and Luca Mazzitelli will be joining the team in June.

Sassuolo's outstanding performance.

"During its first two seasons in Serie A", so team manager Eusebio Di Francesco proclaimed after the match against Inter Milan "Sassuolo was beaten three times by Inter, actually losing two of these matches 7-0. The win against Inter Milan (3-1) at Mapei Stadium in the 2014/2015 championships and the win against top-of-the-table Inter Milan at Meazza Stadium this season really highlight the progress we have made".

Sassuolo is continuing its rise up the Italian league table: the team finished the first half of the 2013-14 season with 17 points and it had 25 points halfway through the 2014-15 season. Reaching the halfway point this season with 34 points is a dream come true.

According to many people, Simone Misiroli symbolises the team's efficiency: originally a forward or an attacking midfielder, he can also play much deeper showing great defensive skills. And the goalkeeper, Andrea Consigli, has also made some incredible saves on numerous occasions this season, notably in the match against Inter Milan.

The only blemish on the winter season came in the Italian Cup: Sassuolo was knocked out by Cagliari, a team from the Italian second division, at the Mapei Stadium. Nevertheless, the results achieved against the big teams in league games are of enormous value and now everybody is wondering just how far this Sassuolo team can go.

Eusebio Di Francesco is quick to add that: "We have our feet firmly on the ground. I'm lucky enough to have a well-grounded company behind me. Before this year's league championship began, the management simply asked me to try and improve the team's league position

compared to last year. So far we are on the right track, but before there is any talk about qualifying for the Europa League we want to make sure we avoid relegation. When we have secured enough points to guarantee we will be staying up, then we can start making other predictions and be free to dreaming of even greater results".

Another figure confirms Di Francesco's successful management of the team: adding together all the points won in league games from 1st January to 31st December 2015, Sassuolo is sixth in Italy, only behind teams from big cities and big clubs.

THE MATCHES

SASSUOLO - NAPOLI	2-1
ROMA - JUVENTUS	2-1
ROMA - SASSUOLO	2-2
INTER - FIORENTINA	1-4
NAPOLI - JUVENTUS	2-1
INTER - JUVENTUS	0-0
NAPOLI - FIORENTINA	2-1
FIORENTINA - ROMA	1-2
SASSUOLO - JUVENTUS	1-0
INTER - ROMA	1-0
NAPOLI - INTER	2-1
SASSUOLO - FIORENTINA	1-1
JUVENTUS - FIORENTINA	3-1
NAPOLI - ROMA	0-0
INTER - SASSUOLO	0-1

TEAM	POINTS	RESULTS
SASSUOLO	11	3W 2D 0L
NAPOLI	10	3W 1D 1L
ROMA	8	2W 2D 1L
JUVENTUS	4	1W 1D 3L
FIORENTINA	4	1W 1D 3L
INTER	4	1W 1D 3L

This table published in the Italian sport newspaper *La Gazzetta dello Sport* shows the results of the matches played by Sassuolo during the first half of the season in Serie A championships.

Meazza Stadium against Inter Milan was the icing on the cake for the Sassuolo team, and not just because it was the final game of the first half of the season. The match against Inter Milan was an electrifying battle that was decided in the 94' minute. The referee, Mr Doveri, awarded a penalty after Sassuolo's De-frel was fouled by the powerful Brazilian defender Miranda and Berardi converted the penalty much to the delight of all the Sassuolo fans. Meazza Stadium in Milan is the showcase of Italian football and every team manager and player dreams of winning there. Sassuolo had already managed to beat A.C. Milan 2-1 at the Meazza Stadium last season. On 10th January, 2016, the team completed the double by beating top-of-the-league Inter Milan in a league match. The praise the team received from Erick Thohir, Inter's President, was proud recognition of



REGGIANA TOP OF THE LEAGUE WITH POLONARA IN GREAT FORM

THE TEAM PLAYED REALLY GREAT BASKETBALL, THANKS ALSO TO ITS POWER FORWARD ACHILLE POLONARA

Here's a slam dunk by Achille Polonara in the home win against Avellino.

This season Pallacanestro Reggiana is at the top of the Italian basketball league and also performing really well in Europe. Half way through the season the team sponsored by Mapei is at the top of the league with 22 points, the same number as Olimpia Milano. All the different league tables show the team from Reggio Emilia (Central Italy) at the top, because it won the head-to-head match against Olimpia: Reggiana beat the "red boots" from Milan 74-72 in a closely contested match held at the PalaBigi arena in Reggio Emilia. The team played really great basketball in the first and fourth quarters of this match.

One of the reasons why Reggio Emilia is at the very top of the league at the end of the first half of the regular season is the outstanding form of its power forward Achille Polonara, who is also a key member of the Italian basketball national team. Born in Ancona (Central Italy) on 23rd November 1991, this Italian national team player seems to have improved since last year's championship. "It's hard to express how much he has improved in percentage terms - so Alessandro Frosini, Reggiana's team manager, notes - because basketball is not an individual sport. But I can assure you that Polonara is trying to become a great all-round player by working on his weak points and repairing any chinks in his armour. Compared to last year I have noticed he has really improved in defence and team play".

Might Polonara now be one of the three best power forwards in Italy? "The competition is extremely tough - so Frosini points out - but Achille has everything it takes to be among the best power forwards in Italy. He must keep on improving by working on his weaknesses and ensuring continuous results. That is the only way he will be able to stay at the top for a long time".

Frosini and the rest of the management staff have extended the Italian national team player's contract, so that he will be staying with Pallacanestro Reggiana at least until June 2017. "I'm really pleased with my new contract - so Achille, who

is 2.03 m tall, claims. "I hope to keep on improving as a player and, above all, to have plenty of success with Pallacanestro Reggiana". The club, whose President is Maria Licia Ferrarini, won the Italian League Super Cup last September beating Olimpia Milano in the final in Turin. "Lifting the Super Cup - so Polonara went on to say - was a truly special feeling and my aim is to lift more trophies. Perhaps even the one of the Euroleague, why not?"

The question is now open to debate: what was Polonara's best performance during the first part of the 2015-16 season? "Personally, I would give myself my highest mark for the home game in the Eurocup against the very strong German team Alba Berlin. I helped the team win and made an extremely important block towards the end of the game". Many people think Polonara places his best towards the end of the season. "It is hard to say whether I perform better during the early season or in spring - so Achille points out - because it varies from year to year. This season I think I will be at my best from February onwards". The players from Pallacanestro Reggiana undergo tests and plan their training at the Mapei Sport Centre in Olgiate Olona (Northern Italy). "This is the second year I have been going to the sport facility in



ABOVE. Polonara scores a basket while being challenged by Jared Berggren (Cantù).

BELOW. Achille in action in the away game against Bologna.

Olgiate - so Achille notes - and I get on really well with all the Mapei Sport staff, who are extremely professional and well-organised, very important qualities. The staff help us discover our strengths, so that we can perform our very best. And then of course Mapei is one of our most important sponsors: we are proud to have its name on our kit". Last year Pallacanestro Reggiana almost won the Italian Championship, only losing to Sassari in the final game of the play-offs. This year's main rival seems to be Olimpia Milano. Having already beaten this team both in the final of the Super Cup and in the league this season certainly augurs well for Pallacanestro Reggiana.





MAPEI SPORT

IN THE NAME OF
PERFORMANCE,
ETHICS AND HEALTH



INTERVIEW WITH CLAUDIO PECCI, GENERAL MANAGER OF THE MAPEI SPORT CENTRE

Mapei Sport Centre in Olgiate Olona (in the Province of Varese, Northern Italy) is now in full swing. This facility, originally the brainchild of Professor Aldo Sassi and Giorgio Squinzi, officially opened on 9th December 1996 and was initially intended to support the Mapei Professional Cycling Team. The team, with its famous cube-patterned jersey, completed its activity at the end of the 2002 season. "After the cycling team with all its champions stopped racing - so Claudio Pecci, the General Manager and Medical Director of Mapei Sport, told us - there was a meeting: with Giorgio Squinzi's complete support, we decided that Mapei Sport should keep running".

Lots of things have changed at Mapei Sport since winter 2002-2003: "Our tests and training plans now cover a wider range of sports - so Dr Pecci went on to point out - "And a number of other services have been included, such as medical check-ups, diagnostic aid and help in recovering from injuries, as well as advice about orthopaedics, nutrition and sports medicine. Always with ethics and transparency carefully in mind".

1400 medical check-ups were carried out at Mapei Sport headquarters in Olgiate Olona in 2015. "Some people only come to us for their medical check-up. Others are looking for our help for the entire sport season and or just want our advice or consultancy. They come to Olgiate knowing that we take no shortcuts here at Mapei Sport; ethics and transparency are always very much to the fore. We begin by carrying out medical assessments and then we analyse the tests". Mapei Sport follows three guidelines that Dr Pecci lists as follows: "First and foremost, for us all athletes have the right to try and perform to the very best of their ability. Secondly: our staff at Mapei Sport try to get the best possible results without losing sight of people themselves. Safeguarding a person's psychophysical well-being is at the very focus of everything. Thirdly, scientific innovations are applied with the utmost rigour, ensuring they conform to stringent ethical principles and not just airy-fairy theories or hocus pocus. Commitment to Research and Development is part of Mapei's corporate philosophy and it has transferred over to Mapei Sport".

So what is Mapei sport's relationship with all the latest ideas and innovations? "All interesting scientific innovations based on meticulous research deserve to be made known in the appropriate way. That is why Mapei Sport organises an annual conference looking at the latest issues".

It is worth mentioning that every year Mapei Sport awards a cheque for research worth 10,000 Euros (Mapei actually covers the financial cost) to an university graduate in the Motor Sciences: "It is intended to help set up and complete specific research projects at our facility - so Dr Pecci points out. All this confirms our belief that the quality of support offered to sportsmen and sportswomen is bound to decline without research specifically applied to the present-day scene and physiological changes affecting every sector of life. Here again we move in synchrony with the Mapei Group that invests heavily in Research & Development".

Yes to innovations, no to hocus-pocus: "Innovators are most welcome, Mapei Sport is willing to experiment with new scientific-technological ideas out in the field. For us it may well be important to prove these new theories wrong, if they fail to result in improvements in performance. In the case of serious projects and effective innovations, field experiments have helped take Mapei Sport to the cutting-edge".

Mapei Sport has gradually increased in popularity from 1996 to 2016, but the facility has never changed its grounding principles. "Every single human being - so the head of the facility claims - has physical, mental, endocrinological and psychological traits that make them unique. These absolute values can help people decide which sport to engage in. Size, for example, has always been a critical factor for anybody interested in playing basketball. But physical qualities are not enough on their own: variables in terms of character and mental traits also come into play, not to mention a person's enthusiasm for their sport". At Mapei Sport we do not just assess an athlete's state of health: "The medical staff criss-cross sanitary values with the results of specific tests. Important data can emerge either for fine-tuning training or even advising an athlete to pull out the plug for a while. Sometimes a rest period is important".

Dr Pecci also emphasises another aspect: "The doctors at Mapei Sport believe it is extremely important to work with a physiotherapist to prevent and/or recover from injuries. What counts is being on the same wavelength as the athlete so that everything runs smoothly. For members of a team, outside distractions can complicate matters. The structure of the team they belong to is absolutely vital".

Sometimes rubbing shoulders with legends can be a real



encouragement to athletes. "Here at Mapei Sport we show absolute respect for our athletes, who are offered everything possible in terms of medical-therapeutic aid and the very best technology has to offer, but without resorting to false illusions, chasing myths or blindly following the latest trends. Teams bringing their athletes here accept Mapei's corporate philosophy based on Research & Development, impeccable ethics and a person-friendly approach that we never lose sight of". Just like other companies belonging to the Mapei Group, the importance of teamwork always comes to the fore at Mapei Sport: "Results come from working as a team or club, with everybody knowing what they have to do and being involved in the overall project. And at the company everybody knows how to perform their tasks with consideration for others and enthusiasm. These synergies lead to the very best possible results, it is the same philosophy adopted by other companies belonging to be Mapei Group".

Mapei Sport is now serving an increasing number of women. "Until 2010 the gentle sex accounted for just 10% of our clients. Now the figure for female athletes turning to us for help and to plan their training has increased to 15%. The rise in number is mainly due to an increase in the number of skiers. As regards women, we have noticed an increase in the number of footballers and a slight drop in the number of volleyball players". Even young children come to Mapei Sport: "There has been an increase in demand from families, but I do not recommend children up to the age of 12 being tested".



A WORLD OF PROJECTS

This year we would again like to present the most significant projects where Mapei products have been used. The reference projects presented on the following pages were all winners in the 14th edition of the Mapei References Grand Prix. The following articles contain descriptions of how Mapei products have been used and applied all around the world in the construction of infrastructures, residential buildings, sports stadiums and more. The common thread linking all the interventions are the characteristics offered by Mapei products (durability, safety, eco-sustainability, specialisation), their close ties to the Research & Development sector and, lastly, Mapei's jewel in the crown: its Technical Services Department, always there to offer advice and to work on site alongside clients, designers and contractors.

And for those readers who would like to find out about our other reference projects, visit the company website at

www.mapei.it

Enjoy your read!

**RESIDENTIAL BUILDINGS**

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Ater Residential Complex, Monticchio (Italy) – **Torrelago District**, Valladolid (Spain) – **Villa Pliniana**, Torno (Italy) – **Capitol Development**, Singapore (Singapore) – **Palazzo Tupputi**, Bisceglie (Italy) – **Residential Estates**, Singapore – **Green Residences**, Ekrene (Norway)

**COMMERCIAL FACILITIES**

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Bikini Haus, Berlin (Germany) – **Nerviòn Plaza Shopping Centre**, Seville (Spain) – **Decathlon Store**, Zagreb (Croatia) – **Zara Store**, Hong Kong (PRC) – **H&M Store**, Reggio Emilia (Italy) – **Central Children's Store**, Moscow (Russian Federation) – **Borgo Shopping Centre**, Bologna (Italy) – **Ikea Outlet**, Kuala Lumpur (Malaysia) – **Nave de Vero Shopping Centre**, Marghera (Italy) – **UMW Toyotsu Motors 3S Showroom**, Rawang (Malaysia) – **Gloucester Services along the M5 Motorway**, Gloucester (UK) – **Chloé China Boutique Stores** (PRC) – **Rideau Centre**, Ottawa (Canada)

**TOURISM AND WELLNESS**

50

Moscow Beach Resort, Adler (Russian Federation) – **Astir Odysseus Kos Resort & Spa Swimming Pools**, Kos (Greece) – **Excelsior Gallia Hotel**, Milan (Italy) – **Ritz Carlton Hotel**, Montreal (Canada) – **AquaWorld Jedenáctka**, Prague (Czech Republic) – **Aquamania Waterpark**, Albena (Bulgaria) – **Mont Blanc SkyWay**, Courmayeur (Italy) – **Santa Barbara Eco Beach Resort**, São Miguel (Portugal) – **Ikos Olivia Hotel**, Gerakini (Greece) – **A Mano Restaurant**, Glyfada (Greece) – **Aria Hotel**, Budapest (Hungary)

**PUBLIC BUILDINGS AND URBAN DESIGN**

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Vittorio Emanuele General Hospital, Catania (Italy) – **Santa Maria del Fonte Sanctuary**, Caravaggio (Italy) – **Students Dormitory**, Bari (Italy) – **Massimo Theatre**, Palermo (Italy) – **Basilica of Santo Stefano Rotondo al Celio**, Rome (Italy) – **Palacio del Segundo Cabo**, Havana (Cuba) – **Piazza Duca D'Aosta**, Milan (Italy) – **Southern Stack at Workers' Village of Crespi D'Adda**, Capriate San Gervasio (Italy) – **NATO Headquarters**, Brussels (Belgium) – **University of Miami Dining Facilities**, Miami (USA) – **Sharjah Centre for Astronomy & Space Sciences**, Sharjah City (United Arab Emirates) – **Strada Maggiore**, Bologna (Italy) – **City Centre**, Nova Gorica (Slovenia) – **Danube-Gate Square**, Győr (Hungary) – **Piazza Sempione**, Milan (Italy) – **"Fábrica das Palavras" Library**, Vila Franca de Xira (Portugal) – **Sint Janskerk Church**, Gouda (Holland) – **Middle School**, Campi Salentina (Italy) – **University of Technology and Design**, Singapore – **Benton Castle**, Benton (UK) – **Square in front of Confindustria Headquarters**, Rome (Italy) – **Regional Museum**, Litomyšl (Czech Republic) – **Louis Vuitton Foundation**, Paris (France) – **Cristobal Balenciaga Museum**, Getaria (Spain) – **Masjid Sultan Mosque**, Singapore (Singapore)

**INFRASTRUCTURES**

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Cerchio Viaduct, Cerchio (Italy) – **San Sisto Viaduct**, L'Aquila (Italy) – **Highways 640 and 15 Interchange**, Boisbriand (Canada) – **Base Tunnel along the Mountain Pass Deviation of the A1 Motorway**, Sasso Marconi-Barberino del Mugello (Italy) – **Metro Mosaic Artwork**, Peking (PRC) – **Kuala Lumpur International Airport 2**, Kuala Lumpur (Malaysia) – **DTL Underground Railway Line (Contract C933)**, Singapore – **Farringdon Station at Crossrail**, London (UK) – **Railway Underpass**, San Benedetto del Tronto (Italy) – **Cucchero Tunnel along the A15 Highway**, Parma-La Spezia (Italy) – **Árpád Bridge**, Budapest (Hungary) – **New Panama Canal**, Panama – **Cinta Costiera Road Viaduct**, Panama City (Panama) – **Poya Bridge**, Fribourg (Switzerland) – **Rope Bridge**, Dolný Kubín (Slovak Republic) – **Water Interchange**, Wrocław (Poland) – **Porto Santo Airport Runway**, Porto Santo (Portugal)

**SPORT FACILITIES**

106

Ice-rink, Scaltenigo di Mirano (Italy) – **Luigi Ferraris Stadium**, Genoa (Italy) – **Alberto Cipolloni Tennis Club**, Foligno (Italy) – **Vélodrome Stadium**, Marseille (France) – **Juventus Stadium**, Turin (Italy) – **Parabolic Stand at Monza National Racetrack**, Monza (Italy) – **Margaret Court**, Melbourne (Australia) – **National Aquatic Centre AUT Millennium**, Auckland (New Zealand) – **Aquatics Palace**, Kazan (Russian Federation)

**PRODUCTION FACILITIES**

114

Linth-Limmern Power Station, Canton of Glarus (Switzerland) – **Ford Motor Company Factory**, Hangzhou (PRC) – **Dangote Cement Plant**, Obajana (Nigeria) – **Song Gianh Cement Plant**, Quang Binh (Vietnam) – **Lam Tach Cement Plant**, Kuang Ninh (Vietnam)

**CURIOSITIES**

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Karkemish Archaeological Site, Gaziantep (Turkey) – **TownHouse Duomo Hotel**, Milan (Italy) – **"Crisis" Sculpture**, Hellikon (Greece) – **Expo Milan 2015**, Milan (Italy) – **Torre Arcobaleno**, Milan (Italy)



RESIDENTIAL BUILDINGS

FROM DETACHED HOUSES AND NEW APARTMENT BLOCKS TO BUILDINGS THAT HAVE BEEN THERMALLY INSULATED, RENOVATED OR MADE ABLE TO MEET THE LATEST ANTI-SEISMIC STANDARDS AND LEGISLATION. THERE IS SUCH A WIDE RANGE OF PROBLEMS AND REQUIREMENTS FOR THOSE WORKING IN THIS SECTOR, WITH A KEEN INTEREST IN ECO-SUSTAINABLE PRODUCTS, THE DURABILITY OF BUILDINGS AND THE POSSIBILITY TO REDUCE THE CONSUMPTION OF ENERGY



Ater Residential Complex Monticchio (Italy)

These eight residential buildings, owned by the L'Aquila Province division of Ater (Regional Residential Building Department), were badly damaged during the earthquake that hit the area in April 2009. As a result, a significant amount of work was required on the buildings, particularly to upgrade their anti-seismic capabilities. The contractor had to work in difficult conditions and it took a number of years to complete all the site work. In fact, many of the residents were so afraid of losing their homes that, rather than move away, they preferred to stay, which meant the contractor had to work around people living in the apartments.

To optimise the work, including in the apartments that were still occupied, Mapei Technical Services recommended using the MAPEWRAP carbon fibre-based system to strengthen the reinforced concrete structures and column-beam junctions. For making the load-bearing vertical elements and buffer walls panels structurally safe, the engineers recommended an anti-overturning system comprising PLANITOP HDM MAXI, MAPEGRID G120 and MAPEWRAP FIOCCO. To waterproof the gable roofs, which were made from brick and cement and covered by roof tiles, the engineers proposed a cycle comprising MAPEFINISH, MAPEGROUT LM 2K, MAPECURE SRA, ADESILEX PG4, MAPEBAND, ADESILEX T SUPER, and MAPELASTIC SMART reinforced with MAPETEX SEL. Other work was carried out using several Mapei products, such as bonding ceramic tiles, sealing joints and a series of minor repairs on the buildings.

TECHNICAL DATA

Period of the Intervention 2010-2014

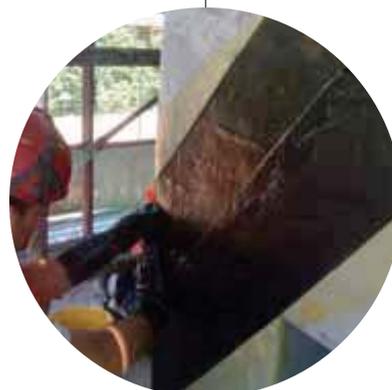
Client: Ater per la Provincia di L'Aquila

Contractor: D'Agostino Angelo
Antonio Costruzioni Generali Srl

Mapei Co-ordinators: Mario
Monardo and Giulio Morandini, Mapei
SpA (Italy)

MAPEI PRODUCTS

Adesilex P9, Adesilex PG1, Adesilex PG4, Adesilex T Super, Dursilite P, Intomap R1, Kerabond, Keracolor FF, Keraflex Maxi S1, Mapeband, Mapecure SRA, Mapefer 1K, Mapefinish, Mapegrid G120, Mapegrout LM 2K, Mapegrout T60, Mapelastic Smart, Mapesil AC, Mapesil BM, Mapesil Z, Mapetex Sel, MapeWrap 11, MapeWrap 12, MapeWrap 31, MapeWrap C Fiocco, MapeWrap C Quadri-AX, MapeWrap C UNI-AX, MapeWrap Primer 1, Monofinish, Planitop HDM Maxi, Primer FD, Topcem Pronto





TECHNICAL DATA

Period of Construction: 1977

Period of the Mapei

Intervention: 2013-2014

Contractor: Comunidad de propietarios Torrelago 1a y 2a fase

Design: 3IAG

Contractors: 3IA Ingeniería Termoacústica, SL

Mapei Distributor: CAT Aislamientos, SL

Mapei Co-ordinators: Pedro Pardo and Juan Sanchez, Ibermapei (Spain)

MAPEI PRODUCTS

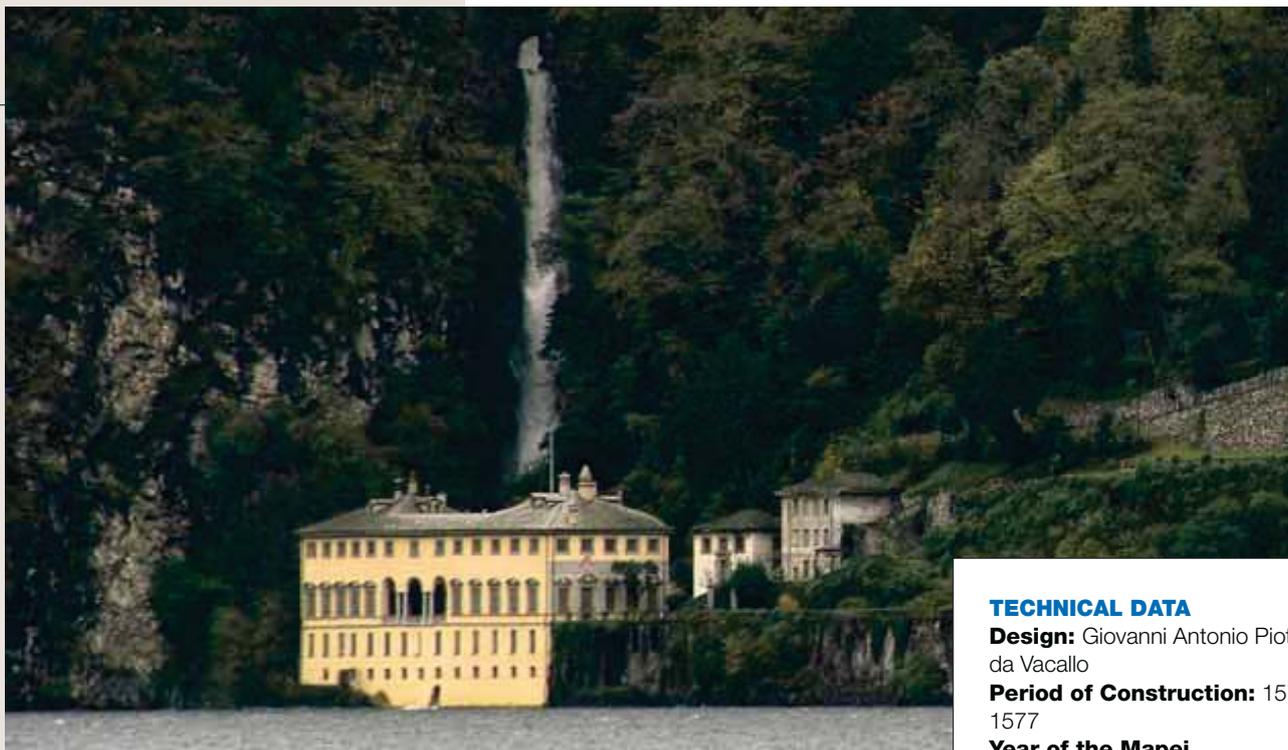
Mapetherm AR1 GG, Silancolor Base Coat, Silancolor Tonachino Plus

Torrelago District Valladolid (Spain)

CityFied is a 5-year project promoted and financed by the European Commission to increase the energy efficiency of buildings by carrying out interventions on their structures. Along with Sweden and Turkey, Spain was one of the countries chosen for this project which involves upgrading the façades of buildings to improve their energy efficiency.

The Torrelago district in the city of Valladolid (Spain) is divided into Torrelago I and Torrelago II and they have 12 and 19 twelve-storey buildings, respectively, for a total of 1,488 apartments. To thermally insulate the façades of the 31 buildings the MAPETHERM system was proposed, specially developed and tested by Mapei to insulate the external walls of buildings. MAPETHERM EPS extruded sintered polystyrene insulating panels were bonded to the façades using MAPETHERM AR1 GG one-component, large-grained cementitious mortar. One day after bonding the panels, the façades substrates were skimmed with a 2 mm thick coat of MAPETHERM AR1 GG, which was applied with a smooth trowel, and while it was still wet, MAPETHERM NET alkali-resistant glass fibre mesh was embedded in the mortar. After another 24 hours, a second coat of MAPETHERM AR1 GG was applied to form an even layer and completely cover the mesh. After around 10 days, once the mortar was fully cured, a finishing cycle of the SILANCOLOR system was applied made up silioxane products and comprising SILANCOLOR BASE COAT followed by SILANCOLOR TONACHINO PLUS.





Villa Pliniana Torno (Italy)

After years of waiting, restoration work on the Villa Pliniana complex in Torno, one of the most antique and picturesque villas on Lake Como (Northern Italy), has finally been completed. It took five years to design the conservation work, followed by two years of intense work and continuous contacts with the local Heritage Authority. PLANITOP HDM MAXI+MAPENET EM40 system was used to eliminate the water seepage at first floor below ground level. In the same area waterproofing works were carried out with MAPELASTIC FOUNDATION, MAPEPROOF LW, MAPEPROOF CD washers and IDROSTOP B25 and MAPELASTIC TURBO. On the second floor below ground level, cracks were repaired with MAPE-ANTIQUE MC. Some masonry sections were rebuilt using MAPE-ANTIQUE STRUTTURALE NHL, MAPENET EM40, MAPENET EM CONNECTOR and MAPEFIX VE SF. To strengthen the domed ceilings, PLANITOP HDM MAXI mortar was applied with MAPEGRID G 220 mesh. IDROSILEX PRONTO and

MAPELASTIC were used for waterproofing works in this area. Waterproofing work at ground floor required the use of PURTOP 1000, MAPEBAND SA tape, and MAPELASTIC TURBO. To waterproof the lift shaft and the new wing for the Villa built against the cliff, Mapei recommended MAPEPROOF bentonite system. The structure of the spiral staircase was strengthened with the MAPEWRAP system. The surfaces of the swimming pool were waterproofed with PURTOP 1000 membrane, before bonding ceramic tiles with KERAPOXY.



TECHNICAL DATA

Design: Giovanni Antonio Plotti da Vacallo

Period of Construction: 1573-1577

Year of the Mapei

Intervention: 2014

Client: La Petrolifera Italo Rumena S.p.A

Architectural Design: Arplan S.r.L., Luciana Bassan and Rosario Picciotto

Works Direction: Luciana Bassan

Design and Direction for Structural Works: Enrico Maria Bandello

Design and Direction for Plants Works: Liviano De Zolt and Claudio Zambonin

Main Contractor: Temporary Association including Cantieri Edili Bergamelli and Cemi

Mapei Co-ordinators: Davide Bandera, Mauro Boselli, Luca Ferrari, Pasquale Zaffaroni, and Fabio Messina, Mapei SpA (Italy)

MAPEI PRODUCTS

Idrostop B25, Mapeband SA, Mapelastic Foundation, Mapelastic Turbo, Mapeproof CD, Mapeproof LW, Planitop HDM Maxi, Primer 3296, Adesilex PG4, Purtop 1000, Primer SN, Quartz 0.25, Mapefix EP385, Mapegrid G 220, MapeWrap 12, MapeWrap Primer 1, MapeWrap C Fiocco 12, MapeWrap 31, MapeWrap C Quadri-AX, Mape-Antique MC, Mape-Antique Strutturale NHL, Mapenet EM 40, Mapenet EM Connector, Mapefix VE SF, Adesilex P10, Keraflex Maxi S1, Kerapoxy, Idrosilex Pronto (now called Planiseal 88)



TECHNICAL DATA

Period of Construction: early 20th century

Period of the Mapei

Intervention: 2013-2015

Clients: ASR Building & Conservation Pte Ltd, Weng Stone Trading Pte Ltd, Hub Seng Construction Trading Pte Ltd, Aegis Building & Engineering Pte Ltd

Design: Richard Meier & Partners Architects

Main Contractor: Shimizu Corporation

Installation Companies: ASR Building & Conservation Pte Ltd, Weng Stone Trading Pte Ltd, Hub Seng Construction Trading Pte Ltd, Aegis Building & Engineering Pte Ltd

Mapei Coordinators: Rodney Heng, Evelyn Tay, Lawrence Chong, Mapei Far East (Singapore)

MAPEI PRODUCTS

Planitop HDM Restauo, Mapegrid G220, Mapegrid G120, Planitop HDM Restauo, Mape-Antique F21, Mape-Antique Allettamento, Mape-Antique Intonaco NHL, Mape-Antique FC/Mape-Antique FC Ultrafine, Mapefer, Adesilex PG2 SP*, Planicrete SP*+Planitop G40 SP*, Mapefill GP*, Keraflex Maxi S1, Keracolor GG, Keracolor SF

* These products are manufactured and distributed on the Singaporean market by Mapei Far East

Capitol Development Singapore (Singapore)

A new integrated luxury lifestyle development was lately shaped up in the heart of Singapore. A 50,353 m² complex (including an historical theatre) underwent extensive makeover for two and a half years. Designed by Richard Meier & Partners Architects, the new complex houses a four-storey upmarket retail mall, a 6-star hotel, a residential component, and one of the largest cinema cum theatre complex in Singapore.

For the structural strengthening of the theatre, Mapei solutions were recommended for the masonry structures. After removing the

existing plaster, PLANITOP HDM RESTAURO pre-blended, hydraulic lime and Eco-Pozzolan-based mortar, reinforced with MAPEGRID G220 and MAPEGRID G120 meshes, was applied to fill up the cracks and strengthen the masonry. MAPEGRID G220 alkali-resistant, glass fibre mesh was used for bigger cracks and MAPEGRID G120 alkali-resistant glass fibre mesh for smaller cracks. Thereafter, a layer of PLANITOP HDM RESTAURO was applied to cover the grid. For the restoration of the theatre, cycles including products such as MAPE-ANTIQUE F21, MAPE-ANTIQUE ALLETTAMENTO, MAPE-ANTIQUE INTONACO NHL, MAPE-ANTIQUE FC/MAPE-ANTIQUE FC ULTRAFINE were used. Products like MAPEFER, ADESILEX PG2 SP*, PLANICRETE SP*+PLANITOP G40 SP*, MAPEFILL GP* were used to repair the structural concrete beams and columns of Capitol Theatre, Capitol Building and the hotel. In the new mall and in the hotel KERAFLEX MAXI S1 was used to install stone floors and KERACOLOR GG to grout the joints.





Palazzo Tupputi Bisceglie (Italy)

Built in the 16th century by the Frisari family, the building was sold in the first half of the 18th century to the Marquis Tupputi family, who redecorated it and modified its layout. Mapei's intervention on Palazzo Tupputi was important because it was the first time CONSOLIDATOR ETS 10 consolidating product has been used, and was highly appreciated by the local Heritage Authority, the restoration team and the contractors working on the project. After carefully cleaning the façade with high pressure water jets, the joints were pointed with MAPE-ANTIQUE ALLETTAMENTO mortar, which had been chosen by the client due its colour being identical to that of the mortar originally used on the façade. The entire surface was then treated with CONSOLIDATOR ETS 10, a ready-to-use liquid product made from tetraethyl orthosilicate in solvent, characterised by high penetration capacity and excellent resistance to alkalis and UV rays. This treatment was followed by the application of a coat of ANTIPLUVIOL W to give the facade a water-repellent finish and to improve the overall durability of the intervention. Apart from the



main surface treatment work on the façades, other walls in the building were treated with dehumidifying products such as MAPE-ANTIQUE INTONACO NHL, MAPE-ANTIQUE RINZAFFO and MAPE-ANTIQUE MC, followed by a finishing cycle of silicate-based SILEXCOLOR PRIMER and SILEXCOLOR TONACHINO.

TECHNICAL DATA

Period of Construction: 15th - 18th centuries

Year of the Mapei

Intervention: 2015

Client: Bisceglie City Council

Fine Arts and Environment

Office: Giuseppe Teseo

Consultant: Agnese Sasso

Works Direction: Antonella Lafranceschina

Contractors: Ge.cos Srl,

Edilcarbutti di Luigi Carbutti

Mapei Co-ordinators: Antonello

Marcuccio, Giammario Dispoto,

and Davide Bandera, Mapei SpA

(Italy)

MAPEI PRODUCTS

Antipluviol W, Consolidante ETS

10, Mape-Antique Allettamento,

Mape-Antique MC, Mape-Antique

Intonaco NHL, Mape-Antique

Rinzafo, Silexcolor Primer,

Silexcolor Tonachino





TECHNICAL DATA

Period of Construction:

1970s-1990s

Period of the Mapei Intervention:

June 2013-July 2015

Client: Housing & Development Board (HDB)

Main Contractor: Utraco Pte Ltd

Design: Housing & Development Board (HDB)

Structural Strengthening

Contractor: Utraco Pte Ltd

Mapei Co-ordinator: Rodney Heng, Mapei Far East (Singapore)

MAPEI PRODUCTS

Adesilex PG2 SP*, MapeWrap 31 SP*, MapeWrap G UNI-AX SP*

* These products are manufactured and distributed on the Singaporean market by Mapei Far East



Residential Estates Singapore (Singapore)

Once every few years, the Housing & Development Board or HDB (a statutory board of the Singaporean Ministry of National Development responsible for public housing) caters for upgrading works in different locations of Singapore. HDB is Singapore's largest developer of residential housing. Lately, housing estates Jurong East, Jurong West, Yishun, Marsiling, Ang Mo Kio, Bishan and Toa Payoh were selected for upgrading. The flats in these estates are aged and the columns at the void decks of HDB blocks had to be reinforced to avoid deterioration. Mapei was appointed approved supplier for HDB. The MAPEWRAP system was used to reinforce columns at the void decks of HDB blocks. MAPEWRAP 31 SP solvent-free epoxy resin based adhesive (which is manufactured and distributed on the Singaporean market by Mapei Far East) was applied on the column surfaces after removing existing paints and plasters. The same adhesive was used for the impregnation of MAPEWRAP G UNI-AX SP uni-directional glass fibre fabrics (distributed on the Singaporean market by Mapei Far East). MAPEWRAP G UNI-AX SP was placed onto the freshly primed columns. To eliminate air bubbles, a trowel was used to press along the surface of columns which was then left to dry. These operations were repeated for another two times to complete a total of 3 layers of wrapping around the columns. Sand was broadcasted onto the surfaces while the last layer of MAPEWRAP G UNI-AX SP was still fresh to promote adhesion of the final plaster. ADESILEX PG2 SP was used to repair concrete substrates with big voids before starting reinforcement works.





Green Residences Ekrene (Norway)

The housing project at Ekrene (Norway) encloses over 100 residential houses built in the last couple of years. It sits beautifully along the coastline of Rogaland with the sea close by. A few linked houses were also built to accommodate most buyers. The buildings feature a modernistic yet refined style and their design aimed at having them fit well in the surrounding natural landscape. They were also built with environmentally friendly criteria and they are all very energy-efficient buildings. The area itself has been built up from scratch starting with the near-by infrastructure, roads, etc. A new kindergarten is located close by, in addition to a commercial area with shops and businesses. Communal areas where children can play together were also built at the site. The façades of the houses need to be able to withstand the rough climate and conditions of the coastline. Mapei products were selected just for this reason. The MAPETHERM system was chosen to thermally insulate the façades of the buildings. Insulating panels were bonded to the façades using MAPETHERM AR1 GG one-component, large-grained cementitious mortar. One day after bonding the panels, the wall substrates were skimmed with a 2 mm thick coat of MAPETHERM AR1 GG, which was applied with a smooth trowel, and while it was still wet, MAPETHERM NET alkali-resistant glass fibre mesh was embedded in the mortar. After another 24 hours, a second coat of MAPETHERM AR1 GG was applied to form an even layer and completely cover the mesh.

After around 10 days, once the mortar was fully cured, a finishing cycle of the SILANCOLOR system was applied made up of siloxane products such as SILANCOLOR BASE COAT and SILANCOLOR TONACHINO PLUS.

TECHNICAL DATA

Period of Construction: 2013-2015

Period of the Mapei

Intervention: 2014-2015

Client: Grønn Bolig Gruppen

Design: Arkitektfirma Knut Kolsto AS

Contractor: Grønn Bolig Gruppen
Works Direction: John Reidar Johannesen

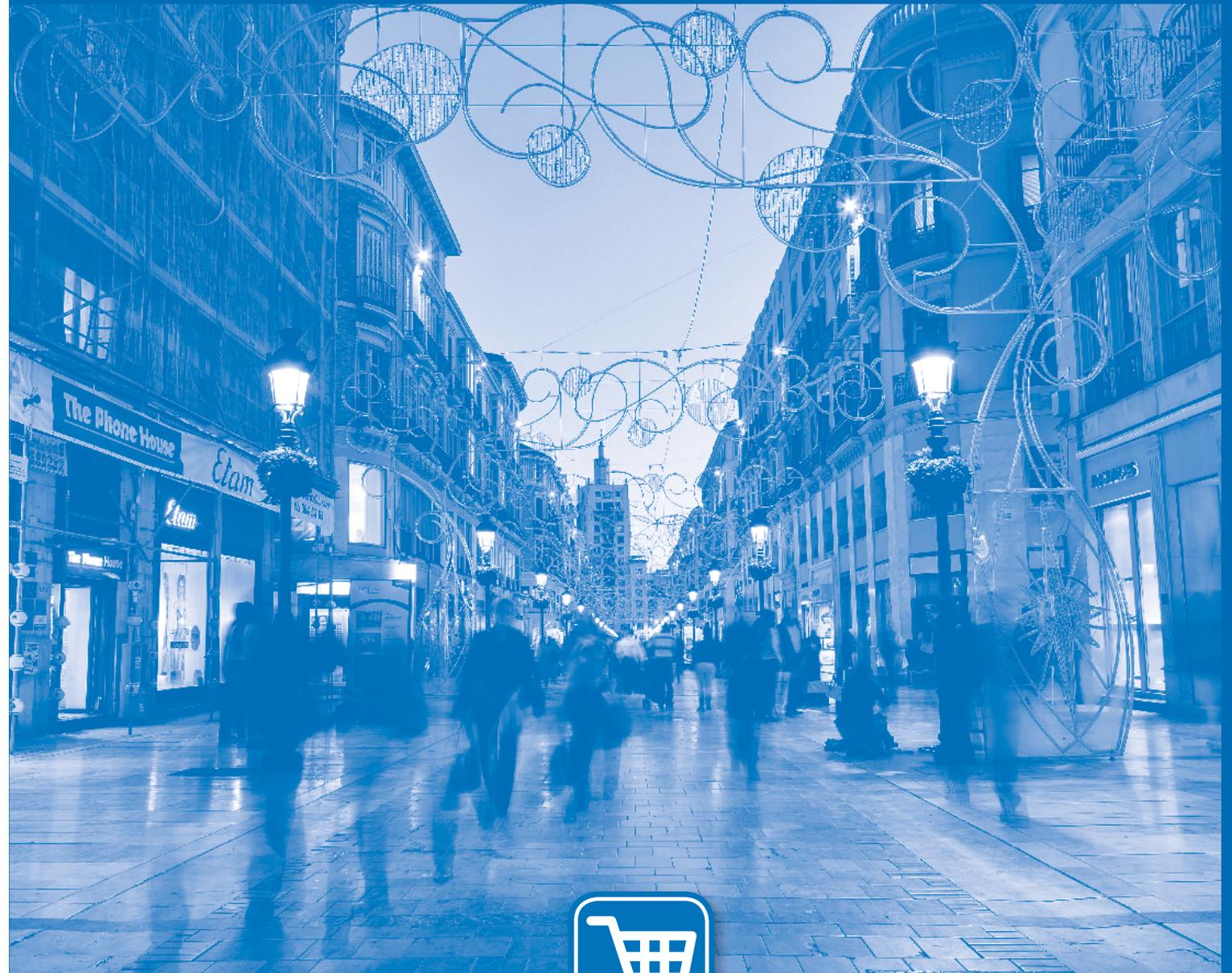
Mapei Distributor: Neumann Bygg Haugesund

Mapei Co-ordinator: Viggo Breivte, Mapei AS (Norway)

MAPEI PRODUCTS

Mapetherm AR1 GG, Mapetherm Net, Silancolor Base Coat, Silancolor Tonachino





COMMERCIAL FACILITIES

FROM LARGE SHOPPING COMPLEXES TO SHOWROOMS, FROM HOTELS TO WAREHOUSES AND BANKS: AREAS THAT REQUIRE PRODUCTS ABLE TO CREATE AESTHETICALLY PLEASING SURROUNDINGS THAT WITHSTAND THE RIGOURS OF TIME AND THAT CAN BEAR THE WEAR AND TEAR OF PEDESTRIAN TRAFFIC WHILE PROVIDING A HIGH LEVEL OF COMFORT



Bikini Haus Berlin (Germany)

After 39 months of construction, the new Bikini House opened in April 2014 in Berlin's City West. This is a concept shopping mall intended to create an unconventional shopping experience. The idea originates from the Belgian brand artist Arne Quinze. The design aimed at combining shopping, work, relaxing, cinema and a hotel in an urban environment out of an existing structure dating back to the 1950s. The Munich architectural firm Hild and K was entrusted with the design and detailed planning of the building complex. They took over the design idea by Arne Quinze and connected it to the realities of the existing building. During the refurbishment, the Bikini House was provided with a new floor. Stone slabs were used as floor coverings, fitted with crushed coloured glass particles and green paving slabs. Around 3,800 m² of floor space in the concept mall was covered with this



kind of material. It was noted that the installation of the 0x30x3 cm stone slabs would take place on a calcium sulphate based, moisture-sensitive floor substrate. The first step was to provide the substrate with a moisture barrier using PRIMER G synthetic resin primer. The product used to install the slabs was MAPESTONE 1 rapid-hardening and quick-drying adhesive. The floor took on a visually beautiful finish thanks to the matching colour of KERACOLOR FL-S FLEXFUGE grout. Both MAPESTONE 1 and KERACOLOR FL-S FLEXFUGE are manufactured and distributed on the German market by Mapei GmbH.

TECHNICAL DATA

Period of Construction: 1950s
Year of the Mapei Intervention: 2014

Client: Bayerische Hausbau GmbH & Co. KG

Design: Hild und K Architekten; KEC GmbH

Site Direction: BIP Beratende Ingenieure für das Bauwesen VBI GmbH

Flooring Contractors: Peter Saurien GmbH; Lindner Hohlboden-Konstruktion

Mapei Distributor: Kerana GmbH, Potsdam OT Fahrland

Mapei Co-ordinators: Marcus Winkler and Herbert Langefeld, Mapei GmbH (Germany)

MAPEI PRODUCTS

Keracolor FL-S Flexfuge*, Mapestone 1*, Primer G

* These products are manufactured and distributed on the German market by Mapei GmbH.





TECHNICAL DATA

Year of Construction: 1999

Year of the Mapei

Intervention: 2014

Client: TYPAL Instalaciones técnicas

Main Contractor: Iberdrola

Flooring Contractor: Tabiquería y Pavimentos Liger

Mapei Co-ordinators:

Eugenio Vigueiras, Juan Juarez, and Fernando Moreno Y Carretero, Ibermapei (Spain)

MAPEI PRODUCTS

Eco Prim Grip, Latex Plus, Nivorapid, Ultrabond Eco 4 LVT, Ultraplan

Nervión Plaza Shopping Centre Seville (Spain)

After 15 years of intense use, the granite flooring in the Nervión Plaza shopping centre had started to show dangerous signs of wear and it was decided to replace it. The client opted for LVT (Luxury Vinyl Tiles) flooring, the latest evolution in vinyl flooring, which is more resistant and particularly suitable for industrial and public areas. The floor-laying company contacted Mapei Technical Services for help in choosing the most suitable products for installing flooring subjected to constant use. Also, to avoid disrupting activities in the shopping centre as much as possible, the client required that all activities were to be carried out during the night shift, between 10 p.m. and 8 a.m.

To get good smoothness for some of the surfaces to be covered, the substrates were smoothed over with NIVORAPID quick-drying, thixotropic, cementitious smoothing compound mixed with LATEX PLUS instead of water. In other areas, the substrate was treated with ECO PRIM GRIP ready-to-use bonding promoter and primer and smoothed over with a 3 mm layer of ULTRAPLAN self-levelling, ultra quick-hardening smoothing compound, which makes floors suitable for tile installation just 24 hours after application. The rapid hardening properties of this product helped meet the deadline imposed by the tight work schedule and provide the high quality finish required by the client. The flooring was then bonded with ULTRABOND ECO 4 LVT, an adhesive developed specifically for bonding LVT.





Decathlon Store Zagreb (Croatia)

The French sporting goods brand Decathlon has opened its first store in Croatia, in capital of Zagreb over one year ago. The new shop has around 3.500 m² of floor space and is located inside the King Cross Shopping Centre Jankomir. The client requested installation of new resin floorings and because the substrate was covered with either ceramic tiles or polyurethane floor or was just made of concrete, it was quite a demanding task. They also had to work according to a very tight schedule because the client was planning to open the store on a certain date. To create flooring subjected to intense pedestrian traffic with a high level of resistance to wear and heavy loads, Mapei Technical Department proposed using the self-levelling epoxy-based MAPEFLOOR SYSTEM 33. Since it was impossible to remove the existing floors, Mapei Technical Services Department prepared a special technical solution that could ensure the durability of the floor. The surfaces were first treated with PRIMER SN epoxy primer which also acted as an adhesion promoter and was strengthened with glass fibre mesh. The next step was to apply a 2 mm thick layer of MAPEFLOOR I 300 SL epoxy formulate mixed with MAPECOLOR PASTE to obtain the colour chosen by the client. The joints were sealed with MAPEFLEX PU 45. To make sure the colour of the floor remained stable over the years and to assure wear resistance, floor was protected with a coat of MAPEFLOOR FINISH 58 W, two-component polyurethane finish.



TECHNICAL DATA

Period of Construction: 2014

Year of the Mapei Intervention: 2014

Client: Degi Jankomir d.o.o.

Design: Abwd d.o.o.

Contractor: Konstruktor d.o.o.

Flooring Contractor: Visio d.o.o., Osijek

Mapei Co-ordinators: Majda Lukić Štampalija, Nenad Karalija, Zoran Špoler, and Jozo Grgić, Mapei Croatia d.o.o. (Croatia); Marco Pagliani, Mapei SpA (Italy)

MAPEI PRODUCTS

Mapefloor System 33, Primer SN, Mapefloor I 300 SL, Mapecolor Paste, Mapeflex PU 45, Mapefloor Finish 58 W



TECHNICAL DATA

Year of Construction: 2014
Period of the Mapei Intervention: March-May 2014
Client: ZARA
Project Management: RCC (Contracting) Ltd.
Contractors: Pollard Construction Company Ltd and Kingsley Engineering Company Ltd
Installation Company: Kingsley Engineering Company Ltd.
Mapei Co-ordinators: Sammy Fan, Mapei China Ltd. (Hong Kong)

MAPEI PRODUCTS

Planicrete, Topcem Pronto, Granirapid, Kerabond T+ Isolastic, Keralastic T

Zara Store

Hong Kong (People's Republic of China)

The Spanish fashion giant and internationally well-known fashion brand ZARA lately opened a flagship store on No. 70 Queen's Road in Central, the major economic artery as well as the financial and commercial hub of Hong Kong. This flagship store had become a new landmark in Central since its opening in July 2014. This is the 12th and the biggest Zara store in Hong Kong from their first store back in 2004. It has a shopping area of about 2,600 m² for 4 stories. Mapei products were carefully selected for this particular project to solve not only the facing challenges of tight schedules, efficiency and high technical performances requirements, but also to meet the stringent standards from client and contractors. Moreover, the low VOC emission level of the products well matches the "eco-friendly" policy and design standards of ZARA applied to their stores worldwide. Large-size ultra-compact reconstituted stone coverings were chosen for the floors of the store, whose installation required a properly built and well cured screed. The substrate was treated with a bonding slurry prepared with PLANICRETE synthetic rubber latex before using TOPCEM PRONTO controlled-shrinkage mortar to build an average 25 mm thick screed. The stone coverings were installed with GRANIRAPID adhesive or KERABOND T+ ISOLASTIC adhesive system on floors. KERALASTIC T polyurethane adhesive with no vertical slip was used to install the stone coverings on the walls due to its high thixotropy, good workability and deformability.



**TECHNICAL DATA****Year of Construction:** 1675**Period of the Mapei****Intervention:** 2013-2015**Client:** Bluefield Srl**Main Contractor:** Gigli

Costruzioni Srl

Installation Contractor: Gigli
Costruzioni Srl**Works Direction:** Ivan Sacchetti**Design:** Studio ADS - Ivan
Sacchetti**Mapei Distributor:** Protecno**Mapei Co-ordinators:** Rossi
C&CA, Luigi Bonfiglio, Mapei SpA
(Italy)**MAPEI PRODUCTS**

Topcem, Ultratop, Mapelastic Foundation, Idrostop Soft, Purtop 400 M, Quartz 0.25, Quartz 0.5, Quartz 1.9, Primer 3296, Planitop HDM Maxi, Mapegrid G 120, Mape-Antique Rinzafo, Mape-Antique MC Macchina, Mape-Antique Intonaco NHL, Mapetherm AR1 GG, Mapegrout Fast-Set, Mapegrout Thixotropic, Planitop 400, Quarzolite Base Coat, Silexcolor Base Coat, Silancolor Paint, Silancolor Base Coat, Mapeflex MS45, Mapefill, Eporip, Keraflex Maxi S1, Keracolor FF

H&M Store at Palazzo Busetti

Reggio Emilia
(Italy)

On the 10th of September 2014, right in the heart of Reggio Emilia (Central Italy), Palazzo Busetti opened its doors once again after renovation works. Its construction was commissioned at the beginning of the 17th century by the Busetti family. After being home over the centuries for different activities, it was chosen by H&M as a new store. For the renovation of the floor below ground level, PRIMER 3296, PLANITOP HDM MAXI, MAPEGRID G 120, MAPELASTIC FOUNDATION, MAPE-ANTIQUE RINZAFFO and MAPE-ANTIQUE MC MACCHINA were used.

The flooring of the area below ground level was made from ULTRATOP. On the intermediate floors, the walls were renovated using MAPE-ANTIQUE INTONACO NHL. The floors were rebuilt using TOPCEM and ULTRATOP.

In the access corridors and landings running to and from the lifts between each storey, as well as in the toilets, porcelain tiles were bonded with KERAFLEX MAXI S1 and tile joints were grouted with KERACOLOR FF.

The repair work to the wainscoting of the façades was carried out with MAPE-ANTIQUE MC MACCHINA, SILANCOLOR BASE COAT and SILANCOLOR PAINT.

The façade of the Palazzo was renovated using MAPETHERM AR1 and MAPENET 150. Certain areas of the antique walls were strengthened and upgraded with MAPEGROUT FAST-SET. Waterproofing works in two service rooms were completed using PRIMER SN, QUARTZ 0.5, and PURTOP 400 M.





TECHNICAL DATA

Period of Construction: 1953-1957

Design: Alexey Dushkin

Period of the Mapei

Intervention: 2010-2015

Client: Sistema

Main Contractor: "Renaissance Construction".

Mapei Distributor: Kamlit

Mapei Co-ordinator: Alexey Savonin, ZAO Mapei (Russian Federation)

MAPEI PRODUCTS

Kerabond T+Isolastic, Ultralite S2, Granirapid, Ultracolor Plus, Kerapoxy Design

Central Children's Store Moscow (Russian Federation)

The building hosting "Children's World" store ("Detsky Mir" in Russian) was built in the Lubyanskaya Square of Moscow between 1953 and 1957 and became the symbol of the postwar revival of the country. It remained the main children's store of the country until the collapse of the USSR. In the summer of 2008, it was closed for renovation and reopened in March 2015 after 6 years of works. Its new name is "Central Children's Store on Lubyanka". The exterior of the building has been completely preserved. The historical location and size of the atrium were also preserved, while its height was raised up to seven floors. The shopping space of the building increased by a half. Interactive learning zones and a museum of Soviet toys were also added to the complex.

Mapei contributed to the renovation works by supplying products to install stone and ceramic coverings. KERABOND T+ISOLASTIC adhesive system and ULTRALITE S2 highly-deformable, lightweight, rapid-setting and hydrating cementitious adhesive were used for bonding thin (3000 cm x 1000 cm) porcelain tiles on the walls. GRANIRAPID two-component, deformable, quick-setting and drying cementitious adhesive was used for installing 1000 cm x 1000 cm granite slabs on the walls. Joints were grouted with ULTRACOLOR PLUS anti-efflorescence, quick-setting and drying polymer-modified mortar with water-repellent DropEffect® and mould-resistant BioBlock® technology and KERAPOXY DESIGN two-component, anti-acid, decorative, translucent epoxy mortar.





Borgo Shopping Centre Bologna (Italy)

To renovate the roof over the multi-storey car-park at the Centro Borgo shopping centre in Bologna, which had previously been waterproofed with a spray polyurea system, MAPEFLOOR PARKING SYSTEM HE was used. This is a seamless, flexible, multi-layered polyurethane surface-coating system compliant with the requirements of Class OS 11a (EN 1504-2). It has high crack-bridging capacity, a non-slip finish and is resistant to intense volumes of wheeled vehicles in areas used for car-parks, including external areas. It also has a waterproofing effect for screeds on roof-top car-parks.

One of the main reasons for the client choosing this innovative "cold-applied" system by Mapei was the need to keep both the shopping centre and the car-park at least partially open, without damaging the cars parked or transiting near the areas where the work was being carried out. MAPEFLOOR SYSTEM HE does not require a spray

application, as in the case for spray polyurea systems. Unlike spray-applied polyurea systems, MAPEFLOOR PARKING SYSTEM HE is not dispersed into the air and inhaled by people in areas next to where the work is being carried out.

The first step was to apply a coat of PRIMER SN mixed with QUARTZ 0.5. The surface was then fully blinded with QUARTZ 0.5. The second layer was made up of MAPEFLOOR PU 400 mixed with QUARTZ 0.25 and the third and final layer was made up of MAPEFLOOR PU 410 mixed with MAPECOLOR PASTE, also mixed with QUARTZ 0.25. For the final finish, a coat of pre-colored MAPEFLOOR FINISH 451 in its dark shade was applied.



TECHNICAL DATA

Year of Construction: 1989
(2004 as for the parking)

Year of the Mapei

Intervention: 2015

Client: IGD Property SIIQ SpA

Design: Galileo Ingegneria

Works Direction: Carlo Cardin

Contractor: Multy Service Srl

Mapei Distributor:

Resinsystem Italia

Mapei Co-ordinators:

Rossi C&CA, and Andrea Degli Esposti, Mapei SpA (Italia)

MAPEI PRODUCTS

Mapefloor PU 400, Mapefloor PU 410, Mapecolor Paste, Mapefloor Finish 451, Primer SN, Quartz 0.5, Quartz 0.25





TECHNICAL DATA

Period of Construction: 2014 - 2015

Year of the Mapei Intervention: 2015

Design: TJ Ong Architect

Client: IKANO Corporation Sdn. Bhd.

Main Contractor: McConnell Dowell (M) Sdn. Bhd.

Civil/Structural Engineers: Arup Jururunding Sdn Bhd

Flooring Contractor: Zacklim Floor Specialist Sdn Bhd

Mapei Co-ordinator: Khor Peh Lin, Mapei Malaysia

MAPEI PRODUCTS

Dynamon Floor 2 MY*, Mapecure SRA 25, Expancrete, Mapefibre ST42 MY*, Mapefibre NS12

*These products are manufactured and distributed in the Malaysian market by Mapei Malaysia

Ikea Outlet Kuala Lumpur (Malaysia)

IKEA first entered Malaysia with an outlet in a shopping mall in 1996, then moved into a stand-alone store in the suburb of Mutiara Damansara in 2003. This was the biggest IKEA store in Asia at the time. It has been so successful that this iconic home-furnishing retailer decided to open its second Malaysian outlet in the Kuala Lumpur suburb of Cheras.

The new building is a 3-storey commercial complex with a 2-storey basement car park. When building the complex, the project managers paid very close attention to the quality of the concrete for the basement, ground and first floor slabs, including the workability of the fresh concrete,

its strength and minimal formation of cracks.

The following Mapei admixtures were used for the concrete mix design: DYNAMON FLOOR 2 MY, admixture for improving workability and slump retention, which is manufactured and distributed in the Malaysian market by Mapei Malaysia; MAPECURE SRA 25 curing admixture to reduce hydraulic shrinkage and the formation of micro-cracks; EXPANCRETE expansive admixture for controlled-shrinkage concrete; MAPEFIBRE NS12 mono-filament, virgin polypropylene fibres; MAPEFIBRE ST 42 MY fibres for increased tensile strength and ductility and control of plastic shrinkage cracks, which are manufactured and distributed in the Malaysian market by Mapei Malaysia. Mapei admixtures were supplied for producing 1,500 m³ of concrete used for approximately 10,000 m² of floor slabs.





Nave De Vero Shopping Centre Marghera (Italy)

The Nave de Vero shopping centre is located in Marghera, just outside Venice, and has been designed according to innovative criteria aimed at creating welcoming surroundings. In the gallery of the shopping centre 13,000 m² of Botticino marble slabs were installed on the floors. The screeds were made from TOPCEM special, normal-setting, quick-drying (4 days), controlled-shrinkage hydraulic

binder. The surfaces were treated with a coat of PRIMER G synthetic resin primer in water dispersion, after which the cracks in the screed were sealed with EPORIP two-component, solvent-free, epoxy adhesive. ELASTORAPID two-component, high-performance, highly-deformable, quick-setting and drying cementitious adhesive was then used in its white shade to bond the marble slabs.

MAPEFLEX PU 30 two-component, thixotropic epoxy-polyurethane sealant was used to seal the expansion joints, after mixing it with MAPECOLOR PASTE system to obtain the required color.

Ceramic tiles were bonded in various service rooms, offices and bathrooms using ADESILEX P9 cementitious adhesive with no vertical slip and extended open time and KERAFLEX MAXI S1 deformable cementitious adhesive with no vertical slip. Joints were then grouted with KERACOLOR FF pre-blended, high-performance, polymer-modified cementitious mortar.

TECHNICAL DATA

Year of the Mapei Intervention: 2013

Contractor: Emmezeta

Stone Installation Contractor: Ri.Pa.

Mapei Distributors: Ziche Divisione Marmi, Ri.Pa.

Mapei Co-ordinators: Alessandro Bagliani, Mauro Orlando, and Michele Orlando, Mapei SpA (Italy)

MAPEI PRODUCTS

Adesilex P9, Elastorapid, Eporip, Keracolor, Keraflex Maxi S1, Mapecolor Paste, Mapeflex PU30, Primer G, Topcem.





Kuala Lumpur.

The two-storey building features roof deck parking for cars awaiting collection by buyers.

For the carpark deck, Mapei proposed MAPEFLOOR PARKING SYSTEM ME to provide a durable and UV-resistant flooring system for vehicular traffic as well as waterproofing and anti-skid treatment.

This included the use of PRIMER SN two-component pre-filled epoxy primer on the substrates before broadcasting them with quartz sand. MAPEFLOOR PU 400 two-component, self-levelling, neutral-coloured, highly flexible polyurethane fillerized binder was then applied with steel trowels before sprinkling quartz in excess.

MAPEFLOOR FINISH 451 two-component, aliphatic, elastic coloured polyurethane finish was applied in two layers with a short pile roller.

MAPETHENE TA modified bituminous membrane was used to waterproof the surfaces of the non-trafficable areas on the roof deck. PLANISEAL 288 flexible, cementitious mortar was used for waterproofing substrates in the toilets.

TECHNICAL DATA

Period of Construction: 2014-2015

Period of the Mapei

Intervention: March-April 2015

Client: UMW Toyotsu Motors Sdn Bhd

Design: Asima Architect Sdn Bhd

Contractor: Nakano Construction Sdn Bhd

Flooring and Waterproofing

Contractor: Monarch CC Sdn Bhd

Mapei Co-ordinator: Simon Yap, Mapei Malaysia Sdn Bhd

MAPEI PRODUCTS

Mapefloor Finish 451, Mapefloor PU 400, Mapethene TA, Planiseal 288, Primer SN

UMW Toyotsu Motors 3S Showroom Rawang (Malaysia)

Umw Toyotsu Motors 3S Sdn Bhd is a Japanese-Malaysian joint-venture company which operates Toyota car dealerships throughout Malaysia. In June 2014, the company started construction in the city of Rawang of its second 3S centre to cater Toyota buyers and owners in the region just to the north of





Gloucester Services along the M5 Motorway

Gloucestershire (UK)

A brand new motorway services, Gloucester Services, was recently completed on the M5 motorway, the primary gateway to South West England. The complex includes a main building with an arched grass covered roof and walls constructed from local stone with BREEAM (Building Research Establishment Environmental Assessment Method) excellence, new access slip roads from the M5, a café, a made-to-go food outlet, a farm shop, a play area, an information area, and toilets. There is also a fuel station, parking for all vehicle types, and extensive landscaping.

In the main concourse and petrol station shop, floor screeds were built over insulation and under-floor heating using TOPCEM quick-drying (4 days), controlled-shrinkage hydraulic binder. Once the screed was dried and cured, PRIMER SN epoxy primer with fillers was applied to the surface which was then fully broadcast with QUARTZ 1.2. ULTRATOP self-levelling, ultra-quick hardening mortar was then applied by pump at a thickness between 5 and 40 mm. This made it possible to create abrasion-resistant floors which are necessary in a service stations open 24 hours a day. In this case ULTRATOP was used in an anthracite color shade. During the polishing process, anthracite-coloured ULTRATOP STUCCO powdered grout made from special hydraulic binders was applied for filling microporosities. Floor joints were sealed using anthracite-coloured MAPEFLEX PU30 thixotropic epoxy-polyurethane sealant.

TECHNICAL DATA

Period of Construction: 2013-2014

Period of the Mapei

Intervention: 2013-2014

Design: AFL Architects

Client: Westmorland Family

Works Direction: Frank Whittle Partnership

Main Contractor: Buckingham Group

Flooring Contractor: Polished Concrete Designs

Mapei Co-ordinators: Chris Orme and George Guesford, Mapei UK

MAPEI PRODUCTS

Mapeflex PU30, Primer SN, Quartz 1.2, Topcem, Ultratop, Ultratop Stucco



**TECHNICAL DATA****Period of Construction:**

2013-ongoing

Period of the Mapei**Intervention:** 2013-ongoing**Client:** Chloé China**Flooring Contractor:** Bafang Dongde Construction Decoration Project Co.,Ltd**Mapei Distributor:** Bafang Dongde Construction Decoration Project Co.,Ltd**Mapei Co-ordinator:** Brain Li, Mapei Construction Materials (Guangzhou) Co. Ltd.**MAPEI PRODUCTS**

Granirapid, Planicrete SP*, Ultracolor Plus

*This product is manufactured and distributed on the Chinese market by Mapei Construction Materials (Guangzhou) Co. Ltd.

Chloé China Boutique Stores

Shanghai, Peking, Nanjing, Hangzhou and Hainan (PRC)

Chloé is a French fashion house founded in 1952. Its headquarters are located in Paris (France) and it is owned by the company Richemont Group. The luxury fashion mansion enjoys very high brand awareness and appreciation by many celebrities. The Chloé Group has been growing steadily in China during the last few years, opening stores both in first-tier and key secondary cities. Mapei was involved in Chloé boutique projects from 2013 onwards in Shanghai, Peking, Nanjing, Hangzhou and Hainan. High-quality marble was chosen as floor covering for all the Cloé stores in the above-mentioned cities. The screeds were prepared by using PLANICRETE SP latex additive (which is manufactured and distributed on the Chinese market by Mapei Construction Materials Guangzhou Co. Ltd.) to prepare a particularly flat and sound substrate to bond the marble. To meet the requirement of tight application schedule, GRANIRAPID deformable, quick-setting and drying cementitious adhesive was considered to be the best choice for installing marble, so that floors could be set to light traffic after 3 hours and were completely cured after only 24 hours, speeding up the completion of works. ULTRACOLOR PLUS high-performance, anti-efflorescence, quick-setting and drying polymer-modified mortar with water-repellent DropEffect® and mould-resistant BioBlock® technology was selected to grout the joints, to guarantee perfect color uniformity and to achieve a smooth, compact finished surface on the joints, with low water absorption for easy cleaning.





Rideau Centre Ottawa (Canada)

Rideau Centre is a three-level shopping mall on Rideau Street in downtown Ottawa that was officially opened in 1983. It includes approximately 180 retailers, the 487-room Westin Hotel, a rooftop park and the Ottawa Convention Centre. At 68,818.6 m² in size, it is the fourth largest shopping center in the Ottawa-Gatineau area.

Significant changes have recently taken place at the Rideau Centre. A 360-million-dollar modernization and expansion project began in 2014, including a new Nordstrom, the new Dining Hall, interior and exterior renovation, a three-level underground parking garage, and an additional expansion area. The redesigned shopping centre included a complete interior renovation that features new flooring. All new quartz coverings imported from Italy were installed on the floors of the common area, dining hall and restrooms.

Mapei products were used on a over 21,000 m² area. Work began with surface preparation by using MAPECEM 100*, ULTRAPLAN 1 PLUS*, PRIMER L*, ECO PRIM GRIP, MAPELASTIC HPG*.

The bonding of the quartz coverings

was carried out with GRANIRAPID adhesive for most of the floors, ULTRALITE MORTAR* for all the walls in restrooms, hallways, and food courts and columns, and ULTRAFLEX 2* for very small areas. ULTRACOLOR PLUS was used to grout all the joints. A second expansion phase of the project, which began in June 2014, involved the use of KERABOND/KERALASTIC* and ULTRACOLOR PLUS for floor installation. CARBOPLATE-170* was used to reinforce one of the ramps in the parking garage.



TECHNICAL DATA

Period of Construction: early 1980

Designer: Sankey Partnership

Period of the Mapei

Intervention: 2014-2015

Design: Groupe Archifin, Inc., BBB Architects, B&H Architects

Client: Cadillac Fairview

Mapei Distributor: Ciot Montreal

Main Contractors: C.A. L., PCL

Project Manager: James Mannella – National Ceramic & Granite, Ltd.

Installation Company: National Ceramic & Granite, Ltd

Mapei Co-ordinator: Justin Lafontaine, Mapei Canada Inc.

Photos: Olivier Gariepy

MAPEI PRODUCTS

Mapecem 100*, Ultraplan 1 Plus*, Primer L*, Eco Prim Grip, Mapelastik HPG*, Granirapid, Ultralite Mortar*, Ultraflex 2*, Ultracolor Plus, Kerabond/Keralastic*, Carboplate-170*.

*These products are manufactured and distributed on the Canadian market by Mapei Canada Inc.





TOURISM AND WELLNESS

HOTELS, WHICH SOMETIMES HAVE THEIR OWN WELLNESS CENTRES, OFTEN NEED TO HAVE ECLECTIC, MULTI-FUNCTIONAL SPACES CHARACTERISED BY INNOVATIVE INTERIOR DESIGN BASED ON ERGONOMIC PRINCIPLES AND FLEXIBILITY, WHERE CREATIVITY, CUTTING-EDGE TECHNOLOGY AND HIGH QUALITY MATERIALS ARE THE NORM



Swimming Pools at “Moscow Beach” Adler (Russian Federation)

Moscow Beach is a unique design project belonging to the Vesna hotel, located in a green area 50 m far from the Black Sea. The hotel is hosted in a 15-storey building very close to the sea. Founded in 1970, it was reconstructed in 2009. The hotel is well-known as a health and leisure facility with modern medical equipment and highly professional medical staff. The complex offers both children and adults perfect conditions for holidays: restaurants, a sports center, and Moscow Beach. The latter hosts a swimming pool with hydromassage, a beach, a spa area, VIP-apartments, a children pool with a fountain, bungalows, a restaurant, and a poolside bar. Mapei supplied several products for building the pools. NIVOPLAN PLUS smoothing compound, mixed with PLANICRETE synthetic latex rubber, was used to level the irregularities on the substrates. Waterproofing work was carried out with MAPELASTIC two-component, flexible cementitious mortar, reinforced with MAPENET 150 alkali-resistant glass fibre mesh, and MAPEBAND alkali-resistant rubber tape for the corners. MAPEFILL fluid expansive mortar was used for anchoring some elements in place, while IDROSTOP hydrophilic, expanding rubber profiles were used for waterproofing the joints.

Glass mosaic was bonded in the pools with KERACRETE POWDER + KERACRETE LATEX adhesive system. ULTRACOLOR PLUS anti-efflorescence, quick-setting and drying polymer-modified mortar and KERACOLOR FF+FUGOLASTIC were used for grouting the joints.

TECHNICAL DATA

Period of Construction: 2010-2015

Year of the Mapei Intervention: 2010

Main Contractor: LLC «AQUA-ru» formerly called LLC «StroyUniversal 2003»

Mosaic Installation Contractor: LLC «AQUA-ru»

Mapei Distributor: LLC «KAİROS»

Mapei Co-ordinators: Vladimir Alisov and Pavel Bogachenko, ZAO Mapei (Russian Federation)

MAPEI PRODUCTS

Idrostop, Fugolastic, Keracolor FF, Keracrete Latex, Keracrete Powder, Keranet, Lamposilex, Mapeband, Mapefer 1K, Mapefill, Mapelastic, Nivoplan Plus, Planicrete, Ultracolor Plus





TECHNICAL DATA

Year of the Intervention: 2014

Design: Mastrominas Ilias

Client: Astir Odysseus Kos Resort

Main Contractor: Pikionis Dimitrios

Installation Company: Koursounis

Simeon

Mapei Distributor: Koursounis
E.E.

Mapei Coordinators: Petros
Tzagarakis and Evangelos
Chouliaras, Mapei Hellas (Greece)

MAPEI PRODUCTS

Idrosilex Pronto, Mapegrout
Thixotropic, Mapelastic, Mapesil AC,
Primer FD

Astir Odysseus Kos Resort & Spa

Tingaki, Kos Island (Greece)

Astir Odysseus Kos Resort & Spa is a 5 star hotel constructed in 2009, in Tingaki area. Just 5 km from the historic center of Kos town and 22 km from Kos international airport, it stands out for both its facilities and its services. The hotel offers a unique experience through its luxury and elegance in combination with the comforts of its facilities and services. The complex is built around an interconnected swimming pool matrix which starts from the entrance of the hotel and reaches the seaside. The surrounding buildings feature a modern cubic design which well matches the near-by water.

During 2014, the swimming pool has undergone renovation. The old ceramic tiles were removed and the concrete substrate of the pool was repaired using the fibre-reinforced, compensated-shrinkage mortar MAPEGROUT THIXOTROPIC. The accessible outer surface of the pools was waterproofed with the osmotic cementitious mortar IDROSILEX PRONTO. The whole internal surface was instead waterproofed using MAPELASTIC two-component, flexible cementitious mortar which is ideal for waterproofing balconies, terraces, bathrooms and swimming pools. After the tile installation and grouting operations, the expansion joints were sealed with MAPESIL AC pure, mould-resistant, acetic silicone sealant which was used in combination with PRIMER FD one-component primer for silicone sealants.





Excelsior Gallia Hotel Milan (Italy)

After two years of work, the luxurious Gallia hotel in Milan, owned by Katara Hospitality, has been reopened. The upgrade of this historical hotel was based on playing with the contrasts between tradition and design. A new modern wing with a large glass and steel façade has been added to this historical building, which was first inaugurated in 1932.

The interior design concept paid particular attention to the choice of materials and finishes to create just the right blend of contemporary design and aesthetics with its original Belle Époque style. Mapei products were used in more than 200 bathrooms to install 2 cm thick marble slabs. The marble floor and wall coverings, created especially for these areas, were bonded with KERAFLEX MAXI S1 deformable cementitious adhesive with no vertical slip, extended open time and Low Dust technology. The marble joints were grouted with ULTRACOLOR PLUS anti-efflorescence, quick-setting and drying polymer-modified mortar, while the expansion joints were sealed with MAPESIL LM neutral silicone mould-

resistant sealant.

The same products were also used to install the solid marble shower trays and to bond the Botticino marble slabs along the side of the bath-tubs and on the wedi-board benches (special building panels suitable for damp environments).

Botticino marble was also installed in the corridors and in the areas near the lift doors, and here too the slabs were bonded with KERAFLEX MAXI S1 and joints were grouted with ULTRACOLOR PLUS.



TECHNICAL DATA

Original Design: Giuseppe Laveni and Aldo Avati

Period of Construction: 1927-1932

Period of the Mapei Intervention: 2014-2015

Design for Renovation Works: Studio Marco Piva.

Client: Katara Hospitality

Works Direction: Luigi Merigo

Main Contractor: Impresa Minotti

Stone Installation Contractor: Fratelli Moncini

Mapei Distributor: Fratelli Moncini

Mapei Co-ordinator: Antonio Salomone, Mapei SpA (Italy)

MAPEI PRODUCTS

Keraflex Maxi S1, Mapesil LM, Ultracolor Plus





TECHNICAL DATA

Year of Construction: 1912
Original Design: Warren & Wetmore

Year of the Mapei Intervention: 2013

Clients: The Ritz-Carlton Hotel Company, L.L.C. (Hotel) and Golden Square Mile Holding Inc. (Residences)

Main Contractor: Pommerleau

Project Manager: CRS – Sylvain Chantal (BTM)

Design: Provencher Roy & Associates and SBSA Structural Consultants

Mosaic and Stone

Installation Companies: CRS – BTM Construction, TSIS – Carrelage de Montreal (Residences), TSIS – Olympic Tile (Hotel)

Mapei Distributors: CRS – Reno-Direct Inc., TSIS – Prosol Quebec (Residences) TSIS – Ciot Quebec (Hotel)

Mapei Co-ordinators: Michel Lafortune and Pat Desanctis, Mapei Canada Inc.

MAPEI PRODUCTS

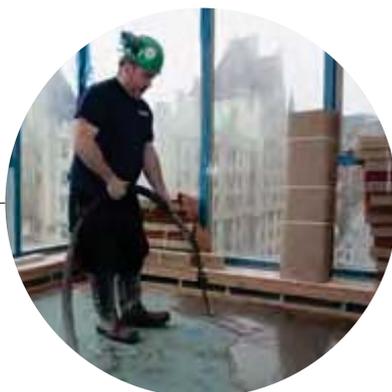
Novoplan 1*, Ultraplan M20*, Mapelite*, Mapelastic Aquadefense, Ultraflex 2*, Keracolor S*, Keracolor U*, Mapecem 100*, Mapelastic 315*, Ultralite*, Kerabond, Keralastic*

* These products are manufactured and distributed on the Canadian market by Mapei Canada Inc.

Ritz-Carlton Montreal Hotel Montreal (Canada)

Starting in January 2013, the Ritz-Carlton Montreal hotel began an incredible transformation. The facade, lobby, and some interiors have been restored to their original splendor. One half of the original building remains as a hotel, while the other half has been renovated and turned into 46 private residences. The renovations included overall updates to the rooms and common areas, as well as an expansion to create luxury residences. Repairs of the concrete slabs at the hotel and the Residences were carried out with

NOVOPLAN 1 underlayment pumped over a layer of PRIMER L. In an older section of the hotel, the structural engineers required the use of a “light” concrete. Mapei supplied ULTRAPLAN M20 PLUS mixed with MAPELITE. Before installing stone coverings in the hotel and the residences, substrates were waterproofed with MAPELASTIC AQUADEFENSE. Marble slabs were bonded with ULTRAFLEX LFT on the walls and ULTRAFLEX 2 on the floors. Joints were grouted with KERACOLOR U. In the residences, marble slabs and mosaic tiles were installed in the kitchens, bathrooms and entrance areas with ULTRALITE, after repairing the substrates with MAPECEM 100 and waterproofing the surfaces with MAPELASTIC 315. Joints were grouted with KERACOLOR U. The KERABOND/ KERALASTIC system was used to install marble in the lobbies before grouting joints with KERACOLOR S and KERACOLOR U. The same products were used to install porcelain and mosaic tiles on the rooftop pool area. All the mentioned products are manufactured and distributed on the Canadian market by Mapei Canada Inc., while MAPELASTIC AQUADEFENSE and KERABOND are also available on the international market.





Aqua World Jedenáctka Prague (Czech Republic)

Aqua World Jedenáctka was built in an area of Prague that is easy to reach by car and with public transport. It comprises three inter-connecting pavilions extending over an area of 76,000 m² and has a poly-functional gymnasium, a swimming pool, an aquatics centre for water-sports and children and a wellbeing centre with saunas and Turkish baths. Numerous Mapei solutions were used in the construction of this important centre, from products to bond ceramic tiles in the entrance hall, in the areas around the swimming pools and in the service areas, to waterproofing products for the swimming pools, plant rooms and service areas.

Apart from MONOLASTIC one-component cementitious waterproofing mortar, MAPELASTIC, and MAPEGUM WPS, combined with MAPEBAND alkali-resistant rubber tape with felt and MAPEBAND SA self-adhesive butyl tape, were used for waterproofing work.

The substrates were treated with PRIMER G and ECO PRIM GRIP. The adhesives used to bond the ceramic tiles were ADESILEX P9, KERAFLEX EASY and KERABOND admixed with ISOLASTIC. The expansion joints were treated with PRIMER FD adhesion promoter and sealed with MAPESIL AC. ADESILEX PG1 RAPID two-component, rapid-setting thixotropic adhesive and EPORIP epoxy adhesive were used for structural bonds. KERAPOXY epoxy mortar and ULTRACOLOR PLUS polymer-modified mortar were used to grout the joints.

TECHNICAL DATA

Period of the Mapei

Intervention: 2013-2014

Client: Prague City Council

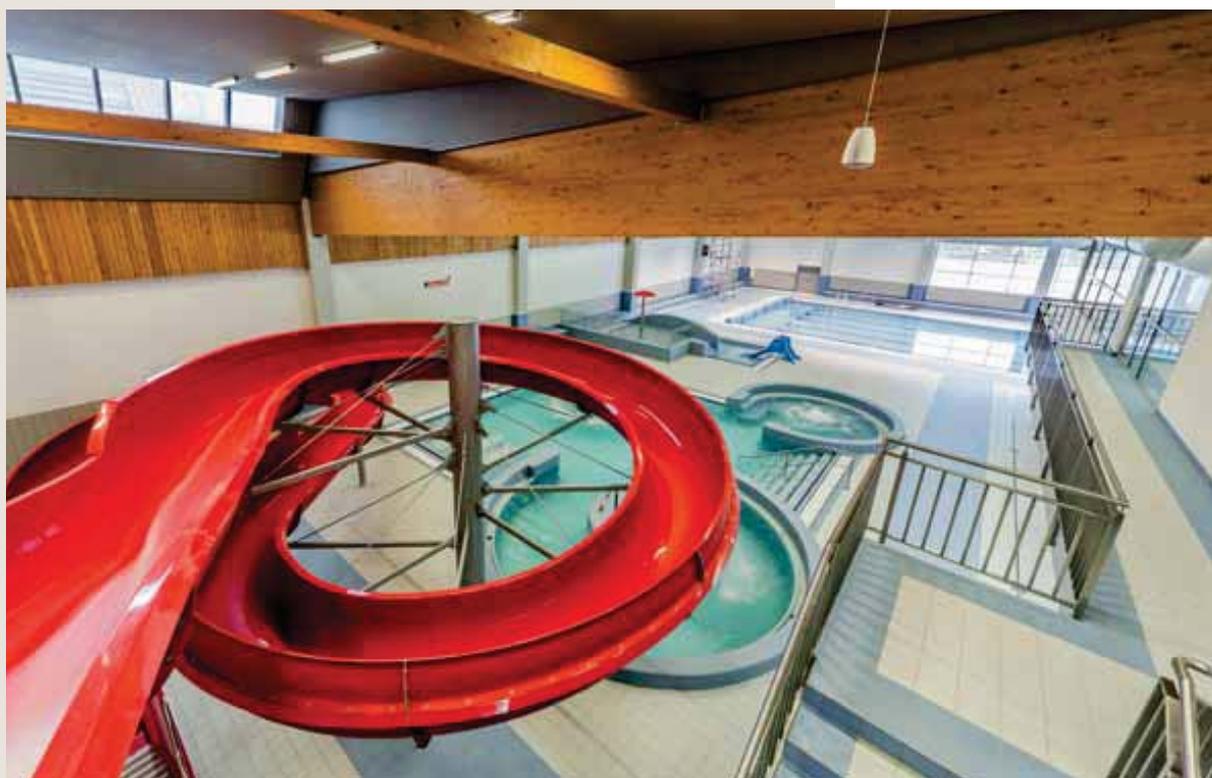
Main Contractor: Hochtief CZ a.s.

Ceramic Installation Contractor:
Hochtief CZ a.s.

Mapei Co-ordinators: Zdenek Runštuk and Starec František, Mapei spol. s r.o. (Czech Republic)

MAPEI PRODUCTS

Monolastic, Mapelastic, Mapegum WPS, Mapeband, Mapeband SA, Primer G, Eco Prim Grip, Adesilex P9, Keraflex Easy, Kerabond, Isolastic, Mapesil AC, Adesilex PG1 Rapid, Eporip, Kerapoxy, Ultracolor Plus





TECHNICAL DATA

Period of Construction: 2014-2015

Period of the Mapei Intervention:
2014-2015

Client: Albena Resort

Design: Nikolay Kutsarov

Main Contractor: Aquatec LTD

Ceramic Installation Company:
Aquatec LTD

Mapei Distributor: Aquatec LTD

Mapei Co-ordinators: Ventsislav
Nikolov and Marin Skarlev, Mapei Bulgaria
E.O.O.D.

MAPEI PRODUCTS

Adesilex P7, Idrostop Soft, Idrostop PVC
BI BE, Keraflex, Kerapoxy, Mapeband,
Mapeband TPE, Mapelastix, Mapenet
150, Planitop Fast 330, Plastimul,
Plastimul 2 K Plus.



Aquamania Waterpark Albena (Bulgaria)

Albena is one of the most beautiful sea resorts of the Bulgarian seaside. It is situated only 30 km away from Bulgaria's sea capital Varna. The resort is remarkable for its 6-km long beach.

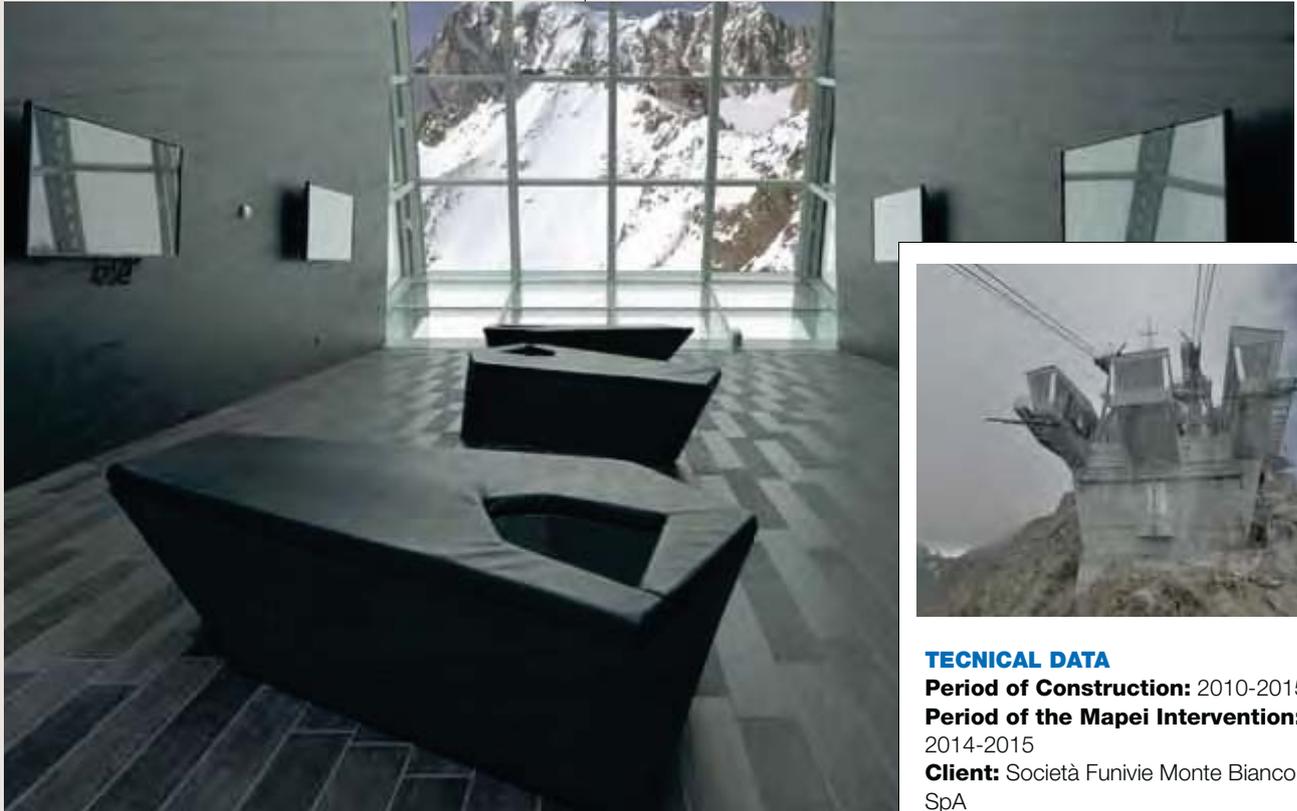
Aquamania waterpark covers an area of around of nearly 30,000 m² with water attractions for adults and kids. Construction works of the park started in early 2014.

Mapei supplied materials for the finishing works in the swimming pools and water attractions, but also for the early construction phase. IDROSTOP SOFT jointing profile and IDROSTOP PVC BI BE waterstop were chosen for waterproofing the joints between the concrete elements, while MAPEBAND TPE tape was used for waterproofing structural joints. For waterproofing the external sections, PLASTIMUL bitumen waterproofing emulsion was used. PLASTIMUL 2 K PLUS solvent-free, bitumen waterproofing emulsion was applied when high resistance to rain was required and when there was an higher risk of cracking.

The waterproofing of surfaces in the swimming pools and water attractions was carried out with a system including MAPELASTIX membrane, MAPEBAND tape and MAPENET 150 mesh. Before external and internal waterproofing, PLANITOP FAST 330 cementitious leveling mortar was chosen for smoothing the concrete.

After the installation of glass mosaic tiles in the pool with KERAFLEX adhesive, as well as that of white small-size ceramic tiles around the pool with ADESILEX P7, the joints of the whole area were grouted with KERAPOXY grout.





TECNICAL DATA

Period of Construction: 2010-2015

Period of the Mapei Intervention: 2014-2015

Client: Società Funivie Monte Bianco SpA

Design: Dimensione Ingegnerie Srl, Funiplan Srl, Si.Me.Te S.N.C., Studio Corona Srl, Proteo Srl, Studio Cancelli Associato

Works Direction: Marco Petrella

Contractors: Cordée Mont Blanc (Cogeis SpA, I.V.I.E.S. SpA, Costruzioni Stradali B.G.F Srl, Doppelmayr Italia Srl, P.A.C. SpA, Consorzio Stabile Valle d'Aosta S.C.ar.l., Boma Construction Srl

Floor and Wall Installation

Contractor: Fornengo Srl

Mapei Distributor: Fornengo Srl

Mapei Coordinators: Valerio Mandelli and Mauro Zanolgio, Mapei SpA (Italy)

MAPEI PRODUCTS

Idrosilex Pronto, Keracolor FF, Keracolor GG, Keraflex Maxi S1, Keralastic T, Kerapoxy CQ, Mapeband, Mapelastic Smart, Mapesil LM, Ultralite S1

Mont Blanc Skyway Cable-car Courmayeur (Italy)

The new Mont Blanc SkyWay cable-car system was inaugurated in May 2015 following a complete overhaul of its three runs which depart from Pontal d'Entrèves.

The first intervention was to waterproof and coat the underground concrete drinking water tanks with MAPEBAND and MAPELASTIC SMART. KERAFLEX MAXI S1 adhesive was used to bond the porcelain tiles, while IDROSILEX PRONTO, which is suitable for contact with drinking water, was used to grout the joints.

In the departure station of the cable-car system at Pontal d'Entrèves, the various formats of porcelain tiles and laminam wall tiles were bonded in place with ULTRALITE S1. In the service rooms, the porcelain floor and wall tiles were bonded in place with KERAFLEX MAXI S1 and joints were grouted with KERACOLOR GG and KERACOLOR GG.

In the intermediate station at Pavillon du Mont Frèty, the flooring was bonded onto the metal substrates with KERALASTIC T while joints were grouted with KERAPOXY CQ.

For the arrivals station at Punta Helbronner, which has a panoramic terrace and is located at 3,466 m above sea level, ULTRALITE S1 was used to bond the various formats of porcelain floor tiles and laminam wall tiles, while in the restaurant area the porcelain tiles were bonded in place with KERALASTIC T and joints were grouted with KERAPOXY. The floor substrate in the service rooms was treated with PRIMER SN, broadcast with QUARTZ 1.2 and finished off with ULTRATOP.





TECHNICAL DATA

Period of Construction: 2011-2015

Year of the Mapei Intervention: 2015

Design: m-arquitectos - Montero Resende and Sousa Arquitectos Lda.

Client: North Shore Resorts

Works Direction: Arch. Fernando Monteiro

Main Contractor: RPM

Mapei Distributor: LivePlace by Palegessos

Mapei Co-ordinators: Marco Ferro and Nelson Moreira, Lusomapei (Portugal)

MAPEI PRODUCTS

Eco Prim Grip, Eporip, Keraflex Maxi S1, Keralastic T, Kerapoxy CQ, Mapefloor Finish 52 W, Mapefloor Finish 58 W, Mapeband, Mapelastic, Mapenet 150, Primer G, Primer SN+Quartz 0.5, Ultratop Loft F, Ultratop Loft W

Santa Bárbara Eco-Beach Resort

São Miguel, Azores (Portugal)

The Santa Bárbara Eco-Beach Resort is located between the mountains and the sea on the island of São Miguel, in the Azores Archipelago, and offers stupendous views of the beach and the nearby Lagoa do Fogo lake. It is a four-star hotel complex with 14 villas, a total of 70 rooms, a restaurant, a Beach Club, a swimming pool, a bar and sports centre, a car-park and direct access to the beach of Santa Barbara. In various zones (suites, bedrooms, bathrooms, halls and restaurant), the designers opted for cementitious floor and wall coverings using the ULTRATOP LOFT system. With this system, the substrates were initially treated with EPORIP, PRIMER SN+QUARTZ 0.5 and ECO PRIM GRIP. The floor and wall coverings were made with ULTRATOP LOFT F and ULTRATOP LOFT W, one-component trowellable cementitious pastes with a coarse and fine texture finish, respectively, with a coat of PRIMER G diluted with water applied between the two coats. The final protection for the surfaces was provided by MAPEFLOOR FINISH 52 W and MAPEFLOOR FINISH 58 W, two-component, polyurethane finishing products in water dispersion. The substrates of the swimming pool were waterproofed with MAPELASTIC, MAPEBAND and MAPENET 150, before bonding mosaics with KERAFLEX MAXI adhesive and grouting joints with KERAPOXY CQ. Cork was used to thermally insulate and soundproof the external façades and it was bonded in place using KERALASTIC T adhesive.





Ikos Olivia Hotel Gerakini, Chalkidiki (Greece)

Chalkidiki is a peninsula in northern Greece featuring magic sea-sides, beautiful mountains, and green forests. Therefore, it attracts many visitors during summer holidays. Gerakini is a very small village in Chalkidiki. Gerakina Beach is a luxurious hotel built back in 1968 in the village outskirts which over the years became a reference point for Chalkidiki inhabitants and tourists. In 2014 a joint venture of Oaktree Capital and Sani holding companies bought the hotel and immediately started renovation works. As a result, a new modern hotel complex was created with more than 500 rooms and around 900 beds. The hotel was given the new name of Ikos Olivia out of the olive trees located in the complex. The hotel buildings cover an area of 24.000 m² and offer top level services in an enchanting setting overlooking the beach.

The complex includes three main swimming pools covering over 5.000 m² surface. Mapei products were used for the final finishing of the pool surfaces.

After curing the screed, MAPECOAT I 600W two-component transparent epoxy primer was applied and then the whole surface of the pool was smoothed with TRIBLOCK FINISH three-component, epoxy-cementitious mortar. A second layer of MAPECOAT I 600W was applied thereupon, before completing the intervention with three coating layers of ELASTOCOLOR WATERPROOF easy-to-clean, waterproof acrylic paint. Thanks to these products, Mapei contributed to the successful opening of the hotel in May 2015.

TECHNICAL DATA

Year of Construction: 1968

Designer: Focal

Period of the Intervention: 2014-2015

Client: Gerakina Beach

Main Contractor: Aktor

Installation Company: Euromonosi

Mapei Distributor: Euromonosi, Kormas

Mapei Co-ordinators: Peter Topalis, Ioannis Koropoulos, and Vivian Angeletopoulou, Mapei Hellas (Greece)

MAPEI PRODUCTS

Elastocolor Waterproof, Mapecoat I 600W, Triblock Finish





TECHNICAL DATA

Year of Construction: 2015

Year of the Mapei Intervention: 2015

Client: A Mano Restaurant

Flooring Contractor: Animo Chatziathanasiou Mathaios

Mapei Distributor: Mirodis Eleetyerios

Mapei Coordinators: Evangelos Chouliaras and Panayiotis Rerras, Mapei Hellas (Greece)

Photos: George Stathopoulos

MAPEI PRODUCTS

Mapefloor Finish 50N, Mapefloor Finish 52W, Mapenet 150, Primer SN, Quartz 0.5, Ultratop Color Paste, Ultratop Loft F, Ultratop Loft W

A Mano Restaurant Glyfada (Greece)

In the center of Glyfada, a very beautiful suburb on the Greek sea shores near Athens, a new restaurant called "A MANO" recently opened its doors to the public. The client's request was to build floors with a final mottled effect and high resistance to the intense pedestrian traffic. The existing floor featured old tiles which were repaired in some damaged areas. Then the whole floor was mechanically prepared using a grinding machine. The substrate was then primed using PRIMER SN, two-component epoxy pre-fillerized primer, mixed with QUARTZ 0.5, and applied in two layers with MAPENET 150 glass fibre mesh embedded into the first layer. QUARTZ 0.5 was fully sprinkled on top of the whole surface with the "fresh on fresh" technique. The day the primerization was completed, the excess sand was removed with an industrial vacuum cleaner and the surface was slightly sanded. After completing these operations, the first layer of ULTRATOP LOFT F trowellable, big-size, coarse-textured cementitious paste (coloured by adding ULTRATOP COLOR PASTE), was applied using a smooth trowel. The following day the floor was sanded and then the final layer of ULTRATOP LOFT W fine-textured paste (coloured by adding ULTRATOP COLOR PASTE) was applied. The last day the floor was sanded and a layer of MAPEFLOOR FINISH 50N two-component, aliphatic, transparent polyurethane finish was applied on top of it. In order to achieve a matt effect, a layer of MAPEFLOOR FINISH 52 W two-component, polyurethane finishing in water dispersion was applied.





Aria Hotel Budapest (Hungary)

Aria Hotel is an eclectic building completed in the second half of the 19th century in Budapest. The latest renovation cost over 8 million Euros and turned the building into a thematic hotel. The theme is music: room interiors evoke music genres and music artists. Mapei Technical Services recommended consolidating the floor substrate in the hall with PROSFAS. The cracks in the concrete floor were repaired with EPORIP. The installation of ceramic tiles on floors and skirtings was carried out with KERALASTIC T. The tile joints in the steam cabin of the wellness unit were grouted with KERAPOXY CQ, after the tiles had been bonded with KERAFLEX LIGHT S1. All the joints in the tiled surfaces in the corridors, as well as in the wall and floor surfaces around the pool were grouted with KERACOLOR FF FLEX (which is manufactured and distributed on the Hungarian market by Mapei Kft.), whereas expansion joints were sealed with MAPESIL AC. In the rooms upstairs, PRIMER G, ULTRAPLAN RENOVATION (which is manufactured and distributed on the Hungarian market by Mapei Kft.), MAPEGUM WPS, MAPELASTIC and MAPEBAND were used to treat and waterproof the substrates while KERAFLEX LIGHT S1 (which is manufactured and distributed on the Hungarian market by Mapei Kft.) was used to bond ceramic tiles.

In addition, a total of 1200 m² floor in the rooms and corridors was covered with textile materials bonded with ULTRABOND ECO FIX. The floor of the library was covered with wood installed with ULTRABOND P913 2K.

TECHNICAL DATA

Period of Construction: late 19th century

Period of the Mapei Intervention:

2014-2015

Design: Zsolt Szécsi, Zoltán Varró

Developer: Varró Design LLC

Client: Ik Hotels, Henry Katan

Main Contractor: Laki Zrt, Citadell SK

Mapei Distributor: B+M Hungary Kft.

Installation Contractor: Dian Studio Kft.

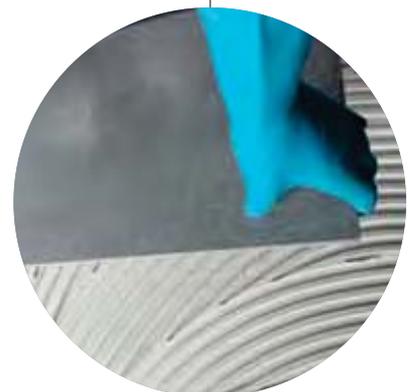
Project Manager: Norbert Szabó

Mapei Co-ordinators: Zsolt Lakatos and László Nagy, Mapei Kft. (Hungary)

MAPEI PRODUCTS

Epoporip, Keralastic, Keralastic T, Keraflex Light S1*, Primer G, Prosfas, Ultraplan Renovation*, Mapeband, Mapegum WPS, Mapelastc, Keracolor FF Flex, Kerapoxyc CQ, Ultracolor Plus, Mapesil AC, Ultrabond Eco Fix, Ultrabond P913 2K.

*These products are manufactured and distributed on the Hungarian market by Mapei Kft





PUBLIC BUILDINGS AND URBAN DESIGN

THE PUBLIC SECTOR COVERS A VAST ARRAY OF BUILDINGS WHICH ALL HAVE TO WITHSTAND PARTICULARLY HIGH VOLUMES OF VISITORS. MAPEI PRODUCTS MEET THE NEEDS OF THE VARIOUS INTERVENTIONS - SUCH AS MASONRY REPAIR WORK, FINISHES FOR FAÇADES, INSTALLATION OF FLOORING, THERMAL INSULATION AND SOUNDPROOFING – WHILE AT THE SAME GUARANTEE THE SAFETY OF BOTH WORKERS AND END USERS



Vittorio Emanuele General Hospital Catania (Italy)

The last renovation works at the General Hospital of Catania involved the application of new wall coatings. After a survey by Mapei Technical Services, five different interventions were recommended based on the various types of substrate. In the first case, the substrate, made up of a lime/cement mortar and a coloured finish, was repaired with INTOMAP R1 admixed with PLANICRETE and PLANITOP 210 skimming mortar reinforced with MAPENET 150 glass fibre mesh. The surface was then finished off with QUARZOLITE BASE COAT acrylic undercoat and ELASTOCOLOR TONACHINO PLUS elastomeric coating. In the second case (lime/cement mortar with a coloured finish in good condition), once the substrate had been cleaned and had dried out, it was treated with QUARZOLITE BASE COAT and ELASTOCOLOR TONACHINO PLUS. The surface was finished off with SILANCOLOR BASE COAT and SILANCOLOR AC TONACHINO. In the third case, the substrate (reinforced concrete in good condition) was treated with QUARZOLITE BASE COAT and ELASTOCOLOR TONACHINO PLUS, followed by SILANCOLOR BASE COAT and SILANCOLOR AC TONACHINO. For the lower parts of the building (lime/cement mortar), which were suffering from rising damp, the substrate was repaired using POROMAP RINZAFFO and POROMAP INTONACO and finished with SILANCOLOR PRIMER and SILANCOLOR TONACHINO. In the fourth area, the surface was levelled off with a traditional mortar and PLANICRETE, before applying MAPETHERM AR 1 GG mortar reinforced with MAPENET 150 and finishing with QUARZOLITE BASE COAT and ELASTOCOLOR TONACHINO PLUS.

TECHNICAL DATA

Year of Construction: 2005

Period of the Mapei Intervention: 2014-2015

Client: Azienda Ospedaliera e Universitaria Policlinico Vittorio Emanuele

Design: Prof. Salvatore Barbera and Archt. Claudia Romero

Contractors: Angelo Russello S.p.A., ATI Conscoop

Works Direction: eng. Giovanni Romiti, Politecnica

Technical Direction: eng. Nunzio Oliva and Salvatore Campo

Mapei Distributor: AD Ceramiche Srl

Mapei Co-ordinators: Achille Carcagni, Ezio Vallone, Rocco Briglia, Antonino Sciuto, and Fabio Latragna, Mapei SpA (Italy)

MAPEI PRODUCTS

Elastocolor Tonachino Plus, Intomap R1, Mapenet 150, Mapetherm AR 1 GG, Planicrete, Planitop 210, Poromap Intonaco, Poromap Rinzafo, Quarzolite Base Coat, Silancolor AC Tonachino, Silancolor Base Coat, Silancolor Primer, Silancolor Tonachino





TECHNICAL DATA

Period of Construction: early 18th sec.

Period of the Mapei

Intervention: 2014-2015

Client: Santuario Santa Maria del Fonte

Regional Fine Arts and

Environment Office: Napoleone Giuseppe

Design and Works Direction:

Studio Ziglioli

Site Direction: Paolo Ziglioli

Contractors: M.V. Construction di Mauro Vailati, Cocciopesto Restauri Sas di Casula Roberto e C.

Mapei Distributor: Edil GI Misano Srl

Mapei Co-ordinators: Davide Bandera, Daniele Sala, Matteo Venturini, Claudio Cò, Mapei SpA (Italy)

MAPEI PRODUCTS

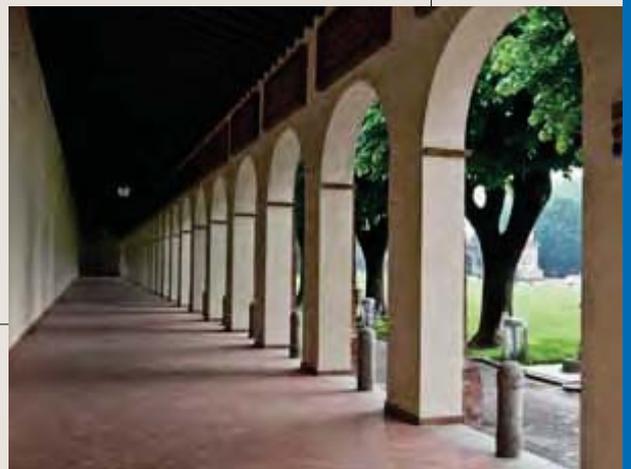
Mape-Antique Allettamento, Mape-Antique Rinzafo, Mape-Antique MC Macchina, Mape-Antique FC Civile, Antipluviol W

Sanctuary of Santa Maria del Fonte Caravaggio (Italy)

In the Sanctuary of Santa Maria del Fonte, a MAPE-ANTIQUE dehumidifying cycle was applied to restore the render for the porticoes which had been badly damaged by rising damp and soluble salts. After removing all the old, damaged render and washing the walls with low pressure water jets to eliminate all the loose materials, efflorescence and soluble salts, the masonry was treated with MAPE-ANTIQUE RINZAFFO salt-resistant, transpirant lime and Eco-Pozzolan scratch-coat mortar. The next step was to apply a 20 mm thick layer of MAPE-ANTIQUE MC MACCHINA macro-porous, salt-resistant dehumidifying, lime and Eco-Pozzolan based render. Once the render was fully cured, the surface was skimmed with MAPE-ANTIQUE FC

CIVILE salt-resistant, fine-grained lime and Eco-Pozzolan transpirant skimming mortar, mixed with a small amount of very fine, ochre-yellow sand to give it the same colour as the original material. All the products in the MAPE-ANTIQUE LINE comply with EN 998-1 and EN 998-2 standards so that they can meet specific certification requirements. They are also all eco-sustainable mortars, in that they are certified by the GEV Institut as EC1 R Plus, which means they have very low emission level of volatile organic compounds (VOC).

The parts of the masonry walls along the colonnades that are most exposed to rain were then treated with ANTIPLUVIOL W transparent, silane and siloxane water-repellent impregnator in watery solution.





Students Dormitory Bari (Italy)

Located in the centre of the city behind the main police station, after being left abandoned for more than 15 years, the Students' Dormitory in Largo Fraccacreta has been returned to its original use in time for the start of the 2015-2016 academic year.

Renovation work was carried out on the whole of the building, from strengthening work on the main structure to rebuilding more than 7,000 m² floors and laying linoleum floorings supplied by Tarkett, all using Mapei products for floors.

To prepare the existing substrate, the surfaces were initially treated with PRIMER G and then smoothed with ULTRAPLAN self-levelling, ultra quick-hardening smoothing compound, designed for floors with high resistance to heavy loads and high volumes of foot traffic.

Damaged areas, that needed to be partially rebuilt and repaired, were treated with NIVORAPID.

ULTRABOND ECO 530 was used to bond the linoleum floor covering, a new generation in adhesives suitable for bonding linoleum.

ULTRABOND ECO 530 is a solvent free

synthetic polymer based single-coat adhesive in water dispersion, easy to trowel, with very low emission levels of volatile organic compounds (EMICODE EC1 Plus-certified). It is characterized by its short drying time and strong initial bond. Areas of sagging, rolls ends, projecting edges or severe arching of the coverings can be laid securely and without problems.

This adhesive also guarantees high levels of dimensional stability and excellent early strength, which allows fast joint coverings with fuse wire.



TECHNICAL DATA

Year of Construction: 1960

Period of the Mapei

Intervention: 2013-2015

Client: Agenzia per il Diritto allo Studio Universitario, Bari

Design: U.T. Università degli Studi di Bari – R.U.P. eng. Tritto Antonio

Main Contractor's

Consultants: Studio Vitone e Associati - eng. Bonaduce Francesco

Works Direction: eng. Andrea Trovato

Contractors: Ati Edil Alta Srl, D'Attolico Paolo Srl, SAP Srl

Mapei Co-ordinators:

Michelangelo Occhiogrosso and Michelangelo Sorrenti, Mapei SpA (Italy)

MAPEI PRODUCTS

Nivorapid, Primer G, Ultrabond Eco 530, Ultraplan





TECHNICAL DATA

Year of Construction: 1897

Year of the Mapei Intervention: 2015

Client: Teatro Massimo Vittorio Emanuele di Palermo

Works Direction: Cosimo De Santis, Teatro Massimo

Main Contractor: Edilsama Srl

Wooden Floor Contractor: Tecnomontaggi di Ribaudò Giusto

Mapei Distributor: Ballarò Damiano & C. Sas

Mapei Co-ordinators: Achille Carcagni, Ric. Co. Snc, Felice Ciruolo, and Rocco Briglia, Mapei SpA (Italy)

MAPEI PRODUCTS

Ultracoat Toning Base, Ultracoat Premium Base, Ultracoat High Traffic

Massimo Vittorio Emanuele Theatre Palermo (Italy)

Renovation work was carried out in August 2015 on the cherry wood parquet flooring in the "Great Hall", or stalls, of the Massimo Vittorio Emanuele Theatre in Palermo.

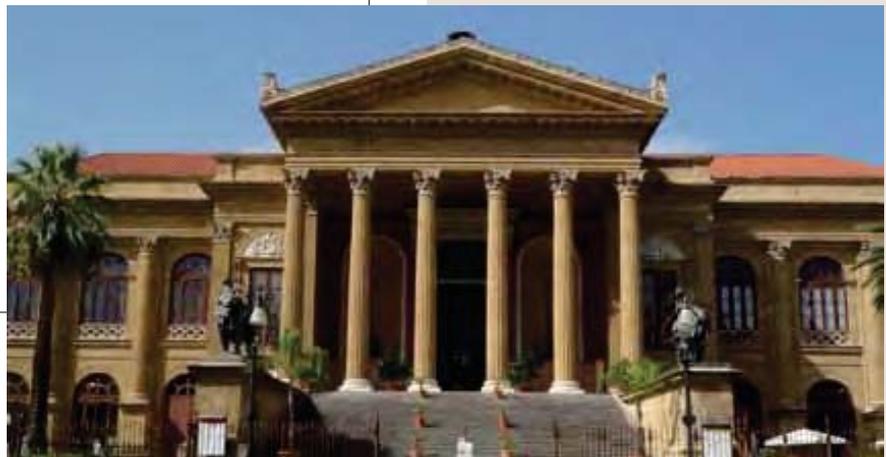
The solid, square cherry wood blocks, measuring 40x40cm, cover an area of around 500 m², and were installed when the theatre was closed for renova-

tion work between 1974 and 1997.

At the time, the floor was treated with solvent-based, fire-proof varnish which changed the actual nature of the wood as its colour had become very dark.

In order to maintain its functional characteristics and restore the original wooden flooring to its natural, "warm" colour, work started by removing the old, solvent-based fire-proof varnish and applying ULTRACOAT TONING BASE two-component, water-based toning undercoat to give the floor a more natural color shade, followed by a treatment cycle required to certify its reaction to fire characteristics.

After sanding the surface again, a coat of ULTRACOAT PREMIUM BASE water-based basecoat was applied followed by a first coat of ULTRACOAT HIGH TRAFFIC (30 gloss) water-based varnish. After two hours, a second coat of ULTRACOAT HIGH TRAFFIC was applied in combination with a coat of ULTRACOAT PREMIUM BASE using the wet-on-wet technique. This enabled the flooring to be certified as fire-reaction class CFI and smoke development class S1 in compliance with EN 13501-1:2010 standards, fully meeting the specifications requested by the client.





Basilica of Santo Stefano Rotondo al Celio

Rome (Italy)

The first stage of the renovation work on the loft under the roof of the walkway in the Basilica of Santo Stefano Rotondo al Celio, in Rome, was to make the wooden beams structurally safe by thoroughly cleaning, and consolidating them with MAPEWOOD PRIMER 100 fluid epoxy impregnator in water dispersion.

The cracks in the beams were sealed with MAPEWOOD GEL 120 gel epoxy adhesive. The beams were then reinforced by applying another coat of MAPEWOOD PRIMER 100 and steel rods were anchored in the beams with MAPEWOOD GEL 120. The surface cracks were then sealed with MAPEWOOD PASTE 140 thixotropic epoxy adhesive.

The same products were also used to remodel the ends of the beams, as well as the parts of the beams that had been worn away and other wooden structural members, while MAPEWOOD PASTE 140 was used to cover parts of the beams with metal plates.

The masonry around the support areas for the beams was cleaned to expose the facing wall before consolidating it and filling the cracks in the masonry with MAPE-ANTIQUE SRUTTURALE NHL transparent mortar made from natural hydraulic lime and Eco-Pozzolan.

MAPE-ANTIQUE F21 super-fluid, salt-resistant, hydraulic binder was then applied by injection to complete this important consolidation and renovation intervention.

TECHNICAL DATA

Period of Construction: 460 AD.

Year of the Mapei Intervention: 2015

Client: Pontificio Collegio Germanico e Ungarico

Structural Design: Marco Fiabane, Marco Bugia

Works Direction: Marco Fiabane

Artistic Direction: Riccardo D'Aquino

Main Contractor: Iciet Engineering

Mapei Co-ordinators: Leonardo Butò and Renato Soffi, Mapei SpA (Italy)

MAPEI PRODUCTS

Mape-Antique F21, Mape-Antique Strutturale NHL, Mapewood Gel 120, Mapewood Paste 140, Mapewood Primer 100



**TECHNICAL DATA**

Year of Construction: 18th century

Period of the Mapei

Intervention: 2012-2014

Client: Oficina del Historiador de la Ciudad

Design: OHCH Department for Architectural and Urban Design

Contractor: Empresa Constructora Puerto Carena

Mapei Co-ordinators: Renato Soffi and Pedro Graniela, Mapei SpA (Italy)

MAPEI PRODUCTS

Adesilex PG1, Antipluviol S, Carboplate, Carbotube, Epojet, Lampocem, Mape-Antique I, Mape-Antique MC, Mapefer 1K, Mapefill, Mapegrout T60, Mapelastic, Mapenet, Mapewood Paste, Mapewood Primer 100, Mapewood Gel 200, Planitop HDM Maxi, Primer 3296

Palacio del Segundo Cabo Havana (Cuba)

Built in the 18th century, Palacio del Segundo Cabo is a two-storey high palace with an Andalusian style central courtyard. Upgrading work on the building aimed at bringing it back to its original splendour by renovating the rooms in the building without compromising its Baroque Colonial style. The building was badly damaged, with deep cracks in the arches and walls caused by overloads on its structure. After a thorough analysis of the conditions of the building, consolidation began by injecting MAPE-ANTIQUE I super-fluid, salt-resistant, lime and Eco-Pozzolan-based, hydraulic binder with fillers in the walls, followed by the application of CARBOPLATE carbon fibre plates. The reinforced concrete elements were repaired by applying MAPEFER 1K anti-corrosion cementitious mortar on the steel reinforcement rods and repairing the concrete elements with MAPEGROUT T60 fibre-reinforced, sulphate-resistant thixotropic mortar. Renovation work on the ornamental stone decorative elements was carried out using PRIMER 3296 and PLANITOP HDM MAXI fibre-reinforced, pozzolan-reaction mortar, while for the façades MAPE-ANTIQUE dehumidifying, cement-free, lime and Eco-Pozzolan-based cycle was applied, comprising a layer of MAPE-ANTIQUE RINZAFFO and MAPE-ANTIQUE MC macro-porous, salt-resistant dehumidifying render, which was mixed with special pigments in order to match the original colours. The dome was waterproofed with MAPELASTIC membrane reinforced with MAPENET 150 glass fibre mesh. Damaged components of the roof wooden structure were repaired using the MAPEWOOD system.





Piazza Duca d'Aosta

Milan (Italy)

The architectonic stone floor in the square just in front of Milan Central Station was recently re-installed. Mapei Technical Services proposed the use of MAPESTONE system, a system used to install urban stone floors at a competitive cost with numerous advantages: durability, resistance to freeze/thaw cycles and high mechanical strength. The time allowed to install the floors was quite limited. After examining the slabs, it was decided to remove the broken ones and replace them with new ones of the same type, while the remaining slabs were recovered by giving them a thorough cleaning.

Before bonding the slabs on the installation screed made from MAPESTONE TFB 60 pre-blended mortar while it was still fresh, a bonding slurry made from PLANICRETE synthetic latex rubber, water and cement was applied on the back of the slabs. The stone slabs were then installed in a specific pattern. The expansion joints were sealed with MAPESIL LM neutral silicone mould-resistant sealant and MAPEFLEX PU20 castable epoxy-polyurethane sealant. To obtain the correct size of the joints and prevent the sealant reaching the bottom of the joints, MAPEFOAM cord was pressed down into the joints sides. This intervention was completed by grouting the joints with MAPESTONE

PFS 2 pre-blended mortar with high compressive strength and good resistance to de-icing salts and freeze-thaw cycles, ideal for grouting architectonic stone floors in exposure classes XF3 and XF4 according to UNI EN 1:2006 standards.

In the central part of the square, the substrate was also waterproofed with MAPELASTIC TURBO rapid-drying, elastic cementitious mortar. For installing stone slabs on the concrete surfaces of the new entrance areas of the adjacent underground railway station, ELASTORAPID highly-deformable, quick-setting and drying cementitious adhesive was chosen in its white shade.



TECHNICAL DATA

Period of the Mapei

Intervention: 2014-2015

Client: Milan City Council

Contractor: Guerrato SpA, Simedil Srl (Caligiuri, Federico Valentini)

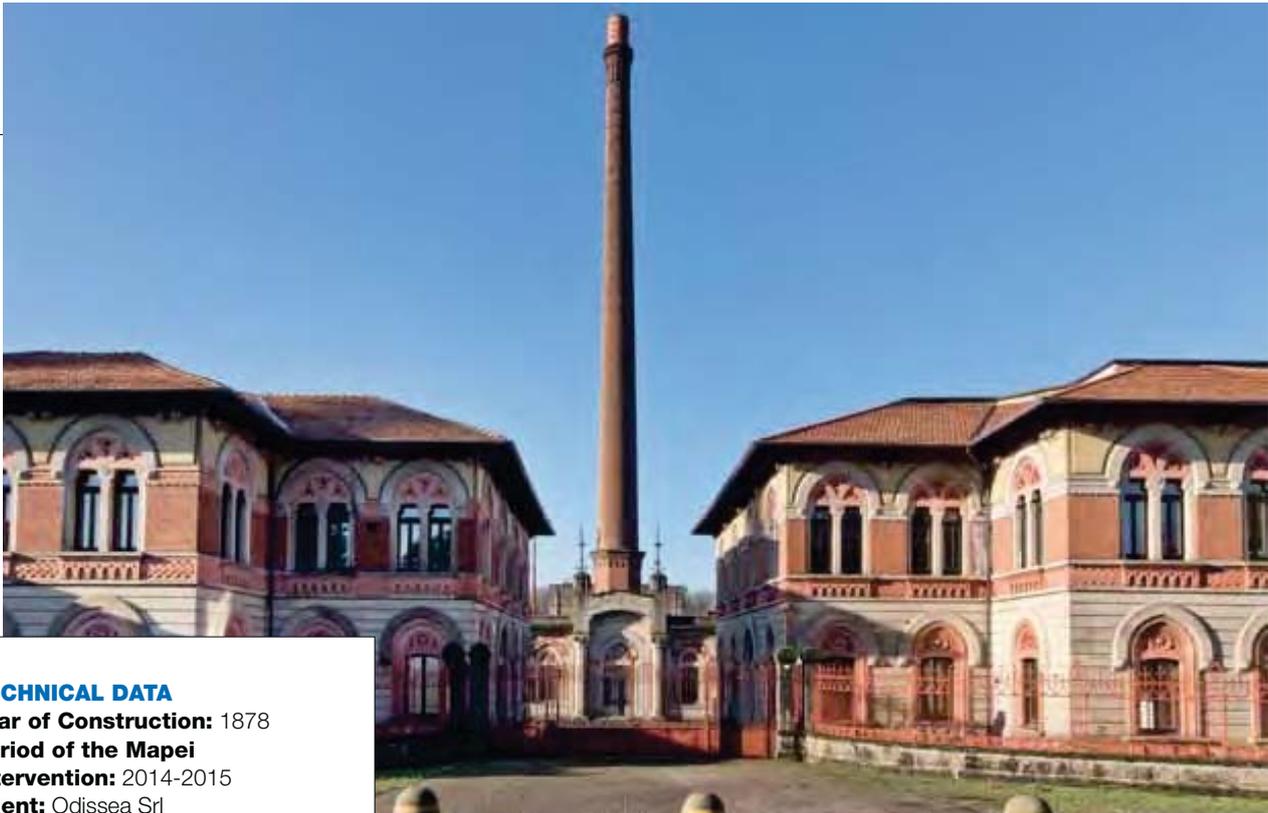
Flooring Contractors: Ideal Pose, Simedil Srl

Works Direction: Mr. Gravina

Mapei Co-ordinators: Marcello Deganutti and Andrea Serafin, Mapei SpA (Italy)

MAPEI PRODUCTS

Elastorapid, Mapeflex PU20, Mapefoam, Mapelastic Turbo, Mapesil LM, Mapestone PFS 2, Mapestone TFB 60, Planicrete

**TECHNICAL DATA****Year of Construction:** 1878**Period of the Mapei****Intervention:** 2014-2015**Client:** Odissea Srl**Design and Works Direction:**

Studio Ing. Giovanni Battista Scolari

Main Contractor: S.M.V.

Costruzioni S.r.l

Masonry Restoration**Contractor:** Cocciopesto Restauri

Sas di Casula Roberto e C.

Tester: MSC Associati Srl, eng.

Danilo Campagna

Mapei Co-ordinators: Dominica

Carbotti, Giulio Morandini, Davide

Bandera, Paolo Baldon, Alessandro

Ladislai, and Federico De

Niederhäusern, Mapei SpA (Italy)

MAPEI PRODUCTS

Planitop HDM Maxi, Mapegrid

G220, MapeWrap C Uni-AX,

MapeWrap C Fiocco, MapeWrap

Primer 1, MapeWrap 11, MapeWrap

31, Stabilcem, Mape-Antique MC,

Consolidante 8020, Antipluviol S

Southern Stack at Crespi d'Adda Village

Capriate San Gervasio (Italy)

The intervention of restoration and strengthening on the structure of the southern chimney stack in the workers' village of Crespi d'Adda in Capriate San Gervasio (Province of Bergamo, Northern Italy) was carried out by using a combination of several different technologies. After carefully preparing the substrate, it was sprayed with a layer of PLANITOP HDM MAXI fibre-reinforced mortar, with MAPEGRID G220 alkali-resistant glass fibre mesh embedded in the mortar.

The strengthening work included the application of eight strips of twin-layered MAPEWRAP C UNI-AX unidirectional carbon fibre fabric applied vertically along the entire length of the stack.

A series of hoops of double-layered bands of MAPEWRAP C UNI-AX fibre fabric were applied around the internal part of the chimney, pitched according to calculations by the design engineers, while in the upper part of the stack, four double-layered spiral strips of the same carbon fibre fabric was applied. All the areas where the strips of fabric crossed each other were also reinforced with MAPEWRAP C FIOCCO. The fabric was bonded in place using the wet-on-wet technique by applying MAPEWRAP PRIMER 1, MAPEWRAP 11 and MAPEWRAP 31, followed by the MAPEWRAP C UNI-AX fabric. For the external part of the stack, consolidation work included injecting the cracked areas with a slurry made from STABILCEM expansive, super-fluid cementitious binder and reconstructing the cotto bricks with MAPE-ANTIQUE MC dehumidifying render and oxides. CONSOLIDANTE 8020 reversible consolidator was also used to anchor the sand broadcast over the surface. The final operation was to coat the surface of the stack with ANTIPLUVIOL S siloxane resin water-repellent impregnator.





Nato Headquarters Brussels (Belgium)

The new headquarters of NATO (North Atlantic Treaty Organisation) are right opposite the former headquarters and extend over an area of around 40 hectares. Construction work started in October 2000 and was completed in December 2015. The new headquarters have around 250,000 m² of floor space in the seven-storey building which is intended to host more than 4,500 employees. Offices account for more than 120,000 m² of the floor space. The new headquarters also has a convention centre, meeting rooms, a restaurant, a bank, a gym and a relaxation area, as well as other areas with storage and workshop facilities. The building is sober and functional and a great deal of importance has been given to internal security features and flexible work areas, which can be set out according to particular operational needs. The contractors working on the construction asked Mapei Technical Services for assistance during various phases of the work. TOPCEM quick-drying, controlled-shrinkage hydraulic binder was used for building the screeds in the ground showers, kitchen and swimming pool. ULTRATOP self-levelling, ultra-quick hardening mortar was used for the floors in the parking. Ceramic tiles were bonded with ELASTORAPID, quick-setting and drying cementitious adhesive in the toilets, changing rooms, swimming pool and cleaners rooms, before grouting joints with ULTRACOLOR PLUS anti-efflorescence, quick-setting and drying polymer-modified mortar. Ceramic tiles in the kitchen, were bonded and grouted with KERAPOXY epoxy mortar, which was also used to grout joints in the showers. In the showers, substrates were waterproofed with MAPEGUM WPS flexible liquid membrane, while MAPELASTIC flexible cementitious waterproofing mortar and MAPEBAND tape were used in the swimming pool.



TECHNICAL DATA

Period of Construction: 2010-2015

Year of the Mapei Intervention:
2010-2015

Client: NATO (North Atlantic Treaty Organisation)

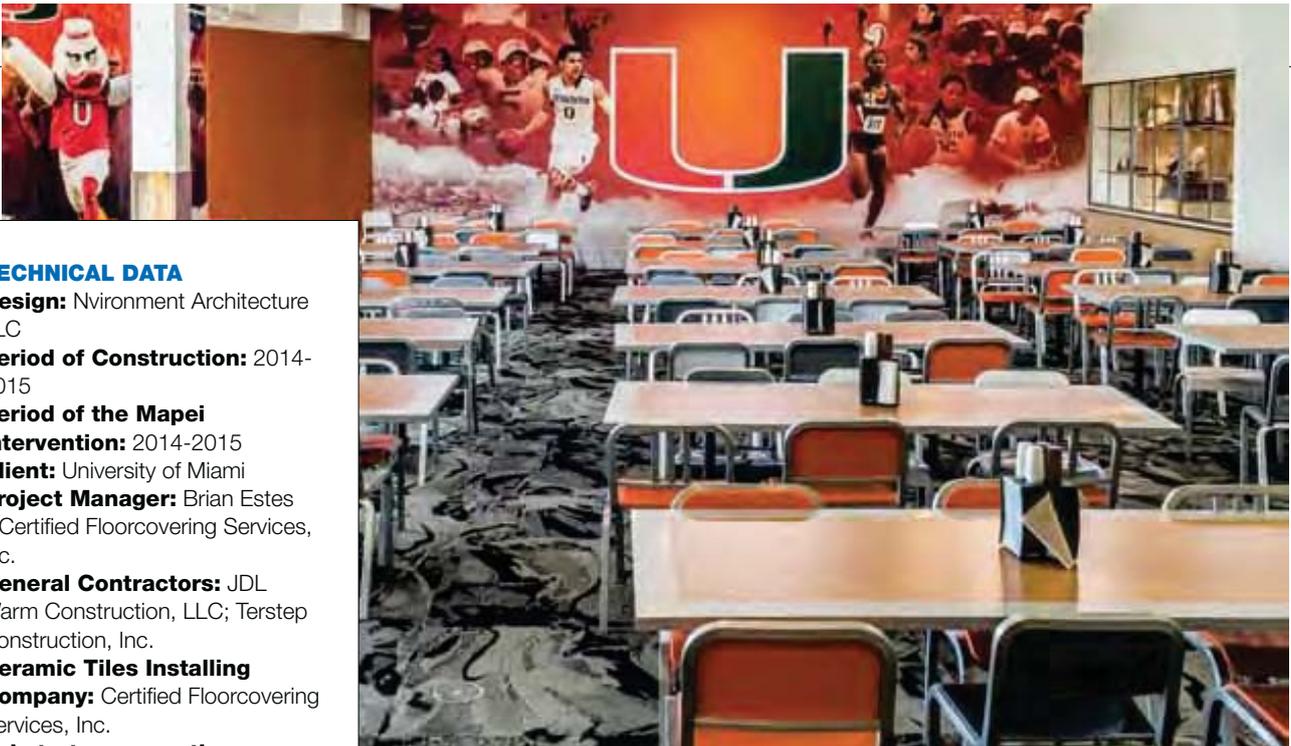
Design: SOM Architectes, Assar Architects, VK Engineering

Main Contractor: BAM

Mapei Co-ordinator: Willy Vijgen, Mapei Benelux S.A./N.V

MAPEI PRODUCTS

Elastorapid, Eporip, Idrosilex, Keralastic, Kerapoxy, Lampocem, Mapefill, Mapefinish, Mapegum EPX, Mapegum WPS, Mapelast, Planitop Fast 330, Plastimul 2K Plus, Topcem, Ultracolor Plus, Ultratop



TECHNICAL DATA

Design: NvIRONMENT Architecture LLC

Period of Construction: 2014-2015

Period of the Mapei

Intervention: 2014-2015

Client: University of Miami

Project Manager: Brian Estes – Certified Floorcovering Services, Inc.

General Contractors: JDL Warm Construction, LLC; Terstep Construction, Inc.

Ceramic Tiles Installing Company: Certified Floorcovering Services, Inc.

Substrate-preparation Contractor: Professional Surface Installations

Mapei Distributor: Carpet Cushions & Supplies, Inc.

Mapei Co-ordinator: Tyler Barton, Mapei Corp. (USA)

MAPEI PRODUCTS

Mapelastic AquaDefense, Mapelastic CI*, Novoplan 2 Plus*, Planiseal VS*, Primer T*, Planipatch, Planipatch Plus*, Ultrabond Eco 360*, Ultrabond Eco 570*, Ultrabond Eco 575, Ultrabond Eco 711*, Ultrabond Eco 810*, Ultrabond Eco 885*, Ultrabond Eco 985*, Ultrabond Eco 995*, Ultraflex 2*, Ultraflex LFT*, Adesilex P10, Type 1*, Kerapoxy CQ, Keracaulk*, Keracaulk U*, Keracolor S*, Keracolor U*, Ultracolor Plus

*These products are manufactured and distributed on the US market by Mapei Corp. (USA)

University of Miami Dining Facilities

Miami (Florida, USA)

When students returned to the University of Miami campus in the autumn of 2014, they found a bounty of healthy new dining choices. The Hurricane Food Court in the Whitten University Center and the Hecht-Stanford Dining Hall had been totally renovated during the summer. The substrates were treated with PLANISEAL VS, PRIMER T, NOVOPLAN 2 PLUS, PLANIPATCH and PLANIPATCH PLUS and waterproofed with MAPELASTIC CI and MAPELASTIC AQUADEFENSE. In the Hecht-Stanford Dining Hall, rubber flooring was installed using ULTRABOND ECO 570. For the main floor area of the athletic training table, carpet tile was in-

stalled with ULTRABOND ECO 885. Vinyl tiles in the “pantry” breakfast nook were bonded with ULTRABOND ECO 360. The bamboo in the center of the general dining area was installed with ULTRABOND ECO 985. Quarry tiles were bonded with gray ULTRAFLEX 2 and joints were grouted with KERAPOXY CQ. All floor tiles in the dining hall were bonded with white ULTRAFLEX LFT. The joints of the wall tiles, as well as those of the mosaics on the restroom walls, were grouted with KERACOLOR U. All LVT coverings were installed with ULTRABOND ECO 711. At the food court joints were grouted with ULTRACOLOR PLUS. The glass tiles used to form a backdrop for the “water bar” in the food court were bonded with ADESILEX P10 adhesive and the joints were grouted with ULTRACOLOR PLUS. All the mentioned products, except for MAPELASTIC AQUADEFENSE, PLANIPATCH, KERAPOXY CQ, ULTRABOND ECO 575, and ULTRACOLOR PLUS (which are also available on the international market), are manufactured and distributed on the US market by Mapei Corp.





Sharjah Centre for Astronomy & Space Sciences

Sharjah (United Arab Emirates)

The Sharjah Centre for Astronomy & Space Sciences was opened in April 2015, providing a new digital and hybrid planetarium for the Middle East region. The 200-plus seat planetarium is part of the brand new space centre situated in Sharjah, about 35 km from Dubai. It is a cutting-edge colorspace theatre with an 18.5 m hemispherical dome screen. The circular planetarium building is surrounded by 40,000 m² of gardens, designed to represent the solar system, where the planetarium building with its golden ceramic roof symbolizes the sun in the centre, which can be seen from miles away. The project was the brainchild of Sheikh Sultan bin Muhammad Al-Qasimi, a member of the UAE's Supreme Council & current ruler of the Sharjah emirate.

The application of the golden glass mosaic on the GRC (glass fibre-reinforced concrete) dome was the most challenging part of the building project. Mapei provided a complete system for the installation on an area of 1,400 m², meeting the requirement for the project's grout colour: gold. The company supplied the synthetic resin primer PRIMER G for treating the substrates, ADESILEX P10 + ISOLASTIC adhesive system to bond the mosaic, KERAPOXY DESIGN anti-acid, decorative, translucent epoxy mortar mixed with MAPEGLITTER metal-effect coloured glitter in its gold shade, and KERAPOXY CLEANER special cleaning solution for the cleaning operations.



TECHNICAL DATA

Period of Construction: 2014-2015

Period of the Mapei Intervention: 2014-2015

Design: Art & Design Engineering Consultants

Client: Government of Sharjah

Contractors: United Engineering Co.,
Choiceway Technical Contracting

Mosaic Installation Company:
United Engineering Co

Mapei Co-ordinators: Mapei
Construction Chemicals LLC.

MAPEI PRODUCTS

Adesilex P10, Kerapoxy Cleaner,
Kerapoxy Design, Isolastic,
MapeGlitter, Primer G



TECHNICAL DATA

Year of the Mapei Intervention:

2014

Clients: Emilia Romagna Regional Government, Italian Ministry of Infrastructures and Transports, Bologna City Council, San Lazzaro di Savena City Council, Tper SpA

Main Contractor: Cooperativa Costruzioni Bologna

Stone Installation Contractor: Antica Via

Mapei Co-ordinators: Rossi C&CA, and Marcello Deganutti, Mapei SpA (Italy)

MAPEI PRODUCT

Mapestone TFB 60

Strada Maggiore Bologna (Italy)

The roads in our towns and cities are often in poor condition because they were not designed to withstand the mechanical stresses and chemical aggression they are now subjected to. This leads to high repair and maintenance costs that have to be paid for. Strada Maggiore in Bologna was rebuilt in the 1960's and, since then, there has been a steady increase in the level of traffic and heavy goods vehicles. In 2014 the road surface, made from polygon-shaped stone slabs, needed to be repaired and the client and design office were looking to implement a solution that, apart from guaranteeing durability and safety, would allow the material to be installed quickly. The first works phase involved around one km of road surface with around 35,000 slabs installed over an area of 8,700 m². Mapei Technical Services recommended using products from the MAPESTONE line, with MAPESTONE TFB 60 for the screed on which the slabs were laid. MAPESTONE TFB 60 is a pre-bled mortar made from special binders, selected aggregates and specific additives that give the product its high chemical and physical properties, making it suitable for areas exposed to freezing weather, de-icing salts and freeze-thaw cycles (exposure classes XF3 and XF4). Hundreds of buses use Strada Maggiore every day, exerting compressive loads on the road surface that normal mortar would not be able to withstand. MAPESTONE TFB 60 is specifically formulated to withstand such conditions.





Nova Gorica City Centre Nova Gorica (Slovenia)

Nova Gorica is a large city in Slovenia with a population of around 32,000 inhabitants. After carrying out a series of tests, installation of 8000 m² of stone floorings got underway using MAPESTONE TFB 60 preblended mortar with high mechanical strength. The product was supplied in silos on site to make it easier to mix with the right amount of water.

MAPESTONE TFB 60 was applied in layers around 7 cm thick over all the surfaces and, where the stresses were lower, in layers slightly more compact. Slabs of light, medium and dark grey flamed granite measuring 35x70x6 cm were then installed. The solid steps and fountain were made from Repen stone, installed on the reinforced concrete slab using again MAPESTONE TFB 60.

A similar technique was used to install the other types of coverings (granite, Repen stone, precast concrete, etc.). The joints were then grouted with high compressive strength MAPESTONE PFS 2 pre-blended mortar (C 45/55), which is also resistant to freeze-thaw cycles and de-icing salts.

To obtain the correct depth for the expansion joints, 10 mm diameter MAPEFOAM closed-cell polyethylene foam cord was inserted in the joints. Before applying MAPEFLEX PU45 elastic sealant, a coat of PRIMER M was applied to improve adhesion. MAPEFLEX PU45 was also applied in the fillet joints between the plant service equipment, the steps and various features in the square.

TECHNICAL DATA

Year of the Intervention: 2014

Client: Matej Arčon, Nova Gorica City Council

Investment Direction: Vladimir Peruničič, u.d.i.a.

Works Direction: Domen Mozetič, u. d. i. a., Materia, d.o.o.

Design: Domen Mozetič, Simon Kerševan, and Grega Klemenčič (Materia, d.o.o.); Polona Filipič, Peter Šenk, Marko Pretnar, and Primož Špacapan (Studio Stratum)

Site Direction: Valter Figar, u.d.i.g., Edil inženiring, d.o.o.

Stone Installation Contractor: Marmor Sežana, d.d.

Installation Director: Aleksander Burkelca, Marmor Sežana, d.d.

Mapei Co-ordinator: Luka Božič, d.i.g., Mapei d.o.o (Slovenia)

MAPEI PRODUCTS

Mapeflex PU45, Mapefoam, Mapestone PFS 2, Mapestone TFB 60, Planicrete, Primer M





TECHNICAL DATA

Period of Construction: 1930s

Period of the Mapei Intervention: 2014–2015.

Client: Győr City Council

Design: Komplex Architectural Designing Office Ltd.

Main Contractor: West Hungária Bau (WHB) Ltd.

Works Direction: Péter Kopcsa

Stone Installation Contractor: Mozaik Classic Kft.

Mapei Distributor: Mozaik Classic Kft.

Mapei Co-ordinators: Bela Palmai, Csaba Miklós, Péter Novák, and Júlia Fleisz, Mapei Kft. (Hungary)

MAPEI PRODUCTS

Keranet, Primer M, Keraflex Maxi S1, Mapefoam, Mapeflex PU21, Mapeflex PU40, Mapeflex PU45, Mapestone PFS 2, Ultracolor Plus, Mapelastic



Danube-gate Square Győr (Hungary)

The over 500 year old Danube-Gate Square surrounded by historical monuments is the symbol of Hungarian city of Győr. In 1555 it was decided to build here a fortress, which became a key element of the defense system against Ottoman invaders. By the 18th century the fortress lost its strategic role and in the 1930s the square was built. A 265-car underground parking was built below the surface, after carrying out large-scale archeological excavations. During renovation works of the area, approximately 13,000 m² of the square were covered with granite, clinker and basalt slabs, whereas the adjacent Jedlik Street was covered with Italian dolomite stones. Slabs joints were grouted with MAPESTONE PFS 2 pre-blended mortar. Expansion joints cut into raw concrete were filled with MAPEFOAM closed-cell, polyethylene foam cord, before sealing with MAPEFLEX PU21 castable epoxy-polyurethane sealant for movements up to 5% and MAPEFLEX PU45 paintable polyurethane sealant with a high modulus of elasticity for movements up to 20%. After 1–2 weeks surfaces were cleaned with KERANET acid-based solution. The surfaces of the water basin on the square were waterproofed with MAPELASTIC two-component, flexible cementitious mortar, before bonding natural stone slabs with KERAFLEX MAXI S1 deformable cementitious adhesive and grouting joints with ULTRACOLOR PLUS anti-efflorescence, quick-setting and drying polymer-modified mortar.



Piazza Sempione

Milan (Italy)

Located right in the heart of Milan's buzzing nightlife and just behind the Sforza Castle, for years Piazza Sempione had been "forgotten" by town planners. From its urban features to the stones covering the pavements, the Piazza was generally run down. In 2015 the Piazza, with its famous Peace Arch at the centre, was completely renovated and covered with new slabs of stone. The feature product of this work was MAPESTONE SYSTEM, the "turnkey" solution by Mapei for this type of intervention.

Durability is the number one quality of MAPESTONE SYSTEM, which includes products that help create a monolithic structure around stone, whatever its type or size. Highly resistant to freeze-thaw cycles, MAPESTONE is quick to install and helps reduce work times. The installation screed was made from MAPESTONE TFB 60 pre-blended mortar and, before laying the stone, the back of the slabs were covered with a bonding slurry made from PLANICRETE synthetic latex rubber. On the same day that the stone slabs were laid, MAPESTONE PFS 2 ready-mixed mortar was used with the "wet-on-wet" technique to grout the joints of the slabs.

The stone slabs of the stairs surrounding the square were bonded with KERAFLEX MAXI S1 deformable cementitious adhesive with no vertical slip, extended open time and Low Dust technology, particularly recommended for laying large porcelain tiles and natural stone slabs.

TECHNICAL DATA

Period of the Mapei Intervention:
2014-2015

Client: Milan City Council

Design: Rosario Sorrentino

Main Contractor: W. Bau Srl,
Christian Laurino

Works Direction: Pier Luigi Balconi

Operational Director: Gaetano Aiello

Mapei Co-ordinators: Alessio Risso
and Andrea Serafin, Mapei SpA (Italy)

MAPEI PRODUCTS

Mapestone TFB 60, Mapeflex PU20,
Mapefoam, Mapestone PFS 2,
Planicrete





TECHNICAL DATA

Period of Construction: 2012-2014

Period of the Mapei

Intervention: September 2014

Design: Miguel Arruda
Arquitectos Associados, Lda.

Client: Vila Franca de Xira City Council

Contractor: Fernando Dias
Morais Lda

Thermal Insulation

Contractor: Kenotécil

Mapei Distributor: Kenotécil

Mapei Co-ordinator: Marco
Ferro, Lusomapei (Portugal)

MAPEI PRODUCTS

Colorite Performance, Malech,
Mapetherm AR2*

*This product is manufactured
and distributed in the Portuguese
market by Lusomapei (Portugal)

“Factory of Words” Library Vila Franca De Xira (Portugal)

A new municipal library called the “Fábrica das Palavras” (the Factory of Words) was inaugurated on the 20th of September 2014 in Vila Franca de Xira, a city located in the western part of Portugal.

Designed by the architect Miguel Arruda, the building is located in an enchanting position along the banks of the river, enabling those who use the library to take in the splendid views offered by the city and river.

An investment of around 5,750,000 Euros was required to build the library, with 65% of the total provided by the European Union. With this new complex dedicated to culture and entertainment, the local council is aiming at promoting education, reading, and writing skills, improve access to information and promote social integration.

The complex is divided into seven floors and has a library service available for all age groups, a coffee-shop, an exhibition area and a multi-purpose hall with an auditorium.

The MAPETHERM system by Mapei was used during construction work to guarantee efficient thermal insulation for the external walls. The system involved using MAPETHERM AR2 adhesive, manufactured and distributed on the Portuguese market by Lusomapei, to bond the EPS insulating panels, and MALECH acrylic resin undercoat in water dispersion to regulate the absorption of the substrate and promote adhesion, before applying a finishing coat of COLORITE PERFORMANCE protective acrylic paint with high resistance to UV rays.





Church of Sint Janskerk Gouda (Holland)

The Church of Saint-Janskerk, dedicated to John the Baptist, is the main church in the Dutch city of Gouda and is the main ecclesiastical structure built with a cross-shaped layout in the Netherlands. Famous all over the world for its magnificent stained glass windows, it was built in the 13th century and then extended after several fires. In 2015 the chorus area of the church was reopened after significant renovation work. The most striking feature is the new brass floor which also allowed a new underfloor heating system to be installed. With this type of material, which blends in particularly well with the colours of the church, the floor itself acts like a large radiator and the chorus may now feel warm after a very short space of time.

“An intervention with respect for the past, the sense of grandeur of this monument and a vision for the future: we created a new space for an old building using both old and new materials”, declared Ron Verduijn, the architect who designed this project. The first step was to treat the floor substrate with ECO PRIM T solvent-free, acrylic primer with very low emission level of volatile organic

compounds (VOC) and smooth the surface with FIBERPLAN self-levelling, ultra rapid-setting, fibre-reinforced smoothing compound. The brass plates for the flooring were then bonded in place with KERALASTIC T two-component, high-performance polyurethane adhesive.



TECHNICAL DATA

Period of Construction: 13th century

Year of the Mapei Intervention: 2015

Client: Gouda Protestant Community

Design: Van Hoogevest Architecten
Works Direction: Hans Willem van Kakerken

Flooring Contractor: Floorbridge, Van Woudenberg

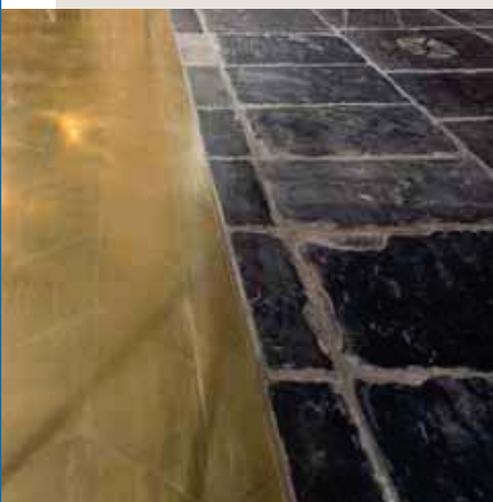
Mapei Distributor: Juliu s/d Werf

Mapei Co-ordinators: R. van Wolfert and Corinne Hindricks, Mapei Nederland B.V.

Photos: Frank Hanswijk

MAPEI PRODUCTS

Eco Prim T, Fiberplan, Keralastic T





TECHNICAL DATA

Year of the Mapei Intervention:
2014

Design and Works Direction:
Raffaele Guido

Client: Campi Salentina City
Council

Contractor: Marullo Costruzioni Srl

Mapei Distributor: Edil Bagno
Idrotermica S.a.s

Mapei Co-ordinators: Alfredo
Nocco, Danilo De Matteis, Luca
Carcagni, Mapei SpA (Italy)

MAPEI PRODUCTS

Mapetherm AR1 GG, Mapetherm
Net, Quarzolite Base Coat,
Quarzolite Tonachino Plus



Middle School Campi Salentina (Italy)

School buildings often lose a lot of heat which has quite an impact on overall running costs and the comfort of those using the building. Excellent results may be obtained by insulating the walls, that is, by applying thermal insulation material on the walls. This type of intervention was carried out at the Middle School in Via Novoli in Campi Salentina (Southern Italy).

Before insulating the building, all the walls were thoroughly cleaned.

Rockwool panels were then bonded to the walls using MAPETHERM AR1 GG one-component cementitious mortar. An even layer of mortar was applied over the surface of the insulating panels, making sure it did not run into the joints of the adjacent panels and form thermal bridges.

An even 2 mm layer of MAPETHERM AR1 GG was then applied on the façades and, while the mortar was still wet, MAPETHERM NET alkali-resistant glass fibre mesh was placed on the mortar. After another 24 hours, a second layer of MAPETHERM AR 1 GG was applied.

After 15 days, once the mortar was completely cured, the surfaces were finished off by applying the QUARZOLITE system, comprising QUARZOLITE BASE COAT coloured acrylic undercoat and QUARZOLITE TONACHINO PLUS highly protective, mould and mildew-resistant acrylic coating.





Singapore University of Technology & Design Singapore

Singapore's fourth public university, the Singapore University of Technology and Design (SUTD), is one of the first universities in the world to have incorporated the art and science of design and technology in a multi-disciplinary curriculum.

SUTD first opened its doors in April 2012. Its collaboration with Massachusetts Institute of Technology (MIT) aimed to develop educational curriculum and spur SUTD's research enterprise. In January 2015, SUTD moved to its permanent campus at Upper Changi, located in the eastern part of Singapore.

SUTD appointed DP Architects Pte Ltd, in collaboration with UNStudio from Amsterdam, to design the new campus. On 9th May 2015, SUTD was officially opened with a pompous ceremony.

The project has achieved the Platinum Green Mark rating from Building Construction Authority (BCA) in Singapore for energy saving features that were incorporated in the building.

For this project, the architect specified mineral silicate paint for the external structures of the academic buildings. Various shades of green, red and lilac SILEXCOLOR and SILANCOLOR systems were selected by the designers for providing a protective and decorative coating for the external walls of the academic buildings, while SILANCOLOR AC PAINT and SILANCOLOR PRIMER were used for finishing the surfaces of the two bridges of the campus.

TECHNICAL DATA

Period of Construction: 2012-2015

Period of the Mapei Intervention: 2012-2014

Client: Industrial Contract Marketing (2001) Pte Ltd

Design: DP Architects Pte Ltd

Main Contractor: Kajima Overseas Asia Pte Ltd

Coatings Contractor: Industrial Contract Marketing (2001) Pte Ltd

Mapei Co-ordinator: Lincoln Lim, Mapei Far East (Singapore)

MAPEI PRODUCTS

Silancolor AC Paint, Silancolor Paint, Silancolor Primer, Silexcolor Paint, Silexcolor Primer





TECHNICAL DATA

Period of Construction: 13th century

Period of the Intervention: September 2013-August 2014

Client: private owner

Contractor: Mark Price, Painter & Decorator

Mapei Co-ordinator: Martin Andrew, Mapei UK

MAPEI PRODUCTS

Mapesil AC, SilanColor Cleaner Plus, SilanColor Primer, SilanColor Paint Plus

Benton Castle Benton (UK)

This small medieval castle in Pembrokeshire was originally built in the 13th century and represented the knight's fee within the lordship that belonged to the barony of Walwyn's Castle. Its ruins were substantially restored during the 20th century and it is now a private residence.

Mapei's SILANCOLOR paint system has been used to restore the castle. The system was installed as part of a refurbishment project to help protect the external stone-built surface.

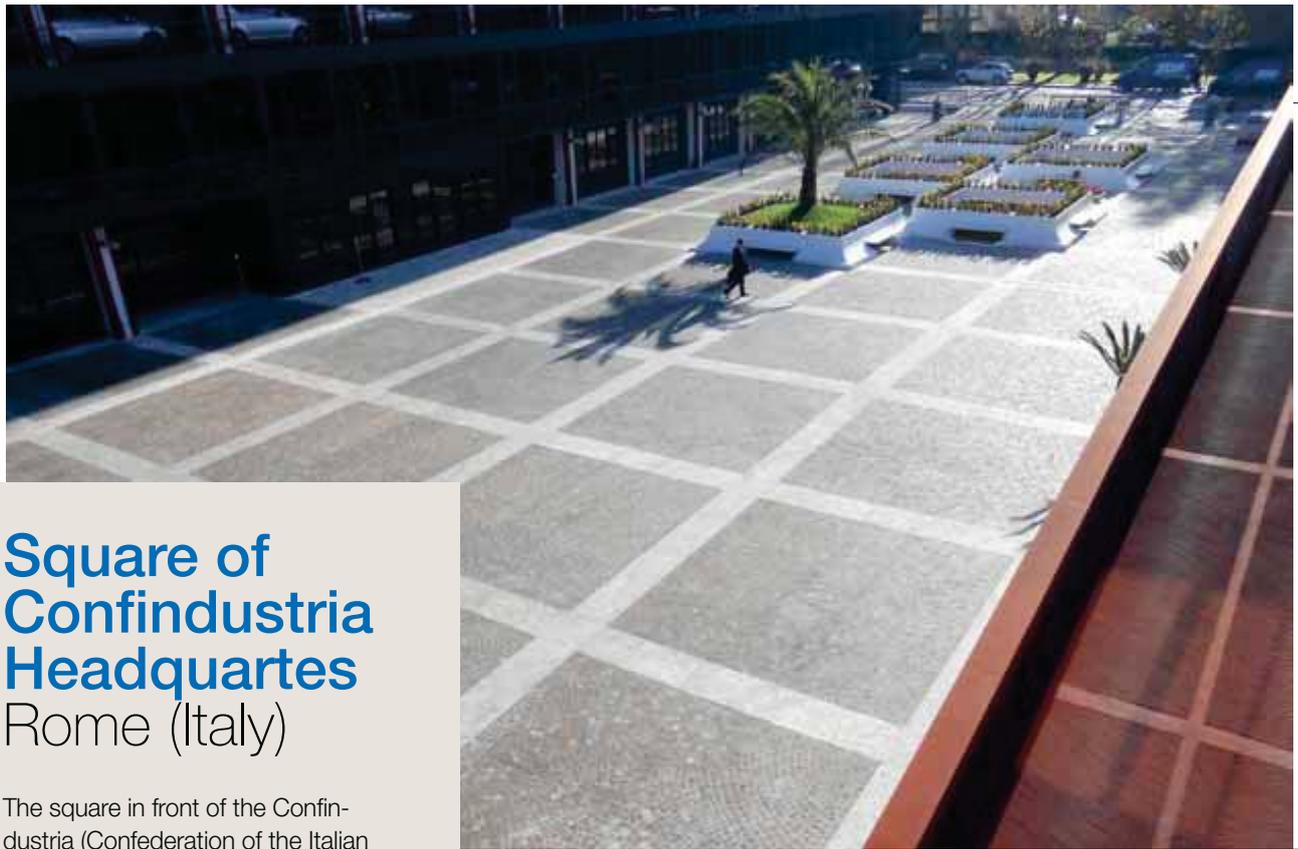
Approximately 800 m² of SILANCOLOR CLEANER PLUS hygienising detergent in watery solution was used to clean the surface, as the previous coating and mortar were damaged due to coastal weather from the estuary below, moss in the mortar and an algae infestation on the north face from adjacent trees.

SILANCOLOR PRIMER highly protective siloxane, mildew and mould-resistant primer was then applied to the outer walls of the building to help regulate the absorption of the substrate and protect the wall surface from further chemical aggression.

To finish, a coat of SILANCOLOR PAINT PLUS transpirant, water-repellent, anti-mildew and mould hygienising siloxane paint was applied to provide a long-lasting protective coating to help prevent micro-organisms reforming on the external façade.

In addition, MAPESIL AC pure, mould-resistant, acetic silicone sealant with BioBlock[®] technology was used for the restoration of the cracks in the external façade.





Square of Confindustria Headquarters Rome (Italy)

The square in front of the Confindustria (Confederation of the Italian Manufacturing and Service Companies) National Head Office in Rome, made from blocks of porphyry installed on a cementitious screed, covers the whole of the underground auditorium, a large part of the storage area and the garage. The existing waterproofing system – comprising a bituminous membrane – had become very hard and cracked and the roof showed damages due to water seepage. The first step of the works was to remove and repair the original porphyry and travertine blocks, after which the old substrate was demolished right down to the old

waterproofing layer.

The existing concrete elements were repaired with a cycle of MAPEFER 1K for the reinforcement rods and PLANITOP SMOOTH & REPAIR mortar for the surfaces. MAPEGROUT HI-FLOW mortar was used to form beads around the structural joints, which were anchored to the slab with MAPEFIX VE SF. After preparing the cementitious substrate by applying a coat of PRIMER SN, MAPEBAND TPE tape was bonded to the beads with ADESILEX PG4 adhesive. Once the surfaces had been prepared, PURTOP SYSTEM DECK was applied, a spray-applied hybrid polyurea or pure polyurea-based waterproofing system for trafficked roofs and bridges. The system involved priming the substrate with PRIMER BI and applying a coat of PURTOP 400 M solvent-free, hybrid polyuria membrane.

After checking and testing the system, the original porphyry surface, which had been cleaned and repaired, was installed using the dry-laying technique. All work was completed according to schedule during the summer shut-down of the offices.

TECHNICAL DATA

Year of the Mapei

Intervention: 2014

Client: Confindustria (Confederation of the Italian Manufacturing and Service Companies)

Contractors: Tecnomanto Srl

Works Direction: Master Management Studi e Ricerche Srl

Mapei Co-ordinators: Roberto Pasquali and Renato Soffi, Mapei SpA (Italy)

MAPEI PRODUCTS

Adesilex PG4, Mapeband TPE, Mapefer 1K, Mapefix VE SF, Mapegrout Hi-Flow, Planitop Smooth & Repair, Primer BI, Primer SN, Purtop 400 M.



**TECHNICAL DATA****Period of Construction:** 18th century**Period of the Mapei Intervention:**

2014-2015

Client: Litomyšl City Council**Design:** Josef Pleskot, AP Atelier**Main Contractor:** Koberce Breno**Flooring Contractor:** Ligma spol. s r.o.**Mapei Distributor:** Koberce Breno**Mapei Co-ordinators:** Lakoš Daniel and

Váňa Vratislav, Mapei spol s r.o. (Czech

Republic)

MAPEI PRODUCTS

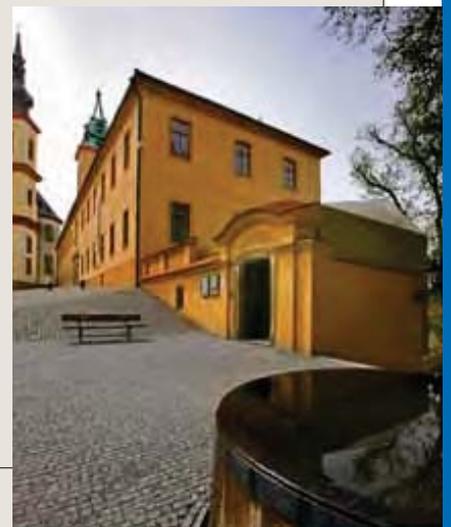
Eco Prim T, Ultraplan Eco, Ultraplan Quick Traffic*, Ultrabond Eco V4 SP, Adesilex G19, Ultrabond P990 1K, Ultracoat Oil Wax.

*This product is manufactured and distributed in the Czech market by Mapei spol. s r.o

Regional Museum Litomyšl (Czech Republic)

The castle hill in Litomyšl was reopened in September 2015 after two year renovation. Restoration works involved several buildings in the area: the Renaissance-style and UNESCO World Heritage-listed castle, the interior of the neighbouring church, the adjacent college and a school, which was turned into a museum. The design work was carried out by several famous Czech architects. Josef Pleskot and his AP atelier were responsible for the renovation project of the Regional museum and surrounding buildings. The floors of the museum were also involved in the renovation intervention. All the concrete screeds were treated with ECO PRIM T solvent-free acrylic primer and ULTRAPLAN ECO self-levelling, ultra quick-hardening smoothing compound. The fast-setting, self-levelling compound ULTRAPLAN QUICK TRAFFIC, which is manufactured and distributed in the Czech market by Mapei spol. s r.o., was used in the areas where a rapid finishing was required. The rubber flooring was installed using ULTRABOND ECO V4 SP acrylic adhesive in water dispersion. ADESILEX G19 epoxy-polyurethane one-buttering adhesive was used for bonding the rubber floors in the areas subjected to intense traffic.

In all the public areas oak floors were bonded on wooden substrates with ULTRABOND P990 1K solvent-free, low-odor, flexible polyurethane adhesive. The wooden surfaces were then carefully sanded and treated with ULTRACOAT OIL WAX water and oil-repellent, low-odor oil/wax finish, applied in two layers.





Louis Vuitton Foundation Paris (France)

October 2014 saw the inauguration of the Louis Vuitton Foundation. Characterised by its curves, waves and a spiral movement typical of the Canadian architect Frank O. Gehry, the construction is a genuine work of open-air modern art. Glass, wooden and steel panels cover an area of 11,000 m² dedicated to a celebration of contemporary art, 7,000 of which are open to the public. It has taken more than six years to build the structure. This was also a pilot project to adapt a HQE (Haute Qualité Environnementale) standard for service and cultural facilities, which involves selecting materials that have a low impact on the environment and balanced carbon emissions.

The Auditorium has oak parquet floorings installed using Mapei products. The first step was to treat the surfaces with PRIMER MF epoxy primer used for consolidating and waterproofing against residual damp. The surface was then broadcast with QUARTZ 1.2 silica sand. After vacuuming off the excess quartz sand, the substrate was levelled

with PLANO 3 fast hardening, self-levelling smoothing compound. Around 24 hours after smoothing the surface, the solid oak wooden floor was bonded in place with ULTRABOND ECO S948 1K solvent-free, silitated polymer-based adhesive with very low emission level of volatile organic compounds (VOC). The ceramic tiles in the bathrooms were installed on the floors and walls with KERAFLEX cementitious adhesive, while joints were grouted with KERAPOXY DESIGN translucent epoxy mortar.



© Fondation Louis Vuitton, Louis-Marie Daurzat e Félix Cornu

TECHNICAL DATA

Period of Construction: 2008-2014

Period of the Mapei Intervention: 2013-2014

Designer: Frank O. Gehry

Client: Fondation d'Entreprise Louis Vuitton pour la Création

Works Supervision: Frank O. Gehry,

Main Contractor: Vinci Construction

Flooring Contractors: Parqueterie de la Lys; ILDEI

Works Director: SETEC Bâtiment, Veritas

Mapei Distributor: Triomat (for the ceramic line products)

Mapei Co-ordinators: Laurence Prial and Jean-Rémi Pimenta, Mapei France

MAPEI PRODUCTS

Keraflex, Kerapoxy Design, Plano 3, Primer MF, Quartz 1.2, Ultrabond Eco S948 1K



© Fondation Louis Vuitton



**TECHNICAL DATA**

Design: Juliàñ Argilagos for the Palacio Aldamar

Period of Construction: 2008-2011; late 19th century as for Palacio Aldamar

Year of the Mapei Intervention: 2010

Design: AV 62 Arquitectos

Works Direction: G 56, S.A.

Main Contractor: Altuna y Uría, S.A.

Floor Contractor: Studio Parquet, S.L.

Mapei Distributor: Studio Parquet, S.L.

Mapei Co-ordinator: Rocco Belnome, Ibermapei (Spain)

MAPEI PRODUCTS

Mapecem Pronto, Primer G, Ultraplan, Ultrabond P990 1K

Cristòbal Balenciaga Museum

Getaria (Spain)

Much admired by the great couturiers of his times, such as Christian Dior and Coco Chanel, Balenciaga is

considered to be a master craftsman in the art of designing clothes. Born in Getaria (Spain) in 1895, he opened his first high-fashion house at the age of just twenty, soon followed by others in Madrid and Barcelona. When civil war broke out in Spain, Balenciaga decided to move to Paris, where he opened his own atelier in 1937.

The Balenciaga Museum was officially opened in Getaria in 2011 in the presence of the Queen of Spain. The designers chose wooden floors to cover the floors of the museum's main hall, opting to use Mapei products for this purpose, due to both their speed of installation and low emission level of volatile organic compounds (VOC). MAPECEM PRONTO pre-blended, ready-to-use, quick-setting and drying (24 hours) mortar was used to build the screeds. The surfaces were then treated using PRIMER G synthetic resin primer.

The substrates were smoothed using ULTRAPLAN self-levelling, smoothing compound which allows the installation of floor coverings just 24 hours after it has been applied.

The wooden floor was bonded using ULTRABOND P990 1K one-component, ready-to-use, flexible polyurethane adhesive. This adhesive is low-odor and free from solvents, causes low environmental impact and is certified by the GEV Institut as a product with very low emission level of VOC.





Masjid Sultan Mosque

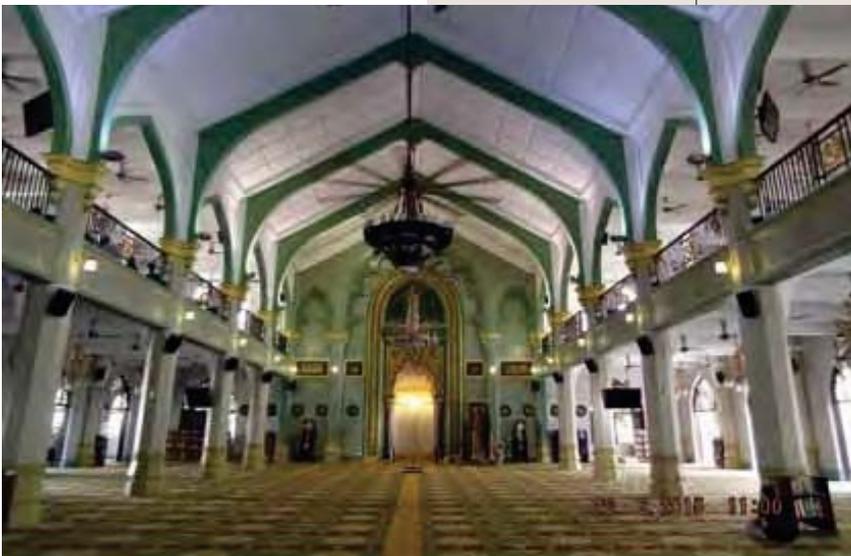
Singapore (Singapore)

The history of the Masjid Sultan mosque dates back to 1824 when the reigning Sultan of Singapore requested for a mosque to be built near his palace. A century later, a new mosque was built in the existing site with massive golden domes with bases decorated with glass bottle ends. In 1987, the mosque was extended with a three-storey auxiliary building. Today the prayer halls can accommodate up to 5,000 worshippers and is one of the biggest religious structures in Singapore.

Over the years, the mosque needed restoration. After a seminar conducted by Mapei Far East, in collaboration with the National Heritage Board (NHB), Mapei solutions were selected for renovation. For treating the rising damp at the ablution area, Mapei proposed to consolidate the crumbly brick structure with CONSOLIDANTE 8020. MAPESTOP was used to form a chemical barrier against capillary rising damp in masonry.

For the masonry repair at the ablution area, gaps and cavities were filled with

MAPE-ANTIQUE ALLETTAMENTO. MAPE-ANTIQUE RINZAFFO salt-resistant, transpirant scratch-coat mortar was used to prevent soluble salts from penetrating macro-porous mortars and MAPE-ANTIQUE MC was applied as a dehumidifying render. For the final finishing in the ablution area, external areas of the Main Prayer Hall building and auxiliary building, SILANCOLOR PRIMER, SILANCOLOR PAINT and SILANCOLOR AC PAINT were chosen. In the internal areas of the Main Prayer Hall building, MALECH, COLORITE MATT and DURSILITE MATT were recommended as finishes.



TECHNICAL DATA

Period of Construction:

1824, 1987

Year of the Mapei

Intervention: 2014

Client: GT Coating Pte Ltd

Design: Interconsultants Pte Ltd/GP Design Pte Ltd

Contractor: Tang's Engineering Pte Ltd

Mapei Co-ordinator: Lincoln Lim, Mapei Far East (Singapore)

MAPEI PRODUCTS

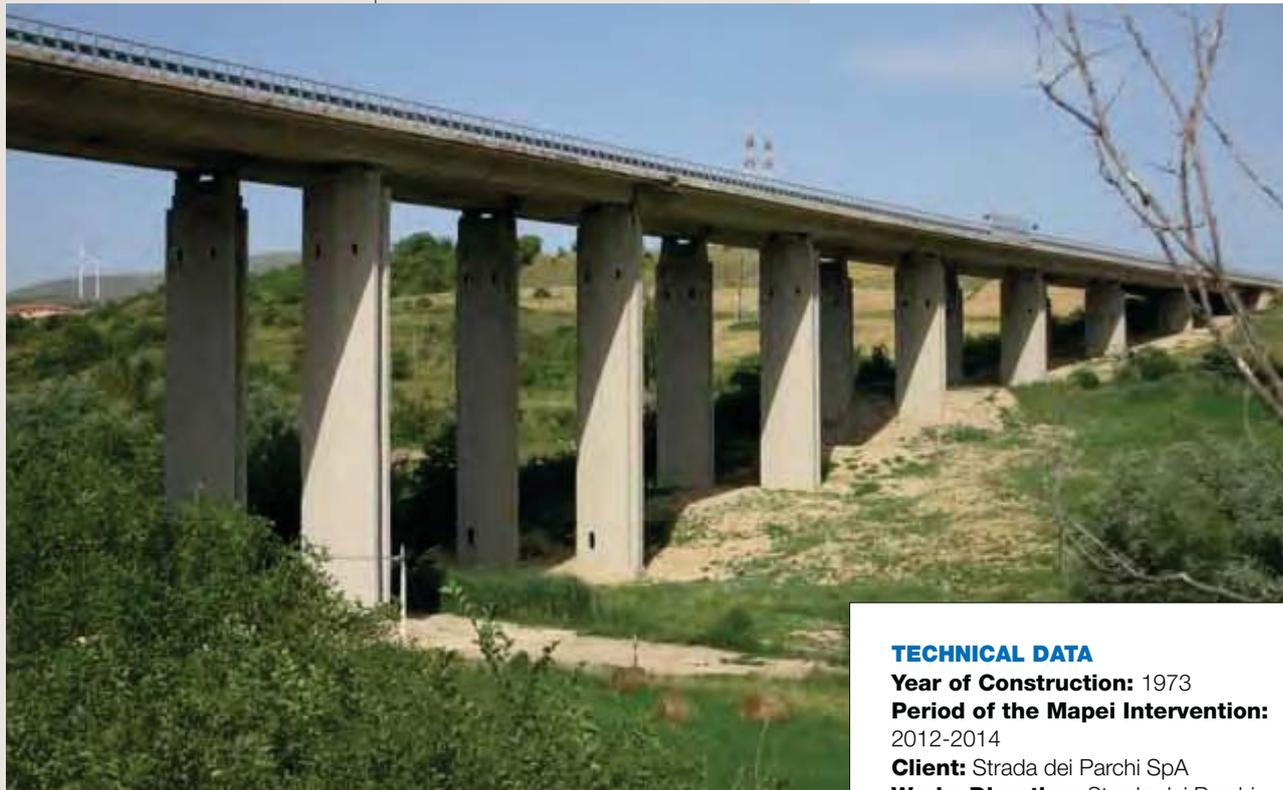
Consolidante 8020, Mapestop, Mape-Antique Allettamento, Mape-Antique RinzaFFO, Mape-Antique MC, Planitop S12, Isolastic, Malech, Dursilite, Colorite Matt, Silancolor Primer, Silancolor Paint, Silancolor AC Paint

SPECIAL FOCUS PROJECTS



INFRASTRUCTURES

BOTH IN ITALY AND ABROAD, MAPEI PRODUCTS HAVE BEEN USED TO CONSTRUCT BRIDGES, VIADUCTS, METROPOLITAN RAIL NETWORKS AND DAMS. MAPEI TECHNICAL SERVICES HAS BEEN PRESENT ON BUILDING SITES TO PROVIDE SUPPORT FOR CONTRACTORS AND TO RECOMMEND HIGH TECHNOLOGY PRODUCTS, SUCH AS SOIL CONDITIONING AGENTS, SUPER-PLASTICISING ADMIXTURES FOR CONCRETE, WATERPROOFING PRODUCTS AND SEALANTS



Cerchio Viaduct along the A-25 Motorway Cerchio (Italy)

The "Cerchio" Viaduct is located between the towns of Cerchio and Collarmele in the Province of L'Aquila (Central Italy), along the Torano-Pescara stretch of the A25 motorway. It is around 500 m long and is made up of 14 pairs of load-bearing piles and an abutment at each end. It was constructed at the beginning of the 1970's and, since then, no extra maintenance work had ever been carried out on the viaduct. Clear signs of deterioration in the concrete and corrosion of the reinforcement rods had increased over the years, due mainly to the large amounts of de-icing salts spread on the motorway during the long winter months. A plan was already in place to make the viaduct structurally safe, but this plan was brought forward following the earthquake that hit the area in 2009, along with the adoption of extra measures on the piles and abutments to upgrade their anti-seismic characteristics.

The work was carried out between 2013 and 2014. The first step was to prepare the substrate by high-pressure hydro-scarifying to remove all the deteriorated concrete and then replace and integrate the reinforcement rods. To rebuild and strengthen the piles, which required the application of layers from 7 cm to 15 cm thick, the certified mortar MAPEGROUT EASY FLOW and the curing admixture MAPECURE SRA were used. To completely protect the piles and make them waterproof MAPELASTIC GUARD was applied, a two-component, elastic cementitious mortar for protecting large concrete structures subjected to high stress.

TECHNICAL DATA

Year of Construction: 1973

Period of the Mapei Intervention: 2012-2014

Client: Strada dei Parchi SpA

Works Direction: Strada dei Parchi SpA, Marco Rocchi, Stefano Ventura

Project Manager: Marco Rocchi

Main Contractor: Toto SpA Costruzioni Generali

General Director for Italy: Sergio Bandieri (Toto SpA)

Technical Direction: Nicola Leva

Site Direction: Alessandro Toscan

Site Manager: Antonio Persia

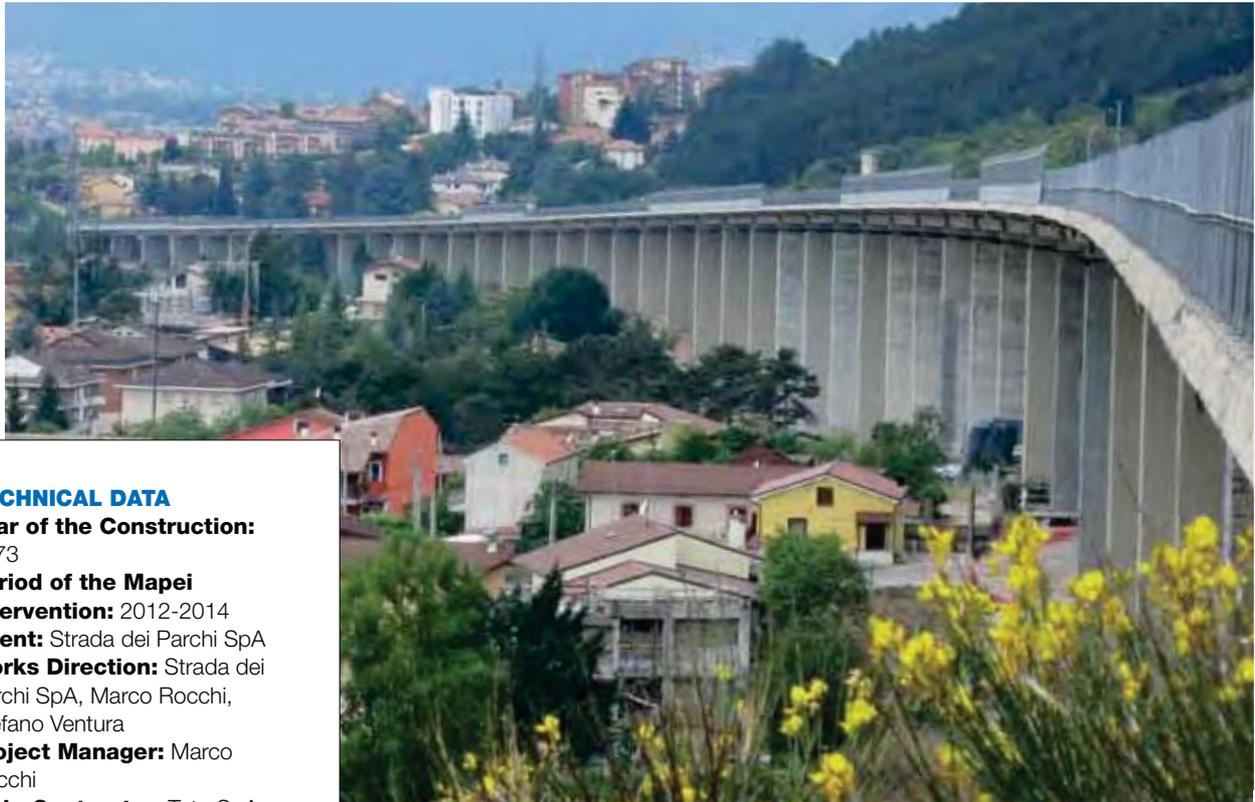
Design: Guido Furlanetto (Infra Engineering)

Mapei Co-ordinators: Giuseppe Buccione, Marc Taccone, Vito Pedretti, Paolo Banfo, Alessandro Barnabè, Massimiliano Petti and Renato Soffi, Mapei SpA (Italy)

MAPEI PRODUCTS

Mapegrout Easy Flow, Mapecure SRA, Mapelastic Guard





TECHNICAL DATA

Year of the Construction:

1973

Period of the Mapei

Intervention: 2012-2014

Client: Strada dei Parchi SpA

Works Direction: Strada dei Parchi SpA, Marco Rocchi, Stefano Ventura

Project Manager: Marco Rocchi

Main Contractor: Toto SpA Costruzioni Generali

General Director for Italy:

Sergio Bandieri (Toto SpA)

Technical Direction: Nicola Leva

Site Direction: Alessandro Toscan

Site Manager: Antonio Persia

Design: Guido Furlanetto (Infra Engineering)

Mapei Coordinators: Vito Pedretti, Paolo Banfo, and Alessandro Barnabè, Giuseppe Bucciano, Marc Taccone, and Renato Soffi, Mapei SpA (Italy)

MAPEI PRODUCTS

Mapectix VE SF, Mapegrount Easy Flow, Mapelastix Guard

San Sisto Viaduct along the A24 Highway L'Aquila (Italy)

The San Sisto Viaduct is part of the A24 Rome-Teramo motorway network and runs along the northern part of the city of L'Aquila. It was built in the 1970's and is made up of 44 spans measuring 39 m each, for a total length of 1716 m. It has 43 pairs of piles of various heights and an abutment at each end. The repair project included upgrading the anti-seismic characteristics of the viaduct by carrying out structural work on the 86 piles.

The first step was to hydro-scarify the piles by regulating the pressure of the jets according to the consistency and strength of the concrete used to make the piles (between 1,200 and 2,500 bar) down to a depth of 5-8 cm.

To anchor the new steel reinforcement (which was specifically calculated to strengthen the piles according to design specifications) to the old concrete structure, the contractor used MAPEFIX VE SF, a styrene-free, hybrid vinyl resin-based chemical anchor. This product is ideal for anchoring metal bars in tension and compression zones in cracked and non-cracked concrete, including in areas at risk of seismic activity. After carefully cleaning all the surfaces with water at 500 bar, the concrete was repaired with MAPEGROUT EASY FLOW thixotropic mortar, which was mixed with MAPECURE SRA admixture and applied by spray in several steps. MAPECURE SRA is used to reduce hydraulic shrinkage and the formation of micro-cracks.

Once the mortar had cured and the surface had been cleaned again for the final protection, a layer of MAPELASTIC GUARD two-component, elastic cementitious mortar was applied.





Highways 640 and 15 Interchange Boisbriand (Quebec, Canada)

To improve the Highway 15/Highway 640 interchange, the Quebec Ministry of Transportation commissioned a consortium of engineers to carry out a large-scale reconfiguration of the interchange. Designed to facilitate traffic flow for local residents, the four-phase project became a center for work, housing, services and leisure, with residential, commercial and industrial zones.

The work on the intersections of Highways 640 and 15 is one of the major infrastructure renovations in the greater Montreal area completed within recent years. It took four years for the project to be completed mainly because contractors could only work from May to November due to the cold weather in Montreal. PLANIGROUT 712 grout was used to support the concrete beams under the overpass. The contractor built small pads from PLANIGROUT 712 for the beams to rest on in order to make sure the beams were perfectly level. When the formwork was removed from the poured

concrete used to build the overpasses, holes about the size and shape of an ice cream cone were left in the concrete. Workers filled the "cones" with PLANITOP 23 repair mortar. Also, when the forms were removed, the workers sometimes found that the concrete was not well-compacted, with a honeycombed look. In those areas, PLANITOP 23 was used to solve this problem, too. Both PLANIGROUT 712 and PLANITOP 23 are manufactured and distributed on the Canadian market by Mapei Canada Inc.



TECHNICAL DATA

Period of Construction 2010-2014

Period of the Mapei

Intervention: 2013-2014

Design: Cima/Genivar/Dessau Consortium

Client: Quebec Ministry of Transportation

Main Contractor: EBC/DEMIX Joint Venture

Mapei Distributor: Reno Direct

Mapei Co-ordinator: Michel Lafortune, Mapei Canada Inc.

MAPEI PRODUCTS

Planigrout 712*, Planitop 23*

*These products are manufactured and distributed on the Canadian market by Mapei Canada Inc.



TECHNICAL DATA

Period of Construction: 2005-2015

Period of the Mapei Intervention: 2015

Client: Autostrade per l'Italia SpA

Design and Works Direction:

Spea Engineering SpA

Mapei Distributor: Pavimental SpA

Installation Contractor: M.G.A. Srl

Manutenzioni Generali Autostrade

Mapei Co-ordinators: Mapei UTT and Rossi C&CA, Mapei SpA (Italy)

MAPEI PRODUCTS

Keraflex Maxi S1, Kerapoxy CQ, Mapecoat T28, Mapefloor Finish 58W, Mapequick AF1000, Dynamon SR3

Base Tunnel along the Mountain Pass Deviation of the A1 Motorway

Sasso Marconi-Barberino del Mugello (Italy)

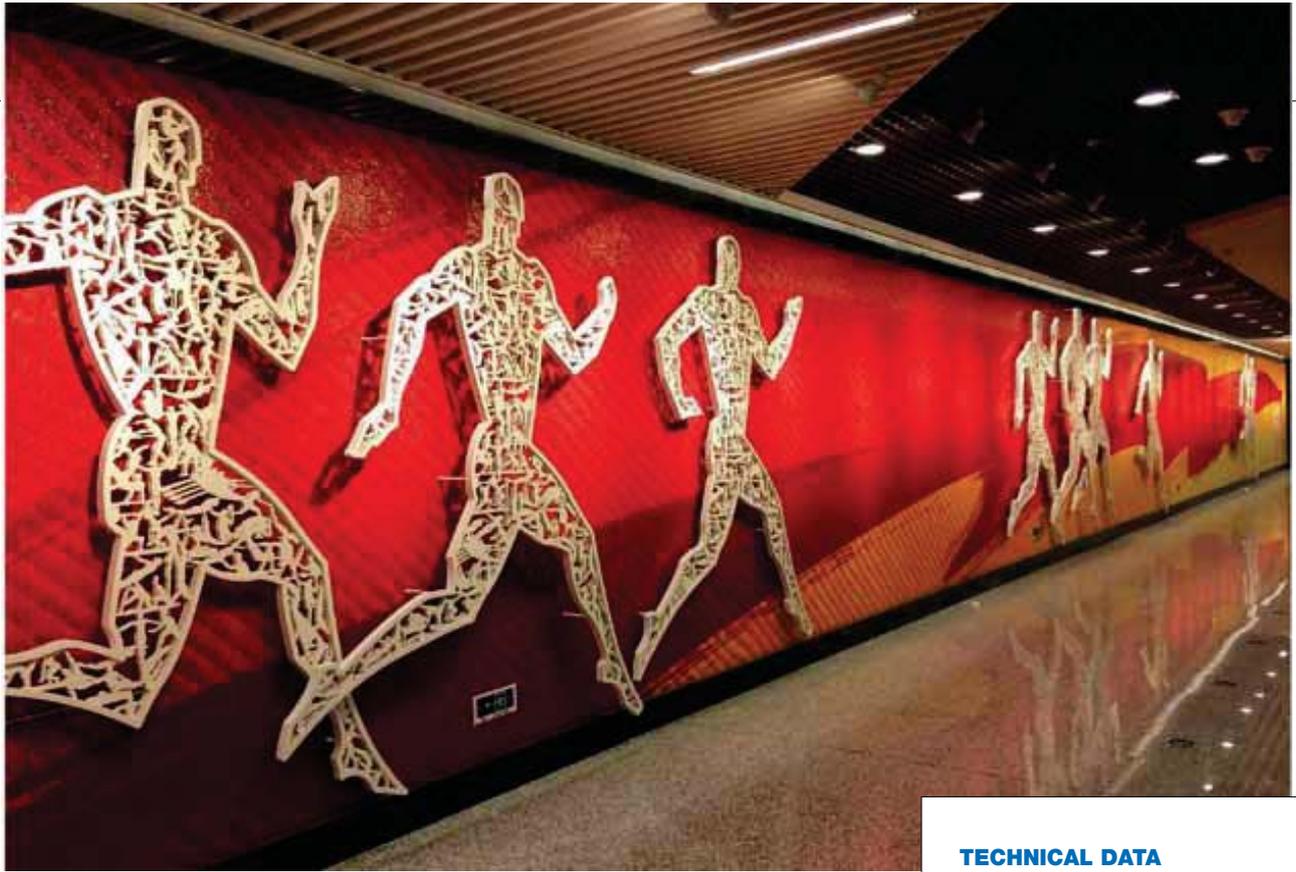
The base tunnel along the mountain pass deviation of the A1 motorway is 8.6 km long and has a cross-sectional area of 180 m². It is a twin-bore tunnel, one for each of three-lane carriageways. It is situated along the Badia Nuova-Aglione stretch of the A1 Motorway and runs through the Apennine Mountains between Bologna and Firenze.

Excavation work on this tunnel started way back in 2005 and was completed in 2015. Mapei has been involved since the beginning of the works by supplying admixtures for concrete, such as accelerators from the MAPEQUICK line and superplasticizers for concrete and shotcrete from the DYNAMON line.

The base tunnel is the main important structure along the mountain pass deviation and one of the most modern and cutting-edge tunneling projects for highways in terms of safety and traffic performances.

What makes this tunnel unique is the technical solution adopted to cover the surface of the tunnel piers. In fact, from the base of the piers up to a height of 4 m, thin porcelain tiles were applied, covering a total surface area of 175,000 m², which makes the inside area especially bright and helps to keep it cleaner. The adhesive used was KERAFLEX MAXI S1 which, thanks to its special characteristics, fully complied with all the specified installation requirements. An important characteristic was that it is highly thixotropic and, because of the curved substrates and the size of the tiles, the layer of adhesive required varied from around 3 to 5 mm and the specifications required that the adhesive would not slump or detach before positioning the tiles. The high adhesion and deformability of KERAFLEX MAXI S1 made it possible to bond the tiles on the particularly smooth, waterproof reinforced concrete substrate, and to apply the adhesive on the back of the ceramic tiles reinforced with glass fibre mesh. The joints were grouted with KERAPOXY CQ epoxy grout. MAPECOAT T28 water-based copolymeric paint and MAPEFLOOR FINISH 58W aliphatic, transparent, polyurethane finish were used to finish the surfaces of bypasses, fire escapes and emergency exits.





Metro Mosaic Artwork Peking (People's Republic of China)

Peking (Beijing) is not only the political, cultural, scientific and educational heart of the People's Republic of China, but also its key transportation hub. Its underground railway system can be regarded as China's key transportation network and the route keeps on expanding. By the end of 2014, 18 metro lines have been in operation, with a total of 527 km.

Beijing metro line 7, parallel to metro line 1 and line 6, is almost 24 km long and connects 21 stations. It was put into service in 2014. GuangQu Men Nei Station was named after its location as its near the GuangQu Men Nei Street. This station also hosts a stone mosaic mural named "Alley Impression" which is the longest stone mosaic mural in Beijing metro. It portrays the changes of the city, the transportation systems and the trade in ancient times.

The Olympic Station of Beijing Metro Line 15 is close to the Beijing main Olympic Stadium, so sports elements were chosen for the decoration of the interior walls.

Mapei provided a completed solution for the mosaic installation in these stations of Beijing metro. PRIMER G was applied on the substrates to increase the adhesion of the mosaic.

ADESILEX P10 + ISOLASTIC system was chosen to bond the mosaic on walls, due to its high adhesion, slip resistance and flexibility.

Translucent-effect KERAPOXY DESIGN was used to grout the joints.

TECHNICAL DATA

Period of Construction: 2013-2015

Period of the Mapei

Intervention: 2013-2014

Client: Beijing Civil Engineering Co., Ltd

Design: Central Academy of Fine Art Public Art Design Studio

Main Contractor: Beijing Pebble Mosaic Trading Co., Ltd

Installation Contractor: Beijing Pebble Mosaic Trading Co., Ltd

Mapei Distributor: Beijing Pebble Mosaic Trading Co., Ltd

Mapei Co-ordinator: Brian Li, Mapei Guangzhou (PRC)

MAPEI PRODUCTS

Adesilex P10+Isolastic, Kerapoxy Design, Primer G





a combined retail space of about 68,000 m². The Integrated Complex comprises the transportation hub, express rail link terminal, shopping mall, boarding and departure lounges and linkway passages. Installation of ceramic coverings started in January 2013 and was completed in early 2014, covering a total area of approximately 140,000 m² for baggage claim areas, shopping mall, express rail link terminal, transportation hub, bus-stand, taxi-station, walkway to carparks and all toilets in those areas. The project designers wanted a high-performance tile adhesive able to withstand the heavy traffic of people, trolleys and electric carts. KERAFLEX MAXI S1 deformable cementitious adhesive with no vertical slip was used to bond 400 mm x 800 mm homogenous porcelain tiles on most of the floors as well as to install 300 mm x 600 mm homogenous porcelain tiles on the floors and 150 mm x 600 mm tiles on the walls of the toilets. To grout tile joints, KERACOLOR FF pre-blended, high-performance, polymer-modified cementitious mortar was chosen in two different color shades.

Kuala Lumpur International Airport 2

Kuala Lumpur (Malaysia)

KLIA2 (Kuala Lumpur International Airport 2) is the newly-built, low-cost carrier terminal located in Sepang, Selangor. It is designed to cater to 45 million passengers a year. The new KLIA2 terminal building covers over 257,000 m² with 60 gates and 80 aero-bridges. In addition, an adjacent shopping mall with 35,000 m² of commercial space offers

TECHNICAL DATA

Period of the Mapei

Intervention: 2013-2015

Client: Malaysia Airports Holding Berhad

Design: Arkitek AAP

Contractors: WCT Construction S/B and Bina Puri Bhd

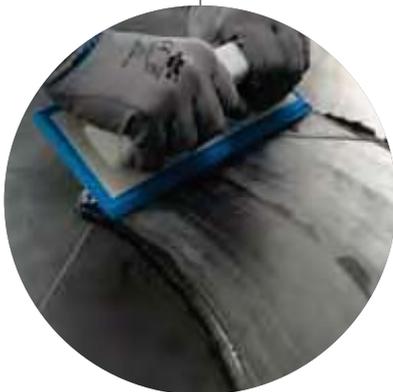
Ceramic Installation

Contractors: Hon & Cheah Construction & Tiling Sdn Bhd and Sun-Trident Sdn BhdLigma spol. s r.o.

Mapei Co-ordinators: Allison Bong and Vincent Lim, Mapei Malaysia

MAPEI PRODUCTS

Keraflex Maxi S1, Keracolor FF





Downtown Line (Contract C933) Singapore

The idea of the Downtown Line (DTL) was first conceptualised in 2001 to meet Singapore's growth and transportation demand. It was recognised that additional lines were required to bring commuters from residential areas in the North-West and East more directly to the city. Once the Downtown Line is fully completed in 2017, the 42 km long line, spanning 34 stations, will be the 5th Mass Rapid Transit line (MRT) in Singapore and serve more than half a million commuters daily. It will be the longest fully automated and driverless underground rapid transit line in Singapore. The construction was split into 3 stages and Mapei supplied products for Stage 2 from 2011 to 2013. Spanning 21 km long and covering 16 stations, Stage 3 is the longest and most complex segment to build. Works commenced in November 2011 and are targeted for completion in 2017.

Mapei UTT team initiated contact with the contractor and eventually convinced the contractor of Mapei UTT's expertise and product performance. Mapei supplied the following solutions: MAPEQUICK CBS SYSTEM 1, MAPEQUICK CBS SYSTEM 2 and MAPEQUICK CBS 2 admixtures for cementitious backfilling grouts; MAPEBLOX T, MAPEBLOX

TL and MAPEBLOX PKG oils, sealants and grease for mechanized tunnelling; POLYFOAMER FLS, MAPEDRILL F1, MAPEDISP FLS, MAPEDRILL FFT and MAPEDRILL CCS for ground conditioning; MAPEFILL MC 06 for concrete repair; MAPECOAT W SP for segment coating.



TECHNICAL DATA

Period of Construction:

2011-2016

Period of the Mapei

Intervention: 2012-2015

Client: Penta-Ocean Construction Co. Ltd

Design: Singapore Land Transport Authority

Mapei Co-ordinators: Richard Schulkins, Ulas Aycun and Roger Kan, Mapei Far East (Singapore)

MAPEI PRODUCTS

Mapequick CBS System 1, Mapequick CBS System 2, Mapequick CBS 2, Mapeblox T, Mapeblox TL, Mapeblox PKG, Polyfoamer FLS, Mapedrill F1, Mapedisp FLS, Mapedrill FFT, Mapedrill CCS, Mapefill MC 06, Mapecoat W SP, Polyfoamer FP





Farringdon Station - Crossrail London (UK)

TECHNICAL DATA

Period of Construction: 2009-2019

Period of the Mapei Intervention: 2015-2016

Main Contractor: BFK

Waterproofing Contractor: Prestec

Mapei Co-ordinator: Steven Price, Mapei UK; Mapei UTT

MAPEI PRODUCTS

Mapeplan TU S 20



Mapei adapted its own synthetic waterproofing system providing a solution matching the specification of Crossrail Ltd and meeting the needs arising from one of the world's most important underground projects. Crossrail is Europe's largest infrastructure project. The estimated cost of the infrastructure is 20.5 billion Euros. The aim of the project is to increase the rail capacity of 10 %, feeding London's key business district and bringing an additional 1.5 million people to within 45 minutes commuting distance. The construction operations started in 2009 and will finish in 2018 delivering the new 118 km railway.

Farringdon station is a key stop in the heart of London City, situated 25 m below ground. The station consists of two main platform tunnels. The two tunnels have an internal diameter of 9.5 m and they are connected by 10 Cross Passages (CP).

A PVC waterproofing system (MAPEPLAN TU S) was chosen to waterproof the station providing a full round barrier against London's underground water. The system consists of a 700 g/m² geotextile regularization layer fixed with specially designed PVC discs, securing a single 2 mm PVC waterproofing membrane which incorporates a warning signal layer.

The MAPEPLAN TU S membrane is produced using a co-extrusion process in Mapei's own manufacturing plants allowing custom roll lengths to be produced minimizing the number of on-site welds and wastage of material. This types of membrane has its own CE certification and comply with EN 13491 standards.

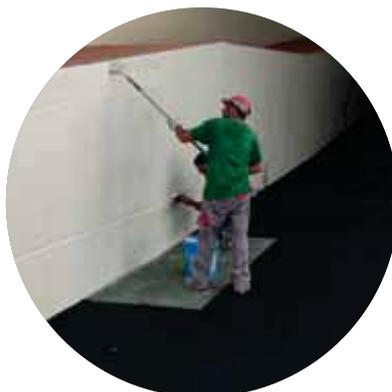




Railway Underpass along the Ascoli-Porto d'Ascoli Line San Benedetto del Tronto (Italy)

The new railway underpass along the Ascoli-Porto d'Ascoli line in San Benedetto Del Tronto (Central Italy) is 5.03 m at its highest point, 10.50 m wide and has two lateral passages for pedestrians and bikes, each one 1.50 m wide. The tunnel is a precast "box-structure" of reinforced concrete, 34 m long, which was manufactured separately and then placed under the railway line by the technique of the hydraulic thrust. The engineers, together with Mapei waterproofing team, worked to find the most suitable solutions for this particular project and developed a new bentonite membrane: MAPEPROOF

SW. This particular membrane is able to work in a water rich in chloride and sulfur, in which the traditional sodium bentonite had no satisfactory expansion. The result of this effort was to supply numerous other products, such as MAPELASTIC FOUNDATION, IDROSTOP 25, IDROSTOP PVC, IDROSTOP MULTI, IDROSILEX PRONTO, MAPEBAND TPE, various admixtures for concrete, MAPEFILL R, MAPEGROUT SV, MAPECOAT I 650 WT, ELASTOCOLOR PAINT, MAPECOAT TNS URBAN, MAPEFIX, several POLYGLASS bituminous membranes and special types of VAGA sand.



TECHNICAL DATA

Period of Construction: 2014-2015

Period of the Mapei Intervention: 2014-2015

Client: San Benedetto del Tronto City Council

Project Manager: Annalisa Sinatra, San Benedetto del Tronto City Council

Design: Nicola Antolini and Enrico Offidani, San Benedetto del Tronto City Council

Works Direction: Nicola Antolini

Safety Co-ordinator: Alberto Paradisi, T.R.E.N.D. PROJECT

Operational Director: Enrico Offidani

Main Contractors: Gaspari Gabriele Srl; Giobbi Srl, Impresa Moviter Snc

Design: MADing

Site Direction: Massimiliano Mestichelli and Daniele Fares

Site Supervisors: F. D'Angeli, S. Vittori, S. Palestini, G. Fede

Subcontractors: Impedil (for waterproofing works); SDF Verniciature (for finishes)

Concrete Supplier: Colabeton SpA

Mapei Distributor: F.lli Simonetti SpA

Mapei Co-ordinators: Dino Vasquez, Chiara Galimberti, Francesco Di Carlo, Luca Consorti and Francesco Carboni, Mapei SpA (Italy)

MAPEI PRODUCTS

Mapeproof SW, Mapeproof CD, Mapeproof Seal, Mapeproof Mastic, Mapeproof Swell, Idrostop 25, Idrostop Mastic, Idrostop Multi, Ultrabond MS Rapid, Idrostop PVC BI, Idrostop PVC BE, Adesilex PG4, Adesilex PG1, Mapeband TPE, Primer 3296, Mapeelastic Foundation, Planitop Smooth & Repair, Planitop Smooth & Repair R4, Idrosilex Pronto, Mapegrout Hi-Flow, Mapefill R, Ultralite Flex, Eporip, Lamposilex, Mapefix EP385, Mapefix VE SF, Malech, Elastocolor Paint, Planitop 210, Mapecoat I 650 WT, Mapegrout SV, Mapegrout SV Fiber, Mapecoat I 600 W, Mapecoat TNS Urban, Mapefluid N100, Dynamon XTend W200 N

POLYGLASS PRODUCTS

Polyprimer HP45, Plana P, Polybond, Polyflex Light HP

VAGA PRODUCTS

VG16SS, Ghiaietto 6-10 mm



TECHNICAL DATA

Period of Construction:

1968-1971

Period of the Mapei

Intervention: 2013-2014

Client: Autocamionale della Cisa SpA

Design: Ivano Barilli (Studio Sina)

Technical Directors:

Francesco Protano, Giuseppe Bernazzoli, Maurizio Piccioli

Design: Ercole Lucchini, Emilio Michele Zucco

Main Contractor: Lenzi Rinaldo & C Snc

Contractors: ITINERA Spa and MGA Srl

Mapei Coordinators:

Pasquale Zaffaroni, Paolo Banfo, Davide Demicheli, and UTT Division, Mapei SpA (Italy)

MAPEI PRODUCTS

Mapegrout Easy Flow, Mapelast TU System, Mapelast, Mapeplan T DR FR 15/400, Mapecoat I 650WT, Mapecoat W, Mapequick AF 1000, Mapeplast SF

Cucchero Tunnel along A15 Parma-La Spezia (Italy)

Cucchero tunnel is located along the A15 Parma-La Spezia motorway in Italy, just after the mountain pass along the border between Liguria and Emilia-Romagna. It's 1,166 m long and it was built at the end of the 1960's.

This gallery had several critical points, such as water seepage into the tunnel and some portions of the lining which were in weak conditions, due to various factors. The first step was to reduce the permeability and consolidate the interface between rock-face and lining by injecting cementitious material into the gaps behind the lining; after the injected products had cured it has been possible to grind a layer of damaged concrete, around 5 to 6 cm thick, from crown and side walls. The second step aimed at avoiding that water inflows may fall and flow on the road especially from side walls, so two different approaches were used:

1. The draining system using MAPEPLAN T DR FR 15/400 along with profiles, fixings and wire mesh, using a method already applied in several tunnels.
2. On the areas without actual presence of water but with possible incomings, MAPELASTIC TU SYSTEM waterproofing membrane was applied by spray directly on the milled concrete structure.

As third step, both systems were then covered with MAPEGROUT EASY FLOW structural mortar. With the process involving MAPEPLASTIC TU SYSTEM, it has been possible to improve the structural behaviour of the portion involved, due to the structural continuity between the substrate and the final lining.

The crown portion of the whole tunnel was covered with a layer of shotcrete, whose mix design was devised together with contractor and the ready-mix plant, using MAPEQUICK AF1000 alkali-free accelerator.

The final step was the application of a protecting coating with MAPECOAT I 650 WT epoxy finish, while sidewalks have been coated with MAPECOAT W epoxy paint.



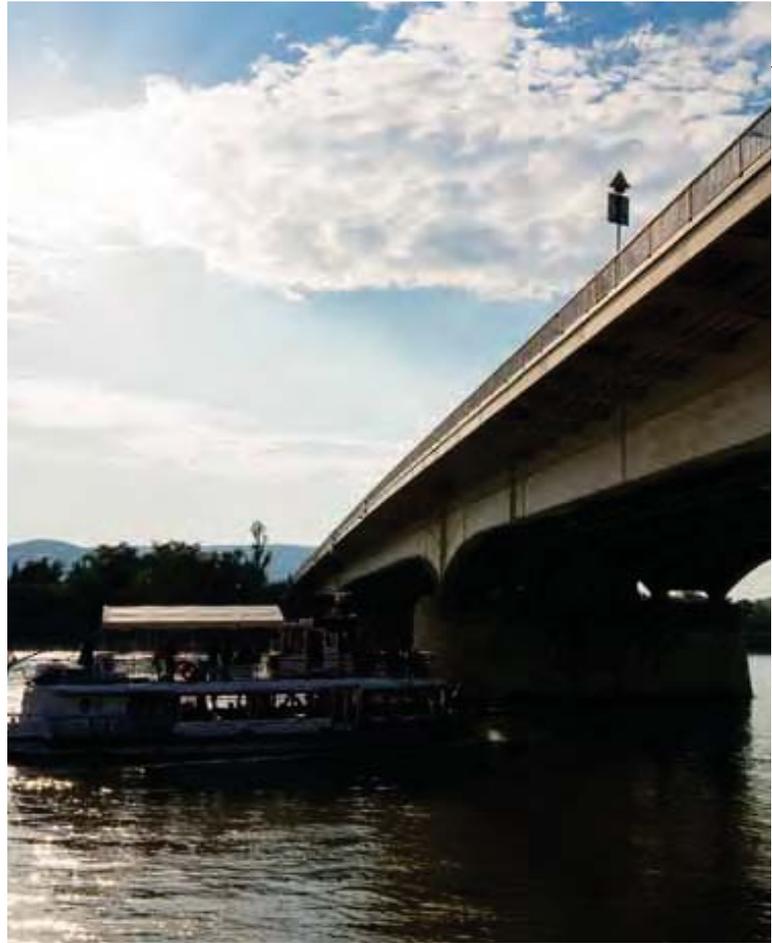


Árpád Bridge Budapest (Hungary)

The construction of the 65-year-old Árpád bridge named after the head of the confederation of the Hungarian tribes, Grand Prince Árpád, started in 1939 and its original substructure is still intact. Today, Árpád is the busiest bridge in Budapest, with about 150,000 vehicles crossing it everyday. In 2014 the bridge was renovated and the intervention included the removal of the old expansion joints and the asphalt pavement on both sides, and the construction of new steel structures. A new underpass was also built.

During renovation works, the damaged reinforced concrete structure was first treated using MAPEFER 1K anti-corrosion cementitious mortar for steel reinforcement rods and MAPEGROUT THIXOTROPIC fibre-reinforced mortar for concrete. The surfaces were then coated with a 4 mm thick protective coating system. The first layer was made of MAPEFLOOR I 914 epoxy primer. A protective coating was then applied with two layers of MAPECOAT BS1 flexible, abrasion-resistant, epoxy-polyurethane resin-based coating with sand broadcasted thereupon. The other surfaces were waterproofed with MAPELASTIC BV3, which is manufactured and distributed in the Hungarian market by Mapei Kft.,

before applying the finishing layers with ELASTOCOLOR PRIMER consolidating primer and ELASTOCOLOR PAINT protective paint. Facings of the underpass were treated with WALLGARD GRAFFITI BARRIER. The pedestrian underpass was waterproofed by a double layer of FLEXO S6 waterproofing membrane manufactured by Polyglass, a subsidiary of the Mapei Group.



TECHNICAL DATA

Period of Construction: early 20th century

Period of the Mapei

Intervention: March-June 2014

Client: Hungarian Government

Design: Zsolt Kovács Uvaterv Zrt.

Contractors: A-Híd Zrt. Konzorcium, Korrózióvédelmi Kft.
Project Manager: Balázs Varga

Mapei Distributor: Korrózióvédelmi Kft.

Mapei Co-ordinators: Ádám Pavelka and Laszlo Nagy, Mapei Kft. (Hungary)

MAPEI PRODUCTS

Mapelastik BV3, Mapefloor I 914, Mapecoat BS 1, Mapegrout Thixotropic, Mapefoam, Mapeflex PU 45, Primer AS, Wallgard Graffiti Barrier, Lampocem, Mapefer 1K, Elastocolor Primer, Elastocolor Paint, Flexo S6 by Polyglass (Mapei Group)



TECHNICAL DATA

Period of Construction:

1910-1916

Period of the Mapei

Intervention: 2010-2016

Design: Mike Newberry (CICP, Panama), Bernardo González (Grupo Unido Panama Canal, Panama)

Client: ACP (Autoridad del Canal de Panamá)

Main Contractors: GUPC (Grupo Unido Panama Canal), including Sacyr Vallehermoso (Spain), Impregilo (Italy), Jan de Nul (Belgium) and Constructora Urbana (Panama);

Sub-contractors: Cimolai (Italy) and Hyundai (South Korea)

Works Direction: eng. Bernardo Gonzales (GUPC)

Mapei Distributor: Mapei Construction Chemicals Panama S.A.

Mapei Coordinators:

Maurizio Leotta, Roberto Saccone, and Renato Soffi, Mapei Spa (Italy); Thomas Lundgren, Mapei Corp. (USA)

MAPEI PRODUCTS

Sibelon C 3250*, Sibelon C 3900*, Sibelon CNT 3750*, Sibelon CNT 4400*

*SYBELON trademark is owned by CarpiTech Sibelon. The above-mentioned products were manufactured at Polyglass (Mapei Group) plants

New Panama Canal Panama

The expansion work on the Panama Canal is the most ambitious engineering project to be carried out in the last decade and includes the construction of two new sets of locks (one on the Atlantic side and one on the Pacific side) to increase the flow of commercial traffic along the canal. Through its subsidiary, Mapei Construction Chemicals Panama SA, Mapei has supplied various products for this project. Work is expected to be completed in April 2016. Work on the third set of locks to increase flow along the Canal is also in the final stage: an environmentally and socially sustainable plan has been drawn up, called the Water Saving

Basins project, to limit its impact on the surrounding area, the people and the environment. This will lead to a 60% reduction in the amount of water required. Whereas normally each passage requires around 500 million litres of water, the new system will need only 200 million litres. Mapei's part included the supply of SIBELON PVC P* synthetic membranes to waterproof the basins used to partially recover and recycle the water from lake Gatun.

Developed specifically for hydraulic works, SYBELON PVC-P* synthetic membranes, used together with a polypropylene non-woven fabric, were applied over a total surface area of more than 800,000 m². Featuring high resistance to UV rays and aggressive atmospheric agents, they guarantee long-lasting durability for an impressive project of engineering that has been achieved thanks also to the winning commitment of Mapei products and engineers.





Cinta Costera Road Viaduct Panama City (Panama)

The Cinta Costera, or Coastal Beltway, stretches for more than 3 kilometres along the Ocean front. It is one of the most important tourist areas in Panama City and one of the fastest expanding residential areas in the city. There are numerous parks along the Beltway, as well as cycle tracks, footpaths and playing fields. This is the area offering the best view of Casco Viejo, which is the old Spanish quarter of the city, and the skyscrapers of Punta Paitilla, while on the horizon you can see the ships waiting their turn to navigate the Panama Canal. Construction work on the project, divided into three phases, started years ago, with more than 26 hectares of land being reclaimed from the sea. In 2011 the government of Panama started work on Phase Three, which includes the urban areas of San Felipe, Santa Ana and El Chorillo and, just like the other two phases, it has residential areas, recreational facilities for residents and tourists and new roads for the local traffic. After carrying out a number of site surveys, Mapei Technical Services supplied a series of products to build the 560 precast beams (each one measuring 40 m in length and 2.1 m in height) used to support the road viaduct running over a stretch of the sea. The products supplied included the admixtures for concrete DYNAMON SP 45/AC and MAPEPLAST N12/P (which are manufactured and distributed on the local market by Mapei Construction Chemicals Panama), DYNAMON HAA and DYNAMON SR 5, MAPEFLEX PU45 sealant, and MAPEGROUT HI-FLOW and MAPEGROUT T60 mortars.



TECHNICAL DATA

Period of Construction: 2011-2014

Period of the Mapei Intervention: 2012-2014

Client: Panama Government

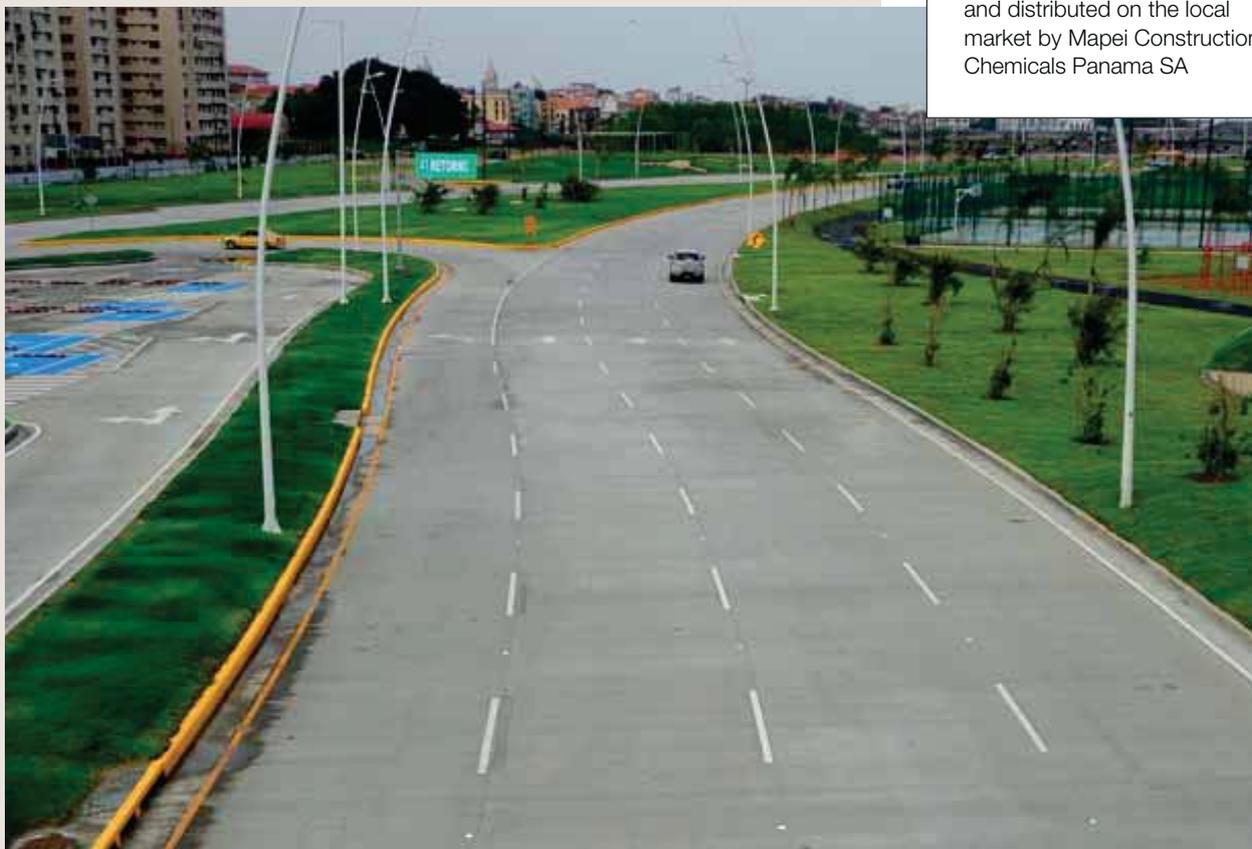
Contractors: Cemex, Odebrecht

Mapei Coordinators: Paolo Tellarini, Mapei SpA (Italy), Alexis Toribio and Rubén Rodríguez, Mapei Construction Chemicals Panama

MAPEI PRODUCTS

Dynamon HAA, Dynamon SP 45/AC*, Dynamon SR 5, Mapefer, Mapeflex PU45, Mapegrout Hi-flow, Mapegrout T60, Mapeplast N12/P*

*These products are manufactured and distributed on the local market by Mapei Construction Chemicals Panama SA





TECHNICAL DATA

Period of Construction: 2010-2014

Period of the Mapei

Intervention: 2010-2014

Design: GVH Ingénieurs civils
PF-SIA

Works Direction: Antonio La
Cola, Felix Oechslin

Client: Tiefbauamt Kanton
Fribourg

Main Contractor: Consortium
IGR (Implemia, Grisoni-Zaugg,
Routes Modernes)

Mapei Distributor: Vigier Beton
Romandie SA, Tentlingen

Mapei Co-ordinator: Thomas
Liniger, Mapei Suisse SA
(Switzerland)

Photos: kindly supplied by Eric
Sauterel, Fribourg Canton Bridge and
Highway Authority

MAPEI PRODUCTS

Dynamon Easy 11, Mapeair AE10

Poya Bridge Fribourg (Switzerland)

The Swiss city of Fribourg was founded in 1157 and since then the traffic passing through the city has steadily increased. Fribourg has various suspension bridges that link each of the different areas of the city together. The idea of a bridge that would free the city centre of traffic without damaging its overall appeal has been the subject of discussion since 1959. After numerous proposals, and after spending a long time designing the bridge, work finally started on a cable-stayed bridge that was inaugurated in 2014. The structure is 851 m long and has ten pillars and

two piers, which makes it the longest cable-stayed bridge in Switzerland, with a total of 283 cables for a combined length of 150 km. The bridge has a road for vehicles, which is suspended around 73 m above the River Saane.

To build the bridge a number of Mapei admixtures were employed, such as the modified acrylic-based superplasticizer for ready-mixed concrete DYNAMON EASY 11 and the air entraining admixture MAPEAIR AE 10, which is used to make concrete resistant to freeze-thaw cycles. Thanks to the high levels of workability of the concrete admixed with DYNAMON EASY 11, it proved to be particularly suitable for the type of cement used on this site. To maintain a high level of quality in the concrete, even when being pumped over distances of up to 150 m, MAPEAIR AE 10 was used.





Rope Footbridge Dolný Kubín (Slovak Republic)

In the Slovakian city of Dolný Kubín, the capital city of the Dolný Kubín district in the Northern part of the country, Mapei products played an important role in the renovation of a special type of bridge built in 1967 according to a design by A. Tesar, one of the main designers of the famous Nový Most Bridge in Bratislava. The footbridge in Dolný Kubín has a span of 130 m, a height of 27 m and is the only one of its kind in the Slovak Republic, with just one single pre-stressed steel cable.

It is the first bridge in Slovakia to have been renovated using PURTOP SYSTEM DECK by Mapei, a dedicated waterproofing system for trafficked roofs, bridges and viaduct decks.

The metal surfaces of the bridge, after being thoroughly cleaned, were treated with PRIMER EP RUSTOP, a two component epoxy coating that improves the adhesion of the polyurea to the steel surface. In addition, it is also able to provide long-term protection against corrosion.

The next step was to spray on PURTOP 400 M two-component, hybrid polyurea membrane using a high-pressure bi-mixer type pump. Once re-tilated, this product forms a continuous waterproof coating that perfectly bonds to the support and that adapts to any geometric shape without cracking. As the project involved the use of the asphalt, an appropriate primer was needed to ensure perfect adhesion to the waterproofing membrane. PURTOP PRIMER BLACK one-component primer was used to this purpose; while the second layer was still fresh, QUARTZ 1.2 quartz sand was applied thereupon. The project was completed with the drafting of the asphalt and related tack coat.



TECHNICAL DATA

Year of Construction: 1967

Year of the Mapei

Intervention: 2014

Client: Dolný Kubín City Council

Main Contractor: DOSA
Slovakia, s.r.o.

Waterproofing Contractor:
DOSA Slovakia, s.r.o.

Mapei Distributor: MAPEI SK,
s.r.o.

Mapei Coordinator: Igor Kaštan,
Mapei SK, s.r.o. (Slovak Republic)

MAPEI PRODUCTS

Primer EP Rustop, Purtop 400 M,
Purtop Primer Black



TECHNICAL DATA

Period of Construction:

19th-20th centuries

Period of the Mapei

Intervention: 2014-2015

Main Contractor: Dragados S.A.

Clinker and Granite

Installation Contractor:

Pol-Aqua S.A.

Mapei Distributor: Eurotech

Kielce

Mapei Co-ordinator: Mariusz

Orzeł, Mapei Polska (Poland)

MAPEI PRODUCTS

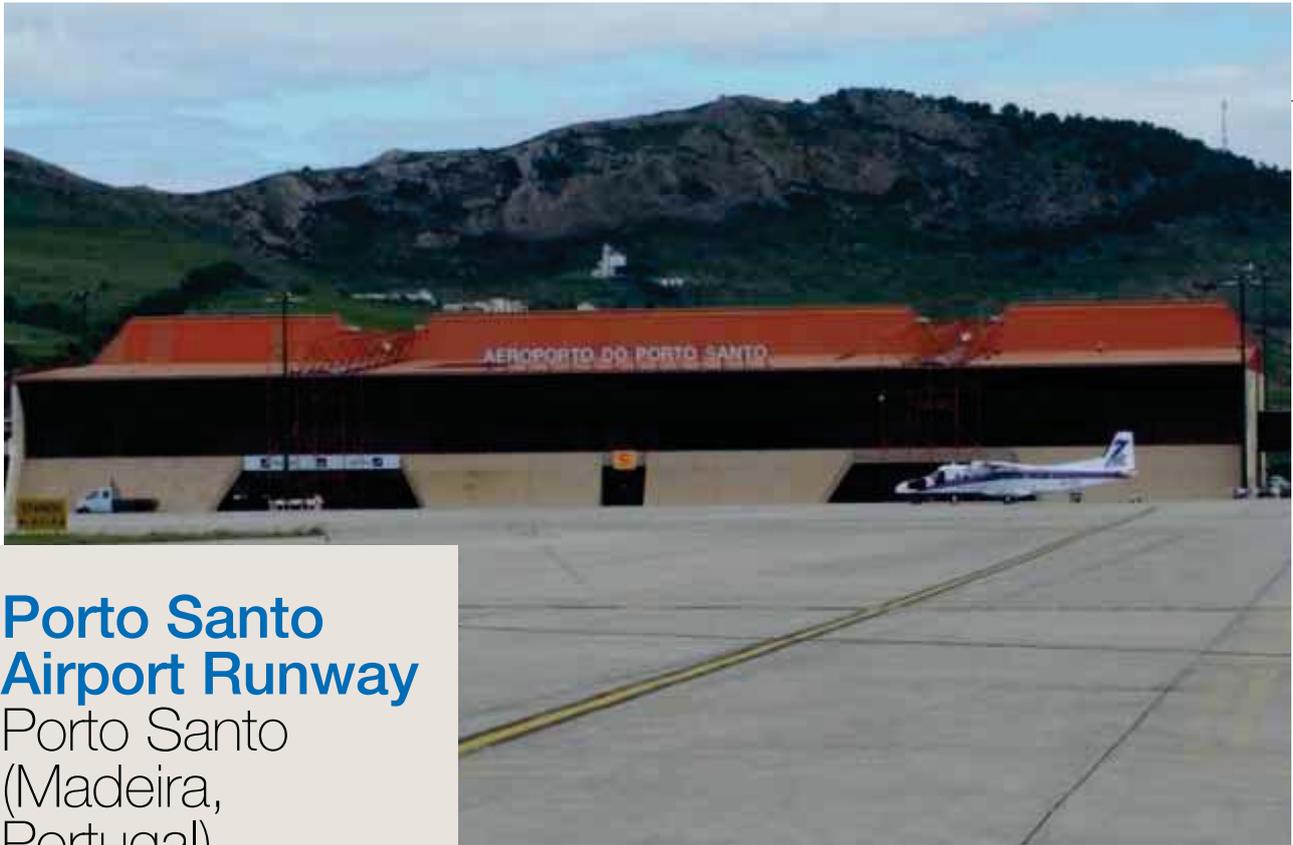
Adesilex PG1, Idrosilex Pronto, Mapeflex PU 45, Mapeklinker*, Plastimul Fiber*

*These products are manufactured and distributed on the Polish market by Mapei Polska

Water Interchange Wroclaw (Poland)

The Wroclaw water interchange on the Odra river is one of the most extended and complex hydrologic constructions in Poland. Renovation works started in 2011 and were intended to increase the water transfer capacity through the channel of Odra river, while protecting historical monuments and housing districts of the city from the risk of floods. In 2014 a 10 km long section of boulevards in the very heart of the city was also renovated. In order not to disrupt the architectural harmony of Wroclaw, the boulevards were renovated with cement-lime-based mortars and concrete structures were covered with ceramic tiles. Mapei supplied the mortar for bonding and grouting the clinker bricks and granite blocks used to renovate the boulevards. MAPEKLINKER mortar, manufactured and distributed on the Polish market by Mapei Polska, was tested and approved for clinker bricks and soon proved to be perfect for both clinker and granite. Beside that, PLASTIMUL FIBER bituminous coating (which is manufactured and distributed on the Polish market by Mapei Polska) was used for underground waterproofing works on the banks, IDROSILEX PRONTO osmotic cementitious mortar for waterproofing concrete structures; MAPEFLEX PU 45 paintable polyurethane sealant and adhesive for bonding the granite slabs onto the masonry structures; ADESILEX PG 1 thixotropic adhesive for structural bonds.





Porto Santo Airport Runway

Porto Santo
(Madeira,
Portugal)

Porto Santo is a fascinating Portuguese island in the autonomous region of Madeira, just off the coast of Morocco. Thanks to the crystal-clear waters surrounding the island and its long beaches, it is also known as the "Caribbean of Europe". Porto Santo was the first island in the Madeira Archipelago to have its own airport, which was built in 1959 and then extended several times over the years. Today, the airport has a runway extending over an area of around 3,000 m². Made from concrete and bitumen, its expected life-span was around 15 to 20 years. Because its life expectancy had been more than exceeded, repair work needed to be carried out to restore the surface of the runway and to put around 500

end sections of the runway back in service, which over the years had been cordoned off because of the damage caused by the metal pipework used to drain off the rainwater.

Mapei products were used for this restoration work, particularly for the joints in the concrete surfaces. Some of the joints were removed, while others were sealed with the two-component, solvent-free epoxy adhesive EPORIP. PRIMER PU60 moisture curing polyurethane resin was then applied, which is used to consolidate and waterproof screeds with residual moisture above recommended levels, followed by MAPEFLEX PB27 two-component, castable, modified-polyurethane sealant for the joints.

TECHNICAL DATA

Period of Construction: 1959

Period of the Mapei

Intervention: 2014-2015

Works Direction: eng. Miguel Pereira

Client: ANA (Aerportos de Portugal)

Contractor: Farrobo

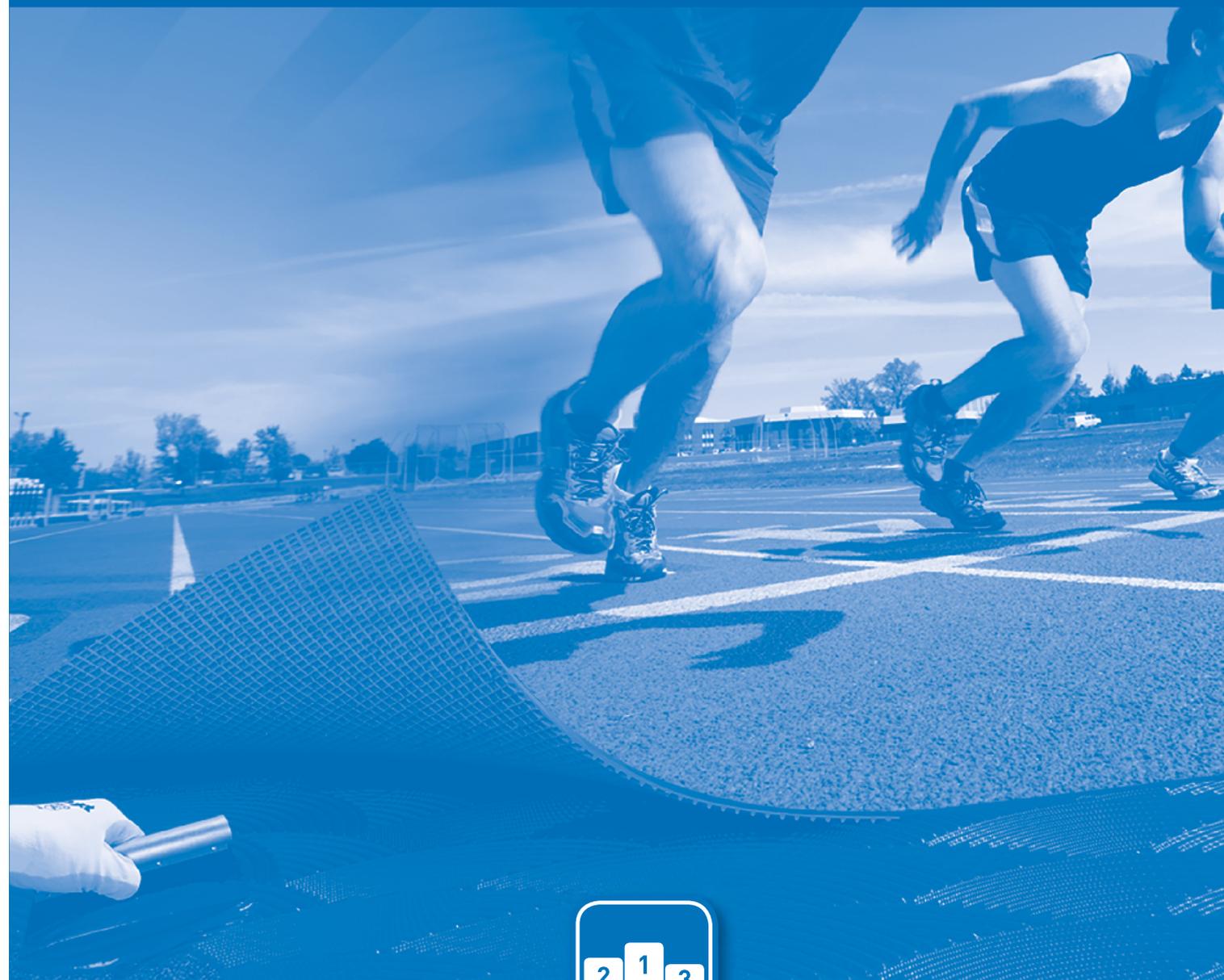
Mapei Distributor: Flagame

Mapei Co-ordinator: Mário Jordão, Lusomapei (Portugal)

MAPEI PRODUCTS

Epoporip, Primer PU60, Mapeflex PB27





SPORT FACILITIES

MAPEI HAS A PARTICULARLY STRONG BOND WITH THE WORLD OF SPORT AND WITH THE FACILITIES AND CENTRES WHERE SPORT IS PLAYED. NOT JUST THE LARGE STADIUMS AND COMPLEXES BUILT FOR IMPORTANT SPORTING EVENTS – SUCH AS THE OLYMPIC GAMES OR THE FIFA WORLD CUP – BUT ALSO PLAYING FIELDS AND SWIMMING POOLS USED ON A REGULAR BASIS, THAT NEED TO GUARANTEE RELIABILITY, SAFETY AND DURABILITY OVER THE YEARS

Ice-rink

Scaltenigo di Mirano (Italy)

The speed-skating rink in Scaltenigo di Mirano (near Venice) was built at the beginning of the 1980's. It was a highly prestigious structure with particularly high technical characteristics recognised at international level, in compliance with the guidelines of the F.I.H.P (the Italian Ice-hockey and Ice-skating Federation).

The structure needed to be upgraded. After demolishing and then rebuilding the flat home and back straights of the track, the drainage channels that collect rainwater between the speed-skating track and the flat area inside the track were also rebuilt. The Plexiglas safety panels that form a barrier around the track were then replaced.

MAPEFOAM and MAPEFLEX PU45 were used to seal the joints in the concrete substrate. The surfaces were coated with acrylic resin products from the MAPECOAT TNS MULTISPORT PROFESSIONAL system.

The application cycle of this system involves applying two layers of TRIBLOCK P primer, two coats of MAPECOAT TNS WHITE BASE COAT and two coats of coloured acrylic resin: the first coat using MAPECOAT TNS FINISH 1 and the second one using

MAPECOAT TNS COLOR. To make racing more spectacular and increase the performance characteristics of the track, without compromising the safety of those taking part in races, the surface was coated with MAPECOAT TNS PROTECTION finish. This kind of solution has been developed to guarantee a good grip for the skaters both along the straights and the bends. After renovating and upgrading the track as specified, the rink hosted the Italian National Speed-skating Championships, with more than 500 member athletes of the FIHP and 65 teams taking part.



TECHNICAL DATA

Year of Construction: 1983

Year of the Mapei Intervention: 2015

Client: Mirano Town Council

Design: Studio Associato Boato Progetti (Stefano Boato, Michele Boato)

Works Direction: Studio Associato Boato Progetti (Stefano Boato, Michele Boato)

Main Contractor: Agrogreen Srl

Flooring Contractors: Agrogreen Srl, Tagliapietra Srl

Mapei Co-ordinators: Fabio D'Amato, Marco Cattuzzo and Michele Orlando, Mapei SpA (Italy)

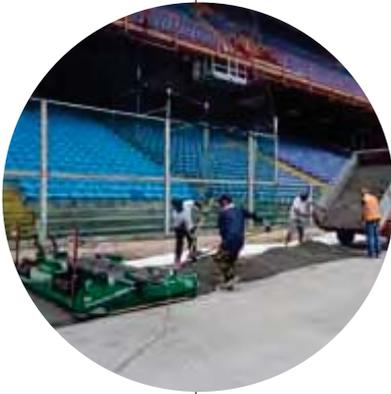
MAPEI PRODUCTS

Mapecoat TNS White Base Coat, Mapecoat TNS Finish 1, Mapecoat TNS Color, Mapecoat TNS Protection, Mapecoat TNS Line, Triblock P, Mapeflex PU45, Mapefoam



TECHNICAL DATA**Year of Construction:** 1911**Year of the Mapei Intervention:** 2015**Client:** U.C. Sampdoria SpA and Genoa C.F.C. SpA**Design:** Giovanni Castelli**Works Direction:** Giovanni Castelli**Contractor:** Sama Srl**Mapei Co-ordinators:** Elisa Portigliatti, Marco Cattuzzo, Raffaele Profili, and Angelo Nobili (Mapei SpA)**MAPEI PRODUCTS**

Mapesoil 50, Mapesoil VD, Mapetard, Dynamon SR4, Ghiaietto 6-10 mm by VAGA (Mapei Group), Risetta 1.5-3 mm by VAGA, Sabbia Lago 0.1-2 mm by VAGA



Luigi Ferraris Stadium Genoa (Italy)

After years of intense activity, the pitch in the Luigi Ferraris Stadium in Genoa underwent significant upgrading work on its structure to bring the pitch up to the high standards required for Serie A football matches.

In 2013, Lega Serie A (Serie A's governing body), acting on behalf of the two teams from Genoa (Sampdoria and Genoa), and in collaboration with Mapei and the Mapei Sport Research Centre, decided to adopt the MAPESOIL drainage system for the Luigi Ferraris Stadium based on a technical and scientific survey carried out on the pitch.

This system involves the installation of a no-pipe drainage system. Water is forced to run off by means of a drainage screed made from MAPESOIL VD hydraulic binder directly below the sandy root-zone underneath the grass surface (its effect is like having a series of drainage pipes running alongside each other).

Apart from its very high drainage capacity, up to 100 times higher than with a conventional system (as certified by Labosport), one of the many other advantages of MAPESOIL is that water drains off the grass playing surface much more quickly.

This system prevents flooding on the surface of the pitch, less energy is required for the heating system when it is switched on, and the water drained off and collected by the system may be recycled for irrigation purposes.





Alberto Cipolloni Tennis Club Foligno (Italy)

The Alberto Cipolloni Tennis Club in Foligno (Central Italy), founded in 1930, is the oldest tennis club in the Umbria Region and has four clay courts which have been used intensely over the years. The Tennis Club Committee decided to upgrade the courts by installing a new type of playing surface in synthetic resin specifically designed for tennis courts, which would allow the courts to be used all year round and reduce their high maintenance costs.

The solution chosen for the new playing surfaces was the MAPECOAT TNS CUSHION system.

The first step was to apply a package of inert materials to make the substrate more stable. This was followed by the application of a first layer of asphalt 5 cm thick to act as a binder and then a second layer 3 cm thick to form a bitumen mat.

The new acrylic resin playing surface was then created over the second bituminous layer by applying MAPECOAT TNS CUSHION, comprising a first infill coat of MAPECOAT TNS GREY BASE COAT, a medium-elasticity coating product, made from a balanced mix of acrylic resins in water dispersion and selected fillers.

To complete the MAPECOAT TNS CUSHION system, 3 coats of MAPECOAT TNS FINISH 1.3.4. acrylic resin-based product was applied, which is certified by the ITF (International Tennis Federation), so that the courts could be approved for tournament matches.

TECHNICAL DATA

Year of Construction: 1930

Year of the Mapei Intervention: 2014

Client: Tennis Club Foligno Alberto Cipolloni

Mapei Coordinators: Fabio D'Amato and Marco Cattuzzo, Mapei SpA (Italy)

MAPEI PRODUCTS

Mapecoat TNS Grey Base Coat, Mapecoat TNS Finish 1, Mapecoat TNS Finish 3, Mapecoat TNS Color, Mapecoat TNS Line





© GFC/photos Véronique Paul, SCAU - D. Rogeon - Photo Luc Boegly

TECHNICAL DATA

Year of Construction: 1937

Year of the Mapei

Intervention: 2011-2014

Client: Marseille City Council

Design: Studio Scau, Didier Rogeon Architecte

Main Contractor: GFC Construction

Mapei Co-ordinators: Jimmi Fisher, Mapei France

MAPEI PRODUCTS

Mapefill F, Nivolite F*, Nivoplan F*, Planitop 450*

* These products are manufactured and distributed on the French market by Mapei France

Vélodrome Stadium Marseille (France)

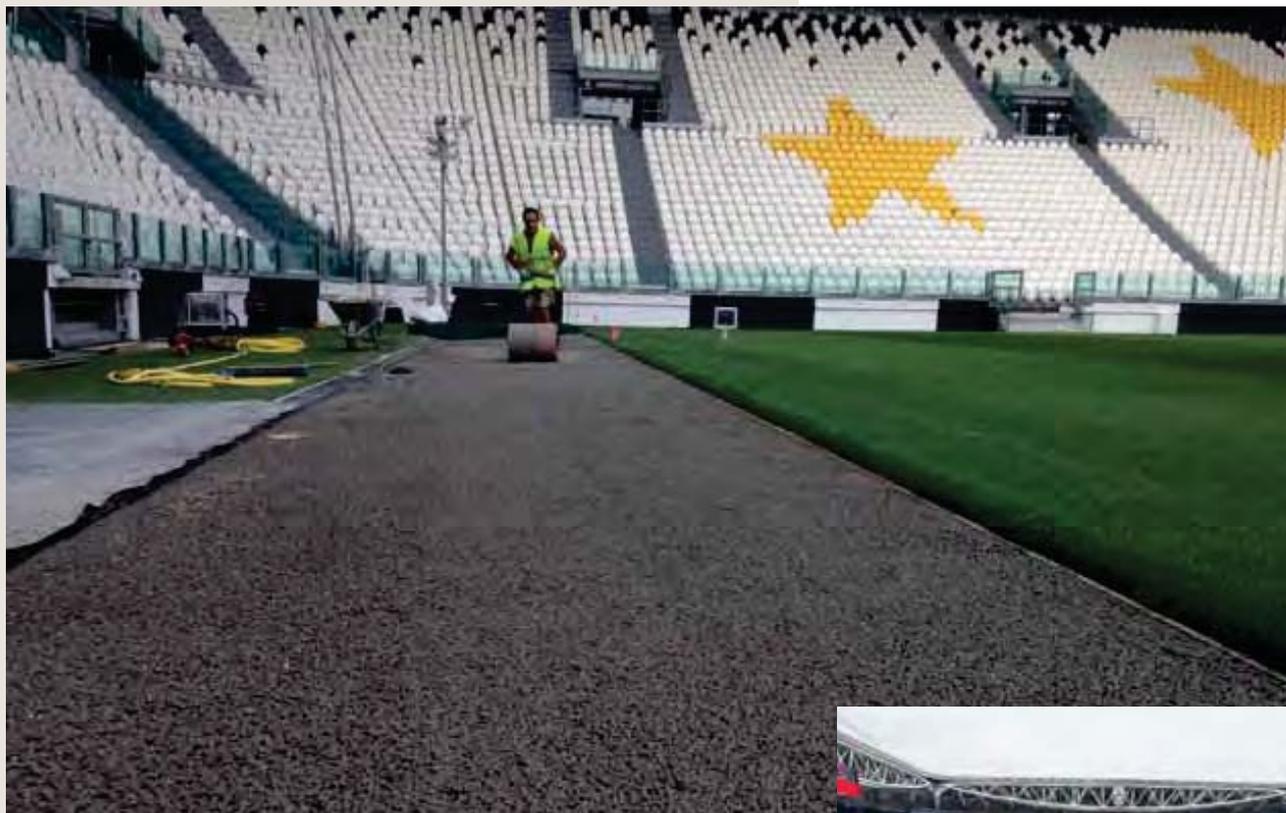
It took three years of hard work to bring this stadium up to date for the 2016 UEFA European Football Championships. Inaugurated at the end of 2014, the seating capacity of the stadium was increased from 60,000 to 67,000 and is now the second largest stadium in France, after the Stade de France in Paris. Inaugurated in 1937, the Vélodrome stadium originally had a circuit for cycle races and a second track for athletics events. In 1998, the structure was completely renovated to host football matches for the FIFA World Cup Finals. Apart from the new seats, the stadium

is characterised by larger hospitality areas and more modern services, as well as a large, 65.000 m² undulated roof to protect the spectators in the stands. The renovation of the entire structure, which will host six matches and one of the semi-finals during the next European Championships, has earned the Marseille stadium a "5-star" rating from UEFA.

This important project used various Mapei products, starting with MAPEFILL F high-performance mortar to anchor and seal various elements. PLANITOP 450 fibre-reinforced mortar was used to repair concrete, NIVOPLAN F smoothing compound was used to skim the walls and NIVOLITE F smoothing compound was applied in the new Ganay and Jean Bouin stands. PLANITOP 450, NOVOLITE F and NIVOPLAN F are manufactured and distributed on the French market by Mapei France.



© D. Rogeon - Photo Luc Boegly



Juventus Stadium Turin (Italy)

Summer 2015 in Italy was not just hot in terms of the exceptionally high thermometer readings. If we take a careful look at the Italian football scene, 14 out of the 16 stadiums preparing to host the 2015/2016 Italian football league championship had “works in progress” signs at their entrances.

Mapei technology for playing fields was used for five of the most important projects underway, including: Mapei Stadium (Reggio Emilia), Meazza Stadium (Milan), Luigi Ferraris Stadium (Genoa), Atleti Azzurri d'Italia (Bergamo) and of course, prestigious Juventus Stadium (Turin). The pitch inside Juventus Stadium also underwent repair operations during the summer break and, more specifically, the run-off area of the playing field, already made of synthetic grass, was completely renewed.

As well as replacing this synthetic grass surface, the opportunity was also taken to upgrade the sub-base using MAPESOIL VD technology to achieve efficient, high-performance draining system. Mapesoil technology for creating sub-bases under playing surfaces for sports was also used to upgrade Vinovo's training ground: using MAPESOIL 100 to build the horizontal draining system for the playing field meant that the old bitumen conglomerate under the old and worn-out playing surface could be completely reused, so that the club did not have to cover the costs of disposing of it.



TECHNICAL DATA

Period of the Intervention: summer 2015

Client: Juventus F.C.

Design and Works Direction: Studio Manzone e Gruppo Prisma Tre Srl

Contractor: Italgreen SpA

Installation Companies: Tipiesse; Peletta Luigi Srl, Gli specialisti del Verde

Mapei Co-ordinators: Elisa Portigliatti, Angelo Nobili, and Marco Cattuzzo, Mapei SpA (Italy)

MAPEI PRODUCTS

Mapesoil VD, Mapesoil 100, Ultrabond Turf PU 2K, Dynamon SR4, Mapetard, Ghiaietto 6-10 mm by VAGA, Risetta 1,5-3 mm by VAGA (Mapei Group)

TECHNICAL DATA**Year of Construction:** 1922**Design:** Alfredo Rosselli**Year of the Mapei Intervention:** 2015**Client:** Autodromo Nazionale di Monza**Works Direction:** Pozzi, Tremolada**Concrete Repair and Waterproofing Contractor:**

Ranghetti Art Proget Srl

Mapei Coordinators: Fabio Messina and Dino Vasquez, Mapei SpA (Italy)**MAPEI PRODUCTS**

Eporip, Mapecoat PU15, Mapefer 1K, Mapeflex PU45, Planitop Smooth & Repair, Primer SN, Purtop 1000

The Parabolica Stand at Monza National Racetrack Monza (Italy)

Monza National Racetrack, situated north of Milan, was built in 1922 in the Monza Royal Park, the largest in Europe. Monza Racetrack is one of the oldest and most historic circuits and is the fastest track on the F1 calendar. From when it was first built until today, the F1 Italian Grand Prix has been held here almost every year. The Parabolica spectator stand, which takes its name from the famous bend where it is located, was built in the 1980's and offers more than 2,000 spectators some of the most spectacular views of Grand Prix racing. Renovation work was carried out on the Parabolica Stand in 2015 to create a hospitality area under the stand for the F1 Grand Prix and other racing events, and to turn it into an area open to the general public. The concrete was repaired using MAPEFER 1K cementitious mortar for steel reinforcement rods and PLANITOP SMOOTH & REPAIR R2-class, thixotropic, fibre-reinforced, cementitious mortar for concrete surfaces. Cracks in the concrete were filled with EPORIP epoxy adhesive and fillet joints were sealed using MAPEFLEX PU45 sealant, before applying PRIMER SN epoxy primer with fillers. The entire area was then waterproofed with PURTOP 1000 solvent-free, pure polyurea membrane. Once this operation had been completed, the stand was painted grey, apart from the steps to the stand which was painted yellow, using MAPECOAT PU15 aliphatic, polyurethane finish.





Foto: Popoulos, John Collings

Margaret Court Arena

Melbourne (Australia)

In the latest redevelopment phase of Melbourne Park, Margaret Court Arena (MCA) has been given a complete transformation to create the precinct's third all-weather arena. The project was completed in time for the 2015 Australian Open. This is the first Gold LEED accredited sports venue in Australia. Over 7000 m² of granite and bluestone pavers were installed in and around the Margaret Court Arena. An existing polyurethane membrane was repaired and MAPEPRIM SP solvent-free primer was applied thereupon. The sand and cement bed was treated with PLANICRETE SP (a multi-purpose latex which is manufactured and distributed on the Australian market by Mapei Australia)

to ensure an efflorescent-free installation. MAPELASTIC SMART mortar was applied over the substrate which acted both as a waterproofing membrane and anti-efflorescence barrier. MAPECEM QUICKPATCH, which is distributed on the Australian market by Mapei Australia, was used to repair any deficiencies in the substrate as well as forming ramps to the tennis courts from the walkways. KERAQUICK cementitious adhesive was used to bond the pavers. Joints in internal paved areas were grouted using KERACOLOR FF polymer-modified cementitious mortar, while in the external paved areas joints were grouted with KERACOLOR GG mortar. Granite slabs were also installed on the metal staircases inside the stadium using KERAPOXY adhesive.

TECHNICAL DATA

Year of the Mapei Intervention: 2014

Client: Victorian State Government
Design: Populous and NH Architecture

Works Direction: Major Projects Victoria

Main Contractor: Lend Lease Corporation Limited

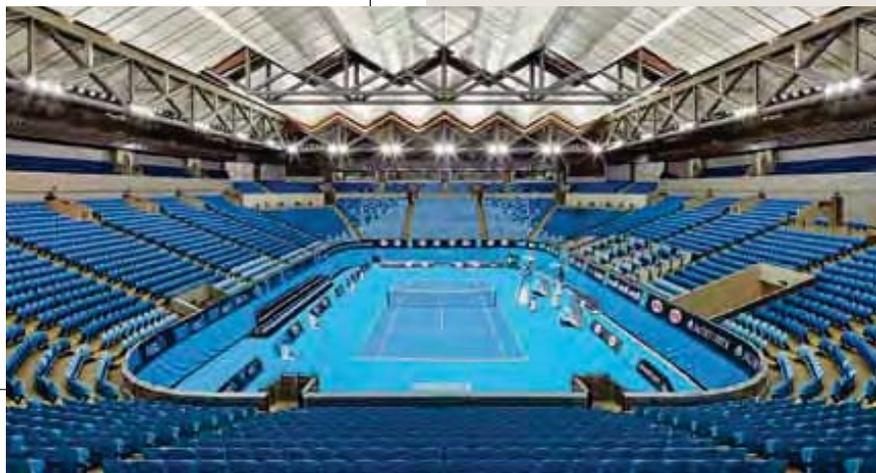
Stone Installation Contractor: DeFazio Tiles and Stone

Mapei Coordinator: Paul Buckley, Mapei Australia

MAPEI PRODUCTS

Keracolor FF, Keracolor GG, Kerapoxy, Keraquick, Mapecem Quickpatch*, Mapelastic Smart, Mapeprim SP, Planicrete SP*.

*These products are distributed on the Australian market by Mapei Australia



**TECHNICAL DATA****Period of Construction:**

2013-2015

Period of the Mapei**Intervention:** 2014-2015**Client:** Auckland Council/AUT**Design:** Pacific Environments Ltd**Project Management:**

Argon Construction Ltd

Main Contractor: Argon Construction Ltd**Installation Contractor:**

The Tile People Ltd

Mapei Co-ordinator:

Chester Becroft, Mapei New Zealand

MAPEI PRODUCTS

Primer SN, Mapecoat I 24, Mapegrout T60, Mapelast Smart, Mapenet 150, Mapelast AquaDefense, Mapetex Sel, Mapecem, Planicrete, Planitop Fast 330, Mapefill GP, Mapeband TPE, Adesilex PG4, Mapeband, Adesilex T Super, Keraflex Maxi S1, Granirapid, Keracolor FF, Mapesil AC, Mapefix EP 385



National Aquatic Centre AUT Millennium

Auckland (New Zealand)

The new National Aquatic Centre meets the growing demand for flat water from both the public and high performance aquatic sport in Auckland (New Zealand). Completed in July 2015, the National Aquatics Centre on the North Shore is capable of hosting major events, including world championships. The 4000-seater facility features an Olympic-sized 50 m pool and also a 25 m warm-up pool.

When waterproofing both the 50 m and 25 m pools, MAPEBAND TPE and ADESILEX PG4 were installed over the construction joints. MAPEBAND was used to waterproof the remaining wall/floor and wall/wall junctions. MAPELASTIC SMART and MAPENET 150 were used to waterproof both pool tanks. PLANITOP FAST 330 was used to level the top of the side walls of both pools.

Installation of ceramic tiles was carried out with KERAFLEX MAXI S1 and GRANIRAPID. KERACOLOR FF was used to grout the tile joints and MAPESIL AC to seal expansion joints.

The substrates of the concourses were levelled where required with MAPECEM before being waterproofed with MAPELASTIC AQUADEFENSE. Ceramic tiles were then installed with KERAFLEX MAXI S1, joints grouted with ULTRACOLOR PLUS and expansion joints sealed with MAPESIL AC.



Aquatics Palace

Kazan (Russian Federation)

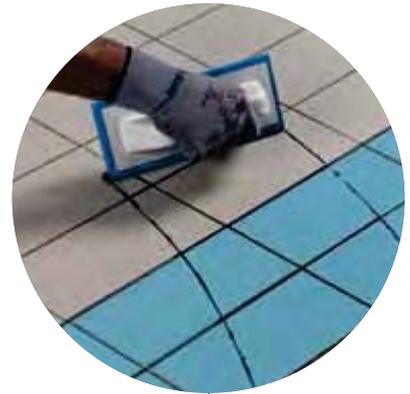
The 15th edition of the FINA World Swimming Championships was held in Kazan (Russian Federation) from the 24th of July to the 9th of August. The Aquatics Palace is a sports complex dedicated to diving and swimming events. The structure has three pools: one measuring 33.3x25 m for the diving events and two measuring 50x25 m for the swimming events. Here the Italian diver Tania Cagnotto won three medals for Italy.

Various Mapei products were used to renovate the towers housing the diving boards and for other work around the pool. PROSFAS, a water-based, solvent-free consolidator, was used in the ventilation concrete chambers. MAPESIL AC pure, mould-resistant, acetic silicone sealant was used to seal the joints between the sides and between the sides and bottom of the pool, while KERACRETE +

KERACRETE POWDER adhesive system and ULTRACOLOR PLUS grout were used to bond the covering materials in certain parts of the pool and to grout the joints. For the diving boards and platform, ADESILEX P4 levelling compound was used to level off the surfaces.

The layer of PRIMER SN two-component epoxy primer applied afterwards was used to create a damp proof membrane before bonding the covering materials. ADESILEX G19 two-component, epoxy-polyurethane adhesive and KERALASTIC two-component, polyurethane adhesive were then used for the installation of the covering on the steps of the diving board tower and for the diving blocks.

Our thanks go to the Italian diver Tania Cagnotto for the use of these photos.



TECHNICAL DATA

Year of the Mapei

Intervention: 2015

Ceramic Installation

Contractor: OOO "Azimut"

Mapei Co-ordinator:

Kuznetsov Sergei, ZAO Mapei (Russian Federation)

MAPEI PRODUCTS

Adesilex G19, Adesilex P4, Keracrete, Keralastic, Mapesil AC, Prosfas, Primer SN, Ultracolor Plus





PRODUCTION FACILITIES

THE TYPE OF WORKS CARRIED OUT IN THIS PARTICULAR SECTOR VARIES ENORMOUSLY AND RANGES FROM CEMENT PLANTS TO AREAS WHERE SEVERE STANDARDS ARE APPLIED TO REGULATE THE STORAGE OF FOOD AND DRINKS. MAYBE MORE SO THAN IN ANY OTHER AREA, SAFETY FOR THE WORKERS, A HIGH LEVEL OF HYGIENE AND RESISTANCE TO LOADS AND CHEMICALS ARE FUNDAMENTAL: AND THERE IS A WIDE RANGE OF MAPEI PRODUCTS AVAILABLE TO MEET SUCH NEEDS



Linth-Limmern Power Station

Canton of Glarus (Switzerland)

Water has been widely used in Switzerland for more than 100 years to generate electricity, which allows it to cover around 56% of the country's total energy needs. Construction work on the Linth-Limmern hydro-electric power station, which is located to the south of the city of Glarus-South in central Switzerland, started in 1957. It has been extended over the years up until today and comprises five water basins and three generating units for a current total output of 479.8 MW. 2.1 billion Swiss Francs (around 1,9 billion Euros) were invested recently in the power station to increase its output to 1,480 MW (1,480,000 kW). To transport materials and workers to the building site, the two largest cable-car systems in Europe had to be built, each one with a load capacity of 40 tonnes. The project is made up of various phases including the construction of the two cable-cars, a new concrete dam for the Mutsee basin (which will make it the largest concrete wall in Europe), an underground machinery and plant area, a steel pipe-work for the unused water and a new pump and turbine system. Because all these sections required the production

of massive amounts of concrete, Mapei Suisse offered its help by supplying technical assistance and innovative products to design the most suitable mix. Going into detail, the air-entraining agent MAPEAIR AE 2 was added to the mix to make it more resistant to freeze-thaw cycles. To increase its workability and reduce the water/cement ratio, on the other hand, MAPEFLUID N 100 superplasticizer was also used.



TECHNICAL DATA

Period of Construction 2010

– ongoing

Period of the Mapei

Intervention: 2010 – 2015

Design: AXPO AG,

Planergemeinschaft IG

Clients: Kanton Glarus and AXPO AG

Contractor: ARGE Kraftwerk Limmern, Linthal

Mapei Coordinator: Urs Wirth, Mapei Suisse SA (Switzerland)

MAPEI PRODUCTS

Mapeair AE 2, Dynamon SX 14, Viscofluid SCC 10, Mapetard D, Mapefluid N 100, Mapequick AF 1000, Stabilcem T, Mapecure E30, Mapegrout Thixotropic



Ford Motor Company Factory Hangzhou (PRC)

TECHNICAL DATA

Period of Construction:

2014-2015

Period of the Mapei Intervention: 2014-2015

Client: Chang'an Ford Automobile Co., Ltd

Main Contractor: Chang'an Ford Automobile Co., Ltd

Flooring Contractor: Xiamen Master of Architectural Engineering Technology

Mapei Distributor: Xiamen Master of Architectural Engineering Technology

Mapei Co-ordinator: Frank Qiu, Mapei Construction Materials (Guangzhou) Co. Ltd (PRC)

MAPEI PRODUCTS

Mapefloor I 312, Mapefloor I 212, Mapefloor I 202, Mapefloor I 390 EDF, Mapefloor I 900

* This product is manufactured and distributed by Mapei Construction Materials (Guangzhou) Co. Ltd.

The Ford Motor Company (also known as simply Ford) is an American multinational automaker headquartered in a suburb of Detroit (USA). It also has a number of joint-ventures, including Chang'an Ford Mazda in China. One of the Ford's key factories is located in Hangzhou, a sub-provincial city in China. The city is a hot destination for tourist, and, thanks to its close location to Shanghai, many commercial buildings and factories are located here as well.

The total area of the Ford manufacturing facility is around 660,000 m². Till now, this is the largest co-op development between Ford and Chang'an. The production capability is expected to expand up to 500,000 cars annually.

In the testing workshop, a Mapei system for industrial floorings was used on about 2,000 m². It comprises MAPEFLOOR I 900, a two-component epoxy binder used for preparing epoxy mortars with special electrically conductive fillers, with a consistency similar to a mortar screed, and MAPEFLOOR I 390 EDF, a two-component, self-levelling epoxy formulate for high strength, dissipative coatings. This product is particularly suitable for use in the electronics, pharmaceuticals and automotive industries, as well as in warehouses with inflammable products and combustible powders and in the aeronautics and aerospace sectors.

In the assembling workshop and warehouse, a MAPEFLOOR system was instead used, comprising MAPEFLOOR I 202, MAPEFLOOR I 212, and MAPEFLOOR I 312 two-component, solvent free, epoxy coatings used as primer, coating and finishing, respectively.





Dangote Cement Plant Obajana (Nigeria)

The Obajana Cement Plant, opened in 2006 and located in Nigeria, is one of the largest cement plants in the world, with a total capacity of 13.2 million tons of cement per year. It is part of the Dangote Group, Nigerian and privately owned, active in different fields in many African countries.

Mapei engineers approached the plant staff to develop tailor-made solutions to improve the performances of the cement produced in Obajana and to reduce the specific CO₂ emissions. Extensive raw materials analysis and industrial trials were carried out on site in order to move from traditional grinding aids (only devoted to increase the cement mill output) to highly sophisticated performance enhancers like MAGA/VM 123, capable to increase the cement strengths and to reduce clinker and CO₂ emissions. The importance of this project, apart from the size of the plant itself, is related to the remote location of the plant (Central Nigeria), the extension of the quarries, the variability of the raw materials and the fact that the plant has been built in three different phases with state-of-the-art but different technologies.

Thanks to the use of MAGA/VM 123, the cement produced at Obajana plant has increased its strengths from 19-20 MPa at 2 days to 24-25 MPa and, at the same time, the clinker content has been reduced of 5%. We can estimate that, thanks to the Mapei technology, Dangote is saving more than 55 kg of CO₂ for every ton of cement produced, which is equivalent to an annual saving of 730.000 tons of CO₂ a year for the whole plant.

TECHNICAL DATA

Period of Construction: 2006-2015

Period of the Mapei Supply: 2012-ongoing

Design: FLS Smith for phase 1; Sinoma for phases 2 and 3

Client: Dangote Group

Main Contractors: FLS Smith, Sinoma

Mapei Distributor: IPM

Mapei Co-ordinator: Davide Padovani, Mapei SpA (Italy)

MAPEI PRODUCT

MAGA/VM 123



TECHNICAL DATA

Period of Construction:

2000-2005

Period of the Mapei Supply:

2010-ongoing

Design: Polysius – Germany

Client: Cosevco, HB (Kusto Group)

Main Contractor: Polysius + Cosevco

Cement Additives Supplier:

Mapei Vietnam Ltd.

Mapei Coordinators: Davide Padovani (Mapei SpA, Italy) and Pham Thi Thai Mai (Mapei Vietnam Ltd)

MAPEI PRODUCTS

MA.PE/S 511, MA.PE/S 299

Song Gianh Cement Plant Quang Binh (Vietnam)

Vietnam is one of the countries where the Mapei Cement Additive Division has some of its most significant references in terms of grinding aids and strength increasing products. Among the cement plants using the most advanced technology additives, we highlight the Song Gianh cement plant in Quang Binh.

The Song Gianh plant is very committed in producing high performing cement and at the same time reducing the amount of clinker in its composition, thus safeguarding the environment and saving CO₂ emissions in the atmosphere.

Mapei Cement Additives Division has

performed tests first at the Mapei R&D Centre in Milan and subsequently directly at the Song Gianh cement plant, in order to determine the most suitable additives to pursue the customer's targets.

At present, the cement plant is using the performance enhancing products MA.PE./S 511 and MA.PE./S 299, which have given very impressive results both in terms of mill output and strengths increase and especially in terms of clinker reduction. The additive MA.PE./S 511 is used for bagged cement PCB40, increasing the cement mill capacity up to 10% and early strengths, and decreasing clinker by 2-3%. Even more impressive results have been obtained by using MAPE/S299 additive for industrial cement PCB40: it allows an increase of 10% in the cement mill capacity, increases early and late strengths and allows saving clinker by 5-6% on average. Song Gianh plant is thus one of Mapei's top references in terms of sustainable grinding of cement.



Lam Tach Cement Plant Kuang Ninh (Vietnam)

The cement industry in Vietnam is one of the most important in the Asian Region and the Vietnamese cement factories are among the most modern and technologically advanced.

The cement produced in Vietnam is also exported in several countries which appreciate the quality and the full respect of the standards. Part of the cement exported from Vietnam is sold in sophisticated markets, adopting the European Regulation about the reduction of the hexavalent chromium Cr(VI) in cement, which is potentially dangerous for the human health. The Vietnamese cement plant Lam Tach is using the Mapei patented technology, the product MAPE/Cr 05 LV, to reduce the Cr(VI) in cement below 2 ppm (part per million) according to the EN Standard 197-10.

The decision to rely on the innovative Mapei product MAPE/Cr 05 LV has been taken by Lam Tach thanks to the following advantages:

1. Extremely reliable technology, based on antimony trioxide and patented by Mapei, reducing the Cr(VI) in cement steadily, even in case of transportation via sea when the cement is exported.
2. Long lasting reduction of the Cr(VI) and low dosages of the product MAPE/Cr 05 LV: only 50 gram per ton of cement per every ppm of Cr(VI) to be reduced. The innovative product MAPE/Cr 05 LV and Mapei Research are helping the cement industry to be eco-friendly and more efficient all around the world.

TECHNICAL DATA

Operating since: 2007

Period of the Mapei supply:
2015-ongoing

Client: Cement Quảng Ninh Joint Stock Company

Designer: Triều Dương NORTH

Clients: SIAM VINA

Cement Additives Supplier:
Mapei Vietnam Ltd

Mapei Coordinators: Davide Padovani (Mapei SpA, Italy) and Pham Thi Thai Mai (Mapei Vietnam Ltd)

MAPEI PRODUCT

MAPE/Cr 05 LV

SPECIAL FOCUS PROJECTS



CURIOSITIES

MAPEI PRODUCTS ARE DEVELOPED TO GUARANTEE
LONG-LASTING PERFORMANCE, SAFETY AND
ECO-SUSTAINABILITY AND HAVE BEEN USED IN THE
STRANGEST OF PLACES!



Karkemish Archaeological Site

Karkemish, Gaziantep (Turkey)

The archaeological site of Karkemish, located in southeastern Turkey on the border with Syria and dating back thousands of years, has been inaccessible for a very long time.

It has now been again the subject of archaeological research following a decision by the Cultural Authorities of the Turkish Republic in 2011. Extending over an area of 90 hectares straddling the Turkish-Syrian border, Karkemish is so more than a simple archaeological site: it is the city that has always had a place in the imagination of all those archaeologists that have worked, and are still working, in the Middle East. The final project includes the creation of an archaeological park which will be integrated with the environmental park on the Euphrates.

To consolidate the road surfaces of Hittite origin and some of the orthostats, PRIMER 3296 consolidating primer was used, diluted 1:2 with water. MAPE-ANTIQUÉ LC lime and Eco-Pozzolan based hydraulic binder was then applied after mixing it with local aggregates. To consolidate the walls dating back to the Roman period, after applying PRIMER 3296, a layer of MAPEANTIQUÉ RINZAFFO salt-resistant mortar was applied. To consolidate the crumbling walls of the old dig house belonging to Thomas E. Lawrence, a mixture made from PRIMER 3296 and soil was used. To anchor and grout the sections that had become detached, ADESILEX PG2 epoxy adhesive was used.

TECHNICAL DATA

5th Dig Campaign at the Site: April-June 2015

Period of the Mapei Intervention: 2011-2015

Expedition Director: Prof. Nicolò Marchetti (Alma Mater Studiorum University of Bologna- Department of History and Cultures)

Design of Restoration

Interventions: Laura Benucci and Giada Bertocci

Archaeological Park Design: Archt. Alessandra Giacardi and Massimo Ferrando (2APstudio)

Mapei Co-ordinators: Davide Bandera and Pasquale Zaffaroni, Mapei SpA (Italy)

MAPEI PRODUCTS

Adesilex PG2, Mape-Antique LC, Mape-Antique Rinzafo, Primer 3296





evening, is transformed into an elegant lounge bar with a terrace opening onto the Piazza. Each of the fourteen suites in the hotel has been given a personal touch by a group of Italian architects. Each designer was given free rein to express their ideas and the result is a showroom of design, where every suite becomes its own world in terms of materials, finishes, form and colour. Mapei was involved in the creation of suite no.10, known as the “Swan Room”, designed by the architect Simone Micheli. It is characterised by a large mosaic wall with the image of an elegant white swan. ELASTORAPID two-component, high-performance, highly-deformable, quick-setting and drying cementitious adhesive in its white shade was used to bond the stone floors in a herringbone pattern in the corridors leading to the suites, Mapei proposed ULTRABOND ECO P909 2K light coloured, two-component, solvent-free polyurethane adhesive with very low emission level of volatile organic compounds (EMICODE EC1 R-certified).

TECHNICAL DATA

Period of Construction:

2014/2015

Period of the Mapei

Intervention: 2014/2015

Design: Simone Micheli

Client: Seven Star Galleria Italia

Mosaic Installation Contractor:

Impresa Prada

Works Direction: Archt. Savero

Mapei Co-ordinators: Igor Pellegrini,

Antonio Salomone (Mapei SpA)

Photos: Gianni Dal Magro, Umberto Amiraglio, and Jurgen Eheim

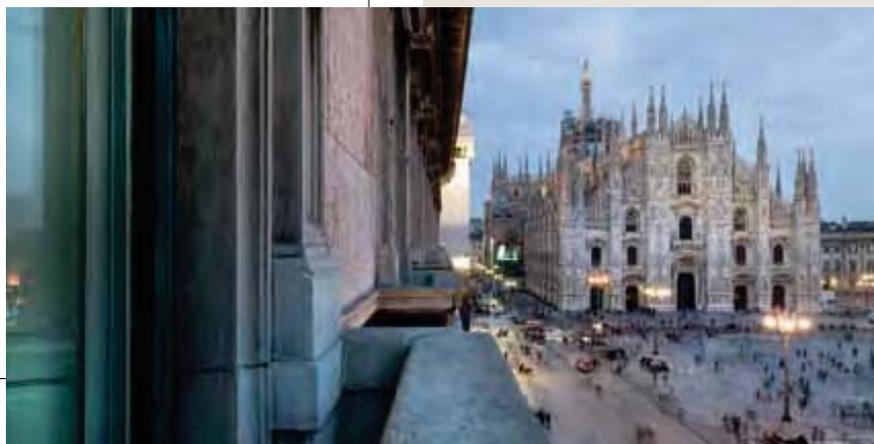
MAPEI PRODUCTS

Elastorapid, Ultracolor Plus,

Ultrabond Eco P909 2K

TownHouse Duomo Hotel Milan (Italy)

TownHouse Duomo by Seven Stars, a brand new boutique hotel in the heart of Milan, opened in February 2015. The hotel, located inside Vittorio Emanuele II Arcade, is one of only eight hotels in the world to have been awarded seven stars. The building that houses TownHouse Duomo sits in the heart of the most fashionable area of Milan and also has a restaurant, private meeting and function rooms and a café which, in the





“Crisis” Sculpture Hellikon (Greece)

“Crisis” is a sculpture by the Greek artist Tasos Nyfadopoulos addressing the consequences of the financial, economic and social crisis that started in 2011. The main objective of the sculpture is to present in the most vivid and imminent manner the consequences of crisis, focusing mainly on man’s suffering. The sculpture, showing a financial index and a man, vividly portrays the man’s psychological condition. MAPEWRAP G UNI AX glass fibre rolls were applied in the molds of the sculpture using MAPEWRAP 31 epoxy adhesive to create the outer shell of the sculpture. The MAPEWRAP G UNI AX fabrics were laid on the molds and pressed with metal rolls. MAPETHERM EPS extruded sintered polystyrene insulating panels were used to fill the inner shell of the sculpture (prior to the application of the MAPEWRAP G UNI AX rolls) and bonded together with MAPETHERM AR 1 adhesive. MAPETHERM NET was also applied on the front and back side of the final polystyrene block. MAPEWRAP 31 was also used to fix pvc tubes placed in some holes in the molds. MAPEWRAP G UNI AX and MAPEWRAP C UNI AX, bonded with MAPEWRAP 31, were also used in the section of the Economic Index. The human figure of the sculpture was first sculpted in clay and then a silicon mold was made. The cast was made with MAPEWRAP 31 and quartz.

TECHNICAL DATA

Period of Construction: 2014-2015

Period of the Mapei Intervention: 2014-2015

Client: Hellikon Municipality

Design: Tasos Nyfadopoulos

Project Management: Tasos Nyfadopoulos

Mapei Distributor: LOGIKI

Mapei Co-ordinator: Ioannis Koropoulos, Mapei Hellas (Greece)

Photos: Dimitra Fotopoulou

MAPEI PRODUCTS

MapeWrap C UNI AX, MapeWrap 31, MapeWrap G UNI AX, Mapetherm EPS, Mapetherm AR1, Mapetherm NET



**TECHNICAL DATA****Period of Construction:** 2012-2015**Period of the Mapei****Intervention:** 2012-2015**Mapei Co-ordinators:** Massimo Seregni, Andrea Serafin and Mapei SpA (Italy)**MAPEI PRODUCTS**

Products belonging to all the 15 Mapei product lines

Expo 2015 Milan (Italy)

After the final visitor entered at 5 o'clock in the afternoon on 31st October, the Milan Expo drew to a close. Alongside the Tree of Life, the real star attraction of this Expo, the most striking thing was the wave of human beings that flowed through the turnstiles every day: an average of 116,000 people-a-day. They explored the subject of this World Expo, "Feeding the Planet, Energy for Life", and all the various issues concerning sustainable food presented in the 148 pavilions and clusters. Dismantling works on the structures that hosted the pavilions began in November and are employing about 600 workers. Most of the nations involved will be recycling, either in their home country or elsewhere, their own pavilion. Those nations that will not be reusing their structures will in any case, have to recycle the wooden and metal parts of their pavilions. The 'Seme dell'Altissimo' sculpture has been donated by its designer, Emilio Isgrò, to

Milan City Council that will be relocating it in Sempione Park.

The Mapei Group supplied systems and the constant support of its Technical Assistance team during building operations, helping the contractors by providing solutions for dealing with problems arising on site. On the exhibition site, Mapei supplied products for the construction of 65 pavilions, the nine clusters and other works, such as the foundation slab on which the site was constructed, as well as the protective coating for the asphalt pathways along the main axes (Cardo and Decumano). The Company also contributed to works around the site (the Expo Bridge and TEEM, Milan East External Bypass) and inside the city of Milan (the M5 underground line and the Pietà Rondanini Museum). Mapei also decided to sponsor the USA Pavilion, the 'Seme dell'Altissimo' sculpture, and the Consorzio Orgoglio Brescia, which was responsible for constructing the Tree of Life. Mapei was also part of the "Ecco la mia impresa" (This is my business) project hosted in Intesa Sanpaolo's Waterstone Pavilion (see *Realtà Mapei International* no. 54). Mapei accompanied over 3000 international operators working in the building industry on tours around Expo and the city of Milan. By joining the "Adopt



a School for Expo” project promoted by Confindustria (Confederation of the Italian Manufacturing and Service Companies), Mapei chose to adopt the E. Molinari Technological Scientific High School. Mapei covered the costs and expenses of the students’ visits to the Expo, finishing off with a trip to the Mapei R&D Laboratories, to be followed up by training and apprenticeship courses.

In accordance with the Expo theme “Feeding the Planet, Energy for Life”, Mapei promoted solutions and systems suitable for all those environments where food and drink are stored, processed, distributed and consumed (the brochure *Food. Mapei Systems for the Food and Drinks Industry* is available at www.mapeifood.com).





Torre Arcobaleno Milan (Italy)

Torre Arcobaleno is the old water tower owned by RFI, the Italian Railway Company, located in the Porta Garibaldi railway station, one of the most important infrastructure hubs in the city of Milan.

The structure, 35 m high and 10 m in diameter at the base, originally had a rough cement finish over its 1000 m² surface and was in very poor condition. In 1900 RFI decided to give the tower a complete facelift and transformed the Tower into a rainbow of multi-coloured ceramic tiles. 25 years after that first facelift, Mapei took part in the renovation works. For the concrete repair works, Mapei proposed MAPEFER 1K anti-corrosion cementitious mortar and PLANITOP SMOOTH & REPAIR fibre-reinforced, thixotropic grout.

The uprights of the tower were then painted with ELASTOCOLOR PRIMER consolidating primer and ELASTOCOLOR WATERPROOF acrylic paint.

To bond the new ceramic tiles, Mapei supplied ULTRALITE S1 QUICK adhesive. The joints were then grouted with ULTRACOLOR PLUS anti-efflorescence mortar. MAPESIL LM silicone sealant was used to seal expansion joints.

To repair the waterproof layer on the round roof, after preparing and skimming the base concrete with PLANITOP SMOOTH & REPAIR, a coat of IDROPRIMER adhesion promoter by Polyglass (Mapei Group) was applied.

Polyglass also supplied POLYFLEX LIGHT bitumen membrane, POLYFLEX LIGHT MINERAL membrane, and MINERAL FIX paint.

TECHNICAL DATA

Year of the Mapei Intervention:
2015

Client: RFI Gruppo Ferrovie dello Stato

Design: Studio Original Designers 6R5 Network

Contractor: Bazzea – B Construction Technology

Mapei Coordinators: Mirko Demichele, Francesco Di Chiara, Gianluca Brichese, and Paolo Sala, Mapei SpA (Italy), Michele Dalla Pasqua, Polyglass SpA (Italy)

MAPEI PRODUCTS

Mapefer 1K, Elastocolor Primer, Elastocolor Waterproof, Ultralite S1 Quick, Ultracolor Plus, Mapesil LM, Planitop Smooth & Repair.

POLYGLASS PRODUCTS

Idroprimer, Polyflex Light Mineral, Mineral Fix



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ADMIXTURES FOR CONCRETE



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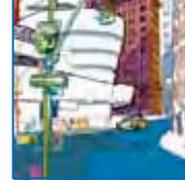


PRODUCTS FOR STRUCTURAL STRENGTHENING

PRODUCTS FOR BUILDING



WALL PROTECTIVE AND DECORATIVE COATINGS



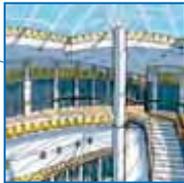
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PRODUCTS FOR CERAMICS AND STONES



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PRODUCTS FOR ROAD MAINTENANCE



PRODUCTS FOR CEMENTITIOUS AND RESIN FLOORING



PRODUCTS FOR URBAN FITTINGS



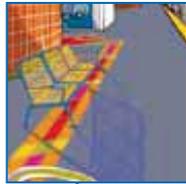
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