

Realtà MAPEI

MIDDLE EAST AND EAST AFRICA

Dear Readers,



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

It is always a great pleasure to start something new, especially when it is supported by extensive experience.

With more than 180.000 copies of both the Italian and International versions, as well as fifteen local editions issued by subsidiaries, Mapei's magazines ensure that our reputable audience is always at the source of news and activities that describes Mapei role globally and locally in the field of the construction industry.

Therefore, I am happy to introduce our new sixteenth localised Realtà Mapei edition for Middle East & Africa region issued by our branch office in Dubai.

"World of Mapei - Middle East & Africa" will tell the stories of interesting projects done by Mapei in one of the fastest growing economies in the world. Our vast range of products and systems will move us even closer to the large number of clients, architects and project managers.

It has been 10 years since we started developing business in this region and we are exciting and looking forward to writing about new projects in which we have participated with our innovative products and solutions. Our presence in this region is empowered by our factory in Dubai and local and regional offices with more than 120 employees.

I hope that you will find it interesting to read about the various projects, such as Al Habtoor City Hotels, Palm Jumeirah Viceroy Hotel in Dubai or Louvre museum project in Abu Dhabi, as well as big projects done in whole GCC region and North-East Africa.

We are celebrating 80 years of our success story and now with one additional candle on our cake, which represents the 10th anniversary of Mapei MENA region helps us to realize that such jubilees bring new energy and wiliness to go further with our product researches and innovative solutions. Our goal is to improve working environment and better quality of life on all building sites over the world.

With the desire for progress and further development, I am sending you my special greetings!

A handwritten signature in black ink, reading "Adriana Spazzoli". The signature is written in a cursive, flowing style.

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COVER STORY:

Marvelous Hotel overlooking the sea, built on the artificial island of Palm Jumeirah is new attraction in Dubai. The mammoth hotel is design by architect firms Yabu Pushelberg and NAO Taniyama and Associates. Mapei contributed with products for installation of 150.000 m² of marble and ceramics inside the hotel.

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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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10 Years of successful business in the Middle East Region





With Mapei celebrating its tenth year anniversary, Stefano Iannacone, Regional Director of Mapei Construction Chemicals L.L.C., for the Middle East and Africa, takes a look back at the decade just past, and outlines his plans for the future



STEFANO IANNAZONE,
Regional Director of Mapei
Construction Chemicals L.L.C.

The other day, as we were clearing out our offices in preparation for our move to the new premises, our chairman called me over, saying that he had a gift for me. As it turned out, he had found the very first bag that had come out of our Mapei production plant, back in 2009. It was literally the first bag to have come out of the plant, and it had been signed by everyone who was on our team, all those years ago.

I'm proud to say that many of those who signed the bag back then are still valued members of our team, and it's a gift that I will treasure, as I intend to frame it and have it hung in my new office, to remind me of the journey Mapei has undertaken over the last ten years.

I often think back to how things began for our company, to remember how we began life, not as Mapei, but as Innovative Building Solutions. Operating out of a small apartment in Karama, we used to hold our meetings in the kitchen, and stick our heads out of a window to get a clear signal for our mobile phones!

As many of you know, it was a long road to get to where we are today. Although it was only in 2007 that we established ourselves in the UAE, we'd already been active in the market for a few years. In fact, it was just three years ago that we could take over the rights to the Mapei name and become Mapei Construction Chemicals. We had to be patient and bide our time, but as they say, all good things come to those who wait, and it was certainly worth it!

In 2009, we finally found the perfect production facility for our purposes, buying out our current production plant from its then owners in 2007, and then spending two years and large amounts of investment to put in our own production lines and bring it up to the standards Mapei is known for.

During this time, our team grew steadily, supported by the great faith our shareholders had in us, despite the struggles and low sales figures we had at the time. However, the two years were not wasted by us, as we worked hard on two fronts to bring ourselves up to the standards we expect of ourselves – we had an engineering team travel constantly through Italy, following up on the build-up of the production line.

On the other hand, we began to carve out a niche for ourselves in a market that was heavily dominated by our competition. To do this, we started by focusing on those product lines that we thought would be most successful in the shortest period of time. It was because of this



ABOVE: Production and warehouse facility.
LEFT: First produced bag upon opening the production line with employees signatures.
BELOW: Dimensional stability testing in our laboratory facility.



strong work ethic and determination that we were able to start creating awareness and import products from Mapei's plants in Italy and around the world, until we were ready to shift to local production.

Ten years later, here we are, on the brink of moving to our office building that will have more than 2.000 m² of built-up area, which will include a showroom and training centre, while we have also built up additional storage capacity at the production facility – an 8.000 m² covered warehouse.

These new facilities will stand us in good stead as we start taking the next steps in Mapei's Middle Eastern evolution, as we look to move forwards into new territories and product lines. These investments in our future come as part of the company's wider strategy for the region, with plans underway to enter new product lines and turn Dubai into the regional headquarters for the Middle East and Africa.

We have already founded Mapei Doha and we're in the process of incorporating Mapei Egypt and Kingdom of Saudi Arabia, while we're looking at entering the East African market. Although we'll start as a commercial company in Egypt, we already have production investment in mind. In the Kingdom of Saudi Arabia, we expect to be moving by the end of the year. We have already constituted Mapei Saudi. Further afield, we already have people working for us on the ground in Kenya, in East Africa, in Iran and in Pakistan.

For the time being, the manufacturing will be handled out of Dubai, but as previously mentioned, we plan to manufacture in Egypt, in Africa, in Iran and especially in Pakistan, as it's a huge potential market for us.

Mapei currently has 15 product lines, and we're slowly introducing more and more. We will respond according to the needs of the market and how it evolves. We'll always be looking to add more to our offerings, as per the market requirements.

We have been planning for this for a long time. Thanks to the

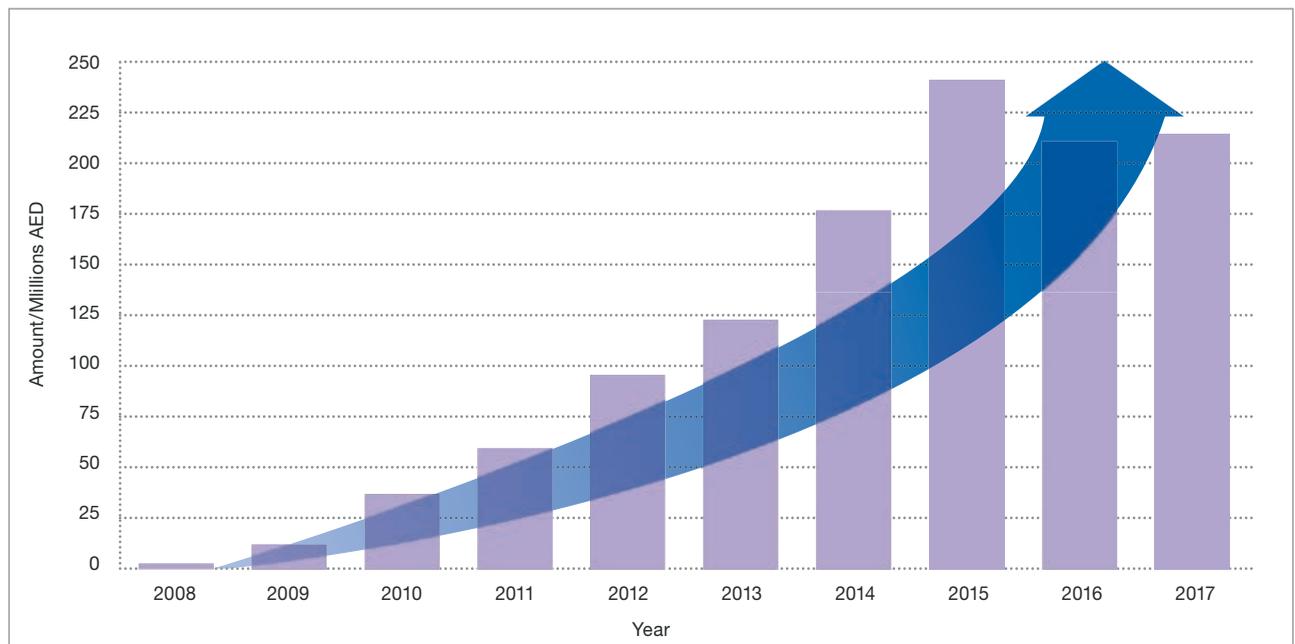
way our production facility was built, we have the ability to increase volumes without altering capacity. This is a model we'll follow in other countries – where we plan to go and manufacture. We'll start producing both powder and liquid products – those formulations that we know can establish our presence in the market fastest.

You have to look at the market and see how you can be successful in the shortest period of time. Once you cover your baseline, then you can spend some money and go into other productions.

We're always very close to the market, so our labs and research departments will continue to formulate and develop products according to the market requirements. They are different from country to country, area to area, but if you want to be successful, then you have to be ahead of the competition. Which means that you have to think about what can be done better, compared to what the market has today.

While the future promises to be bright for Mapei, it has still been a challenging ride to get to this point. But one thing I am proud of is the people in this company. Going from that kitchen in that small apartment and seeing what we've built and bought to the group gives me immense pleasure. I think everybody that has been a part of Mapei's journey over the last ten years feels that this is their company. When I see the team growing, especially in a challenging industry like construction, it gives me a big sense of satisfaction to see where we are after a relatively short period of time. Everywhere you drive in Dubai or the UAE, you see big, iconic developments and I hope our Mapei team realises that they have been an integral part of building the fabric of Dubai. While we may not build with our own people, the products we supply are used across massive developments in the region!

GRAPH 1: Growth in sales throughout years.



Some of our most notable projects over the last 10 years:

Hospitals:

- Cleveland Clinic
- Mafraq Hospital

Hotels:

- Emirates Palace Hotel
- Burj Khalifa
- Armani Hotel
- Kempinski Wave Oman
- Fairmont Hotel
- Soffitel Palm Jumeirah
- Le Meridien Mina Seyahi
- Emerald Palace Hotel

- Abu Dhabi airport Expansion and Renovation

- Abu Dhabi Midfield Terminal
- Maktoum International Airport

Universities:

- New York University Abu Dhabi
- Khalifa University

Metro:

- Dubai
- Doha
- Riyadh

Airports:

- Dubai International Airport Terminal 3 – New Concourse
- Renovation of Dubai International Airport Terminal 1 & 2
- New Doha Airport

Malls:

- Dubai Mall

Museums:

- Louvre museum

Entertainment parks:

- Ferrari World

SPECIAL FOCUS ANNIVERSARIES

RIGHT: Laboratory technician performing tests in Mapei laboratory facility within production plant.
BELOW: Production in process

This has only been achievable because of the commitment and family support given to us by everyone involved with this company. It's worth mentioning that just a few years ago, soon after we had started production at our factory, we went through a very challenging period.

When Mapei stepped into this market, there was an overlap with the crisis that hit Dubai. I remember in particular that although there was a plant and resources in place, we weren't selling anything. There were strong competitors in the market, and although we came from an internationally renowned company, we were still unknown locally.

It really was an unknown situation – the crisis was completely new to Dubai and we were stepping into a situation where it felt like the ground under our feet was disappearing. But the internal commitment provided by the Mapei group gave us the possibility to change our future.

While competitors were losing staff and assets, Mapei was investing in itself, during a period when no one was investing. From my point of view, that was a pivotal moment. Somehow, we were able to turn it to our advantage.

This is something I remember very well, not because it was a difficult time, but because it was really surprising – it's not something you can take for a given. The Mapei family supported the construction of our division at a period when it was completely unclear.

And it's this commitment, this family support that was crucial in the generation of this company. We couldn't do all the things that we have without the people involved. Because of the type of people working at Mapei, we were able to turn this tough situation into our favour.

This will continue to be my biggest challenge as we move forwards into a new era for Mapei in the region. Although we have built a company from scratch, we have to continue to man-



age the company culture, alongside the local culture that we work in.

Take out the professional knowledge of whatever role it is, what we continue to look for at Mapei is the capability to adapt to the work environment. It's about open mindedness and understanding of each other. I've lost count, but for sure, we have more than 25 different nationalities in this company, and everything comes down to the ability to sit down, talk and work with anybody.

That is what makes Mapei great, and that is what has allowed us to flourish and grow, through tough times and good times. For me, that is the Mapei way, and I look forward to seeing it continue for many more years to come.

Happy tenth anniversary to all of you!



MAPEI FIGURES



2.4

Billion Euros estimated consolidated turnover in 2016



28

Main research centres in 18 countries



more than

1.000

New formulations every year of the Mapei Group



more than

9.000

Employees, with 12% working in R&D



3.000.000

Tons of CO₂ saved thanks to Mapei additives for cement grinding



more than

5.000

Products for the building industry of the Mapei Group



more than

50.000

Tons of CO₂ offset



73

Plants in 5 continents, in 34 different countries



81

Subsidiaries in the Group



more than

66.000

Clients around the world



more than

161.000

Professionals from the sector involved in Mapei training courses



more than

25.000

Tons of products shipped every day



Learn more on www.mapei.com



The future begins today

by Giorgio Squinzi



The first comment I would like to make 80 years after Mapei was first established is that the **company has never betrayed its vocation to be a leading player in innovating** the building market and often anticipating its needs.

A path first taken with courage and determination by **my father Rodolfo**, who had the foresight to sense and understand (during a period which, in certain respects, was still pioneering) that progress and improvement were about to make a rapid and resounding impact on the “Auxiliary Materials for Building and Industry” (this is what Mapei actually means) sector.

Mapei was a direct result of this insight and the company has kept on growing right through to the present day, while managing to hold on to that winning symbiosis of family values and business values.

Extraordinary results that immediately catch the eye if, taking a look 10 years back into the past, we compare today’s figures with those published in conjunction with Mapei’s first special anniversary - marking 70 years in business - that we celebrated rather officially.

Since then the world building market has changed considerably: in certain countries, like Italy and France, it has shrunk, while in others it has grown. **Mapei has successfully managed to adapt, holding onto the status it has attained in Italy**, where the market has halved in size, **and growing by between 62%-82% in the rest of the world**, gaining new market shares and finalising new acquisitions.

Mapei has never changed course during this process of adaptation and growth, constantly expanding its wide range of products while keeping to those three fundamental pillars that have always characterised its growth: specialisation, internationalisation and constant commitment to Research and Development.

From a purely business viewpoint, I can safely say that we have become more competitive by opening so many new manufacturing plants around the world and extending our business operations to so many other countries.

Its constant quest to grow is now reflected in the company facts and figures. The Group now has 81 subsidiaries, **28 main Research & Development Centres**, 1 of which is a Corporate Laboratory, and **73 manufacturing plants operating in 34 countries**, each equipped with its own Quality Control laboratory.

Important facts and figures paying testimony to a process that began back in the 1970s and has never relented. It is worth pointing out that over the last 10 years the Group has acquired a total of 20 new subsidiaries, including start-ups and acquisitions.

Constant internationalisation is directly linked to the increase in revenue over the last 20 years: in 1990 it was 150 billion Italian lire, but by 2001 it had reached an aggregate figure of 725 million Euros, 57% of which made abroad. From 2006 to the present day the number of product lines has increased from 9 to 16 and the total number of staff - just over 500 in the 1990s and 4800 in 2006 - is now close to 10,000, 12% of which working in research.

➤ **Mapei has successfully managed to adapt, holding onto the status it has attained in Italy and growing by between 62%-82% in the rest of the world**

➤ **R&D: the driving force behind growth**

» Continuing to grow transparently, without taking shortcuts based on a successful process of internationalisation

For year 2017, we are expecting consolidated turnover of 2.5 billions of Euros. **Behind such tempestuous growth there are great success stories** in certain regions of the world, such as North America, Great Britain, Poland, Northern Europe and the vast Asian region of the Pacific.

Growth has always been my obsession: healthy, balanced and stable growth leaving behind it the foundations for further progress.

And continuing to grow transparently, without taking shortcuts based on a process of internationalisation that is self-sustaining in nation after nation, is still one of the anchors of our corporate mission.

Growth in line with carefully targeted goals **in the name of sustainability and aimed at creating increasingly high-performance products.**

Sustainability and respect for the environment, which is an across-the-board commitment for Mapei, without ever forgetting that the products of a non-eco-sustainable company could never be considered eco-sustainable and remembering that “sustainable” building also means saving on natural resources, water, energy and non-renewable materials, while simultaneously reducing emissions and solid/liquid waste.

All this without overlooking the significant social role Mapei plays, which, for me, is the flower in our buttonhole setting an example of how to become increasingly competitive: **no negative balance sheets or drop in revenue, no resorting to redundancy pay for staff**, no loss of jobs to reduce the number of staff while, in contrast, continuing to provide financial backing for sports activities, artistic enterprises and University projects.

A global vision of how to do business, whose foundations lie in focusing on the people who make up the great Mapei World and on our faith in their intrinsic capabilities.

We have achieved these exceptional results thanks to **a wonderful team of now almost 10,000 people**, to whom, on a special occasion like this 80th anniversary, I would like to express my most heartfelt thanks.

It is thanks to their contribution that we can continue to nourish this **combination of creativity and innovation**, a grounding value of Mapei’s business culture.

Because **new ideas generate innovative processes, which, in turn, lead to even more new ideas**. And this virtuous circle can only be continued with the help of special people in an environment that encourages creativity, where the goals are clearly set and there is real determination to improve.

Transparency and efficiency to create innovation and guarantee performances of the very highest order: these are Mapei’s basic ideas shared by a wonderful group that is destined to grow for many more years to come. Always well aware - to make this important anniversary in Mapei’s history even more meaningful - that, as Pope John Paul II once said, **“the future begins today, not tomorrow”**.

» **Sustainability and respect for the environment: 2 absolute musts**

» **A wonderful team of now almost 10,000 people**

» **New ideas generate innovative processes, which, in turn, lead to even more new ideas**



80
years
1937-2017



Happy
Birthday



Mapei: building the future for the last 80 years

Mapei is celebrating its 80th anniversary in 2017...

A success story lasting 80 years that is still continuing... The story of a company founded in the suburbs of Milan in 1937, which now operates worldwide drawing on incomparable know-how that means it now leads the market for products for the building industry.

From its founding to the present day, Mapei has contributed to both small and major building/renovation works and the conservation of important buildings for both Italy's and the world's artistic and cultural heritage.

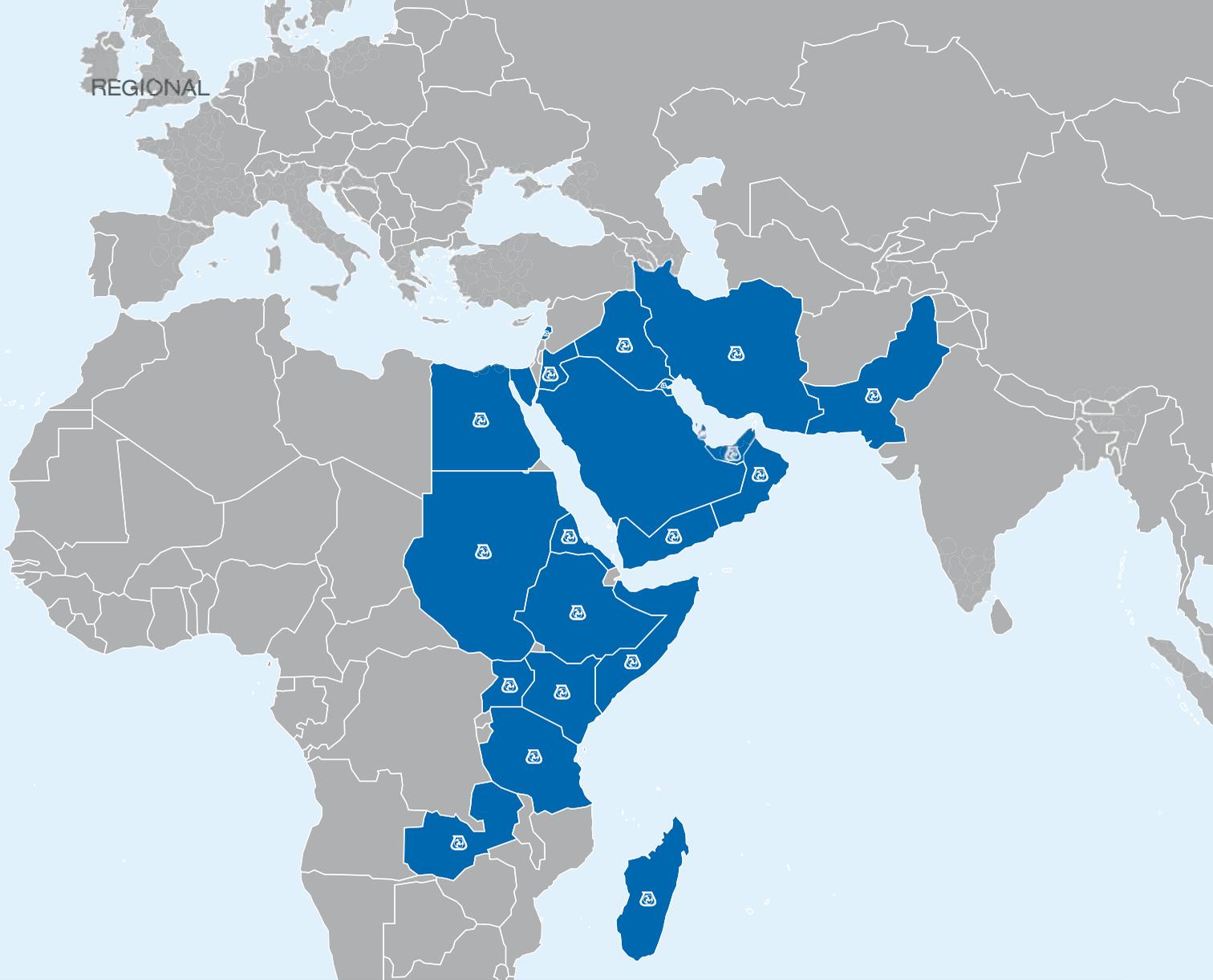
Everything from cutting-edge architectural complexes or projects of the utmost technical complexity to major public works or sports facilities; from the most prestigious museums to renovation projects on historical buildings; from public infrastructures to the homes we live in.

In order to build to the very highest standards in the world, we follow a very definite corporate philosophy: specialisation in construction work, internationalisation and research, offering our clients the most customised service possible... because at Mapei our clients are also our partners.

A team spirit that has always been based around those healthy principals coming from sports, which Mapei maintains with great determination and success.

Mapei's commitment to research is fundamental: it is aimed at providing safe and innovative solutions for improving the working environment and quality of life on all building sites and in all construction projects, even the most complex and demanding.

This means innovation is the norm for Mapei production plants manufacturing solutions for high-speed markets. Here cutting-edge manufacturing technology is used to keep up with the high-speed of the industry, while constantly monitoring quality control in everything from raw materials to packaging.



Developing business strategies in The Middle East and The North-East Africa region

In the year 2008 Mapei decided to open its first subsidiary in the Middle East region, in Dubai, UAE. At the beginning, our main focus was to cover UAE market. However, the long-term business strategy always considered covering the construction markets of surrounding countries.

In following years, and in line with Mapei's globalisation strategy to be closer to the market, a state-of-the-art manufacturing facility was opened at Dubai Investments Park (DIP) on a 40,000 m² plot. Products are manufactured to the most stringent health, safety and environmental requirements as

well as complying with the latest material standards, such as GSO: ISO 13007-1 and GEV.

In 2013, Mapei's management decided to create a team whose main task was to establish an export business in the region. Qatar, with its steady 2.5 % year to year growth, came as natural choice to start with. With huge efforts and support from Dubai's office departments we were able to achieve another success story in Doha and sales turnover started doubling and tripling year on year by securing the top and most prestigious projects in Doha. World's first sustainable



downtown regeneration project – Msheireb Doha, located in the heart of Qatar’s capital city and designed to regenerate and preserve the historical appeal of the city, was first huge project signed with Mapei products. Huge quantities of TOPCEM — our special fast drying polymer modified hydraulic binder for controlled shrinkage screeds was delivered to the site. Waterproofing products, tile adhesives and many other products has followed this huge project. Our second flagship project was Hamad International airport – one of the top-rated airports in the region. After successful finishing of projects many others has come and been written in Mapei’s project portfolio, like: Qatar National library, Doha Metro station and many other projects.

Based on the success in Qatar, Mapei has decided to open an office in Doha in 2015. Our team in new established office continued with development of successful story offering great support for local market needs. Our export activities than start shifting to the surrounding countries.

Moving to another major step, we started focusing on the Kingdom of Saudi Arabia (KSA), if not the biggest, then is one of the region’s biggest construction markets. Ever since 2015,

Mapei has been focused on increasing its presence within KSA market due to both its size and enormous potential.

The construction market in KSA is continuously growing and that has been a huge encouraging factor for us to move forward with projects. Over the past few years, Mapei has been present in then KSA market and has been able to provide systems and solutions for significant projects. Our systems are installed in Riyadh Metro, Makkah Royal Clock tower, King Abdullah Petroleum research and studies centre, Makkah train station, Madina Train Station and many more.

Technical support is a pertinent factor in export projects. We believe in long term partnership commitment and we always offer our technical support to the clients, re-sellers and professional applicators on site and through continues training and seminars.

Step by step we are determined to increase our market share all across the region and expand to new markets strengthening our position in the Middle East region and North-East Africa.

Sherif Sedky, Export Manager





The Makkah Clock

A record-breaking tower, an oversize clock and a “tailor-made” adhesive: the story of a demanding intervention

After the Emirate of Dubai with its Burj Khalifa skyscraper, it is now Saudi Arabia’s turn to boast about having one of the tallest skyscrapers in the world. In fact, last year at The Mecca – the holy Islamic city – the Al-Bait Abraj Towers, known also as the Makkah Clock Tower, were inaugurated.

This complex has been built to offer high quality lodgings and recreational facilities for visitors to the Masjid Al Haram Mosque next to the Makkah Clock Tower. The largest mosque in the world can now host up to a million worshippers. The complex, designed by the Dar al-Handasah Shair & Partners design studio, has a total surface area of 1,500,000 m² and is made up of seven towers split into residential units and hotels, erected on a low, 15 storey main body. It has numerous shops, two heliports and a large car-park and can host up to an estimated 100,000 guests.

The Figures Behind the Challenge

The 120 storey Clock Tower is the tallest in the complex: it measures 607 metres to the top of the spire with its scintillating crescent moon, 11 less than the Burj Khalifa skyscraper in Dubai. At the very top of the tower there is a steel structure, similar in shape to the Eiffel Tower, in Paris, measuring 251 metres in height and weighing 12,000 tonnes. There is an enormous clock installed in the tower. A masterpiece of engineering, the clock has been located on the top of the tower according to the wishes of the King of Saudi Arabia Abdullah Bin Abdul Aziz Al-Saud, a gift to the holy city and to the pilgrims visiting Mecca. The clock is the largest in the world and is made up of four faces, two round and two oval, one for each side of the structure. Visible from a distance of 8 kilometres, it is more than five times bigger than the famous Big Ben clock face in London. It is powered by a series of solar panels, but it may also be connected to the main grid in Mecca. Running three hours ahead of Greenwich Mean Time, the size of the clock is really impressive: the

longer sides are 45 metres long and the clock face is 46 metres in diameter. The four clock faces are lit up by a total of 2 million LED so that the phrase "Takbir" ("God is great"), positioned on top of the tower, is visible, and light up five times every day to coincide with prayer time. Floral decorations in classic Islamic style ornate the corners of the structure where the mechanism is housed, while geometric designs complete the face and hands.

The top of the tower where the clock is housed was designed by a team of German and Swiss engineers, along with the help of specialists from all around the world. The clock was designed by the German studio SL-Rasch, specialised in the construction of "lightweight" structures.



RIGHT: The top of the Tower with its clock and the phrase "God is great".

BELOW: Various phases during the making of the clock.



IN THE SPOTLIGHT

KERAPOXY ADHESIVE

Two-component, epoxy adhesive with no vertical slip for ceramic tiles and stone material. KERAPOXY ADHESIVE is used for internal and external bonding of ceramic, porcelain and stone to floors and walls, on all substrates normally used in the building industry. It has an excellent durability and resistance to ageing, a perfect bonding on all types of substrate commonly used in the building industry, it hardens by chemical reaction without shrinking, becoming extremely strong. It can contribute up to **3 points** to obtain the LEED certification.



TECHNICAL DATA

Makkah Clock Tower, Makkah, Saudi Arabia
Designers: Dar al-Handasah Shair & Partners; SL-Rasch (Leinfelden-Echterdingen, Germany)

Period of Construction: 2008-2012

Period of Intervention: 2008-2012

Intervention by Mapei: supply of products to install and grout glass mosaic tiles at the top of the Tower (performed in Dubai)

Client: Premiere Composite Technologies LLC - (Dubai UAE)

Contractor: Saudi Bin Ladin Group (Gedda, Saudi Arabia)

Laying Company: Premiere Composite Technologies LLC - (Dubai UAE)

Laid Material: glass mosaic tiles made by Trend Group (Vicenza, Italy)

Mapei Co-ordinators: Nisreen Salman, Tarana Daroogar and Daniele Spiga, (IBS-Mapei); Enrico Geronimi and Cesare Misani, (Mapei SpA)

MAPEI PRODUCTS

Laying and grouting of the mosaic tiles: Kerapoxy, Kerapoxy Adesive FR*

*Product formulated specifically for this site

For further information on these products see www.mapei.ae and www.mapei.com



The Riyadh Metro — Tunnel & underground waterproofing with Mapeplan system

The Riyadh Metro is a rapid transit system serving the city of Riyadh. It consists of 6 metro lines spanning a total length of 176 kilometres with 85 stations. The project cost \$22.5 billion to build. It is scheduled to open in 2019. Estimates suggest that the number of Riyadh's population will grow from about 6 million to more than 8.5 million over the next 10 years. This will require the provision of more effective alternative ways to meet the needs of the city from population growth and transportation.

In June 2013, a shortlist of 3 major global consortia was chosen to build the metro. Contracts were awarded in July 2013, with construction planned to start in 2014 and took 4 years to finish. The ground-breaking ceremony was celebrated on April 4, 2014, with an opening now projected for 2018.

It is currently being built by construction companies including Bechtel, FCC, Strukton, Salini Impregilo, Larsen & Toubro and Samsung. It is expected to be the backbone of the city's public transport system as it will integrate with an 85-kilometre (53 mi) three-line bus rapid transit (BRT) network.[4]

Line 3 being executed by the Salini Impregilo/Larsen & Toubro/Samsung joint venture and runs for 41.58 km, starting from the west (near the Jeddah Expressway) and ending in the east (near the National Guard Camp of Khashm El Aam), for a total of 22 built stations. Majority of the line runs underground through the part known as old Riyadh

The trains that will run on it will have a maximum length of 36.7 m (2 carriages), a capacity of 267 passengers and a maximum speed of 100 km/h.



which had to be designed to accommodate a few hundreds of penetrations through it.

Working closely with the design teams from Salini Impregilo and Larsen & Toubro, their design concerns to accommodate the waterproofing had to be addressed for each unique situation.

The first situation was to ensure that the products met the design life of the structure which was 120 years. The Mapeplan TU S PVC membranes were put through accelerated ageing tests to prove the long-life expectancy.

The Mapeplan TU S double layer membranes system were to be installed loose around the structure and compartmentalized with the highly flexible Idrostop PVC BEC ME 32T waterstops every 200 m². The waterstops also incorporated the IDROSTOP MULTI 11 re-injectable hoses in them. This was to ensure that any gaps while casting the concrete could be filled with the micro-fine hydraulic binder with pozzolanic action — MICROCEM 8000. This way the leakages in any compartment could be effectively restricted if there were any gaps in the cast concrete.

The second situation was to devise a system which would allow the repair of the membrane in case of damage. To solve this requirement a double layer system was designed using the MAPEPLAN TU S 20 and the MAPEPLAN PVC Protection 15 membranes. These layers would be welded at the edges of the compartments to enable injection between the two layers in case of leakage. To facilitate this, MAPEPLAN injection flanges were installed with 5 in every compartment to cover the whole surface area of each compartment. These were to be injected with MAPEGEL UTT, re-swellable acrylic resin, to flood the compartment. This resin gels and then swells when it comes in contact with water, thereby keeping the water out of the structure. The tension anchors penetrating the structure through the slab

The work plays a key role for the city's practicability, considering that its population is expected to increase from its current 6 million inhabitants to 8 million by 2030. The new metro will therefore reduce traffic congestion and lower pollution, since it will allow to limit the number of vehicles present on the city's streets, creating a sustainable and efficient means of transport.

Project development

Mapei became involved with the project during the design phase with the joint venture partners. The project was unique in many ways. Underground stations were all under the ground water table level. The deepest ones were 36-40 meters deep. The ground water was contaminated and highly saline.

The stations were being constructed in extremely congested parts of the city and required diaphragm wall shoring to support the ground before excavation could be carried out. This was coupled with the fact that all the walls and ground slabs were held in place with tension anchors penetrating into the concrete. These anchors were placed to prevent uplift of the structure, because of water pressure after the construction was complete. In layman's terms, a waterproofing system

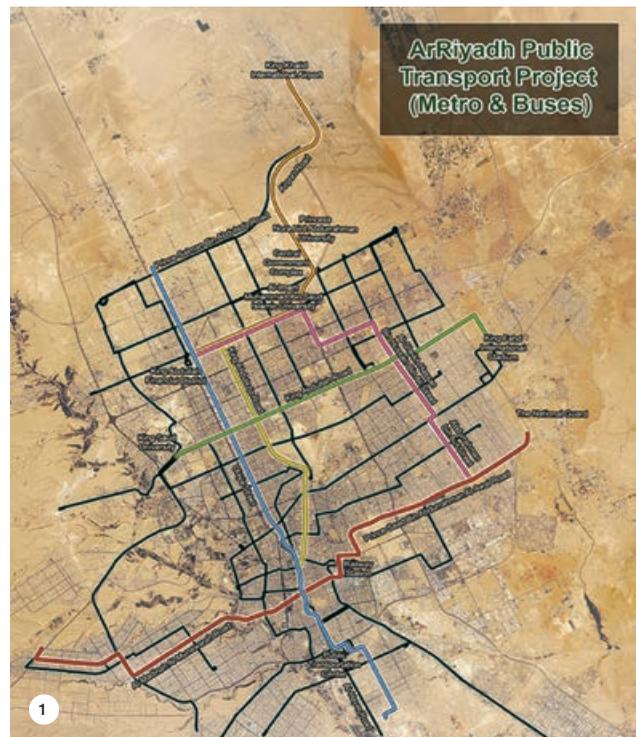
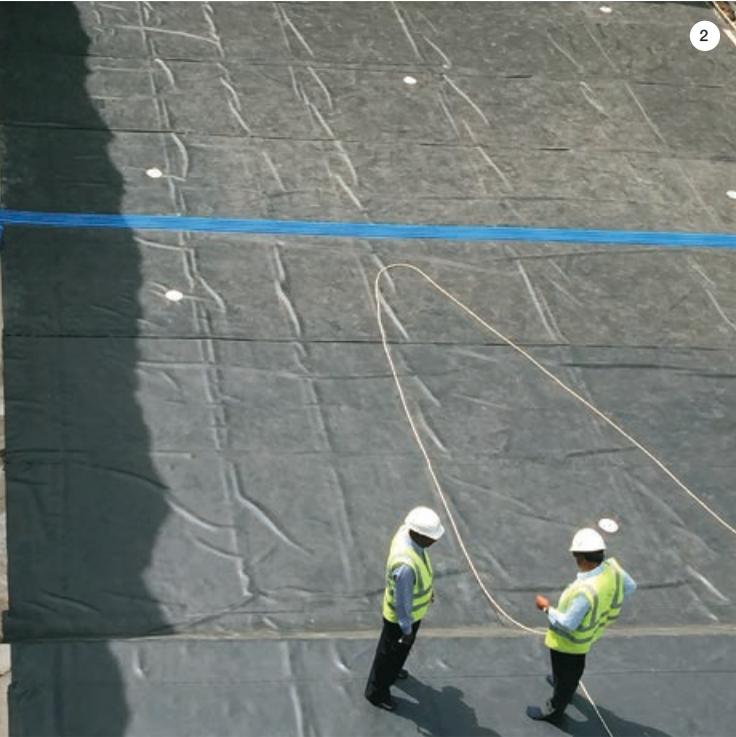


PHOTO 1: Project layout of the various Metro lines.



2



3

PHOTO 2: Layout of flanges in the double layer compartments.
PHOTO 3: Waterstop incorporating the IDROSTOP MULTI 11 re-injectable hose.
PHOTO 4: Anchors penetrating the ground slab.
PHOTOS 5 and 6: Showing the depth of the iconic station and a close up of the anchor treatment.

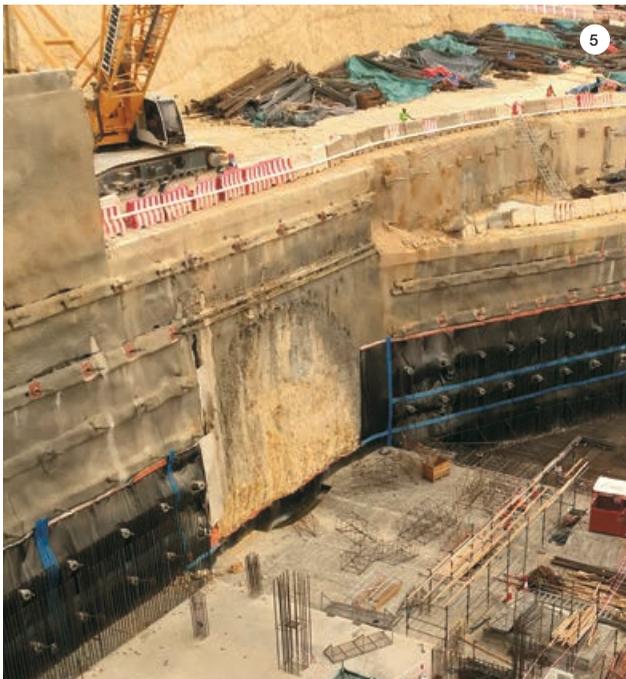


4

and the retaining walls posed an immense challenge to the designers, to accommodate the waterproofing system. A unique solution was found to treat these ground anchors. Collars were fabricated using the MAPEPLAN TU S20 membrane. These collars were filled to one third the depth with MAPEGEL UTT which is a hydrophilic gel. The gel and the collar were then encapsulated with free flowing grout — PLANIGROUT 300 ME PCT to contain the swelling action of the MAPEGEL UTT. The shoring diaphragm walls also had the same anchors at the Downtown Iconic Station. The same solution was applied



6



5

for the treatment of the anchors. The work was slow and time consuming but was a perfect solution to stop leakage through the anchors.

The following products were used to arrive at a perfect solution to the many design challenges associated with the Riyadh Metro Underground Works

- MAPEPLAN TU S20 PVC synthetic membrane which is manufactured by co-extrusion;
- MAPEPLAN PVC PROTECTION 15 synthetic PVC membrane used as a secondary liner;
- IDROSTOP PVC BEC ME 32T waterstop for compartmentalisation;
- IDROSTOP MULTI 11 re-injectable hose for the injection of micro cement;
- MICROCEM 8000 micro fine cement for the injection into the IDROSTOP MULTI 11;
- MAPEPLAN INJECTION FLANGES to facilitate injection of resin between the two layers of membrane;
- MAPEGEL UTT hydro swelling acrylic resin for injection between the two layers of membrane and for the treatment of anchors;
- PLANIGROUT 300 ME PCT epoxy resin grout for the treatment of anchors and penetrations.

PHOTO 7:
Connection of the waterproofing system at the tunnel eye.



Conclusion

MAPEI has the wide range of products required to find solutions for complex waterproofing design and suit the use in any kind of structures, whether it is structural or architectural. MAPEI's experience in the use of various kinds of technologies gave the contractors and the consultant the confidence which led them to use the MAPEI solutions on all the underground stations, the cut and cover tunnels, the cross passages and the evacuation shafts.



TECHNICAL DATA

Riyadh Metro, Riyadh, the Kingdom of Saudi Arabia

Period of Construction: 2014-2019

Period of Mapei Intervention: 2014

Intervention by Mapei: supplying products for underground stations waterproofing with unique system for anchor treatment

Client: ArRiyadh New Mobility

Design: Zaha Hadid Architects

Consultant: IDOM/ONE WORKS/SALINI/L&T

Contractor: CWG

Subcontractor: IKK/CRETEC

Mapei co-ordinators: Stefano Iannacone, Ranbir Khanna, Dario Casile, Khaled Farouk Mansour

MAPEI PRODUCTS

Underground Waterproofing System: Mapeplan TU membranes, Idrostop PVC waterstops, Idrostop Multi 11, Mapeplan Injection Valves, Mapegel UTT, Mapeproof Swell, Microcem 8000, Planigrout 300 ME PCT

Wet Area Waterproofing System: TBA

For further information on these products see www.mapei.ae and www.mapei.com



Al Habtoor City Hotels

– Underground waterproofing and installation of natural stone tiles

IN THE SPOTLIGHT

MAPEPLAN TU WL

MAPEPLAN TU WL is a PVC-P synthetic waterproofing membrane. Due to the high standard production level, performs both good mechanical properties and workability and welding characteristics. The innovative concept of inserting the "Warning Layer", allows to easily detect any eventual damage, even if minimal, that may occur during the installation or during all the subsequent working phases. Special formulation achieved in Mapei SpA laboratories, can accomplish different waterproofing requirements.



Three excellent hotels with unparalleled amenities grace Al Habtoor City. World-famous international designers and architects have worked on the three 5-star hotels in the new neighborhood, representing famous hospitality brands that inspire confidence and symbolize luxury living and offering more than 1.600 elegant rooms.

All three hotels are designed and inspired by different époques and styles. The St. Regis, Dubai is inspired by the legacy of New York's gilded age, and represents nobility and beaux-arts architecture. W Hotel is characterized by an avant-garde design, which offers extraordinary experiences in exclusive ambient. On the other hand, The Westin Dubai interiors feature stylized motifs inspired by Art Décor, which combines modernist styles with fine craftsmanship with rich materials.

Investor has chosen Mapei waterproofing system for underground structures, bathrooms and damp areas thanks to our well-known quality products and systems. For screeds and substrate consolidation, we introduced our fast drying binder – TOPCEM and for ceramic and natural stone tiles installment, our high performance, deformable, cementitious adhesive – KEAFLEX MAXI S1.

Waterproofing system for underground structures

For waterproofing 70.000 m² of substructure, we used Mapei synthetic membrane system – MAPEPLAN TU WL 3.0 with good mechanical and welding characteristics. The innovative concept of inserting the "Warning Layer", allows easily detection of any eventual damage, that may occur during the installation or subsequent working phases, safeguarding the integrity of the whole waterproofing system.

For waterproofing structural joints, we used IDROSTOP PVC, a highly flexible water stop made out of high-quality thermo-plastic vinyl resins. Anchorage of membrane has been performed with high puncturing resistance element MAPEPLAN DISK. Sealing and waterproofing injections in construction joints are done with product IDROSTOP MULTI, Mapei's PVC-P injectable hoses.

More than 1.000 piles were treated using a high performance, shrinkage compensated high-flow micro concrete – MAPEGROUT ME05, along with PLANIGROUT 300 ME PCT, a three-component, multi-purpose fluid epoxy resin grout.

Onsite technical support was provided during the system installation, which was important to maintain the quality of welding in order to minimize failures due to workmanship. The success of "Al Habtoor Palace" project leads to create awareness of Mapei waterproofing system in the region.

Waterproofing system for bathrooms and damp environments

MAPELASTIC SMART is a two-component, highly flexible cementitious mortar that is chosen for waterproofing of all types of damp environments (90,000 m²) due to its durability, performance and application characteristics. In order to obtain excellent mechanical characteristics of membrane we used MAPETEX SEL, a non-woven, macro-holed polypropylene fabric.

MAPELASTIC SMART is easily applied by brush, roller or spray on both horizontal and vertical surfaces at a thickness of approximately 2 mm. Due to the content and high quality of the synthetic polymers used in the formulation, the hardened layer of Mapelastic Smart remains constantly flexible under all environmental conditions.



Building screed and substrate consolidation

Mapei system was used for substrate preparation of both horizontal and vertical areas, before installment of ceramic and natural stone tiles. For screeds, we have used our special pre-bagged polymer modified hydraulic binder, TOPCEM to create thicknesses of 60-70 mm for an area of 50.000 m². Gypsum boards have been treated with PRIMER G, a synthetic resin primer in water dispersion with a very low content of volatile organic compounds (VOC), prior the installation of tiles.

TOPCEM's fast drying and controlled shrinkage aspect, allows ceramic tiles to be installed after 24 hours and natural stone tiles after 2 days. These properties add a great value for the projects in speeding up the process of tiling in comparison of conventional cement usage for screeds.

Installing ceramic and natural stone tiles

Thanks to our complete range of tile adhesives and grouts, Mapei has been chosen by the investor. Prior to installment and selection of adequate adhesives, dimensional stability and staining test were conducted in our laboratory in order to determine the stone classification.

LEFT: Laying ceramic tiles with high-performance adhesive KERAFLEX MAXI S1.

UAE PROJECTS

Based on lab results, we decided to use our high-performance adhesives, KERAFLEX MAXI S1 and KERAFLEX. KERAFLEX MAXI S1 is white cementitious adhesive with extended open time and no vertical slip, especially suitable for the installation of large-size porcelain tiles and natural stone. KERAFLEX, also high-performance cementitious adhesive is suitable for single-fired, double-fired porcelain tiles, terracotta, klinker, stone materials and mosaics of every type of floors, walls and ceilings. ADESILEX P9, a high performance cementitious adhesive was selected for fixing porcelain tiles on vertical and horizontal area.

For grouting, we offered our pre-blended high-performance, polymer-modified cementitious mortar KERACOLOR FF, with water-repellent DropEffect® technology for grouting joints up to 6 mm wide. Its wide range of colors (17) enables designers to choose appropriate tones for proper combination with tiles.

“Green Responsibility”

As the part of Mapei commitment to the environment; all materials and systems supplied in the project were either zero or low VOC (Volatile Organic

Compounds), and complying with LEED (U.S. Green Building Council) requirement which assist project designers and contractor create LEED certified projects.



TECHNICAL DATA

Al Habtoor City (Al Habtoor Palace) - St. Regis, Westin & W hotel, Dubai, UAE

Period of Construction: 2013- Q3 2016

Period of Mapei Intervention: 2013 - 2016

Intervention by Mapei: Supplying products for screed, waterproofing and bonding tiles and marble in the areas in FOH

Client: Al Habtoor Group LLC

Consultant: Khatib & Alami Consolidated Engineering Company

Contractor: HLG Contracting

Sub-Contractor: AHK International (Fitout), Al Shirawi (Waterproofing), Marmi Group (Marble), Dar Al Rokham (Marble), GCS (Screed)

Mapei Co-Ordinators: Bachir A Abdallah, Market Manager;

Shatha Weldali, Senior Sales Engineer; Hany Al Assal, Application Manager-Waterproofing; Ian Gregory, Sales Manager

MAPEI PRODUCTS

Underground Waterproofing System: Mapeplan TU WL, Mapegrout ME 05, Planigrout 300 ME PCT

Wet Area Waterproofing System: Mapelastic Smart, Mapetex Sel
Building screed and substrate consolidation: Topcem, Planicrete, Primer G

Ceramic tiles and marble tiles installation: Keraflex Maxi S1, Keraflex, Adesilex P9, Keracolor

For further information on these products see www.mapei.ae and www.mapei.com

SET the MOOD

Personalize your space
with the **new MAPEI**
grout colour collections.



SERENE



TRADITIONAL



NATURAL



ROMANCE



GLAMOUR



Learn more on grouts.mapei.com



Laying natural stone in wet areas

Rocks and stone are synonymous terms, geologist and earth scientists prefer the use of the term "rock" while we find that commercial stone industry prefer the use of the term "stone".

Stone or rocks are composed of minimum of one mineral, but more sophisticated stones can be a combination of several minerals.

The majority of the dimension stone as we know them commercially are a result of the cementation of more than 25 minerals in different combinations and ratios. Identifying the presences of such minerals and their percentages in a particular rock, makes the bases to help us understanding the stone behaviour under particular application. The stone industry utilises such information's in order to optimise the use of available stone, to reduce the waste and to avoid costly mistakes.

Laying natural stone in the construction industry

For successful, durable tiling jobs and for the proper selection of the adhesive type to be used, several aspects need to be taken into consideration such as:

- type and the physical properties of the chosen stone;
- dimensional stability of the stone;
- water absorption and moisture sensitivity of the selected stone;
- type of substrate where the stone will be applied (masonry blockwork, cement render, gypsum board, cement board, gypsum render or wood);
- deformability of the substrate, stone format, stone weight, external or internal application.

Other factors that can also influence the proper selection of an adhesive such as: stone installation under permanently wet conditions like water fountains, swimming pools, bathrooms and kitchens. Depending of the substrate that should be tiled on, have an equal importance, especially the dimensional stability of the substrate itself.

In vertical applications, we need to be sure that the substrate can withstand the weight of the stone. A general guideline for the weight of the stone shall not exceed 32 kg/m² when fixed onto gypsum plasterboards and the maximum stone weight, which can be supported by sound gypsum plaster background, should not exceed 20 kg/m².

Stone adhesives and their selection

Taking in consideration the substantial investment that a building owner makes when opting to use natural stone to reflect an artistic taste, we recommend usage of high performance adhesives to ensure good result.

Mapei offers a wide range of mortars that can be used for the installation of various types of natural and engineered stones such as marble, granite and engineered stone.

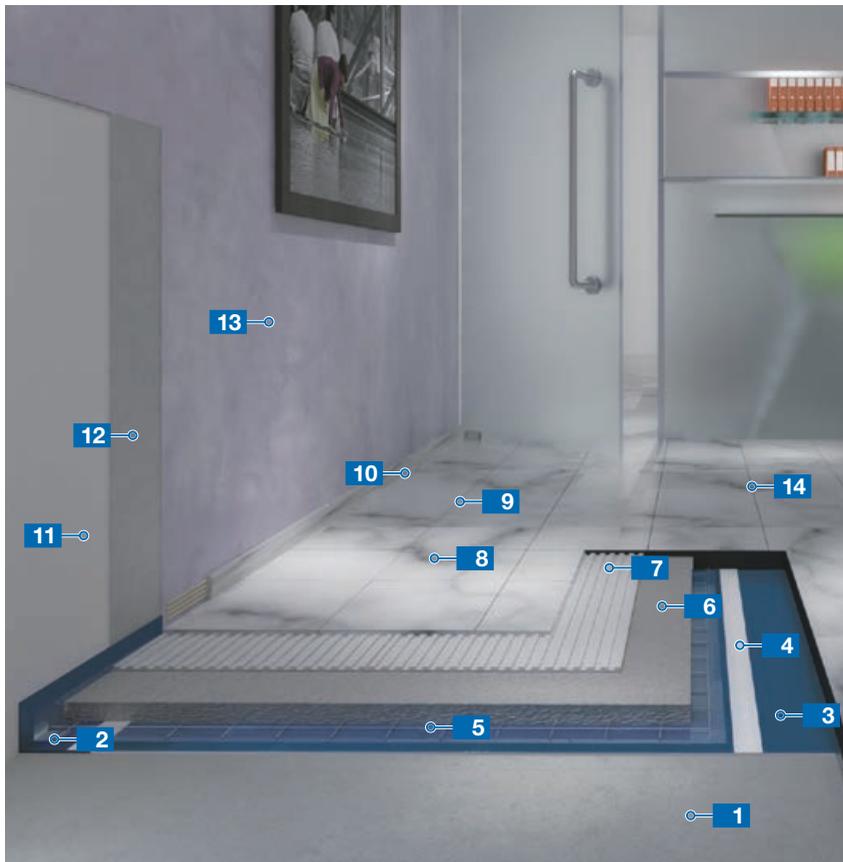
Selection of our high-performance products such as KERABOND T, a slip-resistant cementitious adhesive of class C1T with flexible latex additive – ISOLASTIC which complies with ISO 13007 classification of C2TES2. This premium system has exceptional bond strength, flexural strength, elongation and freeze/thaw durability. Combination of KERABOND T + ISOLASTIC, can be used for most interior or exterior residential and commercial installations on floors, walls and ceilings.

A huge number of projects in GCC in their portfolio have natural stone as final aesthetic touch. Long experience and innovative technology enables Mapei to offer an innovative products and systems that can fulfil even most demanding projects.

Our high performance, deformable cementitious adhesive with extended open time and no vertical slip – KERAFLEX MAXI S1 is an ISO 13007 compliance product, specifically formulated as single component product with just water addition. The product is especially suitable

BELOW: Dimensional stability test using wet felt.





Soundproofing system against noise of footsteps for the rapid installation of natural stone and ceramic tiles with a decorative wall coating

- 1 Cementitious screed
- 2 Perimeter strip
Mapesilent Band R
- 3 Soundproofing membrane
Mapesilent Comfort
- 4 Sealing tape
Mapesilent Tape
- 5 Damp proofing membrane
- 6 Screed
Mapecem Pronto
- 7 Adhesive
Elastorapid
- 8 Marble
- 9 Grout
Ultracolor Plus
- 10 Sealant
Mapesil LM
- 11 Smoothing compound
Planitop 560
- 12 Silicate primer
Silexcolor Primer
- 13 Decorative silicate coating
Silexcolor Marmorino
- 14 Sealant
Mapesil LM

for the installation of large-size porcelain tiles and natural stone and meets the EN 12004 C2TES1 standard, making the product the best choice in its class for the installation of large format stone on horizontal and vertical surfaces.

Criteria for soundproof installation

Nowadays architects and project owners are putting much more emphasis on acoustic criteria when designing hotels, hospitals and residential complexes. Professionals are aware of the key role that the acoustic system can play in securing a noise free and tranquil environment by eliminating noise transfer through internal building skin.

When an acoustic underlayment is required in a project, it is of the utmost importance that the acoustic matt supplier, the specialty adhesive supplier and the installer meet and discuss about design criteria aspects of the sound insulation system that has to be implemented.

Depending on the type of the insulation material system in use (100 % cork, 100 % rubber or cork - rubber mix), the types of the adhesives to be selected can widely vary from simple acrylic adhesives, to one or two part polyurethane adhesives, or polymer modified cemen-

titious base adhesives. The acoustic matt adhesives can be totally different than the adhesive between the stone tile and the acoustic matt. At all times, the area where the system is going to be applied should be factored in during the adhesive selection process. Adhesive for acoustic mats in wet area can be totally different than similar application in dry area.

Applying system for soundproof floor surfaces

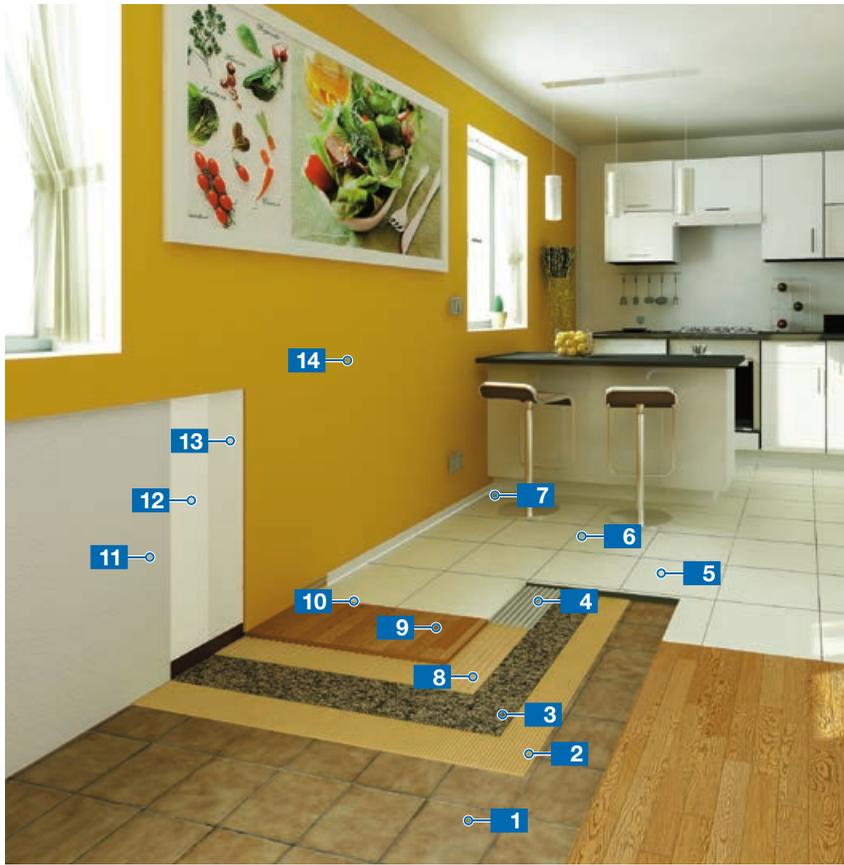
For floor soundproof surfaces, we recommend system that includes products:

- ULTRABOND ECO P909 2K – two-component, solvent free, polyurethane adhesive with very low emission of volatile organic compounds;
- KERAFLEX MAXI S1 – two-component, solvent free, polyurethane adhesive with very low emission of volatile organic compounds and no vertical slip;
- MAPESONIC CR – thin section soundproofing membrane;
- ULTRACOLOR PLUS – high-performance, antiflorescence, quick-setting and drying polymer-modified mortar with water-repellent DropEffect® and mould resistant BioBlock® technology.

Installation of sensitive stone tiles

Many varieties of marble, natural stone and agglomerates are highly sensitive to moisture. Natural stone tiles such as marble, slate and sandstone are porous in their nature and using a conventional normal-setting adhesive may result in the curling at the edges of the stone, which can lead to a complete delamination of the stone from the substrate. In addition, normal-setting adhesives are slow setting and therefore allow more water to be absorbed into the tiles, which can result in staining of the stone.

To resolve problems arises due to the tile sensitivity to moisture, we recommend usage of our product GRANIRAPID, an improved fast setting cementitious deformable adhesive classified as C2F S1 as the ultimate solution to tackle curling and inherited problems with sensitive stone tiles. GRANIRAPID develops high early mechanical strength and cures



System for the installation on existing flooring with soundproofing

- 1** Existing ceramic flooring
- 2** Adhesive
Ultrabond Eco S955 1K
- 3** Soundproofing membrane
Mapesonic CR (2 mm) +
Mapesonic Strip
- 4** Adhesive
Granirapid
- 5** Porcelain tiles
- 6** Grout
Kerapoxy CQ
- 7** Sealant
Mapesil AC
- 8** Adhesive
Ultrabond Eco S955 1K
- 9** Multi-layered pre-finished wood
- 10** Sealant
Silwood
- 11** Render
- 12** Smoothing compound
Planitop 560
- 13** Hygienizing siloxane primer
Silancolor Primer Plus
- 14** Hygienizing water-based paint
Dursilite Plus

considerably faster than normal setting mortars, leaves very low residual moisture, preventing the possibility of the formation of efflorescence, staining or curling of moisture sensitive stone tiles. For highly sensitive natural or reconstituted stone tiles, Mapei offers a wide range of solvent free 100 % solid epoxy based products such as KERAPOXY a water-cleanable, high-strength epoxy mortar and chemical-resistant no sagging grout which has an outstanding record in successful installation for those aesthetically appealing stone tiles. Mapei, at its central R&D laboratory in Milan (Italy) and in labs around the world holds a comprehensive data on moisture sensitivity of tens stone types.

Shortly after opening offices in Dubai, headquarters realizes the importance of the UAE and GCC market and its huge demand for natural stone instalment into projects and has introduced the stone dimensional stability testing equipment into technical centre lab in Dubai. With factory and laboratory alongside, our technical team can help in choosing the right products and systems for any kind of projects emerged on market.

Nisreen Salman, Product Manager Ceramic and building line



Keraflex Maxi S1

New formula:
Ultra WHITE
Excellent WORKABILITY



Keraflex Maxi S1 is an improved, deformable, ultra white cementitious adhesive with **Mapei Low Dust®**, technology and extended open time for bonding porcelain and natural stone tiles even in large formats. **ULTRA WHITE** version with its improved formula provides **incredibly easy installment** and **brilliant white color**.



/mapeispa

For more information contact:
www.mapei.ae and www.mapei.com



Five Palm Jumeirah hotel

Installation of marble and ceramics in a new hotel in Dubai



In certain parts of the world, and Dubai is such a place, hotels themselves are one of the attractions and in the city that is now making preparations for the Universal Exposition of 2020, one thing is certain: nobody likes to come second. The city's latest addition, the FIVE Palm Jumeirah Dubai, inaugurated this year, just goes to prove this rule.

This mammoth hotel overlooking the sea has been built on the artificial island of Palm Jumeirah according to a design by the architect firms Yabu Pushelberg and NAO Taniyama and Associates.

The FIVE Palm Jumeirah is located in a strategic position close to the Dubai business quarter and the city's numerous tourist attractions and has features which include its own private beach and three open-air swimming pools, one of which is 60 metres long and runs through the central part of the resort.

It has 477 rooms and suites on 16 floors, all with large spaces and wonderful views of the Arabian Gulf, which are furnished simply yet elegantly with luxurious touches.

The building has large, ceiling-high windows which allow



The FIVE Palm Jumeirah Hotel in Dubai. For this hotel, Mapei products have been used to install marble and ceramic floorings.

natural light to enter and illuminate the inside of the building. Most of the internal areas are finished in Italian marble, while light and dark shades of wood perform light games with the colours of the marble, creating a sense of balance.

Mapei's contribution

Mapei made a significant contribution to the construction of this prestigious hotel and the work was carried out at various phases of its construction. Mapei supplied products to install 150.000 m² of marble and ceramics inside the hotel (for the

entrance halls, corridors, rooms, bathrooms and balconies) and in the large Glass Cube – the heart and symbol of the FIVE hotel.

During the first phase, ULTRABOND ECO 375 adhesive in water dispersion with a high and rapid initial tack and long open time was used for bonding an acoustic insulation mat to the screed to reduce the transfer of sound between floors. ADESILEX P9 a high performance, non-slip cementitious adhesive with extended open time was used to install the ceramic tiles.



ADESILEX P9 has been used to bond ceramic tiles in the internal areas.

The slabs of marble were installed with KERAFLEX MAXI S1, a white coloured, high performance, non-slip cementitious adhesive with extended open time for ceramic and stone material.

The movement joints between the natural stone were sealed with MAPESIL LM, a mould-resistant, neutral silicone sealant. MAPESIL AC was used to seal the movement joints in the ceramic tiling.

The tiles in areas exposed to heavy traffic were grouted with

KERAPOXY two-component, acid-resistant epoxy mortar, designed for grout lines at least 3 mm wide, which can also be used as adhesive.

ULTRACOLOR PLUS, a high-performance, anti-efflorescence, quick setting and drying, water-repellent and anti-mould grout was used for the tiling in all other areas.

A highly successful, eco-sustainable system was proposed by Mapei engineers for the Glass Cube's raised flooring, below which pass electric cables and ventilation systems. The





products were chosen by taking into consideration the difference in temperature between the lower part of the cube, which is hotter, and the upper part of the structure where it gets cooler, as well as to allow for installation of large-format artificial stone tiles on top of the raised floor system. MAPELASTIC SMART, a two-component cementitious mortar with high elasticity, was used to protect the plywood boards and the flooring against rising damp. ECO PRIM GRIP, a multi-purpose, synthetic resin-based

adhesion promoter with selected inert materials and very low VOC, was used to facilitate application of ULTRAPLAN FIBER KIT self-levelling, fibre-reinforced, ultra rapid-hardening smoothing compound, which is distributed in the UAE, on the upper part of the plywood boards. To complete this system, KERALASTIC T, a two-component, high performance polyurethane adhesive was used to bond soundproofing panels and to install large-format slabs of artificial marble on to the prepared sub floor.



IN THE SPOTLIGHT

KERALASTIC T

Two-component, high-performance, polyurethane adhesives for ceramic tiles and stone material. Once mixed, Keralastic T forms a special paste which has good workability, excellent durability and resistance to ageing and which hardens without shrinkage.

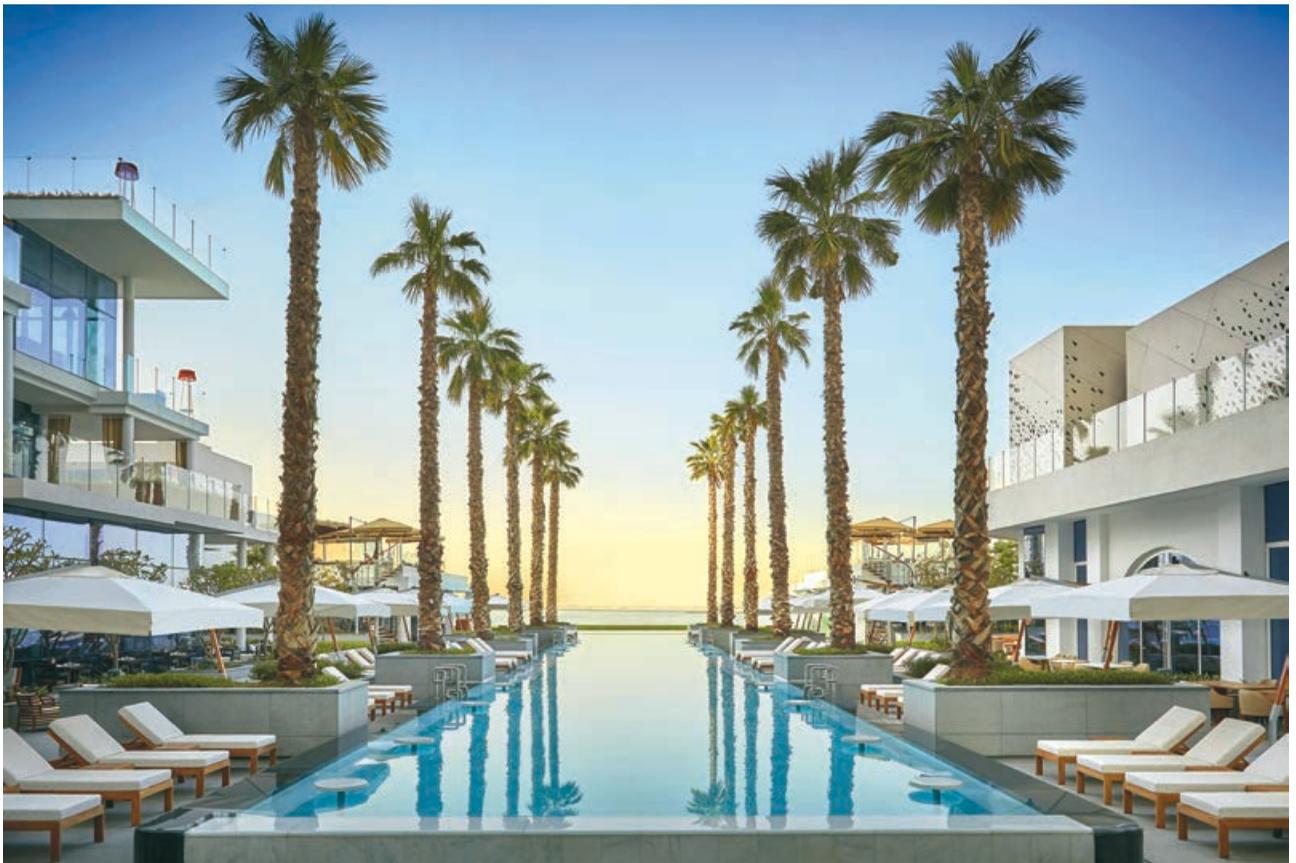
Keralastic T is highly thixotropic: it can be applied vertically without slump and without letting even heavy or large tiles slip. The slipping strength is in compliance with EN 1308.



LEFT. The ceramic tiles have been bonded with ADESILEX P9, while KERAFLEX MAXI S1 has been chosen for the marble.



Last, but not least, ULTRATOP, ultra-fast setting, self-levelling mortar based on special hydraulic binders for abrasion-resistant flooring, thickness from 5 to 40 mm was installed as a finished floor for Maiden Shanghai Chinese restaurant. ULTRATOP was selected for its ability to create a range of designs as well as for its durability. Enjoy the view of this spectacular venue!



TECHNICAL DATA

FIVE Palm Jumeirah Hotel, Dubai (UAE)

Period of construction: 2014-2016

Period of intervention by Mapei: 2015-2016

Intervention by Mapei: supply products for the installation of ceramics and of natural stone and Ultratop decorative floor finishing

Client: FIVE Holdings LLC

Project: Yabu Pushelberg and NAO Taniyama and Associates

Consultants: P&T/ECG

Installer Company: Ishwar Tiling/Emirates Marble/In Out Concepts

Mapei Coordinator: Alia Khawaja (Mapei Construction Chemicals LLC)

MAPEI PRODUCTS

Substrates preparation: Ultrabond Eco 375, Eco Prim Grip, Ultraplan Fiber Kit*

Waterproofing: Mapelastic Smart

Installation of ceramics and stone material and grouting:

Adesilex P9, Mapesil AC, Mapesil LM, Kerapoxy, Ultracolor Plus, Keralastic T, Keraflex Maxi S1

Finished concrete flooring: Ultratop

* This product is distributed in the UAE market by Mapei onstruction Chemicals LLC

For further information on these products see www.mapei.ae and www.mapei.com

Mapeplan

Mapeplan®

Roofing and Waterproofing
Synthetic Membranes

POLYGLASS
presents the roofing
and waterproofing
synthetic membranes
in **PVC-P** and **TPO/FPO**
Mapeplan®



Adds value!



Polyglass SpA
is member of
Green Building Council Italia



Above and below grade waterproofing systems

Return on investment in any development is influenced by the quality of construction. Value engineering increases structural durability and reduces life cycle costs. Mapei waterproofing systems and solutions adds those values.

Our competence in the field of waterproofing solutions is based on many years of experience and our systems are equally appropriate for general engineering, water containment or exclusion structures, civil engineering projects, tunnelling and building. This is evidenced by numerous projects being successfully completed under varied climatic conditions and construction environments. From the torrid heat of the Middle East, to the frozen expanse of Siberia, Mapei waterproofing solutions continually prove their reliability and durability.

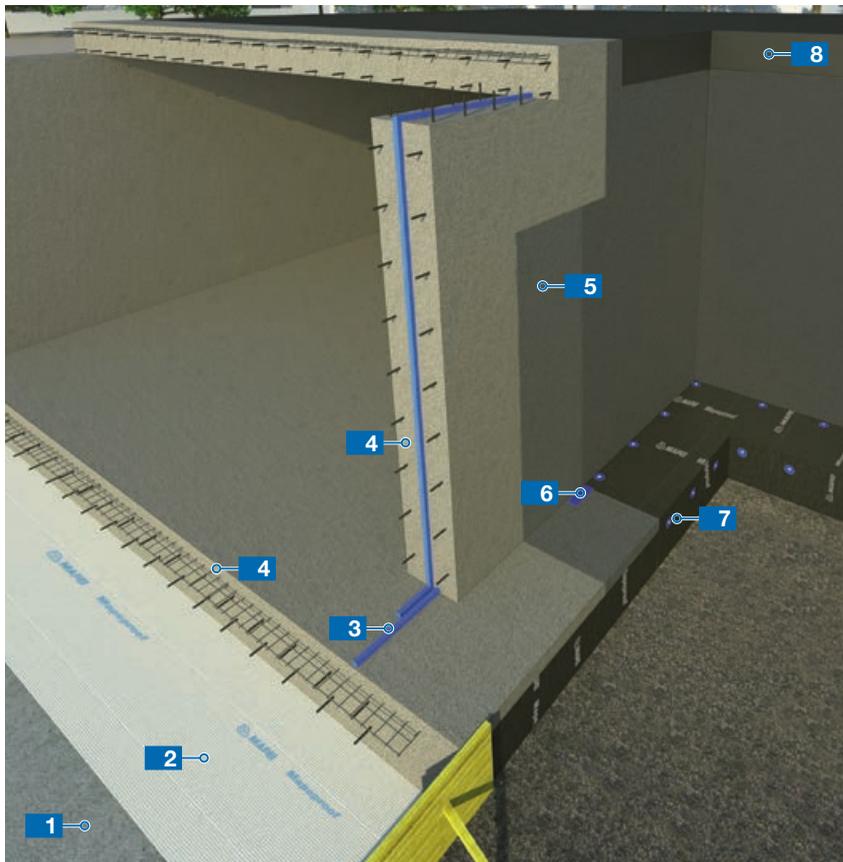
The engineering of Mapei waterproofing products relies on these key principles:

- tailored to meet the unique requirements of the structure;
- minimizing the risk of leaks and the disruption of retrospective maintenance;
- reducing life cycle costs;
- extending the durability of a structure;
- environmentally friendly;
- incorporating technology with long term life expectancy.

Waterproofing is a fundamental element in building construction and is a key factor in guaranteeing building integrity. To ensure this, we combine vital components of construction, which includes: durability of membranes; active and inactive joint protection systems; pile head treatments; excellent tolerance to settlement and movement of the structure; quality control; and easy instalment.

Mapei has developed a system of products and accessory items for product application that may be used to carry out waterproofing work that is both se-





Waterproofing reinforced concrete foundations for new structures by open excavation in groundwater

- 1 Substrate
Lean concrete
- 2 Bentonite sheet
Mapeproof
- 3 Hydro-expansive bentonite joint
Idrostop B25
- 4 Concrete structure admixed with
Dynamon
- 5 Cementitious waterproofing mortar (2 coats)
Mapelastik Foundation

after application of the primer
Primer 3296
- 6 Bentonite paste
Mapeproof Mastic
- 7 Washer
Mapeproof CD
- 8 Pre-cast self-adhesive bitumen polymer membrane
Adesoguard produced by Polyglass

cure and guaranteed for both above and below underground construction.

Structural waterproofing

Structural waterproofing techniques can be used to resolve a range of problems; from waterproofing damp basements, underground vaults, cellars and tunnels; through to protecting car park decks, water treatment plants and swimming pools. Professional waterproofing designers should consider using more than one type of waterproofing to provide enhanced protection of the structure to achieve the necessary environmental grade. Combination strategies provide increased waterproofing protection to the structure.

A thorough analysis of the morphological characteristics of the ground and water flow provides correct analysis of the construction technique applied for structures below ground level. Foundations are structural elements with the function of transferring stresses and loads - both permanent and accidental - to the ground.

Even the smallest of imperfections (cracks, honey combs, etc.) and structural joints form a preferential passage for water. Water, which penetrates into the concrete, is saline and therefore ag-

gressive for both the base components of the concrete and for the reinforcement rods. Considering the above, the only solution to adopt to stop water penetrating into the concrete and infiltrating into the rooms below ground level, is to use a waterproofing system, which addresses all the construction components in making it water tight.

Mapei offers a wide range of durable products for waterproofing structures below ground level, which are suitable for both new constructions and for repair work on existing structures even in the harshest conditions. When properly applied, our systems will prevent the passage of water into or out of structures or buildings.

MAPEPLAN® synthetic PVC membranes are coextruded with a signal layer for use in below ground construction to accommodate any movement and stresses that may occur during the life of the structure. The life expectancy of these membranes exceeds 100 years. In excavations without confinement, waterproofing of the reinforced concrete facing walls is carried out after pouring the concrete. Mapei offers a range of products with different characteristics and performance levels for this type of application:

- MAPELASTIC FOUNDATION — two-component, flexible cementitious mortar for waterproofing surfaces subject to negative and positive hydraulic lift;
- PLASTIMUL — bitumen waterproofing emulsion;
- PURTOP — two-component, solvent-free, pure polyurea membrane applied by spray to form waterproof coatings directly on site.

All concrete structures require construction joints. They represent a point of discontinuity and must be made watertight to avoid the points of discontinuity forming a preferential route for water. Sealing joints below grade can incorporate our IDROSTOP, a hydro-expanding, self-sealing joint made from a mixture of polymers, which give the product excellent characteristics of compactness, flexibility and stability for lifetime joint security.

External joints can be sealed with the RESFOAM, one-component, ultra-fluid polyurethane resin, or with MAPEGEL UTT, three-component flexible hydrophilic gel that can seal joints in floors and walls in even the harshest of environments.

Waterproofing of structures that are

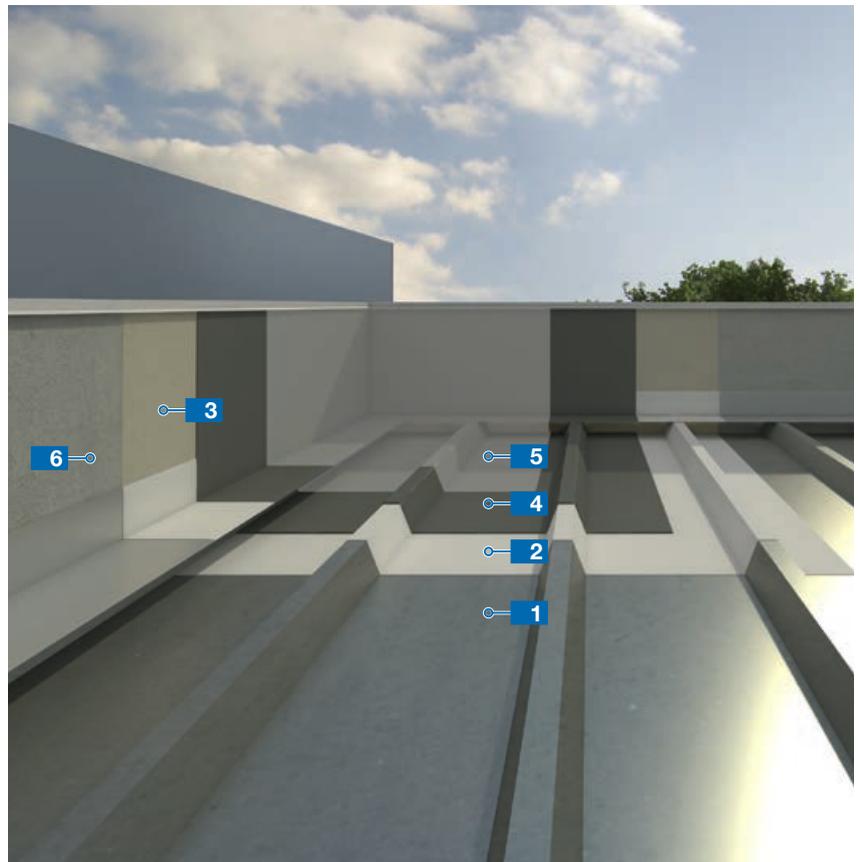
THE EXPERT'S OPINION

Hybrid polyurea membrane applied in-situ for waterproofing flat metallic roofs

- 1 Corrugated sheet
- 2 Primer
Primer EP Rustop
- 3 Primer + broadcast with quartz sand
Primer SN + Quarzo 0,5

- 4 Polyurea hybrid membrane
Purtop 400 M

- 5 UV-resistant protective finish
Mapecoat PU 15
- 6 Concrete substrate



subject to traffic or that must contain plants requires a special type of product. Our class leading Purtop system for bridge decks is complemented by our trafficable Purtop membrane system for car parks of high and low usage. The MAPEPLAN and PURTOP, two-component polyurea membranes are also suitable for the treatment of podiums, planter boxes, terraces and show exceptional resistance to penetration by plant roots, a major problem for the longevity of structures. The trend to create garden spaces in urban environments is facilitated by the use of our systems to ensure that the usability of the building is maintained as well as allowing an aesthetic use of what would otherwise be cold uninviting places. The MAPELASTIC range of internal wet area waterproofing products is perfectly complemented by our class leading tile adhesives and grouts.

Roofing

Depending on building usage and its construction, choosing a correct waterproofing system varies from bituminous membranes, single ply systems or liquid applied systems. Inadequate roofing can affect not only a structure's functionality but its maintenance and whole-

life cost, with far-reaching implications for the building's durability.

Liquid applied systems

Liquid applied waterproofing systems are suitable for almost all types of roofs, from simple shapes and small sizes to large surfaces and roofs with complex structures, multiple details, penetrations, or roofs with restoration works.

Waterproofing with cementitious mortars

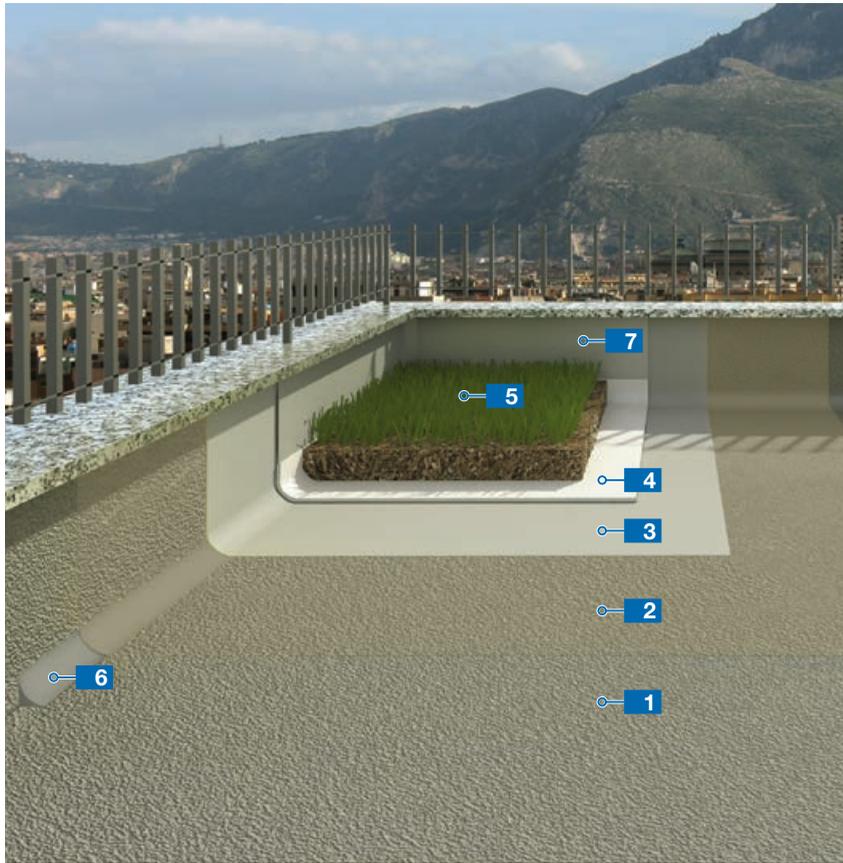
It is important that a waterproofing system is hemmed onto the masonry and not onto the render. After sanding all metallic fittings to remove traces of loose material, apply a coat of EPORIP, a two-component, solvent-free epoxy adhesive. While the resin is still fresh, dust the surface with quartz sand to help adhesion of the flexible cementitious waterproofing product applied later. Seal any drainage outlets and waterproof the joints.

Waterproof the surface with two coats of MAPELASTIC SMART, a two-component, high-elasticity cementitious mortar on the clean, dry substrate with total thickness of at least 2 mm. After

applying the first coat of product, insert the MAPETEX SEL, a non-woven polypropylene fabric using class C2F cementitious adhesive.

Waterproofing with spray-applied polyurea membranes

This waterproofing system is suitable for foot and vehicular traffic and large areas on the roofs with complicated shapes. It is quick and easy to apply. Before starting application, it is necessary to prepare a substrate in order to achieve good adhesion of product. Longitudinal and lateral slope of the surfaces must be $> 1.5\%$, roughness of the substrate < 2.0 mm and maximum moisture content of the substrate 4% . Before applying PURTOP 400 M - solvent-free, hybrid polyurethane membrane, remove all traces of dust from the surface with an industrial vacuum cleaner. PURTOP 400 M has immediate permeability and rapid set for foot traffic. For finishing, we recommend MAPEFLOOR FINISH 55, high-elasticity, aliphatic polyurethane product, resistant to wear and UV rays. With the reassurance of BBA and FM approval, you can rely on Mapei to protect your structure against the elements for a longer service life.



Hybrid polyurea membrane sprayed in-situ for waterproofing roof gardens

- 1 Substrate
Concrete
CALCESTRUZZO Vaga RCK 37
- 2 Primer
Primer SN broadcast with **Quarzo 0,5**
- 3 Polyurea hybrid membrane
Purtop 400 M / Purtop 1000
- 4 Now-woven fabric combined to HDPE
Polyfond Kit Drain
produced by Polyglass
- 5 Garden soil
- 6 Sealant
Mapeflex PU30
- 7 Protective coating
Mapecoat PU 15

Waterproofing roofs using synthetic membranes

Polyglass®, a leading manufacturer of modified bitumen roofing and synthetic waterproofing membranes as well as roof coatings, offers a complete waterproofing product range. Decades of practical experience in the application of roofing and waterproofing materials provide a strong foundation for understanding the importance of constant development of innovative products and maintaining customer satisfaction. In 2008, the Mapei Group acquired Polyglass®, a company heavily focused on product research and development making it a natural fit for Mapei.

Before installing a waterproofing system made from a synthetic membrane, the roof must be installed and/or checked to make sure it is suitable for use and that it has been prepared correctly. Roofs must be dimensioned to withstand the design loads and overloads. Substrate, therefore, must be smooth, clean and dry and all corners and edges must be smoothed.

For the roofs blasted with gravel, cement slabs, bonded tiles, concrete screed or green roofs, we recommend our PVC-P MAPEPLAN B 15 or MAPEPLAN B 18 - UV and weather

resistant membranes, reinforced with a dimensionally stable glass mat, or MAPEPLAN T B 15 and MAPEPLAN T B 18 flexible polyolefin (TPO/FPO) membranes.

Besides membranes, Polyglass® also carries in its product range standard accessory parts and details such as: L shaped profiles for roof edging, wall fillets of different shapes and profiles and drainage outlets.

Green roofs

The term "Heat Island" is used to define the phenomenon of an increase in temperature generated in urban areas compared with temperatures recorded in rural areas. To reduce the "Heat Island" effect, Mapei has developed a series of products and systems for the eco-sustainable building sector that may be grouped together into two macro categories:

- GREEN ROOF - products to create roof gardens and green areas;
- COOL ROOF - products characterized by their highly reflective white colour that helps reduce the surface temperature compared with a similar covering material in a darker colour.

GREEN ROOF Mapei systems are tech-

nologically advanced product systems that are used to provide excellent waterproofing for roofs, as well as offering the possibility of creating green roofs, thereby contributing to reducing the "Heat Island" phenomenon which affects urban areas. The products used in the GREEN ROOF systems include hybrid polyurea membranes such as PURTOP 400 M and pure polyurea membranes such as PURTOP 1000. All Mapei GREEN ROOF systems have passed severe testing regimes to assess their resistance to root penetration and perforation and microbiological attack. In addition to this, the Mapeplan T range of TPO membranes come with a SRI of 102, making them highly reflective to reduce the heat gain from solar rays.

As we saw, waterproofing provides value retention, concrete longevity and saves money. Even in dry places like desert, water still can find its way to create large problems to commercial or private buildings and constructions.

Ranbir Khanna, Regional Market Manager for waterproofing and sealants



The new Panama Canal

Mapei was amongst the key players of the most ambitious “made in Italy” feat of engineering ever completed in the world

An 80 km long, inter-ocean canal with the capacity to double the yearly return for Panama to up to 5 billion dollars. A revolution in global maritime commerce really is under way. A new type of ship with loads of up to 14,000 containers will be able to pass through the new canal locks, which up until now could only handle ships carrying 4,400. Half the arsenals from around the world have changed in order to construct them, while the Pacific and Atlantic ports, particularly in the United States, have already carried out large-scale interventions in order to handle these new ships, generating spin-off activities worth twenty times the cost of the work, equating to more than 100 billion dollars.

The first area to benefit from the expansion project has been the east coast of North America because it will now be reached via a direct route across the Pacific from Asia, rather than the longer route across the Mediterranean and Atlantic, which means two weeks less navigation time.

And Italy could also reap the benefits if one knows how to act and react. In fact, expansion of the Panama Canal coincides with the expansion work on the Suez Canal which could

turn the Mediterranean into the centre point for many trade routes. 19% of the volume of global traffic and 25% for global routes currently transit through the Mediterranean Sea. Italy is the third most important nation in Europe for goods traffic with 473 million tonnes and is the leading nation amongst EU countries for short range trade. In twenty years the number of containers handled in the 30 most important ports in the Mediterranean has grown by 425%, at an annual rate of growth of 21%. But something new is needed, both from port authorities and from the ports themselves. The ports of Gioia Tauro (Southern Italy) and Genoa (Northern Italy) handle more than two million containers, but this figure is quite a way behind their direct competitors in Valencia and Algeciras (Spain), and Port Said (Egypt).

The technical aspects and future of the canal

The chambers of the new locks system are 427 m long, 55 m wide and 33 m deep. They act like giant lifts that raise the ships 27 m above the level of the ocean to the level of the artificial Lake Gatún and the navigable route that crosses the Isthmus

16 GATES

THE NEW CANAL IS BASED ON A SYSTEM OF 16 GATES (8 ON THE PACIFIC SIDE AND 8 ON THE ATLANTIC SIDE). EACH GATE IS 57.6 M LONG, 11 M WIDE AND 30 M HIGH AND WEIGHS 3,000 TONNES AND THEY ALLOW SHIPS TO ENTER THE WATERS OF LAKE GATÚN



IN THESE PHOTOS: On the 26th of June the Chinese container ship Cosco Shipping Panama entered from the Atlantic side of the New Panama Canal. It was welcomed by the President of Panama, Juan Carlos Varela, together with a group of foreign Heads of State and Ministers, and a crowd of people.



of Panama, to be then lowered down again on the opposite side, ready to set off on their oceanic voyage. Next to each chamber the Consortium has built enormous storage basins where the water is recycled: they allow more than 60% of this precious resource to be saved, and then feed it back into the locks system.

The “old” Canal, built by the Americans at the beginning of the last century, and which today still gives a return of 2.5 billion dollars, will continue to operate. The Panamanian authorities have already received more than 166 bookings between now and December. Estimates foresee that income from the Canal will double to 5 billion dollars a year once the new Canal has become fully operational.

The main client is still the United States, who on the 31st of December 1999 handed over administration of this precious waterway to Panama. But the Chinese are fighting back with their increasingly large merchant ships. So much so that the Canal authorities are already working on a future plan and are analysing the costs and benefits of a fourth route, maybe even larger than the current one.

Head-spinning figures

The construction of the new canal required an enormous building site with head-spinning figures: 70 million cubic metres excavated, 290,000 tonnes of steel, 5.5 million cubic metres of concrete and more than 100 million hours of work. The jewel in the crown of the project are the 16 giant steel gates, built in Italy and transported via sea over the course of seven years. The average weight of each gate is 3,000 tonnes and they carry out their task in just five minutes: to open and close the



5,500,000 m³ OF CONCRETE ADMIXED BY MAPEI USED FOR BUILDING THE INNER AND THE OUTER SIDES OF THE LOCKS

water chambers which – operating like enormous lifts – allow the ships to overcome the 27 m difference in level between the two oceans and the artificial Lake Gatún.

Mapei knowhow

Through their subsidiary company Mapei Construction Chemicals Panama S.A., Mapei supplied various admixtures of the latest generation to manufacture around 5,500,000 m³ of mass concrete and marine concrete, used respectively to build the internal and external sides of the locks. DYNAMON XP2 and DYNAMON XP2 EVOLUTION 1 were developed specifically to build the new Canal (see *Realtà Mapei International* no. 40, 42, and 46).

After numerous checks, carried out in the purpose-built Mapei laboratory in Panama, and cross-referencing the results with the GUPC laboratory, DYNAMON XP2 was chosen for use during

the first six months of work on the project on both the Atlantic side, where they were using Panama cement, and on the Pacific side, where they were using Cemex cement.

The objective was to guarantee a service life of the work of 100 years, thanks to the use of a model that calculates the durability of concrete.

After commissioning the plants producing the concrete and aggregates, several serious problems regarding a considerable loss of mechanical strength and durability in the concrete produced by the plants were solved.

In this phase, Mapei's support focused on various activities: a study and chemical and mineralogical analysis of the raw materials used (basalt aggregates, pozzolan and cement); technical suggestions for the correct choice in flocculants and coagulants employed to treat the waters used to clean the aggregates so that they would be more chemically compatible with the super-plasticisers used in the concrete mix; chemical and petrographic analysis; control of the pozzolanic activity of the basaltic fines from the cleaning operations to assess its use in the concrete mix and optimise its natural pozzolan content. Following a request from the client, Mapei then started to develop a new product which could work well with the new mix designs being verified at the GUPC laboratory.

Mapei technicians designed the formulation for a new admixture called DYNAMON XP2 EVOLUTION 1, with the name chosen to give a sense of continuity to the enormous amount of



IN THESE PICTURES:

For this prestigious building site, Mapei especially developed a new admixture for concrete, DYNAMON XP2 EVOLUTION 1, which proved to be excellent at maintaining the workability and application of the concrete.

30,000 PEOPLE AT WORK ON THE BUILDING SITES OF THE NEW PANAMA CANAL

800,000 m²

OF SYNTHETIC MEMBRANES

FOR WATERPROOFING THE AUXILIARY BASINS USED TO RECOVER AND PARTIALLY RECYCLE WATER FROM LAKE GATÚN

work previously carried out on the old admixture. This product proved to be even better at maintaining the workability and placing of the concrete at even lower dosage rates compared with the competitors' products.

Renovating the existing canal

The project also included restoration work on the original canal, originally put into service in 1912 and considered by many to be the most impressive concrete structure ever built.

Mapei was asked to offer a repair solution for the 30m concrete columns that form an integral part of the structural concrete and steel framework of the 'guillotine gates'—massive gates raised and lowered by canal operators as they move ships through the lock system to and from both the Pacific and the Atlantic.

These columns, referred to by the ACP (Autoridad del Canal de Panama as the "cut-waters") stand in the center of the 30m diameter pipes and physically "cut" the flow of water racing through the pipe into two distinct channels controlled by two parallel guillotine gates.

Due to deterioration produced by cavitation, chemical attack, abrasion and impact from debris, the "cut-water" columns had been badly eroded, with large sections broken off and missing throughout. The structural integrity of the columns had been compromised to such a degree that the ACP engineers deemed it prudent to demolish them totally and re-cast them with a high strength repair mortar.

Mapei's technical representative assigned to this project recommended Planitop 15, a one-component, shrinkage-compensated cementitious mortar ideal for large-volume, low heat of hydration, form-and-pour and form-and-pump applications, and MAPECURE SRA, a special curing admixture for cementitious mortars and concrete to reduce hydraulic shrinkage and the formation of micro-cracks. Due to scope of the repair involving hundreds of bags per column, Planitop 15 was extended 60% with washed pea gravel and modified with the maximum recommended dosage of Mapecure SRA. Planitop 15 was mixed and integrated with pea gravel by means of two large rotary-drum

mobile mixers and then augured into the hopper of a concrete line pump which delivered the fluid mix to the operators 30m below. The mortar mix was pumped, progressively filling forms until the top of the 30m pipe were reached.

The Planitop 15 and Mapecure SRA worked flawlessly for the ACP repair crew which had only 1 week to complete the repairs and return the Gatun Locks to full service. Umberto Bal and Paul Bernal, Project Engineers, ACP, were extremely happy with the performance of the products and the on-site service and support provided by the Mapei technical representative.

TECHNICAL DATA

Panama Canal, Panama

Period of Construction for the Original Canal:

1910-1916

Period of Construction for the New Locks: 2010-2016

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

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

Works Direction: Bernardo Gonzales (GUPC)

Mapei Co-ordinators:

Roberto Saccone, Maurizio Leotta, Walter Nussbaumer, and Renato Soffi, Mapei SpA

(Italy); Thomas Lundgren, Mapei Corp, USA (for renovating the existing Canal)

MAPEI PRODUCTS

Renovating the existing Canal:

Planitop 15**, Mapecure SRA

Preparing the concrete used to

build the new locks: Dynamon

XP2, Dynamon XP2 Evolution 1

Waterproofing the basins:

Sibelon C 3250*, Sibelon C

3900*, Sibelon CNT 3750*,

Sibelon CNT 4400*

Other building works:

Planigrout 300, Mapegrout

05/06, Idrostop PVC

Waterstop**, Idrostop Multi 11**,

Mapegel UTT, Idrosilex Pronto,

Mapeproof Swell, Idrostop 10,

Idrostop Mastic

*SYBELON trademark is owned by CarpiTech Sibelon. The above-mentioned products were manufactured at Polyglass (Mapei Group) plants. **These products are manufactured in the USA by Mapei Corp.



ABOVE: On 25th June Mapei Panama celebrated the extension of the Panama Canal and its contribution to the project with a special event.

A year full of events, exhibitions, conferences and sport tournaments

For Mapei Construction Chemicals L.L.C. 2017 event calendar is always filled with lot of activities as we are enjoying organizing and participating in a number of different activities, such as: exhibitions, conferences, sport tournaments, and many other activities that differentiates us as a company that is devoted not only to reaching business targets, but also as a company that cares for its employees, business partners, local society and the environment.

Lots of activities has been organised successfully in the 2017, but there are still many others to come in the coming years.

Mapei's second Football tournament

According to the large interest in Mapei football tournament organized for our clients last year, we have decided to

continue with tradition. This year we had 12 client's teams and one Mapei team competing. It was great opportunity to develop sense of fellowship out of business environment. Thirteen 5 - a side teams competed against each other: Consolidated Contracting Company, Emirates Ceramic, Star Dubai, Dubai Contracting Company, Hercules, Star Ajman, Isam Kabbani, Star Abu Dhabi, Belhasa, Petrocoat, Star Ras Al-Khaimah, Venus and Mapei Construction Chemical L.L.C.



pulled together corporate teams and transformed employees into football players for one afternoon. Following an exciting day, we announced three winning teams Consolidated Contracting Company in first place, Mapei Construction Chemicals L.L.C. in second and Belhasa in third.

After the success of football tournament, we were eager to organise a second Cricket Tournament, which will have nineteen teams competing against each other: Stones & Slates, Choiceway Technical Works, Hercules, Plafond, Danube, Milano, Petrocoat, Unique Paints, Water Seal (team 1), Water Seal (team 2), SPME, TCTI, WELS, Wimpey Laboratories, Material Lab (team 1), Material Lab (team 2), Venus Engineering, and two Mapei Construction Chemicals L.L.C. teams.

Desert warrior challenge — Mapei was proud to be a sponsor and participant of sport and fan activity which was held on last October at Dubai Land District and Dubai Police Training Facility.

The Desert Warrior Challenge is a fun and challenging obstacle course, designed to test the physical strength, mental toughness, team-work and overall fitness of each and every Warrior. Each course consists of a wide range of obstacles where participants run, crawl, jump, carry, climb and slide their way to the finish line.

Conferences, presentations and exhibitions

4th Arabian Tunnelling Conference — our business division “Mapei Underground Technology Team” (UTT) showcased a wide range of products for tunnelling, mining and underground construction at the 4th Arabian Tunnelling Conference, which was held at the Ritz Carlton DIFC Hotel Dubai.

As a Platinum Sponsor with an interesting booth design that featured a tunnel shaped slab representing Mapei’s waterproofing system for underground tunnelling, we gained a lot of attention and good business contacts during the event.



LEFT: Football tournament for partners, Mapei team.

RIGHT: Desert warrior challenge, Mapei team.

ABOVE: Mapei UTT stand ATC conference Dubai 2017.



Mapei Stand on Stone & Surface Exhibition – Kingdom of Saudi Arabia

Stone & Surface – Kingdom of Saudi Arabia — This is the Kingdom's only event that brings together the industry's material and machinery suppliers with specification and procurement decision makers. At the event, Mapei shared some of its most recent product innovations, systems and solutions for waterproofing, installations and renovations of surfaces like ceramics, porcelain tiles, concrete and mosaics.

International conference - "Advances in Sustainable Construction Materials and Civil Engineering Systems", Sharjah University — Technical service manager, Albert J. Thykadavil conducted a presentation on the subject of "Mapei Grinding Aids," with the aim of creating awareness about this range of Mapei products, highlighting their influence on sustainability and the reduction of carbon footprints in the construction industry.

Royal Institute of British Architects (RIBA) — Mapei presented a study on "Fast Track Systems for Green Building Solutions" by our regional specification manager, Vincent Robinson, who covered various aspects of fast track systems and their benefit for architects and designers.

Fast Track systems and Energy Efficient Roofing Solutions seminar in Bahrain — in collaboration with KBM Trading Co. WLL (the main distributor of Mapei in the Bahraini market), we have conducted a seminar for number of clients, contractors, architects and governmental officials.

Middle East Stone Exhibition — For this specialised exhibition we introduced our complete and long-lasting system for architectonic stone floors - Mapestone system to the local market. This system, when combined with certain other products, creates a monolithic structure that will not deteriorate over the years.

In addition, we have displayed our new grouts colours, which were divided into five different collections: Serene, Traditional, Natural, Romance and Glamour. Also, we took the opportunity to highlight our "FLEXOCOLOR 4 LVT", acrylic flexible grout for luxury vinyl flooring (LVT).

International Concrete Technology Forum, Roda Al Bustan Hotel, Dubai — As a Golden Sponsor, Mapei participated in debates about the latest advances, technical knowledge, research, tools, sustainability, LEED V4 and responsible sourcing in the concrete industry.



Marina Bay Sands Resort, Singapore



Gardens By The Bay, Singapore

SUSTAINABILITY

MAPEI IS COMMITTED TO PROTECTING THE ENVIRONMENT WITH ECO-SUSTAINABLE CERTIFIED SOLUTIONS WORLDWIDE FOR MORE THAN 30 YEARS

CERTIFIED PRODUCTS.

Mapei products are certified according to the most severe international standards, fruit of the commitment of the Group's 28 R&D laboratories. They are formulated using innovative, recycled and ultra-light raw materials developed to reduce energy consumption and to have very low emission level of volatile organic compounds.



/mapeispa



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INTEGRITY
RESEARCH
VALUES
SUSTAINABILITY
HONESTY
RESPONSIBILITY
COLLABORATION
RESPECT
PROFESSIONALISM
COMMITMENT
ETHICS
LOYALTY

OUR COMMITMENT TO **TRANSPARENCY.**

For 80 years we have been helping to improve people's quality of life by researching and producing chemical products for the construction industry. We are fully committed to working and operating with the utmost respect for ethics, health, safety and social and environmental responsibility. Our emphasis has always been on innovation as a means of developing our products so that they meet our clients' requirements and, at the same time, respect the needs of the environment.



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