

REALTÁ MAPEI



2015 E O P EXPO MILANO 2015 - ITALY



MILAN WILL PROVIDE THE DRIVING FORCE BEHIND ITALY'S GROWTH

The 2015 Universal Expo will be held in Italy and, for an entire year, Milan will be at the focus of attention.

Mapei, which was founded in this city over 70 years ago, has played and continues to play a key role in its growth.

Mapei products and technologies have not just helped the city to grow, but also to restore and renovate all its most symbolic landmarks and distinctive locations: Sant'Ambrogio Basilica, the Teatro alla Scala Opera House, the Pirelli Skyscraper and Central Railway Station, just to mention a few. Milan is always looking to the future and, as a matter of fact, the new Rho-Pero Trade Fair will be one of the focal points of the Expo. Mapei can be proud of the fundamental part it played in constructing the new Trade Fair. Pride, commitment and tradition.

Mapei has extremely tight bonds with this city and, even more significantly, it is well aware that the new Trade Fair is a great opportunity not just for Milan and Lombardy but for the whole of the Italian country.

It is to be hoped that this will be the chance to really bring together all the various businesses operating in the

local economy focused around Milan. Companies, but not just companies. I am also referring to infrastructures and modern road links connecting Milan to the rest of the world and rest of the Italian country; I am referring to education facilities of the highest level, the integration of the various universities, particularly Milan and Turin Polytechnics; I am also referring to culture and the co-operation programme among the Teatro alla Scala Opera House, the Turin Regio Theatre, the Verona Arena and the Petruzzelli Theatre in Bari, just to give one example.

Moreover, the Expo must be the driving force behind the Italian nation's growth and modernity, an excuse for setting about modernising Italy. After all, Italy is already changing. It is no coincidence that the leading players in this important achievement are two women, who share the same vision of how both the city and the Italian country can develop, quite aside from any distinctions between the public and private sectors: i.e. Letizia Moratti, the Mayor of Milan, the main architect behind this important suc-

cess, and Diana Bracco, the President of Assolombarda (the Association of Italian firms located in the Lombardy region). Their commitment (and ours too) is to invest in Italy's future.

Mapei's contribution to sustainable growth, one of the Expo's key issues, has already materialised. This is shown by the research and innovation Mapei has been undertaking in this direction for years, as it sets about designing products for protecting both people and the environment.

Milan is getting ready: the city is already changing fast, the surrounding area is equipping itself for the event and Mapei is ready to support this major development process.

The next few years will see plenty of hard work and striking growth. Mapei will be working alongside all the institutions and businesses destined to be key players in providing Milan with the chance to underline and enhance its international status.

Here's wishing everybody a successful Expo as they set about the hard work involved in preparing for it.

Giorgio Squinzi



TEATRO ALLA SCALA



2008

Mapei is Founder of Teatro alla Scala

**Mapei's long-lasting commitment to art and culture contributes
to making Milan even more prestigious**

Mapei has always been emotionally linked to great music. The Company also enjoys a special relationship with the Teatro alla Scala in Milan, being one of its official supporting subscribers since 1984.

Mapei was born in 1937 and on February, 2007 the Company celebrated its 70th anniversary in this theatre. This link has been lately strengthened and is destined to be long lasting, as Mapei officially became one of the Founders of the Teatro alla Scala.

The support Mapei has always given to arts and culture is a corporate creed that originates far back in time. It is born out of the belief that, as Mapei's CEO Giorgio Squinzi says, "work may never be separated from art".

This firm belief is responsible for the constant attention Mapei has always paid to many "artistic places" all over the world, where the Company's growing expertise has been applied for years. At the same time, Mapei's inter-

national pursue of excellence never drove the Company away from the place where it was born and first developed: Milan.

Mapei's technology, research and expertise, as well as its strong love for art and for the Teatro alla Scala, found their best expression in the works for the restoration and the renovation of this theatre.

More than 50 Mapei solutions were used here and the Company was involved in three phases of the works at this building site: in the diagnostic work on the existing materials, in the support during the works and in the continuous technical assistance (see Realtà Mapei International n. 16).

Mapei is committed to support high-level performances while pursuing excellence and internationalization.

This is why, thanks also to Mapei, technology at the Teatro alla Scala becomes "Living Art".



VARESE 2008

UCI Road Cycling World Championships, 22-28 September 2008

		<p>Programme</p> <p>Monday, 22nd September Opening ceremony</p> <p>Tuesday, 23rd September Time Trial Under 23 Men</p> <p>Wednesday, 24th September Time Trial Elite Women</p> <p>Thursday, 25th September Time Trial Elite Men</p> <p>Friday, 26th September Road Race Under 23 Men</p> <p>Saturday, 27th September Road Race Elite Women</p> <p>Sunday, 28th September Road Race Elite Men</p>

Experience the passion.



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Comitato organizzatore Varese 2008 spa
www.varese2008.org

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In the Arctic circle, the largest phyto-genetic bank in the world, the Global Seed Vault, was completed last February. Mapei contributed to its building by supplying several products.



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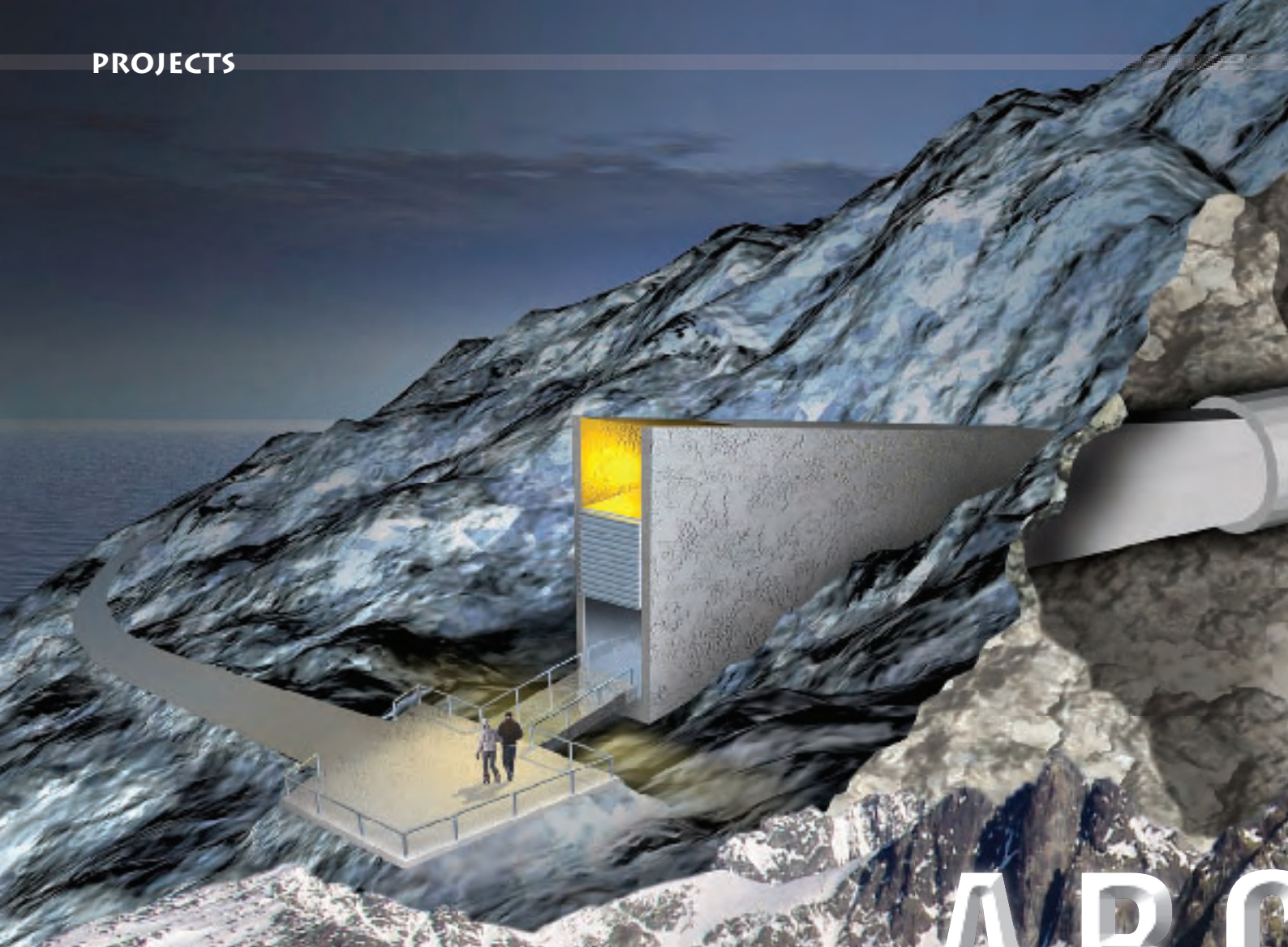
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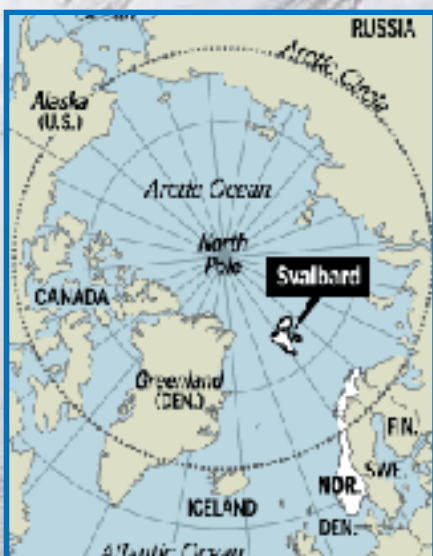
The Mapei web site contains all the information about the Group's products, its organisation in Italy and overseas, its involvement in the sector's main trade fairs and lots more.

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A R O THE GLOBAL

Mapei, with the largest phyto-genetic bank in the world, to safeguard the future



This must be one of the most extraordinary activities at the service of mankind, and it was made possible also thanks to the contribution of Mapei.

Inaugurated on the 26th of February on the Svalbard Islands in Norway, the largest phyto-genetic bank in the world, the Global Seed Vault hosts examples of unique varieties of the world's most important flora. According to Jacques Diouf, Director-General of the FAO (Food and Agriculture Organization of the United Nations) who inaugurated the complex, the gene bank offers "a guarantee, on a world-wide level,

to face up to the challenges of the future".

Because of the task it must carry out, the inviolability it must guarantee and its universal value, it evokes legendary and memorable constructions, such as Noah's Ark and the Pyramids.

To those who are used to watching

**18 degrees below zero,
the temperature at which the
seeds are conserved**

science-fiction films, it is similar to a docking station for space ships, or the ice-bound headquarters of Spectra, the organisation against which the most



GENETIC SEED VAULT

famous secret agent of all times, James Bond, has been battling for more than 30 years.

The past and the future blend together when trying to describe this work, capable of inspiring a wide range of unexpected thoughts and emotions.

The seed vault has been built inside a frozen mountain close to the village of Longyearbyen, in the archipelago of the Svalbard Islands, around one thousand kilometres to the north of the Norwegian coast. According to the FAO, the permafrost and rock formation of the mountain will ensure that, even if there are power cuts, the genetic material conserved in the vault will remain frozen and protected.

In accordance with the Biodiversity Treaty, the Svalbard gene bank will receive about 200,000 types of seed, although its total capacity is of around 4.5 million samples, for a total of around 2 billion seeds.

The construction of the complex was financed by the Norwegian government. According to the FAO, the world gene vault "is essential to increase the productivity of crops, to reduce the effect of climate change and the spread of diseases and parasites, and to guarantee a supply of genetic resources for the future.

The diversity in production is constantly under threat of natural disasters and of those caused by mankind".

The Contribution of Rescon Mapei

Mapei has also contributed to this important project which is destined to challenge the onset of time, through the Norwegian subsidiary Rescon Mapei AS. In fact, the bank was created mainly to face up to the future challenges of climatic change.

In the spring of 2007, Rescon Mapei was heavily involved in the building of the entrance tunnel to the vault, which was dug into the frozen rock.

The job of building in the permafrost was quite a challenge, which Rescon Mapei approached by using innovative products designed by the Group especially for extreme climatic conditions.



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The structure is made up of three underground chambers, reinforced with special concrete. The temperature of the materials was one of the most difficult challenges, and Rescon Mapei rose to the challenge with a series of high technology solutions and really special products. But let's look more into the technical details to try and grasp the real importance of this work, and who are the leading players.

Description of the Works

The vault for the Svalbard Seed vault is about one kilometre as the crow flies from Longyearbyen Airport, and around 130 metres above sea level. The entire complex has been built underground in the permafrost and has a constant temperature of approximately -3/-4 °C. Permafrost is a phenomenon which

consists in the perennial freezing of the ground, and means exactly this: a territory where the ground is permanently frozen.

As we already pointed out, the complex was designed to have a more or less eternal service life. This place considers all possible scenarios of a rise in the level of the oceans, caused by global climatic change.

268,000 samples were stored in the seed vault on the day of inauguration

The complex has been built so deeply into the mountain that any kind of climatic variation on Svalbard, as far as current experience and knowledge is concerned, will have no effect on the thermal sealing effect of the permafrost. In fact, the temperature will

Photo 1. Drilling of the rock.

Photo 2. The first blast in May 2007 marked the start of work on the tunnel.

Photos 3 and 4. View of the tunnel and work progress.

Photo 5. External view of the tunnel.

Photo 6. Anchoring rock bolts in the permafrost rock: a mixture of Nonset 120 FF and Zinkbolt mortars was used for this operation.

Photo 7. Application of Murtett, a special protective and decorative cementitious coating.

Photo 8. The final effect after applying Murtett.



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remain stable even if there are technical problems for short periods, such as black-outs.

Three Underground Chambers

The project consisted of three separate underground chambers.

Each chamber has a storage capacity of 1.5 million different types of seeds. The electrical circuit, supplied by electricity generated on site, will keep the internal temperature at a constant level of -18° C. The chambers have a special shelving system to store pre-packaged seed samples which arrive from the donor countries.

Access to the chambers is through a tunnel approximately 120 m long, and the entrance door to the tunnel is the only part which is visible from the outside. The tunnel is long and narrow and is made from reinforced concrete and brushed stainless steel. The external surface of the roof and

the front surface of the raised part are decorated, so that they reflect the polar light and offer a sensation of changing, incandescent light.

The Maximum Safety

The external half of the entrance tunnel is made up of a steel tube with a diameter of approximately 5 metres. This tube goes through the layer of snow, ice and loose rock, right up to the heart of the mountain. The method of excavation which was used was the Norwegian conventional method of drill and blast.

The rock is supported by shotcrete and rock bolts. The rock bolts are 6 m long by 25 mm in diameter. The bolts are anchored with rock bolt mortar.

The permafrost helps to maintain sta-

bility, however during the construction period, the local zones surrounding the tunnel is slowly being defrosted. The internal floor is in asphalt, and the entire complex is illuminated using electric lighting.

A closed-circuit camera system has been installed to guard against illegal intrusion. Close to the tunnel entrance, there is an office area and spaces dedicated to temporary work activities, which are only heated in those periods in which people are working in them.

The total area of the seed vault is approximately 1,000 m².

The complex was designed by the consultancy firm Barlindhaug Consult AS from Tromsø, which also has offices in Longyearbyen. Multiconsult AS contributed in the design of the geo-

4.5 million
the number of
samples which
may be stored in
the seed vault





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technical architectural solutions and landscaping.

The architecture was designed by Peter W. Søderman from Barlindhaug Consult.

The Commitment of Mapei Technicians

When shotcrete is used, it is important that the internal temperature of the material is taken into consideration, while development of the mechanical strength depends on the chemical reaction among the cement, water and alkali-free setting and hardening accelerators. In those areas where the quality of the rock is quite good, it is not necessary to apply large thicknesses of concrete, and a 8-10 cm layer is usually sufficient.

As we will see, this premise is very important in order to understand the reasons for which this operation was particularly challenging. On Spitsbergen, there are no mixing plants, and all the concrete had to be mixed by the local contractor Leonhard Nilsen & Sønner AS.

Rescon Mapei was involved in this phase from the very start, to find the most suitable solutions and to supply a ready-to-use, dry mortar in order to make on-site spraying operations.

A new product, RM SPRØYTEBETONG*, was developed specially for these requirements.

This dry mortar, which is supplied in 1,200 kg big bags, was formulated on the basis of a typical Norwegian shotcrete using 470 kg of cement per cubic metre.



*Photo 9.
View of the site with the
entrance area
almost completed.*

*Photo 10.
Work completed in the seed
storage area, where Rescon
Mapei shotcrete was used.*

*Photo 11.
The reinforced concrete and
brushed stainless steel entrance
to the seed bank.*

*Photo 12.
The refrigeration rooms.*

*Photo 13.
The arrival of the seeds
on the day of inauguration.*



Photo 14. One of the three chambers fitted out with a special shelving system for the seed samples.

Photo 15. The packaging used to send the seeds from countries from all over the world.

6 million Euro
the amount of money donated
by the Norwegian Government
to finance the construction.
Maintenance will cost almost
78,000 Euro per year

The cement selected for this application was one which is widely known for its quick-setting characteristics. The mortar production plant in Rescon Mapei has different sand grain sizes, with a maximum size of 4 mm. However, a normal Norwegian shotcrete has an aggregate size of up to 8 mm. Therefore, aggregates 4 – 8 mm was supplied in addition.

Apart from the dry mix, Rescon Mapei also supplied admixtures and an alkali-free accelerator. The admixture used for the concrete was DYNAMON SX-N*, a superplasticizer of the latest generation. It is characterised by a high capacity to reduce the amount of mixing water required. The concrete was mixed with hot water in combination with rapid cement to obtain a higher initial temperature and reactivity with accelerator. This is why a retardant was used: MAPETARD

SD-2000*, liquid admixture for sprayed concrete. During spraying, a setting accelerator admixture is added. In this case, MAPEQUICK AF-2000* alkali-free set accelerator for shotcrete was used. When using this product, the retarding effect of MAPETARD SD-2000* is neutralised by the alkali-free accelerator.

Reinforcing the Permafrost
 Rock bolting in permafrost is a hard task, because the temperature is constantly below freezing point. Rescon Mapei has designed a system for anchoring rock bolts at temperatures as low as -25°C. For this particular job, a mix of products was developed, with the aim of optimising the balance between mixing times and workability. In particular, a mix of NONSET 120 FF* and ZINKBOLT* pre-blended mortars was proposed. During the period immediately prior to construction of the tunnel, two UTT technicians from Rescon Mapei, Roy Hansen and Thomas Beck, worked closely with the contractor in order to

optimise the mix design and application. The entrance to the tunnel was excavated during the first weeks.

The start of the construction of the tunnel took place at the beginning of May, 2007. In only four months, the access tunnel (approximately 120 m long) and the three storage chambers were completed. The sprayed concrete was mixed in an automatic mixer directly on site.

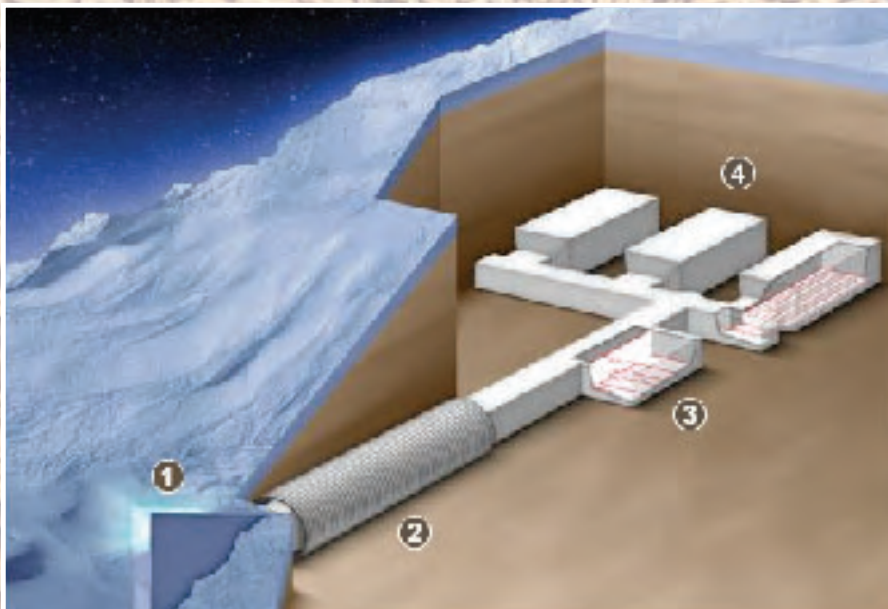
In the autumn of 2007, excavation of the tunnel was completed. The entire concrete surface was treated with a layer of MURTETT*, a special cementitious coating produced by Rescon Mapei, which is used for both protective and decorative purposes. It is available in two colours, white and grey, and the white version was chosen for this project.

MURTETT* is a cementitious product which does not contain any anti-freeze agents.

The product may be applied by hand or by spraying and, for this operation, the latter method was chosen. In this case, spraying the material on frozen concrete was a critical process. Because no accelerator could be used in the spraying process, due to risk of colour change, there was a risk of getting problems with frost in the fresh product.



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- ① The brushed stainless steel access to the vault. The external surface of the roof and the front surface of the raised part are decorated, so that they reflect the polar light and offer a sensation of changing, incandescent light.
- ② The external half of the tunnel is made up of a steel tube with a diameter of approximately 5 metres.
- ③ Areas to be used for offices for temporary work operations.
- ④ The three separate underground chambers where the seeds are stored at a constant temperature of -18°C .



www.croulrus.com





The work team which achieved this prestigious project on the day of the inauguration.

The photos published on these pages are by Even Bratberg, Cary Fowler and Mari Tefre. The illustrations were supplied by Global Crop Diversity Trust, whom we kindly thank. For further information: www.croptrust.org.

In order to avoid it freezing before hardening, the tunnel system was divided into sections, and each one was heated to make sure that MURTETT* did not freeze during the first hours.

A Special Team by Rescon Mapei

Exceptional results were made possible by expert technicians and technologically avant-garde products, developed to offer maximum performance under the most difficult conditions.

Just like the Mapei team dedicated to this specific sector, whose motto is: "By your side in the tunnel, from the beginning to the end of the job".

This is the Mapei UTT (Underground Technology Team): the international Mapei task force (capable of intervening anywhere in the world within 24-36 hours), specially trained to satisfy all the requirements of those who operate in the underground construction sector.

This work was the result of the commitment for research and development of a complete range of specific products, and the dedication of the team members which unite professionalism and experience.

Which is why, once again, Mapei offered its services as a problem solver, to contribute in helping to make what man creates durable over time.



*Mapei products: the products mentioned in this article belong to the "Admixtures for Concrete" and "Products for Underground Constructions". The technical data sheets are available on the "Mapei Global Infonet" DVD and at the website www.mapei.com.

Mapequick AF 2000: alkali-free set accelerator for shotcrete.

Mapetard SD 2000: admixture for concrete and mortars with retardant effect.

The other products mentioned in the article (**Dynamon SX-N, RM Sprøytebetong, Murtett, Zinkbolt and Nonset 120 FF**) are only manufactured and distributed in Northern European countries by Rescon Mapei AS, the Norwegian subsidiary of the Mapei Group. For further information, see the web sites www.resconmapei.com and www.utt-mapei.com.

TECHNICAL DATA

Noah's Ark - Global Seed Vault - Svalbard Islands (Norway)

Work: construction of an underground tunnel and areas in the permafrost and in the rock

Years: 2007-2008

Customers: the Royal Norwegian Ministry of Agriculture and Food, the Royal Norwegian Ministry of Foreign Affairs, and the Royal Norwegian Ministry of Environment

Project: Peter W. Soderman (MNAL), Barlindhaug Consult AS

Project Owner: the Norwegian Directorate of Public Construction and Property

Project Manager: Magnus Bredeli Tveiten

Contractor: Leonhard Nilsen & Sønners AS

Contractor's Project Manager: Gudmund Løvli (Leonhard Nilsen & Sønner AS)

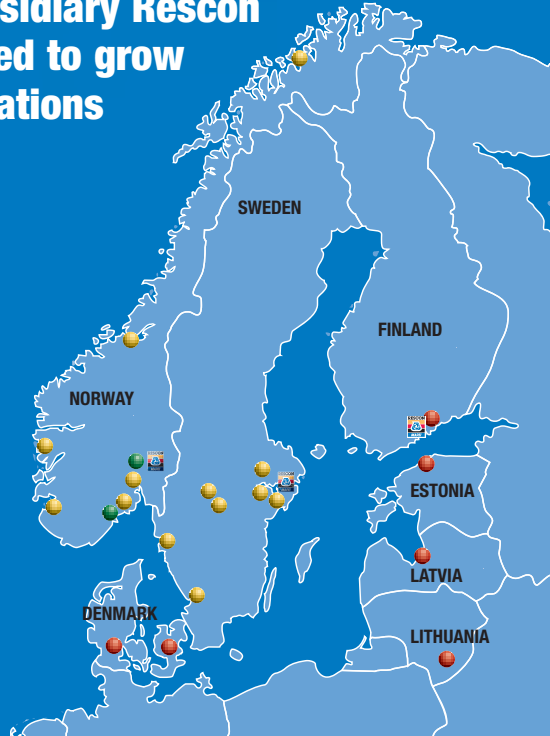
Work Management: Bjørn Arne Bjørkmo (Leonhard Nilsen & Sønner AS)

Mapei Co-ordinators: Roy Hansen and Thomas Beck - UTT Rescon Mapei AS (Norway)

MAPEI OPERATIONS UP IN NORTHERN EUROPE



Ever since it joined the Group, the Norwegian subsidiary Rescon Mapei has continued to grow in line with expectations



Let's talk about Rescon Mapei again. In 2001, 2 years after the Norwegian company Rescon joined the Group (taking on the name Rescon Mapei AS), we interviewed (in issue number 9 of Realtà Mapei International) Trond Hagerud, the Managing Director. Mr Hagerud said he was very optimistic about the Company's future thanks to the experience gained in Norway working in the realm of products for building structures for offshore drilling for oil, tunnelling, building bridges and laying floors. Moreover, these expectations were based on the expertise (for example in Research & Development) and creativity, which Mapei, as a partner, had to offer and share with Rescon in Nordic countries. We interviewed him once again at the opening of the new Rescon Mapei R&D Laboratory and new plant for manufacturing admixtures (see article on page 14) to take stock of the results so far achieved. First, however, let's briefly go back over the history of this subsidiary.

The Background Before Mapei....

When Rescon joined the Mapei Group in 1999, it was already a solid business enterprise based in Sagstua, not far from Oslo. It was founded (in a private garage!) in 1976, and during its next 23 years in business it developed innovative technology, an excellent manufacturing base, and highly efficient corporate

management system, gaining a firm foothold on a notable slice of the market in Nordic countries.

As regards technology, as we have already mentioned, Rescon had enviable know-how about products for underwater applications and tunnel and bridge constructions. More specifically, it was the leading Norwegian company in the supply of plastic thermosetting compositions, special cementitious mortars and admixtures for concrete. In addition, it also manufactured products for laying floors, such as the self-levelling compounds used to prepare substrates prior to installation.

These materials were first (and now still are) developed at the Research & Development Centre and manufactured at the Sagstua plant, one of the most modern plants in northern Europe equipped with cutting-edge machinery. Rescon products were (and currently are) then exported to other Nordic countries, such as Iceland, Sweden, Denmark and Finland. As regards attention to quality and human resources, Rescon was already a model company when it joined the Mapei Group. By 1994 it had already obtained NS-EN ISO 9001 quality certification, which was renewed in 1997, covering all its operations: Research & Development, production and sales. It was entirely structured around a programme focusing on developing the individual skills of its staff through general training, raising the standards of professional expertise and the sharing of corporate values.

Thanks to this corporate policy, the number of people employed, which was just three in 1976, was over a dozen by 1980 and as many as 60 by 1987, finally reaching a total of 98 staff in 1998. The Company's turnover has also increased at the same rate: from 10 million in 1987, it had already risen to over 20 million by 1998.



... and with Mapei

Mapei initially took over 51% of all Rescon shares in 1999 and then the remaining 49% the following year, when the Company was renamed Rescon Mapei AS.

Since then the Group has made considerable investments (15 million euros in Norway alone) in its new subsidiary, and this has allowed product distribution centres to be opened in various Nordic countries, also favouring an overall boom in its turnover, structures, human resources and market shares. The constant growth of Rescon Mapei explains why a new R&D Laboratory was opened last October, as well as a new plant for manufacturing admixtures for concrete at its headquarters in Sagstua, an event described in the following article.

So now let's hear what Trond Hagerud, the Company's Managing Director, has to say about Rescon Mapei's background from 1999 to the present day.

Interview with Trond Hagerud

What do you have to say about Rescon Mapei's progress from when it first joined the Group until the present day?

The Company has grown considerably in every realm: for example, as regards its turnover, in 2003 we set ourselves the target of reaching 60 million euros by 2010. 2007 was, however, such a positive year that we managed to raise sales by 22% and, consequently, we envisage reaching our goal by 2008, 2 years ahead of schedule. Thanks to an investment of approximately 15 million euros, we were able to boost our manufacturing capacity by installing new production and packaging machinery and modernising those already in operation; the distribution network has also been reinforced: for example, a new distribution centre was opened in Sagstua in 2003 to supply Nordic and Baltic countries with all the products from the latest Mapei ranges. Thanks to this investment, we have also been able to build a new Research & Development Laboratory and a new plant manufacturing admixtures for concrete.

Rescon Mapei is now a very healthy Group composed of various companies operating in three different countries: Rescon Mapei AS in Norway, Rescon Mapei AB in Sweden, and Rescon Mapei OY in Finland; it also owns Resconsult, a company specialising in consultancy and carrying out special maintenance and construction

work on concrete structures; finally, Rescon Mapei can boast working with exclusive distributors in Denmark, Iceland, Estonia, Lithuania and Latvia. Generally speaking, we can say that Mapei has been an excellent owner for Rescon, so we are proud to be part of the Group.

What are the Rescon Mapei's projects in the coming years?

2008 will be "Swedish year" for us, as we plan to focus our commitment and energy on raising market shares in this country. We also plan to introduce new production lines and to reinforce Rescon Mapei's organisational setup in Sweden. We also want to expand into other neighbouring countries and, in this respect, the new admixtures plant in Sagstua will play a decisive role, allowing us to launch an effective "offensive" in these areas.

A new Research & Development Laboratory, even though you already had one in a Sagstua: why?

In actual fact the new Laboratory has replaced the old one, and the new facility testifies to the Company's plans to keep on investing in Research & Development to reinforce its growth. Its task is to develop specific know-how and technology about concrete used in very cold climates, both in terms of handling and end product quality. This know-how will, on one hand, help Rescon Mapei meet the market requirements of northern Europe and Baltic countries; on the other, it will make the Company part of the special network of facilities with cutting-edge knowledge of concrete promoted by the Norwegian authorities.

The network of Innovation Centres through Research & Development is, in actual fact, coordinated by the Research Council of Norway and its activities involve such high-level institutes as SINTEF (Foundation for Scientific and Industrial Research) and NTNU (Norwegian University of Science and Technology).

Our Laboratory, which is viewed very positively by the authorities, will, therefore, play a key role in this network. The Centre's cutting-edge machinery will allow us to follow innovative projects ensuring the Rescon Mapei Group stays at the very forefront of the market. In addition, a well-equipped laboratory acts as a drawing force for the best brains around, and this will allow



us to put together a highly qualified Research & Development team.

What Human Resources will be employed in the Centre?

Highly qualified staff. For example, in the months after the Laboratory was opened, various engineers with Msc and PhD degrees began working there, all from prestigious universities, because, as I have already said, a cutting-edge centre engaged in top-level scientific projects inevitably draws in precious Human Resources with plenty of experience.

Why did you decide to open a new plant for manufacturing admixtures?

Admixtures for concrete are a growing segment of the market, because new technology has made it possible to develop concretes formulas with very specific and increasingly high performances. We needed to bolster manufacturing output and expertise in this sector, so this new plant will be at the very "heart" of our plans to expand into new areas.

Which production areas will Rescon Mapei be bolstering?

After opening the new R&D Laboratory and a new plant for manufacturing admixtures, we plan to replace the bag-filling equipment in the production unit devoted to mortars, and also to construct a new shotcrete accelerators plant. This latter product line is one of the most important for Rescon Mapei, which plans to enhance its production capacity so that it can supply both the home and foreign markets.

NEW NORDIC RESEARCH AND PRODUCTION FACILITIES

New Rescon Mapei AS R&D Laboratory and admixtures manufacturing facility now officially open

More celebrations in the Mapei Company.

This time it is Rescon Mapei AS's turn, the Group's Norwegian subsidiary, which, on 11th October, 2007 celebrated the opening ceremony for its new Research & Development Centre and new plant for manufacturing admixtures for concrete.

The Laboratory and plant, which involved investments of 5.1 million euros, cover an area of 2,400 m² inside the complex of buildings where, in Sagstua (not far from Oslo), other facilities (administration, business, marketing, technical service and quality control offices and production areas for Mapei product lines) belonging to the headquarters of Rescon Mapei AS are also located.

Both the new units are devoted to designing and manufacturing products to be used in very cold and par-

ticularly severe climates in Nordic countries (particularly extremely low temperatures dropping below freezing point).

Both are furnished with cutting-edge equipment and spaces devoted to various operations: for example, there is a showroom, a conference room and some research offices in the R&D Centre alongside the Laboratories.

The opening ceremony was attended by about 120 staff from Rescon Mapei AS and Resconsult (a consultancy Company for special projects, which is part of the Norwegian subsidiary), 10 from the Swedish commercial branch Rescon Mapei AB and three from the Finnish Company Rescon Mapei OY, plus about a hundred clients, suppliers, agents and business partners from Norway, Sweden, Finland, Iceland and Germany.

Lots of local officials and Norwegian



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Photo 1. The headquarters of Rescon Mapei AS in Sagstua (Norway).

Photo 2. The new Rescon Mapei AS Research & Development Centre.

Photo 3. A production area inside the new plant for manufacturing admixtures for concrete.

Photo 4. The auditorium in the Research & Development Centre used for teaching training courses.

Photo 5. The product distribution centre.



INVITASJON - INBJUDAN - INVITATION - KUTSU - BOÐ - KUTSE - IELŪGUMS - PAKVIETIMAS



business people were also present, including Asgeir Østlie, Mayor of the Nord-Odal municipality (where the headquarters of Rescon Mapei is located); Niels Ferdinand Rolsdorff, Leader of the Regional Committee of Glåmdal (which encloses 7 local municipalities); Gunnar Gundersen, a member of the Norwegian Parliament; and Sverre A. Larssen, President of the Norwegian Building Association.

Plenty of journalists and photographers from local and national newspapers and magazines also took part in the event, which boasted over 240 participants.

The guests, who were sent a personal invitation before the event, started arriving at the Rescon Mapei AS offices at 10 o'clock in the morning, where they signed in to the accompaniment of a trio of musicians playing soft back-

ground music on a guitar, sax and bass. Øyvind Roos, the compere of the event who co-ordinated all the day's events starting with the singing and dancing performances by talented youngsters from nearby Revyskolen Solbakken School of Arts and Music, gave a welcome speech at 11 o'clock. After all this enjoyable entertainment, the Managing Director of Rescon Mapei, Trond Hagerud, provided a brief outline of the history and operations of the subsidiary, before describing the two facilities which have just opened and handing over to the CEO of the Mapei Group, Mr Giorgio Squinzi. Mr. Squinzi officially thanked everybody for taking part in the opening ceremony, detailing the Company's operations both worldwide and locally, describing the Group's projects in general (mentioning the targets set in the "Vision 2010"

corporate plan) and those involving Rescon Mapei in particular. He then pointed out that, when the Nordic subsidiary joined the Group, there was an exchange of technology of great benefit to both parties: Rescon Mapei was able to take full advantage of the mother company's solid background of knowledge and know-how in the realm of products for building and for the installation of ceramics and resilient materials, while Mapei was able to draw on technological developments in accelerators for concrete and products for underground constructions, which the Company it had taken over already possessed.

Following Mr Squinzi, other official speeches were given by, respectively, Gunnar Gundersen, a member of the Norwegian Parliament, who described Rescon Mapei's enterprises as "an



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industrial adventure” and “important investment” for the whole country; Asgeir Østlie, Mayor of the Nord-Odal municipality, who underlined the strategic role of the Company’s operations on a local level, since it stimulated economic growth and provided the entire area with job opportunities; Sverre A. Larssen, President of the Norwegian Building Association; and Tor Arne Hammer, senior researcher at SINTEF, who outlined the COIN (Concrete Innovation) research programme, which Rescon Mapei is part of, to everybody in attendance. Between speeches, guests had the chance to watch performances by a young pupil from the local singing school mentioned above and also the professional singer, Nils Erik Steinstø, who performed various airs in both Italian and Norwegian.



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Photo 6.
The day of the opening ceremony for the admixtures for concrete plant and Research & Development Centre, Giorgio Squinzi, CEO of the Mapei Group, gave a speech to the guests in attendance, illustrating the history and present state of the Mapei Group and its Nordic subsidiary. Left: Trond Hagerud, Managing Director of Rescon Mapei AS.



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Next, Mapei staff were introduced to the audience; members of the Research & Development and Technical Service departments took the stage: Dag Vollset for the admixtures for concrete, Thomas Beck for the accelerators for concrete, Stig Henning Helgestad for cementitious mortars, and Trond Helgedagsrud for industrial floors. Finally, various representatives from companies and associations which helped build the new facilities also got the chance to say hello and express their best wishes: Tor A. Kittilsen from Sjøtil & Fornæss AS, the architecture firm which designed the two new Rescon Mapei facilities; Jan Egil Melby, the Manager of DnB Nor Bank; and Niels F. Rolsdorph, Leader of the Regional Committee of Glåmdal. After all the speeches and introductions, the musicians Hildegunn Øiset (a

famous Norwegian trumpet and horn player) and Ingrid Kindem (on keyboards), accompanied by a guitarist, performed a jazz piece entitled the "Rescon Mapei Suite", specially composed for this event and performed for the first time on this occasion. After some refreshments in the specially constructed gazebos, small groups of guests were shown around the new premises of the Research & Development Centre and plant. During the visit, guests were lead around by Rescon Mapei technicians, who gave detailed explanations in various languages (Norwegian, Swedish and English). The day drew to a pleasant close and everybody left the place where the opening ceremony had been held convinced that Rescon Mapei has a very bright future ahead of it.

Photo 7. After the official speeches, a famous Norwegian jazz trio performed a piece entitled the "Rescon Mapei Suite", specially composed for this event.

Photo 8. The banquet held after the opening ceremony.

Photos 9 and 10. Guests are given a tour around the newly opened Laboratory and plant by Mapei technicians.



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NECESSITY and VIRTUE

Extreme climatic conditions and geographical locations are the challenging grounds on which Rescon Mapei operates. All the force of Mapei Research, even underground and under the sea

After almost 10 years of becoming part of the Mapei Group, Rescon Mapei is still developing, and continues improving the products and techniques which have always been the Company's strong point.

Offshore oil drilling and tunnel excavation operations are the major areas which have led the Norwegian concrete industry to the top of the international field right from the very start. Today, Rescon Mapei shares and feeds the mother company with its desire to continue with this growth process, by pushing on Research & Development. The special trait which distinguishes Rescon Mapei is, without a doubt, that of designing exceptional products to solve problems on "extreme" working sites. This is a direct consequence of operating in such areas, such as Norway and the extreme Northern hemisphere, where the climatic and geologic conditions are the most extreme, and where the sea, the cold and the mountains are the natural elements which form the landscape, and with which the

Company must inevitably confront itself. The site of the Global Seed Vault, built in the Arctic Circle on the Svalbard Islands (presented in the leading article in this edition), is a particularly significant example. This is one of the reasons for which Norway is known as the leading nation in the construction of underground tunnels and environments, both for defence purposes and for communications and energy purposes.

The country is also renowned for the construction of bridges, underwater tunnels and concrete offshore oil drilling platforms, all built where man measures himself against the odds, and where the use of highly technological materials really does make the difference.

These are all applications where Rescon Mapei is consistently the leading player, with its special products in continuous evolution.

The construction of tunnels has seen the commitment of Rescon Mapei right from the very start, with the aim of mak-





ing them long-lasting, watertight and safe against falling rocks.

Concrete offshore oil drilling platforms is another very important battlefield where the Norwegian Company is heavily committed. In these cases, the strength, quality and reliability of the concrete are essential requisites to withstand the extreme climatic conditions in such locations, sea-water and the oil itself. In this sector, Rescon Mapei supplies product systems of mortars, epoxy-based building products and admixtures which may be employed at up to 300 metres below sea level, and also possesses a historic patent for the maintenance of underwater concrete structures. Mapei's offer includes admixtures which makes underwater concrete used below the sea cohesive and viscous; epoxy adhesives for bonding construction segments into a monolithic structure, both for the inner and outer surface; and protective coatings for the surfaces. Methods and products suitable for underwater environments which may also be used in other marine applications, such as for dockyards and bridges.

In fact, as with oil drilling platforms, bridges must also be particularly safe, in that they are continuously exposed to similar stresses. And what is more, bridges must also face up to mechanical wear, anti-freeze salts, pollution from the vehicles which cross them and, last but not least, freezing weather and seawater. Salt, for example, penetrates into the concrete and makes the reinforcement rods expand, which then crushes the construction. By using Rescon Mapei products, many problems and damages caused by external agents, such as those mentioned above, may be quite easily avoided or

kept under control.

Exceptionally reliable products (such as the one presented below), together with a clear, winning business philosophy: to supply added value for the client, and to reduce their costs. These are the reasons for the success of Mapei's Norwegian subsidiary. A success story which, in the North, is there for all eyes to witness. In fact, it lives in the most prestigious, modern structures which enrich the Scandinavian countries. Large-scale works destined to last over time, thanks also to Rescon Mapei. ■■■



RESCON T

RESCON T is a powder anti-washout admixture for underwater concrete or mortar castings. It can be used for all kinds of underwater applications: from underwater castings to renovation and maintenance works of underwater structures. All methods of casting can be used: with a pump, with tube pumping equipment, free casting with large buckets or else raceway casting.

When RESCON T is added, underwater concrete becomes cohesive, highly fluid, without cement or fine particle washout, stable and without segregation, self compacting and easy to pump.

Due to the cohesion obtained and low miscibility with water, the concrete will be more viscous and will adhere better to the mixers and equipment more than normal concrete. RESCON T should preferably be added after the other ingredients (cement, aggregates, water) but can be mixed dry before adding water.

If added directly into the truck mixer, RESCON T must be poured into the drum with the aggregates. Mixing time must be 20 minutes.

For further information on this product, see the technical data sheet on the web site www.mapei.com.





MAJOR WORKS IN NORTHERN EUROPE

In Northern European countries several building works were carried out using Mapei products and under the supervision of Rescon Mapei. Some examples are shown in these pages

Atlantic Road - Molde (Norway)

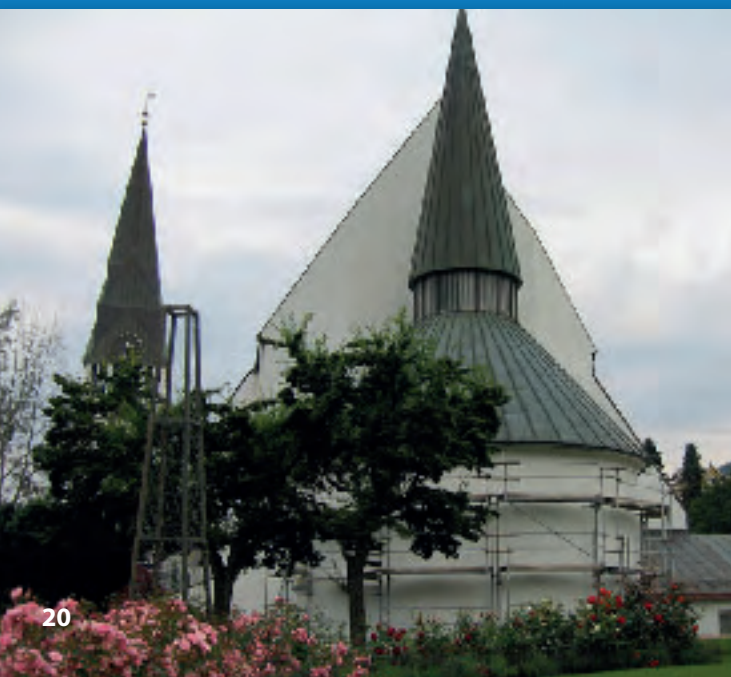
This 8 km road features 7 bridges, whose concrete surfaces were repaired and treated with CEM ELASTIC*, PRIMER E-10*, DS*, MONOFINISH and REDIREP 45*.

Molde Domkirke Molde (Norway)

Mapei contributed to the renovation, completed in 2005, of this suggestive church's front by supplying products, such as SILEXCOLOR PRIMER, SILEXCOLOR PAINT and SILEXCOLOR TONACHINO.

Hotel Avalon – Gøteborg (Sweden)

The outside pool located on the roof of this hotel has a glass bottom and side. The concrete substrates were treated with PRIMER G and waterproofed with MAPELASTIC and MAPEBAND. The mosaic tiles were bonded with ADESILEX P10 mixed with ISOLASTIC.





Bridge on the Øresund (Sweden)

BETONG PRIMER*, MAPEPOXY L*, MAPEPOXY LL*, RAPP*, CEM S* and MAPECOAT I* were used for building this 7.8 km bridge connecting Denmark and Sweden.

Santa Claus Park – Rovaniemi (Finland)

Santa Claus amusement park is located in the Arctic circle, near the city of Rovaniemi. It was built in 1998 by excavating at about 50 m under the ground level. Every year thousands visitors come here to enjoy the mystery of Arctic Circle, the Northern lights and the reindeers and to meet Santa Claus. In spring 2007 it was completely renovated. Over 1 km substrates were drained and REDIREP 45 RSF* mortar was sprayed on them. Other concrete surfaces were cleaned with a high pressure water washer and a 2 mm layer of MURTETT* was then applied. SILEXCOLOR PAINT ensured a final dark blue coating reminding the Northern night skies.



Statoil's Snøhvit Project – Hammerfest (Norway)

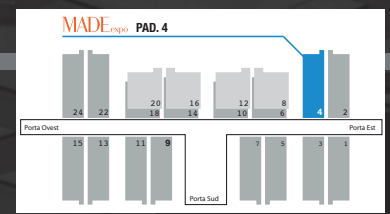
The first European platform for processing and liquefying natural gas was completed in 2005 in Melkøya by using the following products: MAPEAIR 25*, MAPECURE 1*, MAPECURE CCI 2000*, MAPEPLAST P*, MAPETARD R, MAPETARD SD 2000, RESCON T, MAPEPOXY LR*, NONSET 50/50 FF*, REDIREP 25 RSF*, ZINKBOLT*, MAPEQUICK 34*, MAPEQUICK AF 20*.

Den Norske Opera – Oslo (Norway)

Rescon Mapei supplied the following products to complete the toilettes, VIP areas, stages, offices, workshop and rehearsal rooms: MAPEPOXY LR*, CONFIX*, STØPEMØRTEL C-35*, NONSET 120*, NONSET 400*, MURTETT GRÅ*, MAPESIL AC, MEGAFIX LIGHT*, MEGATEC HVIT*, BUTYLBÅND*, RØRMANSJETT*, FIBERFILT*, PRIMER G, KERAFLEX S1 HVIT*, ULTRACOLOR PLUS FOU*, ULTRACOLOR PLUS.

** These products are only manufactured and distributed in Northern European countries by Rescon Mapei. For further information, see their technical data sheets on the web site www.mapei.com.*





MADE_{expo}

in... Mapei

Mapei was very much to the forefront of international building, right across the board, at the first edition of MADE (Milan Architecture Design Building)

What is the point of MADE for Mapei? The answer lies in the fact that anything innovative in the building industry is an integral part of Mapei's DNA.

The Company took part in the first edition of MADE Expo 2008, which was held at the new Milan Trade Fair (Fiera Milano) in Rho-Però from 5th to 9th February.

The results of this first event exceeded expectations. 170,779 people attended this innovative five-day international exhibition devoted to building and architecture, including 154,754 Italians and 16,025 foreigners. The very best of the building industry attended MADE Expo, displaying everything this sector has to offer ranging from design to construction, from services to high-tech solutions, not forgetting materials and finishes. Carefully focusing on the distinctive features of each separate sector of the industry, the event was a great success with specialist operators and designers.

According to Giulio Cesare Alberghini, the Managing Director of MADE eventi (the company in charge of the organization of the exhibition and its side events): "The 1,914 exhibitors enthusiastically took up the challenge of this



first edition, which was totally different from previous events in the building industry and hosted in a brand-new setting featuring some incredible structures and closely tied to the European market. The 1,625 Italian companies in attendance also got the chance to confront the international market, presenting the very best the Italian building industry has to offer."

For Mapei the location of this event had a very special appeal, since the Company has Milanese roots and is closely tied to the local area. Milan was once again the stage for architectural renewal and a leading player on the world economy, underlining its vocation, even in this sector, as an international showcase and benchmark not just for the world of building, but also the entire realm of architectural design. The organisers' efforts were reward-

ed by an array of important visitors, including architects and designers as well as specialist operators of this field, who admired the range of products on display and the exhibition layout, but, above all, acknowledged Milan's (and the Rho Trade Fair's) role as a catalyst of the very highest order.

The "SKIN – Architectural Surfaces" exhibition, a side event sponsored by Mapei, attracted plenty of interest. Side events, such as conventions, meetings and opportunities for taking a deeper look at the industry, turned out to be extremely popular. "Beyond our wildest expectations - according to Roberto Snaidero, the President of Federlegno-Arredo (the Italian Federation of Wood, Cork, Furniture and Furnishing Manufacturers) - the test which this first exhibition event set was most certainly passed. This opens up some interesting



development prospects for getting even more deeply involved in forthcoming editions of MADE Expo, forcing us to immediately devise strategies for internationally strengthening and developing the 2009 event".

Mapei to the Fore: "One Company – One World"

Mapei's involvement in the first edition of MADE Expo held in Milan, the city where Mapei was founded in 1937 and where this Italian multinational company still has its headquarters, was highly significant. Mapei was certainly committed to the event and displayed its products in two different stands, taking part in two of the side events as a technical and official sponsor: "SKIN - Architectural Surfaces", an exhibition

outlining technological materials and solutions for architectural services encompassing all the world's different cultures, and "MADE in..... posa", the first wooden floor laying and installation championships.

Mapei also sponsored a technical conference on the topic of "Stone materials: selection, installation, care and maintenance", with a speech being given by the engineer, Ms. Stefania Boselli, from Mapei's Technical Service Department. At the meeting – organised by "Italy for Marble" (Italian Association promoting Italian Natural Stone) on behalf of Confindustria Marmo (Federation of Italian Marble Industries), Acimm (Associazione Costruttori Italiani Macchine per Marmo – Association of Italian Manufacturers of Marble Machines), Assofom (Associazione Nazionale Produttori Forniture per Marmisti – Italian Association of Marble Furnishing Producers) and the Associazione Marmisti Regione Lombardia (Lombardy Stone Association) – Ms. Boselli focused on the most common issues connected with installing stone coverings, like, for example, the incorrect preparation of surfaces, the lack of joints that are often not properly arranged

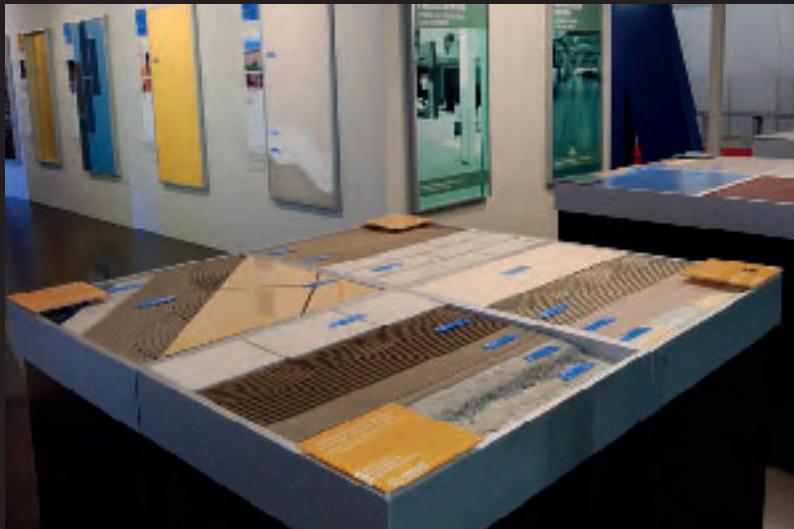
and, in relation to the materials used, phenomena like dimensional instability and staining of natural stones.

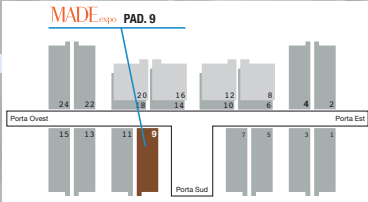
Mapei decided to present itself at the event under the slogan "Mapei: One Company – One World", a clear allusion to Mapei's international research operations and the expertise this gives the Company, which always has benefits locally in terms of efficient solutions and systems for designers, installers and contractors.

But that is not all: this slogan is also intended to highlight how the international and global nature of the Mapei Group (operating in 24 countries worldwide through 51 subsidiaries and 47 plants) is a driving force behind (and great stimulus to) its design and development (based on research operations) of appropriate cutting-edge solutions. Being international means, for example, developing systems and products capable of providing effective solutions to the different demands coming from contrasting climates (from Scandinavia to the Arab Emirates) and complying with even the most stringent regulations (from the GEV in Germany to the LEED in the USA and Canada), also dealing with 5,300 employees (compared to 4,500 in 2006).

Visitors to the Mapei exhibition stands were provided with all kinds of information about the Company's different products and systems, as they looked at what was on display, collected technical documentation, and posed questions to technical and commercial staff, who, throughout the entire exhibition, were always ready and available. The first stand, located in Hall 4, cover-







A STAND FOR INSTALLING PARQUET

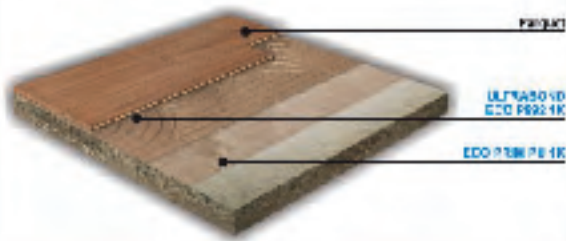
The second Mapei stand, located in Hall 9 and covering an area of approximately 80 m² over one single level, was entirely devoted to products for laying parquet floors. Attention particularly focused on the ECO range and various Mapei systems and solutions for installing parquet, presenting self-levelling compounds, primers and the entire range of adhesives. Plus, every day the stand hosted interesting demonstrations about how to lay parquet and apply products: important little events making the

general public aware of the efficiency and effectiveness of the Mapei systems on display.

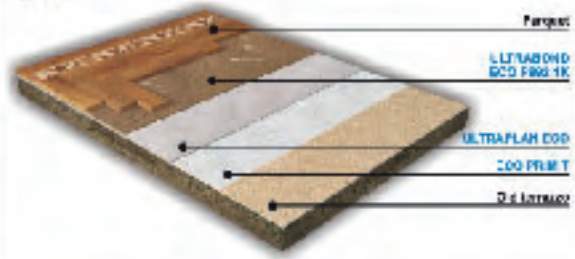
Lots of products were in the spotlight, and a growing interest was shown in ECO systems for professionally installing parquet floors. They are Mapei's pride, epitomising how the Company is committed on a day-to-day basis to research and development into creating safe products for the environment, installers and end users (as illustrated in the articles on pages 30 - 33). They are all GEV (EMICODE EC1) certified



"ECO" SYSTEMS FOR LAYING PARQUET on damp cementitious substrates



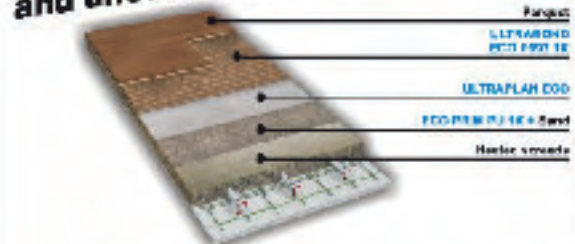
"ECO" SYSTEMS FOR LAYING PARQUET on uneven terrazzo floors



"ECO" SYSTEMS FOR LAYING PARQUET on uneven cementitious substrates



"ECO" SYSTEMS FOR LAYING PARQUET on heated screeds with a rough and uneven surface



and we would like to draw attention to some of them. Firstly, ECO PRIM PU 1K, a revolutionary single-component polyurethane primer (this moisture-curing agent does not require a hardening compound to be added and then mixed in), which is totally solvent-free. Easy to apply using either a roller or a brush, it is ready to use and it has not to be diluted. It is odourless and hypo-allergenic, so that it can also be used by installers who are allergic to epoxy-based products.

As regards smoothing and levelling compounds, the spotlight focused on ULTRAPLAN ECO, a self-levelling, quick-hardening smoothing compound, which may be applied to both absorbent and non-absorbent sub-

strates, in thicknesses ranging from 3 to 10 mm, before installing the parquet. Only suitable for indoor usage, this product prepares both new and old substrates to be covered with all kinds of floors, in places where high resistance is required, and it is particularly suitable for areas subject to wheeled chairs traffic.

Finally, we would like to point out a product which is revolutionising the parquet installation market due to its exceptional properties: ULTRABOND ECO P992 1 K.

This is a new single-component, odourless, hypoallergenic polyurethane adhesive which has no hazardous labelling. It has many properties placing it at the very top of the list of the new generation of adhesives. It is ideal for all types of parquet laid over all kinds of substrate (absorbent and non-absorbent) and it is particularly suitable, given its elasticity and the total absence of solvents, for installing over heating screeds.

ULTRABOND ECO P992 1K also reduces the installer's effort, because its viscosity remains constant and it is easy to trowel, even when applied

at low temperatures.

It is also worth noting that this adhesive has a 20-30% lower consumption rate than traditional reactive two-component adhesives and its packaging has been carefully studied so that any leftover product, when work has been completed, may be conserved, thereby reducing any wastage to a minimum. It is also worth adding one final point: ULTRABOND ECO P992 1K is a high-performance product.

It has excellent adhesion to all kinds of substrate, very good ridges stability, adjustability and open-time, even at high temperatures.

It also reduces impact transmission through the floor, reducing noise levels.

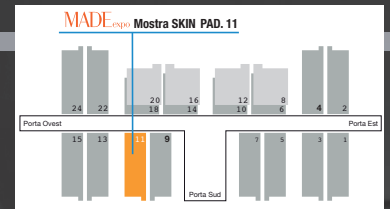
The Mapei ECO range products are innovative high-tech solutions which fully respect both people and the environment.

This is Mapei's international image at the present time.

An image which operators in this industry attending MADE Expo really appreciated and admired, as the Company showed off everything it has to offer.

It also highlighted how important its own contribution to the building world is in terms of research work and experience designed to provide cutting-edge materials to meet the market changing demands and keep one step ahead when it comes to the latest trends.





SKIN

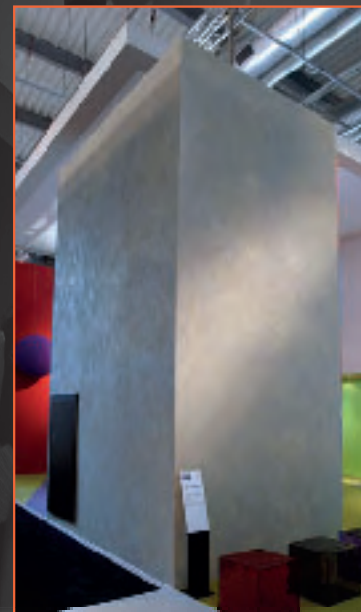
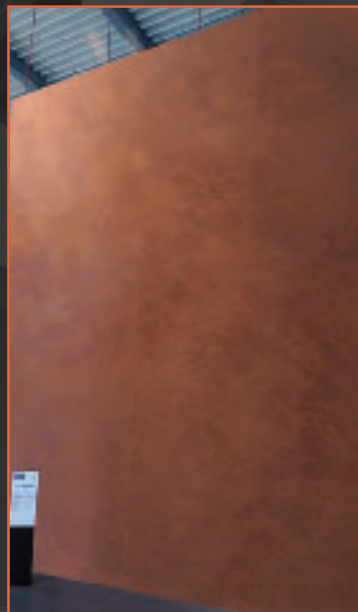
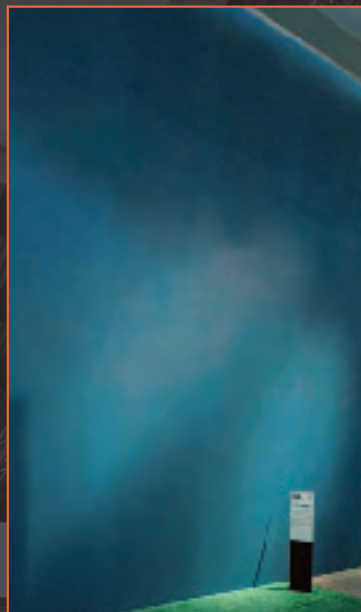
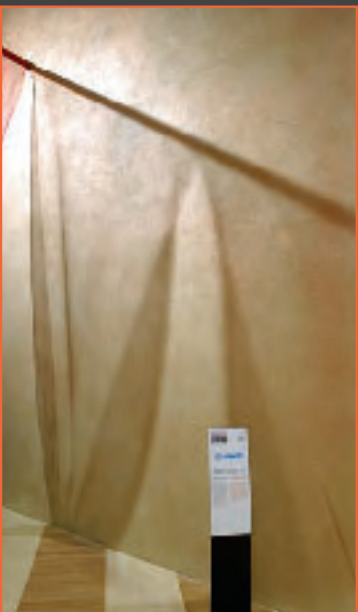
by Mapei



Mapei was the main official sponsor of the "SKIN – Architectural Surfaces" exhibition at MADE Expo, which explored architecture through surfaces. The exhibition, organised by Studio Original Designers 6R5 Network, was a trip through the world's various cultures, illustrated through materials and technological solutions for surfaces, constantly poised between standardisation and local diversity. "SKIN - Architectural Surfaces" took visitors on a trip to discover interesting architectural and cultural aspects of Germany,

United States, Great Britain, France, South Africa, India, China, Japan, Spain, Italy, Russia, Mexico, Saudi Arabia and Morocco. "SKIN" enveloped architectural interiors and shells, interpreting architectural surfaces through the world's different cultures and incredible variety of styles based on highly efficient local materials with their own exclusive design. Thanks to the contribution of 70 companies, "SKIN" displayed the most innovative, latest generation materials for building and architecture,

highlighting the qualities of their technological details and properties, and allowing visitors to admire the thousands of ways in which they can be used. Architects from each of the countries involved displayed photographs (on tall two-sided panels) of projects recently carried out or currently being implemented in the various nations involved in the "SKIN" event. The architects in question were Massimiliano Fuksas and Mario Cucinella for Italy, Dominique Perrault for France, Christoph Ingenhoven for



Germany, Zaha Hadid for Great Britain, Daniel Libeskind for the United States, Kengo Kuma for Japan, Boris Birnaskoni for Russia, Fernando Lopez Carmona for Mexico, Hafeez Contractor for India, Mphethi Morojele for South Africa, Ghorafi Jamal Eddine for Morocco and Yung Ho Chang for China. Visitors to "SKIN" also got the chance to be the first to test out "Codesurfer", an innovative system combining code bar reading with web services and technology to provide a neat and eco-friendly alternative to brochures and printed

catalogues. Mapei interpreted the spirit of the "SKIN" exhibition through products and solutions for major architecture. Most notably, Mapei presented the following solutions for resin floor and wall finishes: PLANITOP 100 – Mexico City (Mexico); SILEXCOLOR MARMORINO "encausto" effect - Berlin (Germany); SILEXCOLOR TONACHINO with MAPEGLITTER - New Delhi (India); SILANCOLOR TONACHINO with MAPEGLITTER - Beijing (China); MAPEFLOOR SYSTEM 33 – Logo Skin

for floors. Striking aesthetic effects and functional reliability were the distinctive traits of the Mapei products on display at "SKIN" for all the visitors to admire. Decorative effects and solutions of great stylistic impact, whose apparent simplicity conceals plenty of very careful design work.

For further information about this event, see the special section on the MADE Expo website (www.madeexpo.it).

Life with MAPEI

The “green history” of the Italian chemical industry: Mapei products all over the world

Mapei's presence at the MADE Expo fair (described at pages 22 - 29) focused on the presentation of products and systems epitomizing the Company's commitment to human health and environment. Indeed, Mapei devotes 70% of the investments for Research & Development to the analysis and design of products which are safe for human beings and the environment where they live.

“Unsafe” products are, for instance, solvent-based products. This is the reason why Mapei developed a range of solvent-free products with very low emission level of volatile organic compounds (VOC): the Mapei ECO line.

Protecting the environment also means eliminating and preventing the formation of mould and algae which can make the buildings unhealthy and damaged. To deal with this problem Mapei devised several products featuring the “BioBlock®” and the “DropEffect®” marks.

“Healthy buildings” also means building not affected by rising damp. For this problem Mapei research developed dehumidifying mortars which are also vapour permeable. They are made of lime, Eco-Pozzolan and components deriving from renewable sources.

Reducing the amount of dust in the air also means contributing to create better environmental conditions. This is the aim of the Mapei “Dust Free” technology which reduces by about 90% the dust normally released in the air during manufacturing, mixing and applying a powder-based product.

Mapei is also committed to energy saving by supplying system such as MAPETHERM for the thermal insulation of buildings.

MAPEFONIC SYSTEM was instead developed to deal with the problem of sound insulation. Noise from footsteps can also be reduced with Mapei last generation adhesives ULTRAFLEX S2 QUICK and ULTRAFLEX S2 MONO.

It is evident that the environmental commitment is an important part of Mapei's corporate philosophy and industrial responsibility: this is a “green history” started over 30 years ago.

“ECO” systems for laying resilient and textile floorings

Mapei possesses all the technology required for adhesives used for laying resilient and textile floor coverings, and always has the best solution available for all your projects.

ECI GEV

Mapei systems for laying floor coverings professionally. Mapei technology within every reach.

Life with MAPEI
Your health and respect for the environment are important to Mapei

MAPEI

In the 1970's Mapei brought products in water dispersion and with low solvent levels onto all the markets, products which do not require fire-protection certificates for inflammable substances.

Mapei's commitment was further enhanced by research programmes for developing products with an extremely low emission level of volatile organic substances to improve wellbeing in the buildings where they are employed. Thus, the Mapei ECO range was born, easily recognisable by the green flower symbol appearing on the products packaging.

The products in the ECO range were initially launched by Mapei on the American market in the 1990's. They were then introduced to the European market and, in only a short time, they replaced most products with a conventional dispersion base. Another significant milestone in the Company's commitment to environment and safety was, in 1992, the adhesion to Responsible Care, the international chemical industry's commitment to sustainable development, promoted in Italy by Federchimica, the Italian Federation of the Chemical Industry.

Since October 2005, the products in the ECO range, which had already been tested and certified by internationally recognised institutions, such as the German TFI (Teppich-Forschungsinstitut) and by the American CRI (Carpet and Rug Institute), also bear the “EMICODE EC1 – very low emission level of volatile organic compounds” mark, awarded by GEV (Gemeinschaft Emissionskontrollierte Verlegewerkstoffe, Klebstoffe und Bauprodukte e.V.), an association which controls the emission levels of products for floor installation, adhesives and building products and of which Mapei is a member.

MAPEI ECO RANGE: THE WIDEST RANGE OF SOLVENT-FREE PRODUCTS AVAILABLE ON THE MARKET!

SOLVENT-FREE ADHESIVES AND PRIMERS FOR THE INSTALLATION OF RESILIENT, TEXTILE AND WOODEN WALL AND FLOOR COVERINGS

- ✓ Solvent free, with very low emission level of volatile organic compounds (VOC)
- ✓ Safe for the health of installers and end users
- ✓ Respectful of the environment
- ✓ Easy to use
- ✓ Excellent technical performances



GEV
EMICODE®



EMICODE certification

History and development of a distinctive quality symbol and a guarantee of products which respect the environment and our health

Nowadays, EMICODE certification is a distinctive symbol of quality and a reference point for floor installers, architects, designers and final users who wish to be guided in choosing amongst the wide variety offered for chemical products for the building industry. This year, EMICODE will be celebrating its eleventh anniversary. It was at the beginning of the 1990's when manufacturers of adhesives for flooring installation removed the final traces of solvents used in adhesives for PVC, linoleum, textile materials, etc. The matter of unpleasant odours given off during this type of application, for either short or longer periods, was closely connected to laying floor and wall coverings. At the same time, consumers were becoming more and more concerned about the quality of the air, particularly in indoor environments, and a more "healthy" construction industry in general. And it was also over this period that there was the misguided (or highly doubtful) belief that there is a close connection between smell, analysis of the volatile organic compounds (VOC) and the physiological effects, which may be summed up by the motto "bad smells cause illnesses, and volatile organic compounds remain suspended in the air". On the 24th of February, 1997 the main producers of adhesives for laying floors founded GEV (Gemeinschaft Emissionskontrollierte Verlegewerkstoffe, e.V.), the Association for the Control of Emissions in Products for Flooring Installation, with the aim, as it still is today, of elaborating and dictating suitable rules and norms for checking, classifying and labelling installation materials, regarding their emission of VOC. With this aim in mind, the EMICODE classification system was created, a certification system which may be measured, compared and docu-

mented, and as a result, is extremely reliable.

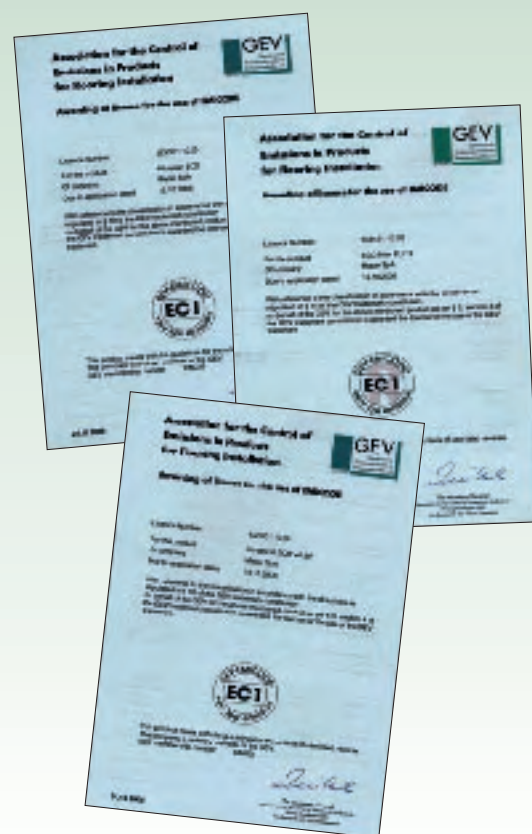
Communications with the companies involved and the definition and pursuit of the objectives of the Association has created an enormous amount of work in the technical field. It became necessary to devise and test an assessment system which was capable of singling out the presence of volatile organic compounds, and to measure their level. It was necessary to establish tight limits, the respect of which guarantee that the level of volatile organic compounds released into the atmosphere were such that they do not have any significant physiological influence. It is not possible to establish a direct relationship between the concentration of VOC tested in the laboratory test chambers and those which one may expect to find in the air in internal environments, but eleven years of practical experience has demonstrated that the tight limits foreseen by the EMICODE guarantee protection against high concentrations of VOC released into the air in internal environments by laying materials. In fact, one of the original objectives of GEV was to definitively exclude such materials from the controversy over smells and the quality of air in environments, through a preventative reduction of VOC emissions from adhesives. Once the EMICODE system had been established, R&D laboratories from the companies which manufacture adhesives had a heavy workload. For a large number of products, it was not possible to satisfy the requirements to obtain EC1 classification according to the EMICODE certification. Also, EC2 and EC3 classes, which accept higher concentrations of VOC, had a much lower impact from a promotional point of view. As a result, these two classes have been rarely used. During this pro-

cess, for example, the use of plasticizing and fluidity agents, very useful from a technical point of view, has been abandoned. A number of dispersion agents were found to be too rich in monomer residuals and, above all, some resins with high bonding capacity (even though they are natural materials), had a VOC emission level which was too high.

The industry manufacturing products for flooring installation put suppliers of raw materials under heavy pressure, until they were able to produce large quantities of clean polymer dispersion agents characterised by their high viscosity.

The Initial Controversy over Products with Low Emission Levels of VOC

In the beginning, not all products with a low VOC emission level were approved by professional users within the sector. Without the use of solvents and without adding small amounts of substances with a high boiling point, it was difficult to create a product with high initial tack, good open time and good technical characteristics.



The first products developed were often considered too “weak”, mainly due to modifications carried out on the resins. Also, formulas without resin and composed by suspended polymer solids with low viscosity were not considered to be a valid alternative.

However, these teething problems were quickly solved and overcome, and nowadays, consumers have a wide range of solvent-free adhesives for floors without plasticizers on offer, without a high boiling point, with limited monomer residues, very low emission levels of VOC and, as far as their technical and performance characteristics are concerned, have nothing to envy of previous generations of adhesives. If the EMICODE certification system was initially used for adhesives for textile and resilient floor materials, it has been quickly extended to include other categories of products.

Therefore, apart from a wide number of adhesives for parquet, nowadays there are also primers and smoothing and levelling compounds which are certified EMICODE. One consequence of this process is the change in name of GEV, which has now become “Gemeinschaft Emissionskontrollierte Verlegewerkstoffe, Klebstoffe und Bauprodukte e.V.” (Association for the Control of Emissions in Products for Flooring Installation, Adhesives and Products for the Building Industry).

Interest in this certification system has never slowed down, and new categories have been introduced (such as grouting mortars), and requests to adopt the system keep on arriving from overseas. For designers and works directors, EMICODE is a precious tool when choosing products from the enormous range of building materials and products available on the market. In fact, this certification system make it possible to create the entire flooring system, while maintaining a very low emission level of VOC.

EMICODE indicates the emission levels and, therefore, is a primary guide to guarantee protection for the final user. However, chemical companies which support the Association wanted GEV to protect even further the health of those who apply the products, and this has been made possible by the introduction of the classes EMICODE EC1 (2, 3) - R.

Once the products with a high level of solvents had been categorically excluded from the EMICODE system, there was then the desire from producers

that the risks for those who apply the products, deriving from incorrect handling and use of some types of products (such as polyurethane, epoxy products and, in general, those labelled as reactives, sililate polymer-based adhesives, labelled products, etc.), were indicated by the letter R (which means “reguliert”, regulated), thus stimulating attention for health and safety measures in the work environment.

In a system based on self-certification and self-regulation, it can not be denied that doubts have been expressed over the years about the system’s authority and validity. GEV has faced up to such claims, and eliminated them with a series of reliable countermeasures.

The statute of the Association, the analysis methods adopted and classification criteria are public knowledge,

and are based on a solid, universally-recognised technical base.

The tests carried out on the products to establish to which EMICODE class they belong are carried out by independent analysis institutes, chosen and selected by GEV, which are capable of controls for EMICODE certification using the accuracy and repeatability required by the Association.

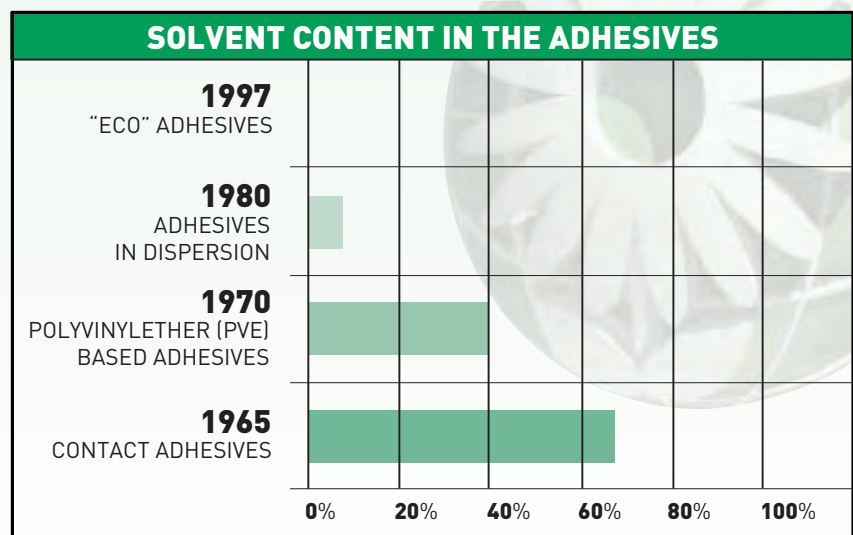
Producers have developed internal control mechanisms for their quality management systems, according to which the products are subject to continuous control. And lastly, GEV regularly carries out sample testing and, according to the results, products which do not make the grade according to the system lose their EMICODE certification and the manufacturers are liable to be sanctioned.

The “ECO” Commitment of Mapei

For many years, the aim of Mapei research has been the development of products which are safe for the environment, floor-installers and final users. Unfortunately, in a number of countries, there are no standards which make it easy to identify and commercialise “ecological” products. This often means that users and contractors may be misled by friendly, attractive slogans, and may therefore choose products which do not respect either the environment or people’s health. The main problem when using these products is that volatile organic compounds (VOC) may be given off, such as solvents, biocides and plasticisers, and which may have a heavy influence on pollution of the air in domestic environments, the so-called “indoor” pollution.

As far back as the 1970’s, Mapei started introducing products in water dispersion with a low solvent content on the market, for which fire-prevention certification for inflammable substances was not required. Even though the solvent content in these products is very low, there is still a small amount and the problem is far worse in those countries which are particularly sensitive regarding the use of ever-safer chemical products.

Mapei’s commitment was further enhanced by research programmes for developing products with an extremely low emission of volatile organic compounds to improve wellbeing in the buildings where they are employed. And this is what led to the birth of the Mapei “ECO” range. The products in this range were initially launched by Mapei on the American market in the 1990’s, and then later on the European market. In a short time, they replaced a large number of conventional dispersion products. Since October 2005, products from the ECO range have the “EMICODE EC1 – extremely low emission of volatile organic compounds” certificate, awarded by GEV, of which Mapei is a regular member.



Flowerly Finishes

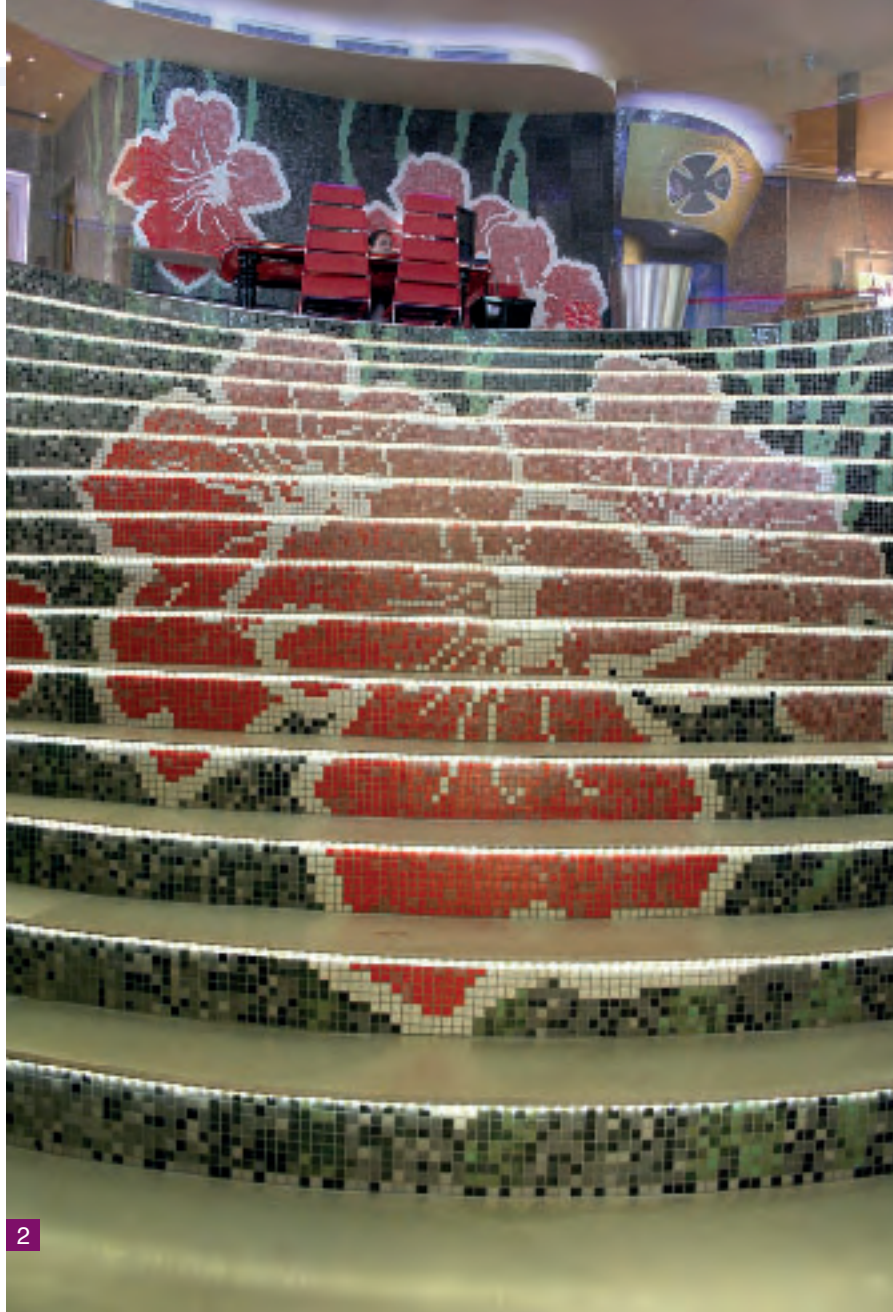
Elegant Italian design, top quality protective and decorative finishes and cutting-edge materials for Les Fleurs Hotel in Sofia, Bulgaria

Bulgaria is now a European country in every respect, which attracts tourists and businessmen from all over the world. So for a number of years there has been a real need, particularly in the capital city Sofia, to provide foreign and also domestic visitors with the best possible accommodation facilities, such as hotels capable of competing with those in other European capital cities in terms of the materials and decorations used to construct them.

Hotel Le Fleurs, which opened in June 2007, stands out for its originality and modernity. This elegant hotel with its very contemporary design is located in a downtown area of Sofia and offers the very highest standards of comfort. Hotel Le Fleurs has 31 rooms, a restaurant and trendy shops set in a very unique and exclusive atmosphere, featuring colourful floors and walls and mosaics decorated with large coloured flowers (in line with the name of the hotel), both on the outside and inside. An Italian firm, Studio Lucchese, was contacted to design the facility with the help of Bulgarian designers; an Italian designer was also commissioned to work on the interior layout and decoration.

Resin Floors

As already mentioned, the finishes had to be of a very high standard, both in terms of their technical properties and decorative effects. With this in mind, the designers proposed making the most of the floors out of resin, using Mapei's special systems for decorative floorings. This specific type of floor covering is often used in work and private environments due to its high resistance to traffic and chemical agents, ease of cleaning and the possibility of creating large continuous surfaces with minimal jointing. Moreover, resin floors are increasingly popular with designers for their decorative effect. The possibility



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Photo 1.
The outside facade of Les Fleurs Hotel is decorated with large flowers in a mosaic pattern. The joints were grouted using Kerapoxy.

Photo 2.
The stairs connecting the hall to the restaurant are decorated with a flowery mosaic pattern, again grouted with Kerapoxy. The stairs treads were made with resin-based Decor System 70.

traffic, was used to give the surface depth and shininess.

As well as being impermeable to liquids, the product also has good mechanical resistance and resistance to abrasion. It is also transparent with a low tendency to turn yellow. An average thickness of 3 mm was applied all over. Using the DECOR SYSTEM 70 system produced a continuous floor with no joints, giving all the rooms where it was applied a very distinctive look.

The restaurant. The restaurant area is located in a basement, whose surfaces had no vapour barrier. This meant that a product had to be used as a primer, which ensured good vapour permeability and allowed the application of the same products as used for the various floor and wall coverings on the upper levels. In this case Mapei Technical Service Department suggested using different solutions than those from the traditional DECOR SYSTEM 70 range, but still from the MAPEFLOOR line.

In the end it was decided to treat the cementitious substrate using MAPECOAT I600 W* two-component finish - in this case used as a primer - diluted with water at a ratio of 1:1 and applied to the surface using a roller. QUARTZ 0.25* was then sprinkled over the substrate while it was still fresh. After hardening, MAPEFLOOR I500 W*, a two-component epoxy treatment in water-dispersion, which is also permeable to vapour, was then applied to the surface; the product was spread on using a special 2 mm thick notched trowel.

MAPEFLOOR DECOR 700* could then be applied. In order to achieve the same delicate aesthetic effect here as in all the other premises of Les Fleurs Hotel, MAPEFLOOR DECOR 700* was also coloured using MAPEFLOOR PASTE* in the copper shade. The surface of the restaurant floor was then given a

of colouring the mix directly on the building site in a wide range of shades also allows artists-installers to choose the colour scheme they prefer.

Mapei's Technical Service Department helped the designers by recommending products from the DECOR SYSTEM 70 system to construct approximately 1,000 m² of resin floors in the restaurant area, hall, corridors outside the rooms, and Frank Muller showroom on the ground floor of the hotel. DECOR SYSTEM 70, which belongs to the extensive MAPEFLOOR SYSTEM family, is a solvent-free epoxy resin-based system for creating decorative floors with mottled or trowel effect finishes in environments subject to average foot traffic, such as homes, showrooms, shops, etc.

The premises involved in this important project are a fine example of the versatility of this innovative Mapei system, which can count on specific products to meet every imaginable practical and aesthetic requirement.

The Hall. After carefully inspecting the building site, Mapei technicians advised the designer and construction company to start by applying PRIMER SN* on the substrate, a solvent-free, two-component, epoxy filling primer used for preparing the substrate and improving the adhesion of products to be applied later.

QUARTZ 0.5* was then sprinkled over the treated surface while it was still fresh.

This operation ensures the decorative coating, composed of two coats of MAPEFLOOR DECOR 700* (solvent free epoxy paste in water dispersion), adheres perfectly. This product, supplied in a neutral colour, was coloured directly on the building site using MAPECOLOR PASTE*, a concentrated colouring paste chosen in a copper shade for this setting.

Finally, MAPEFLOOR I300 SL TRP*, a two-component, transparent epoxy compound applied as a finishing coat for decorative floors subject to heavy



special finish using MAPEFLOOR I300 SL TRP*.

Corridors outside the rooms. The hotel is built over six floors, and the designers decided to install resin floors in the corridors along the landings. Following the DECOR SYSTEM 70 procedure, a coat of PRIMER SN* was applied to the substrate after it had been cleaned properly and then QUARTZ 0.5* was sprinkled over the surface while it was still fresh. The floors along the corridors were also covered with two 3-mm coats of MAPEFLOOR DECOR 700*. In this area the designer decided to incorporate golden veins over the copper background colour: this decorative effect was obtained by combining the copper and gold shades

of MAPECOLOR PASTE*. MAPEFLOOR I300 SL TRP* was applied to create the special finish.

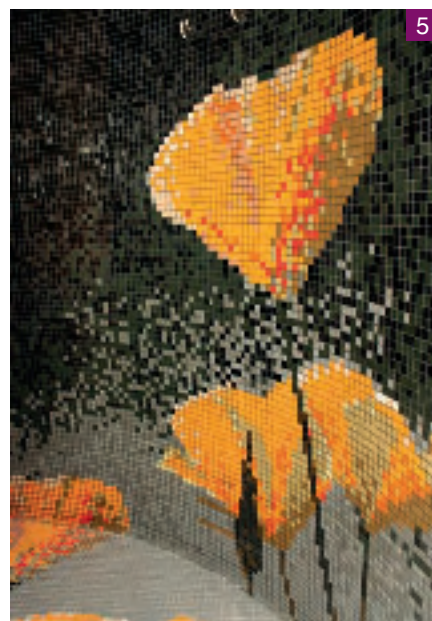
Showroom. The floors of the Frank Muller showroom were treated with PRIMER SN* and then covered with two coats of MAPEFLOOR DECOR 700* (average thickness of 3 mm) coloured with MAPECOLOR PASTE* in the golden shade. Here again MAPEFLOOR I300 SL TRP* was used for the finish.

Colour for Walls

Corridors. After treating the surfaces of the corridor walls near the stairwells using the insulating SILANCOLOR PRIMER*, they were decorated with SILANCOLOR TONACHINO*.



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5



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Photos 3 and 4.
In the hall a decorative continuous floor without joints was made with the Decor System 70 decorative floor system.

Photos 5 and 6.
The bathrooms in the hotel rooms are decorated with mosaics grouted using Ultracolor Plus.

This coating, composed of a silicone resin-based paste, ensures the underlying substrate is highly vapour permeable, uniform in colour tone and extremely water repellent, as well as being highly durable and offering long-lasting protection. SILANCOLOR TONACHINO*, available in a wide range of colours, was chosen in a brown shade for this job.



Photo 7.

The floor in the restaurant was also made with Mapefloor Decor 700. Mapefloor Paste in the copper shade was added to this product to obtain a special colour effect. The walls are very colourful as well, thanks to the flower mosaic patterns grouted with Ultracolor Plus.

Outside facades. The outside of the hotel has strip surfaces at the corners of the building, decorated with mosaic in a large flowers pattern. The joints were grouted using KERAPOXY* two-component acid-resistant epoxy mortar.

Restaurant areas and room bathrooms. The inside of the hotel also has mosaic floral patterns on the walls of the restaurant area, bathrooms in the hotel rooms, and entrance hall. In all these places, the joints were grouted using ULTRACOLOR PLUS*. This product is a high-performance grout. It features

DropEffect® and BioBlock® technologies guaranteeing a high standard of water repellence and antimold effect over a long period of time.

The stairs leading to the restaurant in the basement were also being coloured and decorated using the same solutions, methods and decorative compounds as in the rest of the hotel premises.

The stair risers sport the same floral mosaic pattern that appears on the walls in the hall, while the treads were made using the DECOR SYSTEM 70 resin system in a gold-coloured finish.

TECHNICAL DATA

Hotel Les Fleurs, Sofia (Bulgaria)

Work: laying decorative resin floors in the hall, restaurant, Frank Muller showroom, corridors outside the rooms and stairs leading to the restaurant; applying a decorative coating to the walls of the corridors; grouting the mosaics on the external façades and several internal areas.

Year: 2007

Project: Federica Fazola and Andrea Laserpe from Studio Lucchese (Varese, Italy) with the help of Studio Architettura A3 (Sofia)

Installing Companies: Vissa (Schio, Italy) for the floorings; Rain Color (Sofia) for the wall coverings;

Mapei Distributors: Nido, Vissa and Rain Color

Mapei Coordinators: Marco Pagliani and Piercarlo Rocca, Mapei SpA (Italy)

***Mapei Products:** the products mentioned in this article belong to the "Coatings Systems", "Products for Flooring", and "Products for Ceramic Tiles and Stone Materials" ranges. The technical data sheets are available on the "Mapei Global Infonet" DVD or at the web site: www.mapei.com.

Mapei's adhesives and grouts conform to EN 12004, EN 12002 and EN 13888 standards.

Kerapoxy (RG): two-component, acid-resistant epoxy mortar for grouting joints wider than 3 mm, available in 26 different colours. May also be used as an adhesive.

Mapecoat I600 W: two-component, transparent epoxy finish in water dispersion.

Mapecolor Paste: system for colouring

Mapefloor products.

Mapefloor Decor 700: two-component, solvent-free, epoxy paste in water dispersion, used to create floors with a trowel effect or mottled finish.

Mapefloor I300 SL TRP: two-component, transparent epoxy finish coat, with a low tendency to turn yellow, applied at a thickness of 1 mm as a finishing coat on epoxy resin systems.

Mapefloor I500 W: two-component, multi-purpose, neutral-coloured epoxy treatment in water dispersion, permeable to vapour.

Primer SN: two-component, solvent-free epoxy filling primer.

Quartz 0.25 – 0.5: spherical, grey, alluvium

quartz for the Mapefloor Systems and Triblock P.

Silancolor Primer: silicone resin-based insulating primer in water dispersion.

Silancolor Tonachino: trowelable, highly vapour permeable and water repellent silicone resin based paste coating in water dispersion, for exterior applications.

Ultracolor Plus (CG2): fast setting and drying, high performance, anti-efflorescence, polymer modified grout, for joints from 2 to 20 mm. Water-repellent with DropEffect® and antimold with Bioblock® technology.



Mapefloor System

SYSTEMS FOR RESIN FLOORINGS

A complete range of epoxy and polyurethane floorings systems for industrial and civil environments, showrooms, shopping centres and supermarkets.

- ✓ Safer working environments
- ✓ Continuous surfaces without joints
- ✓ Water-repellent, hygienic and easy to clean
- ✓ Excellent mechanical resistance and resistance to chemical agents
- ✓ Available in several colour shades
- ✓ Very short application times
- ✓ Long-lasting



www.mapei.com
MAPEI[®]

ADHESIVES • SEALANTS • CHEMICAL PRODUCTS FOR BUILDING



Left.
By the end of 2008 the extension to the Mapei plant in Garland (Texas, USA) will be completed.

Below.
The new Mapei Technical Institute Building is a (already operating) facility serving training purposes at the Mapei Corp. headquarters in Deerfield Beach (Florida, USA).

products just in time for the busiest part of the year for the building industry, in order to provide quicker and more suitable solutions for achieving quality work right from the start.

During the first quarter of 2008 we introduced eight new products into the market and others will be coming out over the next several months. The new solutions offered by Mapei Americas can meet the demands of all kinds of very different realms: ranging from systems for repairing concrete to systems for preparing and waterproofing surfaces and installing all kinds of floor and wall coverings, as well as systems for building prestigious sports facilities like those for the Olympic Games.

Attention to the environment, health and safety has always been one of Mapei's strong points: is there anything new in this field?

Of course. As well as continuing to provide products with low emissions of volatile organic compounds (VOC), the Company is committed to environmental sustainability through the introduction of Dust Free technology onto the North American market, already launched in various European countries in 2007 by local subsidiaries of the Mapei Group. This technology produces a significant reduction in dust given off into the environment while preparing and applying installation products. Numerous Mapei products also help earn points that contribute towards obtaining LEED certification (Leadership in Energy and Environmental Design), which indicates a certain standard (recognized nationally in the United States and Canada) in the development of high-performance "green" buildings. Last but not least, commitment to the environment, health and safety can also be seen in the way we control production procedures inside our plants. Controls which, in addition to ISO 9001 certification, have received (or are about to receive) ISO 14001, OSHA 1800 and LEED certification. Mapei has done all this in the firm belief that "it is

the right thing to do". When Mapei's partners buy products and services, they can rest assured that they draw on the very latest technology deriv-

ing from eco-sustainable processes and work practices of the very highest standard.



Giorgio Squinzi: our strategy for America aims at doubling what we have already achieved

Giorgio Squinzi's strategy for the North American market is very clear, as also emerges from the figures: "The 2008 turnover in North America will reach 450 million US dollars and the goal is to reach a billion-dollar turnover for Mapei Americas within the next five years".

The growth target for USA is extremely ambitious: what is the underlying strategy?

Our strategic vision for the American market still focuses on the fact that this is the world's biggest market for high-tech building. Our growth will be based on reinforcing our existing 14 factories - 7 in the United States, 4 in Canada and 1 each in Puerto Rico, Venezuela and Argentina - boosting production capacity and efficiency in general. More specifically, we will also invest in the self-production or self-supply of certain strategic raw materials, such as polymers and silicone and calcareous aggregates. We will also invest significant money and effort of will into implementing all the nine product lines Mapei has to offer, specifically products for textile and resilient floors and the building speciality line. All this will be helped along by the acquisition of existing competitors. Finally, we will complete the range of products by means of business synergies with other companies belonging to the Group.

Does the American market have any distinctive features which make it different from the European market?

The American market is certainly different from its European counterparts. During more than 30 years of operation in this market, Mapei has already adapted to its specific needs, often coming up with innovative solutions to hitherto unresolved problems. A fine example concerns the installation of tiles on plywood substrates.

What will be the distinctive traits of products designed for the American market in the future?

We will keep on upgrading our product lines, thanks also to two research centres we have in Montréal (Canada) and Deerfield Beach (USA), where about a hundred researchers, all chosen locally and highly qualified, are busy at work.

THE 2007 REAL ESTATE AND TILE MARKET IN THE UNITED STATES



In spite of the recession in 2001, the American real estate market kept growing until 2005. This positive trend was also one of the main factors which contributed to the continuing growth of the American economy. Since 2006, this trend has taken a downward turn, and the American real estate market entered a settling-down phase, after the excessive expansion of the previous years. Following the downward trend, according to data released by the U.S. Department of Commerce, consumption of ceramic tiles in 2007 was 248.1 million square metres, a drop of 19.5% compared with 2006.

A careful analysis of the American building and ceramics industries was presented on the 30th of April by the Chairman of Confindustria Ceramica (the Association of Italian Ceramic Tile and Refractory Material Manufacturers) Alfonso Panzani, on the occasion of the Italian Ceramic International Press Conference during the Coverings trade fair held in Orlando.

“The downward trend is not homogenous in all sectors of the market” – stated Alfonso Panzani – “since it is concentrated on the residential sector, and is made worse by the sub-prime mortgage crisis, while the non-residential sector, which has a smaller slice of the overall market, is still growing. And it is worth highlighting how this condition has changed the influence of the various countries which supply materials: in fact, if Italy falls by the same percentage as the market, it still maintains its market share; Brazil and Spain have lost more than 30%, while China and Mexico have increased their shares.

While analysing this data, it is worth remembering that the market shares expressed in economic terms show Italy at a level of 42% market share, and still in further expansion, and that half of the production in the United States is by companies controlled by Italian ceramics manufacturers.

The United States is still a strategic market for the Italian ceramics indus-

U.S CERAMIC TILES IMPORTS
Year 2006 and 2007, by Country

Country	Million \$ (FOB values)			Million square meters			Average FOB \$ value / sqm.		
	2006	2007	%	2006	2007	%	2006	2007	%
ITALY	824.4	715.3	-12.8%	61.39	48.65	-20.8%	13.36	14.70	10.0%
MEXICO	247.4	240.1	-3.0%	41.98	40.87	-2.7%	5.88	5.87	-0.3%
BRAZIL	190.1	134.9	-29.0%	39.98	27.87	-30.5%	4.75	4.88	2.5%
CHINA	136.4	149.1	9.3%	32.19	32.64	1.4%	4.24	4.57	7.8%
SPAIN	275.1	180.0	-34.6%	32.16	18.98	-40.7%	8.55	8.91	15.8%
TURKEY	50.5	39.2	-22.4%	9.21	6.48	-29.8%	5.48	8.05	10.3%
INDONESIA	34.6	14.3	-58.7%	9.08	3.00	-67.0%	3.81	4.77	25.1%
THAILAND	27.7	22.6	-18.4%	7.91	6.21	-21.0%	3.50	3.64	3.8%
COLOMBIA	23.0	18.9	-17.8%	5.25	3.88	-26.1%	4.38	4.36	-0.6%
ARGENTINA	30.7	28.4	-7.5%	3.40	2.91	-14.4%	9.03	9.76	8.1%
VENEZUELA	7.0	6.1	-12.9%	1.76	1.58	-10.2%	3.98	3.86	-2.8%
OTHER	75.5	73.8	-2.5%	9.50	8.51	-10.4%	7.95	8.85	8.8%
TOTAL	1,918.4	1,638.4	-14.6%	253.83	202.37	-20.8%	7.56	8.10	7.1%

Source: U.S. Department of Commerce



American Party for Franco Vantaggi

After the 1st of July 2008, Armando Cafiero, ex-director of AssoCarta (the trade Association for the paper industry representing pulp, paper and board manufacturing companies in Italy) will take the place of Franco Vantaggi as Chairman of Confindustria Ceramica, General Manager of the Association since the 12th of January 2005, and who has now earned the right to go into retirement. And, as Franco Vantaggi was keen to point out, it was necessary simply because he has now reached retirement age.

Franco Vantaggi built his career within Confindustria Ceramica, when he joined the Association – which was then known as Assopiastrelle – from Associazione dei tessili di Milano (the Milan Textiles Producers Association). He became vice-director in 1980, co-director in 1989 and, in 1995, General Manager. Franco Vantaggi will remain with Confindustria Ceramica in an advisory position for a year, to make sure that the handover of the running of the Association is carried out as smoothly as possible. The esteem in which he is held by the Italian ceramics sector was demonstrated during the Ceramic Tiles of Italy Design Competition Award 2008 ceremony at which awards are given by the Italian tile manufactures to North American architects and interior designers using Italian ceramic tiles for the best designs in commercial, institutional and residential sectors around the world.

It was the final official salute which was a moving experience for all those who took part in the event, held in Orlando (Florida) during the 2008 edition of Coverings.

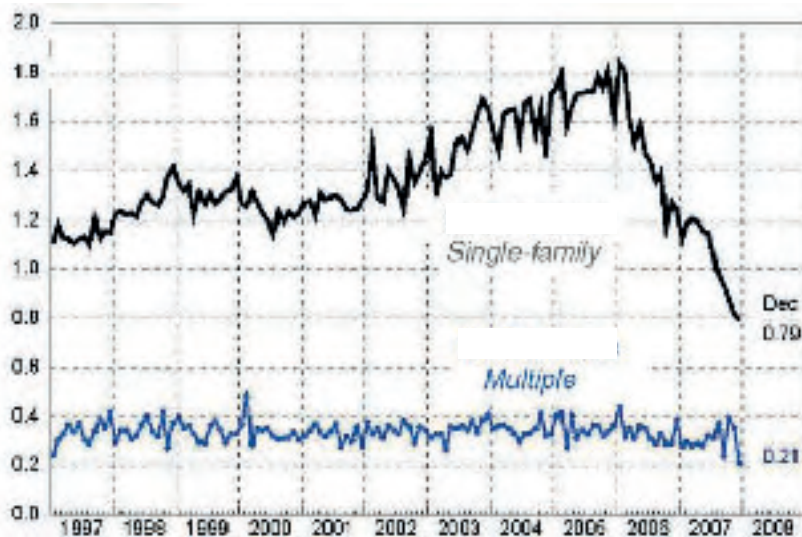
This was a well-deserved award for a man who has always been welcome and held in high esteem for his professional approach and in-born human values that have always distinguished his relationship with people. Mapei offers its most sincere and heartfelt greetings and, at the same time, wishes the new General Manager Armando Cafiero all the best for a successful future.



From the left: Vittorio Borelli, Giorgio Squinzi, Adriana Spazzoli, Franco Vantaggi and Alfonso Panzani.

USA: Building permits for new single-family and multiple residential buildings. Annual rates (moving average)

Values in millions



Source: U.S Bureau of the Census

Housing Starts in the USA

Period	Housing Starts	Variation %
2007	1,080,000	-40.0%
2006	1,801,000	-12.7%
2005	2,068,000	5.7%
2004	1,956,000	5.8%
2003	1,848,000	8.4%
2002	1,705,000	-

Source: U.S Bureau of the Census

try, even though the country continues to pay the price for a budget which, until very recently, allowed the United States real estate market to grow at an extraordinary rate and for an exceptional period of time, but which now has left 1,000 billion dollars of difficult sub-prime mortgages on the field".

Presumably, this situation will continue for the whole of 2008. However, it is worth pointing out that, even though the real estate sector is in crisis, the renovation and non-residential sectors will continue to be characterised by a positive trend which, hopefully, will be long-lasting.

World of Concrete



Photo 1. The Mapelastic kiosk showed the benefits of using this product for protecting concrete against chlorides and carbonation.

Photo 2. Mapelastic Smart ensures complete waterproofing and protection to concrete surfaces.

Photo 3. Product demos could be seen far and wide thanks to a big (1,8 x 2,4 m) jumbo screen placed in the Mapei stand.

Visitors enjoyed a phenomenal glimpse into the world of Mapei at this year's World of Concrete, the Las Vegas (USA) trade show dedicated to concrete technology. A brilliant display of lights, sound, colour and hands-on product demonstrations drew record numbers throughout the eventful 4-day (from 22nd to 22th January) show. Showcasing all the solutions devised for concrete restoration, the Company definitely stood out as the industry's technology leader. Thanks to its continuous and relevant Research & Development efforts directed toward formulating eco-sustainable products and systems, Mapei showed itself as a proud innovator of faster, easier, greener solutions and a manufacturer of 110 LEED-compliant products, that is to say, products that can earn points towards LEED-certified building projects. LEED – which stands for Leadership in Energy and Environmental Design – is a voluntary, consensus-based nationally accepted standard for developing high-performance, sustainable or "green" buildings in the

U.S.A and Canada. Using product demonstrations, panels, screens and exhibition corners, Mapei Corp., the US subsidiary of the Mapei Group, introduced to the public some of its most popular solutions, such as MAPEFER 1K corrosion-inhibiting cementitious mortar for reinforcing rods; PLANITOP XS super versatile one-component mortar, with extended open time, suitable for any kind of concrete repair work; MAPELASTIC SMART two-component cementitious mortar, easy to apply and ensuring complete waterproofing and protection to concrete surfaces; NOVOPLAN EASY self-levelling compounds for a fast preparation of the substrates; TILT FINISH, a very smooth finishing compound for precast concrete, with extended open time.



Surfaces

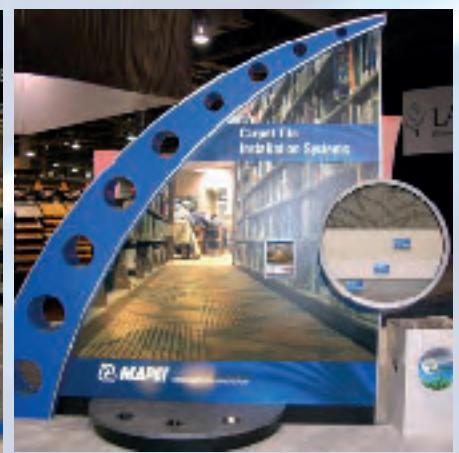
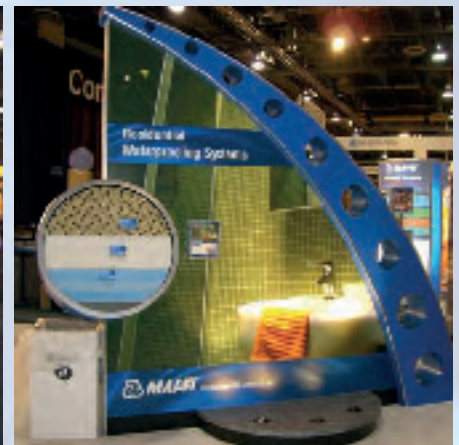


Mapei Corp.'s, the us subsidiary of the Mapei Group. vast array of floor and wall installation systems was beautifully illustrated at the Surfaces 2008 show in the Las Vegas Sands Expo & Convention Center from 30th January to 1st February.

This clearly demonstrated that the Company is able to offer "technology you can build on". This was the slogan featuring the Company's presence at Surfaces and standing out at Mapei stand.

Visitors were encouraged to "think green" as they explored Mapei's newest innovations including Dust Free technology, OPTICOLOR stain-free grout, MAPELASTIC 400 flexible waterproofing membrane, PLANISEAL WFM membrane for installing wood and ULTRABOND ECO 360 adhesive for bonding PVC coverings.

These products, which can contribute points for getting the LEED certification for sustainable or "green" buildings in the U.S.A and Canada, together with a multitude of Mapei complete installation systems were exciting highlights for this year's show.



coverings

The North American subsidiary of the Mapei Group presented a series of innovative technologies to satisfy all requirements in a very important market sector



Since the scenario of the general American real estate market in general, and the consumption of tiles in the USA in particular, is all but encouraging (see article on page 42), the attendance at this year's Coverings trade fair, the most important American event dedicated to ceramic and natural stone floor and wall coverings, was of particular significance for all those who operate in this sector. And their expectations were certainly not let down. The event, which was held from the 29th of April to the 2nd of May at the Orange Convention Centre in Orlando (Florida, USA) recorded the presence of approximately 36,000 visitors from all around the world, to admire the variety of new offers for the sector, displayed by 1,200 exhibitors in an area covering more than 150,000 m².

Amongst the various market trends, particular attention was paid to "green" solutions, both in the production processes used to produce a lower impact on the environment, and in design which highlighted decorative elements inspired by nature, such as leaves, stones and water courses. Also, there is a continued heavier use of metallic colours (such as gold, silver, platinum, etc.) and shiny, glittering decorations, with particular favouritism being shown for bright, shiny colours. A wider use of ceramics was also proposed, particularly for external environments: apart from patios and verandas, it is now applied for outdoor kitchens and bathrooms. There was also a rich programme of side-events (more than 80 appointments on the calendar), including conferences, technical seminars, work-groups, visits by foreign delegations and workshops. Mapei made a strong presentation at Coverings with a stand

characterised by the Group's colours, and presented the latest developments in its ranges of products to the visitors to the stand, in accordance with the latest market trends. The communication chosen for this occasion by Mapei Corp, the North American subsidiary of the Mapei Group, was concentrated on some of the advantages which the Company offers to consumers that show a particular regard for the environment and our health. For example, certain technologies and innovative characteristics of a number of Mapei products were highlighted: Dust Free technology, low emission levels of volatile organic compounds (VOC), moisture-repellent, stain-free and sound-reducing properties. Thanks to these characteristics, Mapei products contribute to obtaining points for eco-sustainable building certification systems (such as LEED in the USA and Canada).

The 2008 edition of Coverings was also the ideal occasion to invite journalists from this sector, at a press conference in which the President and CEO of Mapei Corp, Rainer Blair, presented the current situation and Mapei Americas' projects for the future.

Also, during the event, Mapei Corp was awarded the "Most Preferred Brand of Mortar" prize, assigned to the Company by the Clear Seas Research agency, which in 2007 carried out an analysis of the American Tile and Stone Installation Systems for the American organization, the National Tile Contractors Association (NTCA).



Ultracolor[®] Plus

**THE GROUT WHICH PREVENTS
THE FORMATION OF MOULD
IN WET ENVIRONMENTS**

**Fast setting and drying,
high performance grout
for joints from 2 to 20 mm**

- ✓ Anti-efflorescence
- ✓ Water-repellent with **DropEffect[®]**
- ✓ Anti-mould with **BioBlock[®]** technology
- ✓ Available in 26 colours
- ✓ Classified as CG2,
in compliance with EN 13888





MAPEI FOR USA

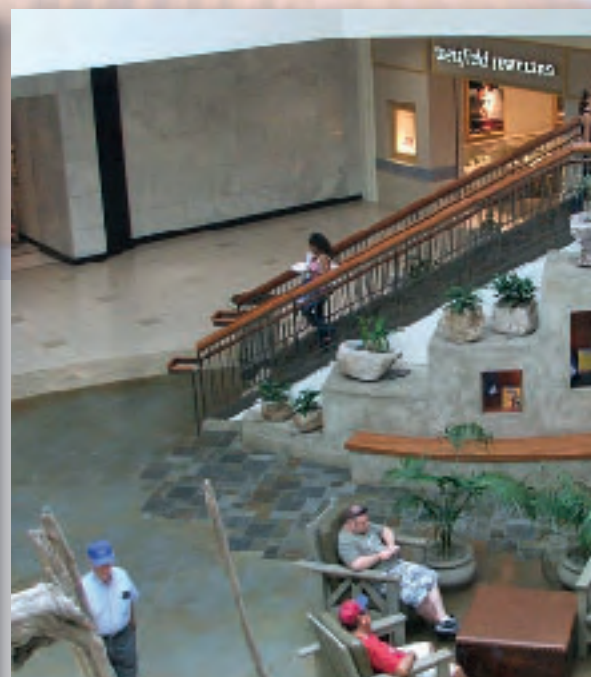
In the USA Mapei solutions are used for completing buildings for several uses: manufacturing facilities, bridges, viaducts, commercial and housing complexes, public and private constructions. Some examples are shown in these pages

Charlotte Arena Murals – Charlotte (North Carolina)

The KERABOND*+KERALASTIC** system was used to bond porcelain tiles and glass mosaics on two big walls located near the entrances to the arena.

Metropolitan Club – Chicago (Illinois)

In this prestigious restaurant floor and wall substrates were smoothed and repaired with PLANIPATCH* or PLANIPATCH PLUS* and waterproofed with MAPELASTIC 315*, before installing ceramic and mosaic tiles on the walls with GRANIRAPID SYSTEM* or KERABOND*+KERALASTIC** SYSTEM, while ULTRACONTACT* or ULTRACONTACT RS* adhesives were used for bonding the floor coverings. Joints were grouted with ULTRACOLOR*.





**Broadway Bridge
Daytona Beach (Florida)**

Glass mosaic tiles were bonded on the viaduct piers with the GRANIRAPID SYSTEM*.



Weil Cadillac and Hummer Showroom – Libertyville (Illinois)

Marble floorings were laid with KERABOND*+KERALASTIC** adhesive systems on substrates smoothed with PLANIPATCH* and waterproofed with MAPELASTIC SM*. GRANIRAPID* mortar was used for installing the coverings in areas where fast-drying was needed. In other areas of the building ULTRALITE MORTAR* was used.

Fiesta Mall – Mesa (Arizona)

The floor substrates of this big complex were repaired and treated with PLANIBOND EBA*, ULTRAPLAN EASY*, MAPECEM QUICK PATCH* and PLANITOP XS*.

Hartsfield Jackson International Airport – Atlanta (Georgia)

Ceramic, granite and agglomerate tiles were laid in concourses A, B, C and D, as well as in the ticketing and baggage claim areas, using several Mapei products: PRIMER L*, ULTRAPLAN 1* and PLANIPATCH* for preparing the substrates; MAPELASTIC SM* for waterproofing them; KERABOND*+KERALASTIC** SYSTEM, GRANIRAPID SYSTEM* and ULTRAFLEX RS* for bonding tiles; KERAPOXY* for grouting the joints.

**These products are manufactured and distributed in America by Mapei Corp. (USA) and Mapei Inc. (CDN).*

***Keralastic is the American equivalent of Isolastic, available in the rest of the world.*

For further information, see the web site: www.mapei.com.



Mapetex System

COMPLETELY REMOVABLE INSTALLATION SYSTEM FOR CERAMIC TILES AND STONE MATERIAL. CAN ALSO BE USED AS AN ANTI-FRACTURE AND REMOVABLE MEMBRANE

Applications:

MAPETEX SYSTEM consists of MAPETEX, a special non-woven fabric, and MAPETEX STRIP rolls of adhesive tape. It can be used as a removable base for the installation of new floor and wall coverings on chipboard, wood, PVC, linoleum, ceramic tiles and stone material substrates, on cementitious screeds and underfloor heating installations. It can also be used to rapidly replace tiles on exhibition panels without damaging them.

MAPETEX, if bonded with KERAQUICK + LATEX PLUS, ELASTORAPID or KERABOND/KERABOND T+ISOLASTIC, can also be used as an anti-fracture and removable membrane for bonding floors on uncured cementitious screeds and the installation of ceramic tiles and stone material (also diagonally) without the need of respecting fraction joints.

Technical data

- MAPETEX
Width: 200 cm, 100 cm
- MAPETEX STRIP
Width: 50 mm, 410 mm

Packaging

- MAPETEX
2 m x 50 m rolls
1 m x 50 m rolls
- MAPETEX STRIP
50 mm x 25 mm rolls
410 mm x 10 m rolls
410 mm x 5 m rolls



For further information on these products, see the technical data sheets at www.mapei.com.



Fixing Mapetex on Mapetex-Strip



Installing ceramic tiles with Keraquick



Grouting with Ultracolor Plus



Removable flooring installed with Mapetex System



Removing a ceramic floor installed with Mapetex System



European Installation

In the run-up to the 2008 European Football Championship, the renowned Austrian sports training centre in Lindabrunn has modernised and completely restyled

by Stefan Schallerbauer, Mapei GmbH (Austria)

30 km south of the country capital Vienna, in the north-east of Austria, there is one of the most modern sports centres in the whole of Europe: the famous Lindabrunn School. Opened in 1976, this centre has become one of the most renowned training centres at a national and international level. During its 30 years of activity, the complex has been continuously restored and extended.

When the 2008 European Football Championship were awarded to Austria and Switzerland in 2002, it was necessary to further extend the structure to make it suitable to pay host to this exceptional event.

Once the extensive upgrading and enlargement projects of a number of the areas were completed (and especially the areas dedicated to sporting activities), the Lindabrunn Centre officially applied as a candidate sport venue to host the UEFA European Football Championship.

The first two phases of the project involved extending the living quarters, redesigning the areas for relaxing and

the construction of a modern football pitch in synthetic grass. The final phase of the work was to extend the kitchen and to restyle the areas which host spectators. All the phases were completed by the end of 2007, so the Centre could carry out final preparation work for the European Championship. The amount of money invested to renew the Lindabrunn sports centre, once the

works had been completed, amounted to 6.15 million Euro.

Products for any Need, Solutions for any Problem

Mapei also contributed to this project, and supplied a number of products for the extension and restyling work of the central building, the wellness area, the bathrooms and showers. In





the showers, for example, more than 6,000 m² of ceramic and mosaic tiles were laid.

Company Appel di Vittis were awarded the laying operations in the three structures, called "Europa", "Lower Austria" and Lindabrunn", fitted out to house guests with a total of 55 double rooms and 19 single rooms with a bathroom or shower, as well as in the central building, the wellness area, the restaurant and in all the service rooms.

In these areas, the walls are in plasterboard, lime and cementitious render and levelled structural panels. The floors were made mainly of cementitious screeds, while in a few areas the coverings were laid directly on the old floors.

During the first phase of the work, and before laying the floors, the surfaces were treated with PRIMER G* synthetic resin-based primer in water dispersion, and in the case of non-absorbent substrates (that is, when laying directly on the old floors), with MAPEPRIM 1K* solvent-free one-component primer. In the showers and the toilets, surfaces subject to splashes of water were waterproofed using MAPELASTIC* cementitious mortar.

The various types of tiles and mosaic were laid using KERAFLEX S1* (a product distributed in Austria by the local subsidiary of the Mapei Group) or ADESILEX P9* adhesives for ceramics. To grout the tile joints on the laid surfaces, KERACOLOR FF* cementitious grout was chosen because of the wide range of colours available, its high workability and its water repellent properties thanks to the product's DropEffect® technology.

In the restaurant area, which had a floor full of cracks, the MAPETEX SYSTEM* removable installation system was used.

The MAPETEX* non-woven fabric was bonded to the substrate using the





KERAQUICK*+LATEX PLUS system, applied using a 3 mm notched trowel. The ceramic covering, on the other hand, was laid on the fabric using KERAFLEX S1*. After the priming treatment with PRIMER G*, all the substrates which had irregular surfaces were levelled off with ULTRAPLAN MAXI* self-levelling smoothing compound, applied at various thicknesses according to the Austrian national ÖNORM-DIN 18202 standards.

Thanks to the wide range of products and the wide variety of solutions offered by Mapei, this modernisation project was concluded without a hitch.

Mapei, which is always involved when-

ever sport is there, again left a mark destined to last for a long time. Even if all special events, including the European Football Championship, end in a few days or weeks, the structures hosting them will stay for good. They will remind people of the sport matches and, at the same time, prove the effectiveness of the Mapei products ensuring that this modern sport centre will continue hosting large publics in the future.

This article was taken from issue n. 6 of "Realta Mapei", the in-house magazine published by Mapei's Austrian, German and Swiss subsidiaries which we would like to thank.

***Mapei Products:** the products mentioned in this article belong to the "Products for Ceramic Tiles and Stone Materials" range.

The technical data sheets are available on the "Mapei Global Infonet" DVD or at the web site: www.mapei.com.

Mapei's adhesives and grouts conform to EN 12004, EN 12002 and EN 13888 standards.

Adesilex P9 (C2TE): high-performance cementitious adhesive with no vertical slip and extended open time for ceramic tiles.

Keracolor FF (CG2): high-performance cementitious grout, polymer modified, water-repellent with DropEffect®, for joints up to 6 mm.

Keraflex S1 (C2TE, S1): improved, deformable adhesive for installing ceramic tiles and stone material on floors and walls. N.B. This product is distributed in Austria by the local subsidiary of the Mapei Group.

Keraquick (C2FT, S1): high-performance, deformable, rapid setting cementitious adhesive with no vertical slip for ceramic tiles and stone material.

Latex Plus: latex admixture inducing elasticity to be mixed with Keraquick.

Mapelastix: two-component, flexible cementitious mortar for waterproofing concrete, balconies, terraces, bathrooms and swimming pools.

Mapeprim 1K: one-component solvent-free primer.

Mapetex System: completely removable installation system for ceramic tiles and stone material. Can also be used as an anti-fracture and removable membrane.

Primer G: synthetic resin based primer in water dispersion.

Ultraplan Maxi: ultra-fast hardening self-levelling smoothing compound for thicknesses from 3 to 30 mm.



TECHNICAL DATA

Traningszentrum Lindabrunn,
Lindabrunn (Austria)

Work: laying ceramic tiles and mosaics

Year of Construction: 1976

Year of the Works: 2004-2007

Customer: Niederösterreichischer
Fußballverband, St. Pölten (Austria)

Project: Architekturbüro Sadilek, Gmünd
(Austria)

Work Management: Knap Ernst of Appel
Ges.m.b.H., Vittis (Austria)

Installation Company: Appel Ges.m.b.H.

Mapei Co-ordinators: Gerhard Praunias
and Ing. Stefan Schallerbauer, Mapei
GmbH (Austria)

EURO 2008 at the Wörtherseestadion

Mapei makes its own contribution to the 2008 UEFA European Football Championship



The new Wörtherseestadion Stadium can now be admired in all its splendour in Klagenfurt, the Austrian city which is the capital of the province of Carinthia, after it was successfully completed in time to host this year's UEFA European Football Championship. The stadium hosted three qualifying matches involving the teams from Germany, Croatia and Poland.

When the first stone was laid in 2005, it marked the start of a project which involved the demolition of the old stadium (no longer big enough to cater for forthcoming sports events and whose basic structure was by then obsolete) and the construction, which began in 2006, of a new sports facility. The building work covered an area of 32,000 m² and involved over 1,300 people (up to a maximum of

500 workers on the building site at the same time). 60,000 m³ of soil was removed and 67,000 m of micro-piles were used to make the subsoil suitably compact; 21,000 m³ of concrete, almost 10,000 tonnes of steel and 300 km of cable were also installed.

The new stadium and adjoining sports park, completed in the record time of one and a half years, were the result of a joint investment of 66.5 million Euro by the Austrian Federal Government, the Province of Carinthia and the Klagenfurt City Council.

The architects managed to perfectly incorporate the stadium's compact structure in the surrounding setting. The breathtaking overall effect is mainly created by the roof over the stands, partly constructed out of double-webbed transparent slabs fitted with a section (above the east stand),

Above.
External view of the Wörtherseestadion in Klagenfurt.

Below.
The new stadium in Klagenfurt, called "jewel box" by the Austrians, was completed in time to host the 2008 UEFA European Football Championship.





Ceramic tiles were laid with Mapei products in several inside areas of the stadium.

which can be raised. The 32,000 fans attending the 2008 UEFA European Football Championship were also able to watch the matches from stands very close to the playing field.

The new Wörtherseestadion, the Centre of Competence for Ball Sports and the Football Academy are the three main buildings in Klagenfurt Park. Climbing walls, special pools for winter rowing training, fitness and wellness facilities and spaces serving diagnostics and wellness purposes complete the wide range of facilities offered by the new architectural construction.

The Football Academy and Ball Sports Centre are designed to train and keep track of the progress of about 200 children and youths who are particularly talented in these sports.

The young people will be able to make the most of special training spaces, gyms, indoor playing fields, boarding facilities, classrooms for theoretical lessons, a medical centre, various locker rooms and a recreation area.

Mapei's solutions for ceramics installations

Mapei, which for decades now has been supplying building products for prestigious sports facilities around the world, like those which hosted (or will host) the Olympic Games from Munich 1972 to Beijing 2008, could not miss the chance to get involved in the construction of the Wörtherseestadion. The Company, which has already provided an outstanding contribu-

tion to the final construction of Ernst-Happelstadion in Vienna and Wals-Siezenheim Stadium in Salzburg, as well as Lindabrunn Training Centre (see the article about the Centre in this issue) and Balance Resort Hotel in Stegersbach (offering accommodation to the Austrian national football team), has this time come up with ideal solutions for laying 3,500 m² of ceramic floors and walls and approximately 1,100 m of skirting in the showers, toilets and corridors connecting the various areas of the stadium. More specifically, products for treating (PRIMER G*) and waterproofing (MAPELASTIC*, MAPEGUM*, MAPEBAND*) substrates, adhesives for bonding the ceramic floor and wall coverings (ADESILEX P9*, KERAQUICK*+LATEX PLUS*, KERAFLEX*, KERAFLEX MAXI*), mortars for grouting tile joints (KERACOLOR

GG*, ULTRACOLOR PLUS*, KERAPOXY*) and sealants for expansion joints (MAPESIL AC*) were supplied: all solutions belonging to Mapei's extensive range of products. In addition to this, 3000 m² of 30 x 30 cm porcelain tiles, were installed in the refreshments area using the KERAQUICK*+ LATEX PLUS* system, after waterproofing the substrates with MAPELASTIC*. The joints were then grouted using KERACOLOR GG*.

The photos of the article were kindly supplied by Stadtpresse Klagenfurt, which we would like to thank.

This article was taken from issue n. 7 of "Realta Mapei", the in-house magazine published by Mapei's Austrian, German and Swiss subsidiaries which we would like to thank.

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Adesilex P9 (C2TE): high-performance cementitious adhesive with no vertical slip and extended open time for ceramic tiles.

Keracolor GG (CG2): high-performance cementitious grout, polymer modified, for joints from 4 to 15 mm.

Keraflex Maxi (C2TE, S1): improved, deformable adhesive for installing ceramic tiles and stone material on floors and walls. N.B. This product has been superseded on the Austrian market, as well as on the Italian market, by Keraflex Maxi S1, featuring a new formula with Dust Free technology.

Keraquick (C2FT, S1; becomes S2 class when Latex Plus is added): high-performance, deformable, rapid setting cementitious adhesive with no vertical slip

for ceramic tiles and stone material.

Latex Plus: latex admixture inducing elasticity to be mixed with Keraquick.

Mapeband: alkali-resistant rubber tape with felt for cementitious waterproofing systems and liquid membranes.

Mapegum WPS: fast drying flexible liquid membrane for interior waterproofing.

Mapelastic: two-component, flexible cementitious mortar for waterproofing concrete, balconies, terraces, bathrooms and swimming pools.

Mapesil AC: solvent-free, acetic cross-linking mildew-resistant silicone sealant, available in 26 colours and transparent.

Primer G: synthetic resin based primer in water dispersion.

Ultracolor Plus (CG2): fast setting and drying, high performance, anti-efflorescence, polymer modified grout, for joints from 2 to 20 mm. Water-repellent with DropEffect® and antimold with BioBlock® technology.



TECHNICAL DATA

Wörtherseestadion, Klagenfurt (Austria)

Years of Construction: 2005-2007

Project: Wimmer – Porr AG (Wien) and Alpine Mayreder Bau GmbH (Salzburg, Austria)

Work: laying ceramic tiles in the toilette, showers, corridors and in the catering area.

Customer: City of Klagenfurt

Work Management: Rudolf Luschnig of Porr AG

Contractor: Fliesen Koller GmbH (Lind/Velden, Austria) and Fliesen Petutschnig (Pörschach, Austria)

Mapei Coordinators: Michael Lingitz and Ing. Stefan Schallerbauer, Mapei GmbH (Austria)



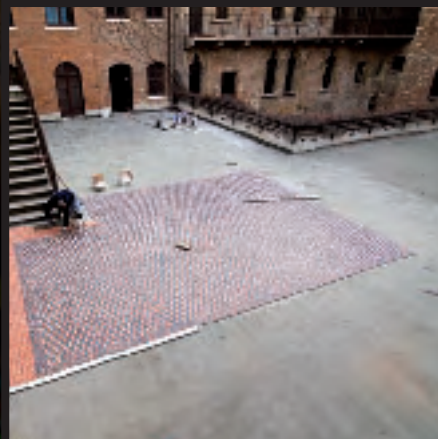
A GESTURE OF LOVE FOR CULTURE

Stone Italiana and Mapei worked together at the restoration of the terrace of the two lovers from Verona

Mapei contributed to the restoration work with his systems:

- smoothing and levelling with ADESILEX P4
- waterproofing with MAPELASTIC + FIBREGLASS MESH
- bonding natural marble mosaic with GRANIRAPID
- grouting the joints with ULTRACOLOR PLUS.

Mapei products were used to bond "Rosso Verona" and "Grigio Bardiglio" marble slabs supplied by the Italian company, Stone Italiana, which also followed the installation of this material.



Juliet's terrace, before and after the renovation works.