INTERNATIONAL

Realtà Mapei






OPEN DAYS AT MAPEI

FABBRICHE APERTE







Year XII - No. 36 - September 2011

SAVE THE DATES!

This autumn the trade fairs offer will be very rich and some exhibitions will be held at the same time in different places.
We recommend you to carefully plan your visit at our stands:

Cersaie

20-24 September, 2011

Bologna

External area 45
booths 12 and 18

Marmomacc

21-24 September, 2011

Verona

Hall 7, booth E2

Saie

5-8 October, 2011

Bologna

External area 45
booth A64
booth A16

Made Expo

5-8 October, 2011

Milan

Hall 4, A25 - C30
Hall 3, H01 - L02
Mapei showroom

Cibus Tec

18-21 October

Parma

Hall 6
booth B6

Come and see our latest and highly innovative products and systems!

Summary

IN THE SPOTLIGHT
MAPELASTIC page 6, **PRIMER G** and **ULTRAPLAN ECO** page 15, **MAPEGUM WPS** page 21, **GRANIRAPID** page 39, **ADESILEX P24 PLUS** and **KERALASTIC** page 43, **MAPESILENT SYSTEM** page 61, **ULTRABOND ECO FIX** and **MAPECONTACT** page 70.

2011 marks the 150th anniversary of the unification of Italy, and the country organized many celebrating events. Mapei, whose headquarters are based in this country, warmly congratulates Italian citizens living both in Italy and abroa.d.

COVER STORY:
Last May, the Mapei Group took part in the "Fabbriche Aperte" (Open Days) initiative by organizing five open days at its production facilities in Italy. (pag. I-XXXII)

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

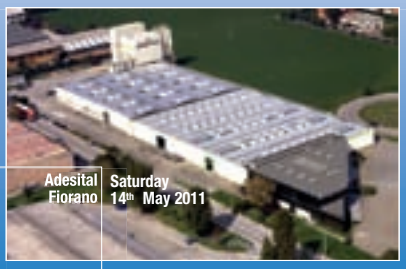
2011 is the International Year of Chemistry

To develop “eco” sustainable products, you cannot wash them green…

You have to invest in research and have your products certified by internationally recognized institutions and being able to contribute to eco-sustainable projects.
Mapei’s products have been awarded international certifications all over the world.

To demonstrate to the public Mapei’s commitment to research and development of eco-sustainable products respecting the environment and human health, the Mapei Group decided to take part in the “Fabbriche Aperte” (Open Days) initiative organized to celebrate the International Year of Chemistry. This was also an opportunity to show the Group’s relevant investments in the field of energy savings and renewable energies, such as the installation of two new plants to produce electrical energy from **photovoltaic solar panels** installed in the Mapei manufacturing facilities at Robbiano di Mediglia (near Milan, Northern Italy) and Latina (Central Italy) and the **cogeneration plants** within the Vinavil and Polyglass industrial sites, located in Villadossola and Ponte di Piave (Northern Italy) respectively.

Polyglass is committed to the research of products which improve energy efficiency and have a lower impact on the environment and uses recyclable materials to produce waterproofing membranes. Adesital’s plant uses waste materials as a resource, with 80% of waste powder products re-worked and put back into the production process.



The Mapei Group took part in this special edition by opening the doors of five of its manufacturing units to a public made up of over 6,000 employees and their families, clients, suppliers and the local residents and authorities.

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MAPEI®
ADESIVI · SIGILLANTI · PRODOTTI CHIMICI PER L’EDILIZIA

The leading players of the future have chosen innovation

The European **chemical industry** is growing at a rate of 4.5% a year, while exports in Italy over the first few months of 2011 have increased by 27%: the highest of all the manufacturing industries in the country. The performance of chemical exports - according to the latest financial figures provided by Federchimica (the Italian Federation of the chemical industry) - seems to be positive both in absolute terms (having exceeded the highest figures for 2007) and also in comparison with the average figures for other sectors of Italian industry. The results are also comforting in relation to the rest of Europe, since Italy is perfectly in line with the overall average (excluding Germany).

According to these figures, considerable growth in emerging countries and a notable recovery of the levels in European chemicals have resulted in worldwide production of chemicals in the first part of 2011 exceeding the pre-economic crisis level by 9% (2007). On average European chemical industry is now once again very close to, but still just below, the pre-economic turndown levels and could grow on average in 2011 by approximately 4.5% compared to 2010.

This is a good sign because the **chemical industry usually leads the way in terms of the cycles in all the other sectors.** On a European level the results exceed the trend in manufacturing as a whole, because we are one step ahead of the rest when it comes to supplying cutting-edge solutions for manufacturing objects forming part of our everyday lives.

It also confirms the concrete nature of the conceptual assumptions resulting in the UNO proclaiming 2011 as the International Year of Chemistry. This is an exceptional opportunity to inform people about the fundamental importance of chemicals in understanding the world and universe and how molecular transformations are essential for producing food, medicine, fuel and countless other products. But that is not all. The year 2011, by celebrating the achievements of chemicals and their contribution to mankind's well-being, is one of the events that the United Nations have created as part of a decade devoted to educating people about sustainable growth (2005-2014): it is a chance for the entire world to celebrate the art and science of chemicals and their fundamental contribution to increasing knowledge, protecting the environment and boosting the economy.

If we take a look at all the studies and statistics carried out over the last 20 years into the issue of eco-sustainability, we will soon realise that the **chemical industry has improved in every respect**. Moreover, the realm of sustainable growth is growing at a faster rate than other traditional sectors.

We at Mapei have so much faith in this that we devote three quarters of our resources to research - amounting overall to 5% of our turnover, corresponding to a figure of about 90-100 million Euros this year - and to creating people/environment-friendly products and systems: these are accurate figures that have been checked very carefully.

The **will and ability to innovate** in the realm of **sustainable growth** is a crucial factor in allowing us to grow and create jobs. **Mapei never made any of its workers even temporarily redundant**, despite the economic turndown. Not only that, the Company has on average created 70-100 jobs each year in Italy alone. And we are talking about jobs predominantly for graduates and well-qualified people rather than ordinary manual workers.

This is because **it is vitally important for us to invest heavily in research and development if we want to really adopt a green approach,** bearing carefully in mind that all those solutions helping produce better products that are less harmful to people and the environment inevitably come out of the laboratory. This is something we have always done with great determination and well ahead of the parameters set by the Kyoto Protocol.

The capacity of Italian businesses to take on the challenge of globalisation and be leaders in their own market niche, managing to compete with companies that are almost always much bigger, lie in typically Italian flexibility and creativity combined with a constant commitment to quality and innovation. All this **despite the inefficiency of the Italian nation's overall system**, which holds back growth through **pointlessly oppressive regulations** enforced without taking into account the actual needs of businesses, **at an energy cost 30% higher than the European average** and with an infrastructural system that is decaying and dilapidated. Italian industry has always astounded experts by its capacity to adapt to changes.

The crisis has taught us that, innovation must increasingly be a real target to be attained mainly based on product innovation.

The economic turndown has also taught us that there is no such thing as a truly mature product: there is always the possibility of adapting it through even greater innovation.

If made-in-Italy products are to have a future, they must increasingly focus on true innovation: i.e. based on research and specialisation. This means becoming leaders in our own field despite the presence of the world's biggest companies.

The challenge we are taking on is to specialise through technology. This is the model I have always believed in, and it could be the model for building our future. The vantage point from which to observe the horizon of industry in its entirety is the **chemical industry**: that is my work and it is the work Mapei carries out all over the world on a daily basis.

Giorgio Squinzi
CEO of the Mapei Group

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Mapei Kft. is now twenty years old

Two decades of important business operations in Hungary for the Group's local subsidiary

Above. Béla Markovich, General Manager of Mapei Kft.
Photo 1. The headquarters of Mapei Kft. in Budaörs in central Hungary.
Photo 2. The Mapei Kft.'s manufacturing plant in Sóskút in northern Hungary.

Mapei Kft., the Mapei Group's Hungarian subsidiary, was first established in Budaörs in central Hungary in September 1991. At the time the Company only employed 4 members of staff in a rented out building serving as offices and warehouses.

In April 1993 Béla Markovich was appointed General Manager of Mapei Kft., a position he still holds today. Under his guidance the subsidiary really boomed and a number of important events took place, such as the construction of new head offices and a warehouse in 1999 and the opening of a new manufacturing plant in Sóskút in northern Hungary in 2002, mainly designed for manufacturing powders and equipped with all the latest manufacturing systems and quality control laboratories.

The choice of location was determined by the availability of raw materials and its strategic location from a logistical viewpoint, making it possible to supply, in double quick time, not only Hungarian customers but also those in some neighbouring countries.

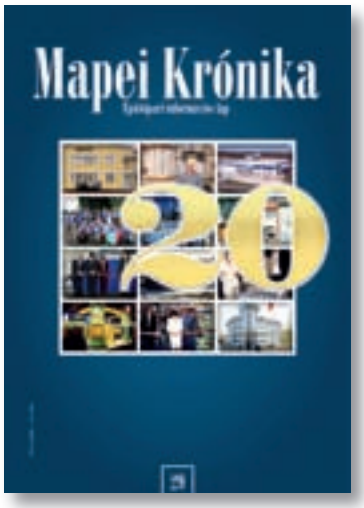
The manufacturing plant can manufacture 93,000 tonnes of Mapei materials every year. In the beginning, production focused on adhesives for installing ceramics and stone material, but it was then extended to encompass levelling compounds for substrates, mortars and binders for screeds. Due to the simultaneous rise in both turnover and the number of staff, Mapei Kft.'s headquarters in Budaörs had to be extended. This resulted in a doubling of the amount of available space and construction of a modern training hall and new indoor warehouse.

Meanwhile the extending of the manufacturing plant in Sóskút began in 2007 and was completed in January 2008, providing new spaces for production operations and a brand-new warehouse, jointly covering an overall area of 3380 m².

Mapei Kft. now has 130 members of staff, a turnover of 20 million Euros in 2010, over 1200 customers, a distribution network including over 600 sales outlets throughout the country, and an extensive training programme attracting over 9000 professionals working in this sector every year.

During its twenty years in business Mapei Kft.'s products and technology have helped construct and repair such important buildings as the Budapest Sports Arena, the Spa and Wellness Centre in Sárvár, the Kodaly Centre Concert Hall in Pecs, the Ramada Resort Hotel and Aquaworld in Budapest (see *Realtà Mapei International* no. 31), the Corvinus University in Budapest, the Megyeri Bridge

MAPEI 1991 - 2011 20 ÉV



near the Hungarian capital (see *Realtà Mapei International* no. 29), the Abacus Wellness & Business Hotel in Herceghalom, the Symbol Café & Restaurant in Budapest, the Rainbow Cultural Centre in Kaposvár, the Ràcz Hotel & Thermal Spa in Budapest (see the following pages).

Twenty Years...Together

For its 20th anniversary celebrations, the Group's Hungarian subsidiary, Mapei Kft., created a special logo for the whole of 2011 that appears on all its communications and promotional material and operations. Mapei Kft. also arranged a press conference at Construma trade fair (see article in following pages) during which Béla Markovich and Riccardo Ardito, Mapei SpA's Export Manager for Hungary, provided journalists with an overview of all the targets and goals it has achieved in twenty years' business and its plans to grow and develop in future. To allow customers and business partners to join in these important anniversary celebrations, Mapei Kft. has also planned numerous activities and events, including a special trip to allow Hungarian installers working with the Company to attend the Cersaie trade fair in Bologna.

Mapei Kft. also recently received the "Energy Efficiency Award" from the *THT Block House* magazine for its contribution to reducing energy consumption in buildings through the MAPETHERM system.

Ambitious Plans Even During Difficult Times

According to the Hungarian Statistics Centre, Hungary's national product for the first three months of 2011 dropped by 7% compared to the same period last year. The construction of new buildings dropped by 35% over the first three months compared to the same period in 2010, with only 3141 new buildings being constructed. These figures prove that the crisis affecting the building industry is not over yet in Hungary. According to official statistics, there will be no further decreases in 2011 and there should actually be a new period of growth in this industry during the second half of 2012, which should progress hand-in-hand with a revival in public investments both locally and nationally and the financial support of banks.

Against this rather patchy backdrop, Mapei Kft. has set itself the goal of an annual turnover of over 21 million Euros, corresponding to an increase of 10-15%. A reasonable target thanks to a development programme that the subsidiary has worked out for this year and which includes assigning each product line to a product manager responsible for its turnover, increasing the number of clients and partners by extending its sales network and employing more product managers, promoters and technicians, partly thanks to an extensive and intensive training programme for the sales team.

In the medium term Mapei Kft. has also set itself the goal of becoming the undisputed leader on the Hungarian market by 2015.

MAPEI Kft. PRODUCTION PLANT IN HUNGARY

Location: Sóskút
Work began: 1999
Officially opened: 13th September 2002
Extended: 2007-2008
Overall area: 3,380 m² (storage area for raw materials and finished products, production area, offices, quality control laboratory and service areas)
Production capacity: 93,000 tons/year
Production range: adhesives for ceramics and stone material, grouts for joints, smoothing and self-levelling compounds, mortars and binders for screeds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Left. The anniversary logo and cover of *Mapei Krónika* no. 29, published by Mapei Kft.
Photo 3. Finished products in the Sóskút plant.
Below. Some key moments in the history of Mapei Kft. The second to last photo from the right shows the ceremony at the head offices after extension works in 2006, attended by Giorgio Squinzi, Adriana Spazzoli and Béla Markovich; the last photo on the right shows the opening ceremony at the plant, attended by Laura Squinzi, Giorgio Squinzi and the Italian Ambassador Giovan Battista Verderame.

Hungarian hospitality

Swimming pools and spa centres characterise numerous new and old hotels in Hungary

All over Hungary, and especially in Budapest, there is no lack of thermal springs, and in the area around the capital alone there are more than 100 known hot springs.
The tradition of thermal waters in Hungary dates back to the Romans, who exported the culture of thermal baths for which they were famous, and today there are still visible ruins of the enormous temples constructed during the Roman domination. The most innovative baths were constructed during the Turkish period in the 16th and 17th centuries; some of them are still in use today, such as the Kiràly bath, which still maintains its original form and is one of the few visible remains from the period dating back to the Turkish domination.
Budapest earned its reputation as a modern thermal city in the first two decades of the 20th century, when the economic potential of the hot springs was first exploited, and worth a special mention is the famous Hotel Gellért in a magnificent Liberty style, the most elegant in the city and famous all over the world.
Mapei supplied its products for the renovation works on numerous Hungarian thermal complexes, and the following pages offer a brief description of just a few of those projects.
In all these works MAPELASTIC was used for waterproofing the substrates in swimming pools, bathrooms, balconies and terraces. The famous two-component, flexible cementitious mortar is well know in Hungary as well as in many other countries all over the world.


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Ràcz Hotel & Thermal Spa in Budapest

The Ràcz Hotel & Thermal Spa, one of the most beautiful and antique thermal hotels in Budapest, was recently renovated. The Ràcz thermal baths, not far from the centre of the city, were constructed in 1437, and during the reign of King Matthias Corvinus, they were known as "the royal spa" because of the long, covered corridor which connected them directly to the King's palace. In 1560, the Turks added an octagonal swimming pool and other smaller pools. This is the best conserved Turkish bath in the entire Hungarian country. Its most prosperous period started after 1860. The spa had a new owner who modernised it, commissioning the services of the famous architect Miklòs Ybl to construct a new area for the swimming pools, covered by a cupola.

The Ràcz thermal baths, which are on the UNESCO World Heritage list, were reopened this year after a long, complex restoration project which has transformed it into a prestigious thermal baths complex covering 8000 m^2. Apart from the antique Turkish bath, it includes the thermal baths constructed by Ybl in neo-Renaissance style, and a more modern part which offers therapies and treatments for the guests, along with changing rooms, a wellness area, a restaurant and a swimming pool.

Photo 1. An external view of the Ràcz Hotel thermal baths.
Photos 2 and 3. After smoothing over the surfaces with NIVOPLAN+ PLANICRETE and waterproofing them with MAPELASTIC, the stone and glass mosaics in the spa were laid with KERAFLEX S1 adhesive and grouted with KERACOLOR FF FLEX.
Photo 4. The walls and floors in the bathrooms were covered with mosaic laid with KERAFLEX S1 and ULTRACOLOR PLUS.

Mapei's Contribution in the Swimming Pool

Mapei supplied its products to waterproof the surfaces of the swimming pool and to lay stone and glass mosaic tiles. The substrates were firstly smoothed with NIVOPLAN smoothing mortar mixed with PLANICRETE latex to improve the adhesion.

The substrates were then cleaned, MAPEBAND waterproofing rubber tape was applied at the corners between the walls and floors and a layer of MAPELASTIC two-component cementitious mortar was laid over the entire surface. This cementitious mortar is supplied in two pre-measured components to be mixed together without adding water or other ingredients. It is applied by trowel or spray on surfaces which are completely clean and, if necessary, dampened with water, and forms a highly-flexible, protective, waterproof coating. Glass mosaic and stone mosaic tiles were laid with KERAFLEX S1 high-performance deformable cementitious adhesive with no vertical slip (N.B. the product is distributed on the Hungarian market by Mapei Kft.). The joints were grouted with KERACOLOR FF FLEX high-performance grout (N.B. the product is distributed on the Hungarian market by Mapei Kft.), mixed with FUGOLASTIC admixture instead of water to improve its compactness and abrasion resistance and reduce its porosity and water absorption.

Thermal Insulation and Mosaic Installation

The historical façades of the thermal baths – built at the end of the 19th century – were restored with full respect for their colours and forms. Firstly, they were treated with the MAPETHERM thermal insulation system, specifically developed and tested by Mapei.

The first phase of this part of the intervention was to bond and smooth over the insulating panels with MAPETHERM AR1 one-component cementitous adhesive and smoothing and levelling compound; MAPETHERM PROFIL pre-mounted aluminium angle irons incorporated with alkali-resistant glass fibre mesh were applied around all the edges and corners. Around one day after bonding the panels, they


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Photo by Sàndor Bànyai, Viktor Ratskò

Photo 5. Before laying the mosaic, the MAPETHERM insulation system was applied on the façades.

were smoothed with MAPETHERM AR1, and while the compound was still fresh, MAPETHERM NET glass fibre mesh was applied.
After a further 24 hours, a second coat of MAPETHERM AR1 was applied to form an even layer which completely embeded the mesh. After several days, and only when the smoothing layer was perfectly dry, the glass mosaic in colours beige and gold was bonded with KERAFLEX S1 and the joints were grouted with ULTRACOLOR PLUS high-performance, anti-efflorescence, quick-setting and drying polymer-modified mortar. The expansion joints were then sealed with MAPESIL LM sealant.
The floors and walls in the bathrooms of the rooms and the walls in the kitchen were also covered with glass mosaic and the mosaic tiles were laid with KERAFLEX S1; joints were grouted with ULTRACOLOR PLUS and expansion joints sealed with MAPESIL LM.

Decorative Floors
Decorative floors were built on the steps for the entrance to the hotel and in the relaxation and massage areas according to a design by the artist Linda Vàrady, who personally followed the works directly on site. The floors in these areas were made using MAPEFLOOR DECOR 700 two-component, solvent-free epoxy paste in watery dispersion, for floors with a trowel-effect or mottled finish.
The product is quick to prepare, may be coloured using MAPECOLOR PASTE and is applied by trowel to create the finish required, in layers from 1.5 to 3 mm thick.
Once hardened, floors have excellent resistance to abrasion and high resistance to chemicals.

TECHNICAL DATA

Thermal Spa Ràcz & Hotel, Budapest (Hungary)
Designer: Miklòs Ybl for the works in 1860; Ákos Kaszab for the works in 2001-2006
Period of Construction: 1437, extension works: 1560, 1860, 2010

Period of the Intervention: 2009-2010
Intervention by Mapei: supplying products for preparing and waterproofing the substrates and installing mosaics in the spa area, for applying a thermal insulation system on the façades, installing mosaics on the façades, building decorative floors in the interiors.

Designers: Tamàs Dévényi, Budapesti Műhely Kft.; Dévényi Tamás, Kis Péter, Pethő László
Restaurator: Szabolcs Csányi
Client: Ràcz Nostalgia Kft.
Works Director: Jòzsef Kovàcs
Contractor: Magyar Epitö Zrt.
Laying Companies: R-Bau Kft for the mosaics; Color-Stone Kft. for the decorative flooring
Laid Materials: stone and glass mosaics
Mapei Distributors: R-Bau Kft, Color-Stone Kft.
Mapei Co-ordinators: Péter Novák, Mónika Barna, László Szabó, Mapei Kft. (Hungary)

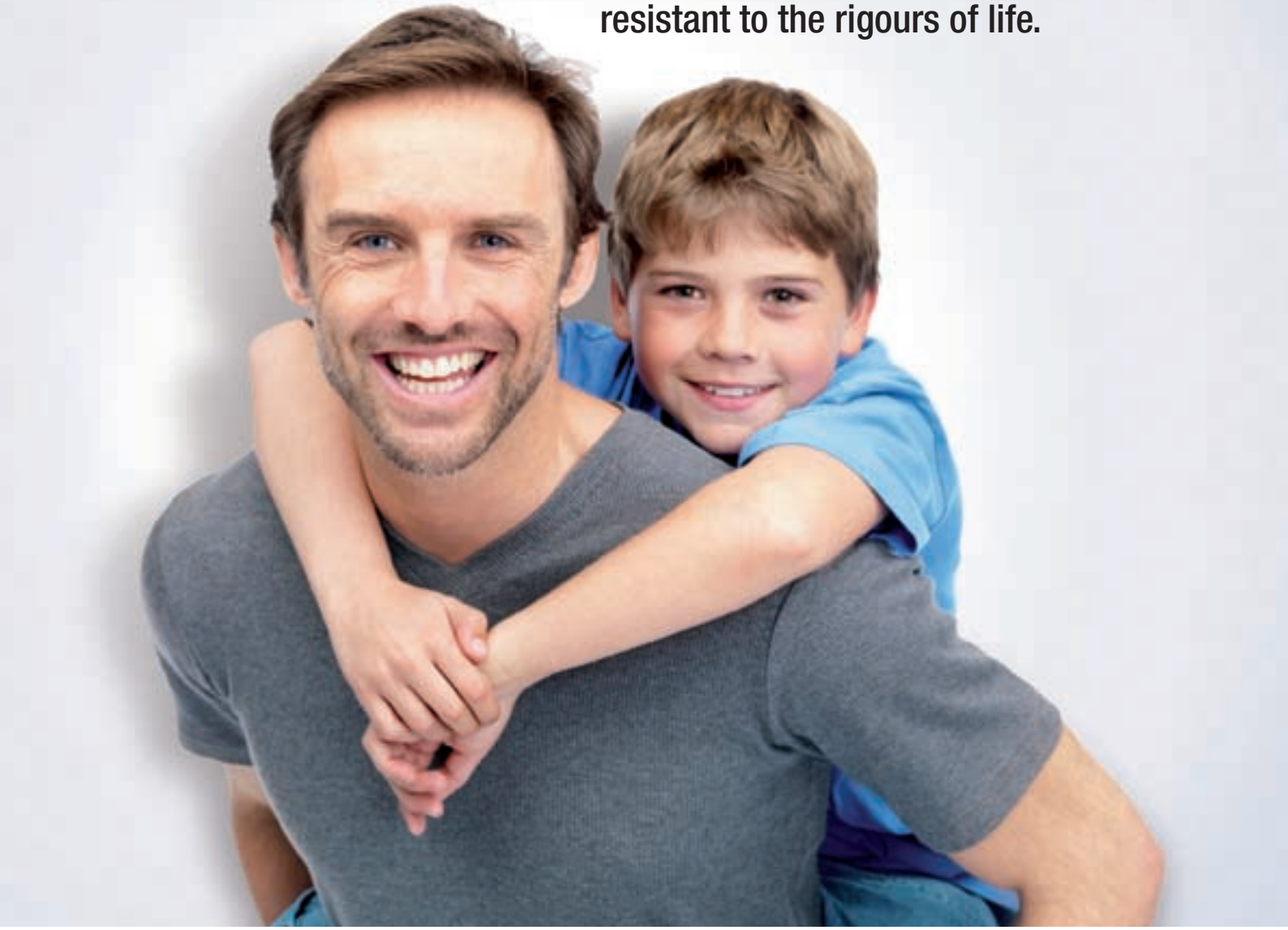
MAPEI PRODUCTS

The products mentioned in the article belong to the "Products for Ceramic Tiles and Stone Materials", "Products for Cementitious and Resin Floorings" and "Building Speciality Line" ranges. The technical data sheets are available at the web site: www.mapei.com. Mapei's adhesives for ceramics and stone materials conform to EN 12004 and have been awarded the CE mark in compliance with Annex ZA, standard EN 12004. Mapei grouts for ceramics and stone materials conform to EN 13888. Almost all the Mapei products for laying floors and walls are also GEV-certified and have been awarded the EMICODE EC1 mark by GEV. Mapei products for repairing and protecting concrete structures comply with EN 1504 standard. Mapei mortars for render have been awarded the CE mark in compliance with EN 998 standard. Mapei sealants comply with ISO 11600 standard. The MAPETHERM system has also awarded ETA N° 04/0061 certification according to ETAG 004 standard. Mapei cementitious mortars and membranes used for waterproofing before installing ceramics comply with EN 14891 standard. More than 150 Mapei products can contribute to obtain the LEED certification.

Waterproofing and treating the surfaces
Mapeband: alkali-resistant rubber tape with felt for cementitious waterproofing systems and liquid sheaths.
Mapelastic (CE EN 1504-2, coating **(C)**, principles **PI, MC** and **IR**; **EN 14891):** two-component, flexible cementitious mortar for protecting and waterproofing concrete surfaces, balconies, terraces, bathrooms and swimming pools.
Nivoplan (CE EN 998-1, type **GP**, cat **CS IV):** smoothing mortar for internal and external walls and ceilings for thicknesses from 2 to 30 mm.
Planicrete: synthetic latex rubber to improve adhesion and strength of cementitious mortars.

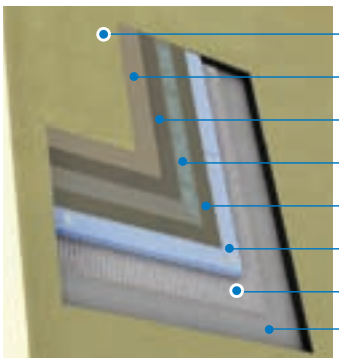
Installing mosaics
Fugolastic: polymer liquid admixture for Keracolor FF, Keracolor GG and Keracolor SF.
Keracolor FF Flex (CG2): pre-blended, high-performance, polymer-modified cementitious mortar with water-repellent DropEffect® technology for grouting joints up to 6 mm wide. N.B. The product is distributed on the Hungarian market by Mapei Kft.
Keraflex S1 (CE EN 12004, C2TE): high-performance deformable cementitious adhesive with no vertical slip. N.B. The product is distributed on the Hungarian market by Mapei Kft.
Mapesil LM (F 25 LM): pure, anti-mould, acetic silicone sealant for movements up to 25%.
Ultracolor Plus (CG2, EC1): high-performance, anti-efflorescence, quick-setting and drying polymer-modified mortar with water-repellent DropEffect® and anti-mould BioBlock® technology for grouting joints from 2 to 20 mm.
Thermal insulation of the façades
Mapetherm AR1 (ETA 04/0061; ETA 10/0024; ETA 10/0025): one-component, cementitious adhesive and smoothing and levelling compound for thermal insulation systems.
Mapetherm Net (ETA 10/0024; ETA 10/0025; ETA 04/0061): alkali-resistant glass fibre mesh for reinforcing base layers in thermal insulation systems.
Mapetherm Profil: pre-mounted aluminium angle iron incorporated with alkali-resistant glass fibre mesh.
Building decorative floorings
Mapefloor Decor 700: two-component, solvent-free epoxy paste in water dispersion to create floors with a trowel-effect or mottled finish.

Harmony borne from a **solid bond** resistant to the rigours of life.



Mapetherm® System

Mapei research has developed a series of **adhesives** and **wall coatings** which guarantee the **best possible thermal insulation system** for buildings while increasing **wellbeing** and **energy savings**.



Mapei. Our experience provides your solutions

Let's take a deeper look together at: **www.mapei.com**

MAPEI®
ADHESIVES · SEALANTS · CHEMICAL PRODUCTS FOR BUILDING

The Hotel Kapitány Wellness in Sümeg

The city of Sümeg is in the western area of the Bakony region and is famous in Hungary for its castle. It was built in 1318 and is still in excellent condition, and is one of the most important fortresses in the country.
At the foot of the castle is the Hotel Kapitány Wellness, a large hotel complex which offers its clients 154 rooms, a large oriental-style wellness area with a swimming pool, pools for children, an open-air swimming pool, a Finnish sauna, a Turkish bath, an aromatherapy cabin, massages and fitness areas. The hotel was completely renovated between 2009 and 2010.

Mapei's Contribution

The construction company used Mapei products for this project, to guarantee excellent results and meet the requirements of the floor layers.
The wall and floor surfaces in the rooms' bathrooms were waterproofed with MAPEGUM WPS flexible liquid membrane and MAPEBAND rubber tape around the edges and corners. On the bathrooms walls - after treating the substrates with PRIMER G – the ceramic tiles were laid with KERABOND T cementitious adhesive with no vertical slip, while for the floor tiles, Mapei recommended ADESILEX P9 cementitious adhesive. The tile joints were then grouted with KERACOLOR FF FLEX (distributed on the Hungarian market by Mapei Kft). The expansion joints were sealed with MAPESIL AC silicone sealant.
The 45x45 cm porcelain tiles in the restaurant area were laid using KERAFLEX S1 high-performance deformable cementitious adhesive (N.B. this product is distributed on the Hungarian market by Mapei Kft).
The floors in the rooms, the corridors, the conference room and the banquet hall were covered with carpet laid using ROLLCOLL multi-purpose adhesive in water dispersion, and the textile coverings on the skirtings were bonded with ADESILEX LP polychloroprene adhesive. Porcelain tiles were also laid on the floors of the terraces overlooking the castle with KERAFLEX S1.
Mapei products were also used in the smaller pools for the children: NIVOPLAN smoothing compound, mixed with PLANICRETE latex to improve the adhesion, was used to smooth over the substrates, and the waterproofing layer was formed by applying MAPEBAND rubber tape around

Photo 1. An external view of the Hotel Kapitány Wellness.
Photo 2. The surfaces in the swimming pool for the children were waterproofed with MAPEBAND and MAPELASTIC and the mosaic was laid with KERABOND T mixed with ISOLASTIC latex.
Photo 3. The porcelain floor tiles for the terraces of the rooms and in the restaurant were bonded with KERAFLEX S1 (N.B. the product is distributed on the Hungarian market by Mapei Kft).
Photo 4. The floors in the rooms, the corridors, the conference room and the banquet hall were covered with carpet laid using ROLLCOLL.

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Photo by István Csàpenszki, Vanda Markovich

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the corners and edges and then a layer of MAPELASTIC two-component cementitious mortar. KERABOND T, which was mixed with ISOLASTIC latex instead of water, was used to lay the mosaics.

Photo 5. The porcelain tiles in the restaurant area were laid on the floors using KERAFLEX S1.

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TECHNICAL DATA

Hotel Kapitany Wellness, Sümeg (Hungary)
Designer: Imre Papp
Period of Construction: 2004 – 2011

Period of the Intervention: 2009-2010
Intervention by Mapei: supplying products for preparing and waterproofing the substrates and installing ceramic tiles in the bathrooms, in the bedrooms, on the terraces, in the restaurant and in the kids pool; for laying textile floors in the bedrooms, in the corridors, in the conference hall and in the banquet hall
Designers: Làszlò Papp
Client: Imre Papp, Hot-Ep Kft.
Contractor: Hot-Ep Kft.
Laying Companies: Tamàs Kerekes, Kajtàr és Tsa Bt., Làszlò Bognàr for the ceramic tiles; Istvàn Szokoli for parquet
Laid Materials: ceramic tiles, mosaics, textile floors
Mapei Distributor: Construct-Ker Kft.
Mapei Co-ordinators: András Doma, Mapei Kft. (Hungary)

MAPEI PRODUCTS

The products mentioned in the article belong to the "Products for Ceramic Tiles and Stone Materials", "Products for the Installation of Resilient and Textile Floor and Wall Coverings" and "Building Speciality Line" ranges. The technical data sheets are available at the web site: www.mapei.com. Mapei's adhesives for ceramics and stone materials conform to EN 12004 and have been awarded the CE mark in compliance with Annex ZA, standard EN 12004. Mapei grouts for ceramics and stone materials conform to EN 13888. Almost all the Mapei products for laying floors and walls are also GEV-certified and have been awarded the EMICODE EC1 ("very low emission level of volatile organic compounds") mark by GEV. Mapei products for repairing and protecting concrete structures comply with EN 1504 standard. Mapei mortars for render have been awarded the CE mark in compliance with EN 998 standard. Mapei sealants comply with ISO 11600 standard. The MAPETHERM system has also been awarded ETA N° 04/0061 certification according to ETAG 004 standard. Mapei cementitious mortars and membranes used for waterproofing before installing ceramics comply with EN 14891 standard. More than 150 Mapei products can contribute to obtain the LEED certification.

Waterproofing and treating the surfaces

Mapeband: alkali-resistant rubber tape with felt for cementitious waterproofing systems and liquid sheaths.
Mapegum WPS: quick-drying flexible membrane for waterproofing internal surfaces.
Mapelastic (CE EN 1504-2, coating **(C)**, principles **PI, MC** and **IR; EN 14891):** two-component, flexible cementitious mortar for protecting and waterproofing concrete surfaces, balconies, terraces, bathrooms and swimming pools.
Nivoplan (CE EN 998-1, type **GP**, cat **CS IV):** smoothing mortar for internal and external walls and ceilings for thicknesses from 2 to 30 mm.
Planicrete: synthetic latex rubber to improve adhesion and strength of cementitious mortars.
Primer G (EC1): synthetic resin primer in water dispersion with a very low content of volatile organic compounds (VOC).

Installing ceramic tiles

Adesilex P9 (CE EN 12004, C2TE; EC1 R): high-performance cementitious adhesive with no vertical slip and extended open time for ceramic tiles.
Isolastic: elasticising latex mixed with Kerabond, Kerabond T, Kerafloor and Adesilex P10.
Keracolor FF Flex (CG2): pre-blended, high-performance, polymer-modified cementitious mortar with water-repellent DropEffect® technology for grouting joints up to 6 mm wide. N.B. The product is distributed on the Hungarian market by Mapei Kft.
Keraflex S1 (CE EN 12004, C2TE): high-performance deformable cementitious adhesive with no vertical slip. N.B. The product is distributed on the Hungarian market by Mapei Kft.
Kerabond T (C1T, CE EN 12004): cementitious adhesive with no vertical slip for ceramic tiles.
Mapesil AC (F 12.5P up): anti-mould, acetic silicone sealant for movements up to 25%.

Laying textile floors and rubber skirtings

Adesilex LP: polychloroprenic double-buttering adhesive in solvent for laying rubber floors and coverings.
Rollcoll: multi-purpose adhesive in water dispersion for laying vinyl floors and walls and for bonding textile floors and walls with all types of backing.

The Historia Hotel in Veszprém

The Historia Hotel complex comprises two antique buildings, and was recently restored without distorting its original artistic and historical prestige.
The first building was built in the 20th century, while the second one was built at the beginning of the 20th century. They then became property of the local municipality which used them for housing. At the end of the 1990's, the Veszprém City Council, a tourist spot to the north of Lake Balaton, decided to relocate the private residences and the complex was turned into a hotel. The Historia Hotel also has a spa area and a wellness centre available for the guests.

Numerous Materials for Laying Parquet and Carpet

To make the substrates perfectly flat, the surfaces in the eleven guest rooms were smoothed with ULTRAPLAN ECO self-levelling, ultra quick-hardening smoothing and levelling compound with a very low emission level of volatile organic compounds (VOC). Parquet was used to cover the floors, laid in place using ULTRABOND ECO S955 1K one-component adhesive with an extremely low emission level of volatile organic compounds (VOC), suitable for all types of parquet.

Photo 1. The courtyard of the Historia Hotel.
Photo 2. The floor substrates in the rooms were smoothed over with ULTRAPLAN ECO and the parquet was laid with ULTRABOND ECO P990 1K.
Photo 3. After waterproofing the pool's surfaces with MAPELASTIC, the

Laying Stones, Ceramics and Glass Mosaics

Stone slabs not sensitive to humidity were laid on the floors of the corridors with ADESILEX P9 and KERAFLEX S1 (N.B. the product is distributed on the Hungarian market by Mapei Kft). After treating the substrates with PRIMER G, the surfaces of walls and floors in the bathrooms were waterproofed with MAPELASTIC two-component cementitious mortar applied in two layers, and with MAPEBAND rubber tape for the corners. The tiles were laid with KERAFLEX S1 adhesive and joints were grouted with ULTRACOLOR PLUS; expansion joints were then sealed with MAPESIL AC silicone sealant. The walls and the floors in the kitchen and restaurant area were

smoothed with NOVOPLAN 21 smoothing compound; ceramic tiles were then laid with ADESILEX P9 and joints were grouted with KERACOLOR FF FLEX (distributed on the Hungarian market by Mapei Kft).
The surfaces of the swimming pool and the areas around the swimming pool were firstly smoothed over with NIVOPLAN, which was mixed with PLANICRETE latex to improve the adhesion. The edges and corners were waterproofed with MAPEBAND rubber tape and then a layer of MAPELASTIC was spread on the surface.
After curing, the glass mosaic tiles were laid in place using KERABOND T cementitious adhesive mixed with ISOLASTIC instead of water to improve its characteristics and comply with class C2S2 (improved cementitious highly-deformable adhesive) according to EN 12004 standard.
The tile joints were then grouted with ULTRACOLOR PLUS mortar.
The carpet in the conference room was laid with ROLLCOLL acrylic adhesive in water dispersion.
WALLGARD GRAFFITI BARRIER was applied to protect the façades of the Historia Hotel. This product forms a film on the surface which fills the pores without affecting vapour permeability, to create a barrier which prevents graffiti from penetrating into the substrate.

mosaic was bonded with KERABOND T+ ISOLASTIC.

Photo 4. The tiles were laid in the restaurant with ADESILEX P9; joints were grouted with KERACOLOR FF FLEX.

Photo 5. The carpet in the conference room was laid with ROLLCOLL.

TECHNICAL DATA

Historia Hotel, Veszprém (Hungary)
Designer: István Véber
Periods of Construction: 18th century and early 20th

Period of the Intervention: 2009-2010
Intervention by Mapei: supplying products for preparing the substrates and installing textile floors in the conference room; for laying parquet in the bedrooms; for laying stone slabs in the corridors and ceramic tiles in the kitchens and restaurant; for waterproofing substrates and laying mosaics in the swimming pool; for applying protective covering on the façades
Designers: Istvàn Vèber
Client: Veszprém Lokálpatrióta Összefogás
Contractor: Vemévszer Zrt.
Works Director: Zoltàn Kökuti
Laying Companies: Tamàs Kerekes, Kajtàr és Tsa Bt., Làszlò Bognàr and Istvàn Szokoli
Laid Materials: ceramic tiles, mosaics, textile floors, parquet
Mapei Distributor: Piedl Kft.
Mapei Co-ordinators: András Doma, Mapei Kft. (Hungary)

MAPEI PRODUCTS

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More than 150 Mapei products can contribute to obtain the LEED (Leadership in Energy and Environmental Design) certification.

Waterproofing and treating the substrates

Mapeband: alkali-resistant rubber tape with felt for cementitious waterproofing systems and liquid sheaths.
Mapelastic (CE EN 1504-2, coating **(C)**, principles **PI, MC** and **IR; EN 14891):** two-component, flexible cementitious mortar for protecting and waterproofing concrete surfaces, balconies, terraces, bathrooms and swimming pools.
Nivoplan (CE EN 998-1, type **GP**, cat **CS IV):** smoothing mortar for internal and external walls and ceilings for thicknesses from 2 to 30 mm.
Planicrete: synthetic latex rubber to improve adhesion and strength of cementitious mortars.
Primer G (EC1): synthetic resin primer in water dispersion with very low emission level of volatile organic compounds (VOC).

Installing ceramic tiles and mosaics

Adesilex P9 (CE EN 12004, C2TE; EC1 R): high-performance cementitious adhesive with no vertical slip and extended open time for ceramic tiles.
Isolastic: elasticising latex mixed with Kerabond, Kerabond T, Kerafloor and Adesilex P10.
Keracolor FF Flex (CG2): pre-blended, high-performance, polymer-modified cementitious mortar with water-repellent DropEffect® technology for grouting joints up to 6 mm wide. N.B. The product is distributed on the Hungarian market by Mapei Kft.
Keraflex S1 (CE EN 12004, C2TE): high-performance deformable cementitious adhesive with no vertical slip. N.B. The product is distributed on the Hungarian market by Mapei Kft.
Kerabond T (CE EN 12004, C1T): cementitious adhesive with no vertical slip for ceramic tiles.
Mapesil LM (F 25 LM): pure, anti-mould, acetic silicone sealant for movements up to 25%.
Ultracolor Plus (CG2, EC1): high-performance, anti-efflorescence, quick-setting and drying polymer-modified mortar with water-repellent DropEffect® and anti-mould BioBlock® technology for grouting joints from 2 to 20 mm.

Laying textile floors

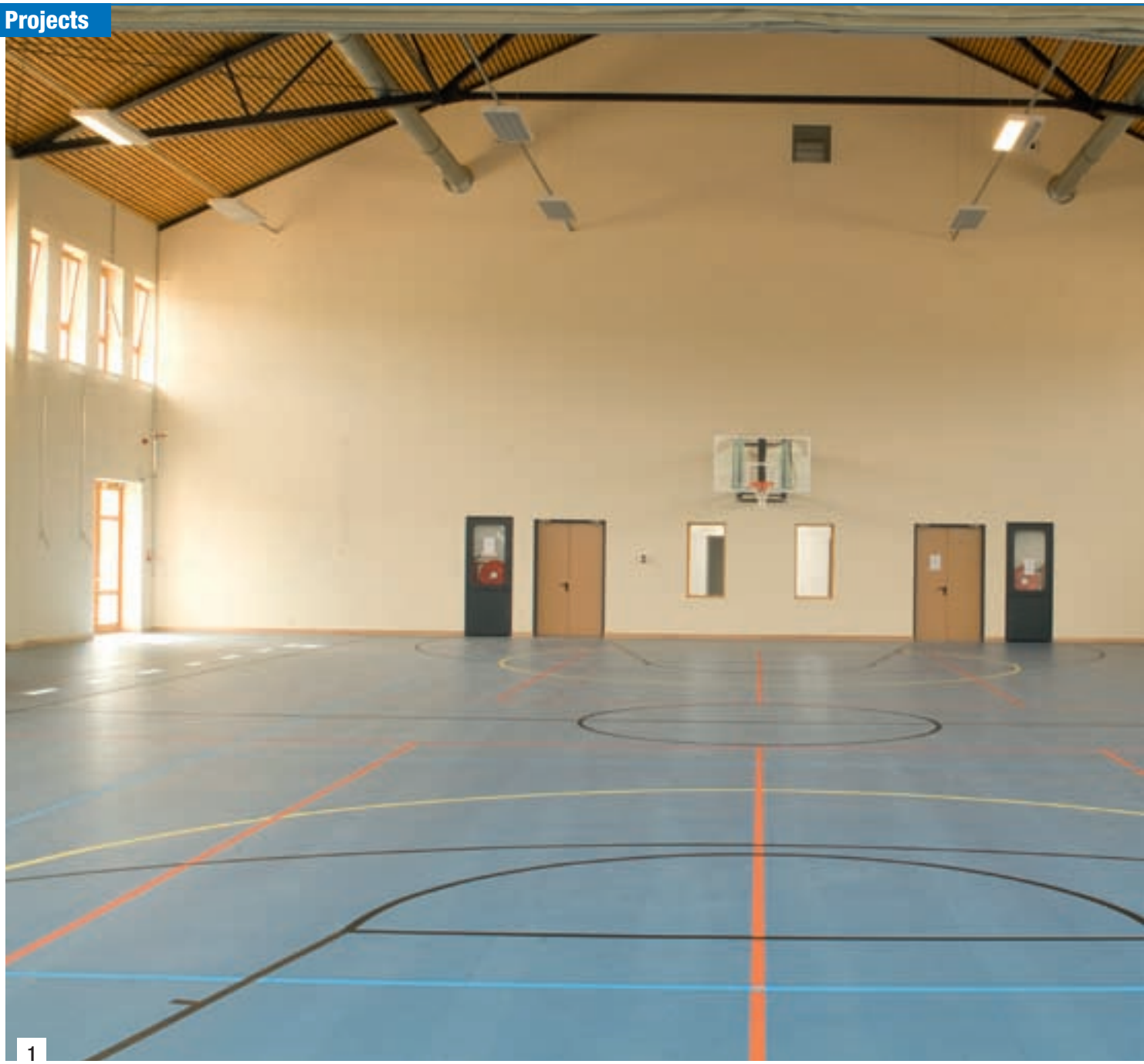
Rollcoll: multi-purpose adhesive in water dispersion for laying vinyl floors and walls and for bonding textile floors and walls with all types of backing.

Treating substrates and laying parquet

Ultrabond P990 1K (EC1 R): one-component, ready-to-use, solvent-free, flexible polyurethane adhesive for all types of parquet. Also suitable for heated substrates.
Ultraplan ECO (CE EN 13813, CT C25-F7 $A2_{fl}$-s1, EC1): self-levelling, ultra quick-hardening smoothing compound for thicknesses from 1 to 10 mm, with a very low emission level of volatile organic compounds (VOC).

Protecting the façades

WallGard Graffiti Barrier: anti-graffiti protective barrier.



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American International School of Budapest

Mapei products helped laying rubber floors in the new gymnasium of a prestigious school

The American International School of Budapest was founded in 1973 and intended to provide a proper American-style education to children of people working for diplomatic corps, multinational and local companies.
In the beginning, lessons were held in a flat in Budapest with three teachers and eleven students.
Since the place was too small, in the first period lessons were also held in different places.
Today 75 teachers provide a high-level education to students of 10-18 years old, only using the English language for teaching different subjects.

Photo 1. A rubber flooring was laid in the new gymnasium of the American International School of Budapest.
Photo 2. The American International School recently completed a new facility in the suburb of Nagykovácsi.

A New Facility for the School

In 2008 the American International School started a huge investment totalling 12 million Euros. A new 14.000 m² facility was built in a ten-hectare area bought from the local government in Nagykovácsi, a suburb near Budapest.
The new complex also encloses a gymnasium for the students' physical training. In this area rubber floorings were laid using a Mapei reliable installation system, proposed by Mapei Kft., the Hungarian subsidiary of the Mapei Group.
Therefore, the floor-layers team headed by Mr. Csatlós Sámuel

made the most of its own experience and of innovative, safe laying materials.
The job began with the elimination of all the dust, incoherent parts and residual materials which could influence the adhesion of the covering material. The expansion joints of the substrate were sealed with MAPEFLEX PU45 one-component, thixotropic, rapid-hardening polyurethane sealant with a high modulus of elasticity. The joints surface was then sprinkled with quartz to obtain the highest adhesion level.
The total surface was again cleaned and the dust was completely eliminated before applying by roller PRIMER G, synthetic-resin-based water dispersion primer with very low emission level of volatile organic compounds (VOC).
ULTRAPLAN ECO was then applied in a thickness of 3 mm to smooth the surface. This is a

IN THE SPOTLIGHT

PRIMER G

It is a water dispersion of special synthetic resins which, once applied to any surface, dry to form a flexible, compact, shiny coating which consolidates the surface, where needed. It also improves the adhesion of smoothing compounds, paints, adhesives for wall paper, adhesives for tiles and mortars for renders.
It has been awarded the **EMICODE EC1** ("very low emission level of volatile organic compounds") certification. It can contribute up to **3 points** to obtain the **LEED** (Leadership in Energy and Environmental Design) certification.

ULTRAPLAN ECO

It is an ultra-fast hardening self-levelling compound with very low VOC emission level. ULTRAPLAN ECO is used for levelling and removing differences in thickness from 1 to 10 mm on new or existing substrates in interior areas, preparing them to receive any kind of flooring where an excellent resistance to loads and traffic is needed. It is particularly suitable for areas subject to wheeled chairs.
The smoothing compunds prepared with ULTRAPLAN ECO are classified as **CT-C25-F7-A2$_{fl}$** according to **EN 13813**. It can contribute up to **3 points** to obtain the **LEED** (Leadership in Energy and Environmental Design) certification.

Photo 3. Before the installation, the rubber covering was cut into sections.
Photo 4. Rubber floorings were laid with ULTRABOND ECO V4 SP, multi-purpose, solvent-free acrylic adhesive with very low emission level of volatile organic compounds (VOC).
Photo 5. After the installation, the rubber flooring was rubbed with a roller to ensure proper bonding to the substrate.


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Photo 6. Floor joints measuring about 2 mm were built with proper tools.
Photo 7. Joints were filled with a proper welding string.
Photo 8. The rubber flooring upon completion of the installation works.

ultra-fast hardening self-levelling smoothing compound with very low VOC emission level for thicknesses from 1 to 10 mm.
Once arrived in the building site, the rubber covering was removed from the packaging several hours before installing; rolls were freely laid to permit acclimatisation and reduction of tension produced by packaging and transport. ULTRABOND ECO V4 SP, multi-purpose, solvent-free acrylic adhesive in water dispersion with a long open time and very low emission level of volatile organic compounds (VOC), was applied to the substrate. In some special cases this product can be substituted by ULTRABOND ECO 380.
The floor layers waited the proper time so that the adhesive developed sufficient tack to maintain contact with the substrate. The rubber covering was pressed onto the layer of adhesive strictly following the previously made marks and carefully checking the installation at the sides. The laid surface was rubbed with a cork trowel, then again with a roller, to ensure perfect bonding of each flooring section. The rubber covering had been cut into sections before the installation. Joints were then built between the adjacent rubber sections. The joints could not be wider than 2 mm and had to feature the same size. They were prepared with a suitable machine and then filled with a welding string.
The laid surface was carefully cleaned and the finished covering speaks for itself.

TECHNICAL DATA

American International School of Budapest, Nagykovácsi, Budapest (Hungary)
Year of Construction: 2008

Year of the Intervention: 2009
Intervention by Mapei: supplying products for preparing the substrates and laying rubber floorings in the gymnasium
Client: AISB Foundation
Project: A+A Stúdió Kft. (Annus Ferenc, Annus Marina Nagy Mihály and Varga Imre)
Laying Company: Csatlós Sámuel
Mapei Distributor: Magyar-Szőnyeg Kft.
Mapei Co-ordinator: Nagy Antal, Mapei Kft. (Hungary)

MAPEI PRODUCTS

The products mentioned in the article belong to the "Products for the Installation of Resilient and Textile Floor and Wall Coverings" line. The technical data sheets are available at the web site: www.mapei.com. Mapei levelling and smoothing compounds and pre-blended mortars for screeds conform to EN 13813 standard and have been awarded the CE mark in compliance with annex ZA, standard EN 13813. Almost all the Mapei products for laying floors and walls are also GEV-certified and have been awarded the EMICODE EC1 ("very low emission level of volatile organic compounds") mark by GEV. More than 150 Mapei products contribute to obtain the LEED (Leadership in Energy and Environmental Design) certification.

Preparing the substrates

Mapeflex PU45 (F2 20 HM): one-component, thixotropic, rapid-hardening polyurethane sealant and adhesive with a high modulus of elasticity.
Primer G (EC1): synthetic-resin-based water dispersion primer with very low volatile organic compounds (VOC) emission level.
Ultraplan Eco (CE EN 13813, CT C25-F7, $A2_{fl}$, EC1): ultra-fast hardening self-levelling smoothing compound with very low VOC emission level for thicknesses from 1 to 10 mm.

Laying rubber floorings

Ultrabond Eco V4 SP (EC1 Plus): multi-purpose, solvent-free acrylic adhesive in water dispersion with a long open time and very low emission level of volatile organic compounds (VOC), for laying rubber, PVC, vinyl, polyolephinic, linoleum and carpet flooring.

CONSTRUMA
BUDAPEST - 5-10 April

Construma

Colours, waterproofers, deformable adhesives and more, by Mapei for the Hungarian market

The curtain went down on the 10th of April this year at the thirtieth edition of Construma, the most important trade fair for the Hungarian construction sector, with excellent results: during the six-day event a total of 60,000 visitors wound their way through the pavilions in the Hungexpo centre in Budapest, attracted by all the novelties displayed on the stands and by the side events. The event itself registered an increase of 10% in the number of visitors compared with last year's edition, and they included architects, building materials distributors, representatives from construction and real estate companies, designers, consultants for public authorities, etc.

And Mapei Was There Too

Mapei was also present at the fair through its Hungarian subsidiary Mapei Kft, with a 170 m² stand, manned by 50 representatives from the Company to welcome the visitors, offer all the information they needed and to reinforce and generate interesting commercial relations. Amongst the solutions highlighted by the Company on this occasion, the waterproofing products under the slogan "Mapei, the Waterproofing Experts" spelt out a clear message. Apart from the Mapei membranes, the most renowned of which is the ultra-famous MAPELASTIC two-component, flexible cementitious mortar, the solutions on display from Polyglass, the Mapei subsidiary which manufactures bituminous membranes, were also under the spotlight at Construma.

Products to treat surfaces with rising damp were also presented to the public: MAPESTOP injection agent, particularly suitable for making a chemical barrier against capillary rising damp, and various dehumidifying mortars from the POROMAP line for restoration work on damp stone, brick and tuff masonry.

"Colours on Your Doorstep" was the slogan chosen by Mapei Kft to promote various coloured coatings at Construma (QUARZOLITE BASE COAT, QUARZOLITE TONACHINO, SILANCOLOR BASE COAT and SILANCOLOR GRAFFIATO) which may be used in combination with MAPETHERM, a tried and tested thermal insulation system which includes adhesives, glass fibre meshes, insulating panels and mortars. The use of this system guarantees a considerable reduction in energy costs, a durable finish and a wide range of colours to choose from, illustrated to the visitors using a series of coloured samples.

In the photos. Mapei took part at Construma 2011 with a stand equipped with highly-efficient advertising and communications tools.

In the range of Mapei adhesives for laying ceramic and stone, the deformable adhesives proved to be of particular interest. Classified S1 ("deformable") or S2 ("highly deformable") according to UNI EN 12004 standards, these products guarantee reliable, long-lasting performance even in unfavourable conditions.

The family of KERAFLEX high-performance, cementitious adhesives was also highlighted at Costruma, with KERAFLEX EASY recommended for laying large-sized tiles on floors, KERAFLEX S1 for medium-sized tiles and KERAFLEX MAXI S1 for large-sized tiles laid externally.

The family of MAPEFLEX two-component polyurethane sealants also drew a lot of interest.

Amongst the Mapei products for laying wood, the public presented with ULTRACOAT OIL, a complete range of varnishes, oils, grouts and accessory products for parquet, which combine perfectly with the innovative Mapei adhesives for laying wood, and which guarantee easy application and maintenance and long-lasting protection, even for parquet subjected to high stresses. The ULTRACOAT system is completed by SILWOOD, an acrylic sealant in water dispersion for wooden floors.

Mapei solutions for industrial floors (ULTRATOP, MAPEFLOOR SYSTEM, DECOR SYSTEM and MAPEFLOOR BINDER 930), for highly decorative floors according to each client's taste, with high resistance to chemicals and wear, also received a lot of attention from the visitors.

Apart from its own stand, Mapei also took part at Construma as sponsor and technical consultant for the Euroskill contest, where floor layers, craftsmen and bricklayers competed against each other to solve typical on-site problems.

The General Manager of Mapei Kft., Bela Markovich, also presented a speech during the "Stone Design" conference about solutions on offer from the Company for laying natural stone.

1

Twenty years in the Czech Republic

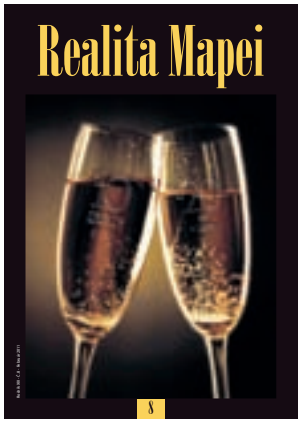
Twenty years of success for Mapei spol. s r.o.

2

Above. Mapei spol. s r.o.'s General Manager, Zdenek Runštuk.
Photo 1. The entrance to Mapei spol s r.o.'s new offices in Prague, in the Bohemian region.
Photo 2. Mapei spol. s r.o.'s headquarters are located in the Moravian region, in the town of Olomouc.

Mapei began writing its history in the Czech Republic when the subsidiary Mapei spol. s r.o. was founded in 1991 in the town of Olomouc, in the Moravia region, where it still has its headquarters nowadays. Also in 1991, a branch (with offices and warehouse) was set up in Prague, the capital of the country and of the Bohemia region. The location of the Czech subsidiary's premises enables the complete range of Mapei products to be regularly distributed from two warehouses – in Olomouc and Prague – to all corners of the Czech Republic, with the products received from other production facilities of the Group situated in Italy, Poland, Germany, Austria, and Hungary.

Mapei spol. s r.o.'s business volume never stopped to grow and its distribution network, efficient sales force and reliable technical service were constantly extended. Mapei spol. s r.o.'s success is proved by its contribution to prestigious building and restoration projects, such as the O2 Arena in Prague, the historical Charles Bridge (see *Realtà Mapei International* n. 32), the Centrum Babylon Liberec, the Mrázovka tunnel, the Droždín water tank, the Palladium Praha shopping centre, etc. The Czech subsidiary's unceasing growth has required a move of the Prague branch into new high-level premises, situated in Prague's outskirts, close to the D1 highway to Brno. The complex encloses offices, a warehouse and a spacious training centre, the so-called "Mapei Academy" which is used for internal seminars and all other training activities organized by the Company for its customers.



Mapei spol. s r.o.'s growth is evident in several fields: its technicians regularly participate to conferences and seminars for architects and designers held in the Czech Republic; it organizes plenty of training and marketing initiatives. Mapei spol. s r.o. also supports eco-sustainable building in the Czech Republic as it does in several countries. This year, Mapei spol. s r.o. celebrated the 20th anniversary of operating in the Czech Republic. A special logo has been designed for the occasion to be used on the marketing material. A promotional campaign entitled "Do it with Mapei" has also been launched and a special anniversary edition of *Realita Mapei* (the in-house magazine edited by the Czech subsidiary together with Mapei SK, the Slovakian subsidiary of the Mapei Group) has been issued. This was also an ideal opportunity for the General Manager, Zdenek Runštuk, to personally thank all those who have played a part in the success story of Mapei spol. s r.o., underlining how technical experience, a flexible sales network and impeccable customer service have been the most important "ingredients" to this success, and thanks to the international nature of the Group and its constant technological innovation, similar positive results can be expected in the future.

MAPEI 1991–2011 ČESKÁ REPUBLIKA 20

Elastocolor Paint

Application

Flexible acrylic resin-based paint in water dispersion for protecting and decorating concrete

- **Long-lasting flexibility**
- **Excellent resistance to chemical agents**
- Excellent protection against carbonatation for concrete structures subject to small deformations when under load
- Excellent protection and decoration, with a continuous flexible layer, for renders with micro-cracks,
- Excellent protection for thin, pre-fabricated structures subject to cracking
- **Excellent resistance to ageing, freezing weather conditions and de-icing salts**
- **Very low dirt-retention level**

IN COMPLIANCE WITH EUROPEAN STANDARD
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MAPEI®
ADHESIVES · SEALANTS · CHEMICAL PRODUCTS FOR BUILDING

The Zelené Město residential complex in Prague

Cutting-edge products for new housing units in the city outskirts

A residential complex, called Zelené Město (meaning "green town" in Czech language), has been created on a 15-hectar green area near Prague. It is perfectly integrated in the surrounding environment and includes 432 housing units arranged in 16 six-storey buildings and one eleven-storey building.

The offer of high-quality, functional and specifically designed units ranges from 32 m^2 studios to 140 m^2 flats. All housing units allow their owners to enjoy the view of the surroundings from their own balconies or terraces.

Long-term service life of these buildings was guaranteed thanks also to the use of high-quality materials supplied by Mapei. Mapei spol. s r.o.'s (the Cezch subsidiary of the Mapei Group) Technical Service department proposed suitable products for preparing the substrates and installing tiles both in the exteriors and the interiors: namely, in communal facilities, as well as in bathrooms, kitchens, balconies and terraces of private flats.

Installation of Ceramic Tiles in the Communal Areas

The people living in the Zelené Město units regularly use communal corridors and staircases. The expert Mapei technicians selected a reliable system for the installation of ceramic tiles in these areas, in order to meet high housing standards.

The anhydride substrates used in the interiors were characterized by high sensitivity to humidity; therefore it was necessary to measure the residual moisture level during the substrate preparation.

The measurements carried out with the hygrometer confirmed the substrate's suitability for successive products application: therefore it was possible to treat the surfaces with PRIMER G, a synthetic-resin-based water dispersion primer for absorbent substrates. Ceramic tiles were applied on the treated substrates with ADESILEX P9, high-performance cementitious adhesive with no vertical slip and extended open time. Tile joints were grouted with ULTRACOLOR PLUS high-performance, anti-efflorescence, quick-setting and drying polymer-modified mortar with water-repellent DropEffect® and anti-mould BioBlock® technology.

Expansion joints were sealed with MAPESIL AC acetic-crosslinking silicone sealant.

Photo 1. The Zelené Město residential complex is located near Prague.

Photos 2 and 3. The substrates of communal corridors and staircases were treated with PRIMER G. Ceramic tiles were then laid with ADESILEX P9; joints were grouted with ULTRACOLOR PLUS.

Photo 4. In the bathrooms of private flats, the surfaces subject to humidity were waterproofed with MAPEGUM WPS and MAPEBAND. Ceramic tiles were laid

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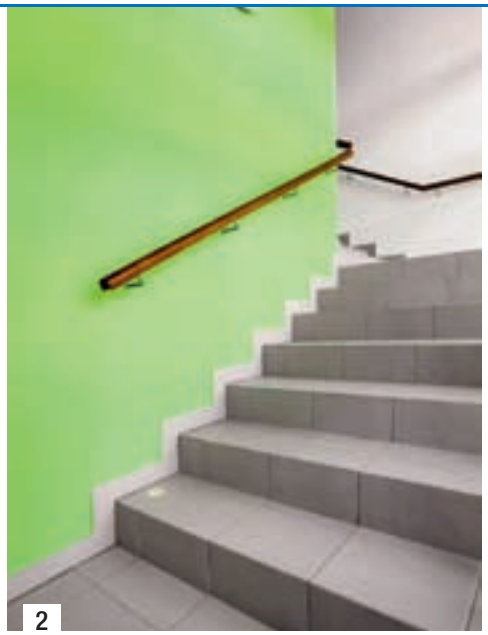

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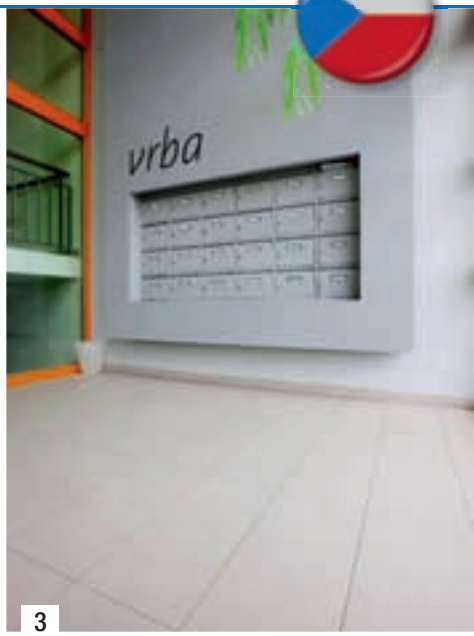

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Laying Ceramic Tiles in the Private Flats

Substrate preparation in the bathrooms and in some kitchens of the private flats was carried out in a similar way. As for the anhydride substrates, measuring the residual humidity of the substrate was fundamental again; PRIMER G was again applied to consolidate the substrates, eliminate the dust and ensure adhesion of the successive waterproofing layer. MAPEGUM WPS quick-drying flexible liquid membrane was used for waterproofing the surfaces subject to excessive humidity. MAPEBAND alkali-resistant rubber tape was applied in the first layer of the waterproofing compound to waterproof the corners between adjacent walls and between walls and floors. Consequently, other two layers of MAPEGUM WPS waterproofing compound were applied across each other. Once the waterproofing compound dried, it was possible to install the required sanitary fixtures and lay ceramic tiles on floors and walls.

Ceramic tiles were bonded on floors and walls using ADESILEX P9. Tile joints were again grouted with ULTRACOLOR PLUS and the expansion joints were again sealed with MAPESIL AC.

Waterproofing and Laying Ceramic Tiles on Terraces and Balconies

Balconies and terraces facing south are among the main features of the Zelené Město residential buildings. They are intended to ensure relax to the flats' owners but are exposed to the influence of the external environment and changing climatic conditions. In order to prevent damages to these structures, Mapei Technical Service experts recommended a complete system for waterproofing the floors of the balconies and terraces. It was

with ADESILEX P9 and joints were grouted with ULTRACOLOR PLUS.

IN THE SPOTLIGHT

MAPEGUM WPS

It is a ready-to-use, solvent-free, one component, grey-coloured paste with a base of synthetic resins in water dispersion. It is thixotropic and easy to apply on horizontal, sloping and vertical surfaces. It is used for waterproofing indoor floor and wall surfaces that are not subject to continuous immersion in water or rising damp. It is ideal for waterproofing surfaces in bathrooms, shower cubicles, kitchen walls and floors and work tops before laying ceramic tiles and natural stone. It acts as an anti-fracture membrane for substrates which are subject to light cracking. Systems based on the use of MAPEGUM WPS, on which tiles have been laid using Mapei cementitious adhesives and water dispersion adhesives, have been certified for use in damp environments by Säurefliesner (Germany) Sp Swedish National Testing & Research Institute (Sweden) and Norwegian Research and Building Institute (Norway). It can contribute up to **3 points** to obtain the **LEED** (Leadership in Energy and Environmental Design) certification.

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necessary to form slopes on the floor substrates in order to ensure smooth drainage of rainwater and prevent the water from damaging the structures. The screeds were then prepared with TOPCEM PRONTO ready-to-use, normal-setting, controlled-shrinkage mortar, mixed with PLANICRETE synthetic latex rubber to improve adhesion and strength of the following layers.

MAPELASTIC two-component, flexible cementitious mortar was applied in the thickness of 2 mm on the substrate. MAPEBAND rubber tape was laid in the first layer of MAPELASTIC to waterproof corners and expansion joints. After the waterproofing layer dried, it was possible to apply ceramic tiles on the waterproofed substrates using KERAFLEX MAXI S1 high-performance deformable cementitious adhesive with no vertical slip, extended open time and Low Dust technology.

ULTRACOLOR PLUS was again used for grouting the joints. The expansion joints were again sealed with MAPESIL AC, used in the same colour shade of the grout.

Photo 5. In the balconies and terraces, screeds were built with TOPCEM PRONTO mixed with PLANICRETE; the substrates were then waterproofed with MAPELASTIC. Ceramic tiles were then bonded with KERAFLEX MAXI S1 and joints grouted with ULTRACOLOR PLUS.

TECHNICAL DATA

Zelené Město, residential complex, Prague (Czech Republic)
Period of Construction: 2009-2010

Period of the Intervention: 2009
Intervention by Mapei: supplying products for preparing the substrates, waterproofing the surfaces and laying ceramic tiles in communal staircases and corridors, as well as in private bathrooms, kitchens, balconies and terraces
Designers: United Architect Studio a Casua s r.o.
Client: Zelené Město a. s. - Lighthouse Group
Contractor: Syner s r.o., Liberec
Laying Company: Syner s r.o., Kera Praha, Silvar Pavel, Jànov Horst
Laid Materials: ceramic tiles
Mapei Distributor: Saint Gobain Distribution, B-Port
Mapei Coordinator: Martin Korinek, Mapei spol. s r.o. (Czech Republic)

MAPEI PRODUCTS

The products mentioned in the article belong to the "Products for Ceramic Tiles and Stone Materials" and "Building Speciality Line" ranges. The technical data sheets are available at the web site: www.mapei.com.
Mapei's adhesives for ceramics and stone materials conform to EN 12004 standard and have been awarded the CE mark in compliance with Annex ZA, standard EN 12004. Mapei grouts for ceramics and stone materials conform to EN 13888.
Almost all the Mapei products for laying floors and walls are also GEV-certified and have been awarded the EMICODE EC1 ("very low emission level of volatile organic compounds") mark by GEV. Mapei pre-blended mortars for screeds and smoothing compounds comply with EN 13813 standard and have been awarded the CE mark, in compliance with EN 13813, Annex ZA.
Mapei products for repairing and protecting concrete structures comply with EN 1504 standard. Mapei cementitious mortars and membranes used for waterproofing before installing ceramics comply with EN 14891 standard. More than 150 Mapei products can contribute to obtain the LEED (Leadership in Energy and Environmental Design) certification.

Preparing the substrates

Planicrete: synthetic latex rubber to improve adhesion and strength of cementitious mortars.
Primer G (EC1): synthetic resin primer in water dispersion with a very low content of volatile organic compounds (VOC).
Topcem Pronto (CE EN 13813, CT C30-F6 $A1_{fl}$, EC1 R Plus): ready-to-use, normal-setting, controlled-shrinkage mortar for quick-drying (4 days) screeds.

Waterproofing

Mapeband: alkali-resistant rubber tape with felt for cementitious waterproofing systems and liquid sheaths.
Mapegum WPS: quick-drying flexible liquid membrane for waterproofing internal surfaces.
Mapelastic (CE EN 1504-2, coating **(C)**, principles **PI, MC** and **IR; EN 14891):** two-component, flexible cementitious mortar for protecting and waterproofing concrete surfaces, balconies, terraces, bathrooms and swimming pools.

Installation of ceramic tiles

Adesilex P9 (CE EN 12004, C2TE, EC1 R): high-performance cementitious adhesive with no vertical slip and extended open time for ceramic tiles.
Keraflex Maxi S1 (CE EN 12004, C2TE S1): high-performance deformable cementitious adhesive with no vertical slip, extended open time and Low Dust technology for ceramic tiles, particularly recommended for laying large porcelain and natural stone tiles.
Mapesil AC (F 12.5P up): pure, anti-mould, acetic silicone sealant for movements up to 25%.
Ultracolor Plus (CG2, EC1): high-performance, anti-efflorescence, quick-setting and drying polymer-modified mortar with water-repellent DropEffect® and anti-mould BioBlock® technology for grouting joints from 2 to 20 mm wide.

CZECH REPUBLIC PROJECTS PORTFOLIO

▲ Aquapark, Jindřichův Hradec

Mapei supplied several products to the contractors building this huge Aquapark, located in southern Bohemia. Mapei solutions were used in the changing rooms, the spa area and in the pools. EPORIP, TOPCEM, MAPETEX SYSTEM, MAPELASTIC, MAPEBAND, ADESILEX PG, ADESILEX PG4 and NIVOPLAN were used to prepare the screeds, waterproof and level the substrates; ELASTORAPID, ADESILEX P10, KERAFLEX MAXI S1, KERAPOXY, KERAPOXY DESIGN and MAPESIL AC were used to lay ceramic tiles and mosaics, grouting the joints and sealing the expansion joints.

NH Hoteles, Olomouc ▶

Mapei products were applied in several areas of this new hotel: after preparing the substrates with PRIMER G, MAPECEM PRONTO and TOPCEM PRONTO and levelling them with ULTRAPLAN ECO and ULTRAPLAN MAXI, granite slabs were installed in the kitchens, the laundry and in the lobby with KERAQUICK, KERAFLEX MAXI S1, MAPEKLEJ EXTRA - this product is distributed in the Cezch market by Mapei spol. s r.o.-, ADESILEX P9, KERACOLOR FF and ULTRACOLOR PLUS. The substrates in the kitchens and bathrooms were waterproofed with MAPELASTIC and MAPEGUM WPS. In the bedrooms and in the lounge area parquet was laid on the floors with ULTRABOND S955 1K, ULTRABOND P990 1K and ADESILEX PA; carpet floors were installed in the corridors and in the conference room with ROLLCOLL, ULTRABOND ECO FIX and PLANITEX D10 (the latter product is distributed in the Cezch market by Mapei spol. s r.o.).

The Charles' Bridge, Prague ▶

Mapei has been participating in the renovation of this world famous historical monument in 2005-2010 (see *Realtà Mapei International* n. 32). MAPEGROUT T60 and MAPE-ANTIQUE LC were used for the structural strengthening of the bridge's pillars, which were attacked by floods many times.

◀ Railway Station, Olomuc

In 2009 the waiting area in the railway station of Olomuc city was renovated and new ceramic floors were laid in the hall and ticket office.
After removing the old floors, the new substrates were built with MAPECEM PRONTO, treated with PRIMER G and smoothed with ULTRAPLAN MAXI and PLANOLIT.
Ceramic tiles were laid with ADESILEX P9 and KERAQUICK and joints were grouted with ULTRACOLOR PLUS and KERACOLOR GG. Expansion joints were sealed with MAPEFLEX PU 45. MAPEGROUT FAST-SET was used for quick repair of the concrete floor damages, after removal of the original tiles.

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Tunnel 513 in Prague

An important infrastructure to improve the city traffic

Chaotic traffic, overcrowded roads and roads paralysed by bumper to bumper vehicles: this is often the conditions in Prague, overwhelmed by a growing number of cars and heavy goods vehicles. The governors of the Capital of the Czech Republic hope that these problems can be partially solved by a high-volume urban ring-road which runs around the city.

This ring-road is made up of 7 sections. One of these sections, between Vestec and Lahvice – called n. 513 – also includes a tunnel for which Mapei products have been used. This section includes one of the bridges over the River Vltava and descends towards Cholupice. The road winds its way through the tunnel for around 2 km through the the Komoranská Strana area and comes out in Komorany.

The tunnel has two carriageways, with the two directions divided by a wall. The south-bound carriageway runs uphill and has three lanes, while the north-bound carriageway goes downhill with two lanes and an emergency lane.

The NATM Tunnelling Method

To construct this tunnel, the designers chose to excavate by NATM, the New Austrian Tunnelling Method, well known and applied in the Czech Republic.

The excavation and then pre-finishing of the tunnel were carried out according to this conventional tunnel construction method, which is based on the capacity of self-supporting a rocky mass so that the structure of the tunnel reaches the required stability. There are two types of finishing with the NATM method. The first one is in direct contact with the excavated surface formed by anchoring and shotcrete, and makes the tunnel stable during excavation work. The second type of finishing is made up of an internal concrete ring, applied after waterproofing the tunnel.

For the tunnel in section n. 513, the first finishing is 300 mm thick and was applied with the wet-mix system. The second finishing is made up of a concrete wall from 250 to 400 mm thick.

With this method, the sprayed cement mix is added with setting accelerators to make the concrete's addition to the surface immediately without the use of

Photo 1. A view of the tunnel upon completion of work.
Photo 2. The tunnel was constructed using the NATM construction method which specifies the use of shotcrete. DYNAMON SX14 superplasticizer and MAPEQUICK 101 FFG setting accelerator were used in the shotcrete mix.

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formwork. It is sprayed on the surface with a high-pressure nozzle. With the dry-mix system, the water is added while the concrete is being prepared in the cement-mixer, and is then channelled into a traditional concrete pump. The wet-mix system reduces the amount of waste, forms less dust and is the best method to use in closed environments. The aeration conduit in the tunnel was made from shotcrete, but in this case the dry-mix system was preferred. With the dry-mix system, the water is added in the cementitious mix in the nozzle.

Spraying the Concrete

The building contractor chose to use a series of Mapei products for this particularly challenging project, including a superplasticizer and an accelerator for the shotcrete used for the main finishing layer.

During the mix design phase, carried out by Radotìn Cement Mill, DYNAMON SX14 super-plasticiser and MAPEQUICK 101 FFG alkali-free liquid accelerator for shotcrete underwent laboratory testing. After this testing, which gave positive results, the test was then carried out directly on site to confirm that the right materials had been selected.

DYNAMON SX14 is particularly suitable for applications which require a low loss in workability, for example for particularly long transport distances or in hot climates, without compromising its high mechanical strengths, even after short curing times. Apart from products, Mapei also supplied technical assistance to the

Photo 3. The walls were firstly treated with MALECH, which regulates the absorption of the substrate and also promotes a better bond with the successive protective paint treatment.

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IN THE SPOTLIGHT

DYNAMON SX14

It is a liquid superplasticizing admixture for high quality concrete with high retention of workability. DYNAMON SX14 is a new, completely formaldehyde-free admixture for concrete based on non-sulphonated acrylic polymer. Because of its high workability (consistency classes **S4** or **S5** according to **EN 206-1**) and reduced amount of mixing water, concrete prepared with DYNAMON SX14 is easy to place in the fresh state and has high mechanical strength when hardened. It is especially recommended for all applications which require retention of workability (long transit time and/or hot weather) without compromising high mechanical performance even at early age. DYNAMON SX14 is mainly used for waterproof and durable concrete with high and very high compressive strength with exposure class; ready-mix concrete with high mechanical performance and high retention of workability in hot weather and/or over exceptionally long transit time; concrete that is pumpable over long distances; pumped concrete mixed with low cement factor and lacking fine aggregate.

designers and building company, and supervision during preparation of the design mix formula. The concrete made using DYNAMON SX14 was prepared in a concrete mixing plant, transported to the tunnel and then applied with a nozzle.

Immediately before application, MAPEQUICK 101 FFG accelerator was added to the mix. This product is a very rapid setting accelerator and is suitable for both wet-mix and dry-mix application systems.

MAPEQUICK 101 FFG gives concrete high development of mechanical strengths after very short, short and long curing times compared with concrete without an accelerator, which is practically zero. The total amount of shotcrete applied for both carriageways in the tunnel was approximately 70,000 m^2. Surface repairs of certain areas of the tunnel were carried out using MAPEGROUT THIXOTROPIC fibre-reinforced, controlled-shrinkage mortar and MAPEGROUT BM two-component cementitious mortar.

Finishing off the Tunnel

The final phase included finishing off the walls of the tunnel. To protect the support columns from aggression by chemicals, the surface of the tunnel was treated with MAPECOAT T two-component, solvent-free, odourless epoxy-acrylic paint, particularly suitable for use in closed environments

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Photos 4 and 5. The final finish was applied using ELASTOCOLOR PAINT.

ture on which it is applied has an attractive finish.
The entire section between Vestec and Lahvovice was inaugurated in Autumn 2010, and at the same start, work on sections 514 and 512 commenced, which will also play their part in improving the city traffic.

with poor ventilation.
The walls were initially treated with MALECH micronized acrylic primer, which is used to regulate the absorption of the substrate and to promote adhesion with the successive layer of protective paint. MALECH is also odourless and does not contain solvents, which makes it suitable for applications in closed or poorly ventilated environments.
This phase was completed by applying ELASTOCOLOR PAINT protective paint on the surface of the concrete in colours RAL 7032 and 7038.
Once dry, this paint forms a flexible film which is impermeable to water but permeable to vapour, and guarantees that the struc-

TECHNICAL DATA

Tunnel n. 513 Komorany-Cholupice, Prague (Czech Republic)
Period of Construction: 2007-2010

Periodo of the Intervention: 2007-2010
Intervention by Mapei: supplying products for the shotcrete used on the tunnel's surfaces, as well as products for the surfaces' coatings
Client: RSD
Works Director: Antonìn Petko (Jiri Krajicek - Subterra)
Contractor: Skanska BS a.s. (subcontractor Subterra)
Mapei Co-ordinator: Zdenek Runstuk, Mapei spol. s.r.o. (Cezch Republic)

MAPEI PRODUCTS

The products mentioned in this article belong to the "Admixtures for Concrete" and "Building Speciality Line" ranges. Mapei plasticizers and superplasticizers for concrete have been awarded the CE mark in compliance with EN 934 standard. Mapei products for repairing and protecting concrete structures comply with EN 1504 standard. The technical data sheets are available at the web site: www.mapei.com.
Concrete Repair
Dynamon SX14 (CE EN 934-2, T 3.1-3.2): fine aggregate supplementing superplasticizer for concrete with high retention of workability and high reduction of mixing water.
Mapegrout BM (CE EN 1504-3, R4): two-component cementitious mortar with a low modulus of elasticity for repairing concrete.
Mapegrout Thixotropic (CE EN 1504-3, R4): fibre-reinforced, controlled-shrinkage mortar for repairing concrete.
Protecting coatings
Elastocolor Paint (CE EN 1504-2, coating **(C)** principles **PI, MC** and **IR):** elastomeric, crack-bridging, permanently flexible, protective paint with high resistance to chemicals for internal and external surfaces.
Malech: acrylic resin undercoat in water dispersion to even out the absorption of substrates before applying other products.
Mapecoat T: two-component, epoxy-acrylic paint for protecting cementitious substrates.

Photo 1.
The tenth anniversary celebrations for Mapei's operations in Portugal were held at the Italian Embassy in Lisbon on 5th May. During the second part of the evening, guests moved to the garden area for the gala dinner by walking through a brightly-lit blue tunnel decorated with *azulejos* (typical Portuguese ceramic tiles).

Above. Mário Jordão, General Manager of Lusomapei.
Below.
A special logo was created to celebrate 10 years of Mapei business operations in Portugal that the subsidiary now uses for all kinds of marketing and communications activities. It also appeared in the *Realtà Mapei Portugal* magazine (right).

Ten Years in Portugal

Mapei celebrates its operations on Portuguese territory

Lusomapei, the Mapei Group's Portuguese subsidiary, celebrated its 10th anniversary: that is how long the Company has been profitably operating in Portugal. This kind of milestone deserves to be celebrated properly, so official celebrations for the anniversary of the founding of the subsidiary took place on 5th May in the majestic setting of the Italian Embassy in Lisbon. About 350 guests took part in the event, including some representatives of the Group's mother company such as the CEO of the Group, Giorgio Squinzi, and the Group's Operational Marketing and Communication Director, Adriana Spazzoli; various members of staff from Lusomapei; local press people; delegates from the Portuguese Ministry of Internal Affairs and, of course, the host of the event, the Italian Ambassador to Portugal, Luca del Balzo di Presenzano.

The evening's celebrations were preceded by a press conference at which journalists were introduced to the main operations of the Group and Lusomapei in particular through a detailed press file and official film clip of the Company. It provided the chance for Giorgio Squinzi to express his confidence in the future of Lusomapei, confirming that the Group would continue to make investments in the country, despite the tricky period the Portuguese economy is going through. Squinzi said he was satisfied with the way Lusomapei had developed over the last 10 years and emphasised that, although this subsidiary is part of a global group, it still embodies the culture of the country in which it is located.

Mário Jordão, the General Manager of Lusomapei, agreed with him about the Company's results and the need for sales to

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keep on increasing. He also pointed out that the main reason why Lusomapei has grown so significantly is due to improvements in work conditions at its production plants, the optimising of manufacturing processes and quality control that enabled the Company to obtain ISO 9001 certification in 2010, and the Company's greater competitiveness in Portugal. Among the targets for 2011, Jordão mentioned higher sales in the sector for redeveloping public works, greater diversification in its range of products, an increase in exports to markets such as Capo Verde and North Africa,

Photo 2. Guests, including the Group's CEO, Giorgio Squinzi, and the Operational Marketing and Communication Director, Adriana Spazzoli, were welcomed by the Ambassador, Luca del Balzo di Presenzano, and took part in a press conference together with the General Manager of Lusomapei, Mário Jordão, and João Belo Rodeia, President the Portuguese Association of Architects.

Photo 3. Guests could visit the "Habitar Portugal" exhibition set up in the courtyard.

Photo 4. Adriana Spazzoli, the Italian Ambassador Luca del Balzo di Presenzano, and the Marketing Manager for Lusomapei Luca Sacripanti.

and the strengthening of business relations and joint ventures with various operators in the industry, without ever relinquishing the kind of excellence that has always characterised its Technical Service and Research & Development departments, always strong points of the Mapei Group.

Jordão pointed out that the Portuguese market is declining sharply in terms of the use of ceramics and there is a general crisis in the construction industry, particularly as regards housing. 2010 ended on a positive note for Lusomapei, because it managed to develop some new solutions for alternative markets to those it usually supplies. They included the sectors of grinding aids, installation of sports tracks and solutions for bonding wood, vinyl, PVC and rubber floors. In future Lusomapei will fight to hold on to the market shares it has acquired and tackle new markets with great potential for growth.

The Ambassador, Luca del Balzo di Presenzano, congratulated Mapei on its success in Portugal, putting it down to corporate policy based on constant modernisation and innovation, enhancing the historical-architectural heritage and its human resources, and a commitment to the environment through sustainable growth.

João Belo Rodeia, President of the Portuguese Association of Architects, emphasised the Association's interest in cooperating more closely with Lusomapei, a partnership that has already borne excellent fruits. A fine example of this is the "Habitar Portugal" exhibition that has been held for the last five years now to promote excellence in local architecture. The evening's guests and press delegates were free to visit the exhibition held in the Embassy's outside courtyard.

At 7:30 p.m. all the guests were received by the Ambassador and

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Giorgio Squinzi. They were offered a welcome drink, listened to a piano recital of Italian classical music and received free gifts and souvenirs of the event. More specifically, guests were given pins with light blue-coloured flowers (Mapei's corporate colours) made out of origami and a tin with the anniversary logo containing seeds for flowers: a clear reference to the Company's ongoing commitment to the environment.

Guests at the gala evening were then taken through to another room in the Embassy, where a

Photo 5. Guests visited a special exhibition of Mapei products on display in showcases as if they were art pieces.

Photos 6 and 7. Guest walked through a blue-lit tunnel in the garden of the Italian Embassy.

Photo 8 and on the background. After the official greetings, the gala meal was livened up by a dance performance dedicated to air, water, earth and fire.

Photo 9. The outside courtyard was specially decorated for the occasion with the Lusomapei anniversary logo projected on the Embassy façade.

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Photo 10.
Lusomapei's distribution centre and head offices are located in Castanheira do Ribatejo.

Photo 11.
A detail of the Lusomapei manufacturing plant in Anadia, which has been awarded ISO 9001 certification.

selection of Mapei products that are a big hit on the Portuguese market were on display, almost as if they were a collection of works of art exhibited inside showcases made of an acrylic material while a film clip provided more detailed information about the Company's wide range of solutions.
The guests then went through to the outside courtyard that had been specially decorated for the occasion with the anniversary logo projected on the building's façade and a blue carpet indicating the tour route. A brightly lit tunnel lead through to the garden area where dinner was served.
The menu chosen for the occasion included some Italian specialities and Portuguese drinks that everybody enjoyed, along with a comic actor's exhibition and a dance performance dedicated to the air, water, earth and fire.
Celebrations ended with fireworks, anniversary cake, numerous toasts with champagne and the release of balloons decorated with the Lusomapei logo that lit up the night of the 10th anniversary of the subsidiary in the colours of blue and white.

A History of Successes

Lusomapei S.A.'s history began in late 2001, when the subsidiary was set up to promote the Company's lines of products in continental Portugal, Madeira, the Azores islands and Portuguese-speaking African nations.
In order to cater for local demands and be more competitive on the Portuguese market, Lusomapei S.A. purchased a manufacturing plant in the Anadia area, in the north of the country, serving both production and distribution purposes.
The next step was the opening of new units in Castanheira do Ribatejo in 2008, in the central part of Portugal, which operate as a distribution centre and headquarters for the subsidiary. After setting up production lines for concrete admixtures in October 2009, Lusomapei S.A. could respond more rapidly and effectively to local industrial needs in terms of concrete, offering a wide range of plasticizers and superplasticizers, which were carefully studied and analysed at the Mapei laboratories and awarded CE marking, in accordance with EN 934-2 and 934-4 standards.
The growth of the Portuguese subsidiary over the last 10 years has come in every realm of its operations: in human resources that now have 40 members of staff; production that now includes all 15 Mapei lines and 680 products for every kind of operation in the building sector; in sales, since 400 Portuguese customers use the Company's solutions and Lusomapei even distributes its products in Capo Verde, Angola, Libya, Tunisia, Morocco and Panama, corresponding to an overall turnover of 10 million Euros in 2010; on building projects that have used all the different lines of Mapei products to construct or repair over 700 buildings serving various purposes in Portugal.
These works include such prestigious infrastructures and constructions as the Santissima Trinità di Fatima Church (see *Realtà Mapei International* n.28); the Sá Carneiro de Porto Airport; Alzar hotel in Monte Gordo and Vinnci Baixa hotel in Lisbon (see *Realtà Mapei International* n.35); the São Vicente bridge in Guinea Bissau; the Sesimbra Bay Beach and spa resort; the do Covelo tunnel along the do Douro Litoral Motorway; the underground railway line in Porto and the Funchal Centrum in Funchal (see *Realtà Mapei International* n.30).

Tektónica

LISBON - 3-7 May

Tektónica 2011

Mapei goes from strength to strength in Portugal

When the curtains went down on the 13th edition of Tektónica, the Portuguese trade fair dedicated to constructions and public works held from the 3rd to the 7th of May at the International Exhibition Centre in Lisbon, the results were more than satisfying. Compared with the previous edition, there was an increase of 11% in the number of overseas visitors from 53 different countries, and a total of 58,000 visitors including sector specialists, distributors of construction materials, architects, engineers, designers, construction companies and architecture, engineering and design students, all of which were able to see at first hand the latest novelties in the sector presented by exhibitors from 28 different countries.

Side events were also organised as part of the programme, such as the Innovation Area (Espaço Inovação), the "Portugal Constrói" forum dedicated to overseas Portuguese construction projects, architecture exhibitions and conferences about the building sector. The theme of restoration was one of the highlights of the fair, with a dedicated Restoration Area (Espaço Reabilitação), a conference, an exhibition and a competition with awards for architectural projects.

Mapei Was There Too

Mapei also played an important role in the success of this edition of Tektónica with a stand which proved to be very popular with the public, with numerous, innovative solutions for specialists from the construction sector. The event was the ideal occasion for the Company to strengthen its commercial ties with many working partners, to further consolidate its position in various specific sectors of the Portuguese market and to get an insight into the latest trends on the local market, especially in the restoration, eco-sustainable building and ceramic laying sectors.

There were a number of display panels on the Mapei stand to illustrate the solutions developed by the Company for various sector requirements: from products for laying ceramic, wooden and resilient wall and floor coverings, to systems for renovating masonry (MAPE-ANTIQUE) and repairing concrete; from systems for thermal insulation of buildings (MAPETHERM) to solutions for underground constructions and waterproofing structures below ground level and in damp environments. In the latter sector in particular, the lion's share was once again taken by MAPELASTIC, the ultra-famous two-component cementitious mortar which has notched up sales records in numerous countries for the last 19 years, and by MAPELASTIC FOUNDATION, the flexible cementitious mortar for waterproofing concrete surfaces subjected to positive and negative hydraulic pressure.

A large part of the communications strategy devised by Mapei for this fair was dedicated to the corporate image of the Group and the anniversary of Lusomapei, the Portuguese subsidiary which celebrates its 10th anniversary this year (more details may be found in the previous article).

Tektónica 2011 was also an ideal opportunity for Lusomapei to present new marketing tools to promote the Company's products and systems: the Mapei general products catalogue, a global, exhaustive presentation of all the Mapei product ranges distributed in Portugal; the Mapei guides, a series of documents to help specialists from the civil construction sector quickly select the most suitable solution according to its specific requirements (waterproofing, concrete repair, sealing, laying ceramic and stone, laying and protecting wood, etc.); the Mapei Global Infonet DVD which, by collating all the information available on the Mapei website, enables users to digitally consult all the sections and relevant information.

At Tektónica 2011, Mapei products were also available in the SIMAC section of the Restoration Area, dedicated to materials and tools for the building industry. And this was yet another chance for the Company to demonstrate to the market its wide selection of products and systems available to meet any requirements, and to distributors that, if the future means diversifying the products on offer, then Mapei is the right partner to choose to face this new trend.

The next edition of Tektónica will be held from the 8th to the 12th of May 2012 in Lisbon.

In the photos. Mapei was present at Tektónica 2011 with a popular booth equipped with cutting-edge communication and promotion tools.

Mapelastic Foundation

Application phase

Two-component, flexible cementitious mortar for waterproofing concrete surfaces below ground level subject to negative and positive hydraulic pressure

- **Barrier against the counter-pressure of water in underground car-parks, cellars, lift shafts and swimming pools and tanks below ground level**
- Highly flexible under all environmental conditions
- Thixotropic consistency, waste reduced to a minimum when applied with a roller or by brush
- Completely waterproof to negative pressure up to 1.5 atmospheres

The Beloura Business Center in Sintra

The Mapetherm thermal insulation system ensured architectonic quality and functionality for prestigious Portuguese offices

Located in the town of Quinta da Beloura, near to the historical Portuguese city of Sintra, the Beloura Business Center structure is a combination of elegant architecture and maximum functionality of the various spaces. Rationality was the main criteria when designing the complex, with the objective of optimising productivity while making the most of its strategic position from a logistics viewpoint.
In fact, it is close to the network of roads which connect the towns of Estoril, Cascais and Sintra and numerous sports, commercial and entertainment centres.
The building comprises three floors, with the ground floor and first floor used for various services and shops, and an underground level with 113 parking spaces. The spaces are versatile and may be used either independently or combined together, to create work spaces covering a range of surface areas. All the spaces have raised floors, with plenty of natural light and the possibility to connect to a fibre optic network. The building has a sober yet elegant architectonic form, which gives companies working in the centre a professional, innovative image.
It sits on reinforced concrete pillars and floor slabs and has two rows of visors positioned all around the building to shade the double-glazed windows with aluminium frames. The internal walls are mainly in brick, while others are in plasterboard with glass-wool soundproofing. The external walls are also in simple brick masonry, lined on the inside with plasterboard and on the outside with insulating material.

Photo 1. The Beloura Business Center was built near Sintra in Portugal, with walls thermally insulated using the MAPETHERM system.
Photo 2. Laying the insulating panels with MAPETHERM AR1 adhesive.

Thermal Insulation for the External Walls

The thermal insulation of the external walls was guaranteed by applying the MAPETHERM system on all the façades, classified by the Guidelines for European Technical Approvals as "a system bonded using supplementary fixing devices". The guidelines are issued by EOTA, the European Organisation for Technical Approval.

The MAPETHERM system has also been awarded ETA N° 04/0061 certification after a series of analyses carried out at ITC-CNR (the Italian national Research Center – Italian Institute for Building Technologies) laboratories, according to ETAG 004 standard. Apart from issuing a certificate of conformity, EOTA has also authorised the manufacturer, in this case Mapei, to apply the CE symbol on the product. This symbol corresponds to a certificate for the conformity of the product to European standards regarding mechanical stability, resistance to fire, user safety, hygiene, soundproofing and low energy consumption. External thermal insulation is nowadays universally recognised as a high quality technical solution, in that it offers total, permanent elimination of thermal bridges, an increase in the capacity of the building to accumulate heat, protection for the structure, reduction in the thickness of the external walls which allows optimisation of the living areas and better living comfort in both the winter and summer.

The MAPETHERM system includes various products such as adhesive, insulating panels, glass fibre reinforcing mesh, smoothing compound, primer, finishing compound and various accessory items.

The following products were used for the MAPETHERM system in this project: MAPETHERM AR1 adhesive to lay the EPS insulating panels, MAPETHERM NET alkali-resistant glass fibre mesh to reinforce the base layer and promote a better bond for the smoothing compound, MAPETHERM AR1 used as smoothing compound to even out the surface of the insulating panels, MALECH acrylic resin based primer in water dispersion to uniform the absorption of the substrate before applying the final coating and to promote a better bond for the coating, QUARZOLITE TONACHINO medium-grain wall coating for internal and external surfaces with high protective and decorative properties, MAPEFLEX AC4 acrylic sealant to seal the expansion joints and various accessory materials. Apart from the MAPETHERM system, two further Mapei solutions were used inside the Beloura Business Center: PLASTIMUL bituminous waterproofing emulsion to waterproof the vertical and horizontal retaining walls and GRANIRAPID two-component, high-performance, deformable, rapid-setting and hydration cementitious adhesive to bond the porcelain tiles on the office floors.


4

Photos 3 and 4. Application of yellow and white QUARZOLITE TONACHINO acrylic coating.

This article was taken from issue n. 9 of Realtà Mapei Portugal, the in-house magazine published by Lusomapei, whom we kindly thank.

TECHNICAL DATA

Beloura Business Center, Beloura (Portugal)
Period of Construction: 2003-2005

Year of the Intervention: 2009
Intervention by Mapei: supplying products for thermal insulation and installation of ceramics
Client: Engiarte S.A.
Designer: Arch Miguel Dória, Arquitectos Associados
Contractor: Engiarte S.A.
Laying Company: Kenotecil
Mapei Distributor: Kenotecil
Mapei Co-ordinator: Lusomapei S.A. Technical Service (Portugal)

MAPEI PRODUCTS

The products mentioned in the article belong to the "Products for Ceramic Tiles and Stone Materials" and "Building Speciality Line" ranges. The technical data sheets are available at the web site: www.mapei.com. Mapei's adhesives for ceramics and stone materials conform to EN 12004 and have been awarded the CE mark in compliance with Annex ZA, standard EN 12004. Almost all the Mapei products for laying floors and walls are also GEV-certified and have been awarded the EMICODE EC1 ("very low emission level of volatile organic compounds") mark by GEV. Mapei sealants comply with ISO 11600 standard.
The MAPETHERM system has also been awarded ETA N° 04/0061 certification according to ETAG 004 standard. More than 150 Mapei products contribute to obtain the LEED (Leadership in Energy and Environmental Design) certification.

Thermal insulation of external walls

Malech: micronised acrylic resin based primer in water dispersion to uniform the absorption of the substrate before the application of Elastocolor Paint, Elastocolor Rasante, Elastocolor Rasante SF, Quarzolite Paint, Quarzolite Tonachino, Colorite Performance and Colorite Beton.
Mapeflex AC4 (F 12.5 up): one-component acrylic sealant in water dispersion.
Mapetherm AR1 (ETA 04/0061; ETA 10/0024; ETA 10/0025): one-component, cementitious adhesive and smoothing and levelling compound for thermal insulation systems.
Mapetherm Net (ETA 10/0024; ETA 10/0025; ETA 04/0061): alkali-resistant glass fibre mesh for reinforcing base layers in thermal insulation systems.
Quarzolite Tonachino (ETA 10/0024; ETA 10/0025): plastic, medium-grain wall coating, for protecting and decorating external and internal surfaces.

Waterproofing retaining walls

Plastimul: bituminous emulsion waterproofer and adhesive.

Laying ceramic floorings

Granirapid: high performance, deformable, two-component cementitious adhesive with rapid setting and hydration for bonding ceramic tiles and stone material.

Dynamon SX

For Major Projects

- **Allowing high water reduction in the mix**
- **Optimization of workability retention times**
- **Accelerated development of mechanical strength**

The development of new products and new application systems plays a fundamental role in the various design phases of the construction on the job site. Construction is faster and the final structure is more reliable and durable. **Dynamon SX** is the superplasticizing admixtures line for the major engineering projects market.

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Airport City Belgrade commercial business park

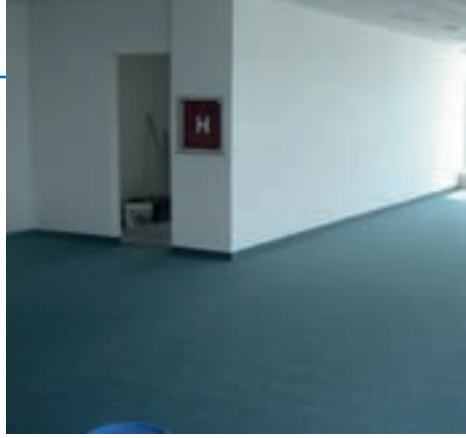
Cutting-edge products for a modern business center in Serbia

In the hearth of Belgrade, the capital of Serbia, there is a fast developing district called Novi Beograd or "New Belgrade". This was intended to be a pre-planned city, built in 1947 on the left bank of the Sava river, opposite of the old Belgrade. In recent years it has developed into a modern financial centre. Many businesses and Belgrade inhabitants moved in this district which has been witnessing the trends of contemporary architecture. Ambitious and innovative projects of urbanization have come to realization in New Belgrade. Many investments and the presence of renowned consulting and engineering companies had this part of the city develop into a real metropolis, that might be a match for many European and overseas cities. Due to the application of the latest building technologies and the use of cutting-edge materials, newly-built facilities in New Belgrade create an urban environment with a special flavor, different from the rest of the city. Amongst a host of business facilities, it is worth mentioning a multi-functional commercial complex, called Airport City Belgrade business park.

Photo 1. The Airport City Belgrade, the first modern business center in Serbia, was recently built in the Novi Beograd district of the city of Beograd.

The complex offers its tenants the concept of the "city-within-a city", seven buildings, over 185,000 m^2 of business and parking areas. It was designed to meet the needs of numerous foreign and local companies.

The construction of the facilities of this complex was accomplished in 2008 through phases.



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Waterproofing the Fountains

Mapei contributed to the building of the complex facilities by supplying innovative technologies and products.

Two glass mosaic-covered fountains have been positioned in the central section of a pedestrian precinct, surrounded by glass façades and lawns.

MAPELASTIC, two-component flexible cementitious mortar, was used for waterproofing and applied in two layers by inserting into the first layer FIBREGLASS MESH, an alkali-resistant fibreglass mesh for reinforcing protective waterproofing layers, anti-fracture membranes and thermal insulation systems (N.B. The product has been superseded in several markets by MAPENET 150).

MAPEBAND alkali-resistant rubber tape was used, both as rolls and sealing gaskets for outlets, for waterproofing all expansion joints and water leaks.

Short deadlines required the application of GRANIRAPID in its white-color version for laying glass mosaic in the fountains. This is a two-component, high-performance, deformable, quick-setting and drying cementitious adhesive for ceramic tiles and stone material, classified as C2F S1 according to EN 12004 standard.

It enables grouting of joints after only 3 hours and its application in swimming pools makes it a better solution in comparison to traditional adhesives, since it enables the involved surfaces to be quickly put back into service.

Joints were grouted with ULTRACOLOR PLUS, high-performance, anti-efflorescence, quick-setting and drying polymer-modified mortar, with water-repellent DropEffect® and anti-mould BioBlock® technology.

According to local regulations, modern Serbian business complex facilities must be properly equipped against the danger of fire. For this reason a 20x8 m tank was built for the water to be used for fire protection.

Just like in the fountains, MAPELASTIC waterproofing system was used in this case as well.

MAPELASTIC ensured a protective final layer and avoided the use of costly coatings commonly used in similar cases.

This system, applied as a final finishing layer, is suitable for use in reservoirs and tanks for drinkable water since it does not influence the water quality; it may also be used for the protection of concrete surfaces in reservoirs and plants for waste water processing.

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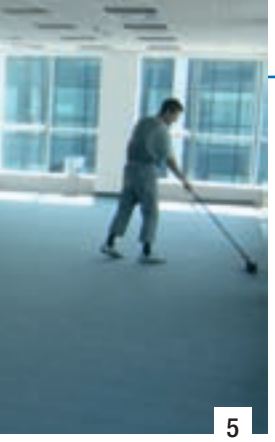
Photos 2, 3 and 4. The fountains surfaces were waterproofed with MAPELASTIC and MAPEBAND; mosaic was laid with GRANIRAPID; joints were grouted with ULTRACOLOR PLUS.

Laying Textile Floorings

Textile floors were laid in several internal areas for a total surface of over 15.000 m^2.

PRIMER G, synthetic resin primer in water dispersion with a very low emission level of volatile organic compounds (VOC), was applied on the absorbent and clean sub-



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strates. The surfaces were then smoothed with NOVOPLAN 21 self-levelling, quick-hardening smoothing compound, which is ideal for thicknesses of from 1 to 5 mm.
PLANIPATCH, fine-grained, ultra quick-drying, thixotropic cementitious smoothing compound, was used to ensure the perfect evenness of some critical areas. This product is ideal for thicknesses from 0 to 10 mm, even on vertical surfaces.
AQUACOL T adhesive in water dispersion was used for laying the textile floor coverings. This product features a a very low emission level of VOC and is especially suitable for bonding textile and linoleum coverings.
ADESILEX VZ, double-buttering polychloroprenic adhesive, was instead used to lay skirtings in the same areas.

Photos 5 and 6. Textile floorings in several internal areas were laid with AQUACOL T. Skirtings were bonded with ADESILEX VZ.

Photos 7 and 8. The cementitious flooring in the underground parking was built with the MAPECRETE SYSTEM, including admixtures from the DYNAMON line, MAPECURE SRA and EXPANCRETE.

Cementitious Floorings for the Parking

The construction of the flooring in the underground parking required an easy-to-apply solution that could ensure a crack-free concrete surface able to meet the strict requirements of the project in terms of static performances.
MAPECRETE SYSTEM was the chosen solution: a revolutionary system for the construction of large concrete structures without contraction joints. It can be used for any kind of construction, from floors with large surface areas to large foundation slabs and very long walls. It also made it possible to satisfy the project's technical requirements, such as a 30 kM/mm^2 mechanical strength at 7-day interval.
The MAPECRETE SYSTEM includes admixtures from the DYNAMON line. This is an admixture range with very high technological content, comprising acrylic superplasticisers for the elimination of steam treatment and for the prolonged preservation of workability in ready-mix concrete.

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In this case, DYNAMON SX, modified acrylic super-plasticiser for concrete, was added to the mix in the quantity of 3 lit./m^3 or 0.75% in relation to cement quantity, and used to obtain ideal reduction of the cement/water ratio and good levelling properties.
DYNAMON SXT-2,modified acrylic retardant superplasticiser, was also used in some cases to compensate extreme weather conditions, since the works were performed during the summer months.
Beside the superplasticizers, EXPANCRETE, expansive agent for manufacturing shrinkage-compensated concrete, and MAPECURE SRA, curing admixture with the property of reducing the formation of micro-cracking, were added to the mix. The combination of these two products creates a synergic effect, so that the concrete acquires properties which are normally impossible with traditional cementitious systems.
The concrete highly expands, even if it is air-cured, during the first days of hardening, and has an extremely low level of shrinkage.
The parking flooring included several layers, with thickness ranging between 3 cm and 12 cm. EPORIP, two-component epoxy

adhesive, and PLANICRETE, synthetic-rubber latex mixed with water and cement, were used to promote the bonding among the flooring layers and improve its final mechanical strength.

This article was taken from Svet Mapei n.3/2009, the in-house magazine published by Mapei d.o.o. (the Slovenian subsidiary of the Mapei Group), whom we would like to thank.

TECHNICAL DATA

Airport City Belgrade (ACB) centre, Belgrade (Serbia)
Period of Construction: 2005-2009 (for the first and second phases); the third building phase is still in progres

Period of the Intervention: 2007-2008
Intervention by Mapei: supplying products for preparing, waterproofing and levelling the flooring substrates in the underground parking, internal areas and external fountains; for laying mosaics in the fountains; for laying textile floorings in several internal areas; for building cementitios floorings in the parking
Clients: ACB Team, Africa Israel Investments Ltd. and Tidhar Construction
Project: Rami Wimmer Architects LTD
Contractors: Mercury Engineering d.o.o
Laying Companies: Mir inženjering d.o.o. (for the glass mosaics), Tik karpet (for the textile floorings) and Demex-St d.o.o. (for the cementitios floorings in the parking)
Mapei Co-ordinators: Nenad Cvetković and Nebojša Janić, Mapei Beograd (Mapei d.o.o.'s branch)

MAPEI PRODUCTS

The products mentioned in the article belong to the "Products for Ceramic Tiles and Stone Materials", "Products for the Installation of Resilient and Textile Floor and Wall Coverings" and "Building Speciality Line" ranges.
The technical data sheets are available at the web site: www.mapei.com.
Mapei's adhesives for ceramics and stone materials conform to EN 12004 and have been awarded the CE mark in compliance with Annex ZA, standard EN 12004. Mapei grouts for ceramics and stone materials conform to EN 13888. Almost all the Mapei products for laying floors and walls are also GEV-certified and have been awarded the EMICODE EC1 ("very low emission level of volatile organic compounds") mark by GEV. Mapei plasticizers and superplasticizers for mortars and concrete have been awarded the CE mark in compliance with EN 934-2 and EN 932-4 standard. Mapei products for repairing and protecting concrete structures comply with EN 1504 standard. Mapei cementitious mortars and membranes used for waterproofing before installing ceramics comply with EN 14891 standard.
More than 150 Mapei products can contribute to obtain the LEED (Leadership in Energy and Environmental Design) certification.
Waterproofing the surfaces and installing mosaics in the fountains
Granirapid (CE EN 12004, C2F S1; EC1): two-component, high-performance, deformable, quick-setting and drying cementitious adhesive for ceramic tiles and stone material.
Mapeband: alkali-resistant rubber tape with felt for cementitious waterproofing systems and liquid sheaths.
Mapelastic (CE EN 1504-2, coating **(C)**, principles **PI, MC** and **IR; EN 14891):** two-component, flexible cementitious mortar for protecting and waterproofing concrete surfaces, balconies, terraces, bathrooms and swimming pools.
Fibreglass Mesh: alkali-resistant glass fibre mesh for reinforcing protective waterproofing layers, anti-fracture membranes and thermal insulation systems (N.B. The product has been superseded in several markets by Mapenet 150).
Ultracolor Plus (CG2, EC1): high-performance, anti-efflorescence, quick-setting and drying polymer-modified mortar with water-repellent DropEffect® and anti-mould BioBlock® technology for grouting joints from 2 to 20 mm wide.
Laying textile floors
Adesilex VZ: double-buttering polychloroprenic adhesive in solvent for laying PVC floors and walls which must stick immediately and PVC base-boards and skirting boards.
Novoplan 21 (CE EN 13813, CT C20-F7 $A2_{fl}$-s1): self-levelling, quick-hardening smoothing compound for thicknesses of from 1 to 5 mm.
Planipatch (CE EN 13813, CT C35-F7 $A1_{fl}$, EC1 Plus): fine-grained, ultra quick-drying, thixotropic cementitious smoothing compound for thicknesses from 0 to 10 mm, including on vertical surfaces.
Primer G (EC1): synthetic resin primer in water dispersion with a very low emission level of volatile organic compounds (VOC).
Building cementitious floorings
Dynamon SX (CE EN 934-2, T 3.1-3.2): modified acrylic super-plasticiser for concrete, characterised by its low water/cement ratio, very high mechanical strength and long workability times.
Dynamon SXT-2 (CE EN 934-2, T 11.1-11.2): modified acrylic-based retardant super-plasticiser for concrete.
Eporip (CE EN 1504-4): two-component epoxy adhesive for monolithic sealing of cracked screeds.
Expancrete: expansive agent for concrete.

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Waterproofing system of a photovoltaic plant

An intervention on the roof of a shopping centre in Cervignano del Friuli (Italy)

by Roberto Protto*

In the Summer of 2010, the roof of the La Rotonda shopping centre in Cervignano del Friuli (Northern Italy) was waterproofed. The waterproofing system was installed before integrating the 780 kWp Sunova photovoltaic plant into the roof.
The waterproofing work was absolutely essential to guarantee a watertight seal against infiltration of atmospheric precipitations, deterioration of the structure and subsequent damage to the electrics and pipe-work and to ensure that the entire complex could be used in complete safety. The waterproofing system had to be designed in order to allow also total functional integration of the photovoltaic plant. The solution opted for was MAPEPLAN T M, a Polyglass waterproofing system with highly-advanced technical characteristics and a low impact on the environment.

Requirements of the Waterproofing System
Because of the critical nature of this particular intervention, the waterproofing system for the roof had the following minimum requirements:
- compatible and integrated with the specified Sunova photovoltaic plant;
- functional and long lasting (with a higher service life than the photovoltaic plant);
- simple, rational and safe during installation;
- featuring good compressive strength and suitable for foot traffic;
- with high solar reflectance index (SRI);
- not containing or emiting substances harmful to man or the environment;
- resistant to aspiration induced by the wind;
- adaptable to the movements and settling of the split support structure.

Photo 1. A view of the building upon completion of work, with the photovoltaic plant integrated into the roof.
Photo 2. Laying MAPEPLAN T M synthetic membrane.

The MAPEPLAN T M Solution of Linear Mechanical Fasteners
On the basis of the specifications and minimum requirements for the project, the MAPEPLAN T M system with linear mechanical fasteners was selected to waterproof the roof. The new waterproofing layer, 1.8 mm thick sheets of MAPEPLAN T M with 12 cm overlaps between the sheets, was applied dry over the wooden load-bearing structure. The sheets were heat-welded at the overlaps with manual and automatic hot air blowers to form "flat" thermo-welded joints. A separation layer in 200 g/m^2 non-woven fabric was laid prior to the waterproofing layer.
To contrast the aspiration effect of the wind, the waterproofing layer was fastened directly to the wood-

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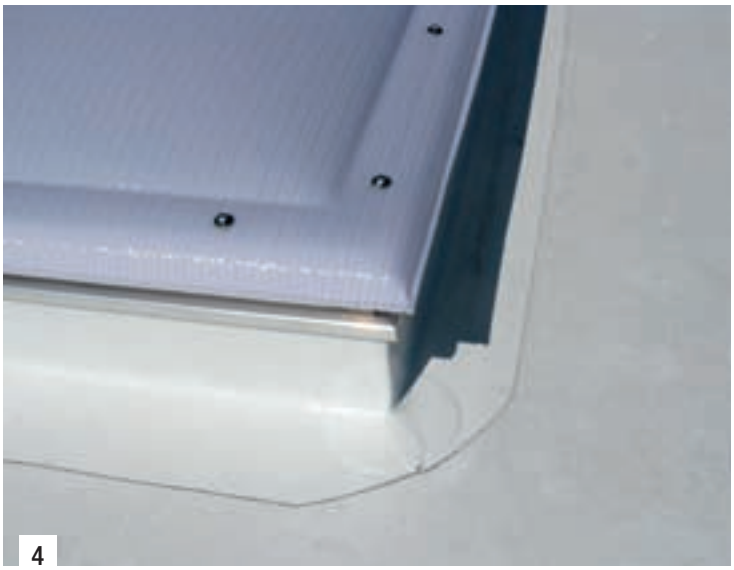

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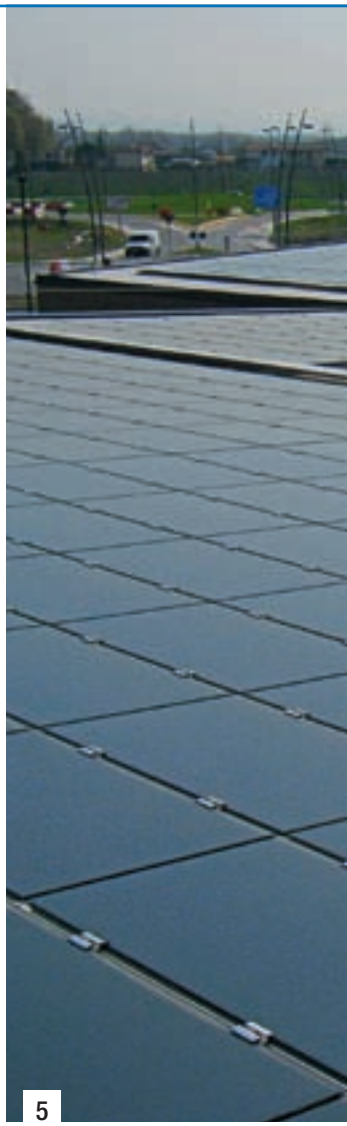

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Photo 3. The first phase of installation of the Sunova photovoltaic plant.
Photo 4. A detailed view of a fillet between MAPEPLAN T M and a skylight's surface.

en load-bearing structure using special mechanical fasteners. We refer to the waterproofing in this article as a "system", because all the accessories and auxiliary elements are perfectly coordinated, compatible and integrated with the MAPEPLAN T M waterproofing membrane. To sum up, the stratification of MAPEPLAN T M installed is as follows:
- old support layer: prefabricated sandwiched wooden panels with mineral wool insulation according to current norms and regulations;
- adjustment layer: 100% polypropylene non-woven fabric with a weight of 200 g/m^2 to form a regular surface to apply the new waterproofing membrane;
- waterproofing membrane: flexible TPO/FPO polyolefin layer such as MAPEPLAN T M 18, thickness 1.8 mm, applied dry and fixed in place with mechanical fasteners;
- heat welding of the overlaps using manual and automatic hot air blowers;
- mechanical fastening system: anchoring the new impermeable stratification to the load-bearing structure with a system of special mechanical fasteners in correspondence with the ribs on the sandwich panel support layer;
- final finishing and blending in of the various elements of the waterproofing membrane with profiles and tinwork made from sheet covered with MAPEPLAN T M.

Characteristics and Advantages of the MAPEPLAN system

The MAPEPLAN T M waterproofing system used for this intervention is technically-advanced and offers unique functional performance characteristics, such as the mechanical fastening system for the waterproofing membrane, which has the advantage of anchoring the new stratification solidly and directly to the underlying load-bearing structure.
The function of contrasting the aspiration effect induced by the wind is ensured by a special mechanical fastening system, calculated and sized according to characteristics such as the height and shape of the building, the location of the building, the type of support layer, the waterproofing membrane and reinforcement and, finally, the estimated speed of the wind.
This mechanical fastening system allows the layer to be applied dry, that is, independently from the support layer, so that all the movements, cracking and settling of the support layer are not transmitted or have a negative impact on the waterproofing membrane, which has the possibility to move.

MAPEPLAN T M Waterproofing Membrane in TPO/FPO

MAPEPLAN T M is made from flexible polyolefin TPO/FPO and has innovative characteristics. Firstly, it contains no plasticisers and no volatile compounds. The flexibility of the membrane is given by the special chemical structure of the base polymer: the element which offers the flexibility is present in the molecular chain and it is bound to the chain through a chemical bond. This chemical bond is very strong and is difficult to separate, which translates into a longer life of the intrinsic characteristics of the layer and better resistance to aggressive substances and the action of atmospheric agents, micro-organisms and bacteria. The dimensional stability of the layer is guaranteed by internal reinforcing net and the "multi-extrusion coating" production process.
The internal high-strength, polyester net gives it very high tensile strength. This characteristic is indispensable in mechanical fastening systems to offer sufficient resistance to the aspiration effect of the wind.
The TPO/FPO membrane is highly ecological, in that it is free of plasticisers and volatile compounds and does not contain substances which are harmful for the environment or people. The modern, highly-technological production process was designed and con-

Photo 5. A view of the Sunova photovoltaic plant upon completion of work.

structed to have the lowest possible impact on the environment and to guarantee each main phase of the life of the waterproofing membrane (production, transport, installation, service life and final disposal).

MAPEPLAN T M Smart White Coloured Surface

The top layer of the waterproofing membrane applied, in this case MAPEPLAN T M SMART WHITE, was made in a special white colour which guarantees excellent reflectance of sunlight with an SRI value of 102. MAPEPLAN T M SMART WHITE reduces the surface temperature of the roof by 50% compared with a dark or black coloured covering and, as a result, also reduces the temperature inside the building and keeps it constant.

This leads to an unquestionable advantage in hot weather: the lower surface temperature means that air-conditioning systems may be optimised and used less to reduce energy consumption and, therefore, energy costs.

It is important to note that the colouring is in the actual body of the material and is an integral part of the material itself, and is not a simple surface painting/treatment which would otherwise alter or deteriorate over the years.

The different surface colour of the layer also has the advantage of forming a signal layer, which shows up any accidental damage or scratches on the surface caused while work is being carried out after laying the sheets.

The "Multi-extrusion Coating" Production Process

The MAPEPLAN T M sheets are produced in a modern, highly-technological "multi-extrusion coating" plant which has a low impact on the environment. This production process applies the synthetic TPO/FPO matrix directly onto both faces of the reinforcing net at the same time, to guarantee that it is perfectly encapsulated within the structure of the sheet. Thanks to this coating, MAPEPLAN T M forms a proper one-layer sheet which is not subject to delamination and is resistant to all forms of stress (physical, chemical and thermic).

Pre-laminated sheets which then need to be bonded together are not used to produce the MAPEPLAN T M sheet.

Special equipment and specifically trained layers are required for the installation of synthetic waterproofing membranes. This is why the supply and installation chain for MAPEPLAN synthetic waterproofing systems is only through specialised laying companies, so that final users only receive functional, durable waterproofing systems.

The MAPEPLAN waterproofing system integrates perfectly with the wide range of special accessories products supplied by Polyglass and Mapei. This global view and approach is the best guarantee for designers, laying companies, owners and final users that the work carried out is functional and durable, with access to complete, all-round, expert technical assistance.

* Polyglass SpA Commercial and Marketing Director

TECHNICAL DATA

La Rotonda Shopping Centre, Cervignano del Friuli (Province of Udine, Italy)
Period of Construction: 2010 - 2011

Year of the Intervention: 2010
Intervention: supplying products for waterproofing the roof
Client: Sunova s.r.l.
Works Direction: Studio Tecnico Gregoris, Cervignano del Friuli
Contractors: CO.PA.RI scarl (for waterproofing the roof); Sunova s.r.l. (for building the photovoltaic plant)
Coordinator: Mauro Redemagni, Polyglass SpA (Italy)

MAPEI PRODUCTS

Mapeplan T M (CE EN 13956): roofing and waterproofing synthetic membrane, manufactured by Polyglass, subsidiary of the Mapei Group. The technical data sheet is available at the web site www.polyglass.it. The MAPEPLAN T range synthetic waterproofing membranes, produced by Polyglass, have been formulated for applications on coverings, and conform to **EN 13956** standard.

Marylin Monroe wearing loose-fitting high-waisted jeans in the 1950s.

Vinavil for blue jeans

CRILAT 1815, a polymeric dispersion giving fabrics a worn look, has now been developed

The Vinavil trademark is everywhere. You can find it in all kinds of good sectors, ranging from such conventional products as adhesives and binding agents to other less familiar sectors such as PVC manufacturing, car body parts, cosmetics and certain kinds of foods, such as chewing gum and coatings for cheese. Vinavil is also used in the fabrics industry such as in non-woven fabrics or pigment printing, but until now it has never been used in the dazzling world of fashion. Now, however, it has carved its entrance in this industry too, particularly in the blue jeans sector for which a special application has been developed called CRILAT 1815, that uses an acrylic dispersion.

Modern jeans were created in 1873 through US patent number 139.121 and basically designed for work purposes.

They were not called jeans but rather "waist overalls" that were supposed to be comfortable, tough and hard-wearing even when roughly and repeatedly washed.

Down the decades lots of different styles have been created. In the 1950s Marilyn Monroe wore tight-fitting, high-waisted jeans, while James Dean preferred the more classic and legendary 501s.

In the1960s long garments and bell-bottoms came into fashion, which became shorter and tight around the ankles in the1970s, ripped in the next decade before giving way to low-waisted styles in the 90s followed by a more conventional "faded" look. Now, thanks to technology allowing the production of a three-dimensional shaped garment (i.e. a kind of denim that is already creased, faded and marked when it comes out of the factory, something that usually only happens after being worn for long and washed frequently), jeans has a "worn" look.

New Technology for that "Worn" look

The technology required to achieve this effect is not so simple. The garment has to be manufactured, placed on an inflatable dummy, shaped around certain specific points, and then impregnated with chemicals by means of immersion or spraying, which cross-link within the fabric during subsequent processing. Generally speaking, a suitably modified glyoxalic dispersion is used that reticulates through acid-based catalytic conversion at temperatures over 100°C. This is followed by a drying stage and reticulation process in big ovens to guarantee higher productivity.

This is a critical phase in that the notable differences in temperature inside large ovens can result in insufficient reticulation (when temperature is too low) or excessive interaction by the acid catalyst on the cellulose fibre (when the temperature is too high). In both instances anomalies occur which emerge in the next manufacturing stage (abrasion process for creating the "used" effect), and can lead to the manufacture of garments off-spec. Vinavil's research has developed CRILAT 1815 dispersion for this particular application, which reticulates at low temperatures allowing significant benefits compared to the aforementioned technique.

This new polymer allows the reticulation during the drying stage, which means that the process can be radically simplified with notable energy savings: this actually eliminates the stage during which most anomalies occur. Moreover, the emission of formaldehyde, which typically happens when using glyoxalic dispersions, does not occur. Garmon, a company based in San Marino supplying products and technology for treating this type of garment, has developed a new kind of technology based on the use of CRILAT 1815 in partnership with Levi's. In April 2010 Vinavil SpA and Garmon applied for a joint patent for this procedure and for the use of CRILAT 1815.

This has enabled Vinavil and its products to enter a highly specialized field of application (the world of fashion and jeans) for treating manufactured garments. This fits in with the Mapei Group's general policy, which, in addition to backing corporate growth, aims at developing new products for niche sectors that are ecologically compatible and safe for users.

Zaverio Rovea, the Managing Director of Vinavil, is pleased to claim that: "From conventional products such as adhesives and paints, to eco-friendly products such as nonstick chewing gum, we have now made a foray into the fashion industry: this is Vinavil, a company that never ceases to astound, innovate and update!". RM

THE WORLD OF BLUE JEANS: A BIT OF BACKGROUND HISTORY AND SOME INTERESTING FACTS

It is hard to trace the history of jeans: there is an abundance of information, some certain but also plenty made up; let's look at the most significant. "Blue", of course, refers to their colour and "jeans" to the city they originally came from, Genoa. Blue de Gênes was the name of the tough, hard-wearing fabric that was shipped around from the port of Genoa in large quantities: as early as in the 16th century it was used for holding sails and then, since cotton turned out to be cheaper than wool, for heavy-duty work clothes. It is worth remembering that one of the first recorded usages of the fabric jeans for clothing purposes may be traced back to the so-called Expedition of the Thousand (Italian patriots joining the military campaign led by the revolutionary general Giuseppe Garibaldi in 1860), who, together with Garibaldi, wore a combination of a legendary red shirt and "Genovese"-style trousers. The chemicals industry has also played its part in developing the market for jeans. Guado, an extract from a plant grown in Europe, was replaced by indigo at the end of the 16th century, a dye coming from Central America and the Indies that was cheaper but less effective. Around 1890, BASF began manufacturing synthetic indigo that totally replaced natural products. Johann Friedrich Wilhelm Adolf von Baeyer received the 1905 Nobel Prize for Chemistry for research carried out in this sector. In 1851 Isac Merritt Singer patented the first sewing machine, very similar to its modern-day counterpart, and supplied his machines to a company in San Francisco that made curtains and trousers out of fabric and jeans. The owner of the company was Levi Strauss, a German Jew who had emigrated to the United States and who in 1873 deposited the patent (together with a tailor called Jacob Davis) for rivets and other metal accessories for reinforcing trousers made of the fabric jeans that were called "waist overalls". They were extremely tough work overalls fitted with braces and a bib, so hardwearing that in 1886 Strauss came up with the famous "two horses brand", whose label depicted two horses attempting to rip a pair of jeans by pulling in opposite directions. This is how the legendary 501s were created, still a classic design on today's market. After Levi's and Davis's patent expired at the beginning of the 20th century, other manufacturers came up with new designs that helped proclaim the ultimate success of blue jeans: Lee and Wrangler. The former produced Bib Overalls dungarees and Union All, overalls made entirely out of denim, knitting together the trousers and jacket; the latter manufactured work garments made of jeans. The US market was shared by these three manufacturers: Levi's was the leading brand in the South, Wrangler's in the North and Lee's in the Midwest.

For unknown reasons, the name "overall" was replaced in the 1920s by "jeans" or "denims", a synonym whose roots lie in a mediaeval French word (fabric "de Nîmes"). The garment was named after the fabric, and this marked the beginning of the history of modern jeans. With the outbreak of the Second World War, jeans began to be worn by everybody, most notably American soldiers, who also wore them in their leisure time and left huge quantities behind in Europe. In the 1950s jeans officially widened their horizons beyond just the United States, thanks to Hollywood film stars who introduced them to the general public. The Fiorucci Store then opened in Milan on 31st May 1967 and was the first to sell women's designed jeans made of a mixed denim and Lycra fabric, a fiber that was so elastic it could stretch to 7 times its original length. This prompted the creation of tight-fitting jeans, which resulted in the magazine *Playboy* calling Fiorucci "a benefactor to all mankind". In actual fact, blue jeans are a symbol of democracy, an item of clothing which can be used by anybody, anytime and anywhere. They are actually the most revamped, transformed, revised, reinvented and long-lasting item of clothing existing. Nowadays some two billion pairs of jeans are manufactured every year, corresponding to total sales of over 20 billion Euros.

1

UCI Mountain Bike World Championships: Cross Country Marathon

Mapei was the Gold Sponsor of the world championships held in Montebelluna (Northern Italy)

The Cross Country Marathon event of the UCI (Union Cycliste International – the International Cycling Union) Mountain Bike Marathon World Championships were held in Montebelluna in the province of Treviso (Northern Italy) on Sunday, 26th June, 2011.

This was the most important event of the Italian mountain bike season and culminating moment in a sequence of events held in this area, including the two previous years' editions of the Italian and European Championships.

Marathon mountain biking is more similar to road racing than the Olympic cross-country cycling race, which is certainly more technical but less intriguing in terms of the courses and less able to capture the interest of newcomers to mountain bike cycling. Steep downhill sections across rugged terrain, sections through old villages and prestigious natural settings make this a unique speciality that lots of former professional road races are extremely fond of, such as Gilberto Simoni and Mirko Celestino (who raced on 26th June).

Huge crowds provided the backdrop for a highly exciting day's racing along the paths of Montebelluna and its neighbouring boroughs. Mapei was, in fact, the Gold Sponsor of the event, showing once again the Company's great passion for sport and the multifaceted world of bikes in particular.

On a bright and warm day, the amateurs were the first to line up at the start of a competition celebrating its 10th edition this year. About 2000 mountain bikers, evenly divided between the Classic and Marathon courses, were able to savour this very special atmosphere.

Photo 1. Approximately 2000 riders took part in the Classic and Marathon events.
Photo 2. The Swiss rider Christoph Sauser at the finish line.

2

Christoph Sauser Was the Fastest in the Men's Race

The men's event was over 115.7 km across tricky terrain including some tough climbs with gravel and single track sections running between them. The winner was one of the big favourites, the Swiss rider Christoph Sauser, who had already won the world championship in this event in 2007. The Swiss champion managed to break away towards the end of the race as he left the Czech rider Jaraslav Kulhavy, another of the favourites and one of the stars of the current cross country season, in his wake. Sauser eventually crossed the line on his own in the excellent time of 4h24'48".

Kulhavy won the silver medal coming in 3'10" behind, while the Italian rider Mirko Celestino put in a truly excellent performance: this Italian cyclist, who won the silver medal last year and was keen to prove he is one of the leading marathon mountain bikers, managed to come home in third place despite a tyre puncture around the 30th kilometre. Celestino caught up and overtook the German rider Tim Böhme, finishing 5'42" behind Sauser and taking the bronze medal.

The reigning champion Alban Lakata from Austria only finished sixth (10'42" behind the winner) while the multi-Olympic and world cross country champion Julien Absalon was forced to retire after being right up at the front when the race was reaching its crucial stages.

3

Photo 3. A jubilant Annika Langvad crosses the finish line. **Below.** The prize-giving ceremony for the winners of the men's and women's cross country marathon.

Annika Langvad on Top of the World

In some respects the surprise winner of the women's world championships was the Danish rider Annika Langvad. The 27-year-old athlete managed to break away from her rivals over the difficult last section of the course, crossing the finishing line on her own. Langvad, a truly multi-skilled rider (this year she won the Danish National road time trial championship and last year the national road race, time trial, cross country and cyclocross championships last season), covered the 98.3 km of the women's race in a time of 4h20'32" finishing 1'55" ahead of the reigning Olympic cross-country champion, the German rider Sabine Spitz. Third place and bronze medal went to the Swiss rider Ester Süss, the reigning world champion, who crossed the line 3'22" behind the winner. The outstanding Norwegian rider Gunn-Rita Dahle Flesjaa came seventh (11'14" behind) and already has a long-distance race named after her held over the same course.

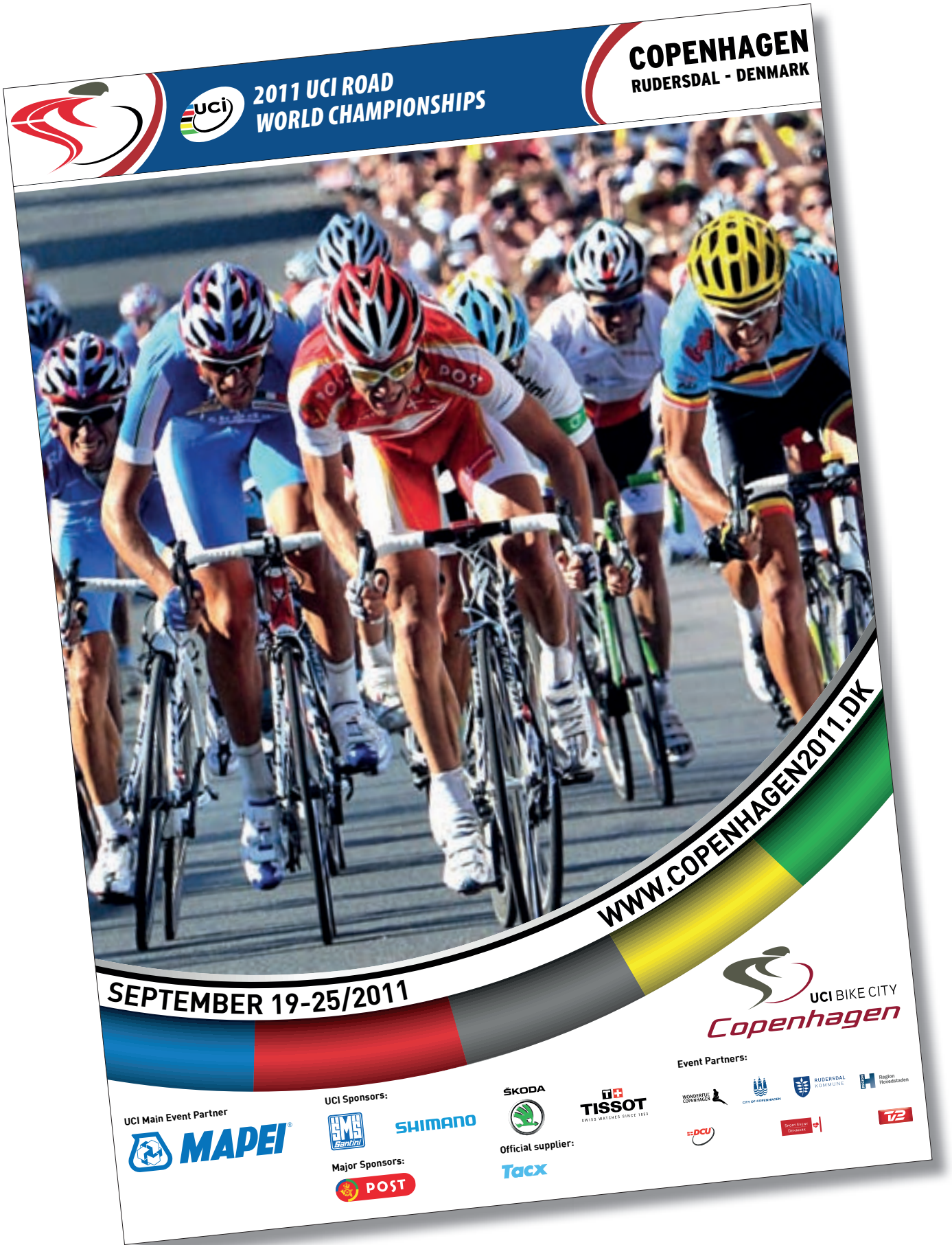
The prize-giving ceremony was held in a crowded town square, where the medals were awarded by the President of the Italian Cycling Federation and Vice President of UCI, Renato Di Rocco, the President of the Province of Treviso, Leonardo Muraro, and the Mayor of Montebelluna, Marzio Favero.

The world championships were a real success, partly thanks to the extensive media coverage given to the event. Credit for this must go to Pedali di Marca (Events Director of the Organising Committee of the UCI MTB Marathon World Championships 2011) agency, who succeeded in introducing mountain biking to a vast television audience. The success of the event is clearly brought out by what Christoph Sauser, 2011 MTB Marathon World Championships, had to say right after the event: "The crowds were fantastic, I really do believe this is one of the best races in the world. They were particular important when there were just four of us in the lead; I fell great throughout the race and would like to thank my teammates. It was really exciting to enter this sort of mountain bike "stadium"".

5

Save the date

Mapei is UCI Main Event Partner during the Road World Championships in Copenhagen from 18th - 25th September.



Open Days at the home of Mapei

"Fabbriche Aperte" initiative was held at 5 of the Group's Italian manufacturing facilities to promote the chemicals industry and Mapei's commitment to sustainable development

The Mapei Group took part in the "Fabbriche Aperte" (Open Days) initiative, promoted by Federchimica, the Italian Federation of the Chemical Industry, by organising five open days at its production facilities in Italy.
Initiated in 1987 to consolidate a relationship built on credibility and trust between Italian industry and the general public, this event has proven to be an important sign of transparency, open-mindedness and an opportunity for opinions to be discussed.
This edition of Fabbriche Aperte was a particularly special one.
In fact, 2011 has been proclaimed International Year of Chemicals by ONU as part of the last decade of celebrations dedicated to education and sustainable development.
This year alone, 94 Italian companies took part in the initiative sponsored by the Italian Ministry of Economic Development, Trade Unions from the Italian industry and INAIL (the Italian Workers Compensation Authority), with a total of 129 facilities open for visits from the general public.

5 open manufacturing facilities

6,000 visitors

680 articles printed in the daily papers

The Mapei Group and its subsidiaries opened the doors of five of their manufacturing facilities to the public in May: on the 7th, the Vinavil plant in Villadossola (Province of Verbania, Northern Italy), on the 14th, the Adesital plant in Fiorano (Province of Modena, Central Italy) and on the 15th it was the turn of the Polyglass plant in Ponte di Piave (Province of Treviso, Northern Italy). Two Mapei facilities were also involved, on the 21st the plant in Latina (Central Italy) and on the 28th the plant in Robbiano di Mediglia (near Milan, Italy).
To bring the general public closer to the chemicals industry by putting them in direct contact with its products, the world of research and the infinite variety of applications for chemicals: these were the objectives of the initiative to which Mapei gladly adhered to.
One of the key items during the guided visits around the Group's production facilities were the "green" initiatives, which aim to reduce energy consumption and the impact of the production processes and the products themselves on the environment.
They were five days to celebrate, but also to reflect. In the Vinavil facility in Villadossola, for example, a questionnaire handed out to the visitors gave us a chance to assess how much they had appreciated and enjoyed the initiative: 82% of those questioned said that Fabbriche Aperte was "very interesting", while 98% of those questioned said that "the chemicals industry is useful". Finally, when they were asked the question "Would you take part in a similar event by visiting this company again or visiting another company?", 98% of those questioned gave a positive reply.

Mapei's sustainable spirit at Mediglia

A day to celebrate while discovering the excellence in the Mapei Group's main production facility near Milan (Italy)

All of Mapei's sustainability was on show on the 28th of May in Robbiano di Mediglia (near Milan), home of the main production facility of the Mapei Group. A truly festive day, with more than one thousand people taking the opportunity to see up close the production processes and excellence achieved by the Company. The day opened with a press conference with Giorgio Squinzi, CEO of the Group, and Andrea Perego, Plant Operations Manager of the Mediglia plant, together with Roberto Formigoni, President of the Lombardy Region (where Milan and Robbiano di Mediglia are located), Cristiana Muscardini and Lara Comi, Members of the European Union Parliament, Claudio Benedetti, Director General of Federchimica (the Italian Federation of the Chemical Industry), and Paolo Quaini, Head of the Commercial Department - Business Unit Energy Efficiency and Sustainable Development at Edison SpA.

An Exemplary Model of Modernisation

Giorgio Squinzi opened proceedings as host by welcoming the numerous guests, and by outlining the current situation in the Italian chemicals

total surface area
of the manufacturing facility
160,000 m²

total covered area of the facility
53,000 m²

employees
490

Above. Arrival of the guests and local authorities and the press conference which opened the day's activities.

Below. A view of the Mediglia manufacturing facility and, to the side, a plan view of the route of the visit. A more detailed description of the various stops during the guided tour, which correspond to the numbers indicated in red, may be found on the following pages.

Loading zone for bulk liquid products


Mortars production department

industry. "With an estimated production worth 51 billion Euros in 2010, Italy is the third largest producer of chemicals in Europe after France and Germany and the eighth largest in the world. The Italian chemicals industry employs about 117,000 people with almost 3,000 companies operating in this sector. The chemicals industry has one of the highest levels of added value per employee, 50% higher than the average for industry". He then highlighted sustainable development within the industry: "We have taken gigantic steps forward in safeguarding the environment, and for years our sector has been at the top of the award charts for safe, healthy plants. It is about time that the general public were aware of this, by meeting us and getting to know us better, and by seeing at first hand the progress we have made, progress which we are quite rightly proud of". It was then the turn of Roberto Formigoni to speak, who affirmed how Mapei is an exemplary model of modernisation in the industry, and commitment to eco-sustainability. He continued by saying that accepting the challenge of sustainability and aiming for technological innovation are vital tools to guarantee that the level of competitiveness in Italy is not only maintained, but increased. "This is why the Lombardy Region" Formigoni claimed, "has chosen to work alongside the chemicals industry, acknowledging that it is an extraordinary driving force for research and innovation".
Claudio Benedetti, Director General of Federchimica, proudly confirmed that "the sector as a whole is already within the

1. SHIPPING OFFICE
2,400 tons
daily average weight of products shipped
567,719 tons
weight of products shipped in 2010
252
daily average of trucks in transit

12. LOADING AREA FOR BULK LIQUID PRODUCTS
2,437
loaded trucks
24
reservoirs
102
products

2. FINISHED PRODUCTS WAREHOUSE
10,500 m²
surface area
24/48 h
time to process orders
43
trucks loaded in one day

4. RAW MATERIALS AND PACKAGING WAREHOUSE
4,500 m²
surface area
113
raw materials
219
packagings

3. MORTAR PRODUCTION DEPARTMENT
62,000 tons
total production in 2010
20,000 kg/h
production capacity
22
silos for raw materials

6. POWDERS PRODUCTION DEPARTMENT
3,850 m²
surface area
270,000 tons
total production in 2010
5
production plants

Powders production department

Self-bonding materials production department

Various adhesives and latex production department

9. SELF-BONDING MATERIALS PRODUCTION DEPARTMENT

Epoxy and paste adhesives, coloured epoxy grouts, hardeners, waterproofing membranes and sealants

4,000 m²
surface area

13,200 tons
total production in 2010

430
finished product codes

10. POLYMERS PRODUCTION DEPARTMENT

917 m²
surface area

41,500 tons
total production in 2010

2
production plants

15. SEALANTS PACKAGING DEPARTMENT

1,800 pieces/hour
production capacity

+36 %
production increase first quarter 2010/2011

11. VARIOUS ADHESIVES AND LATEX PRODUCTION DEPARTMENT

4,000 m²
surface area

40,700 tons
total production in 2010

530
finished product codes

14. LATEX PRODUCTS PACKAGING DEPARTMENT

2,400 x 5 kg canisters/hour
production capacity

1,800 x 8 kg canisters/hour
production capacity

1,350 x 25 kg canisters/hour
production capacity


Quality Control laboratory


Energy saving


Reception area


Mapei Group's Central Engineering Department

parameters laid down in Kyoto, a clear sign that competitiveness, production development and sustainability go hand in hand".
And regarding precisely this theme, the new photovoltaic panels installed by Edison at the Mediglia facility leads to enormous savings in energy consumption and, therefore, emission levels of carbon dioxide. Paolo Quaini from Edison highlighted the importance of the collaboration between the two companies for sustainable development.
Andrea Perego, Plant Operations Manager of the Mediglia plant, highlighted the plant's technical results and stated that "we are proud to announce that Mediglia facility has been certified according to all European norms and regulations". Along with the new energy production system, the numerous visitors then visited all the production and logistics areas. A highly-detailed visit lasting more than one hour, to see up close 19 different areas, from the raw materials warehouse to the shipping office, from the Quality Control laboratory to the packaging departments and the Mapei Group's Central Engineering Department.
Refreshments and street performers for the young were on hand to provide a memorable backdrop to a day which will be remembered by all those who took part. A great result for Mapei and all its employees and partners who took part in the event.

16. PAINTS PRODUCTION DEPARTMENT

20,000 tons
annual production capacity

7,700 tons
paints produced in 2010

+60 %
annual production increase in 2009/2010

7. WASTE MATERIALS AND ENVIRONMENTAL CARE

100 %
non-usable packaging sent for recycling

0.1 %
hazardous waste out of total production

36 %
waste products sent for recycling

8. ENERGY SAVINGS

6,500 m²
surface covered by photovoltaic panels

880,000 kWh
annual energy production of the plant

3,680
photovoltaic panels installed

17. QUALITY CONTROL LABORATORY

250
industrial tests performed in one year

550
tested raw materials

280,000
data inserted in the quality control system in 2010

18. MAPEI GROUP CENTRAL ENGINEERING

441
projects evaluated for the Group's 58 facilities in 2010

65
projects developed in 2010

19. MAPEI FOR SPORT – GYM

77
members

205 m²
surface area

Since **1975** Mapei in **Robbiano di Mediglia**

A Brief History of the Area
A facility in constant growth

In the plant's reception area, an exhibition has been set up which tells its history from 1975 up to today.

Acquisition of the land and construction of the new facility in Robbiano di Mediglia (near Milan, Northern Italy)
1975 - 1978

Transfer of all production from Milan to Mediglia
1979 - 1985

ISO 9001 Quality Management System certification; the plant joins the "Responsible Care" initiative and takes part in its first "Fabbriche Aperte"
1986 - 1995

ISO 14001 certification, EMAS (Environmental Management and Audit Scheme) certification, and OHSAS 18001 certification for the occupational health and safety management system
1997 - 2004

Since **1975** Mapei in **Robbiano di Mediglia**

A Brief History of the Area
A facility in constant growth

New canteens, changing rooms, reception and amphitheatre
2005 - 2007

New plant equipment in service, installation of new Edison photovoltaic plant, joining "Fabbriche Aperte" initiative
2008 - 2011

Over the last few years, the Mapei Group's main production facility in Robbiano di Mediglia has seen an increase in production capacity and number of employees, in spite of this growth being slowed down by heavy urbanisation, as seen in this photo.

Renewable energy at Mapei's plants in Mediglia and Latina

8,388
photovoltaic modules

12,838 m²
total surface area of the panels

1,000 tons/year
reduction in greenhouse gas emissions

In May 2011, two new plants to produce electrical energy from photovoltaic solar panels, installed on the roof of the Mapei manufacturing facilities at Robbiano di Mediglia (near Milan, Northern Italy) and Latina (Central Italy), came into service. These are the first plants of this type installed in the Mapei Group facilities, and represent one of the most important examples of a photovoltaic plant installed in Italy stemming from the partnership between a manufacturing company and an energy producing company.

In fact, this project is the fruit of a working partnership between Mapei and Edison, the Company's main supplier of electrical energy in Italy for a number of years. Using the public incentives for the development of renewable energy sources in Italy, Edison and Mapei have undersigned a number of agreements which are, for certain aspects, quite innovative in Italy. This has led to the commissioning of these two plants according to current norms and regulations on Mapei property, with the support of technology and investments from Edison. Most of the energy produced is used within the manufacturing facilities, and Edison also has the faculty to channel any excess energy produced onto the local grid. Construction of the plants was completed according to schedule without interfering with the normal production activities in the works. The photovoltaic modules had to be installed so as to be adaptable to the conformation of the roofs on the buildings for maximum integration with the existing coverings, and to exploit the most suitable orientation and optimum effect of the sunlight to maximise conversion of the sunlight into electrical energy. Overall, 8,388 photovoltaic modules with a total surface area of 12,838 m² of panels have been installed on the two sites, and cover a total of more than 25,000 m² of roofing.

Photovoltaic modules with polycrystalline silica technology were chosen for both plants which, with an initial conversion rate of more than 13% of solar radiation transformed into electrical energy, for these two specific cases offer the best guarantee of efficiency over the years. The plant at Mapei manufacturing facility in Latina generates a peak output of 970 kW during the hours of maximum sunlight which, on an annual basis, is the equivalent of 1,100,000 kilowatt-hours of electrical energy, used mainly inside the manufacturing unit, and covers about one third of the total consumption of electrical energy in the facility. The peak output at the plant in the Mapei manufacturing facility in Mediglia, on the other hand, is 865 kW, the equivalent of 880,000 kilowatt-hours of electrical energy, which represents approximately one tenth of the total consumption of electrical energy in the entire production complex.

Since more than 80% of the electrical energy in Italy is produced using fossil fuels, mainly methane gas and to a lesser degree coal, the electrical energy produced from solar energy reduces the emission into the atmosphere of greenhouse gases which contribute to overheating of the planet. On this basis, we can calculate that the photovoltaic plants installed in the two Mapei facilities will reduce these emissions of greenhouse gases by approximately 1,000 tons a year, with a foreseen service life at full capacity of at least 25 years. The installation of these plants would never have been possible without the considerable commitment of the management and personnel in the two manufacturing facilities, to complete all the complex requests and applications for authorisation and permits and to coordinate the installation and commissioning work of the photovoltaic modules and all the auxiliary work carried out. These projects also represent Mapei's commitment to improving the environment, and is a concrete example of how consumers and producers of electrical energy can work together to reduce the dependence on electrical energy produced from fossil fuels, and to play a part in reducing greenhouse gas emissions to the levels set by Italy and the European Union for 2020.

The newly-inaugurated photovoltaic plants at Mapei's Italian manufacturing facilities in Robbiano di Mediglia (above) and Latina (below).

Open Days at Mapei plant in Latina

The constant growth of the Mapei manufacturing facility

To celebrate Open Days, on Saturday the 21st of May Mapei also opened the doors of its manufacturing facility in Latina.
A festive occasion where visitors could see at first-hand how increasing competitiveness, energy savings and safeguarding health, safety and the environment are the main corporate building blocks in this facility too. Visiting the facility along with Mapei's CEO Giorgio Squinzi was of the European Union Commissioner in charge of Industry and Entrepreneurship Antonio Tajani, and the Chairman of the province of Latina Armando Cusani. The group also included the Member of the Italian Parliament Claudio Fazzone and the newly-elected Mayor of Latina Giovanni Di Giorgi.
During the press conference which opened the day's events, Giorgio Squinzi reminded everybody that 5% of the annual turn-over of the Mapei Group is invested into research and development of eco-sustainable products which respect the environment and meet the requirements of the LEED programme. He also underlined the importance of the chemicals industry: "the chemicals industry is with us everywhere we go and will become more and more present in the homes of the future, with more ecological products which respect the environment. The Italian chemicals industry remains fundamental for our country, and Mapei remains at the heart of the transformation which will accompany us in the world of globalisation".
Antonio Tajani highlighted how a plant is not only made up of "the employer and the employees", but is a mechanism made from numerous components from the surrounding territory which work

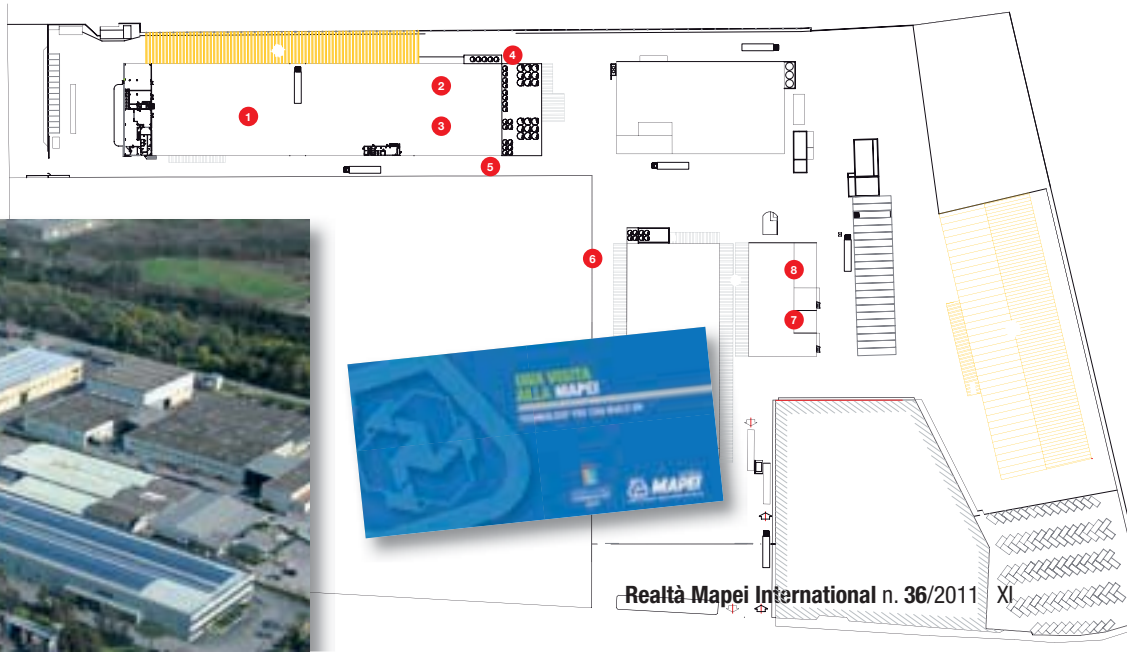
total surface area of the manufacturing facility
135,000 m²

total covered area of the facility
16,500 m²

employees
131

On the left.
The press conference which opened the day's visit around the facility.
Below. On the left, Giovanni Volpe, Plant Operations Manager (on the left in the photo) carrying out an inspection before the visit. On the right, the EU Commissioner Antonio Tajani with Giorgio Squinzi.

Below. A view of the Latina plant and to the side a view of the route of the visit. A detailed description of the stops during the guided tour, corresponding to the numbers indicated in red, may be found on the following pages.



Powders production department


Powders production department

in synergy to contribute to the growth of the real economy, just like the Mapei facility in Latina. On this subject, Mayor Giovanni Di Giorgi renewed the total availability of the local Council which he represents to make the bond between Mapei and the local territory even stronger.
Giovanni Volpe, Plant Operations Manager of the Mapei facility in Latina since it was first constructed 24 years ago, also spoke at the press conferences via telephone from the hospital, where he had been for a few days for a medical check-up. Standing in for him on the day was the deputy Production Manager Michelangelo Finocchiaro, who acted as guide during the morning's visit around the facility, and Massimiliano Aprano, who followed preparations for the event.

A Facility in Constant Growth
The Mapei facility is a very important production and logistics hub because of its central location and production capacity. The site includes 7 production lines, six dedicated to powdered products and one dedicated to liquid products, and a department with two modular electronic dosing plants for colouring products from the Wall Coatings Line (Colormap).
The Latina facility is committed to promoting the use of energy produced by renewable sources, and a new photovoltaic plant, installed on the roof of the facility and already in service, was inaugurated during the Fabbriche Aperte initiative. Thanks to the electrical energy produced by the photovoltaic plant in Latina,

1. LOGISTICS AND SHIPPING

1,700 tons
goods shipped per day

409,000 tons
products shipped in 2010

118
through trucks per day

2. POWDERS PRODUCTION DEPARTMENT PLANT 1

11,0000 m²
surface area

366,500 tons
total production in 2010

50,000 kg/h
production capacity of plant 2

3. POWDERS PRODUCTION DEPARTMENT PLANT 2

11,0000 m²
surface area

366,500 tons
total production in 2010

75,000 kg/h
production capacity of plant 2

Mortars production department

Liquids production department

Liquids production department

4. LIQUIDS PRODUCTION DEPARTMENT

3,000 m²
surface area

4,500 tons
total production in 2010

1,000 pieces/hour
packaging capacity

6. MORTARS PRODUCTION DEPARTMENT

2
packaging lines

25,000 kg/h
paper packaging production capacity

20,000 kg/h
polyethelene packaging production capacity

7. COLOURED COATINGS PRODUCTION DEPARTMENT

7,600 tons
products shipped in 2010

965
colour samples for customers in 2010

1,800
colours developed in 2010

approximately 550 tons less CO_2 per year will be emitted into the atmosphere – the equivalent of approximately 6,000 car journeys from Rome to Milan – for a total of approximately 10,800 tonnes of CO_2 over the next 20 years. The Latina facility is also committed to health and safety and respect for the environment. In 2008, the site was awarded the certificate of Excellence awarded by Certiquality, which certifies compliance of the ISO 9001 norms for Quality Management, ISO 14001 for Environmental Management and OHSAS 18001 for Occupational Health and Safety Management. "Mapei is an excellent example of how investment into research and innovation can help a company become more competitive, productive and solid", commented the Head of the Ugl Trade Union for Rome and Lazio Cristina Ricci at the end of the visit around the facility. "The Group – she continued – has shown that they know how to use resources wisely, especially by investing into this facility, which may be described today as the jewel in the crown of the Italian chemicals industry, with a level of absenteeism of less than 1% and which has never had to resort to redundancies. These are exemplary models which underline the strategic importance of company policy which favours innovation and development".

Quality Control Laboratory

Entertainment for children

5. MAPEI FOR ENERGY SAVINGS

6,300 m²
surface area covered by photovoltaic panels

970 kW
output of the plant

1,100,000 kWh
annual energy production of the plant

8. QUALITY CONTROL LABORATORY

36,000
number of tests in 2010

125
raw materials tested

118
number of finished products tested

Since **1987** Mapei in **Latina**

A Brief History of the Area
A facility in constant growth

From 1987 to today, the Latina facility has grown constantly and new extensions have been planned.

Construction of the facility and start of production with one plant
1987 - 1990

Extension to the structures and construction of plant 2
1991 - 1997

Construction of new offices and a new training area
1998 - 2002

Certification of Environmental Management System according to ISO 14001 standard
2003 - 2006

OHSAS 18001 Certification of Occupational Health and Safety Management System; installation of Edison photovoltaic panels
2007 - 2011

Adesital Open Day in Fiorano

"Fabbriche Aperte" at the Mapei subsidiary's manufacturing facility in Ubersetto di Fiorano (Province of Modena, Italy)

The Adesital manufacturing plant in Ubersetto di Fiorano (Province of Modena, Central Italy) opened its doors to the general public on Saturday, the 14th of May, for this special edition of Fabbriche Aperte, promoted by Federchimica (the Italian Federation of the chemical industry), to mark the International Year of Chemistry.

The Company is specialised in products for laying ceramics and natural stone, preparing substrates, waterproofing surfaces and structures, repairing concrete, restoring damp masonry and for thermal insulation.

The day opened with a press conference introduced by Riccardo Sighinolfi, Managing Director of Adesital, and by Giorgio Squinzi, CEO of the Mapei Group, and guests included Vittorio Prodi, Member of the European Union Parliament and of ENVI (Italian commission for environment, public health and food safety), the Mayor of Fiorano Claudio Pistoni, and the Director of AVISA (the Italian Association of paints, inks, sealants and adhesives producers) Matteo Aglio.

Riccardo Sighinolfi opened proceedings by welcoming the guests and illustrating the positive results the Company has achieved over the last decade, such as the elimination of gas and liquid emissions, using waste materials as a resource (80% of waste powder products are now re-worked and then put back into the production process) and by using high-efficiency motors, which helped reduce the consumption of electricity in 2010 by 11%.

Giorgio Squinzi retraced the steps of the acquisition of Adesital from the Ricchetti Group, how the Company trademark was maintained during the integration process with Mapei, and the

total surface area of the manufacturing facility
20,000 m²

total covered area of the facility
10,000 m²

employees
40

Below. A view of the Adesital plant and, to the side, a plan view of the route of the visit. A detailed description of the various stops during the guided tour, which correspond to the numbers indicated in red, may be found on the following pages.

R&D and Quality Control Laboratory

Logistics

1. RAW MATERIALS WAREHOUSE

15
silos for raw materials

1,000 tons
total storage capacity

350 tons/day
incoming raw materials

7,000/year
tests on incomings raw materials

2. WASTE MATERIALS MANAGEMENT

80%
waste powder products re-worked and recycled in the production process

- 34%*
waste powder products sent for external recycling by specialised companies

- 42%*
waste paper and cardboard for packaging

- 15%*
waste plastic from packaging

*2010 figures compared with 2009 figures

7. EMISSIONS

34,000 m³/h
total capacity of dust aspiration/powder depuration plant

30%
of the maximum permitted level of dust emissions

25%
of the maximum permitted level of inhalable dust in the workplace

absent
gas/fume emissions

absent
discharge of liquid products

8. LOGISTICS

8,000 m² of covered area
finished products warehouse

24/48 hours
average lead time to process orders

40
average number of trucks loaded per day

350 tons
average amount of products shipped out per day

20,000 m²
total surface area

10,000 m²
total covered area

40
employees

investments made in expansion projects and to bring the Company up to the levels of efficiency required by the Group as a whole. He reminded the guests that Mapei invests 5% of turnover every year into Research & Development, which has allowed the Company to go through the current economic crisis without a single day of redundancy and with no reduction in personnel. "Through research and innovation, difficult moments can be overcome", declared Squinzi and underlined that this process has also had an important role in the evolution of the ceramics sector, regarding health and safety in the workplace, performance, sustainability and its precious contribution to the quality of Made in Italy.

Vittorio Prodi illustrated the commitment of the European Union to "decarbonise" the continent and convert it to renewable energy sources. Underlining that the world will be inhabited by 9 billion people in 2050, and how advancing desertification plagues the earth, he expressed a wish for increased investments into the alternative energy sector.

He used how the supply of electrical energy had been changed as an example, and the potential use of satellites as instruments to manage how we adapt to climate change.

The Mayor of Fiorano Modenese, Claudio Pistoni, asking for support for companies to help face this difficult period of economic uncertainty, reminded everybody that it is the younger generation which is risking to have to pay the highest price, and concluded with a phrase from Ciro Menotti, a 19th century Italian patriot: "May your first thought be to unite – adding – we need it".

Matteo Aglio greeted the visitors on behalf of Federchimica, promoter of the Fabbriche Aperte initiative.

The Visit

During the visit to the manufacturing facility, the numerous guests stopped off at the main production areas.

To illustrate the activities of the Company, the visit included stops in the logistics, shipping and storage areas, the waste management area, the production line for products in bags, the production line for products in boxes, the emissions treatment plant, the warehouse for finished products and the training centre.

Adesital products comply perfectly with the

requirements of European Union regulations regarding performance, the safeguard of the environment and the health of users. In 2007, the plant's Quality Management System was certified by Certiquality, which issued certification according to UNI EN ISO 9001:2000 standards.

It proved to be an intense day, a day to breathe in the quality air of a Company in which visitors could understand from up close the secrets of its success.

From **1968** to the Core of the **Ceramics District**

Adesital was established in 1968 in Fiorano Modenese, in the core of the Italian ceramics district, as a company specialised in the production of systems for laying ceramic and natural stone. Over the years, and through the experience gained directly on site, the range of products offered by Adesital has grown to include all sectors of the building industry, proposing cutting-edge technology regarding performance characteristics and safety, without ever forgetting the requirements of floor layers. In 2000 Adesital became part of the Mapei Group, world leader in this sector.

3. PRODUCTION LINE FOR PRODUCTS IN BAGS

80,000 tons
produced in 2010

3 milion
bags of finished products in 2010

-11%
energy consumption in 2010/2009

4. PRODUCTION LINE FOR PRODUCTS IN BOXES

5,000 tons
total production in 2010

250,000
boxes of finished products in 2010

6,000
pallets of finished products

5. R&D AND QUALITY CONTROL LABORATORY

30/year
product development projects

7,000/year
tests on raw materials

8,500/year
tests on finished products

6. TECHNICAL TRAINING CENTRE

Courses for laying ceramic and natural stone

Courses for building site technicians

Courses for sales personnel

Testing of new products

Open Days at Polyglass

A special Sunday at the Mapei subsidiary's facility in Ponte di Piave (Province of Treviso, Italy)

On the 15th of May, the Polyglass Group opened the doors of its main manufacturing facility in Ponte di Piave (Province of Treviso, Northern Italy). The highlight of this special day was the large number of people who visited the facility, with representatives from local institutions and authorities, over 150 employees and their families and numerous local residents taking part in the guided visit.

Polyglass, founded in 1969 and part of the Mapei Group since 2008, produces waterproofing membranes (in PVC, TPO and bitumen) and insulating systems for the building industry. Its expansion into overseas markets is mainly due to the Company's ability to propose revolutionary patented products which, time after time, become the new reference standards in the world of building. It was Mapei's CEO himself Giorgio Squinzi, along with the Managing Director of Polyglass, Pierluigi Ciferni, who welcomed the guests and conducted them on the guided visit, so they could discover for themselves the advanced technology behind waterproofing materials used in the building industry. For Giorgio Squinzi, this day was an important occasion to show guests "the role of science and nurture the development of scientific culture, an element which is tightly connected to an increase in competitiveness". Ciferni said: "Taking part in this initiative gives Polyglass an opportunity to publicly illustrate the work we carry out on a daily basis, and our commitment to sustainable development and the growth of the Treviso and Italian society". Polyglass has always firmly believed in the importance of respect for the environment and is committed to the research of products which improve energy efficiency and have a lower impact on the environment. UNI EN ISO 9001: 2008

total surface area of the manufacturing facility
90,000 m²

total covered area of the facility
25,500 m²

employees
153

Below. A view of the Polyglass manufacturing facility and, to the side, a plan view of the route of the visit. A more detailed description of the various stops during the guided tour, which correspond to the numbers indicated in red, may be found on the following pages.

R&D Laboratory

Process Control room

Visiting the plant

Synthetic membrane production department

11. LOADING/UNLOADING AREA FOR FINISHED PRODUCTS

5,300
trucks handled in 2010

54/day
trucks handled

1h 30 min
average waiting time for loading/unloading

4. COLLECTOR TANKS FOR RAINWATER

3
tanks

6,000 m²
treated surface

6. BITUMEN STORAGE TANKS

4,800 m³
(160 articulated trucks)
storage capacity

50,000 tons
amount of goods handled annually

7. ADDITIVES STORAGE TANKS

1,100 m³
storage capacity

50,000 tons
amount of raw materials handled annually

6,000 tons
(80% of requirements)
polymers from recycling

1. SYNTHETIC MEMBRANE PILOT PLANT

50-80 kg/h
production capacity of extruder

200
extrusions carried out in the first year

60
test mixes tested by the mixer

2. PREPARATION OF MIXES FOR SYNTHETIC MEMBRANES

120 tons/day
production capacity

700 m³
raw materials storage capacity

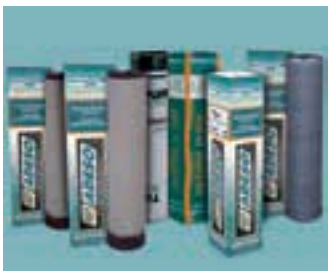
2
mixers

3. SYNTHETIC MEMBRANES PRODUCTION DEPARTMENT

15,000 tons
annual production capacity

3,000 kg/h
extrusion capacity

3
extruders



and UNI EN ISO 14001: 2004 certifications and products labelled with EN 13707, EN 13969 and EN 13956 logos are confirmation of the Company's commitment to constant improvement in performance to prevent pollution and safeguard health and safety in the workplace. In each phase of the production cycle, Polyglass respects the environment and adopts criterias for sustainability. The Company is partner of the Green Building Council and is committed to the research of products which improve energy efficiency and have a lower impact on the environment. Polyglass membranes, for example, help to obtain credits for the LEED (Leadership in Energy and Environmental Design) certification of buildings.

Discovering a Complete Production Cycle

The day began with a visit around the plant for the local authorities, immediately followed by a guided visit for the general public. All the main nerve centres were visited: the synthetic membrane pilot plant, the area where synthetic mixes are prepared and where the storage tanks for raw materials are housed, the synthetic membranes production line, the rainwater collector tanks, the department where bituminous mixes are prepared, the area where the silos for storing polymers and fillers are located, the laboratory, the main process control room, the bituminous membrane production line and the area where finished products are loaded. The facility, with a total surface area of 90,000 m² (25,000 of which covered), has 4 production lines for polymer bitumen membranes, one production line for insulating and soundproofing products and one production line for synthetic membranes. Giorgio Squinzi illustrated the efficiency of the plants, along with the quality of the products and the progress made to safeguard health, safety and the environment which characterizes the facility in Treviso. He painted a positive picture of the subsidiary, stressing how the forecast for 2011 is to double the volume of trade compared with 2008, the year the Company was acquired by the Mapei Group. "This has been a marriage in line with our company philosophy, based principally on a family-type structure. We are firm believers in Polyglass, which has been demonstrated by the investments made in both Ponte di Piave unit and the manufacturing facilities based in the United States".

The meeting was also attended by the Member of the European Union Parliament Amalia Sartori, by the Mayor of Ponte di Piave, Roberto Zanchetta and by Fabio Min ola Rota, Communication Events Director for Federchimica.

The Mayor, proud of such an example of economic excellence within the community he administers, highlighted the added value from the chemicals sector for the Italian economy, and stated that it is strategically important to adopt policies which offer incentives for this sector.

This special day has offered the chance for people to see at first hand the excellent results obtained by the mission of "adding value" that Polyglass has followed for more than 35 years.

"Superasfalti Zanchetta" is founded, a company specialised in waterproofing bituminous membranes

1957

Production of the first Polyglass trademark product

1969

Start of the American adventure, with the first manufacturing facility in Fernley, Nevada

1989

Polyglass Great Britain is founded

1993

Polyglassis is acquired by the Mapei Group

2008

5. BITUMINOUS MIXES PREPARATION DEPARTMENT

13
mixers

710 tons
daily production capacity

50
mixes per day

10. BITUMINOUS MEMBRANES PRODUCTION DEPARTMENT

35,000,000 m²
annual production capacity

50 m/min
maximum production speed

830,000 m²
weekly production record in m²

8. R&D AND QC LABORATORY

50,000
tests on finished products per year

10,000
tests on incoming raw materials per year

5,000
tests on new raw materials, new formulas and competitors' products per year

9. MAIN PROCESS CONTROL DEPARTMENT

50
tests on semi-finished products per day

40
tests on finished products per day

every 45 minutes
process control carried out

Vinavil opens to the future at Villadossola

The historical site in the Province of Verbania (Italy) was extended respecting the environment

The Vinavil manufacturing facility in Villadossola (Northern Italy) opened its doors on Saturday, 7th of May.

The event attracted more than one thousand visitors, to see up close the technological evolution of a company which bases its growth on innovation and respect for the environment, developing products to meet all requirements of the adhesives, paints, textiles and construction industries.

The day kicked off with a welcoming speech for the visitors from Giorgio Squinzi, CEO of the Mapei Group, Claudio Benedetti, Director General of Federchimica (The Italian Federation of the chemical industry), Massimo Nobili, President of the local Province, Zaverio Rovea, Managing Director of Vinavil SpA, the deputy Mayor of Villadossola Marcello Perugini and the Plant Operations Manager Maurizio Pellizzon.

"In this area we have an example of how the chemical sector has changed. We have passed from basic chemicals to quality chemicals, said Giorgio Squinzi. "We have also gone through these very difficult moments of the economic crisis over the last three to four years but, luckily, we have come out unscathed and without having to lay anybody off. We have a number of projects for our growth in the future, which is why we invest so much into research".

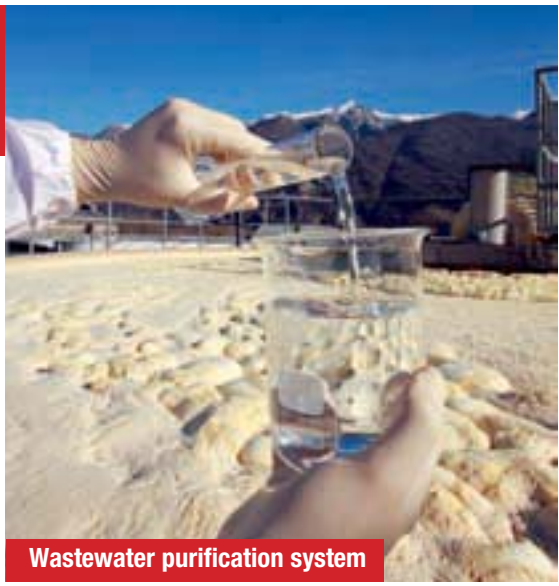
Giorgio Squinzi went over the story of the acquistition of Vinavil, a company deemed surplus to requirements by Enichem petrochemical company and in danger of closure, "but the Mapei Group made a turn-around: and in 17 years we have invested 100 million Euros to bring the company back to a competitive level".

total surface area of the site
280,000 m²

total covered area of the site
37,000 m²

employees
210

Below. A view of the Vinavil facility and, to the side, a plan view of the route of the visit.
A more detailed description of the various stops during the guided tour may be found on the following pages.



Wastewater purification system

Homopolymer production department

"In spite of the crisis, Vinavil has carried on investing", added Zaverio Rovea. "If Mapei had not bought the Company, this manufacturing facility would no longer be here today". The facility in Villadossola is a rarity in the Province, which has witnessed the closure of seven companies in the last couple of years."We are proud to host a company such as Vinavil in our Province, and I sincerely hope that our strategic plan for the future will include the synergy required to increase the development of the site", added Massimo Nobili. The local Council then confirmed that it is committed to complete work on the new road which will connect the facility.
The Vinavil facility is also committed to saving energy with its brand new cogeneration unit recently installed in the works (see article on the following pages). Another of the Company's strong points is the respect for the environment, thanks to a sophisticated wastewater purification plant, explained Maurizio Pellizzon.

5. RAW MATERIALS UNLOADING AREA

Substances unloaded: vinyl acetate monomer

40,000 tons
Annual consumption

1,000 m^3
Overall storage capacity

8. TREATMENT PLANTS

Thermo-combustor for exhausted gases

Wastewater purification plant

11. COGENERATION PLANT

It generates electrical energy, steam and hot air to supply for approximately 70% of the facility's requirements

Total efficiency: 81%, which reduces CO_2 emissions by approximately 2,700 tons/year

The plant uses a 20-cylinder methane engine

7. EVA PLANT
ETHYLENE-VINYL-ACETATE

20,000 tons/years
Production capacity

Tube-bundle polymerisation reactor with product recirculation through 3 high flow-rate pumps

The plant was developed and patented in the Villadossola Research centre in the 1970s

9. HOMOPOLYMERS PLANT

67,000 tons/years
Production capacity

Based on two polymerisation reactors with mixers

Products made in this plant are sold in liquid and powder form

10. SPRAY DRYER PLANT

12,000 tons/years
Production capacity

It transforms dispersions from the EVA and homopolymers/copolymers departments into powder

Homopolymer production department

Around the Plant....

The guests started their visit around the manufacturing facility by putting on high-visibility jackets, protective helmets and safety goggles.

They were accompanied by highly qualified technicians, and visited important areas such as the Research Centre, the Engineering Centre, various production units and the areas which house installations for environmental protection. The Company's commitment to the environment started 13 years ago when they joined the worldwide Responsible Care programme, progressing through obtaining ISO 9001 certification for the Quality Management System, ISO 14001 certification for the Environmental Management System, and OHSAS 18001 certification for the Occupational Health and Safety Management Systems.

Vinavil will also open the doors of its manufacturing facility in Ravenna (Central Italy) on the 8th October, 2011.

Cogeneration Plant

1. ENGINEERING DEPARTMENT

It works with R&D and production departments to define process specifications for new plants and modifications required to existing equipment

It designs detailed construction projects

It follows testing and starting of new equipment

2. RESEARCH AND DEVELOPMENT: INSTRUMENTAL ANALYSIS LABORATORY

It carries out composite and structural analysis of raw materials and finished products, such as:

- chromotography
- mass spectrometry
- spectroscopy
- differential scansion calorimetry

3. RESEARCH AND DEVELOPMENT: SYNTHESIS LABORATORY AND PILOT PLANT

It develops formulations for new products

It carries out reactions with 3, 25, 100 and 300 litre capacity plant equipment

It collaborates with production departments to scale-up products synthesised in the pilot plant or in the laboratory to industrial equipment

4. RESEARCH AND DEVELOPMENT: TECHNICAL SERVICE LABORATORY

It carries out characterisation of finished products synthesised in the Vinavil laboratory and manufacturing facilities in Villadossola and Ravenna (Italy)

It studies the most suitable applications of finished products, divided into:

- adhesives
- paints/varnishes
- products for building
- textiles

6. CONTROL ROOM

Main process control room for production plants:
EVA •
Copolymers •
Acrylics •
Homopolymers •

Vinavil manufacturers…

Powder homopolymers and copolymers for the

CONSTRUCTION ADDITIVES INDUSTRY

VINAVIL

Copolymer dispersions for the

PAINT AND COATING INDUSTRY

Powder homopolymers and copolymers for the

CONSTRUCTION ADHESIVES INDUSTRY

Vinyl, acrylic and ethylene dispersions for the

TEXTILE INDUSTRY

Vinyl homopolymers for the

FOOD INDUSTRY

The acetovinylic emulsions industry

Fabbriche Aperte was the perfect opportunity to go through 90 years of history of Vinavil and the Italian chemicals industry.

A Brief History of the Area
A facility in constant growth

Production site is created in Villadossola (Verbania, Italy) to produce calcium carbide, upon request from SET (Società Elettrochimica del Toce) and SIPS (Società Italiana di Prodotti Sintetici)

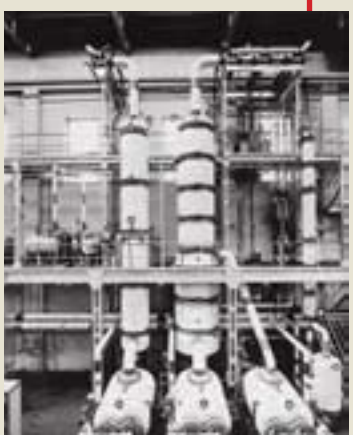
1922

SET becomes part of Gruppo Montecatini, which broadens the production range over the following years, particularly with acetate Rayon

1924

Start-up of plant to produce polyvinyl acetate beads and installation of reactors for polyvinyl acetate in emulsion. The name Vinavil is created, which stands for VINyl Acetate in VILladossola

1952



Montecatini joins with Edison to form Montecatini Edison S.p.A.; in 1974 it becomes Montedison

1966

Installation of EVA (Ethylene-Vinyl-Acetate) plant to produce copolymer emulsions under pressure

1974

Following the crisis in the fibres sector, the old acid and acetic anhydride plants are shut down

1983

Vinavil S.p.A. joins Montedipe, which then joins Enimont. All chemicals activities are then passed over to EniChem

1987

EniChem presents a Business Plan which foresees the closure of the Villadossola site. After strong pressure from politicians and trade unions, the company is put up for sale

1991

Mapei buys the acetovinyl production activities from EniChem, which includes the facilities of Villadossola and Ravenna. The new company is named Vinavil S.p.A.

1994

The manufacturing facility in Villadossola is awarded Quality Certification according to UNI EN ISO 9001 standard.

1995

Construction of the bio-treater for wastewaters and then the thermo-combustor for exhausted gases

2002

The manufacturing facility is awarded UNI EN ISO 14001 Certification

2007

Commissioning of the cogeneration plant

2009

The manufacturing facility is awarded OHSAS 18001 Certification.

2010

1

Cogeneration at Villadossola

A new plant to increase the energy efficiency of the Vinavil production facility

THE FIGURES

THE PLANT'S FIGURES

LCV natural gas:	9,5	kWth/Nm^3
Natural gas consumption	363	Nmc/h
Inlet energy:	3,446	kWth
Mechanical power transmitted:	1,451	kWe
Electrical power transmitted:	1,416	kWe
Net electrical power:	1,363	kWe
Recoverable thermal energy:	1,495	kWth
Electrical efficiency:	0.41	%
Thermal efficiency:	0.40	%
Total efficiency:	0.81	%

Vinavil is in the front line with its commitment to "an ecological chemicals industry". Energy efficiency is considered to be an integral part of an eco-sustainable path towards harmonising the optimisation of production processes while safeguarding the environment.

Being able to tap in to low-cost electrical and thermal energy, in the form of steam and hot water, is a must for the Company, and being the production cycle for adhesives highly energy-consuming, energy becomes a strategic item in the profit and loss which sees Italian industry penalized to its European competitors. Energy efficiency is an indispensable requirement if a company wishes to operate at reasonable costs and to remain competitive on an increasingly aggressive global market. The solution chosen for the Vinavil manufacturing facility in Villadossola (Province of Verbania, Northern Italy) was an AB Energy Ecomax® 14 NGS cogeneration plant, which has reached very high levels of efficiency while reducing annual CO_2 emissions into the atmosphere by approximately 2,700 tons.

Photo 1. A view of the cogeneration plant commissioned at the Vinavil works in Villadossola. The plant runs on methane and produces electrical and thermal energy exclusively for use in the site.

Cogeneration: the Maximum Form of Efficiency

The Villadossola works basically produce acetovinylic and acrylic-based emulsions and powders, with a potential production capacity of 150,000 tons/year. In recent years, the site has been characterised by large investments to safeguard the environment, including a new biological wastewater purification plant, upgrading of the chemical-physical treatment plant of the waste water and a thermal-combustion plant with I.T.R. (Intrinsic Thermal Regeneration) to treat the vent gases.

In December 2007, the facility was awarded ISO 14001 certification for its Environment Management System.

A cogeneration plant in container modules, such as the Ecomax 14 NGS®, offers several advantages. The modular solution is equipped with a GE Jenbacher JGS 420 GS NL motor fed by natural gas, with recovery of the heat generated by the motor block (lubricating oil, intercooler and motor

housing) through a plate-type heat exchanger to produce hot water, and a heat recovery boiler on the exhaust gases to produce steam. The electrical energy produced is used in the production facility, except on rare occasions when any excess energy produced is fed to the local grid. The thermal energy recovered from the motor's cooling system and the boiler is used for various applications, in the form of hot water at a temperature of 80°C and steam at a pressure of 5 bar. The net total amount of thermal energy available for recovery, after considering losses in heat due to dissipation and exhaust gases released into the atmosphere, is equal to 1,495 kWth, of which 652 kWth is at a high temperature (steam) and 843 kWth is at a lower temperature (hot water). The plant is scheduled to operate for 8,000 hours per year. Production and infrastructure activities of the facility are carried out on a continuous-cycle basis 24 hours a day, 7 days a week all year round, except for two maintenance shutdowns, one in Summer and one in Winter (15+15 days).

Production Requirements and Engineering Culture

The cogeneration unit is located within an industrial site which required a feasibility study to develop a plant able to combine modern cogeneration technology with the limits imposed by the plant layout of the site, built in the 1930's. The plant had to satisfy certain technical specifications and to be personalised to suit the characteristics of the site, such as including a double hot water recovery system: one for demineralised water to supply the boiler and one for industrial-grade water for other various uses.

Another factor which required particular attention was the design of the interface of the unit in parallel with the external electrical network, conducted by AB Energy and Vinavil technicians working as a team.

All this led to a constructive dialogue being established between the technical staff of AB Energy and the engineering department of Vinavil, and the result was the design of a plant which came up to expectations and met all the specifications. Proof of this result is the reliability and efficiency of the plant when put to the test in 2010, its first full year of activity. The Ecomax 14 NGS® functioned excellently and produced electrical and thermal energy for 8,332 hours.

Taking into consideration that the Vinavil plant was shut down for scheduled maintenance for a total of 232 hours, we can deduce that the unit was only idle for the time required to carry out the scheduled maintenance and for the minimum time required to carry out a few quick technical interventions for set up or fine-tuning.

Performance of the plant in 2010 may be summarised with the following figures:

- **11,800 MWh_e**
  electrical energy produced
- **67.9%**
  percentage of the total electrical energy consumed by the site
- **7815 MWh_{th}**
  thermal energy recovered
- **2700 tons**
  savings in tons of CO_2 not emitted into the atmosphere
- **1120 Tep**
  savings in equivalent tonnes of crude oil.

These figures have been further improved upon during the course of 2011, through programmed evolution of hot water for non-continuous uses of the site, so as to increase the level of energy efficiency of the industrial production through the almost total recovery of the "low heat water" generated by the endothermic motor.

The experience of the Vinavil plant confirms how in the chemicals industry cogeneration is an ideal solution to improve the energy efficiency of production facilities.

VINAVIL - AN AWARD FOR EXCELLENCE

On the 20th of June in the headquarters of Assolombarda (the Association of the Lombardy Region entrepreneurial system) in Milan, during a convention dedicated to sustainability with numerous guests from the Italian government, universities, businesses and other institutions, a ceremony was held to present the Certificate of Excellence awarded by the Certiquality certification body. This important recognition has been awarded to a limited number of selected enterprises (and Vinavil was among them) which have demonstrated their voluntary commitment and responsibility in managing the company through the achievement of certifications in compliance with the three international standards: ISO 9001 for quality; ISO 14001, EMAS for environmental commitment; British Standard OHSAS 18001 for workers' health and safety. This result has been reached thanks to the widespread commitment of the entire Vinavil staff, and serves to stimulate through the organization a healthy, constant level of awareness and to ever improve on all aspects of quality, environmental care, health and safety. This is not simply a "badge" to be worn with pride, but also represents a competitive lever for a company such as Vinavil, strongly committed to pursuing sustainable growth. With the publication of the 7th Environmental Sustainability Report, Vinavil confirmed its commitment to offer a significant contribution to sustainable development in the sector in which it operates. The report contains concrete examples of results achieved regarding the impact of its industrial activity on the environment, the use of its products on offer in the market and the correct behaviour and practices in the workplace.

In the photo. From left to right: Zaverio Rovea, Managing Director of Vinavil, Ernesto Oppici, Chairman of Certiquality and Umberto Chiminazzo, General Manager of Certiquality.

The great figures of the Group

Founded in Milan in 1937, **Mapei is today the world leader in the production of adhesives and chemical products for building**. The Group now counts 68 subsidiaries with 58 manufacturing plants in 27 countries in the five continents and a Quality Control Laboratory in each plant.

The WORLD of MAPEI

1.9 Billion euros total turnover

58 Plants worldwide in the **5** continents in **27** different countries

More than **1400** Products

7500 Employees of which **900** in our **18** R&D Centres

More than **20000** Tons of products shipped each day

More than **55000** Customers worldwide