

INTERNATIONAL

[Realtà MAPEI]

ISSUE 61

80
years
1937-2017

Year XVII - No. 61 - December 2016

61

ANNIVERSARIES



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

Dear Readers,

I am delighted to present this issue of *Realtà Mapei International* that we here at the publishing staff have been calling “the anniversary issue” ever since it was first planned.

It is a special issue, because the cover shows the symbol for Mapei's 80th anniversary.

Eighty years is not really that long, but long enough to tell lots and lots of stories. They are stories about the mother company, Mapei SpA, and some of our 72 operating subsidiaries that have celebrated their own anniversary in 2016.

To be honest there are not very many of them and they are not even the oldest.

Nevertheless, they pay testimony to a successful internationalisation strategy, which, ever since 1978, when Mapei first opened up to the Canadian and then the American market, has allowed the Group to keep on growing and expanding worldwide.

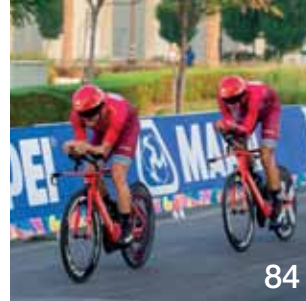
They are stories about lots of women and men, now a total of almost 10,000 Mapei staff working every day with dedication, creativity and commitment to help provide the best solutions for solving all the different problems in the building industry. They are also the untold stories of so many professionals working in distribution, construction and design, who have renewed their trust in us.

This is exemplified by the projects we selected from all those incorporating Mapei solutions carried out in countries where Mapei subsidiaries celebrated their anniversaries in 2016. These projects are also among the ones that won the 15th edition of our in-house competition, the Mapei Reference Grand Prix.

Issue number 61 closes with a pledge on the back cover that all of us here at Mapei have made: the pledge to work transparently on operations aimed to complete your projects and, why not, to make some of your dreams come true.

I do not want to reveal any more, and so I will let you get on with your reading, but not before wishing you and all your families a peaceful and successful Happy New Year.

A handwritten signature in cursive script, reading "Adriana Spazzoli".



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MAPEI WILL BE PRESENT
AT DOMOTEX AND BAU
IN JANUARY 2017.
**COME AND VISIT
OUR STAND!**

DOMOTEX

14th-17th January 2017
Pav. 7, Stand A30
HANOVER
(GERMANY)



16th-21st January 2017
Pav. B6, Stand 502
MUNICH
(GERMANY)



COVER STORY

In 2017 Mapei SpA will be celebrating its 80th year in business. In 2016 seven of the Group's subsidiaries celebrated important anniversaries. In this issue we overview the outstanding projects in these nations that won the 15th edition of the Mapei Reference Grand Prix in-house competition.

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REALTÀ MAPEI
Registered by the Tribunal of Milan
n. 363/20.5.1991
Realta' Mapei International is published 6 times per year

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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 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**

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, **18 main Research & Development Centres**, 1 of which is a Corporate Laboratory, and **70 manufacturing plants operating in 32 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 the early 1990's 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.

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

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

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 region of Asia-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.

**81 subsidiaries
and 70 plants
in the 5 continents
in 32 different countries.
2.3 billion Euros of
consolidated turnover.
More than 1600 products
for building.**

The most innovative products in the building industry are manufactured in the 70 Mapei plants in 32 different countries across five continents.

Over 1600 products (adhesives, sealants, mortars, admixtures, latexes and paints) make up the most complete range of building materials in the world. Miscellaneous high-quality chemical products designed to meet the needs of over 65,000 direct clients worldwide.

Mapei's vast range of products allow the company to play an active part in improving the technical features of buildings, everything from anti-seismic safety to the creation of healthy living/working environments....

Indeed, Mapei's coherent eco-sustainable approach all over the world committed to protecting the environment is embodied in every stage of the life-cycle of its products. From development in the laboratories to manufacturing operations, from the disposal of packaging to customer service and the creation of a comfortable living environment. This is because Mapei products and environmental quality and safety management systems meet the standards of the regulations set by the most authoritative certification institutes in the realm of environmental sustainability.



Robbiano di Mediglia (Italy)



Deerfield Beach (Florida, USA)

| | 1937 - 1976 | | 1977 - 1986 | 1987 - 1996 | |
|------------------|---|--|-------------------------------------|--|-------|
| Employees | 3 | | | 620 | 1293 |
| Total revenue M€ | 0 | | | 124.1 | 325.7 |
| Production lines | <p>WALL PROTECTIVE AND DECORATIVE COATINGS</p> <p>PRODUCTS FOR RESILIENT AND TEXTILE FLOORS AND WALLS</p> | <p>PRODUCTS FOR THE PREPARATION OF SUBSTRATES</p> <p>PRODUCTS FOR CERAMICS AND STONE MATERIALS</p> <p>ELASTIC SEALANTS AND ADHESIVES</p> | <p>PRODUCTS FOR WOODEN FLOORING</p> | <p>PRODUCTS FOR BUILDING</p> <p>PRODUCTS FOR WATERPROOFING</p> <p>PRODUCTS FOR THE REPAIR OF MASONRY</p> | |

As a leading player in this great challenge in the name of ethics, transparency and responsibility, Mapei is now committing to an even higher level of voluntary control over the standards set in the regulations governing products currently available on the market, drawing on the aid of accredited laboratories both in Italy and abroad.

Mapei is continuing to grow drawing on its knowledge and relations both within and outside the business and has clearly set down its commitments in the Group's own Code of Ethics that applies world-wide. This is because Mapei believes that correctness and transparency are concrete facts and not just words.

As Giorgio Squinzi claims, "Our way of operating is not just some fleeting trend, it is based on grounding principles that never fade. These are the pillars on which Mapei was founded 80 years ago and these pillars allow us to look confidently ahead into the future. Creativity, independence and the ability to combine hard work and skills: this is what Mapei stands for. And these are the distinctive traits of the women and men populating the great Mapei World. All this so that we can be leading players in the future when brains and technology, creativity and innovation, hard work and teamwork, will blend together harmoniously".



**Almost 10,000 employees
of which more than 1000
in our 18 R&D centres.**



Delta, British Columbia (Canada)



Nilai (Malaysia)

| 1997 - 2006 | | 2007 - 2016 | | 2017 |
|--|--|--|------|------|
| 1350 | 4800 | 5900 | 9000 | |
| 386.3 | 1428 | 1584 | 2300 | |
| <p>ADMIXTURES FOR CONCRETE</p> <p>PRODUCTS FOR UNDERGROUND CONSTRUCTIONS</p> <p>GRINDING AIDS FOR CEMENT</p> <p>CEMENTITIOUS AND RESIN FLOORINGS</p> | <p>PRODUCTS FOR STRUCTURAL STRENGTHENING</p> <p>PRODUCTS FOR THERMAL INSULATION</p> <p>PRODUCTS FOR ACOUSTIC INSULATION</p> <p>PRODUCTS FOR ROAD MAINTENANCE</p> | <p>PRODUCTS FOR SPORTS FACILITIES</p> <p>PRODUCTS FOR URBAN DESIGN</p> <p>PRODUCTS FOR MARINE INDUSTRY</p> | | |

**80
years**
1937-2017



GLOBAL CELEBRATIONS

IN 2017 MAPEI SPA WILL BE CELEBRATING ITS 80TH YEAR IN BUSINESS. IN 2016 SEVEN OF THE GROUP'S SUBSIDIARIES CELEBRATED REACHING IMPORTANT LANDMARKS. IN THIS ISSUE OF THE MAGAZINE WE DESCRIBE THE MOST IMPORTANT STEPPING-STONES IN THEIR RESPECTIVE BUSINESS-MANUFACTURING BACKGROUNDS. WE OVERVIEW THE OUTSTANDING PROJECTS IN THESE NATIONS THAT WON THE 15TH EDITION OF THE "MAPEI REFERENCE GRAND PRIX" COMPETITION.

1937

 Mapei Spa

1978

 Mapei Inc.

1981

 Mapei Austria GmbH

1984

 Mapei Corp.

 Mapei France SA

1985

 Mapefin Srl

1989

 Mapei East Corp.

 Mapei Far East Pte Ltd

 Mapei UK Ltd

1991

 Mapei Kft

 Mapei spol sro

 Mapei Spain SA

1992

 Mapei GmbH

1993

 Mapei Australia Pty Ltd

 Mapei Caribe Inc.

1981



AUSTRIA

Mapei Austria GmbH

1994

-  Mapei Suisse SA
-  Vinavil Spa
-  Mapei Malaysia Sdn Bhd

1995

-  Mapei Benelux SA

1996

-  Mapei Venezuela CA
-  Mapei AB





1997

-  Vinavil Americas Corp.
-  Zao Mapei



1998

-  Mapei doo






1999

-  Mapei Argentina SA
-  Mapei OY
-  Mapei AS
-  Resconsult AS

2000

-  Adesital Spa
-  VA.GA. Srl
-  Vinavil Egypt for Chemicals SAE
-  Gorka Cement Sp.zoo
-  Mapei Polska Sp.zoo

2001

-  Mapefin Deutschland GmbH
-  Mapei Hellas SA
-  Lusomapei Lda
-  Mapei Sk Sro
-  Vinavil Far East Pte Ltd

2002

-  Sopro Polska Sp.zoo
-  Sopro Bauchemie GmbH (Germany)
-  Sopro Bauchemie GmbH (Austria)
-  Sopro Bauchemie GmbH (Swiss branch office)
-  Cercol Spa
-  Cercol Iberia SL
-  Vinavil Americas Inc.

2003

-  Sopro Hungaria Kft
-  Mapei New Zealand Ltd

2004

-  Mapei China Ltd

2005

-  Mapei Construction Materials (Guangzhou) Co. Ltd
-  Mapei Vietnam Ltd
-  Sopro Cz Sro







2006

-  Rasco Bitumentchnik GmbH
-  Mapei Construction Materials (Guangzhou) Co. Ltd Shanghai branch company
-  Sopro Nederland BV
-  000 Sopro Russia
-  Mapei Romania Srl
-  Mapei Ukraina LLC
-  4307721 Canada Inc.

2007

-  Mapei Construction Chemicals Llc
-  Caribbean Sand Company Llc

2008

-  U.S. Sassuolo Calcio Srl
-  Polyglass Spa
-  Polyglass GB Ltd
-  Polyglass USA Inc.
-  Polyglass Romania Srl
-  Mapei Croatia doo

2009

-  Mosaico+ Srl
-  Mapintec Srl
-  Mapei Betontechnik GmbH
-  Mapefin Austria GmbH
-  Mapei Bulgaria EOOD
-  Mapei Nederland BV
-  Mapei South Africa Pty Ltd

2010

-  Mapei Korea Ltd
-  Mapei De Mexico SA DE CV
-  Mapei Denmark AS

2011

-  Mapei Construction Chemicals Panama SA
-  Mapei Construction Products India Pvt Ltd

2013

-  Mapei Brasil Construction Materials Ltda
-  Mapei SRB doo
-  Mapei Yapi Kimyasallari Inaat Sanayi ve Ticaret Anonim Sirketi
-  Mosaico+ Ukraine

2014

-  Mapei Doha LLC
-  Representative Office of ZAO Mapei in Kazakhstan
-  General Resource Technology Corp.

2015

-  Mapei Costa Rica
-  PT MAPEI Indonesia Construction Products

2016

-  Mapei Perù sac
-  Mapei Philippine Inc.

1991

-  HUNGARY
Mapei Kft
-  CZECH REPUBLIC
Mapei spol sro
-  SPAIN
Mapei Spain SA

2006

-  PEOPLE'S REPUBLIC OF CHINA
Mapei Construction Materials (Guangzhou) Co. Ltd
-  ROMANIA
Mapei Romania Srl
-  UKRAINE
Mapei Ukraine LLC



It is party time for Mapei Austria (again!)

PLENTY OF EVENTS AND MARKETING ACTIVITIES TO CELEBRATE A 35TH ANNIVERSARY

Mapei Austria GmbH, founded in 1981, was the second foreign subsidiary in the history of Mapei, and its manufacturing plant was one of the first Mapei opened abroad. The company was a key player in the Group's initial internationalization plans and expansion operations into Russia, Hungary and the Czech Republic and has an expected turnover of 45.8 million Euros for 2016. This constant growth is due to the great value Mapei Austria GmbH is putting on all its corporate product lines, striving to have a solid market share in all the segments. Andreas Wolf took over the position of General Manager of Mapei Austria GmbH in August 2013. In 2009 Mapei Betontechnik GmbH, a company that manufactured admixtures for concrete, joined the Austrian subsidiary and was merged into Mapei Austria GmbH in October 2016. Mapei Austria GmbH now has a staff of



133 and headquarters in Nussdorf ob der Traisen in Lower Austria, including offices, a manufacturing plant, a Quality Control Laboratory, and an extended training centre for its customers and employees. The company also has warehouses in various locations around Austria (Graz, Klagenfurt, Hall in Tirol, Linz, Nussdorf ob der Traisen, Langenwang and Brunn am Gebirge) used for quickly supplying its own customers with building products manufactured by Mapei Austria GmbH or by other plants belonging to the Group. Mapei Austria GmbH has its own office



LEFT. Andreas Wolf, General Manager of Mapei Austria GmbH, at the opening of the new warehouse in Brunn am Gebirge, near Vienna.

ABOVE. Mapei Austria GmbH organises plenty of training sessions for professionals of the building industry.

dedicated to concrete, a production site for concrete admixtures and a dedicated warehouse in Langenwang, Styria. This very year Mapei Austria GmbH opened a new warehouse in Brunn am Gebirge, near Vienna, where the company invested on special services for its customers: on one hand a modern concrete laboratory where tests are carried out on concrete, on the other hand the company established a so called "flex store 7/24", where customers can pick



LEFT. Mapei Austria GmbH's manufacturing plant in Nussdorf ob der Traisen.

ABOVE. In November 2016 the second edition of the Mapei Austria Reference Gran Prix took place in Wagrain and awards were given to the best projects submitted by the company's clients.

BELOW. Andreas Wolf and Paul Solczykiewicz, Mapei Austria GmbH's Head Sales Manager, with 100 clients in occasion of the football match between SK Rapid Wien and Sassuolo.



up their goods 7 days for 24 hours/day. Mapei Austria GmbH integrally renovated its headquarters in the past by using its top range products: the outside façades, the corridors, the entrance hall, ... everything now talks Mapei language, everything has sound roots.

CELEBRATION AND SHARING

After a first celebration two years ago (see *Realtà Mapei International* no. 49), Mapei Austria GmbH decided to celebrate again its 35 year success by organizing special events. Customers always play a central role for the Austrian subsidiary: a special celebration for customers, partners and the staff is planned in 2017, while many events for customers took place in 2016. First of all the so called "Mapei Insights", a special event which takes place on a yearly base during which customers can discuss together with a well-known speaker and experts about the latest developments in the industry and for which Mapei Austria GmbH is widely known to be an opinion leader in Austria.

Mapei Austria GmbH also invited customers to the Moto GP event in Misano (Italy) in September.

On November the 2nd, the Mapei Austria Reference Grand Prix took place in Wagrain, Salzburg, with customers, partners and the press. It always takes place at a project site and this time the customers could take a ride with a brand new cable car, called G-Link, which connects different skiing destinations in Austria. The station of the cable car was built out of concrete by using MAPECOLOR PIGMENT, special colorants made from synthetic metal oxides, which have been used for special de-

sign. This year, the Mapei Austria Reference Grand Prix was a great success for Mapei Austria. 81 submissions from customers in five categories (UTT, admixtures for concrete, products for resilient materials, construction products and products for ceramic tiles) were received. There was also a special price for one customer, that submitted 16 reference projects. In every category the company selected 3 winners who got a special prize and a diploma.

Some company's staff and plenty of customers were also among the spectators of the Europa League football matches between the well-known Austrian football team SK Rapid Wien against Sassuolo last fall. There was also a top-customer event in Milan and

Mapei Austria GmbH invited its customers to the Group's headquarters and to the Mapei Group's manufacturing plant in Robbiano di Mediglia, near Milan.

Mapei Austria GmbH is also very well known for the direct support of its own technicians and business representatives on both building sites and at their offices all over Austria, as well as for its trainings, too. Every year the company holds a training block of several days, as well as special trainings at customers sites. In early spring there was also a training for customers of the concrete line. It is called "concrete refreshing" and it has to be done according to the norm ÖNORM B 4710 for all employees working with concrete. Mapei Austria GmbH combined the training with an evening event that took place in a famous skiing-resort and which was highly appreciated by the customers.

Let's make a toast, let's celebrate again Mapei Austria GmbH's positive example and constructive attitude for all these 35 years!



HOTEL GRAND FERDINAND IN VIENNA

A NEW LUXURY HOTEL IN THE HISTORICAL CENTRE OF THE CAPITAL OF AUSTRIA COMBINES BOTH TRADITIONAL AND MODERN FEATURES



The Grand Ferdinand Hotel-Viennese Elegance Reloaded, which opened in autumn 2015 and is situated along the 19th century ring-road around Vienna city centre, is just a few minutes' walk from the city park Stadtpark and the Opera House. This 1950s building was once the home of the General Court of the Constitution and any work carried out on its façade had to be approved by the office for the conservation of historical buildings. The client, Florian Weitzer, a well-known Austrian hotelier, invested 27 million Euros to convert the management building into a five-star boutique hotel furnished in the distinctive Viennese cosmopolitan style. Its advertising slogan is a rather old-fashioned type of Austrian greeting, "Küss die Hand, gnädige Frau" ("I kiss your hand, gracious lady"), which has been turned into "Küss die Hand, Grand Ferdinand – new elegance along the ring-road".

The hotel, which opened in October 2015, has 188 guest rooms, an internal garden, a spacious fitness centre, an attic with an infinity pool, and the Grand Etage Saloon, one of the hotel's three restaurants with a striking view across downtown Vienna. The interiors are reminiscent of elegant Viennese homes back in the early 20th century - this has been brought out by incorporating Thonet chairs and tables in the restaurant

facilities - playing on the neutral shades of white and charcoal grey, complete with large chandeliers made of Murano glass and wooden floors.

HOSPITALITY WORK

The Grand Ferdinand Hotel stands out for its high-quality finishes, luxury settings and great attention to the comfort of its guests. The client and designer were looking for highly eco-sustainable products capable of meeting deadlines, lasting through time and offering excellent performance ratings. Mapei Technical Services team recommended a number of systems and products that pleased both the contractor and client.

The installation company prepared the substrates and installed approximately 4000 m² of oak wooden floors in the hotel rooms, fitness facility, suites and attic - some featuring special colours - all using Mapei products.

First of all a bonded screed was created – to make the substrate as smooth and even as possible before installation – using TOPCEM PRONTO, a ready-to-use, normal-setting, controlled-shrinkage mortar for quick-drying (4 days) screeds. PRIMER SN two-component fillerized epoxy primer and – in certain areas - ECO PRIM PU 1K TURBO moisture curing, rapid-drying polyurethane primer with low emission level of volatile organic compounds (VOCs) were then applied on the substrates to consolidate them and promote the adhesion of the following layers.

NIVORAPID ultra fast-setting, thixotropic, cementitious levelling compound with very low emissions of VOC was then applied on the surfaces to make them as smooth and even as possible before installing the wooden floors. In certain parts of the hotel smoothing operations were carried out using ULTRAPLAN QUICK TRAFFIC (manufactured and distributed on the local market by Mapei Austria GmbH) and ULTRAPLAN MAXI ultra fast-drying, self-levelling, smoothing compound, on which floor coverings can be installed just 24 hours after application.

Various different adhesives, such as ULTRABOND P990 1K one-component, ready-to-use, solvent-free, elastic polyu-



The rooftop of the hotel hosts a swimming pool and a restaurant.





rethane adhesive with very low emission level of VOC, were used to install the wooden floor so as to obtain good and lasting results. ULTRABOND P902 2K two-component, epoxy-polyurethane adhesive, which can harden in approximately 24 hours at room temperature to form a strong film with high bonding strength to all types of substrates, and ULTRABOND ECO S948 1K one-component, solvent-free, silylated polymer-based adhesive with very low emission level of VOC, were also used. It was recommended using SILWOOD acrylic sealant (in the same colour as the wood installed) to seal the perimeter joints of the wooden floors.

The Mapei Technical Services team also recommended creating an unbonding layer between the covering and substrate using MAPETEX VLIES antifracture decoupling system (manu-

factured and distributed on the Austrian market by Mapei Austria). The substrates of the outside terrace were smoothed using PLANITOP FAST 330 quick-setting, fibre-reinforced cementitious levelling mortar.

Other Mapei products used in the hotel were IDROSILEX PRONTO, an osmotic cementitious mortar suitable for contact with drinking water (the product has now been superseded by PLANISEAL 88) for waterproofing and repairing the walls, MAPEFLEX AC4 one-component, paintable, water-based acrylic sealant, MAPESIL LM neutral mould-resistant silicone sealant, and MAPECRETE STAIN PROTECTION hydro-oil repellent and anti-stain treatment for concrete, natural stone and cementitious surfaces made from modified organic polymers in watery solution.

TECHNICAL DATA

Grand Ferdinand Hotel,

Vienna (Austria)

Period of Construction:

2014-2015

Year of the Mapei

Intervention: 2015

Intervention by Mapei:

supplying products for building the screeds, preparing and smoothing the substrates, installing the wooden floors and sealing the joints

Works Direction: Romina

Kamper

Design: Atelier Heiss ZT GmbH

Client: Weitzer Hotels

BetriebsgesmbH

Wooden Floor Installation

Contractor: Parketthaus

Kamper&Kamper GmbH

Mapei Co-ordinators:

Reinhold Stinzi, Christian Sabitzer and Paul Solczykiewicz, Mapei Austria GmbH

MAPEI PRODUCTS

Preparing the substrates:

Eco Prim 1K Turbo, Idrosilex Pronto (lately superseded by PLANISEAL 88), Mapecrete Stain Protection, Mapetex Vlies*, Nivorapid, Planitop Fast 330, Primer SN, Topcem Pronto, Ultraplan Maxi, Ultraplan Quick Traffic*

Installation of wooden floors:

Ultrabond Eco S948 1K, Ultrabond P902 2K, Ultrabond

P990 1K

Sealing joints: Mapeflex AC4, Mapesil LM, Silwood

*These products are manufactured and distributed on the Austrian market by Mapei Austria GmbH

**For further information see the websites www.mapei.com and www.mapei.at



LEFT. The wooden floors were installed using either ULTRABOND P990 1K or ULTRABOND P902 2K, or else ULTRABOND ECO S948 1K after building screeds with TOPCEM PRONTO.

BELOW. One of the three hotel restaurants after all the works had been completed.

IN THE SPOTLIGHT

ULTRABOND P990 1K

It is a ready-to-use, moisture curing, resin-based, one-component, polyurethane adhesive. ULTRABOND P990 1K is used for bonding all size and formats of jointed, pre-finished solid wood parquet with a ply backing. It is suitable for floor-layers allergic to epoxy-polyurethane products. It features 30% higher yield compared with conventional two component products, as well as excellent rib stability and buttering on the back of the covering. It can contribute up to **5 points** to obtain the **LEED** certification.





Mapei Kft turned 25!

A SUBSIDIARY
WHICH CANNOT BUT
GROW AND RECEIVE
ACKNOWLEDGEMENT

Mapei Kft., was established on September 1st, 1991 as a subsidiary of the Mapei Group and manufacturer and supplier of chemical products for building. The company owns a production plant in Sósokút, in the Northern part of the country, where materials for the building industry are produced for domestic use as well as for exporting them to the near countries.

In 1991 Mapei Kft. only employed a staff of four in a rented out building serving as offices and warehouses. In April 1993 Béla Markovich was appointed General Manager of Mapei Kft., a position he still holds today. Under his guidance the subsidiary really boomed and the construction of new head offices and a warehouse took place in 1999 and the manufacturing plant was opened in Sósokút in 2002. The product lines and the materials manufactured by Mapei Kft. in Hungary constantly increased, just like the company turnover and the number of employees. The headquarters in Budaörs, in the Northern part of the country, were later extended. The plant in Sósokút was also extended between 2007 and 2008.

Today Mapei Kft. has 146 employees. It was voted the "Best Workplace" by Hewitt Human Consulting Ltd (a management consulting firm specializing in human resources) first in 2006, then again in 2015. In 2015 over 458,000 tons of manufactured products (with over 50 product types available) were produced at the plant in Sósokút and the turnover of Mapei Kft. increased by 20% compared to the previous year's sales, thus exceeding 30 million Euros.

These positive results are due to several factors: the com-



ABOVE, LEFT.
Mapei Kft.'s plant in
Sósokút, in Northern
Hungary.

ABOVE, RIGHT.
Mapei Kft.'s
headquarters in
Budaörs.

LEFT. Béla
Markovich, General
Manager of Mapei Kft.



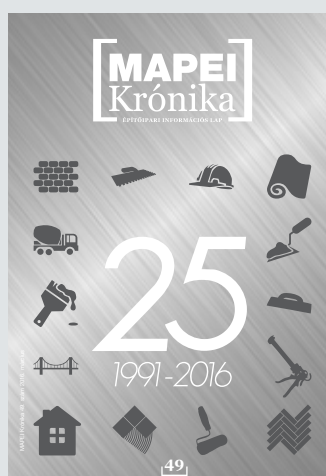
pany's coordinated and intensive marketing (which will also include training events for 85,000 people in 2015 and a Top Installers Day and Top Installers Programme in 2016) and sales activities, its staff of over 70 particularly well-trained sales, product and partner service managers, and its corporate strategy based on knowledge sharing. The combination of all these factors allows Mapei Kft. to meet the needs of approximately 1,230 customers. Another proof of the success of the Hungarian subsidiary is the large amount of building and repairing projects it took part in on prestigious buildings such as the Aria Hotel (see *Realtà Mapei International* no. 55) and the Palace Garden Bazaar (*Realtà Mapei International* no. 54) in Budapest, the Zala Springs Golf Resort (*Realtà Mapei International* no. 60) in Zalacsány, the Hungaroring Motor Racing Circuit in Mogyoród, and the Abacus Wellness & Business Hotel in Herceghalom. Mapei Kft. has also been lately honoured with a Business



ABOVE. Some moments of the press conference organized by Mapei Kft. on 9th March, 2016 at the Aria Hotel in Budapest, attended by Veronica Squinzi and Béla Markovich.

LEFT. The special issue of the in-house magazine *Mapei Krónika*, published by Mapei Kft. and specially dedicated to the anniversary. The cover features the logo specially developed for the 25th anniversary of Mapei Kft.

BELOW. On 26th November Mapei Kft. celebrated its anniversary with a Jubilee Ball that was also an occasion to collect money for charity.



Ethics Award that is given to companies who set an ethical example and whose operations strengthen the trust between civil society and the world of business. The Group's Hungarian subsidiary received the highest mark from the panel of judges.

TWENTY-FIVE YEARS OF SUCCESS

Several activities were planned by Mapei Kft. to celebrate its 25th anniversary. First of all, a special logo was designed, which was subsequently featured on all PR materials, and used at various meetings and at the Construma fair.

Mapei Kft. also organised a press conference on March 9th at Hotel Aria. Béla Markovich and the Mapei Group's Internationalisation and Global Development Director Veronica Squinzi delivered speeches. Markovich described the successes of the company in the past 25 years as well as the goals set for this year, such as the expansion of the Sósút plant. This latter investment is intended to nearly double the storage space and launch a new production line.

A special issue of *Mapei Krónika*, the in-house magazine published by Mapei Kft., was published reporting the successes and experiences of the last 25 years.

On 26th November Mapei Kft. also organised a Jubilee Ball which was a further occasion to worthily celebrate the 25th anniversary while collecting money for charity.



AVALON PARK IN MISKOLCTAPOLCA

SOLUTIONS FROM SIX MAPEI PRODUCT LINES TO COMPLETE A PRESTIGIOUS COMPLEX FOR PROMOTING TOURISM IN EASTERN HUNGARY

The natural and historic treasures of Eastern Hungary offer a good basis for developing the tourism sector. Miskolc-tapolca stands out due to its extraordinary geographical resources: a cave bath, a rock chapel situated deep in a cave, the Békás-tó (Frog Pond) located in the crater of a now extinct volcano, etc.. This is the heart of the Bükk Hills hosting the largest continuous forest in Hungary on over 100,000 hectares and the Bükk National Park.

This is the area where Hell Energy LLC found a highly exclusive location for building Avalon Park, a hotel and family amusement and theme park offering its guests a whole range of tourism services. The project was the largest investment in the Hungarian touristic sector in 2015 and was completed in two stages. As a result, a building compound unique in its complexity was constructed, which contains a karting track, an event center, an open air theatre, an artificial turf pitch, outdoor and indoor pools, a hotel, a restaurant, a covered and open restaurant and beer garden, Finnish log cabins, a playground, etc.

SIX MAPEI PRODUCT LINES AT WORK

Mapei products belonging to six different product lines were employed during this large scale building project which cost nearly 320,000 Euros. Mapei materials were used in the apartment houses, the event center, the Italian restaurant, the grill bar, the storage room attached to the kart track, the hotel building, the wellness unit, the outdoor pools, and the parking garage.

SUBSTRATE PREPARATION

PRIMER G synthetic resin-based primer in water dispersion was applied on the floor substrates and plaster walls in all the areas where ceramic tiles and textile floors were installed.

PROSFAS solvent-free, silicate-based consolidator was

instead used for consolidating the porous and weak concrete floor substrates of the log cabins.

Before installing ceramic tiles on all the involved areas (except for the terraces, bathrooms and wellness areas), the surfaces were levelled with either ULTRAPLAN ECO 20 or ULTRAPLAN RENOVATION levelling compounds, depending on the differences in thicknesses. Both products are manufactured and distributed on the Hungarian market by Mapei Kft.

PLANITOP FAST 330 quick-setting, fibre-reinforced cementitious mortar was employed for smoothing unevennesses on the substrates irregularities in the pools and terraces.

WATERPROOFING INTERVENTIONS

All indoor bathrooms had underfloor heating floorings, which were waterproofed with MAPELASTIC flexible cementitious mortar. MAPEGUM WPS quick-drying flexible liquid membrane was installed on the wall substrates in the bathrooms of the hotel rooms, while MAPELASTIC AQUADEFENSE ready-to-use, ultra quick-drying, flexible liquid membrane was used on the walls of the bathrooms of the common areas and MAPELASTIC TURBO rapid-drying elastic cementitious mortar, reinforced with MAPENET 150 alkali-resistant fibre glass mesh, was instead used on over 80 m² substrates on the terraces. MAPEBAND PE 120 tape was used for waterproofing corners between surfaces treated with MAPEGUM WPS and MAPELASTIC AQUADEFENSE membranes. MAPEBAND SA self-adhesive butyl tape was used for sealing fillets between the floors and the wooden walls of the bathrooms as well as the joints between adjacent plasterboard panels in the log cabins. MAPEBAND tape with alkali-resistant fabric was also applied in the bathrooms of the common areas and the guests rooms for sealing corners between walls and floors.





INSTALLING CERAMIC TILES AND STONE MATERIALS

Thin porcelain tiles measuring 120×60 cm were installed with ULTRALITE S2 in the Italian restaurant on the sidewalls of the counter. 60×60 cm ceramic tiles were bonded on outdoor floors with KERAFLEX LIGHT S1, an adhesive which is manufactured and distributed on the Hungarian market by Mapei Kft. Ceramic tiles of the same size were installed on the walls of the bathrooms of the common areas, guests rooms and log houses, as well as on the outdoor floors of the block-houses with KERAFLEX cementitious adhesive with extended open time and no vertical slip which was also used for bonding 30×60 cm ceramic tiles on the walls of the bathrooms and the wellness areas. Small- and normal-sized ceramic tiles were installed with ADESILEX P9 cementitious adhesive

with no vertical slip and extended open time. Natural stone slabs were installed onto floors and walls of the conference rooms, and well as on the façades of several buildings with KERAFLEX MAXI S1 deformable cementitious adhesive. This product was also used for bonding the 20×20×1.8 cm ceramic tiles on the kitchen floors and the stone coverings on the parapet walls.

KERABOND T cementitious adhesive with no vertical slip was employed for bonding ceramic tiles on the walls of the service areas. The surfaces of the outdoor and indoor pools were covered with glass mosaic bonded with ELASTORAPID highly-deformable, cementitious adhesive with no vertical slip. The product was chosen for its quick setting properties which allowed the pools to be put into use as fast as possible. Mapei grouts for joints were widely used as well. In most





IN THE FACING PAGE. The surfaces of the outdoor and indoor pools were covered with glass mosaic bonded with ELASTORAPID adhesive, after treating smoothing unevennesses on the substrates with PLANITOP FAST 330 quick-setting, fibre-reinforced cementitious levelling mortar.

ABOVE, LEFT. In all indoor bathrooms the floor substrates were waterproofed with MAPELASTIC flexible cementitious mortar.

ABOVE. In the showers and bathrooms of the log cabins the joints of the platinum glass mosaics were grouted with ULTRACOLOR PLUS anti-efflorescence, quick-setting and drying polymer-modified mortar.

cases, KERACOLOR FF FLEX cementitious mortar (which is manufactured and distributed on the Hungarian market by Mapei Kft.) was used for the joints of ceramic and stone coverings. In the showers and bathrooms of the log cabins the joints of the platinum glass mosaics were grouted with ULTRACOLOR PLUS anti-efflorescence, quick-setting and drying polymer-modified mortar with water-repellent DropEffect® and mould-resistant BioBlock® technology. Tile joints in the pools and kitchens were grouted with KERAPOXY CQ epoxy grout with excellent cleanability, a bacteriostatic agent and BioBlock® technology.

In the indoor wellness unit three-dimensional installations were completed by mixing MAPEGLITTER metal-effect coloured glitter, in its golden shade, with KERAPOXY DESIGN anti-acid, decorative, translucent epoxy mortar. After grouting, the expansions joints of the ceramic surfaces (including those on the terraces) were sealed with MAPESIL AC mould-resistant, acetic silicone sealant. MAPESIL LM neutral, silicone mould-resistant sealant was used for sealing joints in the natural stone coverings. Before applying MAPESIL AC, MAPEFOAM closed-cell, extruded foam polyethylene cord was inserted into the flexible joints of the ceramic tiles of the grill bar and the beer garden on the terrace for correct sizing of the joints.

INSTALLATION OF TEXTILE MATERIALS

Mapei products were used for installing textile floorings in the apartment houses, the conference building and the hotel. The Mapei system chosen for this kind of application included PRIMER G as primer, ULTRAPLAN ECO 20 as levelling compound, ULTRABOND 333 and ADESILEX LP as adhesives.

IN THE SPOTLIGHT

ULTRALITE S2

It is a cementitious (C), improved (2), rapid-setting (F), extended open time (E), highly deformable (S2) C2FE S2 class adhesive according to EN 12004 standard. It is used for bonding all types and sizes of ceramic tiles (including thin porcelain tiles) and stone materials on internal and external substrates. Because of its high wetting capacity on the backs of tiles, it is particularly

suitable for laying any type of thin porcelain tile (using the double buttering technique), including on thermal insulation systems, such as MAPETHERM TILE SYSTEM. It can contribute up to **7 points** to obtain the **LEED** certification.



PRODUCTS FOR BUILDING

"Mapei products for building deserve five points on a scale of five, they perform at 100% and are the best value for their price. The full support offered by the Mapei staff throughout the construction process was another major asset" so claimed Gergely Bodnár, the site manager for Avalon Park. Indeed, several Mapei solutions for building operations were used for this project.

The irregularities in the concrete surfaces on the terrace of the conference building were treated with PLANITOP 400 quick-setting, controlled-shrinkage thixotropic mortar, before levelling the surfaces with PLANITOP 550 (manufactured and distributed on the Hungarian market by Mapei Kft.).

The irregularities in the concrete floor substrates of the conference room were repaired with EPORIP solvent-free, epoxy adhesive before installing the ceramic coverings.

The screeds were prepared by using TOPCEM special normal-setting, quick-drying, controlled-shrinkage hydraulic binder or TOPCEM PRONTO normal-setting, controlled-shrinkage mortar. The contractors were looking for a solution that would allow them to prepare sloping concrete surfaces in cold winter weather. TOPCEM PRONTO was the proper choice for this purpose.



ABOVE AND IN THE FACING PAGE. The textile covering was installed in several areas with ULTRABOND 333 while ceramic tiles were bonded around the fireplace with KERAFLEX.

The contractors were also particularly pleased with MAPEPUR UNIVERSAL FOAM, which was used to fill the gaps around the doors and the windows throughout Avalon Park. MAPEFLEX FIRESTOP 1200° refractory grout was used in the elevator machine room where a fire-resistant material was needed. For repairing the concrete surfaces in the outdoor pools the contractors used MAPEGROUT 430 fine-grained, fibre-reinforced, thixotropic mortar in large quantities. Some irregularities in pouring the concrete were evened out by using MAPEFER 1K (anti-corrosion cementitious mortar on the steel reinforcement rods) and Mapei mortars for concrete repair. Expansion joints between the outdoor sidewalk and the façades of the Italian restaurant were made waterproof and resistant to UV rays with MAPEFLEX PU45 one component, rapid-hardening, paintable, thixotropic polyurethane sealant and adhesive with a high modulus of elasticity. MAPEFIX VE SF styrene-free, hybrid vinyl resin-based chemical anchor was chosen for structural loads and construction bars in concrete.

WATERPROOFING WITH POLYGLASS PRODUCTS

The basement of the parking garage was made waterproof by installing two layers of FLEXO S6 PREMIUM membranes by Polyglass, a subsidiary of the Mapei Group. The structural deck was protected against rainwater with double layers of PLANA P PREMIUM membranes. A single layer of PLANA P PREMIUM membrane was applied in combination with POLYGLASS ANTIRADICE root barrier membranes on about 2,500 m² of the garden roofs.

PRODUCTS FOR THERMAL INSULATION AND WALL COATINGS

The MAPETHERM thermal insulation system was used on several sections of the external walls of the hotel, the storage



room of the kart track, and the restaurant, as well as on the abutments of the playground where façades were not covered with stone. The insulating panels were bonded in these areas with MAPETHERM AR1 cementitious mortar or, where a thicker layer of adhesive was required, with MAPETHERM AR1 GG large-grained cementitious mortar.

The external walls of the buildings were impregnated with ANTIPLUVIOL W silane and siloxane water-repellent impregnator, after removing all the cement and lime stains with KERANET acid-based cleaning solution. The brick walls inside the restaurant were treated with ANTIPLUVIOL W.

TECHNICAL DATA

Avalon Park, Miskolctapolca (Hungary)

Period of Construction: 2014–2016

Period of the Mapei Intervention: 2014–2016

Intervention by Mapei: providing solutions for concrete repair, thermal insulation, substrate preparation,

waterproofing of substrates and roofs, installing ceramic tiles and stone slabs, installing textile and resilient materials

Project: Peka Bau 2000 Kft.

Client: Hell Energy LLC

Main Contractor: Peka Bau 2000 LLC

Contractors for ceramic tile and stone installation: Novient LLC, Csaba Pálfalvi, Tororé LLC

Contractors for textile and resilient floorings: K-Deco LLC, Kulenda & Partner LLC

Contractor for building interventions: Attila Szilágyi entrepreneur

Contractor for thermal insulation: Attila Szilágyi entrepreneur

Contractor for roof and basement waterproofing: Geszig LLC

Mapei Distributors: Mikorex LLC, Alapozóker LLC

Mapei Co-ordinator: Gábor Nagy, Mapei Kft. (Hungary)

MAPEI PRODUCTS

Substrate Preparation: Adesilex P4, Primer G, Eco Prim Grip, Prosfas, Ultraplan Renovation*, Ultraplan Eco 20*, Topcem, Topcem Pronto, Planicrete

Installing ceramic tiles and stone materials: Adesilex P9, Adesilex P9 Express*, Keraflex, Ultralite S2, Mapetex, Keraflex Light S1*, Keraflex Maxi S1, Elastorapid, Kerabond T

Installing textile materials: Ultrabond 333, Adesilex LP

Grouting joints: Ultracolor Plus, Keracolor FF Flex, Kerapoxy Design, MapeGlitter, Kerapoxy CQ

Sealing expansion joints: Mapesil AC, Mapefoam

Waterproofing substrates: Mapelastastic

AquaDefense, Mapelastastic, Mapeband, Mapeband PE 120, Mapenet 150, Mapegum WPS, Mapeband SA

Building interventions: Planitop Fast 330, Planitop 400, Mapeflex PU45, Mapepur Universal Foam, Mapeflex AC4, Mapeflex Firestop 1200, Planitop 550, Eporip, Mapefer 1K, Mapegrout 430, Mapefix VE SF

Thermal insulation: Mapetherm AR1 GG, Mapetherm AR1, Mapetherm Net

Roof waterproofing: Polyglass Antiradice**, Plana P Premium**, Polyprimer**, Flexo S6 Premium**

Cleaning substrates and providing wall coatings: Keranet, Antipluvial W

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

**These products are manufactured by Polyglass (Mapei Group)

For further information see www.mapei.com and www.mapei.hu



25 years for Mapei spol sro

TWO OFFICES, TWO
WAREHOUSES
AND LONG-TIME
EXPERIENCE FOR THE
CZECH MARKET



ABOVE. Mapei spol sro's headquarters and warehouse in Olomouc.

RIGHT. Zdeněk Runštuk, General Manager of Mapei spol sro.

Mapei spol sro was established in 1991 by Zdeněk Runštuk, still General Manager of the company, in the town of Olomouc, in the region of Moravia in the Eastern part of the Czech Republic. The Czech subsidiary has now 67 employees. Its headquarters and warehouse are located in Olomouc. It also has a branch equipped with offices and a warehouse in Jažlovice, too, near Prague, the capital of the country and of the Bohemian region. Thanks to their strategic location, they allow the distribution of the complete range of the Mapei solutions (included the ones received from other production facilities of the Group which are situated in Italy, Poland, Germany, Austria and Hungary) to all the corners of the Czech Republic.

The company's service along with an intense marketing activity (including the "Mapei Academy", a real academy dedicated to training activities), the exemplary activity of its Technical Services Department and its efficient sales force made this successful history come true over the past 25 years.

Mapei spol sro's success is proved by its contribution to prestigious building and restoration projects, such as the Vela Private Island Maldivy Resort, the Ejovice Tunnel (see the related article on the following pages), the Charles Bridge in Prague (see *Realtà Mapei International* no. 32), the Aqualand Moravia Aquatic Park in Pasohlávky (see *Realtà Mapei International* no.51), the scientific educational park IQ Landia Science Centre in Liberec, the VAK water production plant in Kroměříž, the Černý Most Shopping Centre in Prague, the Regional Museum in Litomyšl (see *Realtà Mapei International* no.51), etc.

LET US CELEBRATE MAPEI SPOL SRO

Being 2016 the year of Mapei spol sro's 25th foundation anniversary, manifold activities were organized. A special logo was designed on this occasion and a new book was pub-



LEFT. Mapei spol sro's warehouse in Jažlovce, in the Central Part of the Czech Republic.

BELOW. To celebrate the 25th anniversary of the Czech subsidiary, special intensive PROMO training sessions have been organized, to better explain its customers the Mapei solutions for the installation of ceramic tiles and stone, resilient and textile materials, along with products for building and thermal insulation.

lished to narrate the story of this subsidiary and retrospectively look at all remarkable projects that Mapei spol sro was involved over the past 25 years.

The first quarter of 2016 was marked by a campaign launch which included very intensive "PROMO" trainings, the highlights on Mapei Fast Track Ready Technology and the recalling of Mapei spol sro's 25 years in the Czech Republic. During the PROMO activities in Olomouc, Brno and Prague, the customers were provided with 40 minutes seminars sessions of very intensive technical training on the Mapei product lines for the installation of ceramic tiles and stone materials, resilient and textile floorings, along with the products for building

and for thermal insulation. Through these training sessions, the added value of the Mapei systems and products came into the limelight for many areas.

This was also an ideal opportunity for the General Manager, Zdeněk Runštuk, to personally thank all those who have played a part in the success story of Mapei spol sro, underlining how Mapei technical experience, its flexible sales network and impeccable customer service have been the most important "ingredients" of this success. These ingredients, combined with the international DNA of the Mapei Group and its constant efforts to achieve technological innovation, will lead the way for further future positive results.



THE EJPOVICE TUNNEL

A NEW RAILWAY TUNNEL WILL CUT THE TRAVEL TIME BETWEEN PRAGUE AND PILSEN

After almost two years of hard work, the diaphragm of the south tube of the Ejpovice tunnel, near the portal located in Doubravka, a suburb of Pilsen along the Prague-Pilsen railway line in the Czech Republic, was officially broken through.

The tunnel is a key element of the Rokycany-Pilsen line, which forms part of the trans-European transport network and the national Third Railway Transit Corridor which runs all the way to the German border. The tunnel will reduce the length of this stretch of the railway line by more than 6 km: once work has been completed – in 2018 – it will take less than one hour to travel from Prague to Pilsen and trains will be able to travel at speeds of 120-160 km/h; it currently takes around one and a half hours to travel between the two cities.

The modernization of the Rokycany-Pilsen railway line is part of a larger project concerning the national railway in the Czech Republic. The project also fits into the concept of trans-European transport networks by the European Commission and complies with the requirements for interoperability of the European railway network.

The Ejpovice tunnel is the main tunnel of this project and its construction is supposed to improve the safety of railway operations. The project included the construction of two parallel single-track tunnels, each of 9.89 m-diameter with a length of 4,150 m. The tunnels were bored by a tunnel boring machine (TBM) named Victoria which weighs 1,800 tons, is 114 m long and 10 m in diameter and has a rotating head which allows tunnels to be bored and then lined with







segmented concrete rings, completely automatically, through both hard rocks and softer ground, or below aquifers. According to the original schedule planned by the designers of the tunnel, the TBM Victoria should have completed digging operations in November 2015, but during tunnelling operations it encountered unexpected problems due to the geological conditions of the ground. The TBM was then disassembled and refurbished and transported to the town of Kyšice, where it started to dig the second tube of the tunnel.

CUTTING-EDGE ADMIXTURES FOR A COMPLEX PROJECT

Mapei UTT (Underground Technology Team) cooperated closely with the contractor to choose the most proper chemical products for ground conditioning and find out their ideal application method. The process included several laboratory

tests conducted at the Polytechnic University of Turin (Italy) and then directly on the building site. The soil at the tunnel face is generally conditioned with the injection of POLYFOAMER FP/CC liquid foaming agent, with its parameters constantly adapted to the changeable geological conditions.

In some tunnel sections the conditions were particularly complex, with the presence of huge amounts of water at the tunnel face, which required some other measures than just using the foaming agent. In these sections MAPEDRILL M1 synthetic polymer in liquid form, fully compatible with the foaming agent used, was injected into the excavation chamber of the tunnel boring machine. This polymer is able to improve the muck consistency immediately, thus allowing its extraction by means of the screw conveyor. The use of this polymer allowed the contractor to increase significantly the efficiency of the tunnel boring machine, improving the speed of the excavation works and reducing the time loss due to production breaks.

One of the TBM boring method characteristic is to build the lining using pre-cast reinforced concrete elements in the shield. The shield has always bigger diameter than the outer diameter of the tunnel lining ring. Therefore, cavities between the lining and the soil arise naturally during the boring and it is necessary to fill them by injection.

MAPEQUICK CBS SYSTEM, a two-component system for cement-based mixes for injection, has been chosen for the Ejovice tunnel. It is a system made up of MAPEQUICK CBS SYSTEM 1 liquid retarding agent, which during the application phase is mixed with the MAPEQUICK CBS SYSTEM 2 liquid activator admixture, which is able to ensure a very quick set of the mix.

DEFOAMER XP liquid defoaming agent was used in this building site to get rid of the foam during its release to the machine or on the surface. MAPEQUICK AFK 889 alkali-free accelerator for sprayed concrete was used during smaller additional boring works such as in the entrance and access pits.



The Ejovice tunnel is the main tunnel of the Rokycany-Pilsen railway line in the Czech Republic. Mapei supplied several products for excavation operations using a tunnel boring machine (TBM) named Victoria.



IN THE SPOTLIGHT

MAPEQUICK CBS SYSTEM

It is a system specifically designed for use in cementitious mixes that need long workability. It includes MAPEQUICK CBS SYSTEM 1, a liquid retarding agent and MAPEQUICK CBS SYSTEM 2 liquid activator admixture. MAPEQUICK CBS SYSTEM 1 is a low viscosity solution able to retard cementitious mixes maintaining mix workability. In addition the solution assists in reducing bleed of the grout and decreases the grout viscosity. MAPEQUICK CBS SYSTEM 2 is suitable for activating cement setting in mortars or slurries used in injections. It also increases the viscosity of cement-based mixes, even where there is a high water/cement ratio. The main application field of MAPEQUICK CBS SYSTEM is the injection of cementitious mixes used in back-fill grouting behind the precast concrete segments in tunnels excavated by means of TBM (Tunnel Boring Machines).

TECHNICAL DATA

Ejpovice Tunnels, Rokycany-Pilsen railway line, Czech Republic

Period of Construction: 2015-2017

Year of the Intervention: 2015
Intervention by Mapei: supplying products and admixtures for excavation works with tunnel boring machines

Design: Sudop Praha a.s.

Client: ŠŽDC

Works Direction: Štefan Ivor

Contractors: Sdružení MTS, SBT - MTÚ Rokycany, Metrostav a.s.

Mapei Co-ordinators: Zdeněk Runštuk, Krcmar Ondrej, and Hela Vlastimil, Mapei spol. sr.o. (Czech Republic)

MAPEI PRODUCTS

Defoamer XP, Mapedrill M1, Mapequick AFK 889, Mapequick CBS System 1, Mapequick CBS System 2, Polyfoamer FP/CC

For further information see www.mapei.com and www.utt.mapei.com



LEFT. The Mapei Spain S.A.'s manufacturing plants in Cabanillas del Campo and Amposta.
ABOVE. Ibermapei's headquarters in Santa Perpètua de Mogoda, near Barcelona.

Mapei Spain S.A.: a success story

25 YEARS OF GROWTH, QUALITY AND
TRANSPARENCY IN SPAIN

Mapei began operating in Spain back in 1991 when it opened its first business facility called Ibermapei S.A. in Alcorcón, near Madrid. Since then the company has continued to make rapid inroads into the country: its first commercial office opened in 1992 in Badalona, near Barcelona, and then in 1993 Ibermapei began selling products for installing ceramic tiles; next a technical-business office was set up in Mallorca in 1996 serving all the Balearic

Islands; offices then opened in Palma de Mallorca and Onda, in the province of Castellón, in 1997 - the area where most of Spanish ceramic manufacturing is located; the Spanish subsidiary then took over Hidro Recubrimientos in the same year, a manufacturer of coloured plasters for outdoors, with which it then merged in 1998. A manufacturing facility was then opened in Amposta in Northern-Eastern Spain in 1999. The next and most important steps

in Mapei's growth operations in Spain included the opening of a production facility in Cabanillas del Campo in the province of Guadalajara, in the central part of the country, in November 2005. This new manufacturing plant was opened to boost the on-site manufacturing of Mapei products, when the production facility in Amposta proved incapable of meeting all the demands of the whole Spanish market.

The new headquarters in Santa Perpètua de Mogoda, near Barcelona, came into operation in July 2012, including plenty of space for storing products, offices, a showroom (where training seminars and courses are still held) and a testing room (where demonstrations of the work carried out by its technicians still take place). Training areas have also been introduced at the plant in Cabanillas del Campo.

In 2013 the Spanish subsidiary was awarded the OHSAS 18001 certification for its Management System and Health and Safety at Work and in 2014 it was involved in the UCI Road World



ABOVE. On 1st July, Giorgio Squinzi, President of the Mapei Group, and Adriana Spazzoli, the Group's Operational Marketing and Communication Director, attended a lunch to celebrate the 25th anniversary of the Spanish subsidiary in the company of staff from the Mapei Spain S.A.'s offices in Santa Perpètua de Mogoda.





Cycling Championships that were held in Ponferrada, in the Northern part of the country. This major sports event cemented Mapei's traditional bonds with cycling in Spain: indeed the company's reputation had already been boosted by the success of the Mapei Professional Cycling Team from 1993 to 2002. Sponsored by Mapei, the team included such notable Spanish champions as Abraham Olano Manzano and Óscar Freire Gómez and won numerous races in Spain, too.

25 YEARS OLD....BUT IT DOES NOT SHOW

During its 25th year in business, the Mapei Spanish subsidiary, which now has 146 staff and a business network covering the entire country, was renamed "Mapei Spain S.A." to fall even more closely in line with the rest of the Group and reinforce its own corporate values.

Anniversary celebrations began with a traditional birthday cake decorated in blue-and-white being sent to 200 of Mapei Spain S.A.'s VIP clients. The subsidiary took advantage of this opportunity to attract the interest of people on social media, asking everybody who received a cake to take a photo of themselves and then share it on social media using the hashtag #25añosmapei.

On 1st July, Giorgio Squinzi, the President of the Mapei Group, and Adriana Spazzoli, the Group's Operational

Marketing and Communication Director, took part in a celebration lunch together with members of staff from the offices of Mapei Spain S.A. in Santa Perpètua de Mogoda. Squinzi personally congratulated the whole of the Mapei Spain team for helping transform an almost unknown company on the Spanish market into a leading player in the national building industry.

Later that evening Giorgio Squinzi and Adriana Spazzoli, in the company of

ABOVE. On 7th October 2016, about 130 of Mapei Spain S.A.'s clients visited the Prado National Museum in Madrid accompanied by members of the Spanish subsidiary. A performance of "La Bohème" was followed by a visit to the dressing rooms of some of the performers and the cutting of a cake.

BELOW. About 150 members of staff from Mapei Spain visited the Pueblo Español in Barcelona, a national museum providing an overview of the various regions of Spain. Specially for the occasion, professional chefs taught the guests how to prepare various local dishes, which they then ate together.





In 2016 Mapei Spain S.A. also launched a special transparency campaign making the most of its in-house magazine *Realidad Mapei*.

Francesc Busquets, the General Manager of Mapei Spain, attended a special evening event organised at the Gran Teatre del Liceu, where they watched the Opera “La Bohème” together with 11 clients. At the end of the evening, after visiting the dressing rooms of some of the performers, there was the cutting of a cake to commemorate the fact that the Group has now been operating in this country for 25 years. Squinzi took this opportunity to express his satisfaction with the results of the Group’s investments in this country.

On 7th October there was another event in honour of 130 of the most loyal and important Mapei clients in Spain: a guided tour behind closed doors of the Prado National Museum in Madrid in the company of selected members of the Spanish subsidiary. The museum, one of the most important in the world, opened specially for that evening, allowing guests to admire some of the most important paintings

in Europe (such as works by El Greco, Velázquez, Goya, Tiziano and Rubens) accompanied by some of the facility’s expert guides. The tour was followed by cocktails and the cutting of yet another cake, this time in the presence of Veronica Squinzi, Internationalisation and Global Development Director for the Mapei Group.

As a worthy counterpart to this evening, another event was organised at the Pueblo Español in Barcelona for about 150 staff from various facilities belonging to the Spanish subsidiary. The Pueblo Español, created in conjunction with the 1929 World Expo, provides an overview of the various regions of Spain. It features 117 scale reproductions of Spanish buildings to

create a “miniature Spain” focusing on the main traits of each separate region. Wandering around the roads and squares, the staff of Mapei Spain also enjoyed a number of typical Spanish dishes and admired examples of local craftsmanship. Five professional chefs then taught the guests how to prepare a number of typical dishes, which they then ate together, demonstrating once again the great team spirit characterising Mapei Spain S.A.

TRANSPARENCY CAMPAIGN AND BEST ITALIAN COMPANY IN SPAIN

Another event envisaged for the 25th anniversary of the Group’s subsidiary was a campaign, which began at the beginning of 2016, for transparency and ethics, whose aim is to help defend quality in the chemicals for building sector. Moral behaviour, the constant quest for excellence and transparent communication are values “imprinted” in the Mapei Group’s DNA, and it is Mapei Spain’s intention to promote them on the Spanish market and in all the organisations and people it has dealings with.

The campaign also focuses on Mapei’s commitment to respect the environment and safeguard installers and users of its products, partly by making use of international certifications recognised on an international scale (LEED, ISO 9001, ISO 14001 and OSHAS 18001).

Mapei Spain S.A. has also been lately awarded by the Italian Chamber of Commerce with the “Premio Faro del Mediterraneo” as the best Italian company in Spain in 2016. That award goes to Italian and Spanish companies that promote cultural, economic and commercial activities between both countries.





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Más de 150 productos Mapei ayudan a realizar proyectos innovadores certificados LEED, de acuerdo al U.S. Green Building Council.

Mapei aplica sistemas de:
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medio ambiente
gestión de la seguridad
salud

Certificados según las normas internacionales:

ISO 9001
ISO 14001
OHSAS 18001

Los productos y sistemas cumplen con:



El reglamento europeo de Productos de Construcción (CPR 305/2011), en vigor desde el 1 de julio de 2013.



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THE CHURCH OF SAN JERÓNIMO IN BAZA, SPAIN

SERIOUSLY DAMAGED AFTER YEARS OF NEGLECT, THE CHURCH NAMED AFTER SAN GIROLAMO REQUIRED CONSOLIDATION AND RENOVATION WORK

The Church of San Jerónimo in Baza (Spain), a city not far from Granada, is part of a much larger monumental complex that includes a monastery, named after the same saint, and the Enríquez Palace, which was declared a Monument of Historical and Artistic Significance to Spain in 1975. The origins of the complex date back to 1502 when Enrique Enríquez, the uncle of King Ferdinand II of Aragon, married Maria de Luna who commissioned its construction.

THE ARCHITECTURAL HISTORY AND STRUCTURE OF THE CHURCH

The entire San Jerónimo complex played a key role during the 17th and 18th centuries, both for the religious life of the city and for the economical influence it exerted thanks to the properties it owned. During the War of Independence (1808-1814), that saw the Spanish fighting against the French, the church was abandoned by the monks and occupied by the troops of Napoleon. It was then reopened for worship and, in 1936, at the start of the Civil War, it was closed down for the last time. It was later used as a storehouse and a shop and then, a few years ago, it was bought by the Municipality of Baza, which undertook the work thanks to a project jointly financed by the European Regional Development Fund.

The church has a long central nave and shrines are situated on the north side; the great shrine, built in 1535 in a late-Gothic style, contains the tombs of the Enríquez-Luna family. The apse has an octagonal form with external buttresses and is covered by a gothic vaulted roof in the form of a cross. The central nave, on the other hand, has a barrel vaulted roof that runs up to the choir area with upper lunettes sitting on arches. The sacristy was added in 1588

and the church was finally completed in 1690.

The remains of the monastery include the monks' cells, the refectory and some of the Renaissance style arches from the cloister designed in 1554 by Juan García de Gibaja. In the Southern part a second cloister was built of which today there is no trace, as well as the storehouses for the monastery, a cellar and a windmill.

THE CONSOLIDATION WORK

After years of neglect the entire structure of the complex, and of the church in particular, was severely damaged. Upgrading work started to consolidate the structure of the building.

Because of the gravity of the cracks and the consolidation work to be carried out, the designer engineer and main contractor contacted Mapei Technical Services for their support in order to rely on the company's cutting-edge products and systems, as well as their vast experience in renovating architectural works and consolidating masonry structures.

The site survey carried out by Mapei Technical Services revealed a series of problems caused mainly by the long period of general neglect of the church and the progressive worsening of the damage over the years. The main critical areas highlighted were the consolidation of the cross-shaped vaulted roof and the renovation work required for the masonry.

The intervention started with a careful, thorough clean, followed by patching the decorative features and elements, consolidation work on both the vaulted roof and the stone walls, replacing missing stone from the masonry and then pointing the stone used to build the walls.





IN THE SPOTLIGHT MAPE-ANTIQUE I

It is a cement-free, super-fluid hydraulic binder in powder form for injection slurry made from lime, Eco-Pozzolan, natural ultra-fine sand and special additives. It is ideal for consolidating foundations, pillars, vaulted roofs and archways; consolidating cement-core walls; consolidating stone, brick, tuff and mixed masonry on old buildings, including those of historical or

artistic interest; consolidating masonry with the presence of capillary rising damp and soluble salts. This product can contribute up to **3 points** to obtain the **LEED** certification.



Consolidation and strengthening the cross-shaped vaulted roof (extrados).

After cleaning and removing the damaged decorative elements, Mapei technicians recommended anchoring the perimeter walls to the vaulted roof with MAPEWRAP G FIOCCO glass fibre cords impregnated with MAPEWRAP 21 two-component, super-fluid epoxy resin.

MAPE-ANTIQUE I lime and Eco-Pozzolan-based, hydraulic binder was then applied by injection to seal the cracks, gaps

PHOTO 1. The external masonry walls at the start of the intervention.

PHOTO 2. The same walls after being consolidated with MAPE-ANTIQUE I and repaired with MAPE-ANTIQUE STRUTTURALE NHL mortar.

PHOTOS 3 and 4. The MAPEWRAP System was used to consolidate and strengthen the extrados of the cross-shaped vaulted roof.

PHOTO 5. The surface of the cross-shaped vaulted roof was repaired with PLANITOP HDM RESTAURO.

and cavities and consolidate the structure.

PLANITOP HDM RESTAURO two-component, pre-blended mortar was then applied in combination with MAPEGRID G 220 alkali-resistant, primed glass fibre mesh to structurally strengthen the surface of the vaulted roof.

"Patching" the decorative strips under the cross-shaped vaulted roof

After cleaning and removing the most badly damaged elements, the decorative strips running along the entire length of the vaulted roof were uneven and cracked.

It was decided to intervene by injecting MAPE-ANTIQUE I binder to repair the cracks and improve their tensile strength.

MAPE-ANTIQUE I binder, characterised by their high tensile strength, were inserted in holes to join and tie the strips together.



Consolidation and strengthening the cross-shaped vaulted roof (internal face)

After removing the damaged areas of the cross-shaped vaulted roof and cleaning the substrates, holes were drilled in the surface to position MAPEROD G bars and MAPE-ANTIQUE I binder. After this intervention, the cracks and surface of the vaulted roof were repaired by applying MAPEGRID G 220 glass fibre mesh directly on an even layer of PLANITOP HDM RESTAURO. Thanks to its high content of synthetic resins, this mortar has excellent adhesion and, once hardened, forms a tough, compact layer which is impermeable to water but permeable to vapour.

Repairs to the internal and external masonry walls

This intervention commenced with the removal of the old, loose stones and a thorough clean of the walls. After drilling holes for the MAPEROD G pultruded bars and the MAPE-ANTIQUE I binder to consolidate the vertical surfaces, the next phase was to replace the damaged or missing stones and to consolidate and point the existing stones, again with MAPE-ANTIQUE I. To repair the render on the walls, it was recommended to apply MAPE-ANTIQUE STRUTTURALE NHL high-performance, transpirant, cement-free mortar for render and masonry work, made from natural hydraulic lime and Eco-Pozzolan. This product is particularly recommended for making "reinforced"

and installation mortars.

Apart from the interventions above, the entire vaulted roof system was repaired and consolidated. This included the vaults over the shrines running along the side of the church, the apse, the transept and the bell-tower. The floors were rebuilt and new lighting and fire-prevention systems were also installed.

TECHNICAL DATA

San Jerónimo Church,
Baza-Granada, Spain

Period of Construction:
1535-1690

Period of the Mapei

Intervention: November
2014 – August 2015

Intervention by Mapei:
supplying products for
strengthening the walls and for
consolidating masonry walls
and plasters and

Client: Luis Miguel Carranza
Yáñez

Main Contractor:

Construcciones Otero

Main Distributor: Histamar

Mapei Co-Ordinator:

Alfonso Carrasco, Mapei Spain

MAPEI PRODUCTS

Consolidating masonry walls
and plaster: Mape-Antique
Strutturale NHL

Strengthening stone walls:
Planitop HDM Restauro +
Mapegrid G 220, Mape-
Antique I, Maperod G,
MapeWrap G Fiocco,
MapeWrap 21

For further information see the
websites www.mapei.com
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Mapei Guangzhou's tenth anniversary

THE SUBSIDIARY CELEBRATED AN IMPORTANT ANNIVERSARY
WITH TWO DAYS OF SPECIAL EVENTS

The Mapei Group began making headway into China when it started supplying products for carrying out important Chinese building projects, first and foremost the Three Gorges Dam (see *Realtà Mapei International* no. 20). Mapei China Ltd, based in the Hong Kong Special Administrative Region of PRC (People's Republic of China), was then established in 2004. Mapei then began heading

into continental China. Shanghai and Guangzhou (Canton) were the first areas the company considered, since they are the key cities with prominent economic growth in the entire country, along with the capital Beijing, and also feature the highest concentration of private companies and institutions. Two companies were set up between the end of 2005 and the beginning of 2006: the first, Mapei Construction Materials (Shanghai) Co. Ltd, later became a sales office of the second, Mapei Construction Materials (Guangzhou) Co Ltd, which resulted from the acquisition of a leading company on the Southern Chinese market. Mapei also has an office in downtown Guangzhou city and a manufacturing facility equipped with a Research & Development Laboratory approximately 50 km further north in Guangzhou. This plant is specialized in producing waterproofing products, adhesives and grouts for tiles, latexes, products for cementitious and resin floorings, solutions for installing resilient materials, etc. Its management system and production processes were awarded the ISO9001:2008 certification by Certiquality (an international certification body for environmental management systems), confirming its excellence in terms of both quality and safety.

ABOVE.

On 7th January 2016 Mapei Construction Materials (Guangzhou) Co. Ltd invited over hundred customers to a Gala Dinner in Canton.

RIGHT. The most loyal customers and best performances were awarded prizes.



马贝资讯
Realtà
MAPEI

13

LEFT. Mapei Construction Materials (Guangzhou) Co. Ltd.'s manufacturing facility in Conghua, 50 km from Guangzhou downtown.

BELOW. As well as the Gala Dinner in Guangzhou, various training sessions were held in different parts of China to celebrate the anniversary of the Chinese subsidiary.

Mapei also pays very careful attention to the environment in China, too, where numerous products by Mapei Constructions Materials (Guangzhou) Co. Ltd. have been awarded China Environmental Labelling. Compared with other similar products, Mapei labelled products are certified to be with low toxicity, less harmful and also environmental-friendly.

There have been plenty of opportunities to test the quality of Mapei products out in the field in China: lots of company products have been used in such prestigious projects as the construction of the Volkswagen manufacturing facilities in Ningbo, Jiangsu and Hunan, the Metro Mosaic Artworks in Beijing (see *Realtà Mapei International* no. 56), the Beijing Olympic Park Observation Tower, the Shanghai Inter-

national Tourism and Resort Zone, the Shanghai Finance Center, the Fujian Taihot Plaza Shenzhen Shopping Centre, various Porsche showrooms and lots more.

Last January Mapei Guangzhou decided to celebrate its tenth anniversary with a series of events held over two days that were open to media delegates and customers (distributors, installers, representatives of building companies etc.). Over 100 customers were invited to the gala dinner, which was held in Guangzhou, while training events, installation competitions and product demonstrations were held at the Shanghai sales office and in other parts of China. The most loyal customers and best performances were awarded prizes. The media reported extensively on the event over the days that followed.





THRUDESIGN WOOD DIY WORKSHOP IN BEIJING

USING ULTRATOP TO COMPLETE A
SPECTACULAR DIY WORKSHOP IN CHINA

As a worldwide famous metropolis, Beijing is the capital city of the People's Republic of China. Besides, it is a city with long development history and has always been the core cultural center in China. With such background, personalised arts business is flourishing and everywhere is full of different styles of workshops, cultural centers and recreational places. Recently, the local attention goes to DIY wood workshops. With a spectacular outlook and high-graded facilities, Thrudesign Wood DIY Workshop is nominated to be the new landmark workshop in Beijing.

THRUDESIGN WOOD DIY WORKSHOP

Founded by two Red Dot & IF Award winning industrial designers, Thrudesign's philosophy focuses on "less is more". Thrudesign has a team of experienced and dedicated designers and engineers, which are capable of providing some of the finest de-





IN THE SPOTLIGHT ULTRATOP

It is a self-levelling product in powder available in light grey, white, beige, rust red, anthracite and standard, made up of special quick-drying and quick-setting binders, specially graded silica sand, synthetic resins and special admixtures.

ULTRATOP is used internally in public and industrial buildings, for levelling and smoothing new or existing concrete and ceramic substrates in thickness

from 5 to 40 mm, to make them suitable for heavy pedestrian use in shopping centres, offices, shops, showrooms and areas where rubber-wheeled vehicles are in use. It can contribute up to **3 points** to obtain the **LEED** certification.



sign and product strategy research services in China. Working closely with manufacturers and individuals to develop new and compelling products, it developed DIY workshop services to cover a wide spectrum from furniture and personal DIY courses, etc. DIY courses team is enthusiastic and dedicated, and will continue to deliver innovative and winning product solutions to help wood DIY lovers work out personalized products and obtain basic knowledge on wood DIY techniques.

MAPEI'S INTERVENTION

Because of the "Less is more" concept, the designers pre-

ferred the natural original look when choosing materials for building the workshop. Following this requirement, Mapei technicians introduced the cementitious surface effects prepared by using ULTRATOP ultra-fast setting, self-levelling, ultra-quick hardening mortar and ULTRATOP LOFT trowelable cementitious paste. Once Mapei sample board was received, the designers immediately decided to accept the Mapei solution as it perfectly matched their idea.

Other than fulfilling the special aesthetic look, the customer required a low dust and noise-reducing, environmental-friendly system that allowed continuous working during construction.



As a result, Mapei carefully proposed a feasible plan to fulfill the need.

THE STAIRS ON THE FIRST AND SECOND FLOOR

As for the stairs on the first and second floors, PRIMER SN and ULTRATOP LOFT were used on an area of 120 m² to obtain a pleasant look combined with good abrasion resistance. To deal with the disadvantage of dim lighting and inadequate spacing of the workshop, brighter light grey color was chosen to enhance the visual appeal. The effect was overwhelming, and highly appreciated by the customer.

ULTRATOP LOFT is a cementitious trowelable paste for seamless decorative coatings for floors, walls and stairs, which feature high abrasion resistance. A natural color was chosen for the stairs on the first and second floor in order to match the workshop style and to emphasize its essential, textured effect. After treating the substrates with PRIMER SN two-component epoxy primer with fillers, the first layer of ULTRATOP LOFT F coarse-textured paste was applied. The surfaces were then grinded and a second layer of ULTRATOP LOFT F was applied again. Afterwards, one coat of ULTRATOP LOFT W fine-textured paste was used as finishing coat.

THE FLOORS ON THE SECOND FLOOR

In the DIY classroom and DIY aisle on the second floor, polished-effect, quick drying and abrasion-resistant floors were completed using MAPEFLOOR I 900 two-component epoxy binder and ULTRATOP cementitious self-levelling, ultra-quick

hardening mortar on over 300 m².

The substrates were grinded before applying MAPEFLOOR I 900 and broadcasting the surface with quartz sand.

ULTRATOP was applied thereupon. For the fulfillment of the tight application schedule, quick drying and setting ULTRATOP was the perfect choice for this kind of application. Besides, its high abrasion resistance helped to minimize the impact from scratching by tools and wooden materials. Most importantly, floors treated with ULTRATOP, in its polished effect, are very easy to clean and maintain.

TECHNICAL DATA

ThruDesign Wood DIY

Workshop, Beijing (People's Republic of China)

Design: Duoxiang Studio

Period of Construction:

January – July 2016

Period of the Mapei

Intervention: March-June 2016

Client: ThruDesign Wood DIY Workshop

Floor Installation

Contractor: Beijing Nuo La Ano Trading Co.,Ltd

Mapei Distributor: Beijing

Nuo La Ano Trading Co.,Ltd

Mapei Co-ordinator: Ming Guo, Mapei Construction Materials (Guangzhou) Co. Ltd

MAPEI PRODUCTS

Treating the substrates:

Primer SN

Building cementitious and resin floors and stairs: Mapefloor I 900, Ultratop, Ultratop Loft F, Ultratop Loft F

For further information see www.mapei.com and www.mapei.com.cn

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láncszem a ragasztó volt!**

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10 years for Mapei Romania

RECORD BREAKING GROWTH IN 10 YEARS...THIS IS JUST THE BEGINNING



Ten years after entering the Romanian market, Mapei Romania S.R.L. announces an increase in turnover of nearly 5 times which will exceed 11 million Euros by the end of 2016. At the same time, the company has set a medium-term goal following the development of the Romanian construction market: the leadership position in the premium waterproofing and adhesives material segments and an annual increase above those recorded by the Romanian industry.

This was only possible thanks to the successful history Mapei Romania S.R.L. underwent over the past 10 years. Mapei Romania's story began in 2006 with

two people only, while today it is run by a solid team made up of 60 professionals. The company entered the Romanian market with 90 products in its portfolio while today it can offer more than 1,500 different systems and therefore meet any jobsite requests.

In the spring of 2016, Mapei Romania, whose headquarters are in Bucharest, opened a new warehouse in Braşov, in the Central region of the country. The new warehouse has an area of 1,500 m² and a storage capacity of 2,000 tons. Since then, the logistics department has been operating in a new office building which has an area of 240 m².

In October 2016 Mapei Romania was authorized to open a concrete laboratory.

The Romanian subsidiary has clear ideas and solid projects. "To us – declared Florin Ciobanu, General Manager of Mapei Romania – these first 10 years are only the beginning. We aim at growing on the market, keeping in mind our mission of educating each customer who chooses us as a partner, in order to guarantee durability to their projects while satisfying their most demanding requirements. We are different from our competitors, due

to our excellent brand reputation and our experience on the jobsite".

"After a 10 year activity in Romania – continued Ciobanu – we can be proud of ourselves for having a solid presence on the waterproofing systems market, in terms of quality, product diversity and number of products sold. We have a full range of dedicated premium products - from cementitious waterproofing compounds to bituminous emulsions, bituminous membranes and PVC membranes. At the moment, Mapei's growth in Romania is especially focused on the market segment of special improved adhesives for porcelain tiles and thin and large-size ceramic tiles. It is an interesting sub-segment, which recorded a steady growth year after year, compared to standard adhesives. At the same time the grouting materials segment represents a wide potential for us."

On the occasion of its 10th anniversary, a communication campaign called "You are what you build" has been launched by Mapei Romania, raising awareness on the difference between universal materials and specialized products that can guarantee a long lasting work and considerably reduce maintenance works. Mapei's expertise and the quality of its solutions can surely offer a valuable contribute on the Romanian market.



ABOVE, RIGHT. Florin Ciobanu, General Manager of Mapei Romania S.R.L.

ABOVE, LEFT. Mapei Romania's headquarters in Bucharest.

LEFT. Mapei Romania's warehouse and logistics office in Braşov, in Central Romania.





A FAIRY-TALE CASTLE IN ROMANIA

THE "CLAY CASTLE OF THE FAIRY VALLEY" WAS BUILT FROM CLAY,
SAND AND STRAW USING ECO-SUSTAINABLE CRITERIA



IN THESE PHOTOS. MAPE-ANTIQUE LC was used for pointing among river stones and constructing new dehumidifying renders for interiors in the restaurant.



A new hotel, inspired by the world of the fairies, will be opening shortly in the Romanian region of Transylvania. The hotel is called Castelul de Lut Valea Zanelor (Clay Castle of the Fairy Valley) and is located around 40 km from the medieval city of Sibiu, which is reached by following the Transfăgărășan, a famous road running for 90 km through the Carpathian Mountains (see *Realtà Mapei International* no. 49).

The idea of building such a particular hotel came from a Romanian couple - Razvan and Gabriela Vasile – who left Bucharest in 2014 and went back to live in the Carpathian Mountains. The architect Ileana Mavrodin designed the building according to eco-sustainable principles, favouring natural materials such as clay and straw.

The castle consists of several buildings standing in a row and inside the hotel the spaces are arranged over two floors of around 320 m²: the ground floor and another floor under the pitched roofs. Each of the ten rooms has its own style of doors and windows, as well as its own private entrance. The owners and designers of the hotel also chose to use builders and craftsmen familiar with the materials and building techniques typical of Northern Transylvania.

A COMPLETELY ECO-SUSTAINABLE CONSTRUCTION

The design for the hotel and the enclosed restaurant required materials which were as eco-sustainable as possible. The foundations were made from concrete and stones, the pillars were made from wood covered with clay, the render was made from clay, sand and water and the towers, which add movement to the profile of the construction, were made from river cobbles rendered with lime and sand. Another particular feature of the castle is the roofs topped with wooden shingles. The external walls (which are 60 cm thick) were built using a mixture made from sand, clay, water and straw. The same materials were also used for the 45 cm thick internal walls. Thanks to the thickness of the walls the entire complex is not only well insulated, but it also has excellent soundproofing. Construction of both the hotel and the enclosed restaurant



proved to be a very ambitious project and a challenge which also involved the Technical Services Department from Mapei Romania. After carrying out a technical analysis and a series of surveys on the site, MAPE-ANTIQUE LC cement-free binder made from lime and Eco-Pozzolan was proposed as masonry mortar for pointing among river stones and for constructing new dehumidifying renders for interiors in the restaurant area. The product was mixed with water to form a mortar which is difficult for the rainwater to penetrate but which, at the same time, remains highly permeable to vapour, so that any moisture rising by capillary lift from the foundations is gradually released.

The hotel will be opened very soon and the restaurant will serve products sourced exclusively from local markets.

IN THE SPOTLIGHT

MAPE-ANTIQUE LC

It is a salt-resistant, hydraulic binder based on lime and Eco-Pozzolan, to be mixed with aggregates in various grain sizes to make de-humidifying renders and masonry mortars.

It is ideal for repairs to masonry deteriorated by the presence of capillary rising damp and soluble salts, including on buildings of historical and artistic interest; rebuilding lime-based renders deteriorated by the action of atmospheric agents and environmental conditions or by ageing; building new load-bearing and buffer walls or rebuilding old walls; pointing stone, brick, tuff and mixed "natural-finish" masonry.



TECHNICAL DATA

Clay Castle of the Fairy Valley, Sibiu (Romania)

Period of Construction:

2014-2016

Period of the Mapei

Intervention: 2015-2016

Intervention by Mapei:

supplying products for pointing stones and building dehumidifying renders in the restaurant

Design: Ileana Mavrodin

Client: Razvan Vasile

Mapei Distributor: Profelis

Mapei Co-ordinator: Cristi Horia, Mapei Romania

MAPEI PRODUCT

Mape-Antique LC

For further information visit www.mapei.com and www.mapei.ro

10 Years for Mapei Ukraine

A STRING OF SUCCESSES...
DESPITE EVERYTHING

The Mapei Group first began selling building products in Ukraine back in 2000, notably those for installing ceramic tiles and stone material. Mapei Ukraine LLC was established in 2006 and since then has continued to grow on the local market and now supplies its customers with all the different materials from the Group's 15 product ranges.

Another important step along the subsidiary's path to expansion was taken in 2009: Mapei Ukraine LLC broke onto the building materials market in Georgia, where it began doing profitable business with construction companies and distributors.

Today, despite the tricky political situation and not very rosy economic climate in Ukraine, Mapei Ukraine LLC can claim to be extremely happy with its success story, its extensive and well-organised sales network, its close relations with customers (about 50 in Ukraine and 5 in Georgia), the high standard of its services and technical support, and also the transparency with which it goes about all its business.

The Ukrainian subsidiary's headquarters and main



LEFT. Marco Faccin, General Manager of Mapei Ukraine LLC.

distribution centre are located in the capital city, Kiev. Thanks to its staff of about 104 people and the 100 training sessions organised last year for its over 1000 workers, Mapei Ukraine LLC now has income of almost 3.5 million Euros in 2015.

10 YEARS TO BE CELEBRATED

So Mapei Ukraine LLC had plenty to celebrate last January on the 10th anniversary of its founding. For this very special occasion the subsidiary decided to organise an evening of celebrations on 29th January, which were attended by about 63 people, including staff, customers, partners and two representatives from the Group's mother company Mapei SpA: Roberto Vigo, the Group's Export Manager for Ukraine, and Silvio Marchesi, a member of Mapei Corporate Regional Controlling.

A gala dinner was held in a banquet room in Razguli-aevo Restaurant in Kiev, suitably decked out with the Mapei logo and blue-coloured balloons, during which guests got the chance to taste local dishes, enjoy live music and entertainment, congratulate members of Mapei Ukraine for the results they have achieved, strengthen ties with the Ukrainian subsidiary, take plenty of photos, and even dance the night away!

LEFT. The Mapei Ukraine LLC offices in Kiev.

RIGHT. A Gala Dinner was held on 29th January, 2016 to celebrate Mapei Ukraine LLC's 10th anniversary.





NEMO DOLPHINARIUM

IN THE UKRAINIAN CITY OF ODESSA
SAFE, HIGH PERFORMANCE
PRODUCTS WERE EMPLOYED TO
RENOVATE A DOLPHINARIUM



Odessa, a city in southern Ukraine in a strategic position overlooking the Black Sea, has a natural multicultural vocation. Its brief but intense history, a story of rousing economic successes and ruinous falls from grace, has been characterised by its lively cosmopolitan outlook with the ability to attract the greatest minds and some of the greatest interpreters from the world of art and literature.

The Nemo Resort&Spa, a cultural and spa complex was built along the Langeron beach in 2005, in a contemporary architectural style that enhances this splendid promenade.

Apart from the dolphinarium, the complex is also home to an oceanarium, a beach, a hotel with several restaurants and a dolphin therapy centre.

The dolphinarium, designed and constructed according to international standards to safeguard and respect these wonderful marine mammals, complies with all the required standards. It is home for South American sea-lions, common sea-lions and bottlenose dolphins, one of the few species that thrives in captivity.

Because of the rapid deterioration of the structure the dolphinarium had already been renovated on a previous occasion, but this intervention was not particularly successful, so a more thorough intervention was carried out in 2015, with Mapei's



best products playing a key role. Work started in November 2014 and was completed on the 14th of May 2016. It included a complete renovation of the pool (measuring 26 m in length, 15 m in width and 5 m in depth) and the spectator stands overlooking the pool.

REPAIRS TO THE CONCRETE AND WATERPROOFING SYSTEM

To renovate the damaged concrete elements in the spectator stands and pool, MAPEFER 1K was used to provide anti-corrosion protection for the steel reinforcement and MAPEGROUT FAST-SET was used to repair the deteriorated areas of concrete in the substrate.

PLANICRETE was the admixture selected for the filling mortar to improve its adhesion and mechanical performance.

ADDITIX PE, an extremely light powder product with synthetic fibres increasing the viscosity and thixotropy of epoxy- and polyurethane-based resin products, was used to make the epoxy repair mortars, which were also applied on the vertical surfaces.

MAPEPROOF SWELL, specially formulated to make waterproof, elastic seals in cracked reinforced concrete and pre-cast components, was used on the areas and elements with infiltrations of water. The essential product used to waterproof the surfaces in the pool – also because it is certified as being

suitable for contact with drinking water – was PURTOP 1000, a two-component, solvent-free, pure polyurea-based membrane, which is applied by spray with a high pressure bi-mixer pump to form waterproof coatings on site.

PRIMER EP RUSTOP two-component epoxy primer was applied on the metal components and features and PRIMER SN epoxy primer on cementitious substrates, while EPORIP two-component, solvent-free epoxy adhesive was used for the construction joints and to monolithically seal cracks in the surface of the screeds.

When PURTOP 1000 is used in pools, such as in this case, a special finishing cycle must be applied. Within 24 hours of applying this product, a coat of PRIMER P3 two-component, solvent-based polyurethane primer must be applied, followed by MAPEFLOOR FINISH 451 two-component, aliphatic, elastic polyurethane finish. The last step was to seal the expansion joints with MAPEFLEX MS45 one-component, rapid-hardening, thixotropic, silylated polymer-based hybrid sealant and adhesive, with high modulus of elasticity, recommended also for damp substrates and joints subjected to movements of up to 20%.

Products of excellence for an intervention destined to withstand the rigours of time, to the complete satisfaction of the client and these cetaceans that are once again swimming in surroundings that are as good as new and completely healthy.



TECHNICAL DATA

Nemo Dolphinarium,
Odessa (Ukraine)

Year of Construction:
2005

Period of the Mapei

Intervention: 2015-2016

Intervention by Mapei:

supplying products for
concrete repair and for
waterproofing the pool
substrates

Client: Odessa City Council
- Dolphinarium Nemo

Main Contractor: Uspech-
Plus. LLC

Mapei Distributor:
Uspech-Plus. LLC

Mapei Co-ordinator: Egor
Rudenko, Mapei Ukraine LLC

MAPEI PRODUCTS

Concrete Repair: Eporip,
Mafer 1K, Mapegrout Fast-
Set, Planicrete, Primer SN,
Additix PE

Waterproofing operations:
Primer EP Rustop, Triblock,
Purtop 1000, Primer P3,
Mapefloor Finish 451, Mapeflex
MS45, Mapeproof Swell

For further information on
products see www.mapei.ua
and www.mapei.com

IN THE SPOTLIGHT

PURTOP 1000

It is a two-component, solvent-free pure polyurea membrane applied by spray with a high-pressure, bi-mixer type pump, to form waterproof coatings directly on site. It is suitable for contact with drinking water according to the Italian Ministerial Decree DM 174/04.

Thanks to its high chemical resistance, exceptional flexibility and tear strength, PURTOP 1000 is suitable for waterproofing membranes on storage tanks, basins and hydraulic works in general. Moreover, due to its resistance to aggressive substances, rapid application and drying time, exceptional flexibility, excellent tensile and tear strength, perfect adhesion to the structures, PURTOP 1000 is also suitable for waterproofing the type of structures that requires a high-performance waterproofing membrane.



**RUSSIA**

The manufacturing plant in Kikerino that ZAO Mapei, the Russian subsidiary of the Group, recently purchased in Russia.



NEW ACQUISITIONS

THE GROUP KEEPS ON GROWING AS IT PURCHASED NEW MANUFACTURING PLANTS IN TWO COUNTRIES

In keeping with its vocation for internationalisation - one of the cornerstones of its success - the Mapei Group is continuing to grow as it makes more acquisitions abroad. This growth strategy is based on solid economic foundations with constantly increasing income and a determination to keep on breaking onto new markets and growing on the other ones. In 2016 it was Russia and Mexico, where two manufacturing plants were taken over.

A NEW PRODUCTION FACILITY IN RUSSIA

On 4th July, ZAO Mapei – Mapei Group's subsidiary in Russia – bought a manufacturing plant in Kikerino, 80 km to the south of St. Petersburg, from the Austrian company Baumit. The takeover of the manufacturing plant in Kikerino optimises Mapei's territorial coverage in the vast regions in the North West, as well as providing access to the Arctic, an increasingly interesting geographical location due to the discovery of enormous reserves of natural gas and which, due to the extreme weather conditions, requires sophisticated building technology.

Over coming months a major restructuring programme will be directly carried out on the manufacturing plant in Kikerino by the Group's Engineering Central Services department to make sure this site is up to the standard market expects. The reconstruction will include 2 phases: the first one is dedi-

cated to the modernization of the actual equipment while the following one will see the enlargement of the actual warehouse (the total covered area will be extended from 1000 m² to 5500 m²) and the introduction of new productions. When fully operational, presumably by the end of 2017, the plant will employ 20 people in its production department.

ZAO Mapei was established in 2004 and also owns two other manufacturing plants. The facility in Stupino - 70 km to the south of Moscow – was opened in 2007. This is the most important plant, where development and customer assistance operations are focused. Another plant was opened in Aramil - 20 km south of Ekaterinburg in the Urals - in 2012 to serve both the Eastern part of the nation and Siberia more effectively. Thanks to the Russian railway system and closeness of the southern borders, the products manufactured at the plant in Aramil also have easy access to the Kazakhstan market.

ZAO Mapei also has a commercial team in St Petersburg, which, over the years, has achieved important results in terms of both its income and prestigious accomplishments. It is worth mentioning "Russian Venice's" strong vocation for renovating historical buildings. This is a field in which Mapei has plenty of experience and can supply a wide range of special products.

ZAO Mapei operates in the top bracket of the Russian market for chemical products for the building industry and has



helped in the construction and renovation of important building all over Russia, notably including Sheremetyevo Airport (Terminal D) in Moscow (see *Realtà Mapei International* no. 40), the system of tunnels serving the new Moscow-Sochi motorway (*Realtà Mapei International* no. 128), the footbridge across the River Ural in Orenburg (acting as a link between Europe and Asia), the “Living Art” (*Realtà Mapei International* no. 47) and “Millennium Park” residential complexes in Moscow (*Realtà Mapei International* no. 48), various shopping malls, sports facilities for the 2014 Winter Olympics in Sochi (*Realtà Mapei International* no. 47) and 2015 World Aquatic Championships in Kazan (*Realtà Mapei International* no. 55), the television tower in Ostankino, and the Cathedral of Christ the Saviour and part of the Kremlin walls in Moscow (*Realtà Mapei International* no. 12).

ZAO Mapei's exports are mainly focused on countries such as Azerbaijan, Kazakhstan - where a branch office providing customer service has been operating for years - Armenia, Belarus, Turkmenistan, Kyrgyzstan, Uzbekistan and, recently, Mongolia.

MAPEI IS CONSOLIDATING ITS PRESENCE IN MEXICO

Mapei has been active in the Mexican market since 2010 through the trading company Mapei De Mexico SA De CV, as the Mexican market is one of the most important and promising in Latin America. Thanks to the acquisition of the establishments of the Mexican society Texturizados de Zimapan SA de CV, Texzim, Mapei de Mexico now has adequate production capacity to follow the dynamic local market. The plants located in Zimapan and Cancun are barycentrically placed to efficiently serve the majority of the Mexican territory. The Mapei range of products for ceramic tiles and wall finishes will be rapidly expanded to include the wide and innovative range of Mapei products, particularly adapted to the Mexican market. The headquarters of Mapei De Mexico SA CV will remain in Querétaro, where the direction of Texzim was already also located. All the Texzim staff agreed to move to Mapei and will be rapidly enhanced especially in the technical aspects in order to enable a fast development.



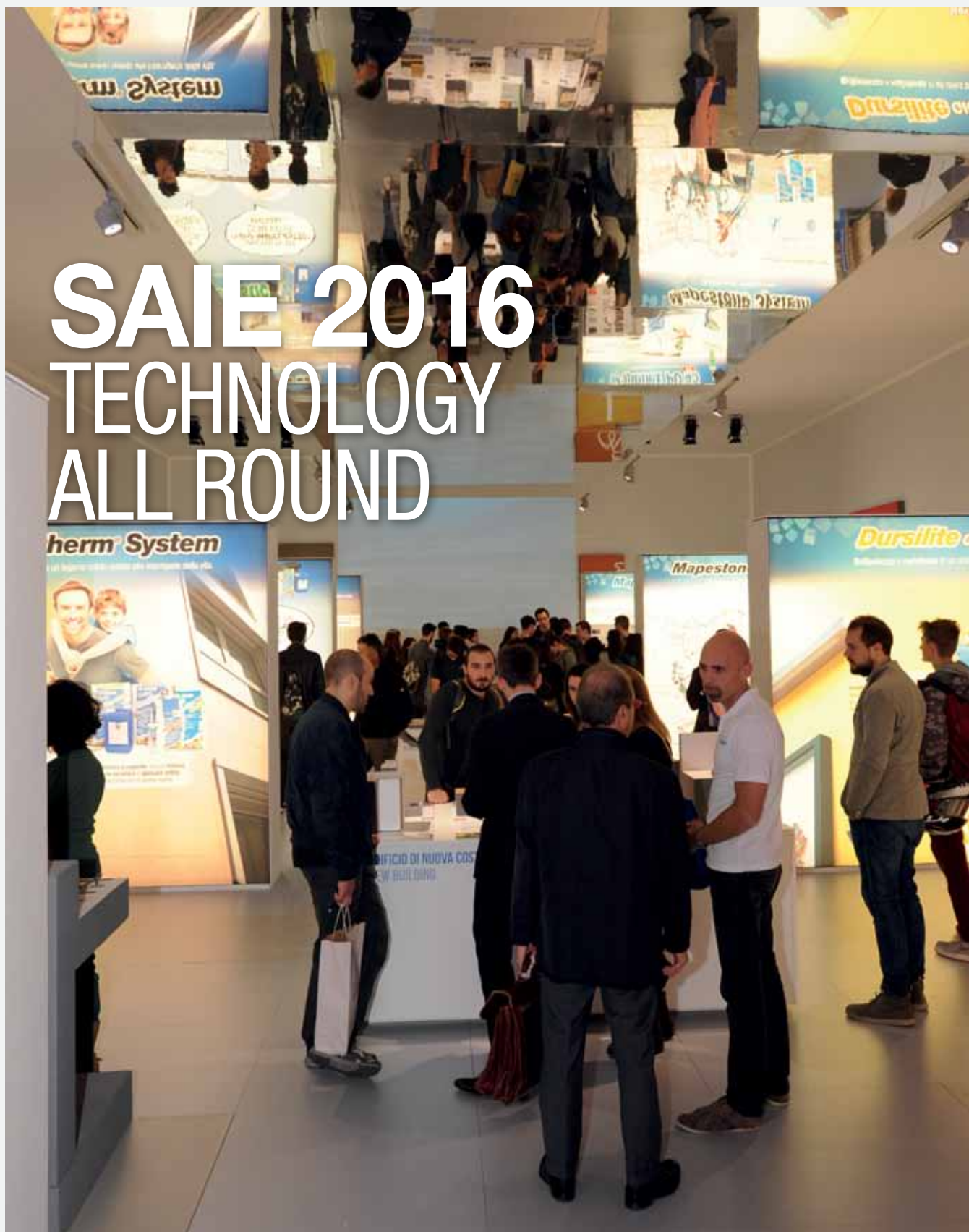
MEXICO

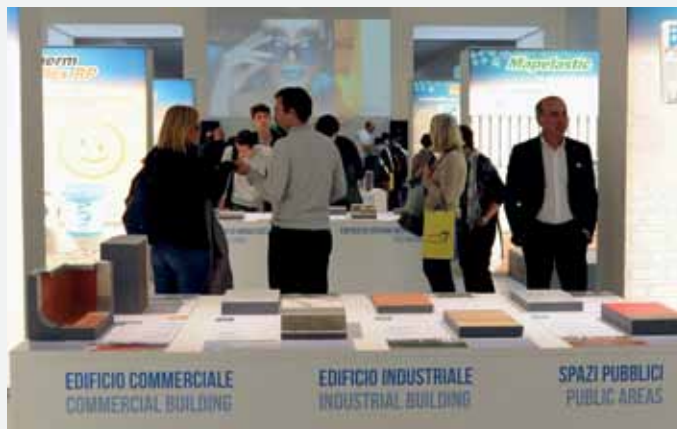
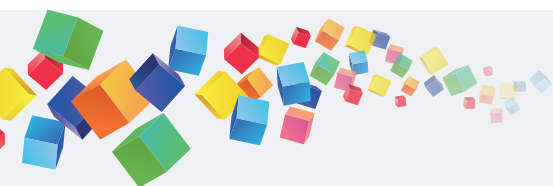
Mapei's Mexican subsidiary, Mexico SA De CV, owns two plants in Zimapan (above) and Cancún (below) in 2016.





SAIE 2016 TECHNOLOGY ALL ROUND





Safety for seismic activity and for the territory, innovation with direct effects on new technology and solutions. These are the themes that characterized the 2016 edition of Saie with a spotlight on digitalization and the regulations and a focus on the themes of sustainability and the environment. Double figure growth (+10%) for the 52nd edition of Saie, an international event for the construction industry, which took place from 19th to 22nd October 2016 in Bologna, the capital of the Emilia-Romagna Region (Italy). The figures from Saie 2016 recorded over 1,000 exhibitors, over 70,000 visits, more than 250 events, 170 new products presented by the companies, 114 delegations of foreign buyers from four continents that participated in around 300 B2B meetings.

"Saie 2016 offered some extremely positive signs: an increase in the numbers of companies and operators," explained Antonio Bruzzone, General Director of BolognaFiere, "and basically, an impor-

tant contribution from the sector's protagonists, who came together to discuss the recovery of the industry and the strategies to adopt in order to ensure that the positive signs in the market go on to become a driving force for a new season for construction."

SAFE, RELIABLE AND SUSTAINABLE BUILDINGS

Mapei's stand included a series of panels to demonstrate its products, images from the most recent international prestigious reference projects and progress slabs where visitors could actually see for themselves and touch the effectiveness of the solutions employed. Also showcased were numerous new products and solutions for new buildings and for renovation work in the residential, public and industrial sectors.

For the occasion, during what is a particularly sensitive period regarding the impact and effects of seismic activity in Italy, Mapei demonstrated once again its

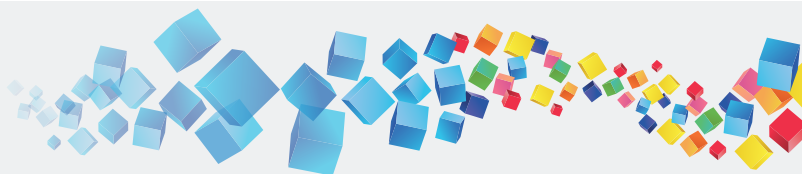
know-how and experience by using Saie to propose its wide range of structural strengthening products designed to create safe and resistant buildings.

Safe, reliable buildings not only from a structural point of view, but also from an environmental point of view, proof of Mapei's long-standing commitment to the production of systems that respect the environment and play an important part in completing sustainable building projects. Also showcased at Saie were the solutions and technologies for internal environments, concrete repair work, urban design and waterproofing solutions for structures both above and below ground level.

SYSTEMS FOR UPGRADING BUILDINGS IN AREAS AT HIGH RISK OF SEISMIC ACTIVITY

An important feature of the Mapei stand were the technologies and systems dedicated to buildings in areas with high seismic activity, particularly PLANITOP HPC





FLOOR and MAPEWRAP EQ SYSTEM, which help counteract a building's vulnerability in the event of an earthquake.

PLANITOP HPC FLOOR is a specific product for repairing and strengthening slabs – where an ultra-high performance free-flowing mortar is required – and for static seismic upgrading of existing structures. Developed in the Mapei R&D laboratories, PLANITOP HPC FLOOR comprises high strength cements, selected aggregates, special additives and rigid steel fibres that requires neither electro-welded mesh nor steel connectors. Un-

like conventional systems, the PLANITOP HPC FLOOR system is a lightweight and compact system: the thickness of the reinforcements is only 2.5 cm and it weighs just 60 kg/m² for a complete intervention. As far as reducing a building's seismic vulnerability is concerned, the proposal by Mapei presented at Saie was the MAPEWRAP EQ SYSTEM, a system which has been tested and certified by the Department of Structural Engineering at the Federico II University of Naples and is recommended for protecting secondary partitions in buildings against anti-tip-

ping and preventing brick/cement floors from collapsing. MAPEWRAP EQ NET anti-seismic reinforcing fabric, which is bonded to surfaces with MAPEWRAP EQ ADHESIVE, helps to form a more even distribution of dynamic stresses, both inside and outside buildings, thereby preventing secondary dividing of partition walls from collapsing or the anti-tipping protection for non-structural walls, allowing extra time to evacuate buildings.

Solutions for the structural consolidation of walls and renders on buildings – in-



cluding buildings for civil use and buildings of historical or artistic interest – was also showcased at Saie with MAPE-ANTIQUE STRUTTURALE NHL, mortar for transpirant render and masonry work in the spotlight. The product is recommended for rendering existing masonry and for making “reinforced” render to help strengthen mechanically weak masonry.

REDUCING THE EFFECT OF URBAN HEAT ISLANDS

Another “hot” topic covered during the exhibition was the reduction of the effect of urban heat islands. Along with its subsidiary Polyglass, Mapei presented its Green Roof solutions, designed for use on garden roofs and green areas in general, and its Cool Roof solutions, in a

MapeWrap EQ System

La risposta sicura in caso di terremoto.



oped for both new projects and for repairing thermal insulation systems damaged by and aggressive atmospheric agents. MAPETHERM FLEX RP is the fruit of a combination of technologies which make it an unique, innovative solution within the products for use with insulating systems: BioBlock® technology protects surfaces from both aggressive mould and fungi and also from algae; Fast Track Ready technology considerably reduces installation times by doing away with the traditional long curing times normally required for cementitious skimming products and the need to prime surfaces before applying the finishing product; and lastly, Ultralite technology makes it "lightweight" and improves its yield during the application phase. All this combines to obtain the maximum results during tests carried out at the ITC (Istituto per le Tecnologie della Costruzione, Italian Construction Technology Institute), proof of its excellent resistance to impact.

PROTECTIVE AND DECORATIVE FINISHES FOR INTERIORS

Amongst the solutions for internal areas presented at Saie was the new acrylic and polyurethane resin-based enamel for walls, DURSILITE GLOSS, with its smooth, semi-gloss finish, which goes to join the water-based paints from the

highly reflective white colour, to help reduce high temperatures.

Mapei Green Roof systems comply with current European standards regarding this type of application (CEN/TS 14416 and FLL) and have been tested by important institutions which have verified their reliability in creating roofs and green roofs with excellent waterproofing capacity. The systems from the Cool Roof range have been tested by specialised institutes which have defined a Solar Reflectance Index (SRI) for each system, in compliance with current standards (ASTM Standard E903, ASTM Standard C 1371 and ASTM Standard E 1980).

Another solution dedicated to roofs presented at Saie was a new product: MAPESLOPE one-component cementitious mortar for levelling and restoring

slopes and filling hollows on roofs. MAPESLOPE allows flatness defects on roofs from 5 to 50 mm to be corrected without demolishing any previous repair work and proceed with the waterproofing operations.

SOLUTIONS FOR THERMAL INSULATION FOR BUILDINGS

The issue of environmental sustainability and improving the energy performance of buildings was presented during the exhibition by showcasing innovative, technological solutions for installing and renovating thermal insulation systems.

Apart from the innovative Mapetherm Tile System for installing thin porcelain tiles on insulating panels, Mapei also presented MAPETHERM FLEX RP skimming paste with high resistance to impact load, devel-

"Interior Masterpieces" line by Mapei. It is easy to remove stains from DURSILITE GLOSS. The product is highly resistant to cleaning treatments and particularly recommended, therefore, for protecting and decorating internal areas subjected to wear and frequent cleaning. Along with such high performance technical characteristics it combines an attractive finish with a high quality finish in a host of bright colours.

A RAPID PAINTABLE ADHESIVE AND SEALANT

Amongst the new products presented at Saie there was also the solvent-free, polyurethane sealant MAPEFLEX PU45 FT with high modulus of elasticity. Suitable for both internal and external use, it may be used for bonding and sealing various glass, wood, ceramic and metal. This rapid version of MAPEFLEX PU45 also includes Mapei's Fast Track Ready technology, allowing work to be carried out more rapidly.

WATERPROOFING PRODUCTS AND SYSTEMS

The exhibition was certainly not lacking in systems for waterproofing structures, both above and below ground level, with the MAPELASTIC family of products, suitable for both new waterproofing systems and repairing old ones.

SEAMLESS RESIN AND CEMENTITIOUS FLOORINGS

For commercial and industrial buildings Mapei proposes MAPEFLOOR SYSTEM, a wide range of products for laying seamless floors resistant to acid, wear and mechanical stress. These products may be used in a host of different sectors: the food and drink industry, chemical and pharmaceutical areas, warehouses and areas subjected to high traffic.

For internal areas in residential and public buildings Mapei proposes the two trowelable cementitious mortars ULTRATOP LOFT F and ULTRATOP LOFT W to create seamless, resistant surfaces with a matic effect finish. With the ULTRATOP LOFT line decorative floor and wall coverings can be created, including in areas



with high pedestrian traffic, such as bars and restaurants, private homes and museums.

REPAIRING AND STRENGTHENING CONCRETE STRUCTURES

To repair and strengthen concrete structures, at Saie Mapei proposed the MAPEGROUT mortars range, a family of products with the capacity to solve various problems caused by corroded reinforcing rods and high levels of abrasion. MAPEGROUT solutions are recommend-

ed for repairing and strengthening infrastructures, roads, hydraulic structures and sewerage systems.

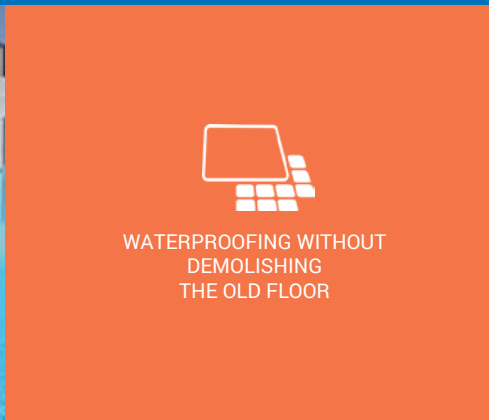
URBAN DESIGN

Apart from the MAPESTONE system for building architectural stone floorings which are suitable for vehicles, MAPEI COLOR PAVING was also presented at Saie 2016, a system to create personalised road surfaces with an exposed aggregate effect finish which integrates perfectly into any environment.





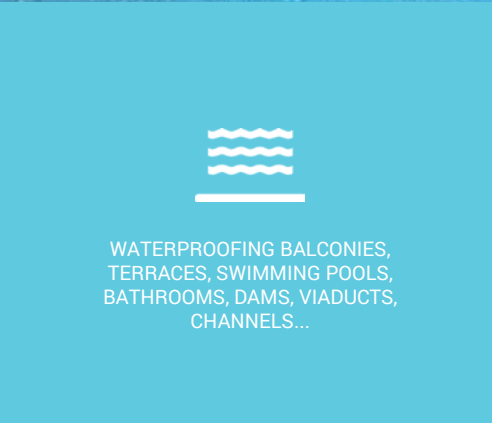
Kos | Greece
Astir Resort



WATERPROOFING WITHOUT
DEMOLISHING
THE OLD FLOOR



Stritez | Czech Republic
Private Villa



WATERPROOFING BALCONIES,
TERRACES, SWIMMING POOLS,
BATHROOMS, DAMS, VIADUCTS,
CHANNELS...



GUARANTEED SYSTEM
WITH MAPEI ADHESIVES
AND GROUTS

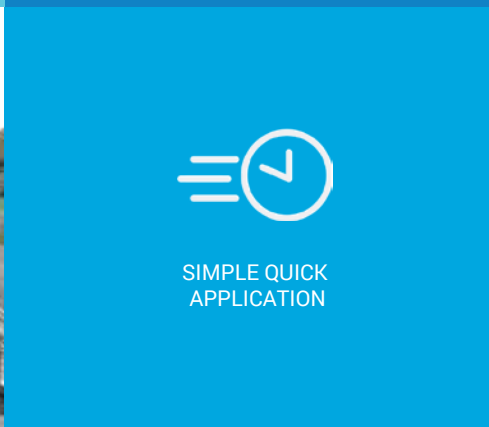


350 MILLION
M²

MORE THAN 350 MILLION SQUARE
METRES WATERPROOFED IN ITALY



Selangor | Malaysia
**Formula 1 Motor-Racing
International Circuit**



SIMPLE QUICK
APPLICATION



Frenstat Radhostm | Czech Republic
Water tank

MAPELASTIC. THE WATERPROOFER.

In the last 30 years Mapelastic has waterproofed more than 350 million square meters of surfaces and has never let a drop pass through. **Terraces, balconies, bathrooms, swimming pools, dams, everything.**

Mapelastic, the elastic cementitious membrane for safe, definitive waterproofing.

Mapelastic, the original.

Only from the best building material and ceramics distributors.



In 2016 a carefully targeted advertising campaign was carried out in the press, on the radio and on social media. Find out more on the website **www.mapelastic.it**!



/mapeispa

Mapei is with you: take a closer look
at **www.mapei.com**



PURTOP

THE INNOVATION IN WATERPROOFING: RESISTANCE,
ELASTICITY, RAPIDITY AND DURABILITY

In 2010 Mapei's line of waterproofing products and systems was joined by a new range of products: the PURTOP line, two-component, spray-applied polyurea waterproofing membranes.

There are three types of membrane in the range - PURTOP 1000 pure polyurea-based membrane, PURTOP 400 M and PURTOP 600 hybrid polyurea membranes. While each one is designed for use in different types of application, all three have important performance characteristics in common, such as:

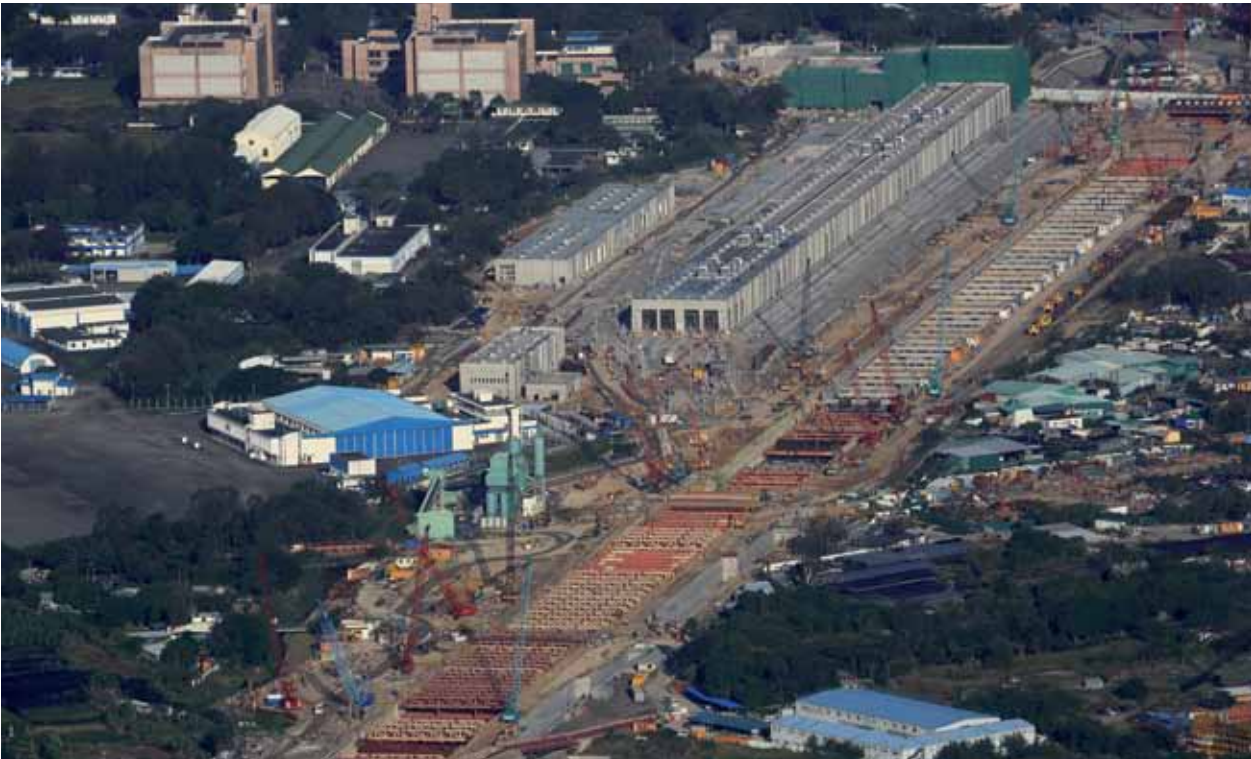
- immediate waterproofing and rapid set to light foot traffic;
- perfect adhesion to any kind of substrate and structure;
- exceptional tensile and tear strength;
- remarkable elongation and crack-bridging properties;
- UV-resistant colours, when used in combination with the suitable finishing coat;
- ideal for restoration because they do not generate any overload on the load-bearing structures;
- resistant to both high and low temperatures.

Over the years these characteristics have become so highly appreciated all around the world that there has been a significant increase in turnover worldwide.

PRODUCTS WITH CERTIFIED QUALITY

Along with the extraordinary characteristics of PURTOP membranes, the Mapei Group has been working tirelessly to obtain certifications from important, world-renowned institutions to enable PURTOP to be proposed as systems with certified quality in numerous application fields, such as for drinking water storage tanks (certified in compliance with Ministerial Decree 174 of 6/4/2004 in Italy and BS 6920 standards in Malaysia, as well as certification from National Institutes of Public Health in Norway and Poland), road decks (CE ETA 14/0289 certified by in compliance with European guidelines ETAG 033) and railway lines (SNCF certification), as well as for green roofs (certified in compliance with CEN/TS 14416). These certifications are in addition to the numerous tests carried out to qualify for the CE EN 1504-2 mark.





PURTOP AT WORK ON BUILDING SITES WORLDWIDE

IN THESE LAST 6 YEARS, THANKS TO A SERIES OF ADVERTISING CAMPAIGNS, TRAINING COURSES AND DEMONSTRATIONS CARRIED OUT ALL AROUND THE WORLD TO ENABLE PEOPLE TO GET TO KNOW AND FULLY APPRECIATE THE EXCEPTIONAL CHARACTERISTICS OF PURTOP MEMBRANES, IT HAS BEEN POSSIBLE TO USE THEM TO COMPLETE NUMEROUS PRESTIGIOUS PROJECTS ALL AROUND THE WORLD. BELOW YOU CAN FIND A SELECTION OF IMAGES SHOWING SOME OF THOSE PROJECTS.

MTRC CONTRACT 823B, GUANGZHOU-SHENZHEN-HONG KONG EXPRESS RAIL LINK (PEOPLE'S REPUBLIC OF CHINA)

The Guangzhou-Shenzhen-Hong Kong Express Rail Link (XRL) is an express railway to be opened in phases between 2011 and 2017. It will connect Hong Kong with the major cities of Mainland. The XRL Hong Kong section is under management of the Mass Transit Railway Corporation (MTRC). The scope of work for Contract 823B located at Shek Kong includes the formation of a 27 hectare job site which hosts the maintenance and plant buildings, the Emergency Rescue Siding, drainage system, water course diversions, roadwork, noise barriers, landscaping and linked habitat compensation works. Mapei's pure and hybrid polyurea waterproofing membranes were selected to waterproof roof tops and sections of the tunnels, respectively. Beside PURTOP 1000 and PURTOP 400 M, PRIMER SN and MAPEFLEX PU45 were also used for this project.



API SEWAGE PLANTS, FALCONARA MARITTIMA - ITALY

Mapei SpA Technical Service Department was contacted to help seal some of the structural joints and apply a waterproof coating for the two sewage plants. After emptying the plants, the internal surfaces were cleaned by sand-blasting. The structural joints were waterproofed with MAPEBAND TPE tape bonded with ADESILEX PG4.

Protection was applied around the metal pipe-work passing through the sides of the plants using ADESILEX PG4 to form a fillet between the concrete and the pipes.

The surfaces of the plants were initially treated with TRIBLOCK P primer for damp substrates. MAPEFLOOR

I 911 was applied with a roller and QUARTZ 0.5 was sprinkled thereupon. PURTOP 1000 membrane was then applied using an industrial-grade, high-pressure, bi-mixer type pump. To give the plants a more attractive finish, the exposed parts were coated with MAPEFLOOR FINISH 55, ADESILEX PG4, MAPEBAND TPE, MAPEFLOOR FINISH 55.



BUKIT BINTANG STATION OF THE KVMRT RAILWAY LINE, KUALA LUMPUR - MALAYSIA

The KVMRT is a rail-based network which will form the backbone of the Kuala Lumpur/Klang Valley public transport system centred in Kuala Lumpur. The Bukit Bintang is one of the completed stations of this infrastructure and is located in the so called "Golden Triangle" commercial hub of Kuala Lumpur. The main contractor wanted a durable, high-performance waterproofing system for the roof slab to provide long-term, low-maintenance protection against water ingress and Mapei was able to supply the ideal solutions. After using other high performance solutions from the Mapei product lines for building and waterproofing, PURTOP 1000 pure polyurea membrane was applied on the surfaces to form waterproof coatings on the top decks.



NAGARATHAR SIVAN TEMPLE, PENANG - MALAYSIA

The island of Penang, in Malaysia, known as the "Pearl of the Orient", is a renowned tourist destination. Many of the Hindu temples on the island were founded by the Nattukottai Chettiar, the first Indian settlers in Malaysia.

One of these temples is the Nagarathar Sivan, constructed more than 150 years ago. The three roofs of the temple were starting to leak through cracks which had formed following the previous restoration works. The proposed

Mapei system comprised the application of PRIMER SN after the surfaces had been thoroughly cleaned, sprinkling quartz sand on the surface of the primer, and then spraying the surfaces with a coat of PURTOP 400 M hybrid polyurea waterproofing membrane. The cycle was completed by applying a coat of MAPEFLOOR FINISH 55 finish and sealing the expansion joints with MAPEFLEX PU 45 sealant.



SEWAGE TREATMENT PLANT – R.M. RAFFINERIA MILAZZO S.C.p.A., MILAZZO – ITALY

Located on the northern coast of Sicily, the Milazzo Refinery operates in the Italian and international refining system for the production of fuels and raw materials for petrochemistry. Following the enlargement of the sewage treatment plant, in 2014, two new storage tanks were made for disposal of the plant's process water itself. These concrete tanks needed an intervention of protection and waterproofing against the aggressive substances contained. Due to its resistance to aggressive substances, rapid application and drying time, excellent elongation capacity, tensile and tear strength, PURTOP 1000 was chosen as the perfect solution.

The preparation of substrates was carried out with products from the MAPEGROUT line. The primer TRIBLOCK P was later applied on all concrete surfaces followed by PRIMER SN + QUARTZ 0.5, while PRIMER EP RUSTOP was used as primer on all metal elements. Finally, PURTOP 1000 was applied by Eng. Pasquale Maisto (B.T.A. S.r.l.) and left in direct contact with the water of the plant.



SEWAGE TREATMENT PLANT, TISZAÚJVÁROS – HUNGARY

The sewage treatment plant of Tiszaújváros, in Hungary, was built in 1976 with an initial capacity of 3000 m³/day. Since it needed expansion and renovation, the tanks were drained off and concrete surfaces cleaned. A base coat layer was then applied: MAPEFLOOR H02, which is manufactured and distributed on the Hungarian market by Mapei Kft, was applied in two layers. Then, the PURTOP 1000 pure polyurea membrane was applied. Its thickness varied between 1.5 mm on vertical surfaces and 2.5 mm on the bottom of the basins and vaults. The total surface to be treated was 850 m² in each tank and the works took two days. The construction joints were filled with PURTOP PRIMER OL, which is also manufactured and distributed on the Hungarian market by Mapei Kft, so as to produce a 100% waterproof layer throughout.

MAPEI STADIUM, REGGIO EMILIA – ITALY



Since 2014, within the framework of a modernisation programme for the Mapei Stadium-Città del Tricolore, various interventions have been carried out on the stands behind the goals and on the roof of the "Bingo hall" next to the stadium. For both interventions the waterproofing system adopted was a PURTOP 1000 two-component pure polyurea membrane. The cycle consisted of preparing the concrete structures with a grinding machine, applying a coat of PRIMER SN + QUARTZ 0.5 and then applying the PURTOP 1000 membrane. A finishing coat of MAPECOAT TNS was then applied on the steps and walkways in the stands and on the roof of the "Bingo hall", while for the terraces in the stands, MAPEFLOOR FINISH 451 was applied after treating the surfaces with PRIMER P3. The last step was to fasten all the seats in position as specified in the design.





BRIDGE ALONG THE A21 MOTORWAY, CREMONA – ITALY

The bridge deck at the Po River on the A21 motorway was lately in need of special maintenance in order to restore its old waterproofing system. The bridge, built in the 1960s, has a metal frame that implies continuous fluctuations and vibrations of the spans. For this reason it was necessary to choose a waterproofing system that was able to withstand and accommodate them. PURTOP 400 M SYSTEM DECK proved to be the perfect choice due to its perfect adhesion to the substrate; excellent resistance and impermeability to chlorides and de-icing salts; rapid application and drying time; resistant to high temperatures; resistance to shearing stress which is generated between the asphalt and the waterproofing system and excellent elongation, tensile and tear strength. The work began with the removal of all the existing asphalt up to the supporting structure which was properly prepared by using a mechanical treatment. The concrete substrates were treated with PRIMER SN + QUARTZ 0.5 and MAPEFLOOR I 910 + QUARTZ 0.5. PURTOP 400 M was then applied. PURTOP PRIMER BLACK + QUARTZ 1.2 were then used to repair the asphalt surface ensuring proper adhesion to the waterproofing membrane.

URBIALDE SQUARE, BEASAIN – SPAIN

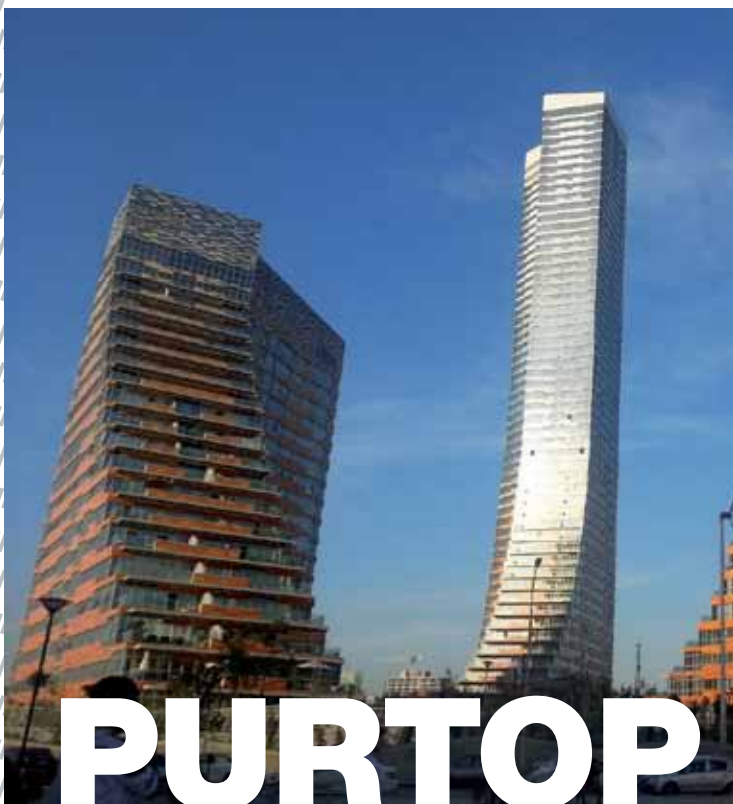
The Urbialde Square is a square of about 3.800 m² located in Beasain, a city that belongs to the Autonomous Community of the Basque Country. Private parking places and commercial activities such as banks, insurance companies, post offices, etc. are located under the square. Following the continuous leakages from below the square, it was decided to renovate the square with a proper waterproofing system.

All coverings, the garden areas and the existing screeds were removed up to the underlying structure. A new screed was built with TOPCEM in order to create the proper slope for rainwater runoff to the new longitudinal gutter placed at the center of the square. By using MAPEBAND TPE, ADESILEX PG4 and MAPEBAND SA, fittings and joints were properly treated. All the substrates were later primed with PRIMER SN + QUARTZ 0.5. PURTOP 400 M was then applied for proper waterproofing.



TAGLIEDE-COSTACCIA CABLE-CAR LIFT LIVIGNO - ITALY

The new Tagliede–Costaccia cable-car lift departs from the centre of Livigno at 1,819 m a.s.l and then climbs to reach a height of 2,017 m. The intrados of the floors in the departure area showed signs of several seepages into the service rooms underneath. So in 2014, work immediately started to waterproof the floor of the departure area. The intervention began by applying a layer of TRIBLOCK P primer, followed by a layer of PRIMER SN to promote adhesion and then PURTOP 1000 was applied by spray with a high-pressure bi-mixer pump. The grating walkways were removed to leave exposed the spacers fixed at the base. Before being waterproofed, they were sandblasted, treated with PRIMER EP RUSTOP, sealed with MAPEFLEX PU45 and then waterproofed with PURTOP 1000. The finishing product chosen was MAPECOAT PU 15 mixed with grey MAPECOLOR PASTE.



MAPEI YAPI MANUFACTURING PLANT - POLATLI



MAPEI YAPI HEADQUARTERS - ANKARA

PURTOP

PRODUCTION IS NOW UNDERWAY IN TURKEY!

PRODUCTION LINE OF PURTOP MEMBRANES HAS BEEN LATELY INTRODUCED AT THE MAPEI MANUFACTURING PLANT IN POLATLI, TURKEY

Since the company was acquired in 2013, Mapei Yapi Kimyasallari A.S., the Turkish subsidiary of the Mapei Group, has been working hard and has obtained impressive results (see *Realtà Mapei International* no. 44 and 54).

The numerous training seminars and workshops that have been organised, as well as the advertising campaigns aimed at users, distributors, contractors and designers on the correct use of Mapei products and on their potential and advantages, and the exhibitions during which the Turkish subsidiary exposed a strategic selection of innovative systems and solutions, including waterproofing systems using PURTOP membranes, have all led to the completion of numerous projects using this line of high performance waterproofing products.

The experience gained from these projects and the successes achieved are the reasons why production of PURTOP membranes has started at the manufacturing plant in the Polatli Industrial Park. Previously these membranes were only manufactured in the manufacturing plants at Robbiano di Mediglia in Italy and Sagstua in Norway.

This addition to the manufacturing facilities will allow Mapei Yapi Kimyasallari A.S. to further increase the speed at which they can meet their clients' demands, supply building sites and satisfy new orders, while reducing waiting times and transport costs and making it easier for colleagues from nearby countries to obtain materials.



ABOVE. From the left: Emanuele de Ambri from Mapei S.p.A. R&D Polyurethanes, Helvacı Msalih, Mapei Yapi Kimyasallari A.S. Product Manager - Building Products Line, Antonio Ausilio, Group Leader of the Mapei S.p.A. R&D Polyurethanes, Canli Nesrin, Mapei Yapi Kimyasallari A.S. Production and Quality Control Manager for Liquid Products, and Dino Vasquez, Mapei Group's Product Manager - Waterproofing Line, celebrating the start of the PURTOP production in Turkey.



ABOVE. The Mapei Yapi Kimyasallari A.S. staff and Antonio Ausilio, Emanuele De Ambri and Dino Vasquez at the Polatli manufacturing plant with the first batch of PURTOP products.



PURTOP IN TURKEY

PURTOP MEMBRANES WERE LATELY USED FOR THE COMPLETION OF NUMEROUS PROJECTS IN TURKEY ENSURING HIGH-PERFORMANCE DURABLE WATERPROOFING. ONE FINDS A SELECTION OF THESE PROJECTS IN THESE PAGES.



VIAPORT VENEZIA RESIDENCES & MALL, ISTANBUL

This project was one of the most prestigious investments in Istanbul for 2015. The design aimed creating a replica of Venice channels inside a shopping mall and residential complex. The most attractive part of the design was the channel which also created the most serious waterproofing problems. There was a whole floor of the shopping mall under the channel and it was impossible to take any risk of water leakage. Therefore the investor looked for the most sophisticated waterproofing solutions. Mapei proposed a waterproofing cycle including PRIMER SN, PURTOP 1000, MAPEGROUT 430, LAMPOSILEX and PLANISEAL 88, which ensured high mechanical performance and impermeability.



AFAD HEADQUARTERS, ANKARA

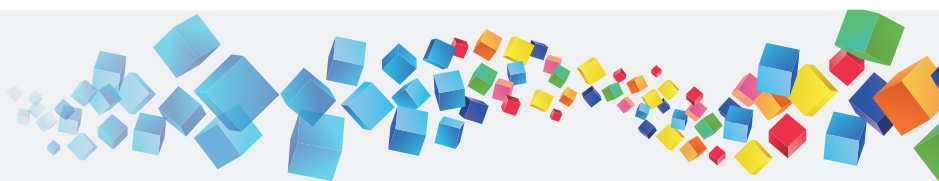
AFAD (National Disaster and Emergency Management Center) headquarters in Ankara was built on a land of 46,000 m² and the project value is 25 million Euros. The project has a 12,000 m² square above parking deck that needed to be waterproofed. The challenge was the heavy construction machinery and equipment that needed to move on the waterproofing layer during construction. Mapei proposed PURTOP 1000 because of the membrane's high mechanical strength and abrasion resistance. The waterproofing application has been finished in 30 days and resisted to heavy traffic during construction and supplied a watertight structure. It involved the use of PRIMER SN, PURTOP 1000, MAPEFLOOR I 900, MAPEGROUT THIXOTROPIC, and TOPCEM PRONTO.



MAHALL RESIDENCES, ANKARA

This complex includes residences, offices and a shopping mall. All terraces and garden decks were waterproofed using Mapei products. PURTOP 400 M was chosen due to its high performance compared to other solutions proposed by many competitors. Mapei was able to propose a complete waterproofing system including PRIMER SN, PURTOP 400 M, MAPEGROUT THIXOTROPIC, MAPEBAND TPE, and ADESILEX PG4.





EXPOTUNNEL 2016

TECHNOLOGIES FOR UNDEGROUND PROJECTS



With a total of around 100 exhibitors, 33% of which from overseas, an increase of 13% on the 2014 edition, the curtain went down on the two-yearly ExpoTunnel Underground Technologies and Major Works Exhibition, held at the BolognaFiere exhibition centre from the 19th to the 21st of October.

Mapei was one of the key players at the exhibition with a stand from its UTT (Underground Technology Team) Division, displaying product systems, which included accelerants for shotcrete, products for mechanized tunneling, injection and consolidation systems, products for repairing, protecting and finishing concrete and systems used to waterproof underground structures.

Companies like Mapei create and innovate thanks to their engineers, professionals and research scientists working in synergy with other organisations and universities both in Italy and from around

the world. A formula for success which, for decades, has been the driving force behind the company's evolution, innovation and excellence in the tunnelling sector.

EXAMPLES OF SUCCESS

Materials play a decisive role in the underground construction sector and it is precisely in this field that the research and development work carried out by companies such as Mapei are a clear indicator of their strength. Mapei goes on consolidating its leading products and constantly developing new solutions to increase the efficiency and productivity in the world of underground construction work.

At ExpoTunnel 2016 Mapei's innovation was highlighted by a rich gallery of images illustrating the most important projects executed over the last two years, all certified as eco-sustainable in

compliance with the most strict international standards.

Mapei's high-tech UTT products were illustrated through the underground projects in which they were adopted.

These included Farringdon Station, part of the Crossrail project in London, where the tunnel surfaces were waterproofed using MAPEPLAN TU S, MAPEPLAN WATERSTOP, IDROSTOP MULTI and MAPEPLAN ANCHORING.

Also showcased was the Ejpvovice Tunnel, in the Czech Republic, for which MAPEQUICK CBS SYSTEM 1, MAPEQUICK CBS SYSTEM 2 and POLYFOAMER FP/CC, as well as other products, were employed during construction work.

Another project on display was the work carried out in Belchen, Switzerland, where MAPEBLOX PKG, MAPEBLOX BT and MAPEQUICK CBS SYSTEM 1 and 3 all played a key role to automate the third tube of the Belchen tunnel along the A2 motorway. MAPEPUR UNIVERSAL FOAM G, MAPEFIX EP 385/585, and MAPEGROUT THIXOTROPIC were also used for this project.

And, lastly, the Base Tunnel for the Mountain-pass Deviation along the Florence-Bologna motorway, where large-size ceramic tiles were installed with KERAFLIX MAXI S1 and the joints were grouted with KERAPOXY CQ.

With the aim of offering solutions for the entire range of technical requirements, thanks to its cutting-edge technology Mapei Underground Technology Team continues to demonstrate its winning know-how on underground sites all around the world.

See you at the next edition of ExpoTunnel in 2018!



Technology for underground construction.

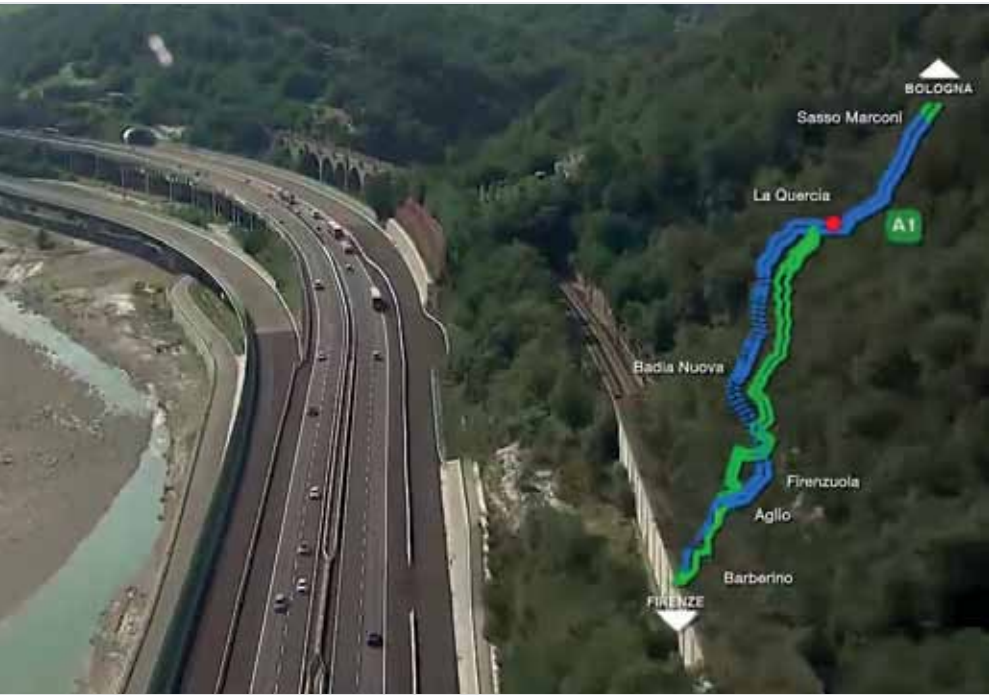
- **Alkali-free set accelerators for shotcrete**
- **Products for mechanized tunneling:** foaming agents for soil conditioning, polymers, sealants, lubricants
- **Products for grouting and consolidating**
- **Products for concrete repairing, protection and coating**
- **Products for waterproofing:** synthetic waterproofing membranes, waterproofing accessories



/mapeispa

Discover the world of Mapei:
www.utt-mapei.com, hq.utt@utt.mapei.com





MOUNTAIN PASS DEVIATION

WORKS WERE COMPLETED AT THE BASE TUNNEL, THE LONGEST TUNNEL OF THE NEW MOUNTAIN PASS DEVIATION ALONG THE A1 FLORENCE–BOLOGNA MOTORWAY

The stretch of the A1 motorway running through the Apennine Mountains between Bologna Casalecchio and Barberino del Mugello is a strategic infrastructure that connects the North and South of Italy. For more than thirty years increasing the capacity of this stretch, which every day is used by 89,000 vehicles, has been considered a priority to increase the capacity of Italy's motorway network. With the objective of modernising Italy's transport system in an area with highly complex geological features, all Mapei's experience and most up-to-date technology has been used to the full in this project, with various cutting edge solutions which have facilitated the execution of the work and enabled the scheduled targets to be met. Out of all the activities carried out by Mapei, two examples in particular highlight how important the company's innovation was for this major project: the Sparvo tunnel excavation with highly sophisticated TBM's (Tunnel Boring Machines), for which a decisive role was played by the MAPEQUICK CBS SYSTEM (a two-component system for cement-based mixes for injection), and the choice of materials used to cover the surface of the sidewall in the Base Tunnel, for which thin porcelain tiles were installed using KERAFLEX MAXI S1 adhesive.

A WINNING TEAM FOR THE TUNNEL DIGGING CHALLENGE: MAPEQUICK CBS SYSTEM AND TBM

At the end of July 2013 the main contractor, TOTO Costruzioni Generali S.p.a., successfully completed tunnel excavation operations for the Sparvo Tunnel located in the lots no. 6 and 7 of the Mountain-Pass Deviation, the new and modern segment along the A1 Milan-Naples motorway. Tunnel excavation was carried out with a 15.625 m diameter TBM-EPB machine built by Herrenknecht AG. The twin-bore tunnel was bored out in geologically difficult soil in the Tuscany-Emilian Apennine Mountains where, apart from the geo-

logical complications, methane gas was widely diffused throughout the clay formations that needed to be crossed during the excavation work.

Mechanized tunnelling consists in the use of TBM's (Tunnel Boring Machines), which bore out the whole section of the tunnel in one go. As the machine advances, the gap between the outside diameter of the mole's shield and the outer face of the blocks used to line the tunnel leave an annular gap that needs to be filled while tunnelling operations are being carried out.

Recently, mechanized tunneling designers and contractors have chosen the so-called "two-component" backfilling system more and more frequently, which comprises the following:

- component A: a highly fluid cementitious slurry which makes it very easy to pump, whose stability and impermeability is increased thanks to the use of bentonite. To guarantee the slurry workability up to 72 hours from mixing, a liquid retarding admixture with a plasticising effect is added, in this specific case MAPEQUICK CBS SYSTEM 1.

- component B: this is made up of a liquid activator admixture, MAPEQUICK CBS SYSTEM 2, which is added to component A just before it is injected into the annular gaps that need to be filled. This admixture is an efficient neutraliser of the set-retarding action of MAPEQUICK CBS SYSTEM 1 and turns the mixture into a gel almost immediately, in a time that can also be modulated (from 5 to 25 seconds).

The main advantages of this system compared with other materials are:

- its super-fluid consistency and maintenance of workability, which reduce the



ABOVE. The TBM used for the Sparvo Tunnel of the Mountain Pass Deviation project.



A FEW FIGURES FOR THIS MEGA PROJECT

41 NEW TUNNELS (57.3 KM OF ROAD)

41 NEW VIADUCTS (16.4 KM OF ROAD)

7.9 MILLION M³

SOIL DUG FROM THE TUNNEL

14.5 MILLION M³

OF SOIL MOVED

ABOUT 30 MILLION MAN-HOURS WORKED

4.1 BILLION EUROS

TOTAL COSTS

risk of clogging in the transport lines and pumping hoses;

- its capacity to completely fill the annular gap behind the ring, thereby minimising any movement in the ground and, as a result, the risk of collapse during tunnelling;

- it hardens very quickly so that, even if water is present, its initial mechanical

strength develops very quickly, thereby "blocking" the ring in its specified position. The progressive hardening of the system is due to its passing rapidly from a liquid state to a gel-like state, which also helps reduce ingress of the injected material into the area being excavated by the TBM.

STUDY OF THE MIX-DESIGN

The composition of the backfilling mix injected behind the concrete segments must be designed to meet the specified performance characteristics, while also being cost-effective. Each project has its own particular set of problems and it is important, therefore, that the two-component mix is designed according to the specific requirements of each single site. After taking into consideration all the specific requirements of the site, preliminary tests were carried out at the Mapei Research & Development Laboratories in Milan. Once the mix had been designed and tested in the Lab, the Technical Services Department of Mapei UTT (Underground Technology Team) tested and checked the mix on site during the first few weeks of TBM operations, and then every week during its round-the-clock work regime.

The aim was to check that the results achieved on site were comparable to those obtained during the Lab tests and, if necessary, to intervene on the parameters measured to bring the ma-

terial in line with project specifications.

EXCEPTIONAL RESULTS

The constant control and technical support work provided, along with the numerous tests carried out in the laboratory and on site, allowed a mix to be obtained that fully complied with all the various requirements that had appeared, guaranteeing a final result in line with the high expectations of the project team.

The volumetric stability of component A was demonstrated by the lack of clogging in the transport lines from the mixing units to the TBM.

The special characteristic of the system is that it guarantees a rapid change in state from liquid to gel to solid, which allowed the annular gaps to be completely filled while preventing, in the case of water being present (a common occurrence when excavating underground), leaching and weakening of the mix.

In the particular case of the Sparvo Tunnel, the effectiveness of the mix-design was verified, particularly after the rotary/translation movement of the TBM before excavating the second tube. Also, the fact that the mix was pumped for more than 5 km clearly demonstrates that it performed consistently well and according to the expectations of the project team, while also minimising costs due to down time to clean out or replace clogged pumping hoses and injection lines.

IN THE SPOTLIGHT MAPEQUICK CBS SYSTEM

It is a system specifically designed for use in cementitious mixes that need long workability. It is made up of MAPEQUICK CBS SYSTEM 1, a liquid retarding agent, and MAPEQUICK CBS SYSTEM 2, a liquid activator admixture. MAPEQUICK CBS SYSTEM 1 is a low viscosity solution able to retard cementitious mixes maintaining mix workability. In addition the solution assists in reducing bleed of the grout and decreases the grout viscosity. MAPEQUICK CBS SYSTEM 2 is suitable for activating cement setting in mortars or slurries used in injections. It also increases the viscosity of cement-based mixes, even where there is a high water/cement ratio. The main application field of MAPEQUICK CBS SYSTEM is for the injection of cementitious mixes used in back-fill grouting behind the precast concrete segments in tunnels excavated by means of TBM ("Tunnel Boring Machines").

HIGH PERFORMANCE INSTALLATION OF CERAMIC TILES IN A TUNNEL WITH KERAFLEX MAXI S1

The 11.2 km Badia Nuova-Aglio stretch of Mountain-Pass Deviation includes what is considered to be the symbol of this intervention: the Base Tunnel.

The underground stretch includes the Poggio Civitella Tunnels (two tunnels 250 m long each) that are connected by an existing viaduct to the Base Tunnel (on the Bologna side). What makes this tunnel unique is the technical solution adopted to cover the surface of the tunnel sidewall. In fact, from the base of the

sidewall up to a height of 4 m, thin porcelain tiles made by the company Cotto d'Este were applied, covering a total surface area of 140,000 m².

CERAMIC TILES TO COVER THE TUNNEL

Apart from safety reasons, the material used to cover the tunnel surfaces was chosen for its functionality and cost-effectiveness. Motorway tunnels are

normally painted with epoxy-acrylic resin which needs to be cleaned periodically (every 5 to 6 months) and then repainted every 4 to 5 years.

Even the most thorough cleaning operation, however, cannot be completely effective; the paint used does not cover any macro-pores in the concrete, which allows soot to gather in the pores and cause dark streaks on the surface.

The build-up of dirt on the walls of the tunnel reduces the luminosity in the tun-





IN THE SPOTLIGHT

KERAFLEX MAXI S1

It is a deformable (S1), improved (2) slip resistant (T) cementitious adhesive (C) with extended open time (E) classified as C2TE S1 according to EN 12004. It is used for interior and exterior bonding, up to 15 mm thick, on floor or ceramic tiles of every type and size on uneven substrates and renders; for interior and exterior bonding of stone materials; for spot bonding of insulating material in interiors. It can contribute up to **5 points** to obtain the **LEED** certification for eco-sustainable buildings.



» TOTAL SURFACE COVERED WITH PORCELAIN TILES:
170,000 M²

nel, which lowers the level of safety and/or increases the power of the lighting required in the tunnel to compensate for the darkness.

With the aim of reducing cleaning and repainting operations in mind, and to maintain luminosity in the tunnel for safety reasons, this was the first time ceramic tiles had been used instead of paint in Italy.

The higher installation costs for this solution will be compensated for by the

fewer and easier cleaning operations, the elimination of periodic repainting and the lower power of the lighting installed (around 40% less power than normally required in similar tunnels). Also, the surface of the walls is much smoother and has a more attractive finish compared with the surface of painted concrete. The choice of fully bonded ceramic coverings, rather than mechanically anchored metal panels, is due to the increased level of safety if they are hit

accidentally, since a ceramic tile would be broken without bending it, the opposite of what would happen with a metal panel which would become a serious hazard for other vehicles.

TECHNICAL PROBLEMS OVERCOME WITH KERAFLEX MAXI S1

The design and application problems that had to be dealt with prior to installation were due to the walls themselves, which rather than being flat were convex with a radius of around 6 m.

The ceramic tiles to be applied were 1 m x 1 m for the first row in contact with the road level and then 1 m x 3 m for the second row.

It goes without saying that the character-





IN THESE PICTURES.
Large-size ceramic tiles were bonded in the tunnel with KERAFLEX MAXI S1.

» CERAMIC TILES WERE INSTALLED IN THE BASE TUNNEL, THE LONGEST TUNNEL OF THE MOUNTAIN PASS DEVIATION

istics of the adhesive used to bond the ceramic tiles and the technique used to apply the tiles all had to be carefully studied and tested by the client, together with the company installing the tiles, Pavimental S.p.A., the manufacturer of the tiles, Cotto d'Este, and with Mapei to identify the best adhesive system for this particular type of installation.

The adhesive used in this case was KERAFLEX MAXI S1 which, thanks to its special characteristics, fully complied with all the specified installation requirements.

One of these particular characteristics is its high thixotropy and, because of the curve of the substrate and the size of the tiles, the thickness of adhesive required varied from around 3 to 5 mm and the specifications required that the adhesive could not pour or detach before positioning the tiles. Also, the adhesive couldn't be subject to hygrometric shrinkage, in spite of the high and different thicknesses that had to be applied.

This proved to be a perfect example of the versatility of KERAFLEX MAXI S1.

A rendering machine with a pre-mixing unit was used to apply the adhesive on the substrate and on the back of the tiles and, in spite of adopting such an unconventional method to apply a cementitious adhesive, thanks to the special thixotropic properties of KERAFLEX MAXI S1, the amount of waste due to the mix falling to the ground was negligible. Also, the particularly long open and adjustability times of KERAFLEX MAXI S1 helped make the installation operations easier.

The high adhesion and sufficient deformability of KERAFLEX MAXI S1 made it possible to apply the adhesive on the particularly smooth, impermeable concrete substrate and on the back of the ceramic tiles reinforced with glass fibre meshes.

With the aim of guaranteeing their total resistance to de-icing salts and to the high levels of abrasion the ceramic tiles will be exposed to during cleaning operations, as well as a good cleanability in removing smog and dust, the joints were grouted with KERAPOXY CQ.

TECHNICAL DATA

Base Tunnel of the Mountain Pass Deviation along the A1 Florence-Bologna Motorway, Italy

Period of Construction: 2005-2015

Period of the Mapei Intervention: 2005-2015

Intervention by Mapei: supplying admixtures for injection mixes and products for the installation of large-sized porcelain tiles

Client: Autostrade per l'Italia S.p.A.

Design and Works Direction: Spea Engineering S.p.A.

Contractors: Todini S.p.A. for the conventional excavation works and for the covering of the Base Tunnel; TOTO S.p.A. for the Sparvo Tunnel; Pavimental S.p.A. for the installation of porcelain tiles

Mapei Co-Ordinators: Mapei UTT, Rossi C&CA

MAPEI PRODUCTS

Admixtures for injection systems: Mapequick CBS System 1, Mapequick CBS System 2
Ceramic tiles installation: Keraflex Maxi S1, Kerapoxy CQ, Mapeflex PU45

For further information see www.mapei.com, and www.utt.mapei.com



ONE LIGHT APARTMENTS IN KANSAS CITY

MAPEI PRODUCTS HELPED BUILD NEW LUXURY APARTMENTS IN MISSOURI, USA

With combined municipal and private investments, One Light Luxury Apartments represents the first residential tower built in downtown Kansas City (the largest city in the U.S. state of Missouri) since 1976 and the first new high-rise construction within the freeway loop since 2006. One Light is just one of almost 80 projects – totaling investments of more than 1.7 billion US dollars – that are a part of the rejuvenation of downtown Kansas City that began in 2012.

One Light was developed by The Cordish Companies as a 25-story high-rise residential building in the heart of Kansas City's Power & Light District. The multi-story building includes 307 residential units, two retail tenants on the first level, club rooms, 650 m² of office space for The Cordish Companies, and two penthouse floors.

The 325 apartments range in size from about 55 m² studios to 130 m² penthouses, with each residential unit featuring views of the Kansas City skyline. Shopping, dining and entertainment are a short walk away; within the apartment complex itself, residents can find a fitness center, theater, pool, community kitchen and club rooms.

Two installer companies were selected for the flooring and wall installations: FDC Contract for wooden, textile and vinyl coverings, and Metro Tile Contractors for ceramic tiles. One Light is a high-end project, and both installers relied on Mapei's installation materials for success.

MAPEI PRODUCTS AT WORK

Teams from FDC Contract began their work by using PLANIPREP SC skimcoating and patching compound to produce a smooth, even substrate for the installation of luxury vinyl coverings.

Because the teams were working on a multi-unit high-rise project, it was important to provide sound reduction between floors. To accomplish this task, the teams used ULTRABOND ECO 360 high-performance adhesive to install a total of almost 14,000 m² of acoustical underlayment.

Over this underlayment, the teams again used ULTRABOND ECO 360, with its easy trowelability for quick installation, to bond luxury vinyl tiles (LVT).

FDC Contract crews installed about 465 m² of 10-mm engineered hardwood in the club room, community kitchen and entrance to the outdoor pool on the fourth floor of One Light. For this installation, the crews used ULTRABOND ECO 995,



ABOVE. One Light is a 25-story high-rise residential building in the heart of Kansas City.

Mapei's premium adhesive for all types of wood flooring and bamboo. ULTRABOND ECO 995 can be used in a single-coat application method that provides a superior bond and moisture vapor emission control on concrete slabs. This adhesive also provides sound-reduction properties, making it suitable for use in multi-unit housing projects.

FDC also installed textile floors in the hallways of the 21 residential floors by using ULTRABOND ECO 810.

For the installation of ceramic tiles in apartment bathrooms and in lobby areas on the main floor, Metro Tile Contractors used an innovative Mapei system. They began by applying MAPELASTIC AQUADEFENSE ultra quick-drying flexible liquid membrane to waterproof interior corners of all walls in the bathroom showers. They then used MAPELASTIC CI for



PHOTO 1. The installers cut the tile surrounding the fireplace down to 22,9 x 91 cm to create a beautiful floor-to-ceiling backdrop for the lobby. In these areas, they used ULTRAFLEX LFT for bonding ceramic tiles and ULTRACOLOR PLUS for grouting joints.
PHOTO 2. ULTRABOND ECO 995 was used to install the wooden flooring in the fourth floor club room and community kitchen.

crack isolation on bathroom floors.

The walls in the showers were covered with 15 x 61 cm porcelain stone tiles, while the bathroom floors were covered with 30 x 61 cm “City View” porcelain tiles by Daltile. Both the wall and floor tiles were bonded with ULTRAFLEX LFT mortar for large-format tile, which is formulated with Easy Glide Technology™ for ease of application.

All of the ceramic tile joints in the bathrooms were grouted with ULTRACOLOR PLUS high-performance, anti-efflorescence, quick-setting and drying polymer-modified mortar with water-repellent DropEffect® and mould-resistant BioBlock® technology for grouting joints from 2 to 20 mm wide.

“This was a pretty straightforward job,” said Kevin Coffman, project manager for Metro Tile. “One very interesting thing for us was the way this job flowed. We worked the project from bottom to top, and thanks to the general contractor,

PHOTO 3. Textile floors in the hallways of the 21 residential floors were installed using ULTRABOND ECO 810 adhesive.

PHOTO 4. On the ground level, large-format ceramic tiles were installed on the walls and floors of the lobby and waiting areas using ULTRAFLEX LFT as adhesive and ULTRACOLOR PLUS to grout the joints.



J.E. Dunn, it was a true design-and-build process. While we were installing ceramic tiles in the bathrooms on the fifth floor, they were pouring concrete on the 17th floor, and by the time we were working on the 10th floor, the 25-story building was being topped off. Once we had chased the building to the top penthouses, we then returned to the ground level to install ceramic tiles in the common areas.”

On the main floor, Metro Tile crews installed 46 x 91 cm large-format tiles from an imported series by Daltile on the walls and floors of the lobby and waiting areas. The installers cut the tile surrounding the fireplace down to 22,9 x 91 cm to create a beautiful floor-to-ceiling backdrop for the lobby. In these areas, Metro Tile also used ULTRAFLEX LFT to bond the coverings and ULTRACOLOR PLUS for grouting joints.

“Mapei was the materials manufacturer of choice on the project for both the tile contractor and flooring contractor,” said Mapei coordinator Brett Robben. “Both contractors knew that we had solutions to help them with the tight construction timeline and specific requirements of the project. They looked to Mapei for solutions to these issues, and we were able to deliver recommendations with confidence. This tower will be a staple in the Kansas City skyline for years to come.”

All the products mentioned in this article are manufactured and distributed by Mapei Corp., the US Subsidiary of the Group, on the American market, except for ULTRACOLOR PLUS and MAPELASTIC AQUADEFENSE which are also available on the international market.



2



4



3

TECHNICAL DATA

One Light Luxury

Apartments, Kansas City

Year of construction: 2015

Year of the Mapei

Intervention: 2015

Client: The Cordish Companies

Design: Humphreys & Partners Architects, L.P.

Main Contractor: J.E. Dunn Construction Group

Ceramic Tile and Stone Installation Contractor:

Metro Tile Contractors

Wooden, Textile and

Resilient Materials

Installation Contractor:

FDC Contract

Project Managers: Todd Saunders (FDC Contract) and Kevin Coffman (Metro Tile Contractors)

Mapei Distributor: Carpet Cushions & Supplies

Mapei Co-ordinator: Brett Robben, Mapei Corp. (USA)

Photos: Brett Robben, Mapei Corp. (USA)

MAPEI PRODUCTS

Preparing the substrates:

Planiprep TM SC*

Bonding acoustical

underlayment and LVT

coverings: Ultrabond ECO 360*

Bonding wooden floors:

Ultrabond ECO 995*

Bonding textile floors:

Ultrabond ECO 810*

Waterproofing substrates:

Mapelastic AquaDefense,

Mapelastic CI*

Bonding ceramic tiles: Ultraflex LFT*

Grouting tile joints: Ultracolor Plus

*These products are manufactured and distributed by Mapei Corp., the US subsidiary of the Group, on the American market.

For further information see the websites www.mapei.com and www.mapei.us



TWENTY YEARS OF SPORTS RESEARCH WITHOUT TAKING SHORTCUTS

THE MAPEI SPORT RESEARCH CENTRE
CELEBRATED ITS 20TH ANNIVERSARY IN 2016

Scientific research in the realm of sport, multidisciplinary support for athletes to help them improve their performance and promote an increasingly rational approach to both competitive sport and fitness in general.

Drawing on a strictly scientific approach and absolute respect for ethical-sporting values that cannot be overlooked, the Mapei Sports Research Centre in Olgiate Olona (Northern Italy) - which

celebrated its first 20 years in operation in 2016 - was set up to help spread the right attitude to sport in every sector of our society.

Sport and ethics actually come together at the headquarters in Olgiate Olona, inside an ultramodern four-storey glass and steel building covering a total of 1400 m², including laboratories and clinics, as well as study, research, training and prevention centres.

These are the foundations on which this centre of sporting excellence is built, and it was the President of the Mapei Group Giorgio Squinzi, who, sharing exactly the same line of thinking and approach to sport as Professor Aldo Sassi (the co-founder of the Centre who passed away prematurely in December 2010), first decided to create this centre back in 1996. This important date was commemorated through an important and prestigious conference for the world of scientific research into sport held at the Ville Ponti

Conference Centre, Villa Napoleonica, in Varese on 21st May this year (see the picture on the left). "There could be no better way of celebrating the 20th anniversary of Mapei's venture into the world of sport - that first began with our legendary Professional Cycling Team - than a day like this, with so many professionals coming together to discuss every aspect of sports research in front of an audience of young students and sports fans", so the General Manager and Medical Director of the Centre, Claudio Pecci, noted. The Mapei Sport project officially came into being when the facility was first inaugurated in 1998. Initially intended to provide the members of the Mapei Professional Cycling Team with proper scientific support and ethical guidance in their approach to the sport, while continuing its work in cycling, the Centre has gradually widened its horizons over the years to embrace other sports, such as football, basketball, athletics, golf, Alpine



skiing and motorsports, without in any way altering its aims and objectives.

The Mapei Sport Research Centre is now widely acknowledged as a benchmark for scientific research applied to sport on both an Italian and European level.

"Sport without taking shortcuts is the very DNA of this project", so Giorgio Squinzi recently stated. "Transparency and fairness in sport have always been our mission, ever since we had our own cycling team, and they continue to be so now that we are achieving significant results with Sassuolo football team. Teamwork is the key to our success at Mapei and if you want to keep going forward, you cannot afford to stop pedalling".

INTERNATIONAL SCIENTIFIC WORK

The Centre's international scientific work began three years after it was first set up. In 1999 Aldo Sassi presented the results of a pilot study for developing a new test for professional cyclists at the annual congress of the European College of Sport Science. This study was completed in 2004 and then published in the

European Journal of Applied Physiology in 2006. The facility's scientific work was further developed in 2001 and two studies were eventually published in 2002 and 2004 in *Medicine and Science in Sports and Exercise*, one of the world's leading journals in the field of Sports Science and published by the American College of Sports Medicine. Since then about 20 studies, either carried out independently by the Mapei Sport Research Centre or in partnership with other institutes, have been published or are being published in highly esteemed international scientific reviews. In addition to this, over 30 presentations have been given at international conferences and over 50 articles published in technical and popular science magazines.

The standard of the research projects completed over the last few years at the Centre was recently given recognition by the Italian Ministry of Labour, Family, Social Affairs and Equal Opportunities which awarded the Mapei Sport Research Centre a grant to finance a study into overtraining in professional sports people, a study planned to be carried



out in 2017-2019. The Centre's growth is comparable to the Mapei Group's own growth both economically and in terms of international prestige and, as Giorgio Squinzi has pointed out, "in memory of Aldo Grassi, whom we miss so much, we must continue with our work, showing the kind of determination that has always been our hallmark".



SASSUOLO'S TRAINING PROGRAMME

For a number of years now Sassuolo football team has been consulting the Mapei Sport Research Centre for scientific support in training its footballers, for advice about proper nutrition and for monitoring the medical care of its players.

Working with the club's technical and medical staff, the Sassuolo players have their training monitored on a daily basis, partly through the use of the latest generation of technological systems. The players also undergo regular physiological assessment performed by the Mapei Sport staff. These tests are aimed at optimising the footballers' physical performance and reducing the frequency of injuries by identifying the main risk factors. The working methodology adopted by Sassuolo is that developed by Dr. Ermanno Rampinini, who helps the team's technical staff plan and programme the training schedule in collaboration with Prof. Marco Riggio, who processes all the training data. All the various aspects connected to nutrition are the responsibility of Dr. Luca Mondazzi. Claudio Pecci, the General Manager and Medical Director of the Mapei Sport Research Centre, is the chief medical officer and coordinator of the project.





2016 UCI ROAD WORLD CHAMPIONSHIPS

MAPEI TRIUMPHS ON THE QATARI
AND INTERNATIONAL STAGE





Team Katusha riding in the Team Time Trial.

FFor the first time in its 89-year long history of organizing competitions, UCI (Union Cycliste Internationale) headed to the Middle East in October 2016, when from 9th to 16th October, the city of Doha in Qatar was all blue and white, as Mapei was Main Sponsor of the UCI Road World Championships. The event, which welcomed more than 1,000 athletes from 75 different countries,

moved from its traditional September date to mid-October, when Qatar temperatures were a little more forgiving.

The choice of Qatar as the first country in the Middle East to host the UCI event is not surprising, given the high commitment the region has towards sports. The country has been promoting sports by organizing several regional and international events in the past few years, leading to more investment in sport infrastructures, allowing Qatar to become an international sport hub.

A LONG TRADITION AS MAIN SPONSOR

The Mapei Group is continuing to support cycling, a sport that is actually a sort of family tradition. Mapei previously sponsored the Time Trial events at the 1999 UCI Road World Championships in Treviso (Northern Italy) and the Road races in Verona (Northern Italy) and Varese (Northern Italy) in 2008, Mendrisio (Switzerland) in 2009, Melbourne (Australia) in 2010, Copenhagen (Denmark) in 2011, Limburg (Netherlands) in 2012, Florence (Central Italy) in 2013, Ponferrada (Spain) in 2014 and Richmond (USA) in 2015. And Mapei has not only supported the Road World Championships, the Group headed by Giorgio Squinzi also sponsored the UCI Cyclo-cross World Championships held in Treviso in 2008. The

reason why the Mapei Group sponsors these events is that it has the same intrinsic values imprinted in its own DNA: hard work, constant team work, attention to human resources and determination in taking on new challenges.

As the event's Main Sponsor, the Mapei brand enjoyed considerable visibility during the eight days of races. The track was covered with Mapei's banners and boards, both at the start and finish. The official ceremonies and press conferences were featured with the company's branding material, as well as the welcome desk and podiums. The close-circuit video screens broadcasted the official Mapei video clip for the whole duration of the event.

There was also a Hospitality Area for Mapei customers along the finishing straight, which soon became an attraction for VIPs, executives, cycling champions of the past and members of the media. Staff and visitors were wearing Mapei's t-shirts for the entire duration of the event ensuring that Mapei logo was present in the most strategic and visible spots. Additionally, promotional items such as branded water bottles and caps were distributed during the races, while official vehicles of the event also carried the blue and white logo.

MAPEI IN THE SPOTLIGHT ON TV, PRESS AND SOCIAL MEDIA

Some of the most important sports journalists and media outlets of the region attended the event. Furthermore, due to the relevance and prestige that this event has in the sport field, international media outlets were present, too: Sky News Arabia from the UAE, De Telegraaf from the Netherlands and Het Laatste Nieuws from Belgium, to name a few. All this media guaranteed that Mapei had even more visibility and the chance to expand its reputation in the region. Moreover, several international TV stations, such as NBCUniversal in the USA, transmitted the event and Mapei had a 5" spot on



RTBF in Belgium and on Viasat Nordic in Northern Europe. The event also had its promotion in Italy, through Mapei SpA's official website www.mapei.it and on social network profiles that were sharing Mapei's spot and giving updates throughout the competition.

PRAISE

Of course there was plenty of praise for Mapei's involvement in Doha 2016. The biggest tribute of all - together with his thanks - came from Brian Cookson, the President of the UCI, and from other leading international cycling executives. The hospitality services and advertising logistics in Doha also provided the opportunity to relive the wonderful victories of Mapei's own Professional Cycling Team from May 1993 to October 2002. That was when the "cycling-barons" with the coloured cubes on their jerseys won a total of 654 races, including 4 Road World Championships.

THE RACES

The competition itself was gripping and engaging, and despite the hot weather and the high temperature, the atmosphere at the event was lively and the fans gave huge support to their teams and favorite athletes.

The organization scheduled a competition for professional



BELOW. The Norwegian rider Kristoffer Halvorsen won the Men's Under 23 race and Elisa Balsamo won the Women's Junior race.

athletes and one for families and amateurs called "The race starts here!" which allowed non-professionals to try the same 19 km road circuit course used by the best riders in the world. Approximately 1,000 athletes coming from 75 different countries attended the 89th edition of the UCI Road World Championship. The event included 12 different races, included Women's and Men's Team Time Trials, Women's and Men's Elite Road Races, Women's and Men's Time Trials, Women's and Men's Junior Time Trials and Road Races, Men's Under 23 Time Trial, Men's Under 23 Road Race and Men's Amateur Road Race.

OLD-HANDS FROM MAPEI LEAD THEIR TEAM TO VICTORY

The heat really tested all the athletes, particularly in the Time Trials. The World Championship races began with the team time trials for professional racing teams. The Men's event was won by Etixx-Quick Step, whose team was made up of Tony Martin, Bob Jungels, Niki Terpstra, Yves Lampaert, Julien Vermote and Marcel Kittel. These six locomotives covered the 40 km at an average speed of 56.418 km/h, taking 12 seconds less than the BMC team. It is worth mentioning that former cyclists from the Mapei Professional Cycling Team were in charge of Etixx-Quick Step: Davide Bramati, Tom Steels and Wilfried Peeters. The team manager was Patrick Lefevere, who had the same job in the Mapei team.

The Women's Team Time Trial held over a distance of 40 km in Doha was won by Boels-Dolmans with Elizabeth Armitstead-Deignan, Chantal Blaak, Karol-Ann Canuel, Christine Majerus, Evelyn Stevens and Ellen Van Dijk.



An advertising banner featuring the Mapei logo at the 2016 UCI Road World Championship.



LEFT. Men Elite Road Race: from left, Cavendish (second), the winner, Peter Sagan, and Tom Boonen, third.

THE OTHER TIME TRIALS

Lisa Morzenti almost won the Junior Time Trial for Italy coming second in a 13.7 km race held on a manmade island called "The Pearl".

Karlijn Swinkels from the Netherlands won at an average speed of 22.764 km/h with Morzenti just 7 seconds behind and Juliette Labous (France) 21 seconds behind the winner. The Men's Junior Time Trial was very much an American affair with Brandon McNulty beating the Danish rider Mikkel Bjerg by 35" and another American, Ian Garrison, finishing third at 53".

The US also won the Women's Elite Time Trial thanks to Amber Neben, who averaged the incredible speed of 47.255 km/h to finish 6" ahead of the Dutch rider Ellen Van Dijk and 8" ahead of the Australian rider Katrin Garfoot.

The Under 23 race was also of the highest standard: Marco Mathis (Germany) covered a distance of 29 km at a speed of 50.799 km/h to beat another German rider, Max Schachmann, by 19" and Miles Scotson (Australia) by 38".

The German anthem was also played at the medals ceremony for the Men's Elite Time Trial, which was won by Tony Martin, beating Vasil Kiryienka (Belarus) by 45" with the Spanish rider Nicolas Castroviejo coming home third at 1'11".

The Italian girls dominated the Junior Road Race at this year's World Championships. Elisa Balsamo won the gold medal at the end of a great team performance. Elisa won the bunch sprint, beating the American rider Skylnar Schneider, the Danish rider Susanne Andersen and all the rest, with Letizia Paternoster from Northern Italy finishing fifth. Despite the heat, the teenagers averaged 39.534 km/h over the race distance of 74.5 km.

SPILLS AND THRILLS

Here is the race result of the Men's Junior race: first Jakob Eggholm (Denmark), second at 7" Niklas Markl (Germany), third Reto Muller (Switzerland). There were lots of crashes in the Under 23 race (166 km), too, which was won by the Norwegian rider Kristoffer Halvorsen. In the bunch sprint he beat Pascal Ackermann (Germany) and Italy's Jakub Mareczko.

The Women's race was also extremely fast (42.247 km/h over a distance of 134 km) and the new world champion was the Norwegian rider Amalie Dideriksen, with the silver medal going to the Dutch rider Kirsten Wild and the bronze to Lotta Lepisto (Finland).

MAPEI BRINGS GOOD LUCK

There is no doubt about it, Mapei advertising brings good luck. It did so for Italy's football team, which won the 2006 FIFA World Cup when it was sponsored by Mapei, and it has done the same for the Slovakian cyclist Peter Sagan, aged 26, who always rides brilliantly when he is surrounded by Mapei advertising. Back at the World Cyclo-cross Championships in Treviso in 2008, the Slovakian rider almost won the gold medal in the junior event, eventually finishing second. This time he won the sprint finish at the Road World Championships in Doha. The 2016 World Champion is Peter Sagan, doubling up on his win in Richmond 2015.

Giacomo Nizzolo was the top Italian finisher in fifth place. Although he is a member of the Trek-Segafredo team, he takes his performance assessment tests at Mapei Research Sport Centre in Olgiate Olona (Northern Italy), where his training plan is also drawn up.

Mapei in Qatar

A DYNAMIC BUILDING MARKET AND HUGE INVESTMENTS INTO SPORTS FACILITIES

In the Middle East the Mapei Group owns two subsidiaries: Mapei Construction Chemicals, founded in 2007 with its headquarters located in Dubai (UAE), and Mapei Doha in Qatar, founded in 2014.

In the region, Mapei offers a wealth of different services and product solutions, a comprehensive range of solution for building and waterproofing, as well as products for civil works in both the new construction and renovation fields.

Mapei's presence in Qatar is not a coincidence: the company is expecting to see an influx of new projects in the region over the next few years, due to its continuous exponential growth and healthy market. The construction industry is a prime example and contribution to this booming market made clear by the constant progression of projects such as the World Cup and its related construction of new sport facilities and renovation of stadiums.

In the past three years, Mapei's most important projects include Qatar Rail, Hamad International Airport and Msheireb Downtown, where the very fact Mapei high end products are being used is a testament to how the market is looking for high quality products, which ensure durability. Mapei products are sold through different channels and are involved in numerous sectors, which explains the company's growth of over 20% per year over the past five years in the Qatari market.

SPORTS EVENTS AND BUILDING PROJECTS

The choice of Qatar as the first country in the Middle East to host the UCI Road World Championships is not surprising, given the high commitment the region has towards sports. High Highness Emir Sheikh Tamim bin Hamad Al Thani stated several times that his objective is

making sport a shared lifestyle.

The region has been promoting sports by organizing several regional and international events in the past few years, leading to more investment in sport infrastructures. Hence, the region will also be home for other major sports events such as the FIFA World Cup 2022.

The UCI event held in Doha gained immense global attention and guaranteed Mapei more visibility than expected. The track was covered with Mapei's banners and boards, both at the start and finish. The official ceremonies and press conferences were featured with branding material, as well as the welcome desk and podiums. Staff and visitors were wearing Mapei's t-shirts for the entire duration of the event ensuring that the Mapei logo was present in the most strategic and visible spots.

Additionally, promotional items such as branded water bottles and caps were distributed during the races, while official vehicles of the event also carried the blue and white logo. The close-

circuit video screens broadcasted the official Mapei video clip for the whole duration of the event.

The event presented a great opportunity to reinforce Mapei's current relationships with clients and to meet new interesting people from the local and international communities. The company staff entertained guests from Dubai, Saudi Arabia, Bahrain, Oman, Kuwait and of course Qatar, all of whom were invited to join the Mapei team in the VIP lounge, which featured wi-fi and refreshments.

VIP tickets given for seats and parking for the company's current and potential clients, as well as for friends and families, gave Mapei's guests the opportunity to attend the Gala Dinner, which brought together officials, team representatives, sponsors and local authorities. Guests even had the option to follow the race in one of the official cars. Hence the strong market position that Mapei has already established in Qatar was undoubtedly reinforced through connections gained at this event.



ABOVE. The team of Mapei Construction Chemicals LLC and Mapei Doha at the 2016 UCI Road World Championships in Doha. From left on, Marwa El-Moniery (Marketing Communications Manager for Mapei Construction Chemicals LLC), Sameh Hanna, Gianluigi Cairo, Stefano Iannacone (General Manager for Mapei Construction Chemicals LLC), Dario Casile and two local clients of Mapei Doha.



Hamad International Airport is Qatar's new airport, opened in 2014 next to the city of Doha and the Arabian Gulf. Home to Qatar Airways, the architecturally stunning, supremely efficient and truly welcoming airport is a gateway to the world, serving over 360,000 flights and 30 million passengers every year in a 600,000 m² passenger terminal.

Mapei played a significant role in completing the project by supplying products for installing mosaics, stone materials and textile coverings, as well as for waterproofing substrates and repairing concrete, such as KERAFLEX MAXI S1, GRANIRAPID, MAPELASTIC AQUADEFENSE, ULTRAPLAN ECO 20, PRIMER G, ULTRACOLOR PLUS, and ULTRABOND ECO V4SP.





PALLACANESTRO REGGIANA: “READY FOR THE CHALLENGES THAT LIE AHEAD!”

THE TEAM
SPONSORED BY
MAPEI HAS BEEN
IN THE TOP THREE
POSITIONS OF THE
ITALIAN A1 LEAGUE
CHAMPIONSHIP



ABOVE. Amedeo Della Valle, who has followed in his father's footsteps, also plays in the Italian football Championship

TOP, RIGHT. Stefano Gentile with head coach Massimiliano Menetti.

LEFT. Standing, from left: Stefano Gentile, Pietro Aradori, Delroy James, Riccardo Cervi, Achille Polonara, Sava Lesić, Arturs Strautins, Amedeo Della Valle. Seated: Derek Needham, Daniele Caminati (physiotherapist), Donatas Slanina (assistant coach), Massimiliano Menetti (head coach), Devis Cagnardi (assistant coach), Emanuele Tibiletti (trainer), Andrea De Nicolao.



Pallacanestro Reggiana basketball team has made a good start to the 2016-2017 season. The team, whose President is Maria Licia Ferrarini and is sponsored by Mapei, has been in the top three positions right through the regular season of the Italian A1 league championship. "We have had a great autumn – so Filippo Barozzi noted, the club's Chief Operations Officer - before the championship began we lost two games to Avelino and Caserta. We then started stringing together a series of wins and settled near the top of the league table".

At the end of the second millennium and beginning of the third, the team from Reggio Emilia (Central Italy) yo-yoed between leagues A1 and A2. "For five years now – so Barozzi pointed out - we have remained in league A1, and over last three years we have won a Eurochallenge and also an Italy Super Cup. The last two years we reached the final of the play-offs for the Italian championship, although we were beaten by great teams. Our fine performances at the moment are partly due to corporate planning and investments in the players coming from our junior teams". The recent run of good form is also due to one specific player. "Our pivot Riccardo Cervi – so Barozzi notes - has come back to play for us this year. We are extremely proud to have brought back home a talented player, who came from our youth team program. His performances during the early season have made a real impact". Cervi and the rest of the squad take their performance assessment tests at Mapei Sport Research in Olgiate Olona (Northern Italy).

A YOUNG TEAM

The Pallacanestro Reggiana team playing in this year's A1 Championship has a squad of 12 players. One of them, Federico Bonacini, made his debuts in the A1 Championship before he was 18. Artur Strautins was born in 1998. The remaining nine players include Delroy James, who is 29, and Sava Lešić and Pietro Aradori, who are both 28; all the rest are even younger. Some people think the Pallacanestro Reggiana team is simply too young to beat such superpowers as Olimpia Milano and Avellino. "The Pallacanestro Reggiana squad is, indeed, young – so Barozzi admits - but it is also experienced. I am proud to point out that three players in the current squad come from Pallacanestro Reggiana's local catchment area and, generally speaking, players like Polonara, De Nicolao, Della Valle, Aradori, who are still considered young, made their debuts in the top flight when they were very young, so they are now experienced athletes. We have 4 foreign players and 8 Italians in our squad: we are still the most Italian teams in the A1 division". The head coach Massimiliano Menetti is another big asset: he has been on the Pallacanestro Reggiana bench since spring 2011. Prior to that he was assistant coach at the club, so he knows the setup well.

SADLY, NO EUROPEAN GAMES THIS SEASON

Pallacanestro Reggiana's position in the 2015-16 League Championship automatically qualified them to take part in this season's Eurocup. Unfortunately a summer squabble between the Euroleague Basketball and the International Basketball Federation (FIBA) meant no Italian team was entered to play in this year's Eurocup. "Being excluded from Europe is damaging on three fronts – so Barozzi notes - first of all it affects



From left, Pallacanestro Reggiana's Operational Manager Filippo Barozzi with Alessandro Dalla Salda, the club's Chief Executive Officer.

your market power: we have managed to include some foreign players in our squad, but it has not been easy. Lots of foreigner players want to play in the European tournaments. And, of course, the best Italian players also want to show off their skills on the European stage, so putting together a competitive team is a much more tricky business. It also financially damaging to the club: not playing in Europe means losing gate money. I would also say the situation has impacted negatively on the image of Italian basketball in general. The fact that Pallacanestro Reggiana team will not be playing in Europe means the Italian championship is even more important this year, although it will be extremely hard to beat such a great team as Olimpia Milano. A target more within our reach might be the Italy Cup, which is played over one single weekend on a knock-out basis that tends to cancel out any differences in class".

PALABIGI: A BUILDING SITE

Playing at the PalaBigi arena in Reggio Emilia is like having an extra man in the team for Pallacanestro Reggiana's home games. Barozzi is rightly proud of the team's fans: "We often sell out: so far it has been too small for us. We began this year's championship playing two games in Bologna, because building work was going on at the PalaBigi and some parts of the arena are still being renovated. There is now sitting room for 3500 fans and Reggio Emilia City Council has promised that it will have a capacity of 4600 seats by the time the playoffs come around. This is vitally important for us: having an extra 1100 fans will be a real boost to the club in terms of both support and gate money".

PALLACANESTRO REGGIANA SQUAD

| | | | | | |
|-----|--------------------|----------|-------------------|------------|-------|
| #4 | Aradori Pietro | - Italy | - guard | - 9/12/88 | - 194 |
| #5 | Needham Derek | - USA | - playmaker | - 20/10/90 | - 180 |
| #6 | Polonara Achille | - Italy | - wing | - 23/11/91 | - 205 |
| #7 | James Delroy | - Guyana | - wing | - 4/5/87 | - 203 |
| #8 | Della Valle Amedeo | - Italy | - guard | - 11/4/93 | - 194 |
| #9 | De Nicolao Andrea | - Italy | - playmaker | - 21/8/91 | - 185 |
| #10 | Bonacini Federico | - Italy | - playmaker/guard | - 23/1/99 | - 190 |
| #12 | Strautins Arturs | - Latvia | - guard/forward | - 23/10/98 | - 198 |
| #14 | Cervi Riccardo | - Italy | - center | - 19/6/91 | - 216 |
| #15 | Lešić Sava | - Serbia | - forward/center | - 23/2/88 | - 198 |
| #18 | Gentile Stefano | - Italy | - playmaker/guard | - 20/9/89 | - 191 |
| #20 | Vigori Alessandro | - Italy | - center | - 13/11/99 | - 210 |

CARNEVALI:

“WE WANT TO GET BACK TO THE TOP OF THE TABLE!”

SASSUOLO: IT HAS BEEN AN UPHILL STRUGGLE IN AUTUMN

Sassuolo's autumn has been a distinctly uphill struggle. Bad luck, injuries and, alas, a number of mistakes by referees and linesmen etc. have seen the Mapei-sponsored team often languishing near the bottom of the league table.

“Oh yes, there has been some bad refereeing”, so Giovanni Carnevali, the Managing and General Director of Sassuolo, was quick to point out. “That was the case, for example, in the match against A.C. Milan at San Siro stadium, a game we were winning 3 – 1. The referee failed to give us a clear penalty, but then he did award a non-existent one to the other team. And to think it was the first match to use an experimental and informal kind of VAR (Video Assistant Referee). The VAR did, indeed, highlight the refereeing mistakes, but, since it is not yet officially in use, it was of no assistance to us. I hope VAR is officially incorporated in the rules and regulations, because it could be extremely useful, particularly for protecting the less famous teams”.

Giovanni, A.C. Milan went on to win 4 - 3. Did Sassuolo suffer a real psychological blow following the incredible turn of events in the match at San Siro stadium?

“Definitely not: the team was in a good spirits in the weeks that followed. Right after the A.C. Milan-Sassuolo game we had a match at Mapei Stadium against Crotone. We won 2 – 1 and

played some good football in the second half; we came from behind to win. In two other matches we lost, it was once again the referees, who caused us major problems”.

Are you referring to the match you lost 2 – 1 at the Olympic Stadium in Rome against Lazio and then the game at Mapei Stadium that Sassuolo lost 3 – 1 against Atalanta?

In both cases the referee failed to disallow a goal for offside that gave the other team a 1 – 0 lead, meaning yet again we had to face an uphill struggle. We had to work extra hard in the first half and ended up running out of energy in the second half”.

Have the players analysed these mistakes?

“It is a prerogative of ours to study any mistakes we have made, so that we do not make them again in future”.

You also lost at home against Roma. It ended up 3-1.

“We have no recriminations to make about that match. Roma proved it was the better side.

Injuries also slowed Sassuolo down this autumn, too many perhaps.

“Before this season began we knew that playing in three big competitions, i.e. the Europa League, Italian Serie A Championship and Italy Cup, might causes us some problems. The fact is that this has certainly affected the players in a young and up-and-coming team like ours, who are not used to competing in two or even three competitions. Playing three games in



ABOVE. Giovanni Carnevali with Sassuolo's owner Giorgio Squinzi.



ABOVE. Giovanni Carnevali, the Managing and General Director of Sassuolo.

the space of just eight days can often be extremely tiring and stressful, not to mention the increased risk of injuries. That is partly why we have had so many injured players”.

Matri scored an equaliser right at the end of the match against Bologna at Dall’Ara Stadium, but in other matches Sassuolo fell apart at the end. This is exemplified by the defeat against Sampdoria in Genoa. Sassuolo was winning 2 – 0 after 84 minutes but it was 3 - 2 for Sampdoria by the ninety-first minute.

“It was not due to a lack of fitness. We carefully analyse all the data after each match and we are pleased to note that, on a number of occasions, our fitness in the second half has been better than in the first 45 minutes. The real trick is to keep your mind and muscles working together for the full 95 minutes, including time added on. It is only natural to go through a bad patch in any game, but we will be trying to keep our concentration high right through to the final whistle”.

Sampdoria scored 3 goals in the last 7 minutes: too many, to say the least.

It was just like the Europa League match against SK Rapid Wien at Mapei Stadium, when they scored two goals against us in the last five minutes to equalise after we had been 2 – 0 ahead, practically knocking us out of the competition. We ran out of energy at the end, partly due to the fact that, after finishing sixth in the 2015-16 Serie A Championship ahead of lots of big-city teams, we had not time to take a break and rest. We began our Europa League campaign with an away match

against Luzern on 28th July. It is easy to see that our players did not even get the chance to go on holiday”.

In the second half of the match in Genoa, after Ricci and Ragusa had scored for Sassuolo, Quagliarella pulled one back for Sampdoria, scoring his 100th league goal in the Italian Serie A Championship.

“His 100th goal with the help of a mistake by our centre back Acerbi. Unfortunately Francesco slipped to make life much easier for Quagliarella. Acerbi has been one of our best and most consistent players during the first half of the season and has not missed a single game. Quagliarella’s goal brought back Sampdoria’s self-belief and they went on to win the game at the death”.

At various times you have had to do without injured players. The midfielder Biondini seems to have the most serious injury. Will you try and buy another player to replace him?

“Not necessarily: we have a lot of promising young players in our squad we would like to bring through. Nevertheless, if a young Italian midfield player were available with all the right qualities to help us improve, then we would think about buying him”.

Giovanni, it is time to get back to winning ways. Is Sassuolo ready for that?

“We are ready, angry and determined: we want to climb back up the table”.



ABOVE. Alessandro Matri and Francesco Acerbi in action as they move the ball around.



“THE EUROPA LEAGUE IS STILL IN OUR DREAMS”

When Andrea Consigli was a small boy he dreamt of playing in goal for A.C. Milan in the Champions League or Europa League (formerly the UEFA Cup). His European dream came true this season, but it was thanks to Sassuolo. Andrea, aged 29, got to play in the qualifying rounds and group stage (Group F) of the Europa League. "We did not get past the group stage - so the goalkeeper born in Milan told us - still, it was exciting to play in some fantastic stadiums full of enthusiastic fans".

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After studying the opposition during the first half, Lirola, Defrel and Politano all scored in the second half. “Everything went well in the first leg against Athletic Bilbao – so Consigli, who has already played for the Italian national football team, noted -, our approach to the match and tactics were perfect and we played some spectacular football”. But the second match in Belgium against Genk certainly did not go the same way and Consigli and his teammates lost 3 – 1. “In Flanders - so the goalkeeper pointed out – our approach was not the best and our first injuries this season meant that our team manager, Eusebio Di Francesco, could not play his favourite 4-3-3 formation. Genk also has a world-class player like Bailey, who scored the second spectacular goal after Karelis had opened the scoring.” Buffel then scored a third for the Belgian team. Politano’s consolation goal just made the score line more respectable for Sassuolo.

A REAL BATTLE AGAINST SK RAPID WIEN

The third match in Group F at the Allianz Stadium in Vienna between the famous SK Rapid Wien team and Sassuolo ended in a 1 – 1 draw. Di Francesco's lads came under severe pressure in the first half and conceded a goal scored by Schaub in the seventh minute, but then Sassuolo managed to score an equaliser almost midway through the second half: Peluso fired in a cross and the unfortunate Shrammel headed it into the back of his own net. "The match really went our way – so Consigli admitted - and SK Rapid Wien lost one of its most important players through an injury towards the end of the game. The Allianz Stadium was a cauldron and so coming home from Austria with a point was vital. Of course we then hoped to win the next match, but that is not the way it turned out".

MISSED OPPORTUNITY

In the fourth game in Group F, the team from Emilia region (Central Italy) missed out on a real chance to qualify: the match at Mapei Stadium in Reggio Emilia ended in a 2–2 draw against SK Rapid Wien. Defrel opened the scoring for Sassuolo in the 34th minute and then Sassuolo made it 2-0 with a rather lucky goal: Pellegrini's free kick was deflected into the goal by Ragusa. But then everything went wrong: SK Rapid Wien equalised with goals by Jelic (86th minute) and Kvilitaia in the 90th minute. "A real shame - so the goalkeeper noted - because we really threw away our chance of qualification in that home game. Everything went perfectly for 80 minutes and then Jelic's goal from a set piece really scared us: there was not much time left, but everything suddenly seemed harder. We should have just closed play down, but our very young team failed to do so: we were rather naive. On the other hand the Austrians were lucky: Kvilitaia's goal came after three deflections and a nutmeg. But that is just the way football goes."

The draw in Reggio Emilia meant that the match against Athletic Bilbao in the wonderful setting of San Mamés Stadium would be a last-ditch chance of qualification. "A fabulous stadium full of really loyal supporters: Athletic Bilbao is a symbol of Basque pride. Every professional player dreams of playing in front of such well-behaved and passionate fans. But the fact that this was the key match for qualifying from the group stage to the knockout matches weighed heavily on our shoulders". Lady Luck provided a helping hand after just a couple of minutes when Sassuolo took the lead through an own goal: Ragusa took a shot which Athletic goalkeeper Herrerin could not hold onto and Balenziaga deflected the ball into his own net.

Athletic equalised with a header by Raul Garcia. Ragusa then almost scored a second for Sassuolo with a powerful right foot shot but it was the Basque team that took control in the second half, eventually taking the lead when Arduiz scored with a clever header. Defrel almost equalised for Sassuolo, which then lost Pellegrini and Biondini through injuries in the space of just a couple of minutes. "When the Basque fans realised that Biondini was seriously injured – so Consigli explained - they all applauded him as he left the pitch". A third goal scored by Inigo Lekue quashed any remaining hopes for Sassuolo. Ragusa restored some pride when he scored a late goal following a mis-



ABOVE. Capitan Maganelli in action against Genk.



ABOVE. Antonino Ragusa and Federico Peluso put on a show at the Allianz Stadium in Vienna.



ABOVE. San Mamés Stadium: Athletic Bilbao-Sassuolo is about to kick off.

take by the Athletic Bilbao player Boveda. The final result (3–2 to Athletic) meant Sassuolo had been knocked out of the Europa League with one game still to play in its qualifying group.

OUR AIM: TO GET BACK INTO EUROPE

According to Andrea, "We regret having had to play various games without a number of key players like Berardi and others. On the positive side we took part in a great feast of football: the Europa League is entertaining with all the teams playing open football. I hope I get another chance to take part in this European trophy playing for Sassuolo, either in the near or relatively near future. Giorgio Squinzi deserves credit for creating a model club, as do all the staff at Mapei Sport, who carefully monitor our performance and help us improve. And our fans also deserve to see us back playing on the European stage. Yes, the Europa League is still in our dreams".

JOINTS IN SCREEDS: WHERE AND HOW?

The proper technical requirements for different kinds of joints

Every how many square metres are joints required in a cementitious screed? What is the recommended size for a joint? And with what type of material should it be filled? Even if from an aesthetic point of view a joint in covering material may not be particularly attractive, technical requirements should always come first, at least in this case. The Italian standard UNI 11493 (section. 3.17) defined joints as follows:

- **Expansion joint:** this is formed in the ceramic covering only;
- **Distribution joint:** this is formed in the ceramic covering and partially through the thickness of the substrate;
- **Perimeter joint:** this is the joint formed around the perimeter of the covering material and the substrate;
- **Structural joint:** this is a joint running through the entire thickness of the covering material and substrate.

Let's take a closer look at the first two types, starting with distribution joints in substrates.



WHY DO YOU NEED A JOINT IN A SCREED?

A joint plays a crucial role: to put it briefly, it allows the covering material and substrate to "move" without breaking. In *Realità Mapei International* we have already discussed the evaporation of water contained in a cementitious screed. To summarise, during the first few days after laying a screed, the water evaporates off and the screed shrinks and reduces in volume. The stresses caused by the screed shrinking would cause uncontrolled cracking to form in the screed, but if distribution joints are made in the screed, most of these movements would be concentrated in the area where the cuts have been made in the screed, thereby preventing random cracking.

HOW DEEP SHOULD THE CUTS BE?

A distribution joint is generally formed in the screed by making a cut to a depth of 1/3 of its thickness, without touching or cutting any of the electro-welded mesh positioned at the mid-point of the screed (UNI 11493; 7.11.12). E.g.: if the screed is 6 cm thick, the depth of the joint will be max. 2 cm. The cut is usually made within 24 hours after laying the screed.

EVERY HOW MANY SQUARE METRES?

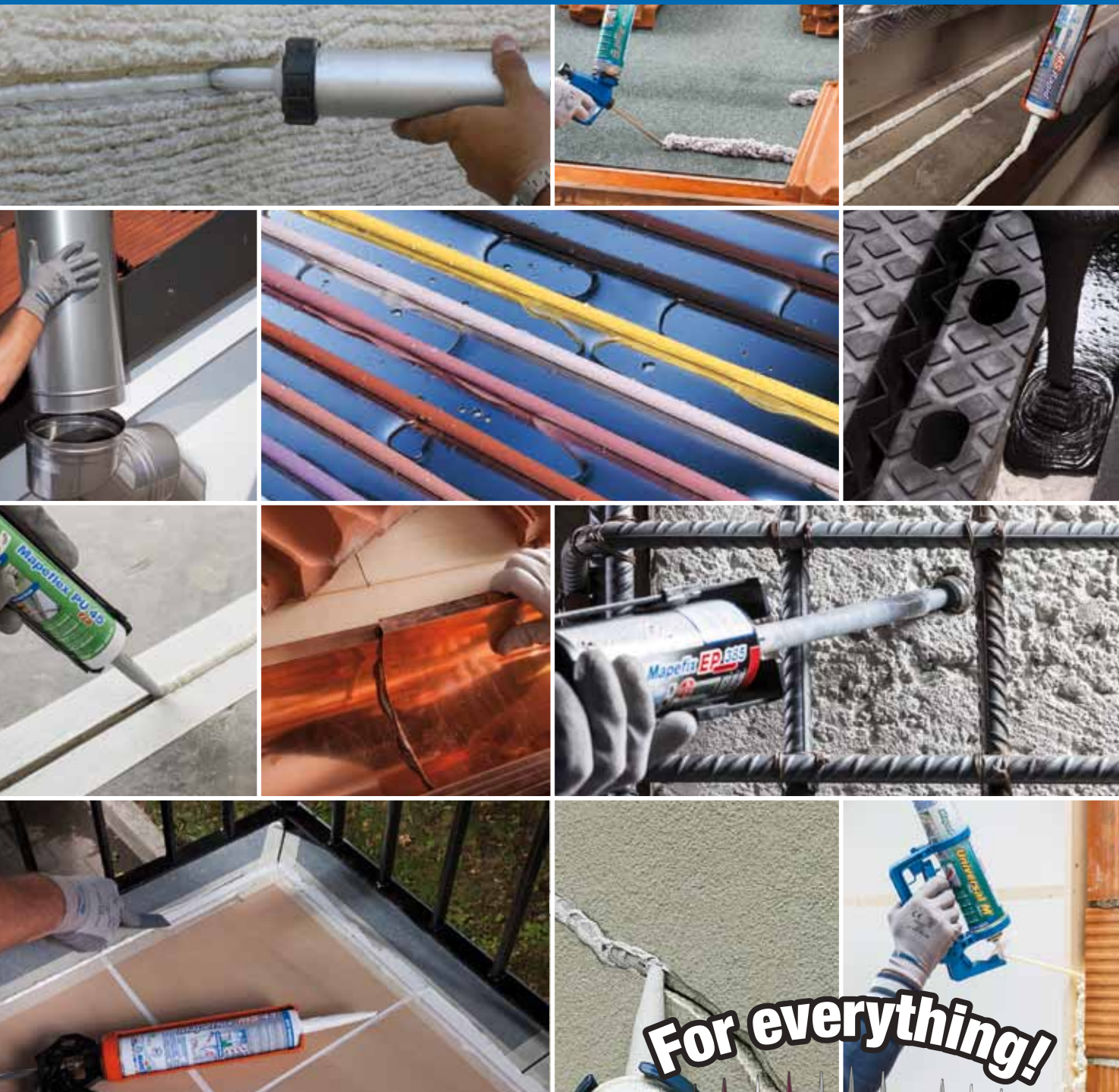
In general, joints are made every 25-30 m² for internal screeds and every 9-12 m² for external screeds (UNI 11493; 7.11.12). The pitch can be modified quite safely for internal screeds depending on, for example, the type of binder used to make the screed or according to the shape of the surfaces.



Joints in the floor must match the joints in the screed. Once a joint has been cut in the cementitious screed, the flooring laid over the screed must match the joint.

Ceramic tiles must not be fixed over the joint, otherwise they will break. In fact, the joint in the flooring (expansion joint) often coincides with the position of the joint in the screed.

Marco Albelice. Mapei SpA Technical Services Department.



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