

INTERNATIONAL

[Realtà MAPEI]

ISSUE 45



Mapei thanks all the readers of *Realtà Mapei International* for their contribution to build *small and large projects*. We wish we can go on building *small and large dreams* in the coming years.



*Season's Greetings
from all Mapei staff.*

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COVER STORY. The largest clock in the world at the Makkah proved to be an outstanding site. Mapei developed a specific adhesive to bond the mosaic tiles.

EDITOR IN CHIEF

Adriana Spazzoli

EDITORIAL CONTRIBUTORS AND ENGLISH TRANSLATION

Federica Pozzi, Federica Tomasi, Marianna Castelluccio, Martyn Anderson, Nicholas John Bartram, Tiziano Tiziani

PRODUCTION AND EDITORIAL COORDINATOR

Metella Iaconello, Marianna Castelluccio

PHOTOGRAPHIC RESEARCH

Davide Acampora

GRAPHIC DESIGNER

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Mapei SpA
Via Cafiero, 22 - 20158 Milan (Italy)
Tel. +39/02/376731
Fax +39/02/37673214
website = www.mapei.com
E-mail = mapei@mapei.it

PRESIDENT & CEO

Giorgio Squinzi

OPERATIONAL MARKETING DIRECTOR

Adriana Spazzoli

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Gianni Dal Magro, IBERMAPEI, IBS Mapei,



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SAVE THE DATES

DOMOTEX

Hannover (Germany)
11th-14th January

WORLD OF CONCRETE

Las Vegas (USA)
21st-24th January

KLIHAHOUSE

Bolzano (Italy)
23rd-26th January

SURFACES

Las Vegas (USA)
27th-30th January

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Mapei in Poland

After Gliwice, Mapei now has a foothold in Barcin with a new LEED-certified production facility

A rapid escalation which has seen the number of production sites in Poland quadruple in just 13 years. A country strategically placed right in the heart of Europe that reaches as far as the Baltic Sea, and an important market with a booming construction sector, particularly infrastructures. The Mapei Team has grown considerably here: from just 48 employees when the facility in Gliwice was commissioned in 2003 to a current workforce of 290. The second production facility in Barcin was officially opened last May: «Poland has always been an important market for us» declared Giorgio Squinzi, CEO of the Mapei Group, «For both its sheer size and growth potential and for the openings available for high quality, technologically advanced products. The new facility in Barcin, the second one to meet the specific needs of the Mapei Poland clientele, is actually the Group's fourth production site in Poland alongside the one in Gliwice, our subsidiary company Sopro Polonia's facility in Nowiny and the Górka Cement works in Trzebinia, which recently celebrated its hundredth anniversary».

A Capillary Network of Facilities

Gruppo Mapei's Polish subsidiary was founded in 2000 and, in just a short time, was awarded a number of important contracts, such as Gdansk Airport (see next article) and the PGE Arena in the same city, the National Stadium and the second underground railway line in Warsaw and the Silesian Museum in the city of Katowice. Their first production facility was opened in 2003 in Gliwice (in the Special Economic Zone in Katowice), which in the following four years doubled its production and storage capacity. Thanks to a constant growth in sales, in 2010 the company decided to commission a new works and chose the Pomeranian Special Economic Zone as a suitable area. Barcin is situated in the central-northern part of the country. It is a strategic location in that it has allowed the company to offer a far better logistics service to their clients. The management is still based in Warsaw. And all this combines to help Mapei Poland produce a total of 420,000 tonnes a year of powdered products, as well as a production line for liquid admixtures for con-

ON THIS PAGE. The recently inaugurated Barcin production facility.





The production facility of the subsidiary company Sopro Polska.



MAPEI GROUP IN POLAND: PRODUCTION AND COMMERCIAL SITES

Mapei Polska

- Administration and commercial headquarters: Warsaw (founded in 2000)
- Gliwice production works (operational since 2003)
Powdered products and liquid admixtures for concrete
Cement grinding line
- Barcin production works (operational since 2013)
Powdered products, including adhesives for tiles, self-levelling products, repair mortars and waterproofing mortars

Sopro Polska

- Headquarters and production works in Nowiny (founded in 1994 and acquired in 2002). Systems for installing natural stone, grouting mortars, levelling compounds and other chemical products for the building industry

Górka Cement

- Headquarters and cement works in Trzebinia near Krakow (founded in 1912 and acquired in 2000)
- Cement (aluminat cement in particular)



The production facility of the subsidiary company Górka.

crete and cement grinding aids recently installed in Gliwice.

Eco-Sustainable Growth

The new facility covers 9,700 m² and is located within a site of 48,000 m² to allow for future expansion. It has a production capacity of 150,000 tonnes a year of powdered products, and its product portfolio includes adhesives for tiles and insulating panels, self-levelling products, repair mortars and waterproofing mortars.

«The investment in Barcin is a direct result of the company's growth and an indication of our firm intention to be as close as possible to our clients and offer them the best service possible», affirmed Veronica Squinzi, Global Development Director for the Mapei Group and Member of the Management Board of Mapei Poland. «In such difficult economic times as these, we are trying to optimise our internal processes so that we are more efficient both locally and globally: thanks to the constant introduction of new product lines we are still able to grow, even in such

unfavourable conditions. Gruppo Mapei is expanding by insisting on a strategy of eco-sustainable growth. Our products are developed to reduce energy consumption and VOC emissions and, as a result, are safe for the environment, for our production workers, for those who use and apply them and for those who use the areas in which they have been applied. Our commitment to safeguard the environment and the health of people can also be seen in the way we operate on a daily basis: our production facilities are built using local, eco-sustainable materials in the vicinity of our clients and suppliers of raw materials so that we can reduce transport distances and costs». Worthy of note is that the production facility in Barcin as 15th has joined the exclusive club of projects in Poland that have been awarded LEED certification by the U.S. Green Building Council.

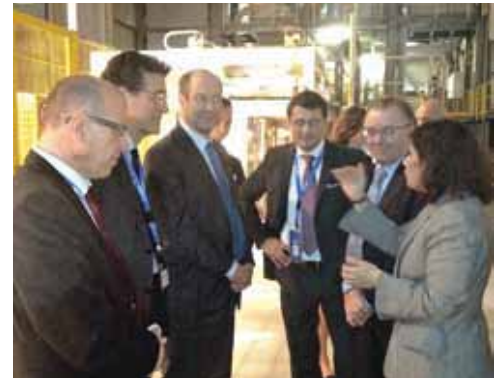
Diversified Production Range

The constant introduction of new product lines has led to Mapei Poland becoming known not only as a market leader in the



The plant in Gliwice.

THE VISIT



production of adhesives and grouts for ceramics, but also as an important player in the building industry, with products for installing resilient and textile floor and wall coverings, wooden, resin and cementitious flooring, thermal insulation systems, protective and decorative paints, admixtures for concrete, waterproofing products and specific products for strengthening concrete and masonry structures. Also worth a mention is the fact that, in terms of weight, 96.3% of Mapei products sold on the Polish market are produced locally (in Gliwice and Barcin), with the remaining 3.7% imported from Italy.

Mapei Technical Training Goes on the Road

One way of keeping Mapei Poland in direct contact with the market is through Mapei Tour, a travelling school with two well-equipped vehicles to carry out demonstrations directly in the field. And there are also

two mobile laboratories to offer support directly on sites where concrete is used, a highly efficient technical support service and a training programme for professionals from the sector held in the training centre in Gliwice.

Artur Olubek, General Manager of Mapei Polska, explained the service offered: «465 technical training seminars were organised in 2012 alone, with 23,200 professionals taking part. We listen very carefully to what the local market is asking for, including from a production point of view, so much so that we have launched new versions of the MAPETHERM range of cementitious mortars and KERAFLEX EXTRA S1 adhesive for installing large sized tiles. In 2013 - sixth time in a row - we received the prestigious Golden Best Construction Brand of the Year award for adhesives and grouts. We were also awarded the Silver Best Construction Brand in the Professionals' Friendly Brand category».



» NUMEROUS LOCAL DIGNITARIES WERE PRESENT AT THE INAUGURATION CELEBRATION

A Striking Ceremony

Following the official opening ceremony of the new Barcin facility a tour was made around core of the works: the production line and the quality control laboratory. Other sectors were also visited, such as the Technical Services Department, which provides support to professionals directly in the field to help define the best solutions to use on site, and to help train users of our products. Those present at the inauguration ceremony included Giorgio Squinzi, Veronica Squinzi, Marco Squinzi and the workers who actually witnessed the birth of the new facility. There were also 150 special guests, including the Italian Ambassador Riccardo Guariglia, and local dignitaries such as the Mayor of the Barcin District Michal Peziak, Vice-Marshall of the Kujasko-Pomorskie Voivodship Dariusz Kurzaw and Starosty of Znin District Zbigniew Jaszczuk.



FACING PAGE. In the large photo a view of the production facility in Barcin. Below, two photos of the coaches used for the travelling demonstrations.
ON THE TOP. From the left, the press conference and four photos of the visit around the Barcin facility and laboratories.
ON THE LEFT. Giorgio Squinzi with Roberto Boselli and, below, the gala dinner and musical entertainment.



THE GALA DINNER



THE AWARDS CEREMONY

ON THE RIGHT. Several images from the awards ceremony. On the stage, Artur Olubek, General Manager Mapei Polska, with Giorgio and Veronica Squinzi.





Lech Walesa Airport

The surfaces of the new terminal, in Gdansk, have been waterproofed with spray-applied MAPELASTIC



Located on the shores of the Baltic Sea, Gdansk is Poland's sixth largest city, as well as being an important shipbuilding centre and the country's main port. It is also famous for being the birthplace of the Solidarność movement which, under the guidance of the Polish activist Lech Walesa, who later became President and after whom the city's airport has been named, played an important role in bringing down Poland's Communist regime. The airport is 12 kilometres north-west of the city. In 2006 the airport authorities recorded an increase in passengers of more than 80% compared with the previous year and so, in view of the even higher influx forecast for the 2012 European Soccer Championships, the government decided to build a new terminal. The structure was designed by the JSK Architekci design studio which had also designed the new National Stadium in Warsaw. The new terminal, inaugurated 69 days before the start of the European Championships, took 24 months to build. The glass roof, supported by pillars in a "V" formation, is in the form of a wave and allows natural light to filter through and illuminate the terminal during different periods of the day. During the rigid Polish winter, the roof uses the internal heating system to prevent snow settling and causing potentially dangerous overloads.

The building is spread over an area of 37,000 m² and is made up of three storeys above ground and one below ground level.

Waterproofing for the Internal and External Surfaces

The very tight building schedule imposed on the building contractors meant that they had to turn to Mapei Technical Services for advice and help in choosing the most suitable products. The first intervention was to waterproof the internal and external concrete surfaces. MAPELASTIC cementitious mortar was employed to protect and waterproof the concrete structures, supplied in the form of two pre-dosed components to be mixed together without adding water.

Because of the sheer size of the surfaces to be waterproofed (around 5,000 m²) MAPELASTIC was applied by spray. The application technique and product used met with great enthusiasm from the contractor, thanks to the application speed and the possibility of covering large surfaces. Two large water storage tanks measuring 22.2x6.4x5.75 m, used by the airport fire-fighting service, were also waterproofed with MAPELASTIC.

Before applying the waterproofing treatment, the corners of the joints between the walls and the horizontal surface of the foundations

PROJECTS SPRAY-APPLIED WATERPROOFING AND LAYING CERAMIC TILES



PHOTOS 1-2. MAPELASTIC was used to waterproof the internal and external concrete surfaces. Because of the size of the work, the product was applied by spray.

PHOTO 3. The stone floor tiles in the departures and arrivals area were laid with ADESILEX P4.

IN THE SPOTLIGHT MAPELASTIC

Two-component, flexible cementitious mortar for protecting and waterproofing concrete surfaces, render or cementitious surfaces, based on cementitious binders, fine-grained selected aggregates, special additives and synthetic polymers dispersed in water. MAPELASTIC is used for waterproof of concrete basins used for containing water, even if it is not drinking; bathrooms, showers, balconies, terraces and swimming pools before laying ceramic tile finishes; underground concrete structures. It can contribute up to **3 points** to obtain the **LEED** certification.



had to be rebuilt. PLANITOP 400 rapid-setting thixotropic mortar was recommended for this work.

MAPEBAND alkali-resistant, felt-backed rubber tape was also placed in all the corners. The MAPEBAND was applied by spreading an even, 1-2 mm thick layer of MAPELASTIC cementitious mortar. A second layer of MAPELASTIC was then applied using the wet on wet technique to completely cover the sides of the tape and embed it between the two layers. After this operation, another layer of MAPELASTIC was applied.

Tiling is also Important

Apart from the waterproofing work, Mapei Technical Services also intervened to help with around 20,000 m² of flooring, including in the departures and arrivals areas of the new terminal. Stone slabs were laid using ADESILEX P4 high-performance, rapid-set, self-buttering cementitious adhesive, particularly recommended for areas subjected to heavy traffic, such as in this case.

The joints were then grouted with KERA-COLOR FF high-performance, ready-mixed, polymer-modified cementitious mortar. In the services areas which had problems with damp, the substrates were waterproofed with MAPEGUM WPS rapid-drying, synthetic resin-based liquid elastic membrane in water dispersion before laying the tiles.

All the surfaces had been treated beforehand with PRIMER G synthetic resin-based primer (mixed 1:2 with water) to make them more solid before laying the various types of flooring chosen. In the areas that did not need to be waterproofed, the surfaces were treated with just PRIMER G. Once the substrates had been prepared, ceramic tiles were laid using ADESILEX P9 high-performance, cementitious adhesive with extended open time and no vertical slip, particularly recommended for ceramic tiles.

The tiles in the plant areas were laid with MAPEKLEJ EXTRA cementitious adhesive, produced and distributed in Poland.

The joints in these tiles were also grouted

with KERACOLOR FF. The expansion joints were then sealed with MAPESIL AC. Thanks to the construction of the new Terminal 2, the capacity of Gdansk Airport is now double compared with that of the old Terminal 1 and it can now carry up to 5 million passengers a year. Also, the new layout of the internal spaces has been specially designed to cater for the needs of families travelling with young children and for the disabled. The entire building has been designed using a modular system so that in the future, if necessary, the terminal can be extended even more.

PHOTO 4. The joints were grouted with KERACOLOR FF.

Technical Data

Lech Walesa Airport, Gdansk (Poland)

Period of Construction: 2010-2012

Year of Intervention 2011

Intervention by Mapei: supply of spray-applied waterproofing products for the internal and external surfaces of two water storage tanks for the fire-fighting system and the laying and grouting of flooring in the departures and arrivals areas and plant areas

Designer: JSK Architekci (Warsaw)

Client: Port Lotniczy Gdańsk Sp. Z.o.o.

Contractors: Budimex SA (Warsaw) and Korporacja Budowlana Doraco Sp. Z.o.o. (Gdansk)

Mapei Distributor: DagoTech Dariusz Górak (Gdansk)

Mapei Co-ordinators: Piotr Kuglin, Ireneusz Ropel, Piotr Dawidowicz, Mapei Polska

Mapei Products

Preparation and reconstruction of surfaces: Mapeband, Mapegum WPS, Mapeelastic, Primer G

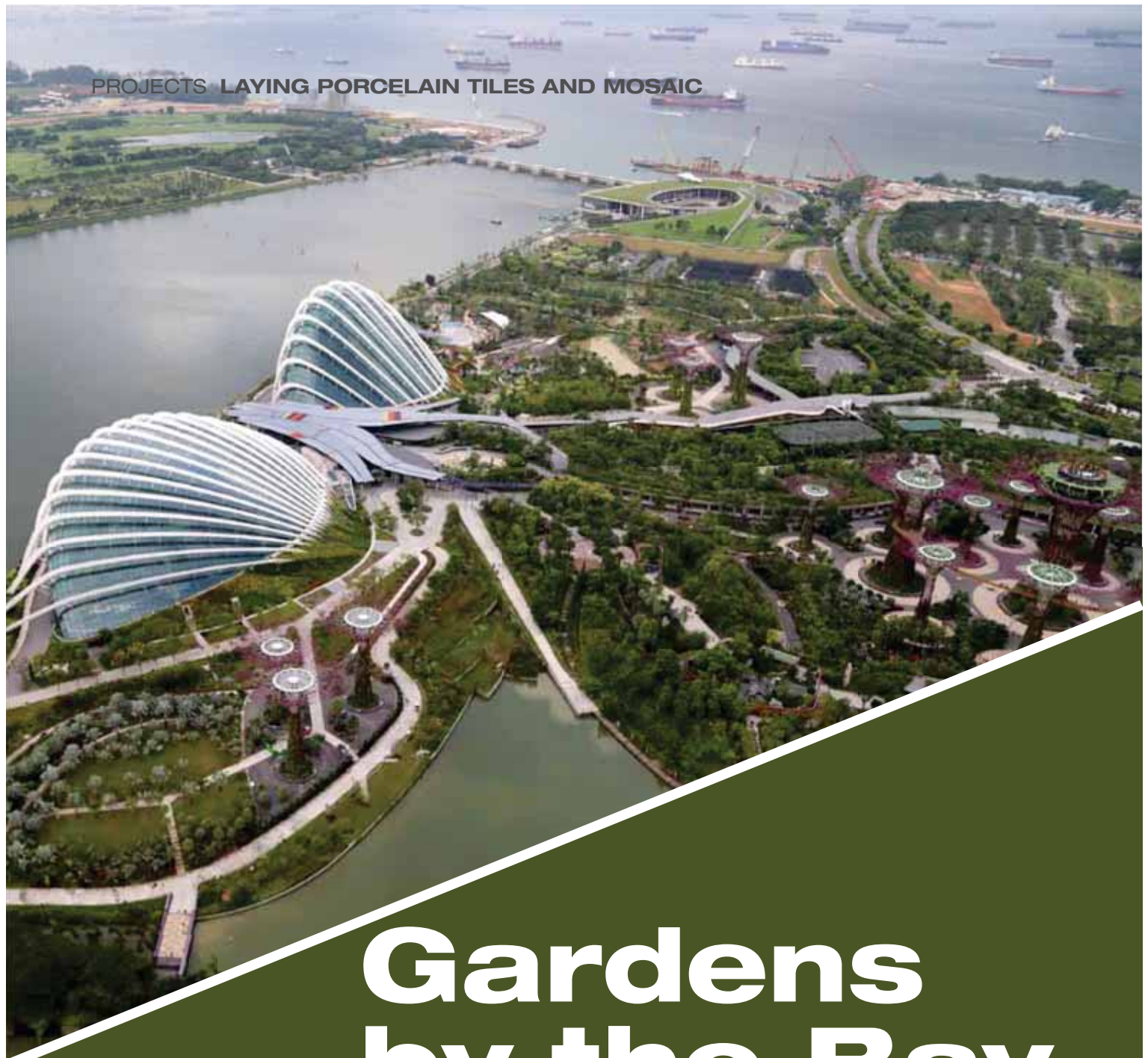
Reconstruction of substrates: Planitop 400

Laying and sealing ceramic tiles: Adesilex P4, Adesilex P9, Keracolor FF, Mapeklej Extra*, Mapesil AC

*Produced and distributed on the Polish market by Mapei Polska

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





Gardens by the Bay

A futuristic park in Singapore, that unites technology and biodiversity

An enormous city-garden with parks and tropical gardens surrounding every new dwelling; that is the way Singapore had been imagined when it gained its independence from the British Commonwealth in 1957. And today this tropical city is getting even closer to that ideal of perfection, thanks to the grand Gardens by the Bay project which had its first garden inaugurated recently.

In 2006 the English landscape gardeners Grant Associates and Gustafson Porter won an international contest to create the Gardens. Six years later the project, extending

over 101 hectares including a section of land reclaimed from the sea, has become reality. The gardens and greenhouses host an innumerable variety of plants and flowers from all over the world, with technology at the service of biodiversity. The large park is located near to the Marina Bay Sands Hotel and is divided into three distinct gardens: Bay East, Bay Central and Bay South. The first one to be completed was Bay South – covering an area of 540,000 m², making it one of the largest gardens in the world – and was officially opened to the public last year.



Marina Bay Sands Resort, Singapore on page 22

TO THE LEFT. An aerial view of Bay South. The two large greenhouses and the SuperTrees can also be seen.

TOP CENTRE OF THE PAGE. A view by night of the SuperTrees.

ABOVE RIGHT. A view of Marina Bay complex. Particularly visible are the three Marina Bay Sands Resort towers (see the box on page 16) and, in the bottom left, the Art Science Museum (box on page 17).

BELOW. The gardens inside the Flower Dome.

The Birth of a Grandiose Project

The Bay South Garden contains possibly the two largest greenhouses in the world, the Flower Dome and the Cloud Forest. In the first one, a climate has been created to mirror those found in Mediterranean and sub-tropical areas, while in the second greenhouse a rain forest at 2000 metres above sea level has been created.

In order to host the vegetation typically found in these zones, solar radiation had to be optimised as much as possible. It was decided to cover the two large theme gardens with cupolas made entirely of high efficiency glass that allows 65% of the sunlight to filter through while reducing the amount of heat from the sun by 35%, integrated with a system to shade the garden made from adjustable triangular sails.

Thanks to the application of technology with low energy consumption, and by making use of renewable energy sources, the greenhouses are self-sufficient. The two gardens offer a view of the eighteen SuperTrees, the most spectacular attraction at Gardens by the Bay. These SuperTrees, made from concrete and steel, are vertical gardens ranging in height

from 25 metres to 50 metres, and along their trunks they play host to 162,900 plants and more than 200 species of flower. The function of the photovoltaic cells inserted in the SuperTrees is to harvest solar energy to illuminate the trees during the night. A 128 metre long cable bridge connects the two tallest trees so that visitors can view the gardens from above from a height of 22 metres.

The Greenhouses with the Mapei Signature: Flower Dome

The entrance to this spectacular greenhouse has a floor decorated with geometric inlays in the form of stylised trees (see the photo on the next page). The respective adhesives used to lay the white and grey granite slabs and the porcelain tiles were KERAFLEX MAXI S1 high performance cementitious adhesive with no vertical slip and KERAFLEX cementitious adhesive for floors subjected to high stresses. KERACOLOR SF ultra-fine cementitious mortar was then used to grout the joints.

In one of the other areas in the large greenhouse, palm trees sprout up from the granite floor. To lay the slabs of red granite around the trees KERAFLEX MAXI S1 was used,



IN THE SPOTLIGHT

ADESILEX P10

High performance white cementitious adhesive for glass, ceramic and marble mosaic. It has extended open time and no vertical slip. ADESILEX P10 mixed with the correct amount of water or ISOLASTIC becomes a creamy paste which is easily workable with an excellent adhesion to all conventional materials used in building. It get off a low level of volatile organic compounds (VOC). It can contribute up to **4 points** to obtain the **LEED** certification.



PHOTO ABOVE. The slabs of granite for the entrance of the Flower Dome were laid using KERAFLEX MAXI S1 and grouted with KERACOLOR SF.

BELOW. The floor tiles in the restaurant were bonded with KERAFLEX and grouted with KERACOLOR SF.

while KERAFLEX was used to bond the porcelain tiles. KERACOLOR SF was also used here to grout the joints. KERAFLEX MAXI S1 and KERACOLOR SF were also used to lay the yellow granite slabs for the curbs along the footpaths in the greenhouse, as well as for the grey granite to separate the area in which centuries old olive trees have been planted. The floor in the restaurant was covered with lively orange tiles, laid using KERAFLEX adhesive and grouted with KERACOLOR SF.

At the centre of the Dome there is the Flower Field, an area dedicated exclusively to flowering plants, offering an array of colours all year

round thanks to their seasonal blooming cycle. The paths for the visitors running through this part of the garden are made from slabs of green granite laid using KERAFLEX MAXI S1 and KERACOLOR SF. In other areas of the greenhouse, the slabs of yellow granite were laid on the concrete substrate, with KERAFLEX MAXI S1 and KERACOLOR SF. The stairs that connect the different areas in the Flower Dome are also covered with slabs of yellow granite in various sizes laid using KERAFLEX MAXI S1 and KERACOLOR SF. The walls and floors in the bathrooms are tiled with porcelain bonded with KERAFLEX, and again grouted with KERACOLOR SF. To lay the granite slabs on metal substrates, such as access doors, KERAPOXY two-component epoxy adhesive with no vertical slip was used.

Cloud Forest

The footpaths running through the large greenhouse are covered in slabs of grey granite in various shapes and sizes. The products recommended for this job were again KERAFLEX MAXI S1 cementitious adhesive and KERACOLOR SF grouting mortar. All the metal stairs used by visitors to reach the various levels in the Cloud Forest are in slabs of grey granite bonded with KERAPOXY and grouted with KERACOLOR SF.

The walls and floors in the bathrooms in this greenhouse are covered with porcelain tiles bonded with KERAFLEX and KERACOLOR SF.





PROJECTS LAYING PORCELAIN TILES AND MOSAIC



TO THE LEFT. Slabs of granite were covered around the edges of the ponds using KERAFLEX MAXI S1 and KERACOLOR FF.

CENTRE OF PAGE. On the metal surfaces, such as the access doors, slabs of granite were laid with KERAPOXY.

BELOW. The bathrooms were tiled with porcelain tiles bonded with KERAFLEX.

BOTTOM OF PAGE. The walls of the nappy-changing facilities were covered with mosaic bonded with ADESILEX P10.



The bathroom walls with nappy-changing tables, reserved for mothers and new-born babies, are covered with colourful mosaics, and to lay them the product recommended was white ADESILEX P10 cementitious adhesive with no vertical slip and extended open time. On the top level of the greenhouse, the area has feature by walls covered with granite in various irregular shapes and sizes laid with KERAFLEX MAXI S1.

Water is always present in this greenhouse, with waterfalls and ponds inspired by the vegetation typical of a rain forest. The ponds where these water features are contained are covered with slabs of granite laid with KERAFLEX MAXI S1 and KERACOLOR FF ready-mixed, high-performance, polymer-modified cementitious mortar, ideal for grouting joints up to 6 mm wide. Shortly after their opening, the greenhouses and the gardens in the greenhouses were awarded the "World Building of the year" prize by the World Architecture Festival. A well-deserved prize for Mapei products too.



Technical Data

Bay South Garden -

2 Greenhouses /

Gardens by the Bay, Singapore

Period of Construction:

2007-2012

Period of Intervention: 2011-2012

Intervention by Mapei: supply of products for the laying and grouting of slabs of granite, porcelain tiles and mosaic in various areas of the Flower Dome and Cloud Forest

Designers: CPG Consultants Pte Ltd (Singapore), Wilkinson Eyre Architects (London); landscape architects Grant Associates Singapore Pte Ltd (Bath, UK)

Client: National Parks Board Singapore

Works Direction: PM Link Pte Ltd (Singapore)

Contractor: Woh Hup Pte Ltd (Singapore)

Laid Materials: granite, porcelain tiles and mosaic

Mapei Co-ordinator: Jesseline Yap, Mapei Far East Ltd

Mapei Products

Laying slabs of granite and porcelain tiles on cement: Keraflex Maxi S1, Keraflex, Keracolor FF, Keracolor SF

Laying slabs of granite and porcelain tiles on metal: Kerapoxy

Laying of mosaic: Adesilex P10

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



Less dust for everyone.

- 90%
DUST

Keraflex Maxi S1

From the Mapei Laboratory experience innovative technology: "LOW DUST" -90% dust during mixing, application and use compared with traditional Mapei cementitious adhesives.

- Especially suitable for laying large-format tiles
- Highly deformable
- No vertical slip
- Extended open time
- LOW DUST technology



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take a closer look at www.mapei.com





Marina Bay Sands Resort

Three 55 storey towers connected by a 10,000 m² sky-garden 200 metres above ground level offering a spectacular view of the city. The towers, each one 55 storeys tall, have 2,560 luxury rooms, while on the terrace there are tropical gardens, restaurants and a large overflow swimming pool. A grandiose complex project which had to be completed on schedule. The performance levels required were high, for both the structure itself and the quality of the finishes. From the laying of ceramic, marble, bamboo mosaic and slate to the waterproofing, structural repair and renovation of concrete, the interventions carried out using Mapei products were numerous. To lay the porcelain tiles KERAFLEX MAXI was chosen, while the slabs of marble were bonded with ELASTORAPID cementitious adhesive and KERAPOXY epoxy adhesive. All the

joints were grouted with KERACOLOR SF cementitious mortar. In the large hall, marble, bamboo mosaic and slate were laid using GRANIRAPID cementitious adhesive. In the Rise restaurant, before laying the marble flooring with ELASTORAPID, the floors were waterproofed with MAPELASTIC cementitious mortar reinforced with FIBREGLASS MESH. The concrete in the complex was in poor condition. The technicians intervened by sealing the cracks with ADESILEX PG2 SP two-component adhesive and EPOJET LV resin. The reinforcing bars were treated with MAPEFER anti-corrosion mortar and, to reintegrate the concrete, MAPEFILL SP expansive mortar and MAPEGROUT THIXOTROPIC controlled-shrinkage mortar were recommended (a detailed article was published in *Realtà Mapei International* issue No. 33).





ArtScience Museum

Dedicated to the ArtScience movement, the museum hosts international exhibitions within its 21 galleries in a building in the form of a lotus blossom next to the Marina Bay Sands Resort. Designed by the architect Moshe Safdie, it opened at the beginning of 2011. The design included the laying of granite flooring in the entrance hall using highly deformable adhesive. To lay the granite the choice went to ELASTORAPID cementitious adhesive, which has a high capacity to absorb deformations in substrates.



Te Awa at The Base

Flooring laid using Mapei adhesives for this shopping centre of Hamilton in New Zealand

Te Awa at The Base is a large shopping centre in the Te Rapa suburb of the New Zealand city of Hamilton, which until 1992 was a base for the New Zealand Air Force, and from which it has taken its name.

The land on which it has been built belongs to the Maori Waikato Tainui tribal confederation, located in the central-western area of New Zealand. During a ceremony in 1995, in which Queen Elizabeth II also took part, the local authorities apologised on behalf of the Crown for the indiscriminate appropriation of the land. This area was one of the first settlements handed back to the Maori tribes. Apart from numerous shops, the shopping centre also has an outlet, a large dining area and a multiplex cinema available to visitors. It is also

the first building in New Zealand to be covered by a roof (26,000 m² surface area) made from Efte, a plastic material which is highly resistant to corrosion, high temperatures and pollution. In 2012 Te Awa was awarded the Silver Medal by the Asia Pacific Shopping Centre Awards and won the Excellence Award New Zealand in the Commercial Buildings category.

A Laying Solution for Every Type of Tile

Mapei Technical Services recommended a series of products to meet all the requirements of this particular site. Firstly, before laying the tiles, all the cracks in the substrates needed to be sealed with EPORIP two-component, solvent-free epoxy adhesive.

Then, while it was still wet, the surface of the

ABOVE. An external view of the shopping centre.



1



2



3



4

PHOTOS 1-2. After preparing the substrate with EPORIP and PRIMER G, laying of the tiles commenced using GRANIRAPID and ULTRACOLOR PLUS.

PHOTOS 3-4. In the dining area, wood-effect ceramic tiles were laid using KERABOND PLUS mixed with ISOLASTIC.

IN THE SPOTLIGHT ULTRACOLOR PLUS

It is a cementitious mortar for grouting improved with reduced water absorption and high resistance to abrasion, certified EMICODE EC1 PLUS. It is suitable for grouting of floors and walls in all types of ceramic. It allows you to obtain uniform colour, colours are resistant to ultra-violet rays and atmospheric agents, smooth, compact finished surface and easy cleaning. It can contribute up to **4 points** to obtain the **LEED** certification.



product was dusted with fine quartz sand. The substrate was then treated with PRIMER G synthetic resin-based primer in water dispersion diluted 1:2 with water.

Large agglomerate tiles were laid on the floor of the covered arcade which is flanked on either side by shops. A sample of the tiles was sent to the Mapei R&D laboratory in Milan to test its dimensional stability. The tests carried out showed that this type of tile was dimensionally stable.

For this reason GRANIRAPID was recommended, an ideal adhesive for flooring subjected to intense traffic and for sites where flooring needs to be laid and put into service particularly quickly.

The joints were then grouted with ULTRACOLOR PLUS high-performance, anti-efflorescence, polymer-modified mortar for joints from 2 to 20 mm wide. Once this phase had been completed, the compensation joints were sealed with MAPESIL AC. In the large dining area, the wood-effect ceramic tiles were laid with KERABOND PLUS cementi-

tious adhesive mixed with ISOLASTIC latex rather than water for better performance and deformability. In this case too, the joints were grouted with ULTRACOLOR PLUS and sealed with MAPESIL AC.

Technical Data

Te Awa at The Base, Hamilton, New Zealand

Period of Construction: 2010-2012

Year of Intervention: 2011

Intervention by Mapei: supply of products to prepare substrates, laying tiles, grout and seal tile joints

Designer: Ignite Architects

Client: The Tainui Tribe (Hamilton)

Contractor: Navlor Love Ltd, (Hamilton)

Laying Company: The Tile People (Auckland)

Laid Material: ceramic tiles

Mapei Co-ordinator: Chester Becroft, Mapei NZ Ltd

Mapei Products

Preparation of the substrates:

Eporip, Primer G

Laying ceramic tiles: Granirapid

Laying wood-effect tiles: Isolastic, Kerabond Plus*

Grouting and sealing:

Mapesil AC, Ultracolor Plus.

*Distributed on the New Zealand market by Mapei New Zealand Ltd

For further information see the websites www.mapei.com and www.mapei.com/NZ-EN



Focus on Lightweights

Mapei widens its range of lightweight adhesives with three new specific products for large tiles

In the ceramic tiling sector it is becoming common practice to use traditional and slim tiles (as little as 3 mm thick) in larger sizes. High performance adhesives are required to lay these types of tiles, especially when used in certain conditions such as on external facades, where properties such as thixotropy and deformability must combine to guarantee that the adhesive completely fills all the gaps in the back of the tiles. This is not always easy to achieve when laying large size tiles.

To offer tilers products that meet these requirements, Mapei has developed the ULTRALITE range of adhesives. In 2013, apart from the tried and trusted favourites ULTRALITE S1 and ULTRALITE S2, the range was widened to include ULTRALITE S1 QUICK and ULTRALITE S2 QUICK.

- ULTRALITE S1 QUICK is an improved, deformable, lightweight, rapid-setting and hydrating cementitious adhesive with no vertical slip and very high yield. It offers good trowellability on all types of ceramic tiles, including slim tiles, and is particularly suitable for laying natural stone with medium stability that tends to suffer from staining.

It is classified C2FTES1 according to EN 12004 standards.

The ULTRALITE S2 series of products has also been created to install large size slim porcelain tiles and are suitable for both floors and

facades.

- ULTRALITE S2 is a one-component, highly deformable, lightweight cementitious adhesive. It has extended open time and excellent wetting capacity combined with good workability. It is classified C2ES2 according to EN12004 standards.

- ULTRALITE S2 QUICK is a one-component, highly deformable, lightweight, rapid-setting and hydrating cementitious adhesive with extended open time and excellent wetting capacity combined with good workability. It is classified C2FES2 according to EN12004 standards.

The equivalent weight of ULTRALITE S1 and ULTRALITE S1 QUICK have a 60% higher yield compared with Mapei adhesives with the same classification, while ULTRALITE S2 and ULTRALITE S2 QUICK have an 80% higher yield compared with two-component S2 adhesives. What is more, a bag of ULTRALITE adhesive weighs just 15 kg as opposed to the usual 25 kg. This makes for much easier handling to and around the building site.

And lastly, it is important to highlight that ULTRALITE S2 and ULTRALITE S2 QUICK are one-component adhesives that do not need to be mixed with plasticising latex, unlike traditional cementitious adhesives with the same classification, making the work of tilers even simpler.

The “**lightweight**” family
welcomes two
new **rapid adhesives**



Ultralite

Our family of “lightweight” products is now extended with two new rapid, lightweight, high-performance adhesives. Ideal for installing all types of ceramic, thin porcelain and stone.

- Lightweight with high performance
- One-component and deformable (S1 and S2 according to EN12004 and ISO13007)
- Available in “standard-setting” and “rapid-setting” versions
- Up to 80% higher yield compared with Mapei adhesives with the same classification
- Good trowelability
- Very high wetting properties



/mapeispa

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





A Spa that is both Damp-Proof and Detachment-Proof

A new thermal spa complex has been opened in Makó in Hungary, designed along the lines of organic architecture

Inaugurated in December 2011 in the small town of Makó in southern Hungary, the Hagymatikum Spa complex is dedicated exclusively to wellbeing. The Spa centre uses hot water from underground springs and curative mud taken from the River Maros, and has indoor and outdoor pools spread over an area of 800 m². It also has one of the largest sauna areas in the whole of Hungary, as well as specialised sectors dedicated to therapeutic Spa treatments. The entire complex is based on an idea by the architect Imre Makóvecz, considered to be one of the leading exponents

of organic architecture, a design concept that promotes harmony between man and nature by integrating artificial elements into the surrounding natural landscape.

The Laying Above All

The Hagymatikum Spa develops along four separate wings with cupola roofs running from a central body. The irregular shaped indoor pools are “immersed” in a large space illuminated from above, in the middle of which there is a 10 metre tall “tree of life”, while a gallery is used to connect the pools and the

IN THE SPOTLIGHT MAPELASTIC

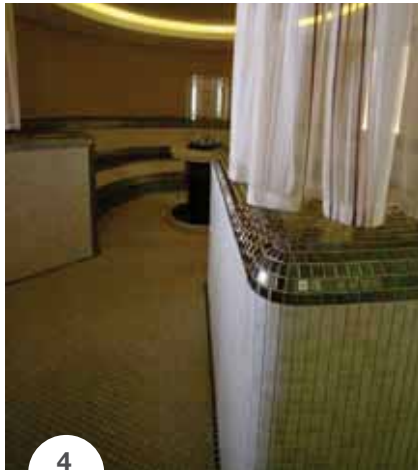
Two-component cementitious mortar for waterproofing and protection of concrete structures, renders and cementitious screeds. MAPELASTIC is ideal for waterproofing of concrete basins, bathrooms, showers, balconies, terraces and swimming pools before laying ceramic tile finishes. It is also used for the protection of renders or concrete with cracks caused by shrinkage; for the protection of concrete surfaces which may come into contact with seawater and de-icing salts. It can contribute up to **3 points** to obtain the **LEED** certification.



1



2



various relaxation areas.

Mapei Technical Services was contacted by the laying company, and recommended a series of products to waterproof, bond and grout the ceramic and porcelain tiles and mosaic in and around the pools and in the changing rooms, showers and saunas.

PLANITOP FAST 330 fibre-reinforced, rapid-setting cementitious levelling mortar was used to prepare the substrates in the pools. After cleaning the substrates, MAPEBAND rubber waterproofing tape was applied along the corners between the walls and floors and a layer of MAPELASTIC two-component cementitious mortar was applied over the entire surface. This type of mortar is applied by trowel or spray on clean surfaces and, if necessary, that have been dampened with water. When hardened it forms a highly flexible, protective waterproof coating.

Once the layer of MAPELASTIC had cured, the tiles were bonded in place with KERABOND T cementitious adhesive mixed with ISOLASTIC instead of water to improve its characteristics and comply with the requirements of class C2E S2 (improved, highly-deformable cementitious adhesive with extended open time) according to EN 12004 standards.

In the changing rooms, service areas and on the stairs, after treating the substrate with PRIMER G, the tiles were bonded in place with KERAFLEX. In the sauna areas, the glass mosaics were bonded with ELASTORAPID two-component, high performance, highly deformable cementitious adhesive. KERAPOXY epoxy adhesive, resistant to the effects of the hot Spa water and the products used for cleaning, was used to grout the joints. The wet areas and external surfaces requiring a coloured finishing coat were painted with ELASTOCOLOR WATERPROOF, acrylic waterproof paint which is suitable for surfaces in permanent contact with water and is also easy to clean.

PHOTO 1. The gallery that connects the pools overshadowed by the Tree of Life. The pools were prepared with PLANITOP FAST 330 and waterproofed with MAPEBAND and MAPELASTIC.

PHOTOS 2-3. KERABOND+ISOLASTIC was used to bond the tiles in the pools, while KERAPOXY was recommended to grout the joints.

PHOTO 4. The mosaics in the sauna areas were bonded in place with ELASTORAPID adhesive.



Technical Data

Hagymatikum Spa, Makó, Hungary

Period of Construction: 2010-2011

Period of Intervention: 2010-2011

Intervention by Mapei: supply of products to prepare and waterproof substrates and to lay and grout ceramic and porcelain tiles and mosaic

Designers: Imre Makóvecz, Lőrinc Csernyus, Attila Turi

Client: Municipal of the City Makó

Contractor: Keviép Ltd

Laid Materials: ceramic tiles and mosaic

Mapei Distributor: GSV Kft., Debrecen

Mapei Co-ordinators: Tamás Ösz and Krisztián Szénás, Mapei Kft

Mapei Products

Preparation of the substrates:

Planitop Fast 330, Primer G

Waterproofing: Mapeband,

Mapelastic

Laying of coatings and finishing

products: Elastocolor Waterproof,

Elastorapid, Isolastic, Kerabond T,

Keraflex, Kerapoxy

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



KERAPOXY CQ

Maximum hygiene from an epoxy grout



KERAPOXY CQ is certified by the University of Modena (Italy) according to ISO 22196:2007 standards as a grouting mortar protected against the formation and proliferation of micro-organisms.

Extreme cleanability and hygiene: the main characteristics of KERAPOXY CQ, two-component grouting mortar for joints of floors in ceramic floor and wall tiling, glass mosaic and non-absorbent stone. Characteristics that make it particularly suitable for use in the food industry, swimming pools, hospitals and all those areas where surfaces with maximum hygiene are specified.

and other microorganisms in compliance with ISO 22196:2007 standards. This characteristic means that protection goes right down through the whole of the grouted joint.

- It can also be used in areas subjected to intense traffic and wear, in that its properties remain stable over the years.
- It does not release substance that are harmful to people, as certified by its EMICODE EC1 R Plus classification (product with very low emission of volatile organic compounds) issued by GEV (Gemeinschaft Emissionskontrollierte Verlegewerkstoffe Klebstoffe und Bauprodukte e.V.).

Easy to Apply and Clean

- Its special rheological properties that makes it easy to apply, including on vertical surfaces, without it running inside the joints.
- The cleanability of KERAPOXY CQ is considerably higher than for traditional epoxy grouts, because the different colours available are not due to the presence of pigments in the mix, but rather on the use of special, coloured silica sand. It is very simple to remove the grout from surfaces with a rubber trowel, which means it is also simple to obtain surfaces that are almost perfectly clean.
- It guarantees excellent resistance to chemicals, so it may be safely used to grout tiling in industrial environments, on laboratory and kitchen worktops and in aggressive environments in general where high resistance is required.
- The University of Modena and Reggio Emilia (Life Sciences Faculty – Bio-technology Area) has certified KERAPOXY CQ as a highly protective product against bacteria

- Finally, it is available in 21 different colours. The aforementioned characteristics, along with the inabsorbency of the product, all combine to make it ideal for use in all those environments where a high level of hygiene is required. KERAPOXY CQ enables floors, walls, work benches, etc. to be made which comply with the HACCP system and the requirements of EC Regulation No. 852/2004 regarding the hygiene of foodstuffs.

In normal residential and domestic use, bathrooms and kitchens are the ideal places to use this product. As with all epoxy products, KERAPOXY CQ cannot be used on absorbent substrates. If the surface is not perfectly smooth, the special cleaner KERAPOXY CLEANER can be used which makes it easier to remove stubborn traces trapped in the natural surface roughness of the tiling.

Colour chart	
100	WHITE
111	SILVER GREY
113	CEMENT GREY
114	ANTHRACITE
120	BLACK
130	JASMINE
132	BEIGE 2000
146	RICH BROWN
147	CAPPUCCINO
151	MUSTARD YELLOW
160	MAGNOLIA
163	LILAC
165	CHERRY RED
170	CROCUS BLUE
173	OCEAN BLUE
181	JADE GREEN
182	TORMALINE
183	LIME GREEN
282	BARDIGLIO GREY
283	SEA BLU
290	CREAM

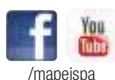


The easy, safe, and versatile epoxy grout

Kerapoxy CQ

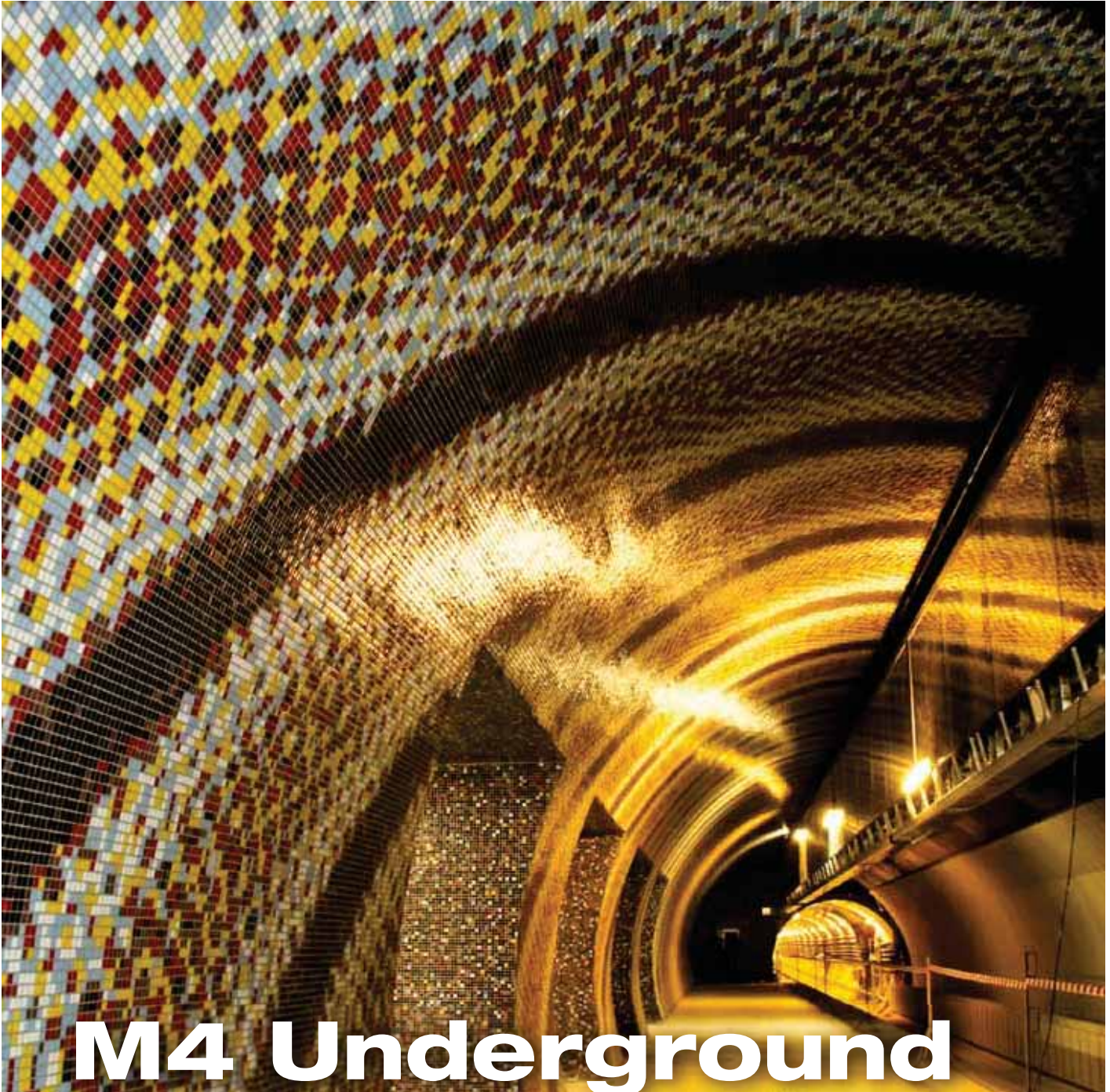
Two-component, acid-resistant epoxy mortar which is particularly easy to apply and clean, for grouting tile joints wider than 2 mm.

- Resistant to aggressive chemicals
- Non-absorbent for maximum hygiene
- Ideal for grouting flooring in industrial, commercial and residential environments and swimming pools
- Ideal for all types of floor and wall tile, both internal and external
- No health risk for floor layers or end users
- Classified RG according to EN13888
- Suitable for surfaces in direct contact with foodstuffs in compliance with the HACCP system – EC REG. 852/04
- Product certified by the University of Modena (Italy) according to ISO 22196:2007 standards as a grouting mortar protected against the formation and proliferation of micro-organisms
- **Available in a range of 21 new colours!**



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





M4 Underground Railway Line-Budapest

A new connection for the Hungarian capital

Budapest boasts the second oldest underground railway system in continental Europe: the M1 line dates back to 1896 and has been declared a World Heritage site. The underground transport system in the Hungarian capital is made up of three lines and the idea to construct the M4 line dates back to the 1970's, and since then the project has had to overcome a number of problems, including the presence of Spa springs along the route.

Underground Interventions

Mapei Technical Services collaborated with the construction companies that worked on the main structures and that laid the tiling, mosaics and resin flooring in the various stations. For the work carried out on the underground concrete structures, a number of products were recommended.

Here are just a few: at Rákóczi Square, contractors used two-component epoxy adhesive EPORIP for monolithic sealing of cracks in screeds, which were subsequently restored with a layer of MAPEGROUT THIXOTROPIC fibre-reinforced mortar for concrete repair. On Fővám Square another cementitious mortar, the two-component MAPEFINISH was employed, applied in 1-3 mm thickness, for finishing concrete walls, whereas on Etele Square concrete was repaired with medium-strength, reinforced thixotropic mortar MAPEGROUT T40, and surfaces levelled and smoothed with one-component PLANITOP 550, manufactured and distributed on the Hungarian market by Mapei Kft.

Visible concrete in public spaces at the Népszínház Street station was treated with osmotic cementitious mortar for waterproofing masonry and concrete structures IDROSILEX PRONTO.

Creating Resistant Flooring

Mapei resin flooring systems were used in public spaces, gangways and corridors as well as operating rooms of metroline M4, for a total area of about 20,000 m².

In operating rooms and in depositories, the screeds were primed with solvent-free epoxy resin-based PRIMER SN. Subsequently it was applied MAPECOAT I 620 W, two-component water-based epoxy coating with a shiny finish, for concrete floors and cementitious substrates, to provide an anti-dust oil resistant finishing treatment. The product is supplied in a neutral colour so it was mixed directly on site with MAPECOLOR PASTE in the colour required.

Ventilation ducts and other places requiring minimum impregnation were primed with MAPECOAT I 600 W, also tinted with MAPECOLOR PASTE. In order to make it dust repellent and easily cleanable, MAPECOAT I 600 W was applied to reinforced concrete. Concrete surfaces of the depositories were primed with PRIMER SN, which was added 0.5 QUARTZ.

The surface was then dusted with QUARTZ 0.5 using the wet on wet technique. The following day, the excess quartz sand was vacuumed off, the surface was sanded and all traces of dust and debris were also vacuumed off. The next stage was to trowel on a coat of smoothing compound, and in this case MAPEFLOOR I 300 SL two-component, neutral-coloured, multi-purpose epoxy



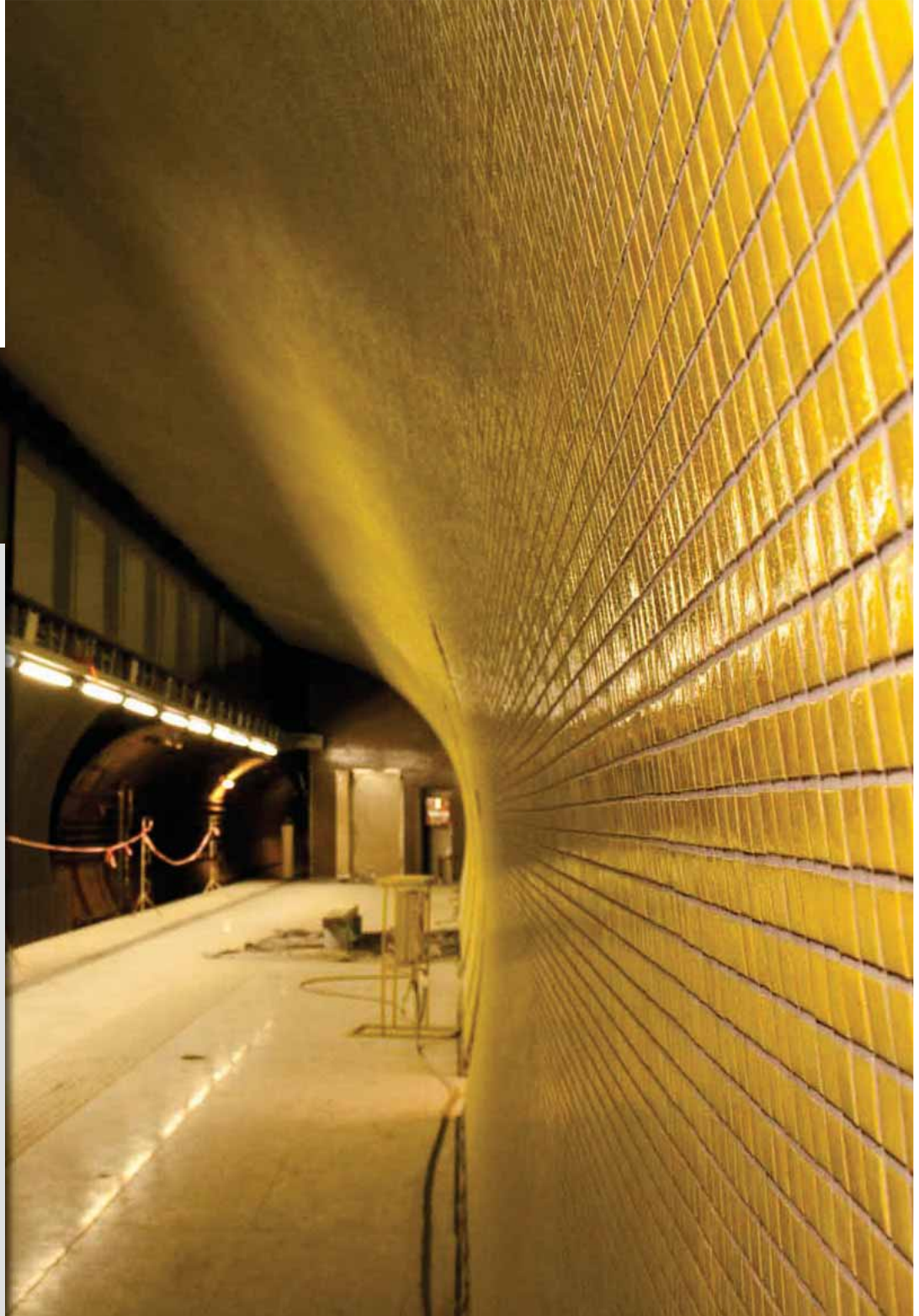
IN THE PHOTOS BELOW. Various Mapei products for concrete were used for the underground tunnels: these photos show repair work being carried out using MAPEGROUT THIXOTROPIC.



PROJECTS RESTORATION OF CONCRETE, LAYING CERAMIC TILES, RESIN FLOORING

PHOTOS ON THIS PAGE.

The attention to detail that characterised laying of the mosaics in the four stations along the line. KERAFLEX S1, ELASTORAPID, ULTRACOLOR PLUS and KERACOLOR FF FLEX were used to bond and grout the mosaics.



IN THE SPOTLIGHT ELASTORAPID

Two-component, high performance, highly-deformable, quick-setting and drying cementitious adhesive with no vertical slip and extended open time for ceramic tiles and stone material. ELASTORAPID can be used for bonding to internal and external walls and floors of all types and sizes of ceramic tiles, natural stone and artificial materials which are slightly sensitive to humidity. It has high bonding strength after only 2-3 hours and, therefore, floor and wall coverings may be put into service very quickly. It can contribute up to **4 points** to obtain the **LEED** certification.



resin for industrial flooring was used, tinted with MAPECOLOR PASTE.

In the various stations along the line, around 4,000 m² of seamless flooring was installed using "natural finish" ULTRATOP self-levelling mortar, for flooring highly resistant to abrasion. The laying bed was initially prepared by trowelling on a coat of PRIMER SN.

Then, after applying the primer, the surface was dusted with QUARTZ 1.2 to guarantee perfect adhesion of the ULTRATOP, which was then applied by pump.

The final stage was to apply MAPEFLOOR FINISH 50 aliphatic polyurethane finish with a roller to give the flooring better resistance to wear. In the areas that had to be impermeable to water vapour (an area of around 5,000 m²), a coat of MAPEFLOOR I 914 epoxy primer was applied.

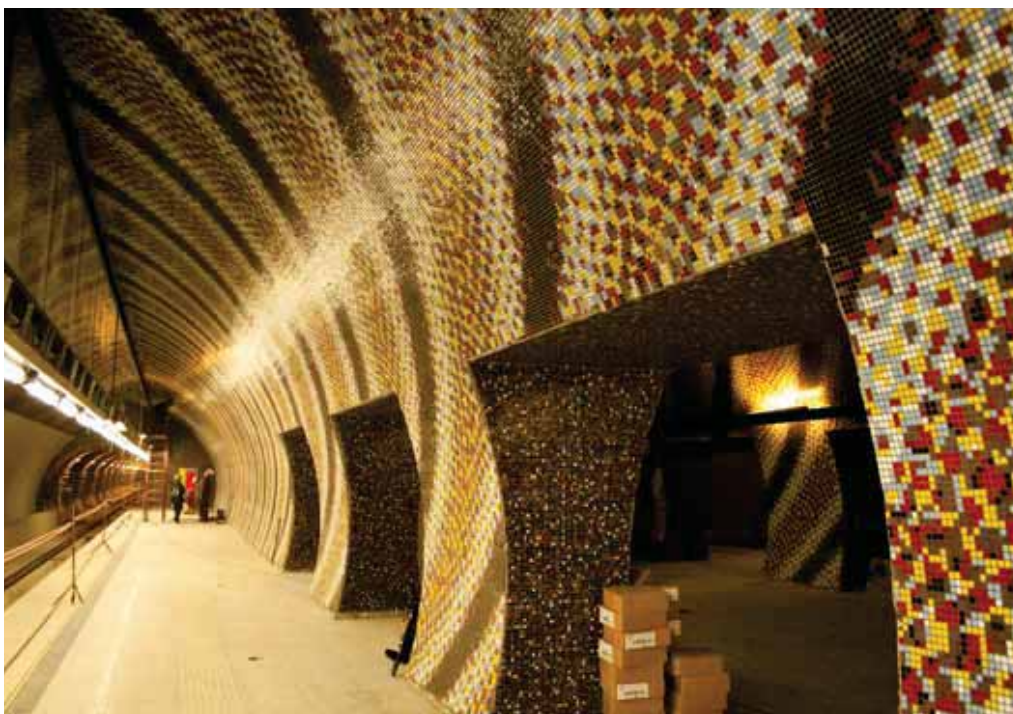
Mosaic Masterpieces for the Stations

Grès porcelain tiles were laid in the operating rooms, gangways and store rooms of ten stations.

ADESILEX P9, cementitious adhesive with no vertical slip and extended open time, was used for laying, while KERACOLOR FF FLEX (produced and distributed on the Hungarian market), high performance, polymer-modified, cement-based grout for joints up to 6 mm, was used for grouting. MAPESIL AC was used for sealing the coverings.

Several metro stations were decorated with spectacular mosaics designed by artists and architects. Each mosaic had its own size and pattern and each one had different technical problems to overcome. Surfaces were primed with ECO PRIM GRIP, universal bonding promoter primer, or EPORIP in cases where the surface had to be restored and levelled with either MAPEGROUT GUNITE, ready-to-use, multi-purpose, cementitious mortar, or PLANITOP FAST 330, quick-setting, fibre-reinforced cementitious mortar. Smoothing was done with MONOFINISH, one-component, normal setting cementitious mortar. After the preparation of the substrates, the glass tiles were laid with KERAFLEX S1 (produced and distributed on the Hungarian market), high performance cementitious adhesive with no vertical slip and Low Dust technology, and with ELASTORAPID, two-component, high performance, highly-deformable cementitious adhesive. ULTRACOLOR PLUS and KERACOLOR FF FLEX were used for grouting tile joints.

This article first appeared in Mapei Krónika edition No. 38, the magazine published by our subsidiary Mapei Kft. Our thanks go to them for their kind help.



Technical Data

Metroline M4, Budapest, Hungary

Period of Construction:

2004-ongoing

Period of Intervention:

2012-2013

Intervention by Mapei: supply of products for work on concrete structures; products for substrates and resin flooring; products to lay porcelain tiles and glass mosaics

General Contractor: Swietelsky Magyarország Kft (Budapest)

Laying Companies: for mosaic tiling Duoflex-Pool Kft; for grès tiling Ratskó-Bau Kft; for resin flooring Swietelsky Magyarország Kft, Lukács és Társa Kft (Budapest)

Laid Materials: porcelain tiles, glass mosaics

Mapei Co-ordinators: Garay Gergely, Bene Beatrix and Barna Mónika, Mapei Kft (Budapest)

Mapei Products

Interventions on the concrete:

Eporip, Foamjet 260 LV, Idrosilex Pronto, Lampocem, Mapegel, Mapefinish, Mapegrout Thixotropic, Mapegrout T40, Mapegrout T60, Stabilcem, Resfoam 1KM, Planitop 550*, Plastimul 2K Plus

Creation of resin flooring:

Mapecoat I 600W, Mapecoat I 620W, Mapecolor, Mapefloor I 300 SL, Mapefloor I 914, Primer SN, Ultratop

Laying and sealing of porcelain tiles: Adesilex P9, Keracolor FF Flex*, Mapesil AC

Preparation of substrates and laying of mosaics: Elastorapid, Mapegrout Gunite, Monofinish, Keraflex S1*, Planitop Fast 330, Ultracolor Plus.

*Produced and distributed on the Hungarian market by Mapei Kft.

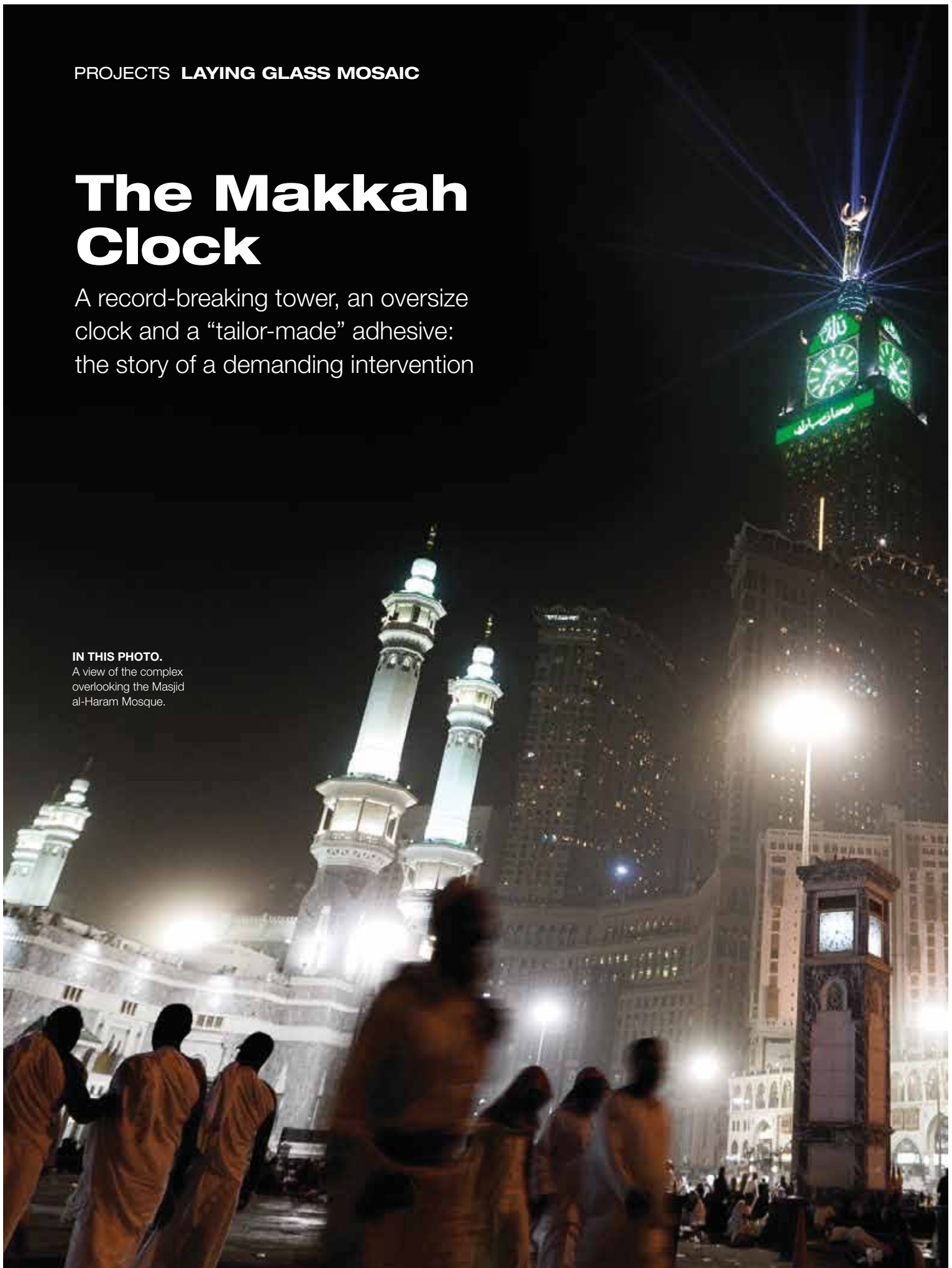
For further information see the websites www.mapei.com and www.mapei.hu

The Makkah Clock

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

IN THIS PHOTO.

A view of the complex overlooking the Masjid al-Haram Mosque.





World's largest tower clock, its clock face is more than five times the size of Big Ben's in London

The crescent of the clock tower is the largest ever built with a diameter of 23 meters

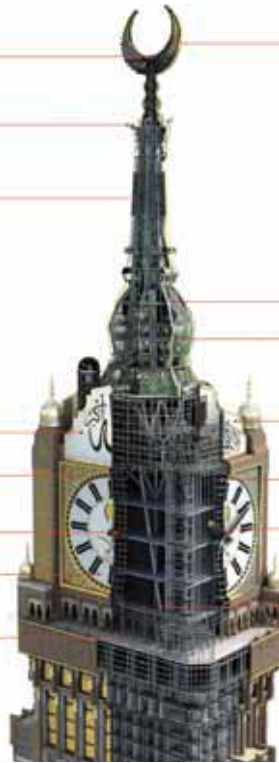
The tower top with the Makkah Clock has a weight of approximately 83,000 tons



PROJECTS **LAYING GLASS MOSAIC**



- Beacon lights
- Additional beacon lights
- Loudspeaker system
- Takbir
- Retractable lightning rods
- Clock drive
- Front clock face
- Visitors' platform



- Crescent
- Solar panels for clock drive power
- Glazing
- Creed
- Clock face steel structure
- Clock hands on side face
- Steel construction

ABOVE. The top of the Tower with its clock and the phrase "God is great".
BELOW. Various phases during the making of the clock.

After the Emirate of Dubai with its Burj Khalifa skyscraper, it is now Saudi Arabia's turn to boast about having one of the tallest skyscrapers in the world. In fact, last year at The Mecca – the holy Islamic city – the Al-Bait Abraj Towers, known also as the Makkah Clock Tower, were inaugurated. This complex has been built to offer high quality lodgings and recreational facilities for visitors to the Masjid Al Haram Mosque next to the Makkah Clock Tower. The largest mosque in the world can now host up to a million wor-

shippers. The complex, designed by the Dar al-Handasah Shair & Partners design studio, has a total surface area of 1,500,000 m² and is made up of seven towers split into residential units and hotels, erected on a low, 15 storey main body. It has numerous shops, two heliports and a large car-park and can host up to an estimated 100,000 guests.

(continued on page 34)





Mapei Intervention

Mapei played a part in this ambitious project by supplying products to install and grout the mosaic tiles made by Trend Group. This Italian company from Vicenza supplied 98 million glass mosaic tiles, some of which with a 24 carat gold leaf finish, for a total of 40,000 m² installed on the facades of the structure of the clock. The adhesive used to bond the tiles at the top of the Tower had to take into consideration that it is exposed to the sun all day long. The products recommended, therefore, apart from guaranteeing very high performance from the bond itself, had to be able to resist the high temperatures. This is why a tailor-made product was developed to install and grout the mosaic on the clock, KERAPOXY ADHESIVE FR, which is re-

sistant to high temperatures and has excellent resistance to fire. This new product was developed in the Mapei R&D laboratories in Milan, starting from the formula used to make KERAPOXY ADHESIVE, a two-component adhesive with no vertical slip for ceramic tiles and stone. The tiles were installed and grouted on panels in Dubai under the supervision of a team from the Technical Services Department of IBS Mapei (Innovative Building Solutions), Mapei's subsidiary company from the United Arab Emirates. The panels were then transported to Saudi Arabia, taking the greatest care possible. The joints, on the other hand, were sealed directly on site. Mapei also supplied KERAPOXY two-component, anti-acid epoxy mortar, available in 26 different colours.

IN THE SPOTLIGHT KERAPOXY ADHESIVE

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





The Figures Behind the Challenge

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

It is powered by a series of solar panels, but it may also be connected to the main grid in Mecca. Running three hours ahead of Greenwich Mean Time, the size of the clock is really impressive: the longer sides are 45 metres long and the clock face is 46 metres in diameter. The four clock faces are lit up by a total of 2 million LED so that the phrase "Takbir" ("God is great"), positioned on top of the tower, is visible, and light up five times every day to coincide with prayer time. Floral decorations in classic Islamic style ornate the corners of the structure where the mechanism is housed, while geometric designs complete the face and hands.

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



© SL Rasch

Technical Data

Makkah Clock Tower, Makkah, Saudi Arabia

Designers: Dar al-Handasah Shair & Partners; SL-Rasch (Leinfelden-Echterdingen, Germany)

Period of Construction: 2008-2012

Period of Intervention: 2008-2012

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

Client: Premiere Composite Technologies LLC - (Dubai UAE)

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

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

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

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

Mapei Products

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

*Product formulated specifically for this site

For further information about the products see the websites www.mapei.com and www.mapei.ae

» *Not only is The Makkah Clock Tower a marvel of engineering, its design is also something for Saudi Arabia and the whole of the Middle East to be proud of. It is an honour for Mapei to have been part of this project».*

Tarana Daroogar, Technical Services Manager, IBS Mapei



Chhatrapati Shivaji International Airport

KERAFLEX MAXI S1 and MAPELASTIC: a winning combination for a grandiose international project in Mumbai, India



Although India is going through a period of sustained, rapid growth, it is also a country full of contradictions, and in particular the co-existence of rural areas with large, technologically-advanced cities. Seven hundred and forty two million people out of total population of one billion two hundred million people live in rural areas, while

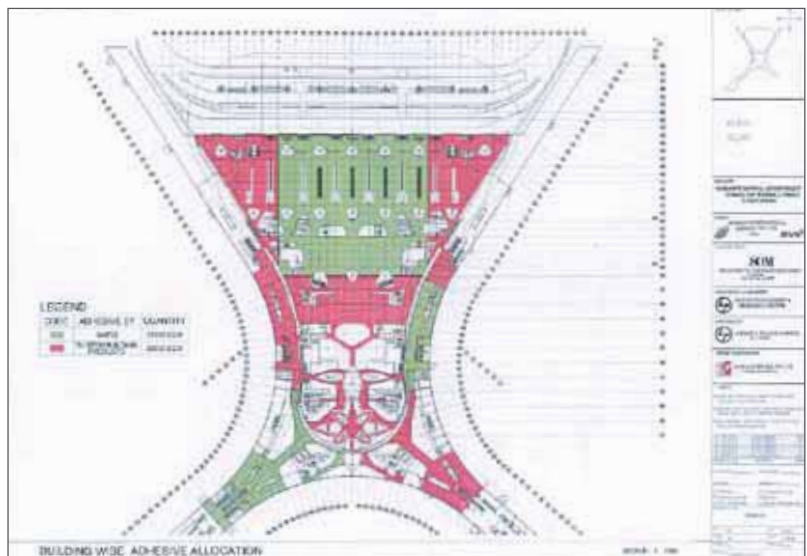
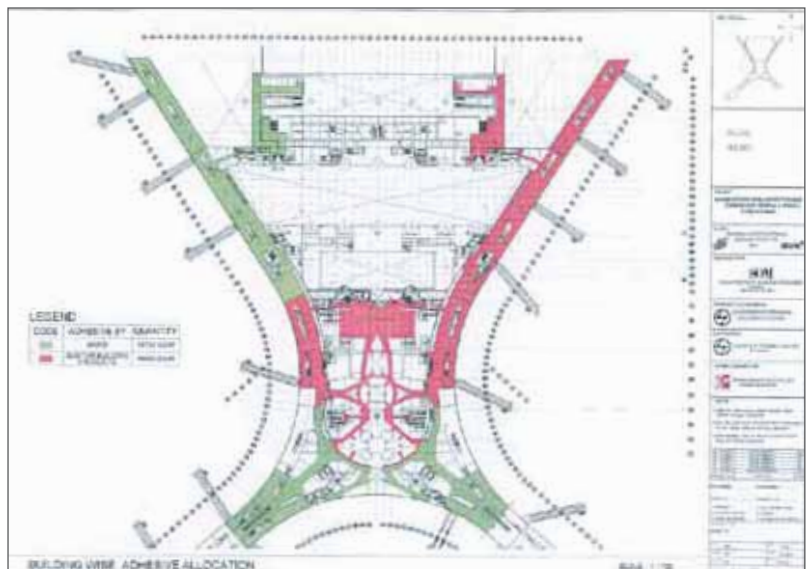
there are also over-populated cities such as Mumbai, Kolkata, Chennai and New Delhi. With these characteristics, India is one of the few areas in the world where, when we talk about projects, it may easily occur that we are not talking about the construction of a simple house, but of an entire city! Within the framework of a process to construct new infrastructures and increase the capacity of existing ones, the Indian government has decided to upgrade or rebuild more than 50 airports.

There are 25 international and 115 domestic airports in the country. The Airport Authority has made plans to modernise 35 airports. A further investment of 75.5 million dollars has also been programmed for three airports in the north-east.



ON THE OPPOSITE PAGE AND ABOVE. Mumbai airport upon completion of work.

BELOW. A plan view of two of the levels at the airport. Mapei products were used in the areas highlighted in green.



PROJECTS LAYING GRANITE

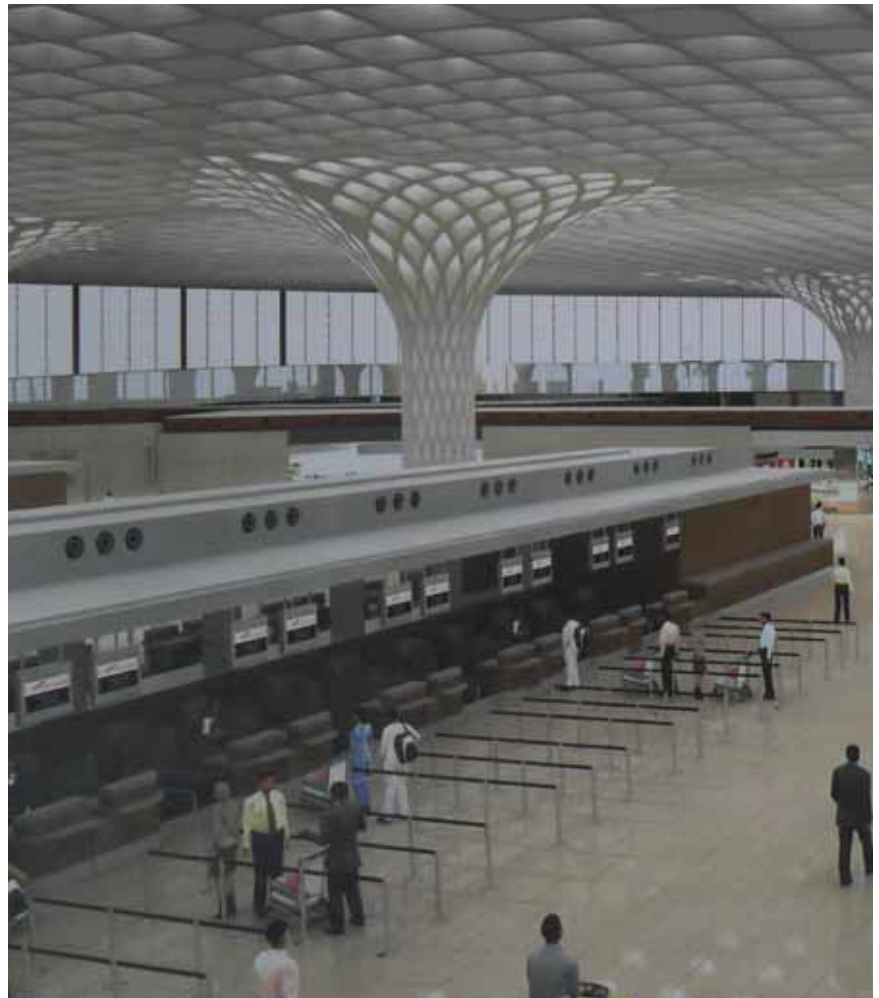


IN THESE PHOTOS.
Brazilian Santa Cecilia granite, bonded with KERAFLEX MAXI S1 and KERALASTIC T, was used for the flooring in the airport.

The Best Products to Lay 160,000 m² of Granite

The airport in New Delhi was completed in 2011 when Mapei India had still not been created. In spite of this, shortly before Mapei India was actually founded, Mapei still managed to win a contract for the Mumbai Airport International Terminal, just a few kilometres from Mumbai City; a large job which involved the laying of around 160,000 m² of Brazilian Santa Cecilia granite slabs measuring 60X60 cm. To lay the granite flooring, the client specified the use of high performance adhesive suitable for large sized natural stone slabs and for flooring subjected to intense traffic. For this task, after various tests in the Mapei Central Laboratory in Milan, KERAF-

LEX MAXI S1 high performance adhesive was singled out as the ideal product to lay the flooring. This is a high-performance, deformable cementitious adhesive with no vertical slip for ceramic tiles, particularly suitable for laying large porcelain tiles and natural stone slabs (thickness of adhesive from 3 to 15 mm). To guarantee that all the laying operations were carried out correctly, it was agreed with the contractor, Shah Granites, that Mapei technicians would train a team of local floor installers directly on site for one week before commencing laying. Accordingly Mr Wong Chun Fatt from Mapei Far East came to India and conducted the training for a week at the project site. KERAFLEX MAXI S1 was used to lay the granite in the enor-





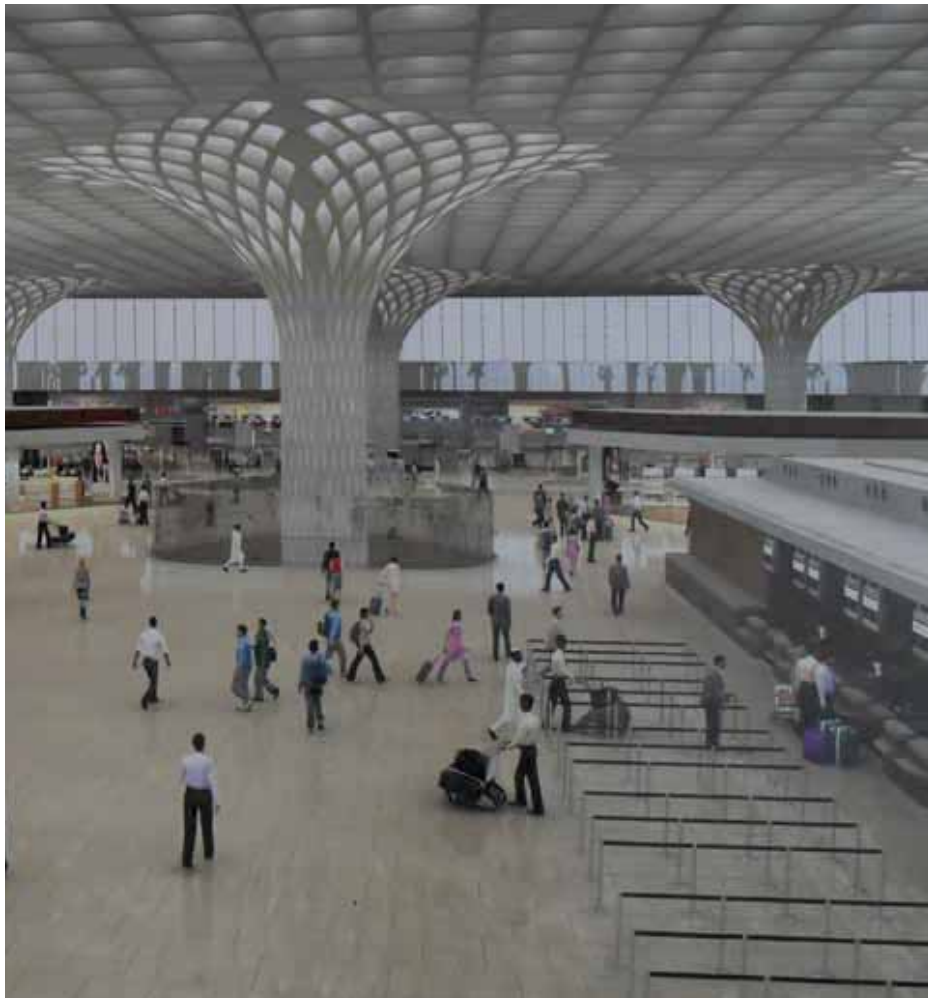
mous lobby in the new terminal and in the terminal bathrooms. Apart from for the flooring, it was also used to bond the granite wall covering. Before laying the stone, EPORIP two-component epoxy adhesive was used to repair the cracks in the substrate. Once this had been done, the surfaces were smoothed over with ULTRAPLAN ECO self-levelling, ultra rapid-hardening smoothing and levelling compound with very low emission of volatile organic compounds (VOC) applied in layers from 1 to 10 mm thick. KERALASTIC T two-component, high-performance epoxy-polyurethane adhesive was used to lay granite over the steel surfaces in the service lifts and elevators. Laying of the granite slabs was completed by the all-important grout-

IN THE SPOTLIGHT KERAFLEX MAXI S1

High performance, cementitious adhesive with no vertical slip, suitable for the installation of large-size ceramic tiles and natural stone, for interior and exterior bonding (up to 15 mm thick). KERAFLEX MAXI S1 is a deformable, improved slip resistant, cementitious adhesive with extended open time. The innovative Low Dust technology considerably reduces the amount of dust compared with standard cementitious adhesives, making floor-layers' work easier and healthier. It can contribute up to **4 points** to obtain the **LEED** certification.



ing of the joints. The product chosen for this operation was KERAPOXY anti-acid epoxy grouting mortar and adhesive for laying and grouting ceramic tiles and stone (minimum width of joints 3 mm). MAPELASTIC two-component flexible cementitious mortar was used to waterproof the water bodies around the structure, a product particularly recommended to form highly flexible, protective waterproof coatings on concrete structures prone to cracking. In this specific case, because the surfaces are particularly stressed, MAPELASTIC was reinforced with MAPENET 150 alkali-resistant, 4 x 4.5 mm weave glass fibre mesh, for reinforcing protective waterproofing coatings, anti-fracture membranes and cladding systems.



Technical Data

Chhatrapati Shivaji International Airport,
Mumbai (India)

Period of Intervention: 2011

Intervention by Mapei: laying granite slabs and waterproofing of the water bodies

Client: Mumbai International Airport Private Limited - MIAL - (a Joint Venture between GVK India & Airport Authority of India)

Designers: Owings & Merrill LLP, New York (USA)

Contractor: Larsen and Toubro Ltd, Mumbai

Laying Companies: Shah Granite, Plus Systems, Waterman, SMG Inter Decor, Rajasthan Marbles, AES

Mapei Technical Assistance: Enrico Geronimi (Mapei SpA), Sandeep Shinde (Mapei India) and Wong Chun Fatt (Mapei Far East)

Mapei Co-ordinators: Lorenzo Pastore (Mapei SpA), Abhijit Dutta, Meher Mukherjee, A. Deshpandey (Mapei India)

Mapei Products

Preparation of the substrates: Eporip, Ultraplan Eco

Laying and grouting of granite slabs: Keraflex Maxi S1; Keralastic T; Kerapoxy

Waterproofing: Mapelastik, Mapenet 150

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

How Do You Create a Solid Chemical Anchor?

The aim of a chemical anchor is to provide a firm hold for a length of threaded bar or rebar in a solid substrate (such as concrete, stone, wood or masonry) or a perforated substrate (lightweight concrete or brickwork) by injecting a specially modified, two-component resin product. In so doing, you can then anchor fixtures and fittings (such as hinges and/or brackets for

doors, blinds, curtains, boilers, sanitary ware and aerials) to a building or wall, anchor heavy industrial members or carry out structural strengthening work. Anchoring and fastening techniques vary according to the type of fixture or fitting, the size of the loads, the size of the fixture or fitting and the time scheduled to actually mount and install the fixture or fitting.

THE STEPS TO CREATE A PERFECT ANCHOR!

Anchoring on a **HOLLOW** substrate (e.g. with MAPEFIX PE SF 300 ml)



1 Drill a hole in the substrate.



2 Before screwing the static mixer onto the end of the cartridge, cut it in correspondence with the ring.



3 Pump three times and discard the resin.



4 Place a mesh bush in the and length suitable for the

Anchoring on a **SOLID** substrate (e.g. with MAPEFIX EP 385 ml)



1 Drill a hole in the substrate.



2 Clean around the hole thoroughly.



3 Screw the static mixer to the end of the cartridge.



4 Pump three times and discard the resin.



TO THE SIDE.
A safety cable anchored in place with MAPEFIX VE SF.



Diffusion of resin through the bush.



4
hole, with a diameter size of the hole.



5
Fill the bush with resin starting at the bottom.



6
Rotate and insert the length of threaded bar in the hole.



7
When the resin has hardened, the anchor is ready for use.



4



5



6

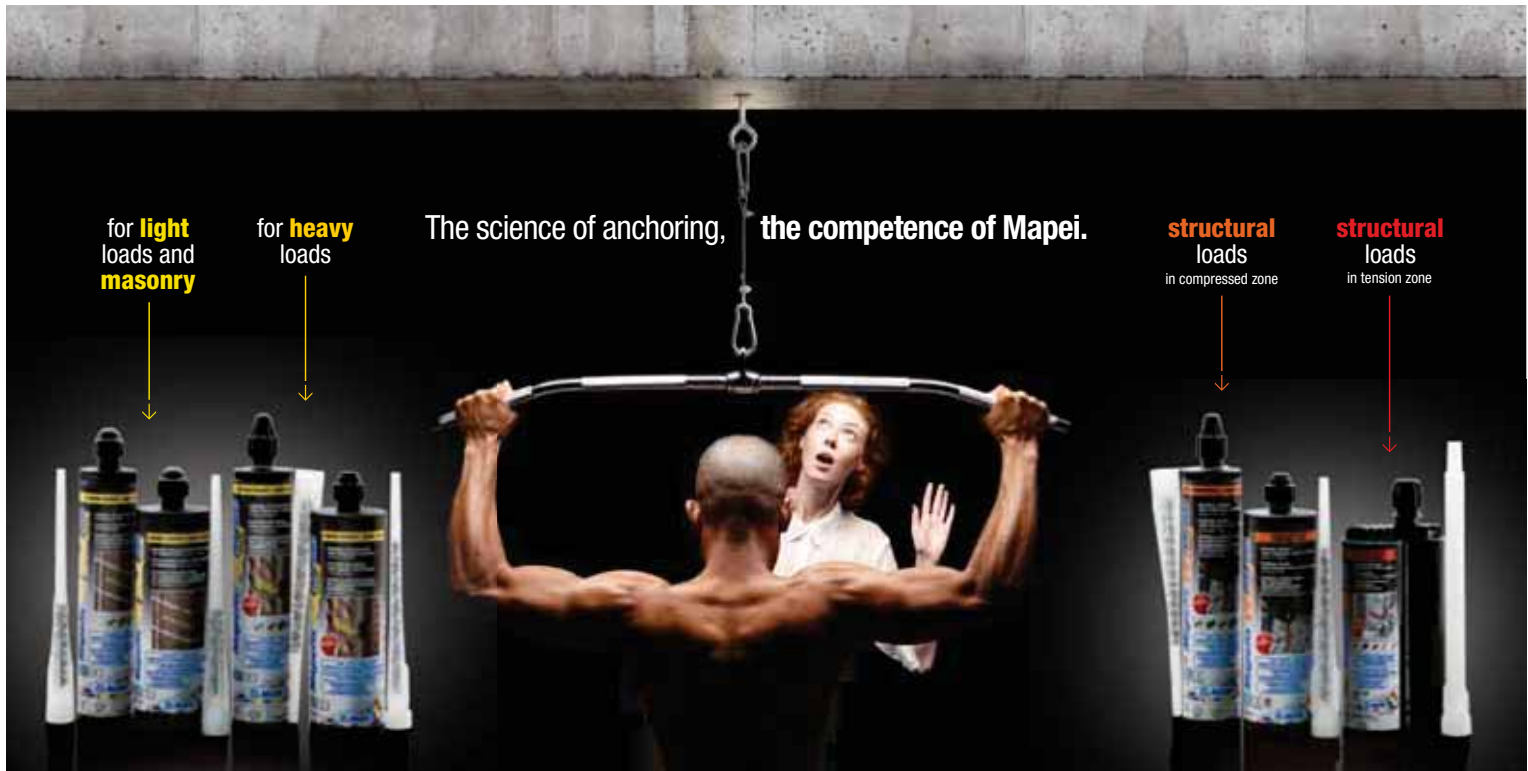


7

Fill the hole with resin starting at the bottom.

Rotate and insert the length of metal bar in the hole.

Make sure that the excess resin is expelled and remove it from around the hole.



THE ADVANTAGES OF MAPEI CHEMICAL ANCHORS

There are numerous cases in which traditional mechanical fasteners are not sufficient to withstand a load and a chemical anchor is the best option. Here are four solutions from the Mapefix line, developed to cover any situation

It is common practice to fasten different building materials together to create a monolithic fixture or element: typical examples are mounting an aerial on a roof or a safety cable along the edge of a flat roof, a sign on a façade, pipe-work or conduits to a ceiling, suspended fittings in a bathroom, a construction joint in concrete...

To fasten an object to a substrate we can use either mechanical fasteners or chemical anchors. While the first type are made from plastic or metal with moving parts that expand inside the hole in the substrate to form a tight grip, the second type is based on the adhesion strength of special, two-component synthetic resin used to fill the gaps and spaces between a piece of threaded or corrugated metal bar and the surfaces inside the hole where the bar is inserted. Chemical anchors have various technical advantages compared with mechanical fasteners:

- there is no mechanical stress on the substrate during installation
- they may also be used in weak or cracked substrates or in perforated substrates
- there is a smaller pitch between adjacent anchors
- there is less mechanical stress on the substrate
- the metal bars do not rust
- they are suitable for all types of material and for all diameters and depths.

Thanks to their safety features, ease of use and high versatility, chemical anchors are becoming increasingly popular with professionals from the building sector. And thanks to their experience in this sector, Mapei has developed the MAPEFIX range of

products, specifically formulated to create chemical anchors for metal bars in any type of building material or composite, to meet all your design and application needs. All the products in the MAPEFIX range are ETA certified and carry CE marking, offering designers and building professionals alike safe results thanks to their guaranteed, repeatable performance characteristics.

The products in the range are as follows:

- MAPEFIX PE Wall, styrene-free polyester resin for anchors for light loads on masonry
 - MAPEFIX PE SF, styrene-free polyester resin for anchors for heavy loads in compressed zones on concrete and masonry
 - MAPEFIX VE SF, styrene-free vinylester resin for structural loads in compressed zones on all types of building material; ideal for reinforcing bars in construction joints in reinforced concrete.
 - MAPEFIX EP, pure epoxy resin for structural loads in tension and compressed zones on all types of building material; ideal for reinforcing bars in construction joints in reinforced concrete.
- In spite of being highly technological, high performance products made from two-component resin, the MAPEFIX range is a simple, safe option for everybody: the four products that make up the range are easy to tell apart thanks to their colour-coded packaging to immediately identify their most suitable area of use.

Fabio Guerrini. Mapei SpA Product Manager - Elastic Sealants and Adhesives Line.

Mapefix: the solutions for all your anchoring needs

LIGHT LOADS

CHEMICAL ANCHOR FOR MASONRY

Ideal for

- BRICK MASONRY
- STONE MASONRY
- MIXED MASONRY
- BRICKS AND HOLLOW BLOCKS
- REINFORCED RENDER

Mapefix PE Wall

HEAVY LOADS

CHEMICAL ANCHOR FOR CONCRETE AND MASONRY

Ideal for

- AERIALS AND SATELLITE DISHES
- SIGNS AND SHELVES
- WINDOW AND DOOR FITTINGS
- PLANT EQUIPMENT
- HANGING SANITARY FITTINGS

Mapefix PE SF

STRUCTURAL LOADS

CHEMICAL ANCHORS FOR ANY KIND OF MATERIAL

Ideal for

- ANCHORS IN COMPRESSED ZONES
- STATIC LOADS
- REINFORCING BARS
- IMMERSED ANCHORS
- AERIALS, SAFETY BARRIERS, PYLONS AND METALLIC STRUCTURES

Mapefix VE SF

CHEMICAL ANCHORS FOR ANY KIND OF MATERIAL

Ideal for

- ANCHORS IN TENSION AND COMPRESSED ZONES
- STATIC AND DYNAMIC LOADS
- STRUCTURAL STRENGTHENING
- REINFORCING BARS
- IMMERSED ANCHORS
- AGGRESSIVE ENVIRONMENTS

Mapefix EP



styrene-free polyester



styrene-free polyester



styrene-free hybrid vinyl ester



pure epoxy



Resistant up to **210 kg** on masonry

300 ml 380 ml

APPLICATION FIELDS



PLUS

- For any kind of masonry
- For temperatures down to 0 °C
- Ultra-rapid hardening
- 300 ml cartridges for silicone guns
- Special zero-waste cartridges



Resistant up to **5220 kg** on concrete

300 ml 380 ml

APPLICATION FIELDS



PLUS

- For concrete and masonry
- Also for damp substrates and temperatures down to -5°C
- Ultra-rapid hardening
- 300 ml cartridges for silicone guns
- Special zero-waste cartridges



Resistant up to **9390 kg** on concrete

300 ml 380 ml

APPLICATION FIELDS



PLUS

- For all materials
- Also for wet substrates and temperatures down to -10°C
- Ultra-rapid hardening
- High mechanical strength and chemical resistance
- 300 ml cartridges for silicone guns
- Special zero-waste cartridges
- Multi-certified



Resistant up to **12700 kg** on concrete

385 ml

APPLICATION FIELDS



PLUS

- For all materials
- Including cracked concrete
- Smooth and rough holes
- Dry, damp and wet substrates
- Small and large holes
- Extended workability
- Maximum mechanical and chemical strength
- Multi-certified

CERTIFICATION

MS - M12

CERTIFICATION

MS - M24

CERTIFICATION

MS - M30 (08 - 032) fire resistance

08-025

Repair joint installed here

CERTIFICATION

MS - M30 (08 - 032) fire resistance

08-025

M10-M24 (010-025)

Repair joint installed here

Download our drilled hole

ACCESSORIES

Cod. 7947001 Cod. 1961701

Perforated bush 12x60 - Cod. 1961310
Perforated bush 16x60 - Cod. 1961310
Perforated bush 20x60 - Cod. 1961310

Cod. 1961112

ACCESSORIES

Cod. 7947001 Cod. 1961701

Perforated bush 12x60 - Cod. 1961310
Perforated bush 16x60 - Cod. 1961310
Perforated bush 20x60 - Cod. 1961310

Cod. 1961112

ACCESSORIES

Cod. 7947001 Cod. 1961701

Perforated bush 12x60 - Cod. 1961310
Perforated bush 16x60 - Cod. 1961310
Perforated bush 20x60 - Cod. 1961310

Cod. 1961112

ACCESSORIES

Cod. 1961801 Cod. 1961412





The skyscraper project targets.

Shangri-La Hotel

Laying wooden floors in this luxury hotel in Toronto, Canada

A paradise lost, an imaginary place, a material and spiritual Garden of Eden...the myth of Shangri-La has always fascinated adventurers and explorers alike, who last century went out in search of this mythical place in the far west of the Himalayan Mountains, fruit of the imagination of the English writer James Hilton. This fascination for the Orient has never faded and still today numerous holiday destinations around the world bear its name, conjuring up the idea of an en-

chanting resting place surrounded by peace. One such place may be found in Toronto, and is just one of the luxurious hotels in the Shangri-La Hotel chain. The building was completed in 2012 and represents a novelty for the skyline of this Canadian city and for the Financial District in particular, towering over it with its lofty 66 floors and the elegant geometric form of its tower. It was designed by the Canadian firm James K. M. Cheng Architects. The first 17 floors are dedicated to the hotel itself, while the remaining upper floors are home to 393 luxury apartments. Three different shades of oak wooden floors - white, graphite and mulberry - were used for the flooring in the hotel supplied by the Italian company Parchettificio Garbelotto, with pre-



IN THESE PHOTOS. Shangri-La Hotel. The use of the one-component adhesive ULTRABOND ECO 995 allowed for perfect laying of the wooden floors while also acting as a soundproofing layer.



PROJECTS LAYING WOODEN FLOORS



IN THESE PHOTOS. A few images of the Shangri-La Hotel in Toronto which occupies the first 17 floors of a tower in the Financial District.

Technical Data

Shangri-La Hotel, Toronto, Canada

Designers: James K. M. Cheng Architects and Hariri Pontarini Architects

Period of Construction: 2008-2012

Intervention by Mapei: supplying products to prepare substrates and lay wooden floors

Period of Intervention: 2009-2012

Client: Shangri-La Hotels & Resorts (Hong Kong)

Contractor: West Bank Projects Corporation (Vancouver, Canada)

Project Manager: Bruce McCulloch (West Bank Projects, Vancouver)

Laying Company: oak wooden floor supplied by Parchettificio Garbelotto (Treviso, Italy)

Photographer: Gabor Gyorgy

Mapei Co-ordinators: Gaspare Clemenzi and Jason Zeppieri, Mapei Inc.

Mapei Products

Preparation of substrates:

Novoplan 2, Primer L, Planiprep FF

Laying wooden floor: Ultrabond Eco 995

These products are distributed on the Canadian market by Mapei Inc.

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

sanded planks 90 mm wide and 12 mm thick bevelled along all four sides, and treated with special fire-proof varnish. The planks were laid in herring-bone, straight and staggered patterns to add variety as they give the hotel an air of elegance. Mapei was involved in the laying of the wooden floors right from the very start. The client specified that the substrate also had to be soundproofed, so Mapei proposed the one-component adhesive ULTRA-BOND ECO 995, available on the American

market. The adhesive was successfully applied after Mapei provided in-depth training to the technicians from the laying company, Sterling Tile. Before laying the wooden floors, the substrate was prepared by treating it with a coat of PRIMER L and then applying a layer of NOVOPLAN 2 self-levelling smoothing and levelling compound over more than 27,000 m² of surfaces. In those areas where the surface was not sufficiently level, it was skimmed again with PLANIPREP FF (all three products are available on the American market). The combined efforts of the laying company and the construction company added a further touch of class to this modern version of Shangri-La.





Ultrabond Eco P992 1K

The one component polyurethane adhesive which improves quality of work, safeguards health and protects the environment.

- Ideal for all kinds of wood
- Excellent bonding to all kinds of substrates
- Solvent-free
- Low environmental impact: certified as EC1 Plus by GEV Institut(*)
(extremely low emission level of volatile organic compounds)
- Without any hazard warning requirements



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



Fibre-Reinforced Materials for the Renovation

In order to renovate and consolidate structures damaged by seismic events or simply by the passage of time, we need technology that is also compatible with the mechanical characteristics of masonry. Strengthening systems must not be invasive and must also guarantee that a building is preserved. For this type of intervention, Mapei proposes a line of products in fibre-reinforced materials: composite fabrics, rods, plates and tapes that guarantee a low impact on the architectural design of a building while offering high durability and simple application. Several examples of this type of intervention are illustrated on the following pages. At the end of the article you will find a truly innovative product: a “seismic wallpaper”.



**Jericho Bridge,
Matamoras, Ohio, USA**



This historic bridge – more than 100 years old – was in urgent need of structural strengthening work. In fact, due to continual freeze-thaw conditions, the concrete was in poor condition. The columns, arches and other supports for the structure were strengthened using the Mapei FRP System, a complete set of products made from fibre-reinforced polymers. For the first phase of the work, the substrates were prepared by treating them with MAPEWRAP PRIMER 1. MAPEWRAP C UNI-AX uni-axial carbon fibre fabric and MAPEWRAP G UNI-AX uni-axial glass fibre fabric were then bonded to the structural members to be strengthened using MAPEWRAP 31 epoxy adhesive.



Church of Santa Maria, Rivara, Modena, Italy

This church, built at the beginning of the 17th century, was severely damaged by the earthquake that hit Emilia in May, 2012. Deep cracks could be seen both on the inside of the church, particularly in the area around the presbytery, and along the external walls. Mapei intervened shortly after the earthquake to make the building safe: PLANITOP HDM RESTAURO mortar and MAPEGRID G 220 glass fibre mesh were used to create “reinforced” strengthening for the masonry supports.



The “House on the Water”, Brioni, Croatia

Built in 1902 in Art Nouveau style, this was the first house on the island to be made from reinforced cement. The building was originally designed for storing boats, but with the addition of another floor, it was then transformed into a residential building. Strengthening work was required in 2011 to prevent damp, bad weather and general ageing causing irreparable damage to the structure. To repair the concrete,

MAPEGROUT T 40 thixotropic mortar was chosen. The structure was then strengthened using MAPEWRAP C UNI-AX uni-axial carbon fibre fabric and CARBOPLATE pultruded carbon fibre plates.





Northern Motorway, Christchurch, New Zealand

The project involved providing seismic upgrading to three bridges crossing the motorway. The intervention was carried out on 21 support columns, each measuring 6 metres by 3 metres. For the reinforcement of these structures, Mapei proposed MAPEWRAP C UNI AX 600/60, particularly suitable for repairing reinforced concrete elements. Over the MAPEWRAP System, a protective layer of MAPELASTIC SMART cementitious mortar was applied to offer protection against aggressive agents.



The Rice Miller Development, Penang, Malaysia

This project involved the reconversion of a vast area, previously occupied by empty warehouses, into an elegant residential area with restaurants and hotels. The aim of the project was to breathe new life into the area while preserving the traces of its social and urban development. The concrete cracks were repaired by injecting EPOJET LV resin and surfaces were re-profiled by formwork grouting with

MAPEFILL MC 06 and MAPEFILL GP fluid mortars. For the structural strengthening work materials in carbon fibre were chosen, such as MAPEWRAP C UNI AX fabric and CARBOPLATE plates, bonded in place using the adhesives MAPEWRAP 31 and ADESILEX PG2 SP.





Church of San Cristobal, Lorca, Spain



The church was seriously damaged in 2011 by an earthquake. Strengthening work on the building started two years later, with the first phase involving just the arches of the central nave. First a coat of MAPEWRAP PRIMER 1 was applied, a specific primer for the MAPEWRAP System, followed by the strengthening materials comprising MAPEWRAP C UNI AX carbon fibre fabric. MAPEWRAP C FIOCCO carbon

fibre cord was then used to create structural connections to guarantee a solid tie between the supports and the Mapei fabrics.



Revoz Works, Novo Mesto, Slovenia

The Revoz car plant, one of the most important companies in Slovenia, is part of the Renault Nissan group. To make way for production of the new models, the Novo Mesto works was partially renovated. After

repairing the concrete with EPORIP adhesive and MAPEFER anti-corrosion mortar, the structures were strengthened with CARBOPLATE carbon fibre plates bonded in place with ADESILEX PG1, an adhesive specifically recommended for structural bonds. MAPEPLAN synthetic waterproof sheathing was applied on the roof of the works.

EQ Dekor and MapeWrap EQ System

Seismic Wallpaper: innovative products that combine safety with good looks

MapeWrap EQ System

THE INNOVATIVE PASSIVE PROTECTION SYSTEM FOR BUILDINGS IN THE EVENT OF SEISMIC ACTIVITY



The vulnerability of a building in the case of seismic activity is influenced not only by its structural elements, but also by its non-structural elements which determine for more than 40% of its overall functionality.

To give more people more time to evacuate a building, interventions may be carried out on non-structural elements by strengthening partition walls, false ceilings and secondary walls.

And for this work Mapei proposes their MAPEWRAP EQ SYSTEM, a new protection system in the form of “seismic wallpaper”. The system is made up of a bi-axial, glass fibre coating fabric (MAPEWRAP EQ NET) that is applied using one-component, water-based adhesive with a strong bond (MAPEWRAP EQ ADHESIVE). MAPEWRAP EQ SYSTEM adheres perfectly to rendered surfaces and guarantees stability, lightness and structural flexibility.

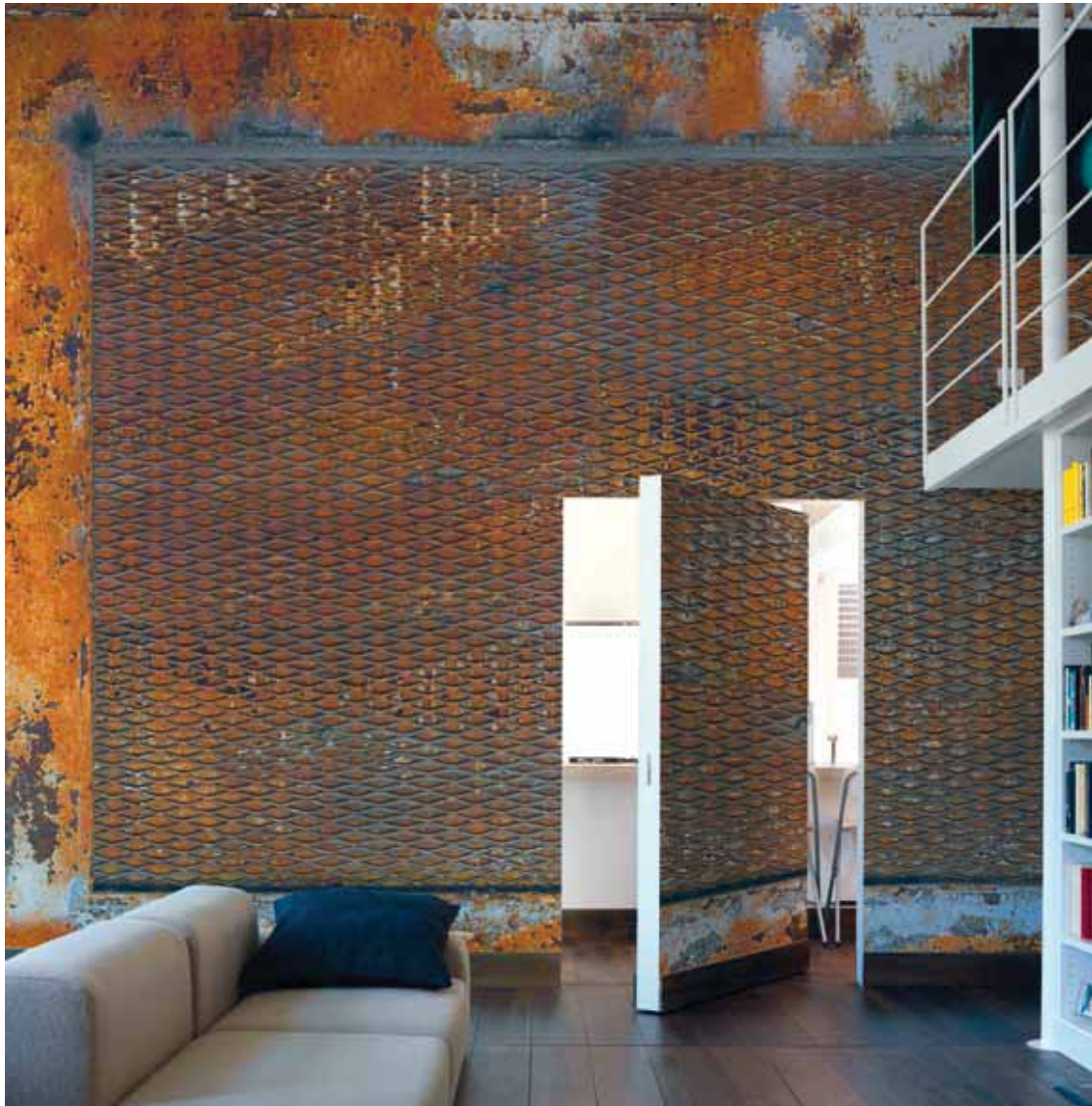
And for those who wish to combine seismic protection with the attractive finish offered by wallpaper, there is also EQ DEKOR, a covering product with a dual protective and decorative function.

Created through the collaboration of Mapei and Inkiostro Bianco, a wallpaper manufacturing company from Sassuolo, EQ DEKOR is a covering that reduces the risk of tilting out of plane or collapsing from walls to a minimum in the case of seismic activity, and by so doing increases the amount of time available to evacuate buildings.

EQ DEKOR wallpapers are printed glass fibre fabrics that are left on view like traditional wallpaper, and come in a range of patterns and designs from which to choose. Once bonded to walls or floors with EQ DEKOR ADHESIVE, they ensure protection against the collapse of secondary walls.

Thanks to the creativity of Inkiostro Bianco, they come in a range of 60 different designs and patterns and create a true “seismic wallpaper” that combines safety with an eclectic aesthetic taste.





ON THIS PAGE. Safety and great looks today you can combine both thanks to EQ DEKOR, the seismic wallpaper from Mapei.
FACING PAGE. Stability and structural flexibility with MAPEWRAP EQ SYSTEM glass fibre fabric.



Thermal Insulation Systems with Mapetherm

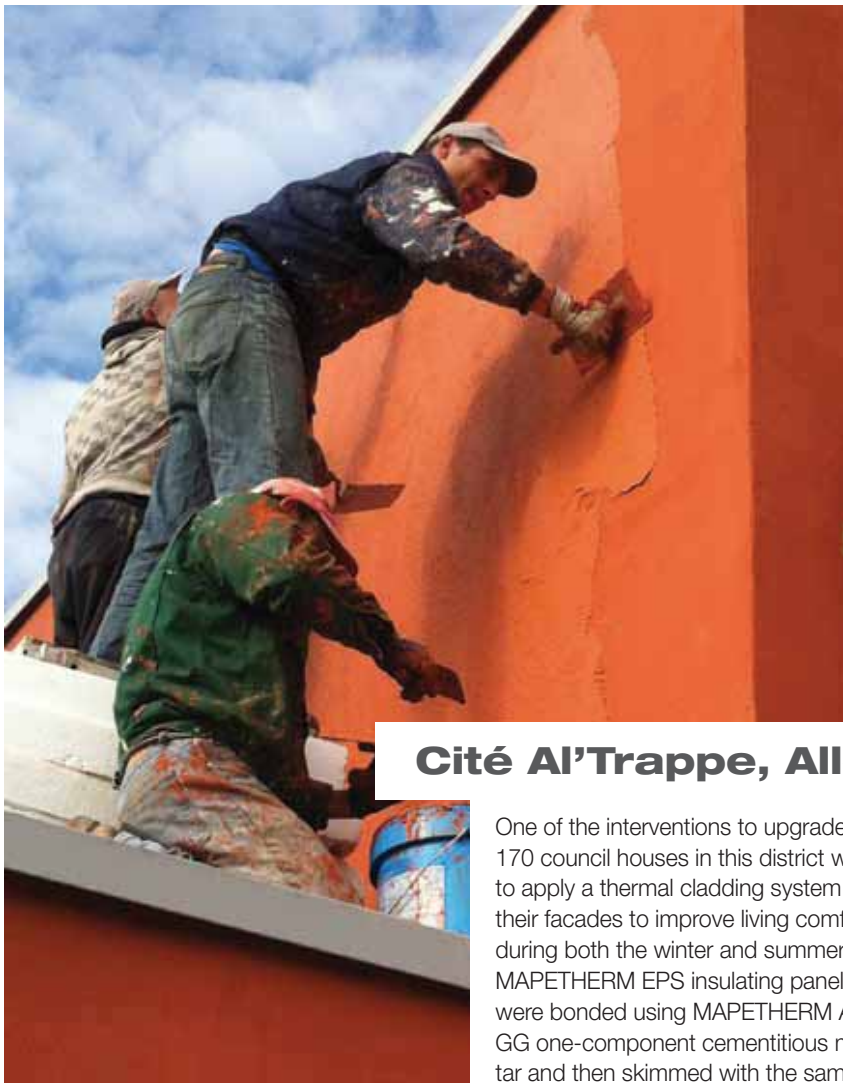
Thermal insulation is a key component in the upgrading of structures and in new builds and is used so that the correct temperature is reached inside constructions. By insulating the walls, that is, by applying insulating material on the vertical surfaces of a building to form a type of “blanket”, all the cold points are eliminated and the capacity of the building to accumulate heat is increased. With this technique the walls warm up, they accumulate heat and then return the heat back into the rooms. Mapei’s MAPE-THERM System is a complete line for internal and external cladding systems, made up of panels in various types of material and thicknesses, cementitious mortar used to bond and skim the panels, reinforcing mesh, accessory items and components. Just a few of the thermal cladding interventions using Mapei products are highlighted on the following pages.



Church of St. Achille, Molfetta, Bari

In order to improve the internal insulation of this building, the client opted for a cladding system on the facades of this recently inaugurated church. Mapei Technical Services recommended starting the job by levelling and skimming the external concrete surfaces: the walls were made plumb by applying a layer of NIVOPLAN and PLANICRETE or by spreading on PLANITOP 200. The next step of the thermal cladding system was to bond insulating panels in place with MAPETHERM AR1 and then skim their surface with MAPETHERM AR1 GG. Once it had cured, the facades were then treated with an undercoat of SILAN-COLOR BASE COAT followed by a coat of SILANCOLOR TONACHINO.





Cité Al'Trappe, Alleur, Belgium

One of the interventions to upgrade the 170 council houses in this district was to apply a thermal cladding system on their facades to improve living comfort during both the winter and summer. MAPETHERM EPS insulating panels were bonded using MAPETHERM AR1 GG one-component cementitious mortar and then skimmed with the same

product. While the skim coat was still wet, MAPETHERM NET alkali-resistant glass fibre mesh was embedded in it. Once the mortar was completely cured, the facades were treated with SILANCOLOR BASE COAT protective undercoat and then a 1.5 mm thick coat of SILANCOLOR TONACHINO coloured finish.



Vital Center, Regau, Austria

The lower part of this building (around 200 m²), which houses both shops and a medical centre, was insulated using the MAPETHERM TILE SYSTEM. The first step was to fasten MAPETHERM EPS polystyrene panels in place using MAPETHERM AR1 GG one-component cementitious mortar and MAPETHERM TILE FIX studs.

The surface was then skimmed after around 24 hours with PLANITOP HDM MAXI and, while the mortar was still wet, MAPEGRID G 120 glass fibre mesh was embedded in it. Once this phase had been completed, the tiles were bonded in place with ULTRALITE S2 adhesive.



Hotel Astera, Varna, Bulgaria

Overlooking the Black Sea, Varna is considered the summer capital of Bulgaria and has a number of newly constructed hotels, such as the Astera. The entire structure was insulated with the MAPE-THERM Thermal insulation System during the construction phase. MAPETHERM EPS polystyrene insulating panels were bonded to the substrates with MAPETHERM AR2 one-component cementitious mortar. The same product was also used to skim the surface of the panels, while MAPETHERM NET glass fibre mesh was embedded in the mortar to reinforce it. The facades were then protected and decorated with SILEXCOLOR TONACHINO and SILEXCOLOR PAINT.



Volta Residence, Liege, Belgium

Former headquarters of the Compagnie Electrique Liégeoise, the building was completely renovated in 2010 and turned into a residence comprising 22 apartments. The first intervention in this project was to protect the reinforcing bars with MAPEFER 1K and rebuild the deteriorated areas of concrete with MAPEGROUT THIXOTROPIC. The second phase was dedicated to the installation of a thermal cladding system: MAPE-

THERM EPS insulating panels were bonded to the facades and then skimmed with MAPETHERM AR1 GG and, while the skim coat was still wet, MAPETHERM NET glass fibre mesh was embedded in it. The SILEXCOLOR system was then applied to finish off the surface.



Harmony born from a **solid bond**,
resistant to the rigours of life



Mapetherm® System

Mapetherm® Tile System

From Mapei research: two systems to guarantee **thermal insulation**, with either **Mapetherm System wall-finishes** or by applying the **Mapetherm Tile System for thin ceramic tiles**.

Wellbeing and energy savings, in compliance with current standards.



/mapeispa

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





Wall Finishes: Colours are in Bloom

Mapei has launched a message with a strong emotive impact with its range of highly technical wall paints

After years of information campaigns targeted at paint specialists to underline the performance features of their water paints, the multinational manufacturer of chemical products for the building industry is now including the general public to get their message across about the intrinsic quality of their products. More emotional, certainly, but still rich in content. An example, and practically a first in the building industry, was the unparalleled success of their TV advertising campaign fronted by the popular television character "Gabibbo" on Canale 5, which for the first time presented hi-tech concepts such as hiding power, dirt pick-up testing and washability (along with its relative "brush-stroke" test) in a user-friendly, do-

mestic setting.

Igniting Passion

Today, Mapei's new four tulips campaign has a more romantic feel, and uses the Dutch flower typical of springtime as a symbol of our wish to brighten up our homes as the seasons change and give a new tone to our surroundings.

We all know that colours represent emotions and Mapei, in line with this philosophy, has launched the slogan "Colours ignite our surroundings with passion" to be featured on various communication formats: brochures, posters, websites and even advertising hoardings (another first in the building industry). The message also involves retailers and is being

transmitted through various initiatives: if you purchase a certain quantity, you will receive free merchandise such as USB memory sticks, tee-shirts or even an iPad mini. The colour chart with the four tulips logo is also new, divided into four lively tones in various shades to make the end user's task of choosing the right colour easier. In this case we have opted for bold colours which, as suggested by market research, are particularly appreciated in times such as these which are rather... dull. The chart contains only a small part of the infinite variety to choose from because, thanks to the ColorMap automatic colouring system available in our sales points, we can mix and match to any sample.



LARGE PHOTO. Even bright colours such as green are easy to cover with Mapei finishes, characterised by their high covering capacity.

ON TOP. Just a wipe with a sponge and stains are gone.

High Performance

But what exactly makes COLORITE MATT, COLORITE PERFORMANCE, DURSILITE and DURSILITE MATT stand out from other products on the market? Here are some of their numerous strong points:

- High cover with excellent covering capacity. In fact, these paints have the capacity to cover dark or bright coloured surfaces and old, dirty stains which are normally difficult to remove
- Low dirt pick up for paints that “repel” dust and dirt and remain clean for their entire life cycle
- Good washability. Thanks to their special formulation which forms a compact, resistant film, dirt does not penetrate and

a simple wipe with a sponge is sufficient to remove dirt and stains

- Very low emission of VOC in compliance with European Directive 2004/42/EC
- High level of whiteness
- Excellent breathability and good water repellence and permeability to water vapour. Properties that make them suitable even in damp rooms, such as bathrooms and kitchens
- Excellent adhesion to all types of substrate
- Good level of opacity

Few Words but Plenty of Facts

Unlike many of our competitors in the water paints sector, who make promises they cannot always keep and, in certain cases,

that are even misleading, Mapei only supplies messages that are clear and unambiguous to guide both the general public and professionals alike.

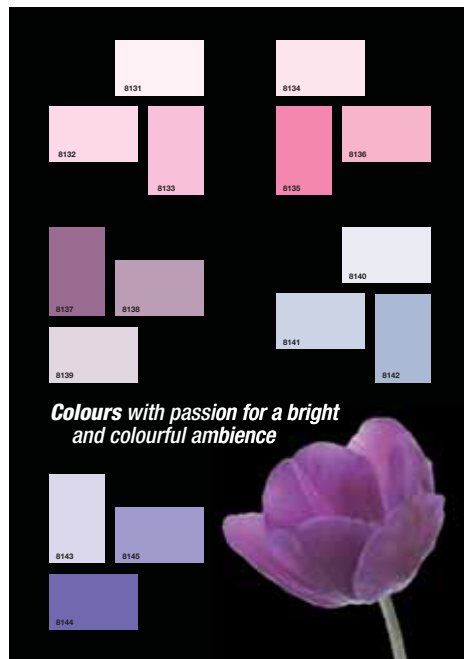
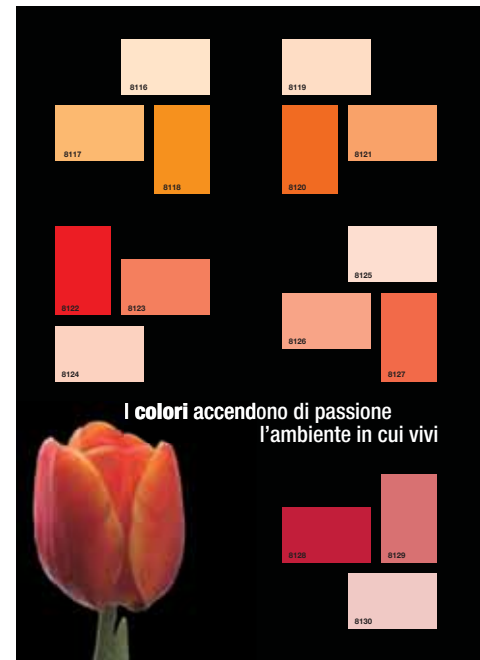
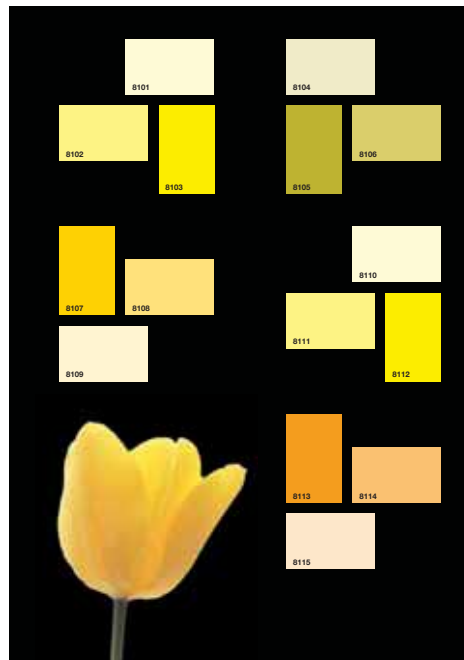
For example, the brochures explain how water paints are quick to apply (these products offer excellent cover, even over bright colours) and collect very little dirt even in the areas most prone, such as above radiators or behind pictures and wardrobes.

Colours: What a System!

The experience gained over the years, with more than 50,000,000 m² of painted external surfaces, our thorough knowledge of the formulation and production of highly-protective, durable raw materials

THE EXPERT'S OPINION

TO THE SIDE. The colour chart for the trendy colours in the brochure with the four tulips logo, symbol of the new Mapei campaign.



and our new, innovative production facility, have led to Mapei widening their range of finishing products to include a new system for decorating internal environments. Unlike certain companies, who offer just a "coloured skin" for walls, Mapei believes that giving a surface a new colour is not an isolated intervention, but rather just part of a complete cycle. This concept of a "system" allows us to optimise all the layers and make them interact correctly with each other: from the structure to the mortars and from skimming compounds to base coats and primers. For example: the wall is damp? No problem, thanks to MAPE-ANTIQUE render. The wall has small cracks or defects? No

problem here either, thanks to the wide range of products developed by Mapei based on the depth of their know-how in research and innovation.

A Poker of Aces

Let's take a closer look at the Mapei range of water paints.

- DURSILITE (the historic Mapei brand) and DURSILITE MATT are superior quality, modified acrylic resin-based paints in water dispersion with an attractive matt, velvety, smooth finish. This is the choice when you are looking for high washability: with just a damp sponge and a gentle cleaning product you can easily remove stains and traces of dirt.

- COLORITE MATT is a highly transparent, synthetic resin-based paint in water dispersion with a smooth, matt finish. The paint to choose when white is the main colour and high breathability is the most important characteristic. It has proven to be particularly suitable when painting ceilings, bathrooms, basements, stair wells, garages and warehouses for the first time.

- COLORITE PERFORMANCE is a super-washable, pure acrylic resin-based paint in water dispersion with a smooth, silky, semi-gloss finish for internal and external surfaces. When applied on external surfaces, it is resistant to smog, salt and carbon dioxide (anti-carbonation action). It is widely used to protect concrete.

“Colours with passion
for a bright and
colourful ambience”



Dursilite / Colorite

High quality, easy to use coatings, to protect and decorate interiors.

The new internal colour collection of Mapei. Bright colours, divided in contemporary schemes. For a bright and colourful ambience. The high quality and durability of Mapei coatings combine vivid colours with an optimum performance.

- **High covering properties.** Paints with the capacity to cover dark or bright coloured paintwork and old, dirty stains which are normally difficult to cover.
- **Low dirt pick up.** Paints that “repel” dirt and remain clean for their entire “life cycle”.
- **Good cleanability.** Thanks to their special formulation forming a compact, resistant film, dirt does not penetrate and a simple wipe with a sponge is sufficient to remove dirt and marks.



/mapeispa

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





Polyglass: Major Projects in South Africa

Mr. Freddie McLennan, technical consultant of Waterproofing Warehouse, explains us the reasons of the success

Approaching a new market is never easy, especially if there are local producers and determined overseas competitors. It was Summer 2009 when Polyglass SpA, a Mapei Group's subsidiary, introduced its specialties to a group of the most prominent South African roofing companies, specialized in the waterproofing. At that time they were looking for new products with higher quality, new technologies, something that could "add value" to their professionalism. Reoxthene Technology® torch-on membranes and Adeso® self-adhesive membranes immediately rose their interest.

The distinctiveness of the Reoxthene line, today protected by international patents, consists of an innovative formulation for the bituminous compound, manufactured without CaCO₃. So that the rolls:

- weigh 30-35% less than traditional ones
- have higher performances to the heat
- enable lower consumption of propane gas
- allow higher daily laying output.

This characteristic is enhanced in the self-adhesive membranes thanks to the releasing mono-silicone coated PE film cut in two parts in its longitudinal direction, SEALLap® the special treatment for improving the selvedge bonding, and FASTLap® the granule-free end-lap.

All above mentioned technical peculiarities made Polyglass products extremely attractive for this group of roofers, they clearly understood that using innovative materials could play a key role in the South African market being recognized as professional roofing waterproofing companies that beside their highly professionalism use the most technological advanced products.

As consequence, they easily agreed to form a new company in order to import and distribute Polyglass products range in South Africa and neighboring countries. So, Waterproofing Warehouse was officially formed in 2010 and with great mutual satisfaction the business picked up soon with great results; nowadays prestigious projects around South Africa have

been waterproofed with Italian materials manufactured in Ponte di Piave, Treviso.

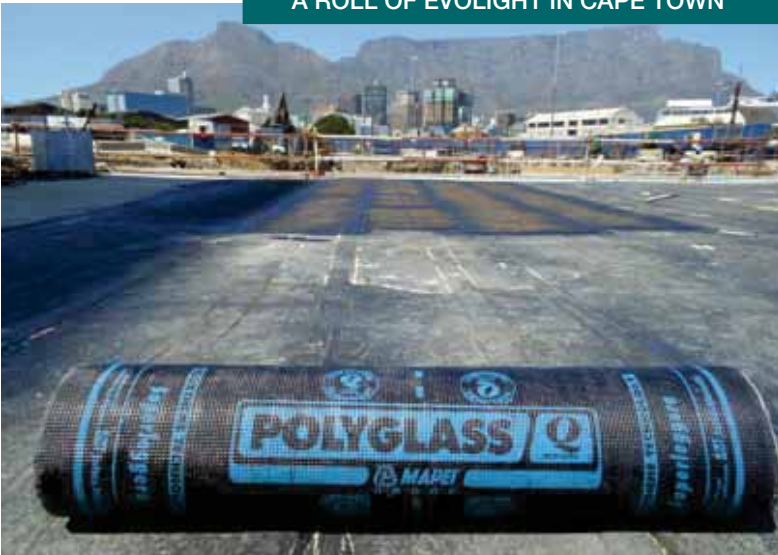
The Reasons of the Success

Mr. Freddie McLennan, who works as Consultant for Waterproofing Warehouse, briefly answers several questions which help us to understand the reasons of the fast-growing success of Polyglass products in the Southern Africa region. Freddie was born in Dublin and played as wing for the Irish Rugby National team from 1977 until 1981; his passion for rugby is still very strong as well as his commitment to solve the waterproofing problems as a specifier. We met Freddie last time in Cape Town.

The Waterproofing Warehouse members are professional roofers with years of experience and deep knowledge in the waterproofing business for the building industry, why have they selected Polyglass?

Polyglass seems to have approached their business in a somewhat different manner that most other waterproofing manufac-

A ROLL OF EVOLIGHT IN CAPE TOWN



BLUE ROUTE SHOPPING CENTER, CAPE TOWN



THESE PICTURES.

A few of the projects in South Africa where Adeso and Evolight membranes have been employed.

Evolight and Adeso Membranes:

- weight of Evolight: 30-35% less than traditional ones
 - higher performances to the heat
 - lower or void (for Adeso) consumption of propane gas
 - higher daily laying output



promoting the products/systems through the local architects and developers. What are the main difficulties to introduce a new brand in a market where the waterproofing torch-on membranes are considered a mature product?

The fact that the products look, and are applied similarly is one reason for specifiers to resist change. Their perception is that all torch and self adhesive systems are the same. It really is a question of explaining in lay mans terms the small but highly significant differences that make Polyglass a far superior product.

Evolight Torch-on Membranes: a New to the South African Market
Why do the architects and developers select Evolight membranes instead of traditional torch-on membranes?

A major factor would be the superior lap sealing ability due to Reoxthene Technology and obviously this result produces a waterproof deck which essentially is safest. Evolight membranes are also compatible with a "green" approach to building, which is now normal practice in the construction sector both during production and during installation. The level of pollutants emitted during the transportation of materials by road is also lower (the product is lighter than traditional membranes so 30% more may be loaded) and

PORTSIDE BUILDING, CAPE TOWN



turers. The philosophy would appear to be to produce systems that waterproofers would wish to apply while simultaneously introducing them into the market place. A refreshing attitude in comparison to the standard sales practice of targeting specifiers and then cajoling contractors by price or otherwise to apply the product. The huge advantage in the ease of application and watertight lap sealing was recognised by the professional waterproofers almost immediately and their influence on the market was responsible for the huge growth experienced over a relatively short period of time.

Waterproofing Warehouse is a young company established several years ago with the goal of developing the business co-operation with Polyglass in the South African market, your job is

there is a reduction in the amount of propane used during application.

Roofing companies usually are very keen in quality and technical performances, Evolight has been very well accepted by the main South African roofers, what is the main reasons of its success?

Waterproofers traditionally were accustomed (and some still are) to applying systems whose manufacturing tech-

DELOITTE HEADQUARTER, PRETORIA



nologies and production plant were developed in the 1970's or even 1980's. Obviously having been made aware of witnessing on site the ease of application and advanced lap sealing technologies in the Polyglass membranes made their switch over almost immediate. Less need for heat also reduced the costs in relation to gas consumption.

What's the workers' main feedback? They are the people that everyday lay down tens of rolls, so their comments are really very important for Polyglass. Scepticism at first, accompanied by initial over heating on the torch applied membranes. However, the learning process was very short especially when they realized that although the membranes required 30% of traditional membrane torch application, the laps themselves the most fundamental part of the system had a far more secure and permanent bond.

Many projects have been already realized with Evolight membranes, which of them would you indicate as the most challenging and prominent? Probably the new Silos Building in Cape Town. It is the first major office building in South Africa aiming for 6 Star Green Rating certificate. The requirement was that not only must the products be waterproof but that they also comply with Green Star requirements in both manufacture, sustainability and reusage. Parking decks, balconies and extensive planted areas all required varying specifications using the Polyglass range of products. Other im-

portant projects are Portside Office Building will be the tallest in Cape Town and Boogertman Offices in Pretoria, where the Adeso self-adhesive mineral surface membrane was used, and it had its first introduction into the market. Standard Bank's new headquarters in Johannesburg was an interesting project as the specifying team had to quickly find an alternative product midway through the contract as the membrane specified did not meet requirements.

The CSIR head office in Pretoria was obviously a feather in our cap as their research department is responsible for testing and passing all materials used in the construction industry. Escom's Megawatt Park mainly because this was one of the largest contracts awarded last year totalling 36.000 m².

Adeso Instead of Traditional Torch-on Membranes

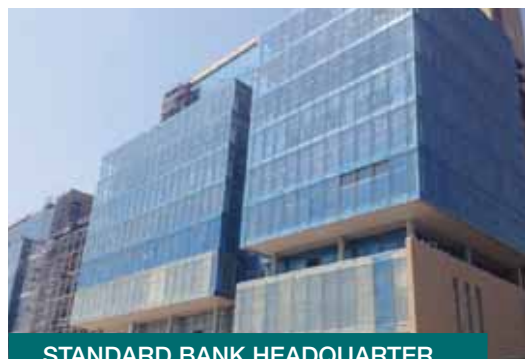
Beside Evolight, Waterproofing Warehouse promotes Adeso, the self-adhesive waterproofing membranes. Some of the roofers, traditionally fan of the torch-on membranes, started to appreciate and use Polyglass self-adhesive technology. How could this happen?

Their experience in applying traditional self-adhesive systems was tainted by the difficult lap edge system and roll out laying technique which resulted in wrinkled membrane at best and unsecure laps at worst. Rolling the membrane out flat and being able to adjust its position has eliminated both alignment and lap problems.

DIMENSION DATA, JOHANNESBURG



STANDARD BANK HEADQUARTER, JOHANNESBURG



The additional adhesive strips at the side lap has also contributed to the security they feel now in using Adeso.

What are the advantages of the self-adhesive technology? And where would you recommend to use it?

I think lap security and speed of application are its main benefit and of course if the client requires a maintenance free roof then the self-adhesive mineral system is the answer.

Polyglass led a training course for Adeso in SA, after that Spider P, Adesoshield and Adesoguard have been used in prominent projects, could you briefly mention the project names and describe the systems?

Boogertman Architects head office, River Walk development and Summer Place contracts all in Pretoria were completed using the encapsulated Adeso system with a base layer of Adesoshield followed by the installation of the EPS insulation board finished with a layer of Spider P overlaid with Spider P mineral giving the client a maintenance free roof.

The ease of application and watertight lap sealing was recognised by the professional waterproofers

Andrea Storani. Polyglass Export Manager

EXTREME SLOPES NO MATCH FOR ADESO®

While imitations slip and slide, ADESO® holds firm, even in the most extreme situations. So choose the original: not only was it the first self-adhesive bitumen membrane, it is also the most reliable, providing the ultimate in waterproofing combined with total stability. It's all down to the dual APP or SBS compound and a highly self-adhesive blend on the underside. And between them lies the reinforcing carrier. Say goodbye to the torch and hello to superior performance and all the advantages this membrane offers!



WWW.POLYGLASS.COM



World Cycling Championships Tuscany 2013

The rainbow jersey is coloured with the blue of Mapei





TO THE LEFT. The race going past Florence Cathedral. The finishing line was in front of Mandela Forum, in the same city.

RIGHT. The statue dedicated to Franco Ballerini.

World Championships Dedicated to Franco Ballerini

The 2013 World Cycling Championships, which were held in Tuscany from 22nd-29th September, will be long remembered as one of the most exciting and successful ever. Pinocchio, the wooden puppet in the famous fairy tale by Carlo Collodi - the event's official mascot - really turned out to be a lucky charm. Just the right choice by the organisers, who recognised Pinocchio as "a symbol of our country, closely tied to his homeland, attentive and sporty, proudly looking out towards the future full of optimism, positive-thinking and contentment". The riders on the Italian national team raced at these World Championships in honour of Franco Ballerini, the team manager who led the professional road race team from 2001 until the day he passed away prematurely in 2010. It was Ballerini who suggested and supported Tuscany's bid to host the 2013 World Championships. Certain key moments during this week of international cycling were specially dedicated to him. Two days before the start of the World Championships on Friday 20th, a statue in his honour was unveiled at the Mandela Forum in Florence. The official unveiling of the statue was attended by local authorities and also Alfredo Martini, the legendary former team manager of the national road race team. Made out of a 75-ton block, the sculpture in honour of Franco Ballerini was cut out of white Carrara marble by the artist Giorgio Butini. Commissioned by the Ballerini family and his brother Mauro in particular, in order to leave a tangible trace of this great cyclist, who - among other things - twice won the legendary Paris-Roubaix cycling "classic" in 1995 and 1998 wearing the Mapei jersey.

The statue was placed on a plinth approximately 2 meters high and set in the small square in front of Mandela Forum in Florence, where the finishing line of the World Championships road race was located. This World Championships once again saw Mapei play a leading role as the UCI Main Event Partner for the third year running. A firmly established and highly successful working relationship between the company and the International Cycling Union, the organisation based in Aigle, Switzerland, responsible for coordinating international cycling competitions. The facts and figures pay testimony to an event that quite rightly takes its place on the podium of great sports events, second only to the Olympics and Football World Cup: there were 7,813 accredited representatives in attendance from 113 different countries.



Mapei's World Championships

The Mapei logo was visible all around the race circuit: for everybody actually attending the races and the millions of people who watched them all over the world, the colour blue really was prevalent at these World Championships. Mapei blue. It was an opportunity to promote the brand globally and to get all its workers and customers, partners and opinion leaders closely involved. During the week's racing over 700 guests got the chance to enjoy the excitement of this event. Mapei Sport was also closely involved in the finishing area, where customers were made welcome in a special



THIS PICTURE. The race route shown in red.



TOP. The podium of the Men's Elite Road Race, won by the Portuguese rider Alberto Rui Faria Da Costa ahead of the Spaniards Joaquin Rodriguez and Alejandro Valverde.
ABOVE. The Dutch rider Marianne Vos, who won the rainbow jersey yet again.

hospitality area. Mapei Sport staff were available in the corporate motorhome to outline all their operations to visitors, partly drawing on their own personal experiences. Total involvement and commitment out in the field, carefully backed by targeted advertising campaigns.

The Race Route

Sunday's race, with the Men's Elite Road Race, was the most important event on the entire schedule. It was featured a tough and highly selective 272.26 kilometre route. From Lucca to Florence, the race went through Montecarlo, Montecatini, Monsummano, Larciano, Lamporecchio, San Baronto, Casalguidi, Poggio a Caiano and Florence along via Pistoiese and into Piazza Duomo followed by a circuit around Fiesole (10 laps). There were two key sections for the 207 racers: the Fiesole climb, 4,370 metres long at an average gradient of 5.2% and the short, sharp hill up via Salviati, 600 metres long with a maximum gradient of 16-18%. Although the climbs were not excessively hard, they really sorted out the riders on the ninth-tenth laps after they had ridden over 200 km (out of a total of 272) and already had so many miles of climbing in their legs.

A Portuguese World Champion for the First Time

The Portuguese rider, Alberto Rui Faria Da Costa, won the most eagerly awaited race of the 2013 World Cycling Championships in Tuscany, the Men's Elite Road Race, on this very tough course: the Portuguese rider, born in 1986 and known as Rui Costa, finished just ahead of the Spanish rider Joaquin Rodriguez. Third place went to another Spaniard, Alejandro Valverde (the bronze medal winner again, just like last year), who beat the Italian rider Vincenzo Nibali in a sprint for the bronze medal. The first breakaway of the day, after the race began in Lucca city centre in the rain, included the Czech rider Barta, the Tun-

sian Chtiouoi, the Austrian Brandle, the Polish rider Huzarski and the Venezuelan Godoy (the youngest of the 208 cyclists in the race). The five of them had a maximum lead of 8'10" just before entering the loop around Florence after 106 km of racing: the last man to survive in the breakaway was Huzarski, who was eventually caught after a breakaway of about 220 km. Meanwhile, the Italian national cycling team began to back the pace right from the first few laps of the circuit to wean down at the number of riders led the main pack right from the first few laps around the circuit, as riders were gradually dropped from the main bunch. On the seventh lap, after it finally stopped raining, Giovanni Visconti made his move and caught up with Huzarski. On the second to last time through the centre of Fiesole, Visconti and Huzarski were swallowed up by the pack as all the riders were back together (a total of about forty) and remained so until the beginning of the last lap. Nibali then attacked on the climb up to Fiesole, staying in the lead with just Joaquin Rodriguez before being caught by Valverde and Rui Costa at the bottom of the descent. These four riders then battled it out for victory: Rodriguez attacked, Valverde marked Nibali and, as the final kilometre approached, Rui Costa made his move and caught up with Rodriguez with just 500 metres left and then outsprinted him to win the rainbow jersey for Portugal for the first time in the history of the World Cycling Championships. The new president of the UCI, Brian Cookson, and the Minister of Sport and Regional Affairs, Graziano Delrio, awarded the medals to be three riders on the podium.

Italy's Only Medal Won by Rossella Ratto

Italy's honour was saved once again by the girls in the Women's Elite Road Race, which was held on Saturday: Rossella Ratto won Italy's only medal at this year's World Champion-



THIS PHOTO. The Mapei and Mapei Sport area.



**THE MEDALS TABLE FOR TUSCANY 2013
GOLD, SILVER, BRONZE (TOTAL)**

Netherlands	3	1	0	(4)	Spain	0	1	1	(2)
Belgium	2	0	0	(2)	Russia	0	1	0	(1)
Australia	1	2	2	(5)	New Zealand	0	1	0	(1)
Denmark	1	2	1	(4)	South Africa	0	1	0	(1)
France	1	1	0	(2)	Sweden	0	1	0	(1)
United States	1	0	2	(3)	Switzerland	0	0	1	(1)
Germany	1	0	0	(1)	Albania	0	0	1	(1)
Portugal	1	0	0	(1)	Italy	0	0	1	(1)
Slovenia	1	0	0	(1)	Norway	0	0	1	(1)
Great Britain	0	1	1	(2)	Ukraine	0	0	1	(1)

ships. Needless to say, the winner was Marianne Vos, who was once again the Queen on the World Championships' throne: the Dutch athlete won the rainbow jersey again in Florence just 12 months after her great victory in Valkenberg. She crossed the finish line all alone, thanks to a decisive break on the "wall" of via Salviati. Emma Johansson came second and the Italian rider Rossella Ratto finished third after trying in vain to catch the Dutch champion over the last few kilometres. The first part of the race was relatively uneventful with the pack keeping together from the start in Montecatini Terme to the circuit around Florence. On the third climb up Fiesole the Italian riders Francesca Cauz and Susanna Zorzi accelerated and caused a split in the peloton, but on the following short climb up via Salviati it was the Dutch rider Brand and Ratto herself who took the lead, but without any luck. On the final climb to Fiesole, five riders reached the top together (Vos, Van Der Breggen, Johansson, Ratto and Stevens) after a number of accelerations. They were then joined by Villumsen, Longo Borghini and Guderzo. The tough climb up via Salviati was the ideal place for Marianne Vos to make the decisive attack and break away from everybody else. Ratto and Johansson were just five seconds behind at the top of the hill, but they could not catch the Dutch rider, who went on to win her third rainbow jersey for the road race, her eleventh in total also counting her victories at the cyclo-cross and track world championships, as well as two Olympics. In the final sprint between the chasing riders, Johansson managed to beat Ratto: these were the first medals at the championships for both Sweden and Italy. The medals were awarded on the winners' podium by David Lappartient, Vice President of the UCI, and the Right Honorable Dario Nardella, Vice President of the Official Committee for the Tuscany 2013 World Cycling Championships.

Next World Championships to be Held in Spain

Mapei was also deeply involved in these World Championships from an emotional viewpoint, as the event paid tribute to the company's great friend, Franco Ballerini, the former manager of the Italian cycling team who died during a rally crash in 2010. The world championships was raced along his "roads" in homage to a wonderful man like Ballerini, who was actually the first to ask for the race to be held in Tuscany.

A very proud Lord Mayor of Florence, Matteo Renzi, stated that «the people of Florence won these World Championships because they showed that, if they want to, they can really bring the best out of the city: I am proud to be the mayor of a city that is not scared of the future». The 2014 World Road Race Championships will be held in Ponferrada in Spain, nine years after they were hosted in Madrid in 2005. Mapei will once again work alongside the UCI as the Main Event Partner, in order to strengthen a bond that is becoming tighter as the years go by.



ABOVE. Photos of the World Gran Fondo dedicated to Franco Ballerini, which was held on Saturday 21st September.
TOP RIGHT. Andrea Tafi wearing the race jersey.



BELOW. Even Giorgio Squinzi rode on the racetrack.



900 CYCLISTS AT THE WORLD GRAN FONDO DEDICATED TO FRANCO BALLERINI

The World Grand Fondo (Sportive) named after Franco Ballerini was held on the morning of Saturday, 21st September, the first official event of the 2013 World Cycling Championships in Tuscany. The World Grand Fondo took place in Lucca with 900 cyclists at the starting line: 472 competitive cyclists and over 400 amateur cyclists taking part for fun (including about one hundred Mapei guests), all driven by their love of cycling and desire to be part of the 2013 Tuscany World Cycling Championships. The official start time was 10 a.m. in viale delle Mura Urbane (near the Baluardo San Paolino) and the starter was the city mayor of Lucca, Alessandro Tambellini. The cyclists taking part could choose between two different routes starting and finishing in the city of Lucca, a “long” race with plenty of technical parts and climbs and a “medium-length” route allowing those taking part to really enjoy the hillside around Lucca. Two different ways of experiencing the atmosphere of the World Championships. A long procession of bicycles, a celebration of people and colours and also an important event from a social viewpoint, made even more spectacular by the presence of variously abled amateur cyclists (visually challenged or with Down’s syndrome) equally passionate about sport and life. Just before the official start the Folgore Regiment of parachutists put on a spectacular show, Mameli’s national anthem was played and then there was a minute’s silence in memory of Franco Ballerini. The most important tribute to “Ballero” took place on Sunday 29th September, when the Professional Road Race passed through Casalguidi, where Franco Ballerini is now buried. A fitting tribute to a great sportsman and a great friend, who will always be in the hearts of the Squinzi family and the whole of Mapei.

Bormio - Stelvio Pass



Mapei Day 2013

Sport climbs to the top in the name of friendship

Every now and then throughout the year we talk about it with our colleagues and fellow workers. The question we ask is the following: «do we need to change anything about Mapei Day to attract an even greater number of people to what is already a successful event»?

The 2013 edition has once again confirmed that the answer is that everything should remain as it is. The explanation is there for all to see: the various aspects of an event held each year over the second weekend in July in the town Bormio are such a faithful reflection of Mapei's winning spirit that changing anything would, in a certain sense, mean betraying ourselves in order to try and be something that we are not. The various ingredients that have gone into organising Mapei Day for nine years now are, in fact, so simple that they cannot be copied: a passion for sport and desire to take part and share with our friends and acquaintances all the effort that goes into

tackling such a long climb, drawing on the kind of team spirit that genuinely cancels out any differences and distinctions between the people involved and the company itself. All this in a very festive and friendly atmosphere in an Alpine setting that is almost incomparable anywhere else in the world.

The event was a success yet again - with Sunday being the key day when the cycling, roller skiing and half marathon races are held - blessed by two wonderful days of sunshine attracting an increasingly international array of sportsmen and women, whose enthusiasm spread right across the entire County of Bormio. Featuring six different races and events held over one extraordinary weekend of sport, Mapei Day 2013 was coloured by Mapei's own corporate blue and the green-and-black of Sassuolo F.C., the football team sponsored by Mapei that was officially presented to its fans on the pitch in Bormio on



Saturday afternoon, playing its first match as a first division team (even though it was only a friendly). As usual the event was jointly organised by Mapei and Unione Sportiva Bormiese under the patronage of Bormio City Council, the Province of Sondrio, the Lombardy Region and Valtellina and in partnership with the Mapei Sport Centre. Ever since the very first edition, it has also had the backing of the Banca Popolare Sondrio and Pirovano, not to mention the regular technical sponsors: Mic Shimano, Colnago, Santini, Bormio Terme, Enervit and Giussani.

Once again at this year's event, as well as the pleasure of taking on this sporting challenge, everybody involved got the chance to lend their support to children in need: last year a new fundraising system was put in place with the aid of 'Rete del dono', the Italian website for personal fundraising. And just like every other year, the aim

was to support the same four associations - Archè, Una, Exodus, Piccola Opera di Traona - through a webpage devoted to the Mapei 2013 project. Helping little ones is a big thing and everybody can contribute in a quick and easy way by either donating directly or setting up your own personal fundraising webpage. The jersey for the 2013 edition, which invaded the town of Bormio and the 21.5 km climb up the Stelvio Pass, was dedicated to the product of the year, MAPELASTIC, a cement-based waterproofing agent that is quite unrivalled and has been used for over 20 years all round the world. All the photos and results of the events are available from the website www.mapeiday.com.

ABOVE. Photos from Mapei Day 2013 that, as usual, was held in Bormio on 13th-14th July.



SASSUOLO F.C., OFF TO A FLYING START

SATURDAY 13TH JULY - 4.00 P.M.

A success story based on friendship, solidarity and love of sport is the best way to sum up Mapei Day. An event which also involved Sassuolo F.C. this year, the football team sponsored by Mapei that has just been promoted to the Italian first division and was here on show to the general public as a top-flight team for the very first time at this special event. And it did so in two different ways: playing its first friendly match of the season on Saturday afternoon against a team representing Valtellina made up of players from local leagues and championships and then by attending a party in the evening specially organised for Mapei guests at the Pentagono. Playing in front of the club owner, Giorgio Squinzi, Sassuolo got off to a winning start with an 8-0 victory. It was obvious that the Sassuolo players had not shaken off two extremely heavy training loads undertaken during this initial training period, but the difference in standard out on the field was such that Di Francesco's team put on a great display despite all the tiredness. The first half finished 5-0 with Zaza and Berardi scoring two goals each, plus another goal by one of the team's latest buys Kurtic, who used to play for Palermo. Everybody was given the chance to play in the second half and there were more goals by Pavoletti just after the restart and then by Antei and Masucci. This was certainly a "July football match", as the team manager Di Francesco pointed out. Throughout the entire 90 minutes he asked his players to pass the ball around and pay very careful attention to detail, always trying to make forward passes instead of playing sideways. These are the distinctive traits of the black-and-greens' manager, who will be using the same basic tactical scheme as last season: extremely intense play with plenty of forward passing will be the standout features of Sassuolo's first appearance in the Italian top flight. The important thing is for the squad to be ready when the championship begins, since this newly promoted team will certainly have to try and win as many points as possible straightaway, in order to keep up the enthusiasm surrounding the club at the moment.

ABOVE. Sassuolo F.C. played its first friendly of the season against a local team representing Valtellina. Giorgio Squinzi and lots of Mapei guests were among those watching.



SKIING

SATURDAY 13TH JULY - 9.00 A.M.

Unlike last year, when the ski race on the perennial snow of the Stelvio glacier could not take place because of the terrible weather conditions, this year Mapei guests got their own back with interest. On a bright and sunny day with excellent conditions out on the slope and the perfect temperature for skiing and having fun, about thirty people took part in the traditional ski race in a healthy climate of friendly competitiveness. The giant slalom, designed and organised as usual by the Università dello Sci Pirovano, Pierre Gelpi turned out to be the winner with Nicoletta Begni winning the women's race. Franco Cappellini was the best performer in the snowboard race, an event that has only been part of Mapei Day since 2011.



ABOVE. Nicoletta Begni, who won the ski race held on the glacier of Stelvio Pass, organised by the Università dello sci Pirovano.



GOLF TOURNAMENT

SATURDAY 13TH JULY - 9.00 A.M.

As usual, as well as Sunday's races, the 2013 Mapei Golf Tournament took place on Saturday afternoon as part of Mapei Day 2013. About 100 new golfers took up the challenge on the greens of the Bormio Golf Club, taking their first shots under the supervision and following the advice of the Club's golf instructors. A golf experience that began at nine in the morning and finished at five in the afternoon on a bright and sunny day that made the golf course, widely acknowledged as one of the best mountain courses in Italy, shine like an emerald. The best net round was recorded by the pair of Flavio Dei Cas and Marco Cantoni, while the best scratch round was shot by the pair Lorenzo Tomasi and Carlo Moro. The best net score in the "Mapei friends" event was by Lidia Frigo and Sergio Carli, while the winners of the scratch event was won by Deragh Connolly and Domenico Bellini.



LEFT. Bormio Golf Club hosted the 2013 Mapei Golf Trophy.



The evening provided the chance to support four associations - Archè, Una, Exodus and Piccola Opera di Traona - through the 'Rete del Dono', an Italian fundraising website.



ABOVE. The entire Sassuolo football team attended the celebrations held at the Pentagono on Saturday 13th in the company of Giorgio Squinzi and Adriana Spazzoli.
BELOW. The winning cyclists on stage.



THE PARTY AT THE PENTAGONO SATURDAY 13TH JULY - 7.00 P.M.

Cycling, football, a bit of entertainment and, above all, a real desire to have fun together. Mapei's gathered together as one big family in the spacious multipurpose premises of the Pentagono on the evening before the cycling race up the Stelvio in the company of Mapei's boss, Giorgio Squinzi. Once again the host for the evening was Adriana Spazzoli with the help of the irrepressible Alessandro Brambilla. The first to take centre stage were the athletes and former athletes from the world of cycling, who are all great friends of Mapei, followed by the entire Sassuolo football team together with its chairman, Carlo Rossi, the team manager, Eusebio Di Francesco, and all the managerial staff. Alongside champions of the calibre of Gianni Bugno, Andrea Tafi, Stefano Zanini and Ivan Basso, the reigning Italian road race cycling champion, Ivan Santaromita, also took the stage and was kind enough to donate his Italian champion's cycling jersey (that he had won just a few weeks earlier) to Giorgio Squinzi. Claudio Pecci, the head of the Mapei Sports Research Centre, outlined

the guidelines inspiring this internationally renowned cutting-edge medical-scientific organization. A year of successes for the Centre with three different football teams drawing on its resources winning their own respective football leagues: not just Sassuolo but also Juventus and the French champions Monaco F.C. The Centre will continue its fine work and also start assisting the Lanciano team from the Abruzzo region that plays in the Italian second division. After awarding prizes of Shimano and Colnago bikes, a special prize was given to Andrea Melotti, who collected the highest number of donations as part of the 'Rete del dono' personal fundraising project. It was then the turn of Sassuolo football team and club, introduced by Marco Nosotti, a commentator for Sky Sport, who asked the players, management, technicians and, of course, Mr Squinzi lots of questions. The boss began by saying, «I am extremely fond of the Sassuolo team. In eight years we have been promoted three times and we would have got to the first division even earlier if we had not been the



ABOVE. Adriana Spazzoli and Giorgio Squinzi with Piero Melazzini, President of the Banca Popolare di Sondrio.

victim of some bad refereeing decisions that penalised us extremely harshly...Sassuolo represents the smallest town to play in the Italian first division since the war, before us there was only Casale». Mr. Squinzi then told everybody about his recollections of the match against Livorno: «I could not bear to watch it in TV, so I changed channel to the Tour of Italy and just checked the score now and again. Then, at the end of the first half, I went to the hairdresser's and only got home a few minutes before the end of the match. I switched on the TV and Missiroli scored straight away. It was the crowning moment of an incredible season!» Mr. Squinzi then set the season's target: «our aim is to stay up, perhaps with the odd cherry on the cake, like beating Inter». Mr. Di Francesco confirmed this target and then added: «a big thanks to Mapei for helping us with everything in every imaginable way, without forgetting the players' great efforts. We will carry on playing with a 4-3-3 formation: football is supposed to be entertaining and we want to entertain people». The cup for winning last year's second division championship was brought out on stage for the grand finale together with a cake, needless to say in the club colours of green and black.

ROLLER SKIING

SUNDAY 14TH JULY - 8.40 A.M.

The first athletes to set off at 8.40 a.m. were the roller-skiers. The three top-ranked athletes in the roller skiing world cup all took part. Simone Pardei won Mapei Day for the fourth year running, leading from the very start. The athlete from Como representing the Centro Sportivo Esercito di Courmayeur was followed home by an in-form Francesco Rossi racing for the Polisportiva Valmalenco. Third place went to Sergio Bonaldi (CSE), 2.20 behind the winner. The top three in the women's event were all foreigners with the Russian athlete Natalya Zernova winning over 10 minutes ahead of the Swiss roller-skier Natascia Leonardi Cortesi and Urszula Letocha from Poland.



HALF MARATHON

SUNDAY 14TH JULY - 8.50 A.M.

The second group of athletes to set off from Bormio town centre were the half-marathon runners in the Fidal (Italian Athletics Federation) competitive race, followed by the fun-runners. Over 300 amateur athletes took part and almost 500 fun-runners; lots of runners preferred not to have their finishing time and position recorded and a further 200 walked up the great mountain on Mapei Day.

Massimiliano Zanaboni from Sondalo in Valtellina representing Valli Bergamasche won in a time of 1h 40' 07", ahead of Daniele Belluschi (Daini Carate), who finished the race in 1h 42' 01". The women's race was won by Ivana Iozzia (Corradini Rubiera) in a time of 1h 51' 28", ahead of Monica Carlin (GS Valsugana), who recorded a time of 2h 02' 58". Ana Nanu (GS Gabbi) came home third in 2h 05' 46".





RE STELVIO

SUNDAY 14TH JULY - 9.15 A.M.

Damiano Lenzi from Ossola won the 29th edition the 'Re Stelvio' cycling race that marks the high point of Mapei Day. Over 3.000 cyclists entered the race, now a classic, some aiming to complete the climb in the best time possible and others just aiming to reach the summit. Lenzi, a member of the Italian ski-mountaineering team, who won the Mezzalama Trophy just two months ago, the most important ski-mountaineering race of all, won on a bike this time. This athlete from Ceppo Morelli in Valle Anzasca trains on a bike in the summer months. Lenzi, who missed out on the podium by just 16 seconds in the 2012 race, broke away on his own wearing the colours of the Rampikossola team from Ossola, racing up the hairpins and switchbacks leading from Bormio up to the top of Stelvio Pass. Lenzi crossed the finish line with his arms raised in the air in a time of 1h 4'57". The battle for first place involved another ski-mountaineer, with Lenzi coming home about thirty seconds ahead of a fellow

member of the Italian national team and rising star of Italian ski-mountaineering, Michele Boscacci (Cicli Franzi). The Italian uphill cycling time trial champion Mauro Galbignani (Aurora 98) came third. The women's race was won yet again by Marina Ilmer (Gobbi) in a time of 1h 18'48"94. Second place went to Valentina Mabritto (Caam Corse) in 1h 22'38"91 and the third step on the podium was taken by Claudia Wegmann (S. Genesien) in a time of 1h 23'12"78.

The Mapei - Memorial Aldo Sassi Fun Race

Over 3.000 cyclists officially took part, but almost 400 others preferred not to have their time recorded using the special chip, setting off early on their "climb" in order to reach the summit. About one thousand others took part without an official number, either on foot or mountain bike, providing a backdrop for the long train of athletes and walkers covering the 40 switchbacks of the over



RIGHT.
Giorgio Squinzi
and Andrea Tafi
reaching the finish
line at the top of
Stelvio Pass.

© Lorenzo Rinaldi



200-year-old road leading from Bormio to Stelvio pass (1,550 metres height gain, 21,097 metres in length). The race organisers numbered and marked all forty switchbacks that were dedicated on this occasion to either a Mapei team, champion or memorable victory. Of course there was also a giant photograph of Aldo Sassi in the square where the race started, the never-to-be-forgotten professor and joint-founder of the Mapei Sports Center, who was an enthusiastic organiser of Mapei Day. Bormio was wide awake and buzzing with life from the early hours of dawn on Sunday morning, a blaze of different-coloured bikes with the sky-blue of the official Mapei race jerseys dominating the scene. An army of sports people on the move ready to tackle the legendary Stelvio climb, so that they could proudly say "I did it... I was there".

The people taking part enthused over the event and the media were totally focused on the boss of Mapei and Sassuolo F.C., Giorgio Squinzi, who is now also

the chairman of the Italian Industrialists Association. Accompanied by his trusted friends and athletes, Bugno, Basso, Tafi, Noé, Nardello, Zanini, along with the Italian Road race Champion Ivan Santaromita, the Chairman of Confindustria answered the journalists' questions when he reached the top of Stelvio Pass, who all wanted to know if it was harder to cycle up the hairpin bends and switchbacks of the Pass or for Italy to emerge from the current recession. He did not avoid the question: «we are going through a tricky period, we are climbing our own long Stelvio Pass, but in the end, if all the best people in the country come together, we will reach the summit and overcome this crisis. We can do it. The important thing - so Mapei's owner pointed out - is that, like cyclists, we never stop peddling». Returning to the sports event, the fun race was won by Cristiano Lainati in a time of 1h 21'32" and the race on vintage bikes - four competitors in total! - saw Mauro Osmetti riding for the local team US Bormiese cross the line first.

PRIZE-GIVING CEREMONY

SUNDAY 30TH JULY - 4.00 P.M.

All the winners and protagonists of the weekend's intense sporting events met together as usual in famous old Piazza del Kuerc in Bormio, where the town's most important events are held. Everybody, including the veterans, realised they had taken part in an event that would always be engraved in their memories. The multi-Olympic champion, Antonio Rossi, the Commissioner for Sport and Young People's Politics for the Lombardy Region, had plenty of nice things to say about Mapei, the Banca Popolare and the Unione Sportiva Bormiese. A big thank you to the over 300 volunteers, who took care of a wide variety of different tasks before, during and after the event, came from the President of US Bormiese, Mario Zangrando: «it is only thanks to the efforts of these people and friends like Giorgio Squinzi that our club manages to organise events like this».

LEFT. The winners in the Fidal half-marathon races and winners in the various categories of the Re Stelvio race.



Regulation (EC) No. 1272/2008 - CLP

From the 1st of June 2015, the criteria for labels and symbols used to identify hazardous chemical products will change definitively. How to proceed

CLP (Classification, Labelling and Packaging) is laid down by European Regulation (EC) No. 1272/2008 and concerns the requirements for the classification, labelling and packaging of substances and mixtures (blends of more than one substance). The aim of this regulation is to guarantee that the inherent risks of chemical products are clearly identified and communicated to workers and consumers within the European Union by means of a unified classification and labelling system. For mixtures, the 1st of June 2015 is the deadline for the implementation of the new criteria and hazard symbols according to the aforementioned CLP. Mapei, which has always been committed to improving and promptly updating information regarding the correct and safe use of its products, has already started to apply the CLP in the firm belief that new, more detailed information is of benefit to clients and users in terms of safety in the workplace and safeguarding the environment. The aim of this article is to highlight the changes in the labelling for cementitious products by which, according to the new criteria laid down by the regulation, the hazard symbol changes while the "risk" statements (or "hazard" statements as they are known in the CLP) used on the labelling remain basically the same. The pictograms to the right show the changes in labelling for cement between the "old" and "new" norm.

Cementitious Products

We would like to underline that the properties and hazard characteristics of "cementitious products" will not change: the only thing that will change is the hazard symbol on their labels, in compliance with the new CLP guidelines adopted. We would also like to remind you that, depending on the percentage of cement contained in a product, the hazard label could change slightly: this means you may find that the packaging for two cementitious products has different pictograms depending on their cement content; the "corrosive" pictogram on products with a higher cement content or just an "exclamation mark" to indicate an irritant on a product with a lower amount of cement.

One Step Ahead on 2015

We would like to remind you that labelling according to CLP has already been mandatory for single substances since 1/12/2010, but is still voluntary for mixtures until 1/6/2015. Suppliers of chemical products, including Mapei, are obliged to label the packaging of substances and mixtures before they are put on the market when:

- a substance is classified as hazardous
- a mixture (more than ninety percent of the products sold by Mapei are in this category) contains more than a certain limit of one or more substances classified as hazardous.

CLP and GHS

CLP Regulation is the European adaptation of GHS (Global Harmonization System of Classification and Labelling of Chemicals) by United Nations (ONU). The purpose of GHS is to harmonise the classification and labelling of chemical products all over the world in order to overcome communication problems between different geographical areas; currently in fact, the criteria and labelling for the same substance may vary between, for example, the USA, Europe or China.

Roberto Pirotta. Mapei Corporate Product Safety Manager

✓ LABELLING FOR CEMENTITIOUS PRODUCTS

FROM THIS
Old (Directive 1999/45/EC)



- ▶ **R43:** may cause sensitisation by skin contact
- ▶ **R41:** risk of serious damage to eyes
- ▶ **R 37/38:** irritating to respiratory system and skin

TO THIS



New (CLP Regulation EC 1272/2008)

Hazard

- ▶ **H315:** causes skin irritation
- ▶ **H317:** may cause an allergic skin reaction
- ▶ **H318:** causes serious eye damage
- ▶ **H335:** may cause respiratory irritation

✓ HAZARD STATEMENTS PRECAUTIONARY STATEMENTS

Hazard statements

- letter H + three figure numerical code

Precautionary statements

- letter P + three figure numerical code
- four types (prevention, reaction, storage and disposal)

Supplementary statements for EU and non GHS criteria

- EU + three figure numerical code (0 + the old R statement number)

✓ EXAMPLES OF NEW PICTOGRAMS



INFLAMMABLE



CORROSIVE



DANGEROUS FOR
THE ENVIRONMENT



LOWER RISK TO
HUMAN HEALTH



SERIOUS RISK TO
HUMAN HEALTH

✓ HOW PACKAGING WILL CHANGE

FROM THIS



TO THIS



The safest grout.
Mould proof

Ultracolor Plus

Cementitious grout, with a perfect uniform colour.

- For internal and external use
- Anti-efflorescence
- Water-repellent with DropEffect®
- Anti-mould with BioBlock® technology
- Available in 26 colours
- Very low emission level of volatile organic compounds (VOC)
- Classified CG2WA according to EN 13888



WITH NO EFFLORESCENCES



MOULD-RESISTANT



ANTIBACTERIAL



WIDE RANGE OF COLOURS

Product info



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



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