

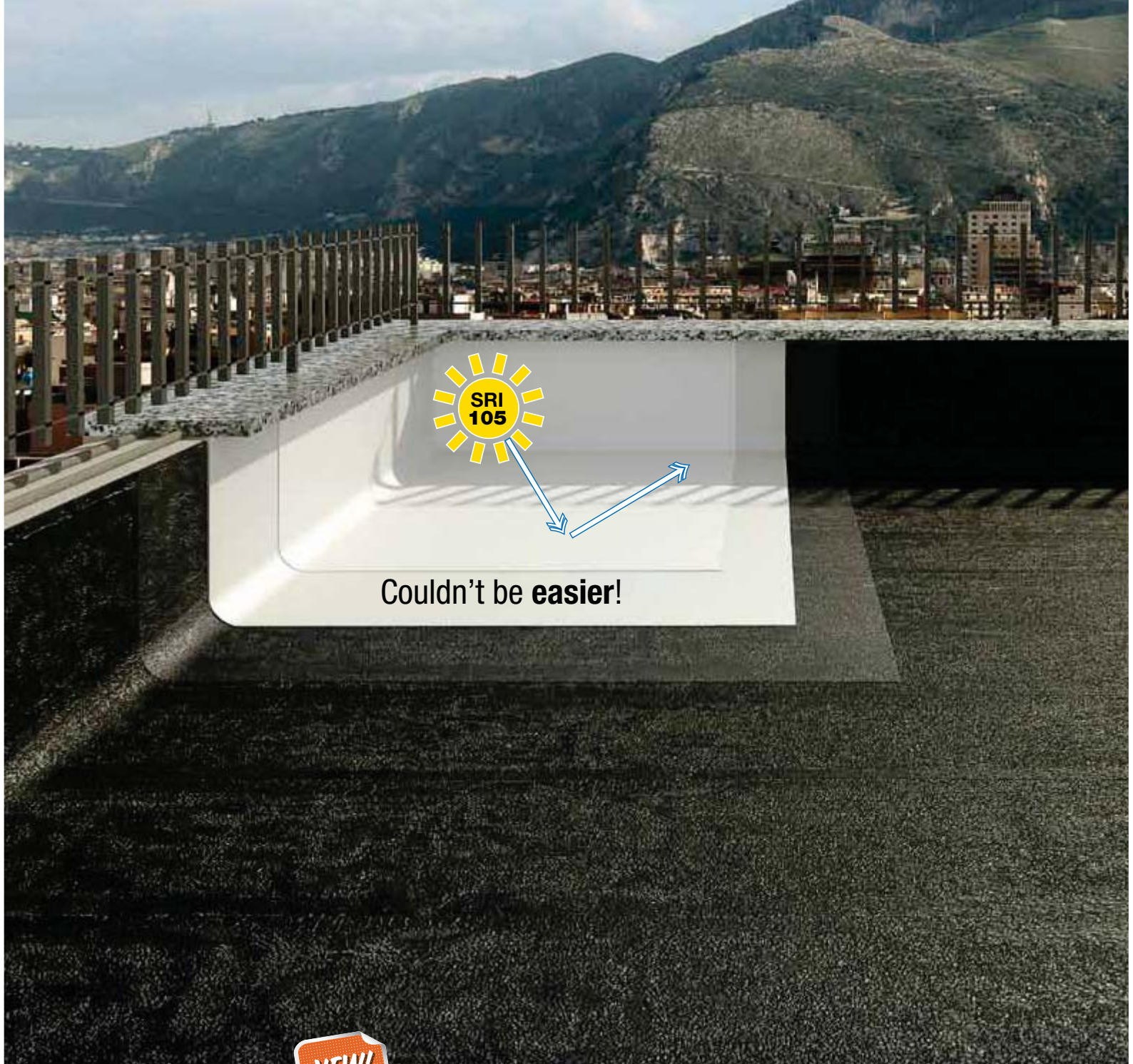
INTERNATIONAL

Realtà MAPEI

ISSUE 41

Year XIII - N. 41 - December 2012





NEW!

Aquaflex Roof HR

Ready-to-use liquid waterproofing membrane, with high solar reflectance and thermal emissivity, with a solar reflectance index (SRI) of 105.

- Reduces the surface temperature of roofs by more than 50% compared with a dark coloured covering;
- 83% solar reflectance;
- **Solar reflectance index (SRI): 105;**
- Resistant to all atmospheric agents and UV rays;
- Easy and practical to apply;
- Elastic, with high crack-bridging capacity;
- Resistant to light foot traffic.



APPLYING THE MEMBRANE



For 75 years we've been helping to build large and small dreams.

Discover the world of Mapei: www.mapei.com



/mapeispa



ADHESIVES • SEALANTS • CHEMICAL PRODUCTS FOR BUILDING



SUMMARY

Plant producing alumina cement at Górká Cement in Poland.



NEWS

- 2 Pope Benedict XVI in Milan
- 14 Cefic 2012: Innovation and Sustainability
- 24 Mapei and CityLife
- 73 2012 Ermco Annual Congress
- 80 54th Annual Conference of Ufemat
- 92 The Sensory Domotics House at the Venice Architecture Biennale

CERTIFIED QUALITY

- 12 2010 Environmental Declaration

PROJECTS

- 16 Vittorio Emanuele II Arcade
- 30 Isozaki Tower
- 50 McLaren Production Centre
- 56 Core Shopping Center in Calgary
- 74 La Rochelle Maritime Port
- 78 Safety Tunnel for the Milchbuck Tunnel
- 82 Bonvino Hotel

TRADE FAIRS

- 34 Cersaie 2012
- 46 Marmomacc 2012
- 60 Saie 2012

THE EXPERT'S OPINION

- 48 Problem-free Architectonic Floors

TEAMWORK

- 6 Górká Cement's 100th Anniversary
- 86 Mapei in Belgium

RESEARCH

- 68 Re-Con Zerø

PRODUCTS SPOTLIGHT

- 72 Re-Con Zerø
- 85 Keraflex Maxi S1
Aquaflex Roof HR back cover

SPORT DIVISION

- 88 2012 UCI Road World Championships in Limburg

ART AND CULTURE

- 94 The Nature of Music and the Essence of Mapei

IN THE SPOTLIGHT

Elastorapid page 23; Granirapid page 53;
Ultracolor Plus page 54.



Photo: Gianni Dal Magro

COVER STORY: the mosaic floor of the Vittorio Emanuele II Arcade in Milan has been brought back to the original splendour thanks to Mapei's products and technical assistance.

EDITOR IN CHIEF
Adriana Spazzoli

**EDITORIAL CONTRIBUTORS
AND ENGLISH TRANSLATION**
Tiziano Tiziani, Federica Tomasi,
Metella Iaconello, Martyn Anderson,
Nicholas John Bartram

**PRODUCTION AND EDITORIAL
COORDINATOR**
Metella Iaconello

GRAPHIC DESIGNER
Studio Magazine - Milan (Italy)

PRINTED BY
Arti Grafiche Beta - Milan

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

PRESIDENT & CEO
Giorgio Squinzi

OPERATIONAL MARKETING DIRECTOR
Adriana Spazzoli

REALTÀ MAPEI - BIMONTHLY MAGAZINE
Registered by the Tribunal of Milan
n. 363/20.5.1991
Realtà Mapei International is published 4
times per year

CREDITS
CityLife, Gianni Dal Magro, Claudio Guido,
Górká Cement, Mapei France, Lusomapei,
Mapei Canada, Mapei Corp. (USA), Mapei Kft
(Hungary), Mapei Suisse, Mapei UK, Roberto
Marino, Studio Nealine&Partners.



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

Articles appearing in this magazine may be reproduced in whole or in part after obtaining the permission of the publisher. However, the source must be mentioned.



POPE BENEDICT XVI IN MILAN

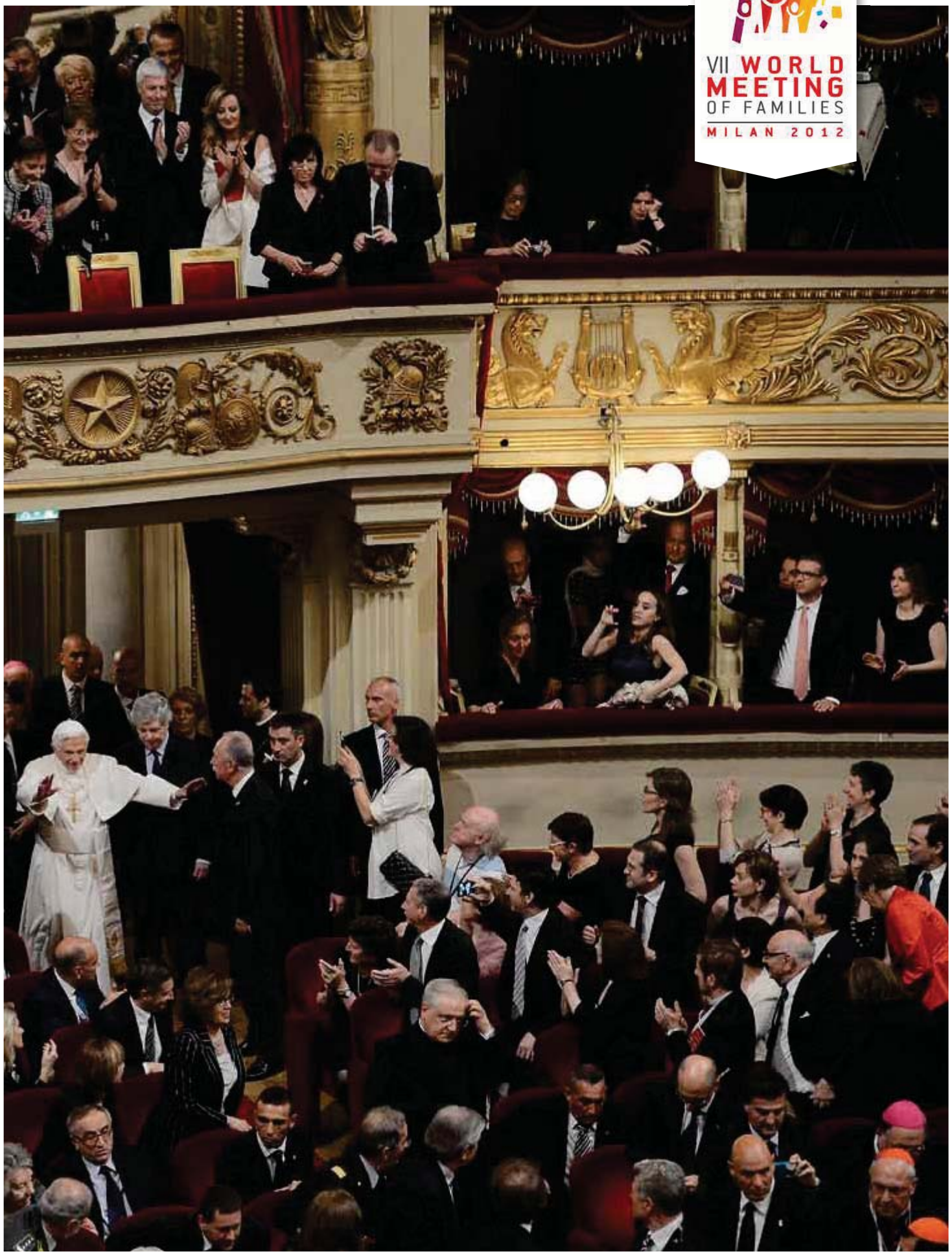
Mapei and the La Scala Opera House for a concert in honour of the Holy Father during the 7th World Meeting of Families

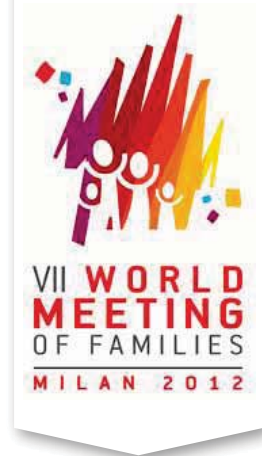
The La Scala Opera House hosted a concert on the evening of Friday 1st June in honour of the Holy Father during the 7th World Meeting of Families held in Milan from 1st to the 3rd June. A cultural event which also had the backing of Mapei - a Founding Partner of the La Scala Opera House since 2008.

Christians and secular people alike met together near Milan Cathedral to joyfully welcome the Pope. In actual fact hordes of people welcomed His Holiness all along his journey from Linate Airport to the city centre, with thousands of faithful cheering the Pope-mobile as it passed by. Pope Benedict XVI

was welcomed by crowds of cheering people from various different countries waving flags who had flocked into the square symbolising the city (Piazza del Duomo) as part of the World Meeting of Families. The Lord Mayor of Milan, Giuliano Pisapia, thanked the Pope for his visit in the name of the entire city and expressed his hope that Catholics and non-Catholics might work together for the good of the community.

The Pope addressed the whole of Milan when referring to the "singular identity" of a city that should not close itself off but rather open up to the future of life in Italy and Europe with





In these pages. The Holy Father during his visit to Milan: from left, with the Lord Mayor of Milan Giuliano Pisapia, with Giorgio Squinzi, CEO of the Mapei Group, and Archbishop Angelo Scola. Right, pictures of the Holy Mass held in Bresso, in the outskirts of Milan.

great hope: “Despite a clear distinction in terms of their different roles and aims, the positively “secular” side of Milan and the city’s faithful are asked to come together for the common good”. After saluting the city from Piazza del Duomo, the musical event supported by Mapei at the La Scala Opera House took this idea even further by extending it to encompass art, because there is nothing like music for universally representing the very essence of life in all its different facets.

The Holy father, whose love of music is well known, visited what is universally acknowledged as being the “Shrine of Opera Music” at 7:30 p.m. and was welcomed at the entrance to the theatre by

it is also a great responsibility because Pope Benedict XVI is an extremely well-informed theatre-goer, who is very familiar with music. This made us think carefully about what we wanted to perform. We thought that the magnificent combination of orchestra and voices in Beethoven’s *Ninth Symphony*, with its final canto inviting everybody to come together through the lyrics of Friedrich Schiller’s ‘Hymn to Joy’ was the ideal way of paying tribute to Pope Ratzinger”.

The real star of the concert was, indeed, the “Hymn to Joy”, which was also listened to with great attention in Piazza del Duomo where a giant screen was set up, as the Pope himself pointed out at the



the Lord Mayor of Milan, Giuliano Pisapia, and Stéphane Lissner, the La Scala Opera House’s General Manager and Artistic Director. After being welcomed into the theatre, the Pope enjoyed a concert in his honour sitting in the same seat as Pope Wojtyla 29 years earlier. The evening at the La Scala Opera House was devoted to the victims of the recent earthquake in Emilia (central Italy), and the Holy Father wanted to physically express how close he felt to the victims by taking the stage for the “Festival of Testimonies” together with one of the families hit by the earthquake, certainly one of the key moments of the Meeting. The host for the evening was Maestro Daniel Barenboim, the General Musical Director of the Scala Opera House, who conducted a performance of Beethoven’s *Ninth Symphony*. A carefully pondered choice that Lissner explained as follows: “It is an honour to be able to open the doors of the La Scala Opera House to the Pope, but on this occasion

end of the performance before leaving the theatre. After listening to this “intense and emotional” performance of Beethoven’s *Ninth Symphony*, Benedict XVI paid tribute to the German composers genius, in some sense widening the horizons of the piece’s majesty. Talking about the musical score, he appreciated “this ideal vision of mankind” but nevertheless noted that: “Beethoven is not expressing strictly Christian joy, it is, in fact, the joy of fraternal coexistence between nations, a victory over egotism, and it is also a desire for mankind to walk along the path of love, almost an invitation sent out to us all, beyond barriers and beliefs”.

The Pope incorporated the Christian vision within this very humane outburst of joy. On its own, so he said, the sentiment expressed in Schiller’s “Hymn to Joy” is hollow for those who are suffering at the moment due, for example, to the violence of an earthquake that has robbed them of all their worldly goods and affections.

And that - so he pointed out - might even cast doubt on the real presence of that “good father” in the “starry sky” referred to in the Hymn, while - so he objected - we are down here on Earth “searching for a God who does not sit on some distant throne but actually enters our lives and our suffering”. “We do not need any unreal discourse about some distant God and noncommittal brotherhood. We are searching for a God who is close by. We are searching for a brotherhood, which, in the midst of all this suffering, can help other people and thereby help itself to move forward (...) that is what this concert calls for us to do”.

An historic evening for the La Scala Opera House and the city of Milan. An event that Mapei was glad to have supported, in accordance with its constant close presence to the city of its origins, internationality and passion for music as a means of bringing people together as well as embodying culture.



» POPE BENEDICT XVI IS AN EXTRAORDINARILY COMPETENT MUSIC LOVER





Happy Birthday to you GÓRKA CEMENT!



Marco Squinzi.
C.E.O. of Górka Cement
and Mapei Group's
Research
& Development Director.

In the late 90s I was assigned by Mapei to develop our own technology to produce calcium aluminate cements. I started to read articles and patents and I happened to encounter in the literature a company named Górka, producing special cements fitting our requirement. I decided to surf the internet for information about cements from Górka.

I came upon a website of a company in Poland. As calcium aluminate cement is a crucial raw material for Mapei mixes, I decided to read on carefully. When I finished, I began wondering whether I had just found a potential supplier worth trying, or perhaps a future Mapei Group member. I couldn't know for sure – it could have just been nothing...

In the following few days I decided to share ideas with my father. He liked the concept of further investigation.

We initiated contact with this Polish compa-

ny. We exchanged a few emails, faxes and received samples of cement. We learnt that the full name of the Company was Górka Cement and that it was located not very far from the city of Krakow: in Trzebinia, a name that we found hard to pronounce at that time. Finally, after several weeks of exchanging correspondence, we decided to create a team of Mapei specialists (chemists, financials, engineers) and book the flight ticket to Krakow. When we arrived at the facility, our first impression was... well... let's say that Górka's assets were marked by its history: two world wars, communism and transformation to capitalism. After a detailed discussion with Górka's crew and a visit around the plant we were sure of two things: that the heart of the company, the kiln unit, was old but still beating strongly, and that Górka's employees had a very positive attitude. We were convinced that if we





In these pages. The pictures show Górka Cement's plant in Trzebinia (Poland). Górka is a special cement manufacturer and a Mapei Group's subsidiary.



combined this with Mapei's philosophy and support, it could work.

From that point on, things started to speed up: we negotiated the price of Górka Cement shares, established a team of people who would decide about the investments that were to be made (our first decisions: to create Quality Control and Research & Development laboratories and buy a good coffee machine). We also started to discuss deliveries of GÓRKAL cement to Mapei subsidiaries in

Europe. Now, after 12 years of hard work, the long history of the company is still marked in its assets, but this time only in the marketing sign, which is visible from the main Górka's entrance.

The company has now become a modern supplier of alumina cements for customers located in more than 65 countries. For Mapei, GÓRKAL cements are currently a key part of mixes for most European Mapei locations.

Just to name a few numbers: Górka's sales value has increased 10 times in the last 10 years. We used to offer 3 types of cements, nowadays there are 8 types of GÓRKAL cements available to our customers. Last but not least, today 147 people are working at Górka. In the year 2000 they were only 98.

Górka is also a partner for local community, limits the influence of its activity through low CO₂ emission, rail logistic and noise reduction systems, to name just a few.

I believe that the last 12 years of Górka and Mapei's common success and 75 years of Mapei excellence strengthened by Górka's 100 years of experience both guarantee a positive beginning of the second century of Górka's activity.





STRONG BY EXPERIENCE

We will continue to develop together



Jerzy Szymański
Górká Cement's General
Manager

100 years ago a cement plant was built. This was made possible by Edward count Mycielski's (owner of the land where Górká plant is located and Head of the Industrial Bank of the Kingdom of Galicia and Lodomeria) vision and determination.

Over the following 100 years, the plant operated incessantly despite wars, occupation and changes of political systems. Today, we draw on the same strength, armoured with

greater experience and tradition, and we continue to run a stable and modern company. Our continuous investments enable us to strengthen our position on the calcium aluminate cement market.

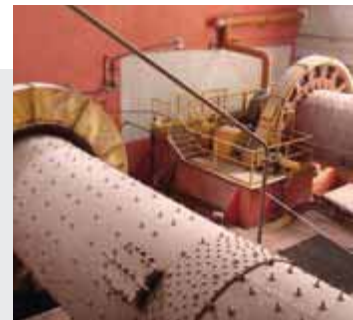
We believe that with customers, our employees, and the support of the Mapei Group, a world leader in production of adhesives and chemical products for building, we will continue to develop together.



1999. mill unit



2000. kiln unit



THE CHANGE WE HAVE MADE

Last 12 years was the period of Górká Cement's modernization. Prepared and implemented in co-operation with the owner, Mapei, and investment program included modernization of machinery and equipments as well as other Górká's assets in amount of 50 million Euros. Between important finished investments we can list:

- white clinker storage unit (6 million Euros),
- kiln unit (4 million Euros),
- two ESP units (3,5 million Euros),
- raw milling unit (2 million Euros).

Investments goals are improvements of efficiency (productivity as well as energy consumption), modernization of technology, and reducing the company's influence on environment.

Presently the company is conducting the next huge investment, a new grey cement storage unit, of 6 million Euros. Investment will be commissioned in spring 2013. It is worth to notice that all investments are conducted during the company's daily activity. Despite of this, increasing sale of GÓRKAL cements was never interrupted.



SOME DATES FROM THE LAST CENTURY

1912

Establishment of Górka joint-stock association at Siersza cement factory.



1913

Górka launches production. 2,485 wagons of cement are produced (1 wagon = 10 tonnes).

1918

World War I and the disintegration of the Austro-Hungarian Monarchy had resulted in most of Górka's contacts being lost. Cement mill restores its sales.

1927

Merging of Firley, Górka, and Ogródzieniec cement mills and establishing Zjednoczone Fabryki Portland – Cementu Firley SA (United Manufactories of Portland Cement "Firley" SA).

1938

Sales of Górka reach 164,000 tonnes of cement and 22,000 tonnes of lime.

1945

Last battles of World War II partially damage Górka property.



1950

Production rate returns to level from before WWII amounting to 184,000 tonnes.

1970

Start of production of calcium aluminous cement GÓRKAL-40, GÓRKAL-60 and GÓRKAL-70



1999

Establishment of Górka Cement, which takes over production and sales of calcium aluminate cements.

2000

Mapei Group buys 100% of shares of Górka.

2002

New R&D and QC laboratories begin operation.



2003

Annual expenditures on maintenance and investments of Górka Cement exceed PLN 10 million.

2004

Total GÓRKAL cement sales in 2003 reached 40,000 tonnes.



2005

Modification of No. 2 mill unit, resulting in a significant reduction of Fe₂O₃ content in GÓRKAL 70.

2007

Repair works in raw material mill, resulting in improvement in composition of input mixture.

2008

GÓRKAL cements sales reached 60,000 tonnes. Construction of a high alumina cement silos - improvement in safety and productivity of white line.

2009

Introduction of GÓRKAL 70F, a purely chemical high alumina cement with quick setting time.



2011

Introduction of GÓRKAL 50+, a chemical pure calcium aluminate cement with low Fe₂O₃ content and long open time.

2012

Mapei celebrates the 75th anniversary of its foundation, Górka celebrates the 100th anniversary of its birth. Mapei and Górka Cement have been working together for 12 years.





GÓRKA: HAPPY 100TH ANNIVERSARY!

The Polish subsidiary manufacturing alumina cements celebrates a century's history and lots of successes

Trzebinia is a Polish city 37 km away from Krakow well-known for its mining and refining operations ever since the 13th century, such as those connected with extracting zinc and coal, which resulted in the founding of various different industries from the 13th to the 20th centuries. One of the companies operating in the area is GórkA that has been manufacturing cements since 1912. This company's history has progressed hand-in-hand with everything else that has happened to Poland in the meantime: the loss of numerous partners due to the First World War and the end of the Austro-Hungarian Empire; the damage caused to its manufacturing plants by the last battles in the Second World War; the restoring of production to pre-war levels at the end of the conflict; the beginning of alumina cement manufacturing with the GÓRKAL brand during the communist regime, etc.

The end of the last millennium marked some important changes for GórkA, such as the founding of GórkA Cement that took over

the manufacturing and sales of alumina cement and the takeover of GórkA Cement by the Mapei Group in 2000, as it looked for an efficient, high-quality supplier of this important raw material required by a number of its products. Ever since then the Group has made plenty of investments in the new Polish subsidiary: the opening of a Research & Development Laboratory; various maintenance and modernisation operations; the starting up of production operations for new types of alumina cements, etc.

1912-2002: Ten Years with Mapei... Make a Big Difference

Twelve years have now passed since the end of the 1990s when Marco Squinzi, the Mapei Group's Research & Development Director, came into contact with GórkA and decided, together with Giorgio Squinzi, the Group's CEO, to purchase the company. The Polish subsidiary's turnover has grown tenfold over the last 10 years and now reached 30 million

Below, from left. Marco Squinzi and Jerzy Szymański, respectively the President and General Manager of GórkA Cement.

The cutting-edge plants and logistical systems at the GórkA plant allow 8 types of alumina cements to be manufactured for clients from 65 different nations.

Various members of the Board of Directors and executives from the Mapei Group attended the 100th anniversary celebrations on 7th September, 2012, such as Giorgio Squinzi, CEO of the Mapei Group; Marco Squinzi, CEO of GórkA and the Group's Research & Development Director; Fabio Crosilla, technical consultant for GórkA; Luciano Longhetti, Manager of the Group's Strategic Planning and Member of the GórkA's Board of Directors, and Guido Trussardi from the Mapei Group's Engineering Central Services Department.





Left. Lots of staff and members of the Group's and Górk's Board of Directors attended the anniversary celebrations.

Below. Veronica Squinzi and Marco Squinzi, both members of the Górk's Board, cut the cake commemorating the 100th anniversary of the company.



Euros; manufacturing at its plants has also increased from three to eight different types of cement; the company can now boast customers in 65 different nations; and its human resources have grown from 98 to 157 members of staff.

Today the Group is making another heavy investment, which will be commissioned in spring 2013, to construct a new storage unit for grey cement, for which 6 million Euros have been allocated.

Thanks to the tenacity that has always characterised Górk's operations down the years, the experience accumulated over a long period in time, and the Group's carefully targeted investments, the company now occupies a powerful position on the international market for alumina cements, while, at the same time, supplying a vital component for lots of Mapei products manufactured at several of the Group's European manufacturing plants.

An Italian-Polish Celebration

Such notable successes deserve to be duly celebrated, which is why Górk Cement organised a special day on 7th September 2012 to commemorate its 100th anniversary and the twelve years it has been part of the Mapei Group. Various local political authorities took part in the event, such as the Lord Mayor of Trzebinia; delegates from various associations operating in the sector, such as the Polish Cement Association and the Polish Association

of Refractory Materials Manufacturers; managing directors of construction companies and Górk customers; press delegates; staff (and former staff) of Górk; delegates of Mapei Polska and Sopro Polonia, which are also Polish subsidiaries belonging to the Mapei Group; and many others.

Members of the Board and directors from the Mapei Group also attended, such as Giorgio Squinzi, CEO of the Mapei Group; Adriana Spazzoli, the Group's Operational Marketing and Communication Director; Marco Squinzi, the Group Research & Development Director and CEO of Górk Cement; Veronica Squinzi and Luciano Longhetti, respectively Director and Manager of the Group's Strategic Planning, and both, together with Marco Squinzi and Dario Cipriani, members of Górk's Board of Directors. Others in attendance included Leonardo Veriani and Guido Trussardi from the Engineering Central Services Department of the Mapei Group, Fabio Crosilla, technical consultant for Górk.

Guests were welcomed to Górk's manufacturing plant at 10 a.m. and then given a guided tour around the plant. After a short buffet based on local dishes, they witnessed the unveiling of a plaque showing two logos, dedicated respectively to Górk's 100th anniversary, Mapei's 75 years of activity and the 12 years Górk and Mapei have been working together.

Guests then attended a press conference during which Giorgio and Marco Squinzi provided the journalists present with an overview of the Group's business strategy and the projects it plans to carry out in Trzebinia in future. Guests also got the chance to listen to the official speeches given by Górk's Board of Directors at 2 p.m. inside Sokol conference Hall, which included a video clip about both the company's and Mapei's corporate history and a recital of Italian and Polish songs by a group of retired staff from Górk. A Polish artist, Marta Bizon, gave a solo performance, singing Neapolitan and Polish songs.

That was then followed by an official banquet during which guests were entertained by a variety of different performances: a Polish folk music band played, an artist made caricatures for the guests, there was a fireworks display, and a commemorative cake was cut decorated with the Górk logo.

A hectic and extremely enjoyable day for many of those who have been involved in such a lengthy success story is that boasted by Górk.

For further information see www.gorka.com.



Above. Guests were given a guided tour around the Górk's industrial site, divided into groups and accompanied by the plant's staff.

A plaque with two logos, respectively dedicated to Górk's 100th anniversary and Mapei's 75th anniversary, were unveiled in the plant's courtyard in the presence of various members of the Mapei Group's Board of Directors.



2010 ENVIRONMENTAL DECLARATION

Mapei production facility in Robbiano di Mediglia safeguards environment and health

Defending the environment from pollution and safeguarding health and safety in the workplace are an integral part of the Mapei Group's business activities.

In line with this commitment, the 2010 Environmental Declaration of the Group's most important production facility, located in Robbiano di Mediglia (Milan, Italy), was published last November, drawn-up in compliance with Regulation (EC) No 1221/2009 (EMAS III) of 25 November 2009.

The publication of an "environmental declaration" is one of the initiatives that the most environmentally-conscious companies have undertaken to demonstrate how it is possible to achieve a higher degree of compatibility between business activities, safety and the environment. By illustrating their performance figures and objectives, companies are given the opportunity to dialogue openly with local authorities and public opinion.

It's worth remembering that the Eco-Management and Audit Scheme (EMAS) is a voluntary instrument created by the European Union, and organisations are invited to participate on a voluntary basis so that their environmental performance record may be evaluated and improved, and to supply information about their environmental manage-

ment system to the general public and other bodies or organisations that declare an interest.

In recent years, Mapei has been operating by actively sharing this concept: for example, in 1992 the company joined the Responsible Care programme (see the paragraph below), and then later implemented an Environmental and Safety Management System certified according to ISO 14001 (in 1998) and OHSAS 18001 standards (in 2000).

The first ratified Environmental Declaration for Mapei's Robbiano di Mediglia production facility was published in 1999 and, in the same year, the EMAS Italy Section of the Ecolabel-Ecoaudit Committee registered the production facility in the register of European facilities complying with environmental standards. In the following years, the 1999 Environmental Declaration was updated with more simplified versions.

Responsible Care

Responsible Care is the voluntary programme of the world chemical industry, through which companies in the programme commit to constant improvement of their products, processes and behaviour regarding health, safety and the environment.



The Responsible Care Programme was started in Canada in 1984 by CCPA (the Canadian Chemical Producers Association), and then adopted in 1988 by ACC (the American Chemistry Council). The following year the programme was started in Europe by CEFIC (the European Chemical Industry Council), and since 1992 the Responsible Care Programme has been administered in Italy by Federchimica (the Italian Federation of the Chemical Industry).

The Programme is currently adopted by more than 10,000 companies from the chemical industry in 53 different countries from all around the world.

Responsible Care, therefore, is based on companies adopting an integrated health, safety and environmental management system, but also requires that they play an active role in the construction of open, transparent dialogue with the local community and outside world.

In order to re-launch the programme and make its implementation around the world more homogeneous, in 2006 ICCA (the International Council of Chemical Associations) presented the "Responsible Care Global Charter". The Global Charter goes further than the original elements of the 1984 Responsible Care Programme, and focuses on the enormous changes that the chemical industry and society on a global scale must now deal with. Public opinion's growing interest for sustainable development, mankind's wellbeing and its relation with the use of chemical products, as well as the need for more transparency, means that the chemical industry's commitment to these themes must be reviewed and renewed.

Mapei is one of the first multinational companies to have adhered to the Global Charter and, in 2008, became part of the pilot programme "Third Party Verification of the Responsible Care Programme", developed and promoted by Federchimica in compliance with CEFIC guidelines, to assess the compliance of companies in the Responsible Care Programme by a certification body (Certiquality).

Copies of the 2010 Environmental Declaration are distributed to Mapei's employees, suppliers, clients, local authorities and the general public. The Declaration is also available to anybody who requests it from the Robbiano di Mediglia facility or Mapei headquarters, and may be consulted directly on-line at the company website www.mapei.it.



HEALTH, SAFETY AND THE ENVIRONMENT IN THE MAPEI GROUP

Defending the environment from pollution and safeguarding health and safety in the workplace, both within the production facilities and around them, are an integral part of the Mapei Group's business activities. Apart from respecting the requirements of current legislation and any voluntary norms the company adheres to, Mapei is committed to carrying out their business activities with constant attention to areas of continuous improvement. Our principles are in line with the requirements of the international project "Responsible Care Global Charter", representing the commitment of the world chemical industry to health, safety and the environment, Responsible Care, to which Mapei has adhered since 1992.

To this aim, the entire Mapei organisation adopts measures with the objective of:

- preventing or reducing the impact of their business activities and products on the environment by adopting an adequate management system for their research, design, production, distribution and waste disposal activities, and by adopting the most advanced, economically viable technology available;
- preventing all possible accidents connected to the company's activities and the activities of companies working for Mapei;
- preventing any risk to the health of employees of the company and of companies supplying services, and to the health of clients and the local community.

The fundamental principles in order to respect this commitment are:

- robust, constant activities to make all collaborators of the company more aware of health, safety and environmental issues in order to increase overall responsibility;
- collaboration with other chemical companies, local authorities and the local neighbourhood to identify measures aimed at minimising the company's impact on the environment and health risks deriving from production activities;
- attention to research and development of new products for solutions with less impact on the environment and on people during their entire "life cycle";
- information and assistance for users, distributors and transport companies regarding the safe use, handling, transport and disposal of products;
- involvement of suppliers and contractors of goods and services to promote correct behaviour regarding safety and the environment;
- transparent internal and external communication regarding company objectives and results.

Giorgio Squinzi
CEO of the Mapei Group



2012 CEFIC ANNUAL MEETING: INNOVATION AND SUSTAINABILITY

Giorgio Squinzi leaves his role as President to Kurt Bock, BASF'S CEO

The Presidency of the European Chemical Industry Council (Cefic) has changed hands, with the election of Kurt Bock, CEO of the German industrial group Basf, taking over from Giorgio Squinzi, CEO of the Mapei Group, after his mandate had officially expired. The announcement was made during the annual meeting of the association held in London last September. Through the various national associations, Cefic represents more than 29,000 chemical companies in Brussels, with a net export of 42.5 billion Euros in 2011. Hubert Mandery, Director General of the association, underlined how the economic crisis has had a negative effect on the industry, leading to Cefic lowering their forecast for the production levels of the European chemical industry, with a drop of 1.2% in 2012 compared with the previous year. For 2013, on the other hand, the indicators point to a slight improve-

ment of around 1%.

During his speech to the assembly, Bock announced that his intention was to direct his mandate in the direction of innovation and sustainability, instruments that are absolutely necessary if the European chemical industry is to remain competitive within a scenario that is witnessing higher rates of growth in production levels in the emerging countries compared with those registered in Europe. "Nowadays, we are witnessing an increasingly intensive use of the planet's natural resources", said Bock. "New economic and social challenges are appearing which involve water, energy, food and living standards. These challenges also involve the chemical industry, which has the capacity of offering solutions to many of these problems. I firmly believe, therefore, that sustainable development also offers great opportunities for our industry".

Squinzi: a United Europe and More Innovation to Remain Competitive

After a two-year period that has seen the financial crisis develop initially into a sovereign debt crisis and then economic stagnation, Giorgio Squinzi remains optimistic and underlines the importance of innovation to build an increasingly strong Europe.

"I still believe that, at the end, the political will to create a stronger, more competitive Europe will prevail, but we must be vigilant and not permit the financial markets to pulverise the need for a more integrated Europe, our economies and our society", he declared in his closing speech as President. His experience as the leader of Cefic has only strengthened this conviction, and now that he is President of Confindustria (the Confederation of the Italian Manufacturing and Service Companies), he certainly doesn't intend

to change his mind: "Europe is not an option, it is a necessity.

We must aim towards a United States of Europe otherwise, sooner or later, the whole idea will collapse. And we cannot allow ourselves to leave such a difficult inheritance for our children".

For once, the chemical industry is the jewel in the crown, and not one of the many Achilles' heels of Europe. But just like everybody else, however, it is suffering from the threat and inevitable adjustments that globalisation has brought, and from the irrepressible rise of the emerging economies. And the latest figures from Cefic confirm that production in Asia is now higher than in the rest of the world, and the emerging nations have beaten the industrialised nations club. The EU's share of the global market has been cut almost in half in the last 20 years.

China is now by far the leading producer and the largest exporter in the world, with 735 billion US dollars annually and a 26.8% share of the total. Europe is in second place with 539 billion US dollars and a share of 19.6%. The United States follows with 408.7 billion US dollars and 14.9%. Within the EU, Germany is ahead of the field with 156.4 billion dollars and a 5.7% share of the global market, followed by France with 83 billion and 3%, then Italy with 53 billion and 2%, neck and neck with the Netherlands. And even though the economic crisis continues to bite and has caused production in the EU to fall by 2.4% and sales to drop by 1% in the first six months of 2012, compared with 2008, that is at the peak prior to the crisis, they have both increased by 6%.

With China leading the world records as usual, then we may wonder if the fate and excellence of the European chemical industry is somehow already sealed. Squinzi is convinced that it isn't.

From left. Hubert Mandery, Director General of Cefic; Kurt Bock, Basf's CEO and new President of Cefic, and Giorgio Squinzi, CEO of the Mapei Group and former President of Cefic.



"The levels of production in China have exploded because China has become the largest manufacturing centre in the world, and the chemical industry is its supplier. A large portion of the Chinese chemicals production, however, is European, and comes from Basf and Bayer. Geographic delocalisation has not led to technological delocalisation, which is still under European control. This must make us reflect and realise that, if we let Beijing become the leading manufacturer in the world, it is inevitable that the European chemical industry will lose its share of the market". China, however, is not the only nation behind the erosion. The sector tends to go and produce close to the sources of low cost raw materials, from petrol to gas and ethylene, and so the share of the Middle East is also destined to increase, while within 3 to 5 years, the United States will also be able to attract part of the chemical industry, thanks to their capacity to exploit shale gas at 2.5 dollars per million Btu, compared with the European average of 12.5.

So is the chemical industry going in the same direction as the car industry, weighed down by over-production

in Europe, and the moment has come to think of a European industrial policy and to rationalise production levels? Squinzi's answer is another no. Because the sector is different, "It has lower volumes but has strengthened its leadership in innovation at the very time it was facing up to important and costly challenges such as REACH and the war against CO₂ emissions, that is, while it invested in increasingly safer products and health".

Because of the multi-faceted nature of the chemical industry, an EU industrial policy should be limited to "favouring access to low cost energy and producing regulations which are increasingly coherent in the support of sustainable development". Rationalisation? It's already been carried out, with the merger of two leading companies, Hoechst and Rhone Poulenc.

And the Italian chemical industry? "It has been restructured and today I can see that there are positive signs. Eni is believing in the future again and is also investing in a greener industry. And small

and medium size Italian businesses are competitive on the global market".

EUROPEAN RESPONSIBLE CARE AWARDS 2012



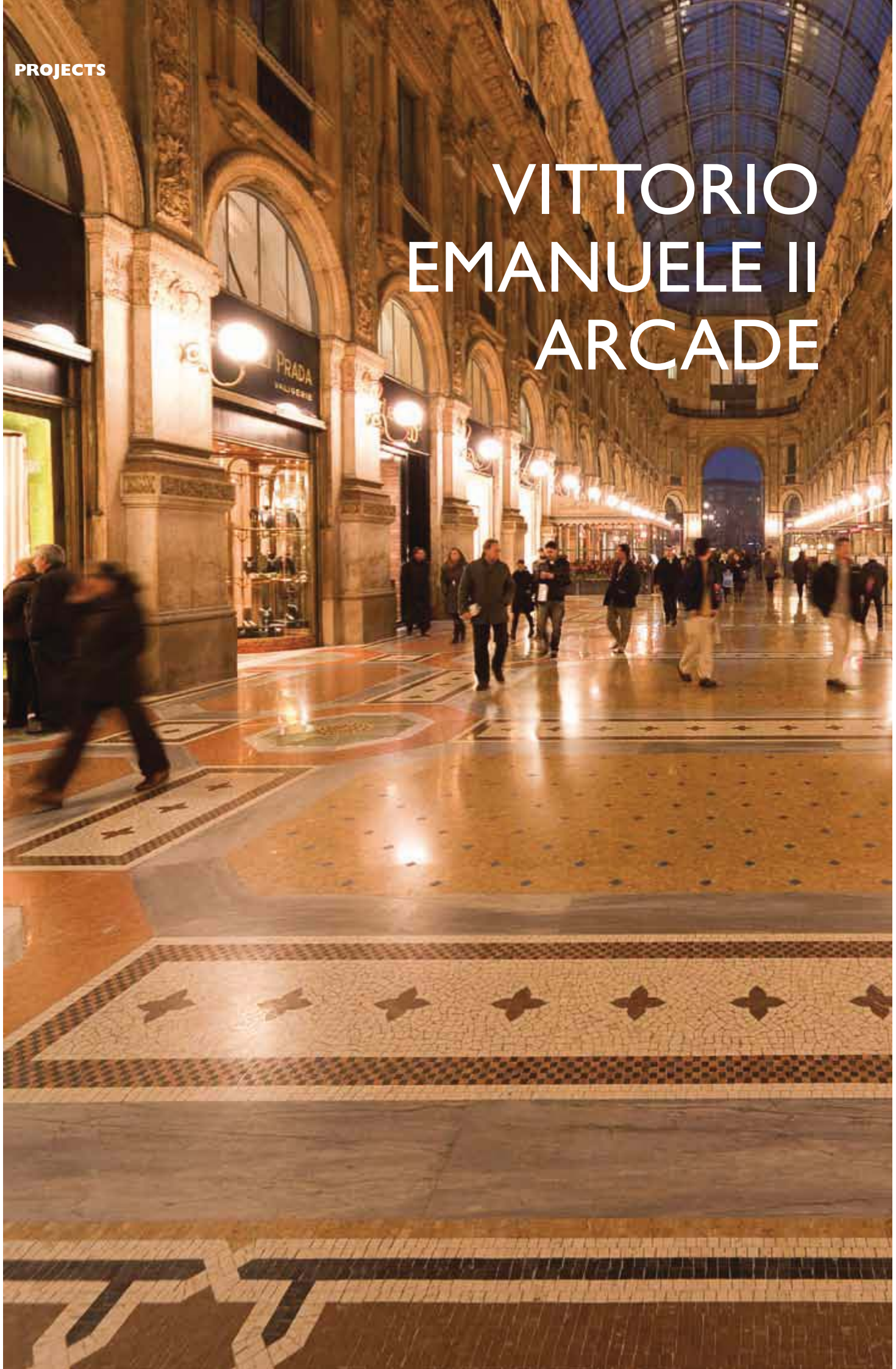
During the 2012 Cefic annual meeting the winners of the Responsible Care (the global chemical industry's initiative to improve health, environmental performance, enhance security) Awards 2012 were awarded by an independent jury composed of experts from the European Commission, trade unions, industry and press. The award in the general category went to AkzoNobel, who, together with its Spanish partner GRIT, has developed a new technology for addressing the pollution issues that surround the treatment and preservation methods used by

the leather industry. Austrian industrial coatings firm Rembrandtin Lack was selected as winner of the small- and mid-sized enterprises (SME) category for its comprehensive Responsible Care programme which evolved through the years into an ongoing corporate social responsibility project. Essenscia, the chemicals, plastics and life science federation of Belgium, was the jury's pick for the Cefic award that recognizes best practice sharing by its national association members.



PROJECTS

VITTORIO EMANUELE II ARCADE





The mosaic floor of the “drawing room” of Milan has been brought back to its antique splendour

The mosaic floor of the Vittorio Emanuele II Arcade in Milan has been brought back to the original splendour, created in the second half of the nineteenth century by the architect Giuseppe Mengoni.

Between 2011 and July 2012, the Arcade, considered one of the symbols of the city, underwent conservative restoration work on the 5,868 m² of flooring, made up of 3900 m² of arcade and 1,968 m² of porticoes. A vast area of the mosaic flooring was removed, replaced and consolidated and 258 octagonal and circular inserts were restored.

The intervention included all the surfaces in natural stone (granite, Bardiglio and Rosso Verona marble), the marble mosaic tiles and the decorative elements which were replaced with new ones in the same colour and pattern as the originals.

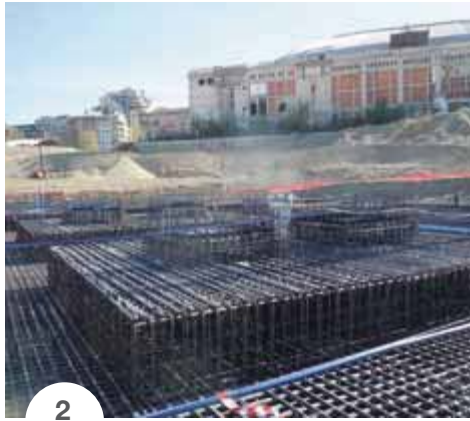
A careful preliminary analysis highlighted which components were in good condition and which needed to be replaced, and all the elements were repaired, grouted and then veiled to help them all blend in well. At daytime mosaic layers, craftsmen, marble layers, technicians worked three shifts on the floors. Work was completed by polishing and then applying a protective treatment on the surfaces.

The restoration site was well organised so that the normal life of the Arcade and the shops

PROJECTS



1



2



3

Photos 1 and 2. The flooring prior to restoration work.
Photo 3. After removing the inserts and the damaged areas, EPORIP was applied and the gaps were rebuilt with MAPEGROUT T40.

Photos 4 and 5. Where possible, the inserts were repaired in the workshop. The petals in the insert were bonded with KERALASTIC T.

in the gallery could continue as normal. The flooring was also sub-divided into lots of smaller areas so that the work would have less impact on the shops.

Restoration work was carried about by a specialized company with the cooperation of Mapei, whose R&D laboratory was made available to select and check the products, and technicians from the company were present on site every day.

The works were completed within the forecast time according to the project designed by arch. Pasquale Francesco Mariani with official appointment from Milan City Council's Cultural Affairs and City Heritage Technical Department.

The Floor inserts

In 1967 the last renovation intervention on the Arcade's floor was carried out. Thereafter, no relevant repair work was ever made. Restoration work was therefore necessary, not only to make the floors more presentable, but also for the safety of the pedestrians. In the

middle of 2011 work started, and the first operation was on the octagonal decorative inserts (which used to illuminate the arcade from below), made from bronze with Plexiglas elements.

The inserts were completely deformed due to the stresses in the flooring and concentrated loads from passing vehicles. Beside, the flooring around them suffered from water infiltrating into the areas under the Arcade.

The inserts were completely removed, re-stored in the workshop and then put back in place with new Plexiglas using special techniques and precautions to prevent water from infiltrating again. The substrate was cleaned up by removing all the deteriorated areas. A layer of EPORIP epoxy adhesive, especially suitable for monolithic sealing cracked screeds, was then applied to bind the underlying substrates and form a solid, monolithic bond with the MAPEGROUT T40 medium-strength, fibre-reinforced thixotropic mortar, used to re-build the housings for the inserts. The mortar was applied using specially made



4



5

Photo 6. The inserts before the restoration work.

Photo 7. The restored insert placed and fastened with ADESILEX PG1 RAPID.

Foto 8. The inserts' joints were sealed with MAPESIL AC.

Photo 9. The substrate was consolidated with PRIMER 3296.

Photo 10. NIVORAPID + LATEX PLUS was used to level the substrate repaired with PRIMER 3296 before installing the mosaic with ELASTORAPID.

Photo 11. The mosaic expert Mr Aquino visited the building site to provide assistance.



templates for each insert to match their original thickness, so that the inserts that had been removed could be put back in place without having problems of flatness.

The 25 mm thick Plexiglas petals in the inserts were bonded with KERALASTIC T two-component, high-performance polyurethane adhesive with no vertical slip, which also guarantees that the whole system remains watertight. The petals were then sealed with MAPESIL AC pure, anti-mould, acetic silicone sealant, with BioBlock® technology, for movements up to 25%.

The inserts around the edge could not be taken to the workshop, so they were straightened out, polished, coated and then sealed directly in place. Here too the system used included the application of KERALASTIC T on the back of the petals as well as to bond the petals directly on the metal portholes.

In this case too, the petals' joints were sealed with MAPESIL AC.

Strengthening the Substrate

Mr. Aquino, a mosaic expert, visited the building site, which was very useful for the works directors and mosaic layers since, as for the laying substrate, there was no official documentation.

Indeed, during the 1967 restoration intervention, only the mosaic surfaces had been re-



PROJECTS

Photo 12. Localised consolidation of the flooring with PRIMER 3296.

Photos 13, 14 and 15. EPORIP and MAPEGROUT SV FIBER were used to restore the mosaic of the Bull, damaged by the weather and pedestrian use. The tiles were installed with KERAPOXY.



stored without involving the substrates which was still the same as in 1865.

An analysis of the stratigraphic layout showed that the substrate was around 7 cm thick and the lean mix layer (made up mainly of sand, cobbles and glass) was around 10-15 cm thick, and its surface strength was generally inadequate.

It was then discovered that the original flooring had been installed without expansion joints and that the substrate had not been strengthened, factors which could lead to cracking due to hygrometric shrinkage and concentrated loads.

The first operation was to obtain sufficient load-bearing capacity and strength in the substrate without damaging the entire flooring. PRIMER 3296 consolidating and anti-dust primer in water dispersion, with micro-particles of acrylic polymers and good penetration capacity, was applied, therefore, in the areas with poor mechanical strength.

Working on the Mosaic

The mosaic layers had to carefully remove the mosaic tiles using tiny electric grinders and chisels to prevent damaging the areas of flooring that were still in good condition. Some of the tiles were used again to recompose the pattern of the original mosaic.

White ELASTORAPID two-component, high-performance, highly-deformable, quick-setting and drying cementitious adhesive with no vertical slip and extended open time was used to install the mosaic tiles by "embedding" them in the adhesive. The mosaic was then sanded and polished 24 hours after installation. This operation was carried out in December when temperatures were quite low. The adhesive was applied on the back of the tiles (with the back-buttering method) so that there was full contact between the marble and the substrate.

ELASTORAPID was also used to install the stars and all the glass paste decorations in the flooring. Marble was then removed from around the inserts, especially the Rosso Verona and Bardiglio slabs, which had been damaged beyond repair.

Positioning the Inserts and Marble Slabs

After completing the inserts in the workshop, each one was placed in position and bonded with ADESILEX PG1 RAPID two-component, rapid-setting thixotropic adhesive for structural bonds. All the edges of the metal frames were fastened in place so that there was a



monolithic grip with the MAPEGROUT T40 mortar used to rebuild the substrate.

Once the inserts had been fastened with ADESILEX PG1 RAPID, the surfaces were levelled with NIVORAPID (quick-drying, thixotropic, cementitious smoothing compound) + LATEX PLUS (elasticising latex).

This system allows for particularly high compressive strength and also to work well around the delicate metal frames and the original substrates repaired using PRIMER 3296.

At this point, the Bardiglio and Rosso Verona marble slabs were installed around the inserts and in other areas of the surface. Once the surface of the substrate had been cleaned adequately, a coat of PRIMER G, synthetic resin primer in water dispersion with a very low emission level of volatile organic compounds (VOC), was applied by brush to improve adhesion. White ELASTORAPID was applied using the back-buttering method to install the marble. The marble around the inserts was installed leaving a wide gap to prevent compression problems. The expansion joints were then sealed with MAPESIL LM neutral silicone anti-mould sealant with BioBlock® technology for stone for movements up to 25%.

Repairing the Substrates

During inspection work, areas of the surface which were completely damaged had been noticed and these areas had to be completely rebuilt. Therefore Mapei suggested the use of a complete system of innovative products such as MAPECEM PRONTO, MAPEGROUT SV FIBER and EPORIP.

First, around the healthy areas in the original flooring, EPORIP epoxy adhesive was injected to make a monolithic bonding of the damaged substrate. The substrate was repaired over the EPORIP layer while it was still fresh using MAPEGROUT SV FIBER quick-setting and hardening, fibre-reinforced, hi-flow cementitious mortar with stiff steel fibres. Using this system, work could be carried out very quickly, even in bad weather.

Restoration of the Bull

The mosaic representing the bull, considered a lucky charm on which every year thousands of people leave their mark, deserves a special mention. To prevent vibrations damaging the Bull, the mosaic was framed and then carefully removed using tiny grinders to remove the tiles. First EPORIP was applied and then, after waiting the proper time, the substrate was repaired with MAPEGROUT SV FIBER quick-setting and hardening, compensated-shrinkage hi-flow mortar, especially suitable for repairing concrete and fixing drains, man-holes and urban architectural fittings in place. The bull was then installed using KERAPOXY two-component, high-performance, anti-acid epoxy and adhesive with no vertical slip for laying and grouting ceramic tiles and stone material. The adhesive was applied on the back of each tile before placing them in position on the installation bed. The following morning, a few hours after the repair work had been completed, the bull was ready for use once again.

The End of a Complex Operation

The final phase of the intervention was to grout the flooring. The colour of the polyester resin-based grout varied according to the colour of the mosaic and original grout. This operation over the entire surface of the flooring allowed the polishing to be carried out with polishing disks after a very short time.

Work on the Porticoes

In February 2012, repair work also started on the porticoes in the arcade. The same procedure was used for the circular inserts; they were removed, restored, the metal was cleaned and treated and then the Plexiglas petals were installed with KERALASTIC T and the joints were sealed with MAPESIL AC.

In this case too, to repair the housings and load-bearing capacity of the support clamps for the inserts, MAPEGROUT T40 repair mortar and ADESILEX PG1 rapid-setting thixotropic adhesive were used.

IN THE SPOTLIGHT

ELASTORAPID

It is a two-component, high-performance, highly-deformable, quick-setting and drying cementitious adhesive with extended open time and no vertical slip, class **C2FTE S2** according to **EN 12004** standards.

It is suitable for internal and external walls and floors, and is used to bond all types and sizes of ceramic tile, natural stone and artificial materials moderately sensitive to moisture (corresponding to class B of dimensional stability according to Mapei standards), which require the use of a quick-drying adhesive.

It helps to earn **2 points** towards **LEED** (Leadership in Energy and Environmental Design) certification.



The work carried out on the marble slabs, on the other hand, was different. Here workers had to deal with the results of several intervention operations carried out in the last 100 years using different installation techniques and slabs with different thicknesses.

Therefore, different laying techniques had to be used in this case.

Once the damaged part of the marble had been removed, if the gaps to be filled were as thick as 10-15 cm, the slabs were put back in place using MAPESTONE TFB 60 (pre-blended mortar with high compressive strength and good resistance to de-icing salts and freeze-thaw cycles, exposure class XF4, for installation screeds for architectonic stone flooring) after applying a layer of bonding slurry made

Photo 16. Installing the marble slabs with white ELASTORAPID.

Photo 17. In the porticoes adjacent to the arcade, the marble slabs were re-positioned using MAPESTONE TFB 60 where the gaps were 10-15 cm thick. Where it was possible to install the slabs directly on the concrete substrate, ELASTORAPID was used.



17



Above. View of the Arcade after completion of the works.

from PLANICRETE synthetic latex rubber to improve the mortar's adhesion and strength. In other areas, where the thicknesses would allow, the marble was installed directly on the concrete substrate using white ELASTORAP-ID. All the expansion joints created around the perimeter of the inserts were sealed with MAPESIL LM.

Some of the pieces of marble which could no longer be reproduced were treated with epoxy-based resin so that they could withstand routine concentrated loads, such as the passage of road cleaning vehicles. In this case an epoxy-based system was used. Once the damaged areas of the marble slabs had been removed, they were rebuilt with MAPEFLOOR I 900 system with QUARTZ 1.9 mixed with coloured MAPECOLOR PASTE.

MAPEFLOOR I 900 epoxy binder was also used as an adhesion promoter on the marble slabs to create a monolithic grip, and to

consolidate deep down into the structure of the stone. For the final grouting of the flooring, two different solutions were used, according to their chemical nature (cementitious products or epoxy-based materials). The floors in one of the porticoes was grouted with MAPESTONE PFS PCC2 pre-blended, polymer-modified mortar with a low modulus of elasticity, high compressive strength and good resistance to de-icing salts and freeze-thaw cycles, exposure class XF4, for grouting architectonic stone floors.

The floors in the other portico was instead grouted with polyester resin. Work was completed by polishing the flooring and applying a final treatment to protect the surface.

The restoration of the Vittorio Emanuele II Arcade floors required time, high-level craftsmanship, high-tech products and methods. Mapei gave their contribution and the results fully satisfied the client.



TECHNICAL DATA

Vittorio Emanuele II Arcade, Milan (Italy)

Period of Construction: 1865-1878

Designer: Giuseppe Mengoni

Period of the Intervention: 2011-2012

Intervention by Mapei: renovating and consolidating substrates; installing mosaic tiles and stone slabs; grouting and sealing joints; restoring the floor inserts.

Client: Milan City Council's Cultural Affairs and City Heritage Technical-Department

MAPEI PRODUCTS

Renovation and installation of floor inserts: Adesilex PG1, Adesilex PG1 Rapid, Eporip, Keralastic T, Latex Plus, Mapegrout T40, Nivorapid, Mapesil AC

Consolidating and repairing the substrates: Eporip, Mapegrout SV Fliber, Mapegrout T40, Mapecem Pronto, Planicrete, Primer G,

Project and Works Management: arch. Pasquale Francesco Mariani Orlandi; arch. Silvia Volpi; Supervision: Libero Corrieri, Alberto Artioli; Operational Management: Simone Ascione, Vittorio Alfieri (Milan City Council)

Building Site Direction: Paolo Maggi

Laying Company: Trivella SpA

Laid Materials: mosaic tiles and stone slabs

Mapei Distributors: Centro Edile Antonini, Gruppo BEA

Mapei Co-ordinator: Paolo Giglio, Mapei SpA (Italy)

Primer 3296, Quartz 1.9

Installing mosaic tiles and stone slabs: Elastorapid, Kerapoxy, Mapecolor Paste, Mapefloor I 900, Mapesil LM, Mapestone PFS PCC2, Mapestone TFB 60.

For further information see the website www.mapei.com

MAPEI AND CITYLIFE: PROJECTS WHICH AIM HIGH





The CityLife project proposes a new approach to building and a new way of living to the city of Milan, by radically transforming how domestic and urban spaces are perceived and used.

And the obvious choice of partner for this important building site could only be Mapei which, thanks to their experience and the way the company is structured, has been able to transform a number of the construction challenges imposed by the residences designed by Zaha Hadid and Daniel Libeskind and for the tower designed by Arata Isozaki into reality.

The ability to handle projects in their entire complexity led to Mapei becoming a key player right from the very first casts of concrete, with their range of admixtures.

For example, particular attention was paid to construction of the foundations for the Isozaki Tower. In fact, a special mixture of self-compacting concrete (SCC) was formulated, suitable for this particular type of mass cast and for the construction company's choice to cast the concrete continuously without vibrating and without including construction joints in the foundations.

The more than 4000 m³ of UNI EN 206-1:2006 and UNI 11104:2004 XC2/XC4 exposure class concrete was cast in one single go, working continuously for 30 hours. The temperature of the concrete was then monitored for over one week.

Mapei's approach to innovation with respect for the environment found fertile ground in this project, which included the company's systems for installing parquet and ceramic on the floors and walls, both internally and externally. The MAPETHERM TILE SYSTEM was also used, which meant that thin porcelain tiles could be used for covering, in line with the design Libeskind was looking to achieve. The Mapei coatings and waterproofing systems were also used to meet all the design requirements. Further details about the progress of this important building site will be available in the next issues of *Realtà Mapei International*.

THE BUILDING INDUSTRY: INNOVATING BY DESIGN

A round-table organised by Mapei at CityLife to discuss architecture of today and tomorrow

On the 29th of June journalists, operators and designers were invited to a special event in Milan: the round-table, entitled "The Building Industry: Innovation by Design" and moderated by the Editor-in-Chief of the Italian economics newspaper *Il Sole 24 Ore* Roberto Napolitano.

The main focus was the CityLife project, in which Mapei is an active partner with innovative products and technical assistance. CityLife is the company engaged in the re-qualification of an area of around 255,000 m² in the historic Milan's trade fair area, which became available following the transfer of the trade hub to the Rho-Pero area of the city and was the subject of an international competition in 2004 aimed at its urban re-qualification. The competition was won by CityLife with a design by the architects Zaha Hadid, Arata Isozaki and Daniel Libeskind.

Work started in 2007 and should be completed in 2015.

Constructing a Network of Companies

The welcoming speech was given by Adriana Spazzoli, Operational Marketing and Communication Director for the Mapei Group. "Innovation has always been one of the favourite key words in Mapei that is taking part in such an important project as CityLife. An innovative project, yet woven into the very fabric that characterises the city of Milan, with respect for its traditions". Claudio Artusi, President and CEO of CityLife, claimed: "With the CityLife project, this area will become a world symbol for a new way of living urban quality".

Claudio De Albertis, Chairman of Assimpredil ANCE (the Association of the Building Companies for the Milan, Lodi, Monza and Brianza areas), highlighted the difficulties the Italian building sector is currently going through.

Daniel Libeskind: "This is the Right City to Experiment In"

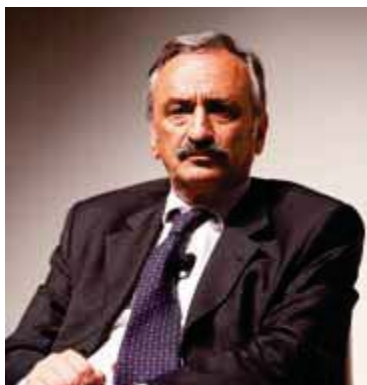
Daniel Libeskind, internationally-renowned architect, openly declared how en-

thusiastic he was about Milan. His professional touch in the CityLife project can be seen in the residences and in the tower. The American architect underlined how, in a globalised world, it is the cities themselves that are competing with each other, not only architecturally, but also through the sustainable solutions employed. He declared: "Milan has readily grabbed this opportunity and is carrying it forward with incredible courage. And I am proud to be a part of this adventure".

Claudio Guido: Innovation and Eco-sustainability

Claudio Guido, Works Director for CityLife, underlined how the keywords for this project are innovation and eco-sustainability. He said: "The fulcrum of the project is the traffic-free residential area, a zero-emissions zone with a balanced mix of housing, offices, shops and services immersed in a large, new public park".

Guido talked in detail about the Isozaki Tower, 202 m tall with a structure mainly in reinforced concrete. Particular attention was paid to construction of the foundations for the Tower. In fact, a special mixture of self-compacting concrete (SCC) was formulated, suitable for this particular





type of mass cast and for the construction company's choice to cast the concrete continuously without vibrating and without including construction joints in the foundations. Mapei developed a specific mix design for the concrete. The pozzolanic admixture MAPEPLAST PZ 300 was used to reduce the heat of the cast concrete, while the super-plasticising admixture DYNAMON SR 914 was used to reduce the amount of mixing water. The anti-shrinkage admixture MAPECURE SRA 25 was also used (for the last 50 cm thick layer of cast concrete), as well as the viscosity modifying admixture VISCOSTAR 3K.

Gennaro Fiscina: Design Ideas and Their Execution

Gennaro Fiscina, Construction Director for CityLife, highlighted how construction techniques very similar to those applied when constructing infrastructures were employed.

Fiscina said: "We realised that we had to develop specific tools and equipment that would allow us to carry out the operations according to the construction phases and specific safety norms. Therefore, special equipment was developed".

To the side. From the left: Adriana Spazzoli, Mapei Group's Operational Marketing and Communication Director; Claudio Artusi, Works Director and CEO of CityLife; the American architect Daniel Libeskind with Giorgio Squinzi, CEO of the Mapei Group; Gennaro Fiscina, Construction Director of CityLife.

Above. From the left: Gilda Boiardi, Editor-in-chief of *Interni*; Pasquale Zaffaroni, Product Manager of Mapei Building Product Line; Fiorella Rodio, Mapei Major Projects Division Director; Paolo Buzzetti, President of ANCE.

Gilda Bojardi: Design, Spectacle, Experimentation

The speech given by Gilda Bojardi, editor-in-chief of the design magazine *Interni*, concentrated on experimentation and practises applied to displays, with particular attention on those organised by *Interni* since the 1990's for the "FuoriSalone" event in April. In The aim of the activities is to stimulate creativity and allow designers and companies to develop a common path and new synergies. Boiardi's presentation included three different styles of furnishing for the show apartment in the residences designed by Daniel Libeskind. The use of Mapei wall coatings allowed the style to be interpreted each time with the proper tones and shades.

Pasquale Zaffaroni: Mapei Research and Innovation

Pasquale Zaffaroni, Product Manager for Mapei's Building Product Line, stressed how the resources Mapei invests into research are a powerful propellant for growth. Mapei was the first European company to patent a new family of acrylic-based, super-plasticising admixtures. These products allowed the entire ready-mixed and pre-cast concrete industry to produce fluid concrete with very low water/cement ratios, with extended workability for complex architectural forms, and to cast concrete in hot climates without having to add water.

The foundation slab had been cast for CityLife using the latest generation of Mapei acrylic super-plasticisers, where the heat of hydration generated had to be closely monitored to prevent cracking.

As for waterproofing systems for the damp environments, Mapei has opened a new path by producing Mapelast, designed to protect infrastructures against atmospheric agents and corrosion.

Fiorella Rodio: Mapei Architectural Solutions Guide

"Systems in the construction sector must be chosen by taking into consideration their characteristics of compatibility and durability in relation to the project itself". This was the concept stressed by Fiorella Rodio, Mapei Major Projects Division Director. "The durability of a structure" she went on saying is a necessary condition for sustainability."

Then she explained Mapei's contribution to green building: "To develop innovative technologies that achieve new levels of excellence, and develop new, eco-sustainable systems to help buildings earn points for LEED certification of buildings". This was just the aim in mind behind the publication of the Mapei Architectural Solutions Guide, an interactive tool to help choose the most appropriate eco-sustainable system to complete a project.

Giorgio Squinzi: CityLife Has Become a Symbol

Paolo Buzzetti, Chairman of ANCE, the Italian Association of Building Companies, spoke about the difficult situation the Italian construction industry is in and claimed that CityLife represents a perfect example of the path to follow to overcome it. Giorgio Squinzi, Mapei Group's CEO and President of Confindustria (the Confederation of the Italian Manufacturing and Service Companies), underlined that CityLife is a real "plan to transform the city". Squinzi said that he was "Particularly proud and delighted about the new layout that this area will have".

He continued by saying, "As President of Confindustria, I believe that this building site is an extraordinary achievement, and is emblematic of how Italy should behave to get out of the crisis and to create new jobs".

Minimal Dynamic. The domestic spaces are linear and dry, using light colours and essential forms for the furniture, objects and accessory items.



Together they create a contemporary atmosphere, minimalist yet welcoming, that expresses refined taste and modern comfort. The large terraces, that seem to extend the external domestic areas, are used to add even more personality to the home.

The Interni proposals

SHOW APARTMENTS AT CITYLIFE

To make the new way of living offered by CityLife more real and perceivable, a show apartment from the Libeskind residences has been created in one of the pavilions at the former trade fair to transmit how it feels to actually live the spaces.

The apartment has been studied right down to the smallest detail, with three different proposals from the magazine *Interni* (with the help of Studio Ravaoli and Silenzi) and one by the magazine

AD. Mapei was also involved in creating the apartments, with their solutions to install the floor and wall coverings and various coatings products.

The internal wall coatings DURSILITE and SILANCOLOR MARMORINO, thanks to their colours and texture, have become an integral part of the interior designs proposed, and underline the balance between the container and its contents.

The Interni proposals

of domestic bliss and softness. The large terraces overlooking the city and park are used to amplify the internal spaces, and become additional rooms which can be used for socialising and entertaining, but also for just chilling out and contemplating.



Classic Contemporary. This style has been used to express a classic and elegant taste. The neutral and natural tones for the walls and the textile coverings offer a pleasant sensation



The AD proposals

The Grand Milan (first act).

The first interior design project proposed by AD evokes the atmosphere of the highly refined interiors of Milan from the time of the Milanese architects Piero Portaluppi, Guglielmo Ulrich, Gio Ponti and Franco Albini. The grey walls, floors in light, natural yet never invasive wood, and furnishings play on the emotions of a kind of decorative contamination. Top quality details, discreet and soft, sensorial lighting, a rich offer of domotics and a well thought out lay-out of works of art complete the scene.

Show Homes in the Residences

Two show apartments were also created in the residences currently under construction, one in the Zaha Hadid complex and the other in the Libeskind complex. Mapei is also present in these apartments with systems to install the flooring and waterproof substrates and, in particular, with wall coatings. Show apartments were created throughout 2012 and Mapei, with its approach to the project, has become a genuine partner for designers who wish to create the new spaces of tomorrow.



Bohémien Chic. This apartment combines freedom of expression alongside a much refined taste in the choice of objects. The target is a new category of consumers that demonstrate special attention to the themes of sustainability and ecology. It is at the cutting-edge of new homes as far as energy performance and lower consumption are concerned. It is an environment open to contamination from different eras and styles, in which works of art and antique ethnic furniture are featured alongside more contemporary accessories.

ISOZAKI TOWER

Low heat hydration and pressure on the formwork reduced to a minimum through new types of concrete

The new tower designed by the architects Arata Isozaki and Andrea Maffei in the new CityLife district, an important urban re-qualification site in the city of Milan (Italy), was inspired by the *Endless Column* sculpture by Constantin Brancusi, a metaphoric representation of a building stretching without limits in its search to reach the sky. When finished it will be slightly more than 200 m tall, one of the tallest buildings in Italy. The tower is designed to accommodate up to 3,800 people over a total floor space of 53,000 m². There will be 50 floors in the tower, 46 of which are for management and business use. The design of the tower comprises a reinforced concrete structure with steel-concrete modules reaching a total height of 223 m from the level of the foundations (207.2 m from road level). The foundations are made of a foundation slab on piles, where the piles act as elements to reduce the amount of settling.

Characteristics of the Ground

The ground where the building site is located is in the middle of a rainwater plain on which, due to the frozen layers melting in the Northern Italy area during the current geological era, a thick layer of river and glacial debris and sand has deposited.

The profile of the surface of the site where the tower is being constructed typifies the stratigraphic layout of the Milan area (from top to bottom):

- fine, granular material in a layer from 5 to 9 m thick;
- river deposits, comprising mainly sandy



pebbles and sand with a gravel matrix with no or very little silt, in a layer from 37 to 40 m thick;

- glacial and river deposits, interposed with layers of silty sand, around 10 m thick, and layers of sandy and clayey silt from 1.5 to 4.5 m thick.

Testing

To assess the interaction between the piles and the ground, two load tests were carried out on test piles 1 m in diameter and 33 m long, which were loaded until they reached their structural limits. The aim of the tests was to determine their load-yield curve and calculate their lateral strength and the resistance of the heads of the piles. The results confirmed the assumptions made during the design phase, and the main theories about the mechanical behaviour of a pile-ground complex.

Foundation Slab

The foundation slab is rectangular and measures 63.1 m by 27 m. It varies in thickness from 2.5 m to 3.5 m and, because of the mixed nature of the foundations, sits on both the underlying ground and on 62 drilled piles. The piles are 33.2 m long, 1.2 m to 1.5 m in diameter and are made of C32/40 XC1 S5 class concrete.

This type of foundations was chosen mainly because of the mechanical characteristics of the ground on which it has been installed and the size of the loads transmitted to the foundations by the tower, around 1430 MN (143,000 tons) in combined service use.

The designers believe that mixed foundations offer more advantages compared with traditional foundations – direct and indirect – and, at the same time, respect the safety and service assessment criteria according to current standards and the in-service performance requirements of the tower.

A structure was designed which, compared to the previous solution with direct foundations, required 60% less concrete and 45% less steel reinforcement for the foundation slab, at the same time guaranteeing 40% less settling compared with surface-based foundations. From a structural point of view, the most stressed areas of the foundation slab, located below the pillars of the tower, were reinforced on the inner side with four layers of steel reinforcement in each main direction. In the central area of the floor slab, where the design loads were lower, the typical steel reinforcement on the inner side comprised two



layers in each main direction.

The specified dimensions of the foundation slab and steel reinforcement were determined considering a maximum flexural load of around 31 MNm (3,100 tonnes-m) and around 42 MN of shear load (4,200 tonnes) in the most stressed section.

The reinforcement was then checked to verify that it respected all the design limits regarding maximum strain and cracking when in service, as well as the shrinkage of the concrete during the curing phase.

Checks

The foundation slab itself would easily pass all the geological and structural safety checks. However, to bring the structural stresses and settling of the foundation slab within acceptable limits, piles were included to reduce settling. The length of the piles in particular was carefully calculated in order to contain the amount of secondary consolidation as much as possible.

Above. View of the complex steel reinforcement in the foundation slab.

Below. View from above of the building site.

PROJECTS



BUILDING SITE MANAGEMENT

The client, CityLife S.p.A., awarded the contract for works management operations for the whole of the New Urban Hub project to ATI Ingegneria SPM - Studio In.Pro. The Building Site Manager and Works Manager are respectively Stefano Perotti and Claudio Guido. The Building Site Management team, with more than 30 years of experience operating in the public and private infrastructure sector, civil works and plant work, offer all their knowledge and experience gained from managing the largest building sites in Italy over the last decades with a staff of more than 150. Both companies have always aimed at excellence by uniting the professional activities of their teams with the most highly advanced applied technology available in the sector, and offer transparency, rapid interventions and efficiency to the entire production and control system, thanks also to the use of sophisticated proprietary software systems such as Piattaforma Projectmate 2.0, which has been used for projects with a value of more than 20 billion Euros.

Formwork

The foundation slab was cast in two steps, the first to a thickness of 2.5 m and the second for the remaining metre of thickness. The forms for the future lift shafts were also created within the foundation slab.

In order to cast the mono-block concrete slab, around 550 m² of panels with metal ribs were used, supported by high load-bearing shoring props.

Each prop was placed in position to counteract the pressure of the cast slab on an area of just 1.35 m² (every metre of frame had to withstand a pressure of 30 kN/m²). Around

Above.

Detail view of the concrete casting process.

Below.

The on-site laboratory.



the perimeter, lateral protective walkways were installed to make it easier for the workers to carry out their work. Around 4150 m³ of concrete were needed for the first phase, and a further 1050 m³ for the second phase.

Characteristics of the Cast Concrete

The foundation slab was so large that the concrete was considered a mass cast.

A cast is defined as a mass cast when its thickness does not allow the heat generated during the hydration phase of the cement to be dispersed constantly and progressively. Problems connected with this type of structure include the differences in temperature between the various areas of the cast and differences in temperature between the centre of the structure and the surrounding temperature. This problem potentially causes the formation of cracks.

Special care was required to design the mix used for the slab, along with all the necessary precautions to protect and cure the cast concrete in order to reduce potential hazards caused by the differences in temperature once the concrete had been cast.

Specifications of the Concrete

Apart from the exposure class, mechanical strength and all the other important characteristics of the concrete, the specifications, defined by the project designer, also included the curing phase and the protection of the

structure to limit the differences in temperature within the concrete:

- maximum temperature at the core of the cast concrete: $70\text{ }^{\circ}\text{C}$, defined as $T_{\text{max}} \leq T_{\text{fresh concrete}} + \Delta T_{\text{hydr}} \leq 70\text{ }^{\circ}\text{C}$
- $\Delta T_{\text{surface-core}} \leq 20\text{ }^{\circ}\text{C}$, with ΔT defined as the difference in temperature between the surface of the concrete and the core of the cast concrete.

The aim of the preliminary tests was to define:

- Heat of hydration of the cement
- Temperature development of the concrete mix
- The use of thermocouples embedded in the cast concrete to monitor the temperatures.

After discussions with the construction companies (Monvil Beton, IA, DL) and the building site managers, Mapei suggested the use of SCC (Self Compacting Concrete), so that the construction company could cast in a continuous way to form a monolithic, homogeneous slab.

Approval of the Mix

It took several months of careful testing to approve the mix. The solution proposed by the concrete supplier Monvil Beton and Mapei was based on the construction company's request to cast the concrete in a continuous way without vibrating, and without any construction joints in the foundation slab. When the mix was designed, a constant pouring of 35 hours was established using two Monvil Beton concrete mixing units. Because it was difficult to estimate the final increase in temperature of the concrete, in particular at the core, it was decided to contain the increase in temperature of the mix as much as possible.

This conclusion led them to opt for the use of mineral additives, to optimise the cement content and to check the mechanical strength of the concrete after 60 and also after 90 days of curing, rather than after 28 days, in compliance with the type A Checks according to the Italian Technical Standards, reaching the strength levels prescribed after 60 and/or 90 days.

Components of the Mix

The final concrete mix was obtained by using class 32.5 CEM III/A blast-furnace cement, aggregates from a quarry owned by the manufacturer of the concrete and limestone fillers containing MAPEPLAST PZ 300 powdered mineral additive with pozzolanic activity. The superplasticizer DYNAMON SR 914 was used in combination with VISCOSTAR



3K viscosity modifying admixture, to form a C32/40 LH XC2-XC4 SCC concrete with high self-compacting properties and controlled development of heat hydration.

The tests were carried out on site on concrete cubes protected with insulating panels to create semi-adiabatic conditions.

The tests were monitored using thermocouples, which demonstrated that the thermal characteristics of the mix complied with the specifications. The required tests also included the values of its tensile and flexural strength carried out by certified laboratories, as well as tests to determine the hydraulic shrinkage of the mix. In the next issues of *Realtà Mapei International* we will provide our readers with updated news on the works' progress at this building site.



Above. Concrete casting by night.

Below. From left on: Giorgio Villazzi, Monvil Beton's CEO; Adriana and Giorgio Squinzi, Mapei Group's Operational Marketing and Communication Director and CEO respectively; Claudio Artusi, CityLife's President and CEO.

TECHNICAL DATA

Isozaki Tower, Milan (Italy)

Period of Construction: 2012-in progress

Project: Arup Italia

Works Direction: Claudio Guido (ATI SPM-INPRO)

Contractors: S.G.F. - I.N.C. SpA (Milan, Italy) (consultancy: Franco Mola); sub-contractor: Impresa Bacchi (Milan)

Formworks Supplier: DOKA

Concrete Supplier: Monvil Beton (Cusano Milanino, Italy)

Mapei Co-ordinators: Pietro Lattarulo and Gianluca Bianchin, Mapei SpA (Italy)

MAPEI PRODUCTS

Admixtures for Concrete: Dynamon SR 914, Mapeplast PZ 300, Viscostar 3K.

For further information see the website www.mapei.com



A COMPANY AT THE TOP BUILDING INTO THE FUTURE

Cersaie 2012, the 30th edition of the International Exhibition of Ceramic Tile and Bathroom Furnishings, was held from the 25th to the 29th of September at the BolognaFiere Exhibition Centre. There were 75,563 unique visitors ('first admissions') and 106,846 'presences', calculated in accordance with international trade fair standards as the first return visit on days subsequent to the first admission.

The new electronic counting system that was introduced this year allowed for more accurate recording of the number of attendees taking part.

International visitors accounted for an

impressive 32% of the total, a new record for the show. Among them, visitors from 120 countries all over the world and important markets such as Russia, Germany and France, but also India, Brazil, Korea and Japan.

The exhibiting surface was fully booked in advance, which is also a very good sign. There were 909 exhibitors, 30% of which came from 32 foreign countries in the five continents. There were 474 ceramic manufacturers, 292 companies for bathroom furnishing (32.1%), as well as raw materials suppliers, manufacturers of installation equipment, publishing houses

and service companies. Among the side events it is worth mentioning the *Lectio Magistralis* given by Pritzker prize winner Eduardo Souto de Moura which was attended by an audience of more than 1,300 people.

Next year's Cersaie will be held in Bologna from 24 to 28 September 2013

A World of Products, a World of Values

"A Company at the Top Building into the Future". This is the slogan that identifies Mapei at Cersaie 2012, the very same year the Company is celebrating its 75th



birthday, and an open declaration of the objectives and values behind its international leadership in the field of adhesives and accessories for installing every type of floor and wall covering material.

Mapei's stand was located in outdoor area 45, covering more than 800 m² divided over two floors. The display included a complete range of products, with systems designed to meet all the needs of professional tile layers wherever they operate, be it in industrial, commercial or residential environments, with solutions for both small and large building sites alike.

Environmental Responsibility

For Mapei, environmental responsibility is a priority.

The Group has developed, and will carry on developing, the widest range of inno-

vative products which not only respect the most severe international regulations, but also help designers and contractors create innovative projects certified by LEED (Leadership in Energy and Environmental Design), in compliance with the U.S. Green Building Council.

Mapei is committed to research programmes targeted at developing solvent-free products with very low emission level of volatile organic compounds (VOC), all with the aim of improving the wellbeing of those who use the buildings where they are applied. These are the ECO products, developed since as far back as the 1990's for the North American market to comply with the CRI (Carpet and Rug Institute) and certified by GEV (Gemeinschaft Emissionskontrollierte Verlegewerkstoffe, Klebstoffe und Bauprodukte e.V.), two bodies which monitor the level of emis-

sions from flooring products.

Since October 2005, all Mapei's ECO products have EMICODE EC1 or EMICODE EC1 R certification (very low emission level of VOC), and since June 2010 the EMICODE EC1 PLUS or EMICODE EC1 R PLUS marks.

Also worthy of mention for certain Mapei products is the introduction of "Der Blaue Engel" certification, a German ecological body that assesses the emission level of volatile organic compounds and the content of cancerogeneous, teratogeneous and mutagenous substances, which must be absent in the products. And since 2012, all products sold by the Company in France for indoor use now carry the new certification "Emissions dans l'air intérieur", which certifies the quality of the air in buildings in relation to the emission of VOC.

A World of Adhesives

Over the years, Mapei has developed and perfected special systems to guarantee the highest reliability in all installation conditions: for internal and external use, on floors, façades, heated substrates, overlaying on existing tiles, bonding large or medium size ceramic tiles and so on.

And this year at Cersaie the family of lightweight products welcomed two new rapid, high-performance, lightweight adhesives to the fold, ideal for installing all types of ceramic tiles, thin porcelain tiles and stone slabs: the rapid versions of ULTRALITE S1 and ULTRALITE S2.

ULTRALITE S1 QUICK is a deformable, rapid-setting and hydrating adhesive with no vertical slip, very high yield, good trowelability and high wetting capacity for bonding ceramic tiles and thin porcelain tiles.

Apart from the same characteristics as its sister product, ULTRALITE S2 QUICK also has extended open time and higher deform-

New at Cersaie 2012

Two new Mapei adhesives for installing ceramics and thin porcelain tiles

ability. Conformity of ULTRALITE S1 QUICK is declared in ITT certificate n° 25120143/AG (TUM) issued by the Technische Universität München laboratory (Germany).

ULTRALITE S2 QUICK, beside the ULTRALITE S1 QUICK's properties, also features extended open time and higher deformability. This is the reason why, unlike other fast-setting cementitious adhesives, ULTRALITE S2 QUICK allows improved workability even during summertime and hot weather.

Conformity of ULTRALITE S2 QUICK is declared on APPLUS+ certificates n° 12/5363-1240-S and n° 12/5363-1241-S issued by LGAI Technological Center laboratory, Bellaterra (Spain).



THIN CERAMIC TILES

Below is an interview with Francesco Stronati, Director of Mapei Group's Technical Service Department, which was first published in the October issue of Tile Italia magazine

The most significant and marked differences between standard thickness ceramic tiles and thin tiles are the latter's lighter weight and the fact that they are easier to handle. For what type of use do you think "thin" tiles offer the best cover?

Thin ceramic tiles represent a significant technological step forward for the ceramics industry, because they allow ceramic to be applied in sectors that had been almost unexplored until recently, such as for furnishing or for laying over thermal insulation system on façades. The most suitable applications for this type of product are without a doubt the façades of buildings, overlaying old ceramic flooring, and whenever, for architectonic or functional reasons, a continuous ceramic surface is required, such as floors in showrooms, or for covering walls in underground or mainline railway stations.

On the subject of final uses and the application techniques currently available, which formats do you think should be developed in the future?

It's not easy to answer this question, because on the one hand their lower thickness makes the tiles lighter and easier to handle, while on the other hand they are fragile and can get broken when they are being moved around or used for flooring and are not installed correctly. In other words, how large, thin tiles perform once they have been installed depends a lot on the professionalism of the tile installer. The

Mapei, un mondo di adesivi

Mapei, a world of adhesives



largest size available is 1x3 m. Today, we may safely say that they can be used successfully for flooring if they are installed correctly, which means without voids on the back that could cause them to break if concentrated loads are applied on the flooring or if something drops on the surface.

What specific research work and products has Mapei developed for installing thin tiles?

Lightweight cementitious adhesives have been developed for the ULTRALITE range, and they guarantee there are no voids in the backs of the ceramic tiles so they are easier and safer to install.

Also, if we consider that the use of thermal insulation systems is becoming more and more widespread, Mapei has developed a system called the MAPETHERM TILE SYSTEM which makes it possible to install thin ceramic tiles safely on this type of substrate.

An in-depth testing campaign in compliance with the American standard ASTM C627 was recently carried out at Mapei R&D laboratories in collaboration with the most important Italian manufacturers of thin ceramic tiles. The aim was to investigate the critical points so that they could be overcome.

Could you tell us about a couple of significant building sites where a specific problem about the thickness of the tiles has been overcome?

The first and most well known was when thin porcelain tiles were installed using our products in the Ferrari showrooms in various important cities around the world.

The other was when ceramic was applied on the façade of a residential building in San Donato Milanese, near Milan (Italy). The ceramic tiles were installed using the MAPETHERM TILE SYSTEM over thermally insulated surfaces.

Grouts

Mapei coloured grouts for tile joints decorate the world of tiles. Mapei proposes a range of high-quality, highly-functional products rich in colour for grouting tile joints in internal and external surfaces. They are solvent-free, have very low emission level of VOC and are certified according to the most severe international standards. Ideal for all types and sizes of floor and wall covering materials: ceramic, terracotta, stone, glass mosaic and metal. Available in the cementitious, paste and epoxy mixes, they are suitable for all residential,

commercial and industrial environments. In the residential sector, the top product is the cementitious grout ULTRACOLOR PLUS, a mould-proof anti-efflorescence grout that prevents mould forming in damp environments, with characteristics which make it second to none.

Mapei has developed a special range of epoxy grouts for tile joints in industrial environments: the KERAPOXY line, particularly suitable for bonding and grouting tile joints in special environments where a high level of chemical resistance is required.

For Mapei, the novelty this year was the wider range of colours available for KERAPOXY CQ, the most versatile grout around, which has gone from 6 to 21 colours. Its special properties include

ease of application, high cleanability, and during application, hygiene and extremely high strength.

KERAPOXY CQ is recommended for ceramic floor and wall coverings in commercial and domestic environments, as well as in industrial environments where high resistance to chemicals is required (industrial kitchens, abattoirs, dairies, etc.).

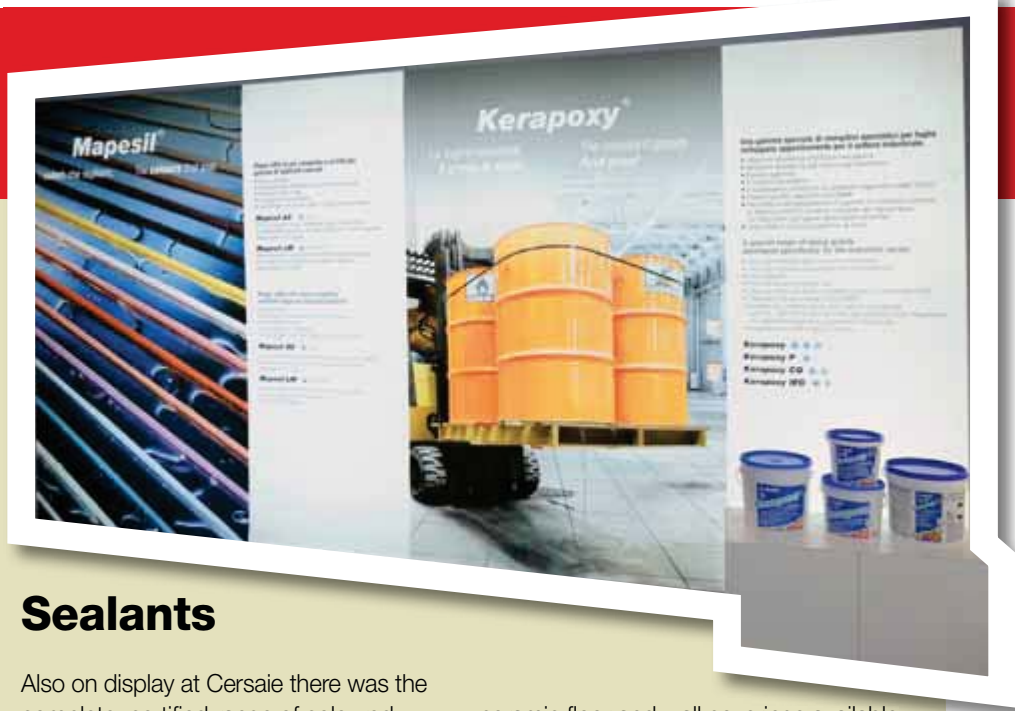
Along with KERAPOXY CQ in this line

New at Cersaie 2012

KERAPOXY CQ, the highly versatile grout for joints, has gone from 6 to 21 colours



are KERAPXY IEG and KERAPOXY P, all products with excellent resistance to acids and oils, as well as excellent cleanability. The KERAPOXY range allows you to create ceramic surfaces in compliance with the HACCP system, and it also has all the requirements for EC 852/2004 Regulation regarding hygiene in foodstuffs. For the domestic and commercial sectors, at the fore there was KERAPOXY DESIGN, the two-component, anti-acid, decorative epoxy grout for tile joints available in a vast array of colours, ideal for glass mosaic, which may also be used as adhesive. This decorative epoxy grout may be mixed with MAPEGLITTER metal-effect coloured glitter, particularly appreciated by designers because it helps create stunning effects.



Sealants

Also on display at Cersaie there was the complete, certified range of coloured Mapei sealants, ideal for creating finishes and details which exalt the quality of any work carried out. Amongst the products showcased there were MAPESIL AC pure acetic silicone sealant, ideal for sealing joints in

ceramic floor and wall coverings available in 27 different colours, and MAPESIL LM neutral silicone sealant for sealing expansion joints in façades and marble, granite and stone floors, with no risk of unsightly stains on surfaces, available in 9 different colours.



Waterproofing

The entire range of products from the MAPELASTIC family was on display at Cersaie as the most durable systems available against damage caused by the infiltration of water. MAPELASTIC, MAPELASTIC SMART and MAPELASTIC AQUADEFENSE represent a valid solution for the damages caused by damp, by forming a real barrier to water. Apart from the

cementitious waterproofing products (MAPELASTIC and MAPELASTIC SMART), which for more than twenty years have been successfully tested on the market, special attention was paid to MAPELASTIC AQUADEFENSE ready-to-use, rapid-drying, liquid flexible membrane, a practical product ideal for creating a quick waterproof barrier on balconies and in bathrooms, showers, saunas and damp environments in general, before installing ceramics,

stone or mosaic. Created for both small and large building sites, MAPELASTIC AQUADEFENSE is the simplest, quickest waterproofing system for internal and external use.

Apart from the mortars, there were the accessory items from DRAIN system, the kit used to create floor drains with a vertical or lateral coupling, ideal for draining off water from terraces, balconies, laundry rooms, etc, were also highlighted.



Wall Coatings

Mapei wall coatings stand out from those of the other manufacturers on the market thanks to their high technical quality and high performance. In fact, the QUARZOLITE, SILANCOLOR, SILEXCOLOR, COLORITE, ELASTOCOLOR, and DURSILITE ranges offer excellent covering, easy application, good filling capacity, water-repellence, elasticity, resistance to UV rays, good transpiration and good cleanability. Amongst the products highlighted there were SILANCOLOR AC PAINT acrylic-siloxane water-repellent paint with high resistance to UV rays for internal and external use and SILANCOLOR AC TONACHINO acrylic-siloxane, water-repellent thick-layered coating with good filling capacity for internal and external use, certified according to EN 15824 for thick-layered plastic coatings, which sets the minimum obligatory standards to guarantee high performance.

Installing Parquet

Through the network of ceramic distributors, parquet has also become more widely offered. And so, at Cersaie, Mapei presented solutions for professional installation of pre-finished parquet with the ULTRABOND RANGE. Amongst the adhesives, showcase products included ULTRABOND ECO S945 1K, ULTRABOND S965 1K and ULTRABOND ECO S955 1K, one-component adhesives certified EC 1R PLUS made from silylated polymers, ready-to-use, easy to apply, easy to clean from surfaces and hands, ideal for all types of parquet on any kind of substrate, including heated substrates. As far as varnishes are concerned, let's not forget the ULTRACOAT RANGE, for long-lasting, durable protection of wood.



Soundproofing

New projects in the building world are requiring more frequently the application of insulating solutions which guarantee very high performance levels, yet at the same time have a particular eye on their aesthetic value.

Mapei, which has always been a frontrunner with innovative, cutting-edge solutions, has developed MAPETHERM TILE SYSTEM, the thermal insulation system which allows ceramic covering materials to be applied, even large-size thin ceramic tiles. The company's technical expertise and knowhow in structural strengthening has led to the development of an installation

and covering system for EPS and XPS panels, characterised by high mechanical strength and low modulus of elasticity, which has the capacity to bear the weight and stresses generated by the covering material and by thermal expansion.

Mapei has developed MAPESILENT SYSTEM and MAPESONIC CR, excellent soundproofing systems for ceramic, natural stone and parquet floors to reduce the noise of footsteps, easy to design and install.

The truly new product which completes the MAPESILENT SYSTEM range and displayed at Cersaie 2012 is MAPESILENT UNDERWALL, an elasto-plastomeric soundproofing strip made from bitumen and special

polymers sandwiched to a layer of resilient polyester fibre coated with blue, non-woven polypropylene fabric, laid underneath perimeter and partition walls. MAPESILENT UNDERWALL meets the requirements of rigid materials such as ceramic, and can be applied in structures such as hospitals and hotels where the primary aim is to reduce the noise of footsteps.

Mapesilent® & Mapesonic® CR

Il **silenzio**, per farti sentire
il vero **benessere**.

*The joy of **silence**, experience
the true meaning of **wellbeing**.*



Soluzioni per l'isolamento acustico da calpestio.

Da Mapei **Mapesilent System** e **Mapesonic CR**, gli eccellenti **sistemi di isolamento acustico** per pavimentazioni in ceramica, pietre naturali e parquet, **contro il rumore da calpestio**, facili da progettare e applicare.

Solutions to reduce the noise of footsteps.

From Mapei **Mapesilent System** and **Mapesonic CR**, the easy to design and lay, **excellent soundproofing systems** for ceramic, natural stone and wood floors to reduce the noise of footsteps.

Mapesonic CR **Mapesonic Strip**

Mapesilent Band R
Mapesilent Panel
Mapesilent Roll
Mapesilent Tape
Mapesilent Underwall

Side Shows and After-fair Events

Tiling City

Since ceramic tiles only acquire their true value once they have been installed, Cersaie 2012 showed particular interest in the installation of ceramic floor and wall coverings: an activity that is under continuous technical and professional development, and since time immemorial it is a determining factor in the final result of a piece of architecture.

This is the reason behind the creation of "Tiling City", a large area dedicated entirely to the installation of ceramic tiles, in which various events were held.

Mapei was an enthusiastic supporter of this initiative and, in the "New Materials and New Installation Techniques" area, various demonstrations were held each day, with Mapei products the stars of the show, used for:

- waterproofing, building expansion joints and installing floor tiles and grouting tile joints;
- installing large-size ceramic tiles and overlaying with large joints;
- installation of thermal insulation system and large-size thin tiles.

Using the most advanced technical references and standards, numerous visitors had the chance to see the most recent installation techniques for themselves.



Above. President of Confindustria Ceramica (the Association of Italian Ceramic Tiles and Refractory Materials Manufacturers) Franco Manfredini (on the left) took part in the Tiling City Event.



Above. Water and stone were the main features of Stonescape, a work by the architect Kengo Kuma.

Bologna Water Design

Mapei was also the star of a show after the trade fair by collaborating in the creation of Bologna Water Design 2012, an initiative dedicated to water, which brightened up the ancient city centre in Bologna while Cersaie was being held. Art galleries, historical buildings, gardens and architecture and design studios hosted fascinating interpretations on the theme of water, a fundamental element in the history of the city of Bologna, with exhibitions, installations and innovative products.

Mapei supplied products for "Stonescape", a piece of work by the architect Kengo Kuma, staged in a room in the former Bastardini Hospital which told the story of two opposing elements from nature, water and stone. The installation, supported also by "Il Casone", a manufacturer of Pietra Serena stone, featured two Mapei products: TOPCEM PRONTO and MAPELASTIC.

Polyglass, a subsidiary of the Mapei Group, also took part at Bologna Water Design as technical partner to waterproof one of the rooms in the former children's home. The project, by the architect Mario Bellini, consisted in the creation of a work which conjugated water and light. An actual swimming pool was built on the floor of the room, in which innovative lighting systems had been installed. The swimming pool surface was treated with MAPELAN TB synthetic roofing waterproofing membrane which created a special "mirror" effect to the amazement of the visitors.

Made in Italy on the Upswing

"We are here today to celebrate 30 years of Cersaie, 30 years of an extraordinary story in which the Italian ceramics sector has been confirmed as the world leader in terms of quality, and which testifies the importance of the role of trade fairs for the country's industrial policy". With these words the President of Confindustria (the Confederation of the Italian Manufacturing and Service Companies) Giorgio Squinzi inaugurated the 30th edition of Cersaie as part of the convention "Made in Italy on the Upswing". The Italian Minister for Public Administration and Simplification Filippo Patroni Griffi and the President of Confindustria Ceramica (the Association of Italian Ceramic Tiles and Refractory Materials Manufacturers) Franco Manfredini also took part at the event. The discussion, in which Irene Tinagli, Professor of Company Economics from the Carlos III University of Madrid also took part, was moderated by the director of Class CNBC Italia television channel, Andrea Cabrini. The convention was the ideal occasion to comment on the economic and political situation in Italy. A context that Giorgio Squinzi analysed by stressing how "Studies by Confindu-

stria have confirmed that, for this year, Italian GDP will be -2.4%, while in 2013 it will slow down by -0.5%, with just a few positive signs only in the second half of the year".

Squinzi also spoke for a while on the capacity of mobilisation that had characterised local companies in the wake of the earthquake in the Emilia Romagna region.

Marco Squinzi at Confindustria Ceramica

The Board of Directors of Confindustria Ceramica approved the proposal by the President, Franco Manfredini, to invite Marco Squinzi, Mapei Group's Research & Development Director, to take part in the meetings of the Confindustria Ceramica Board of Directors to offer continuity to the work of the members of the Boards.

After taking his place, Marco Squinzi declared, "It gives me great pleasure to accept the invitation from President Manfredini because I firmly believe that a tight bond between the world of ceramic tiles and the installation products sector is indispensable, and that it needs to be constantly updated to keep in step with the evolution of ceramics".

The Italian ceramics industry

183

Companies

29,640

Direct employees in Italy and abroad

521,4 MILLION M²

Produced annually in Italy and overseas in 2011

5761 MILLION EUROS

Overall turnover in 2011

These are the figurers that characterise the leadership of the Italian ceramic tiles industry.

Source: Confindustria Ceramica. These figures are based on 2011 data.





Above. The Sassuolo Calcio team during their visit to the Mapei Stand at Cersaie. The photo shows Giorgio Squinzi with the team manager Eusebio Di Francesco, the President Carlo Rossi, part of the management board and the full team of players.

SASSUOLO: GOALS SCORED IN THE TRADE FAIR

The Sassuolo Football Team at Cersaie. More victories, fewer injuries and one secret: Mapei Sport Centre

It was a Sassuolo team in top form that visited the Mapei stand during Cersaie. A team that, while we write, has won eight games out of nine, and is dominating the Serie B. Amongst the group of visitors at Bologna were the President Carlo Rossi, team manager Eusebio di Francesco, part of the management board and the full team of players, all together to meet Giorgio Squinzi at the trade fair.

The team this year is playing with a 4-3-3 formation ("We've been playing with this module for eight years", the sports director Nereo Bonato said). It has a really strong attack, but also a defensive formation if we just consider that it has only had three goals against in nine games, and all of them after the 88th minute.

Victories are created in an anonymous building in the province of Varese, Nor-

thern Italy, where the Mapei Sport Centre is located: from the Giro-Tour double by Ivan Basso in 2010 and Cadel Evans in 2011, to the first place held by the football teams Sassuolo and Monaco in their respective championships in the B leagues. As for the teams managed by Di Francesco dominating the Serie B in Italy, and by Claudio Ranieri at the top of the table in the Ligue 2 in France, Mapei Sport Centre is behind the teams 100% during their preparation: "You must never lower your guard", say the General Coordinator of the Centre Claudio Pecci and the Director of Human Performance Laboratory Ermanno Rampinini, "You can achieve excellent performance levels using fair means".

"Trainers are open and collaborative", added Pecci and Rampinini. "The quality of

the players is fundamental, but our work can also have quite an impact. If we notice that a certain type of play tends to tire the wingers, for example, then we point it out so that they will have a different workload. And this method pays: FIFA statistics show that there are 10 injuries for every 1000 hours on the pitch. For our athletes there are only 4 or 5: the problems have not been eliminated, but there are certainly fewer.

Italian Serie B championship is a long race in 42 stages, and there will be a long pause from the 31st of December to the 25th of January. "In this way we will be able to carry out a real "overhaul" of the preparation, and this is very important. Football is about running quickly, our goal is to make it run well. Without anybody getting hurt" concluded Pecci and Rampinini.

VERONA, 26 - 29 SEPTEMBER 2012



MAPESTONE system, developed by Mapei for installing porphyry and rough-cut stones, created a lot of interest amongst the visitors to the trade fair.

MARMOMACC 2012

Signs of recovery and opportunities for innovative companies

Faint signs of recovery were felt during the four-day exhibition at the 47th edition of Marmomacc 2012, held in Verona from the 26th to the 29th of September, confirming once again to be the world's import-export hub for the stone materials sector (marble, granite, stone, machinery and stone processing technology).

There was no lack of encouraging data, especially regarding exports of Italian rough, semi-finished and finished stone for the first three months of 2012: +4.4% in quantity (1.5 million tonnes) and +7.4% in value (853 million Euros) compared with the same period last year. The results for Marmomacc are also encouraging: more than 1,450 exhibitors, with 60% from abroad from 57 different countries, were present at the exhibition; there were official delegations from 42 different countries (+23% compared with 2011), more than 56,000 operators and buyers, of which 52% from abroad from 140 different countries, and the number of web contacts increased by 11%.

The next edition of Marmomacc will be held in Verona from the 25th to the 28th of September 2013.

Mapei: a Company at the Top Building into the Future

So Marmomacc 2012 provided the opportunity for Mapei to make the most of this climate of renewed "ferment". Mapei's stand highlighted the advantages of their systems for installing marble and stone. Large panels were used to illustrate projects from all over the world using Mapei systems, along with progress slabs showing how to use the products in the spotlight, such as ELASTORAPID and KERAFLEX MAXI S1 adhesives, systems for installing on heated screeds, ULTRACOLOR PLUS anti-efflorescence grout for joints, MAPESIL LM silicone sealant and MAPELASTIC cementitious waterproofing membrane.

Mapestone: the Real Star of the Show

Under the spotlight at Marmomacc 2012 was the innovative MAPESTONE system, used to install stone floors rapidly and simply and guarantee a level of performance much higher than traditional systems. The system is resistant to freeze-thaw cycles, de-icing salts and stress from heavy traffic (for further details see the article on the following pages).

Overseas Architects on Tour

As on previous editions, a seminar on stone materials and design was organised by Veronafiere in collaboration with AIA (the American Institute of Architects), which was held in Verona and Milan during the trade fair. The event, entitled “Designing with Natural Stone 2012: A Continuing Education Program on Natural Stone Materials, From Quarry to Installation” was followed by a group of architects and engineers from the Far East, South Africa, Great Britain, Canada and the United States invited by Mapei Corporation, the US subsidiary of Mapei Group.

The seminar included in-depth sessions on the theoretical aspects of technology used in the stone industry, visits to quarries where stone is extracted and companies that process and finish stone, and to showrooms where stone is on display.

On the 5th and 6th of October, the group was transferred to Milan for a visit to the Mapei manufacturing plant in Robbiano di Mediglia and the Group's Research and Development Centre in Milan.

This was followed by a series of presentations on the systems and technology used to install stone and the international certification systems used in this sector. One of the presentations in particular was by Michael Granatowski, Mapei Corp.'s USA National Manager for Architectural and Commercial Projects, who illustrated the correct use of mortars applied in medium thickness layers to install stone floors, and the changes regarding the passage from the ANSI certification system to the ISO system.



On the Mapei stand, large panels illustrated projects from all over the world where Mapei systems have been used and progress slabs showed their application.



A group of overseas architects followed a seminar in Verona and Milan about the technology used for extracting, processing and installing stone. Together with Mapei technicians, the group visited the Mapei R&D Centre and manufacturing plant in Robbiano di Mediglia (Italy).



The “Carola Dome” was constructed during the trade fair by manually laying, “stone by stone”, blocks of Viterbese tuff with MALTA BASTARDA (lime-cement mortar) produced by VAGA, a subsidiary of the Mapei Group.

Amongst the “Dome Houses”

The Mapei Group, together with their subsidiary VAGA (a company specialised in the production of silica sands and gravel), was also Technical Sponsor of the experimental building site “Dome Houses” held as part of the “Inside Marmomacc - Architecture and Design” exhibition.

The project was carried out by the University of Syracuse Faculty of Architecture working in partnership with the Building Schools from Verona and Syracuse. This project was inspired by the construction work of Fabrizio Carola, a Neapolitan architect who has been working for decades on experimental, low-tech architecture in countries in the Sahel region of Central Africa. A four metre diameter dome was constructed during the trade fair to offer a concrete demonstration of how stone may be employed in situations where there are limited resources. The structure did not need any special scaffolding or complex bracing, and was entrusted basically to the manual laying, “stone by stone”, of blocks of Viterbese tuff with MALTA BASTARDA (lime-cement mortar), produced by VAGA.

PROBLEM-FREE ARCHITECTONIC STONE FLOORS

A Mapei system for laying urban porphyry and interlocking stone surfaces

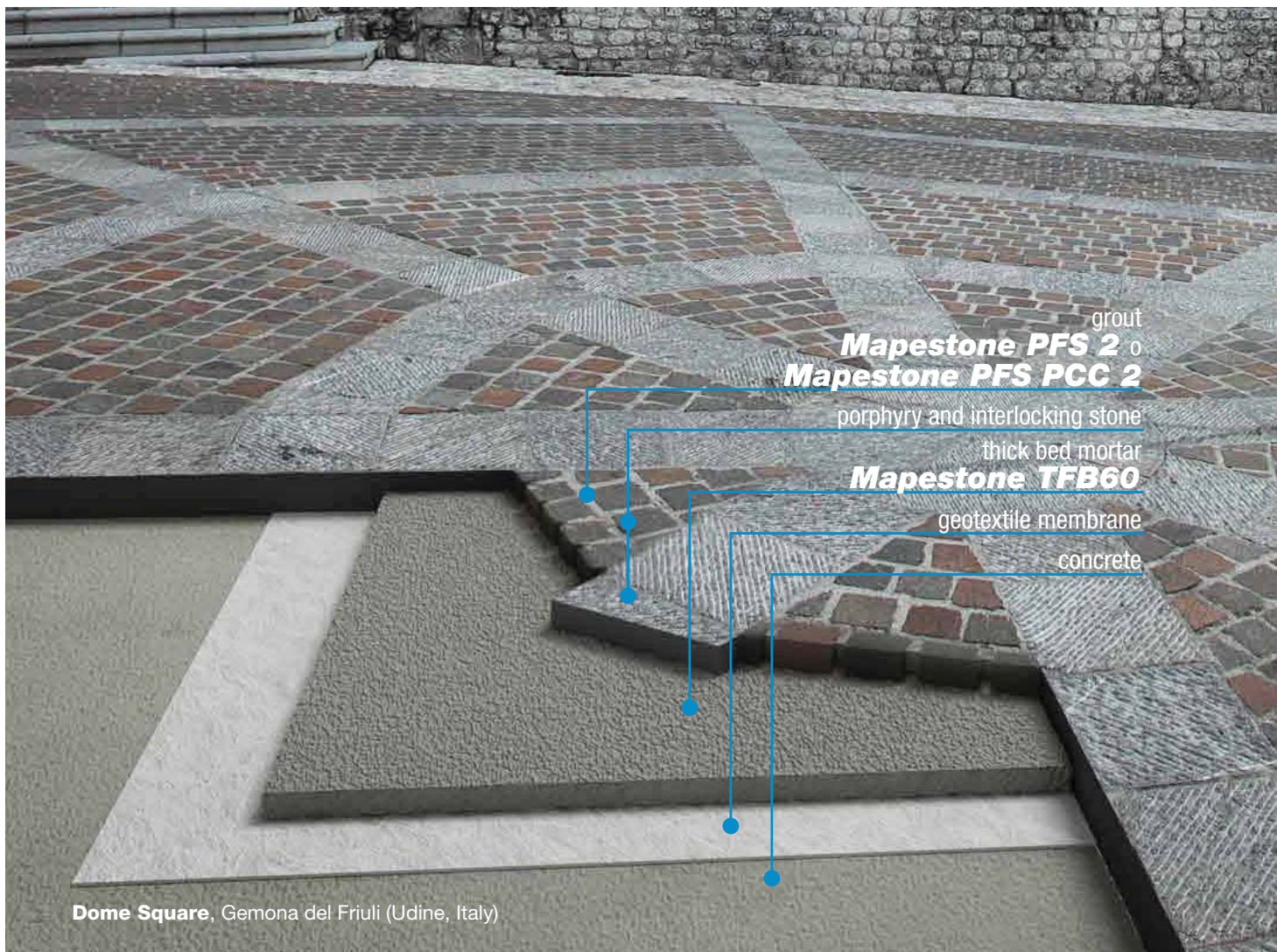
Road surfaces wear out or are damaged for a number of reasons, with the most common being environmental factors and loads from traffic. Cracks and holes form in the road surface and are real hazards for drivers, cyclists and pedestrians. Poor quality maintenance work, neglect and damages in the road increase the risks for road users, and are often the cause of accidents and claims for damages from motorists or pedestrians to local town councils.

The functionality and maintenance car-

ried out on the surface of roads are fundamental to guarantee a smoother, safer ride for drivers, motorcyclists and cyclists, and to reduce the chance of accidents.

From an aesthetical point of view, architectural stone floors selected for use on roads, in town squares and for pedestrian areas in historical town centres are the most attractive choice and fit in perfectly with the surrounding environment. However, this kind of floorings regularly need maintenance and cause city councils several management problems.

Porphyry cubes and stones slabs, whatever their shape or type, are traditionally laid in place on beds of sand or sand and cement and continuously move out of place. This problem is the result of a number of factors, such as the mechanical stresses induced by the passage of cars and heavy-goods vehicles, which cause subsidence of substrates if they



Dome Square, Gemona del Friuli (Udine, Italy)

are uneven or too weak, especially those made from a sand/cement mixture with low compressive strength. Other causes include de-icing salts which break up the surface of the joints, poor workmanship when laying the stones and freeze-thaw cycles which freeze the water which has penetrated into the paved surface, due to the porous nature of the surface and the action of the de-icing salts. The frozen water increases in volume and breaks up the paved surface.

Lowering of the level in the joints and the laying bed breaking up are a consequence of these phenomena, while movement of the stones is the result.

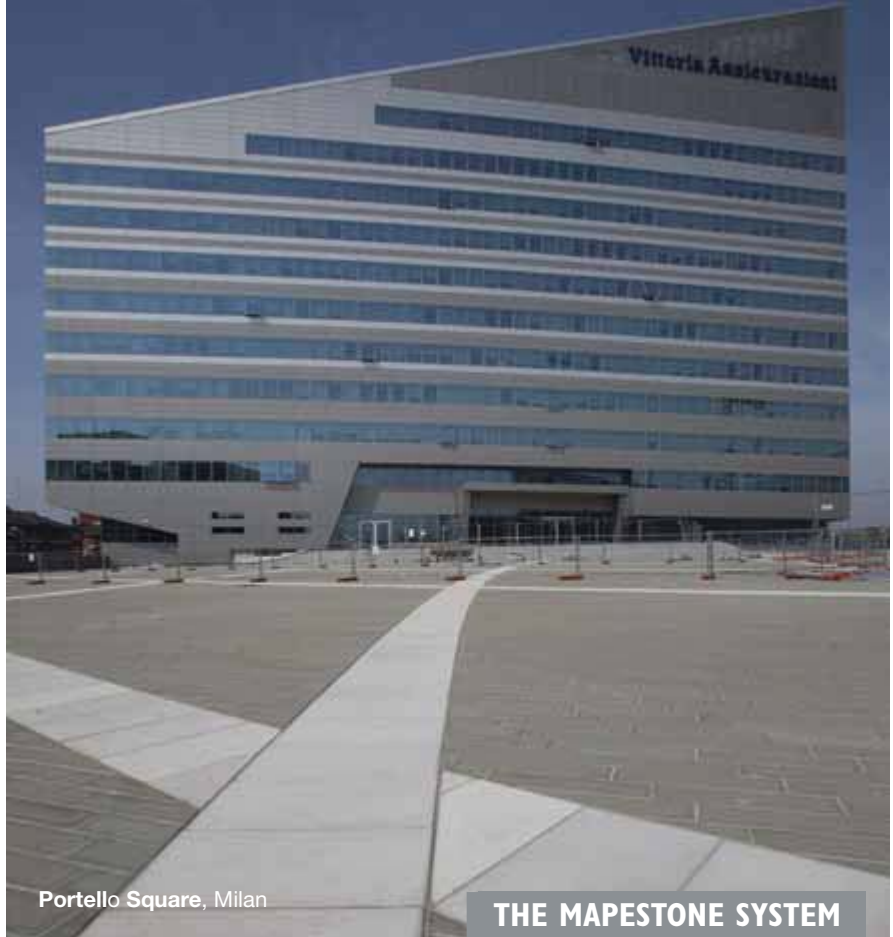
A "mobile" cube of porphyry is dangerous for cars, pedestrians and cyclists.

Maintenance on architectural stone floors laid on sand/cement beds must be carried out every six months to guarantee stability and safety, but this means road works which block or interfere with the flow of traffic and high costs for the local community.

Mapei's Solution

Mapei developed the MAPESTONE system to lay architectural stone floorings in urban contexts.

The system include MAPESTONE TFB 60 pre-blended powdered mortar for screeds, MAPESTONE PFS PCC 2 pre-blended polymer-modified mortar and MAPESTONE PFS 2 pre-blended mortar. These products meet the requirements for exposure class XF4 enclosed in UNI EN 206-1 standard, which covers environmental exposure classes defining the type of deterioration of concrete based on structure-environment interaction and



Portello Square, Milan

specifically indicates class XF4 for this type of application. Stone road surfaces built with this system are resistant to freeze-thaw cycles, de-icing salts and rain. The mortar used does not break up and remains stable and intact for years. The road surface treated with the MAPESTONE SYSTEM has the capacity to absorb the mechanical stresses induced by the passage of traffic, including heavy-goods vehicles. Dangerous hollows do not form in the covering of the road, which would indicate that the structure is giving way, and no interventions are required later on to restore the surface to the correct level. It is also quick to apply, so the amount of time traffic affected or interrupted by road-works is reduced.

THE MAPESTONE SYSTEM

- MAPESTONE TFB 60 is a pre-blended mortar made from special binders, selected aggregates in a granulometric curve and specific additives. It is especially suitable for making screeds which are resistant to freezing weather and de-icing salts (exposure classes XF3 and XF4) and are very strong (C50/60).
- MAPESTONE PFS PCC 2 e MAPESTONE PFS 2 are pre-blended, high-strength mortars for grouting architectural stone floorings (in the case of MAPESTONE PFS PCC 2, the use of polymers reduces the modulus of elasticity of the product when it has hardened).

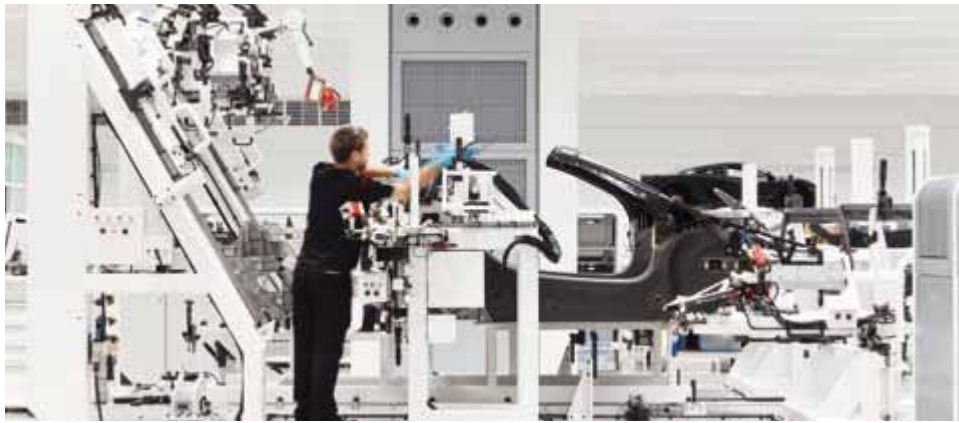
Mapestone is the solution for this problem

Cobblestones, a heel's worst enemy

■ *What dark design is hidden behind that stubborn desire to constantly pave the streets of Rome with cobblestones that last just a day or two before "falling apart", with gaps of five or ten centimetres between them, transforming them into death traps for heels and ankles, not to mention a mortal danger for scooters? A sadistic design? Or is there something else underfoot?*

taken from the 24th of September 2012 edition of the Italian newspaper *Il Giornale*





MCLAREN PRODUCTION CENTRE

An avant-garde structure based on efficiency and sustainability

The brand new McLaren Production Centre, designed by Norman Foster for the British car company based in Woking, to the south-east of London (UK), was inaugurated in November 2011. The building, which was visited by the British Prime Minister David Cameron, accompanied for the occasion by Ron Dennis, McLaren's Executive Chairman, and the drivers of the McLaren F1 team Lewis Hamilton and Jenson Button, has been built close to the company's Technology Centre, also designed by the renowned English architect. The new Centre has been built into the surrounding hills to blend in perfectly with the typical English landscape, and will be the base for production of all future McLaren cars, including the famous MP4-12C sports series. The lower floor is completely underground, while the first floor is surrounded by thick woodland and vegetation which, apart from guaranteeing a cool, shaded environment in the summer, helps camouflage the building with its greenery. Built in just twelve months, the design represents "a further step forward in the evolution of industrial buildings in terms of relationship with the personnel, the working conditions and the flexibility of the spaces and services", were the words of Norman Foster. Ron Dennis said how the most important indication given to Foster's team was that the building had to represent the McLaren's way of thinking, as well as their way of making cars. And in fact a client doesn't see his car being built, he sees it being born. This is why it has been inserted in an environment that is more like a clinic than a workshop.



The Structure of the New Centre

The McLaren Production Centre is the final part of an industrial village which includes an underground visitors' centre, a futuristic wind tunnel and the already famous Technology Centre (which we covered in issue n.17 of this magazine), inaugurated in 2004. The main body of the new building is rectangular in shape, and covers an area of 32,000 m². Inside the building are the production and assembly lines for the McLaren Gran Turismo series used for normal road use.

The new assembly line is connected to the Technology Centre via an underground pedestrian tunnel adorned with interactive displays. Both buildings share the same common architectural language, from their details to their covering materials. The design of the new structure was based on efficiency and sustainability. The roof collects rainwater and

can be fitted with integrated photovoltaic panels, while a system of natural ventilation helps make sure the air inside is changed regularly. Solar panels are also used to supply clean energy for the production processes. A large garden has been created around the structure, planted with trees to help it blend into the landscape.

The earth removed to construct the lower floor was used to create green areas which, located strategically around the structure, help guarantee good thermal insulation. The linear forms of the structure follow the flow of the production lines, and show off the technology of the plant and the system of networks through which the components are distributed, assembled, painted, tested and finished off. Plant systems and storage areas are located underground, while a raised floor has an area overlooking the entire production

Below. The McLaren complex in Woking (UK) includes a Production Centre and a Technology Centre, both designed by the renowned British architect Norman Foster.



PROJECTS



On these pages.
Speed and cleanability were essential in the Production Centre, which is why porcelain tiles were installed, using GRAINRAPID. Joints were grouted with ULTRACOLOR PLUS.



area. The upper part of the structure and the roof are in steel, while the underground part has been made from blocks of cement sitting on concrete foundations. The shell of the building is covered with insulating sandwich elements with a double barrier of panels to create a gap in which all the wiring and piping is housed.

Mapei Technology for McLaren

Production areas are normally considered simple industrial units. For the Production Centre, however, McLaren wanted finished surfaces with a high level of quality and visual impact, representative in a certain way of the sports cars constructed there. As with the Technology Centre, the company wanted to re-propose a winning model from Formula 1 for the Production Centre, a model based on "teamwork": a close bond between designers and future users, where the quest for perfect synergy between the various actors in the project is the key to achieving the best results. Problems have been solved by exploiting the strong points of McLaren and their work partners: innovation, speed and attention to detail.

And just like the Technology Centre, on this occasion too Mapei supplied products to install the flooring for the new industrial complex. The company Avantgarde Tiling installed around 16,000 m² of ceramic tiles and stone slabs on walls and floors in the Centre. Various Mapei products were used to prepare the substrates, to bond the tiles and slabs and grout the joints. Apart from the actual production areas, Mapei also supplied materials for the underground tunnel, the service areas and the VIP area.

The screeds were made from TOPCEM PRONTO pre-blended mortar and LATEX-PLAN TRADE two-component levelling compound, produced and distributed in Great Britain by Mapei UK. In some areas MAPE-TEX SEL anti-fracture membrane was bonded into the substrate with KERAQUICK cementitious adhesive mixed with LATEX PLUS for increased elasticity.

Where a vapour barrier was required for cementitious substrates with residual moisture, MAPEPROOF ESM epoxy resin was used, another product manufactured and distributed in Great Britain by Mapei UK.

In an area such as the McLaren Production Centre, where cleanability and easy maintenance are essential, porcelain tile is the perfect choice for covering surfaces. In this case, the installation company used GRANIRAPID two-component, rapid-setting and hydration, deformable adhesive.

In certain areas, where tiles had to be bonded to metal, KERALASTIC adhesive was used. In the VIP area of the Centre, stone slabs were installed using ELASTORAPID adhesive.

Once they had been bonded in place, the joints were grouted with ULTRACOLOR PLUS grout with Bio-Block® technology which reduces the formation of the microorganisms which cause mould.

Attention to detail was the *leitmotiv* of the design for the entire McLaren Production Centre. The combination of high quality building products and the professionalism of the installation company meant that durable, ceramic and stone surfaces with a high visual impact have been created, and which were more than capable of meeting the expectations of the client.



IN THE SPOTLIGHT

GRANIRAPID

It is a high performance, deformable, fast setting and hydration, two-component cementitious adhesive for ceramic tiles and stone material. It is particularly suitable for the installation of stone material that is moderately unstable to moisture and requires a rapid drying of the adhesive. It is suitable for bonding floors subject to heavy traffic. Because of its extraordinary bonding and fast-setting characteristics, GRANIRAPID is particularly suitable for rapid re-tiling jobs and flooring that has to be in service within very short time (supermarkets, industries, hospitals, airports, swimming pools, etc.). GRANIRAPID is classified as **C2FS1** according to European standard **EN 12004** and has been awarded the **CE** mark in compliance with Annex ZA, standard **EN 12004**. It can contribute up to **5 points** to obtain the **LEED** (Leadership in Energy and Environmental Design) certification.



PROJECTS

IN THE SPOTLIGHT

ULTRACOLOR PLUS

It is a cementitious mortar **(C)** for grouting **(G)** joints, improved **(2)**, with reduced water absorption **(W)** and high resistance to abrasion **(A)**, class **CG2WA** according to **EN 13888** standard. It is ideal for internal and external grouting of joints in floors and walls in all types of ceramic, terracotta, stone material, and glass and marble mosaic. It features the BioBlock® technology which blocks the formation of mould and the DropEffect® which reduces the absorption of surface water.

Joints grouted with **ULTRACOLOR PLUS** feature water-repellence and DropEffect®; uniform colour and resistance to ultra-violet rays and atmospheric agents; smooth, compact finished surface, with low water absorbency; optimum resistance to abrasion, compression and flexural strength and optimum durability.

It can contribute to obtain **3 points** for the **LEED** (Leadership in Energy and environmental Design) certification.





Above. The MP4-12C is one of the sports cars produced in the McLaren Centre.

What's new at the home of McLaren?

The current version of the MP4-12C and the cabriolet version are produced in the new McLaren Centre. The future McLaren MP4-27C ultra-car should be making its debut in 2013. It will be equipped with an ultra-powerful 750-800 CV engine, making it the rightful heir to the unforgettable 1992 McLaren, one of the most powerful cars of all time.

TECHNICAL DATA

McLaren Production Centre, Woking (Great Britain)

Period of Construction: 2009- 2011

Project: Fosters+Partners

Year of the Intervention: 2011

Intervention by Mapei: supplying products for preparation of floor substrates and for laying ceramic tiles and stone materials in the production areas, in the underground tunnel, in the service

and VIP areas

Client: McLaren

Main Contractor: Sir Robert McAlpine

Laying Company: Avantgarde Tiling, London

Laid Materials: porcelain tiles, marble and composite stone material

Mapei Co-ordinator: Gordon Smith, Mapei UK

MAPEI PRODUCTS

Preparing the substrates: Eporip, Latexplan Trade (N.B. This product is manufactured and distributed in Great Britain by Mapei UK), Mapeproof ESM (N.B. This product is manufactured and distributed in Great Britain by Mapei UK), Mapetex Sel, Topcem Pronto, Keraquick+Latex Plus

Laying porcelain tiles: Granirapid, Keraflex, Keralastic

Laying stone materials: Elastorapid

Grouting the joints: Ultracolor Plus

For further information see the websites www.mapei.com and www.mapei.co.uk.



CORE SHOPPING CENTER IN CALGARY

Limestone and ceramics bring new light to a Canadian mall

There's a lot to be said for experience and expertise when an installer takes on a challenge like the four-storey Core Shopping Center in the heart of downtown Calgary (Canada). Thirty years ago the Core started life as three separate shopping centers: the Sears Centre, the Calgary Eaton Centre and Toronto Dominion Square, which also housed the Devonian Gardens botanical park.

In 2008 20 VIC Management Inc. hired MMC Architects to draw up plans for a massive renovation of the properties.

MMC's design called for cutting back existing store fronts by 6-9 m and exposing all four storeys of shops to sunlight flooding through a 230-m-long point-supported glass skylight reminiscent of the Galleria Vittorio Emanuele in Milan, Italy. Though contained within a skyscraper infrastructure by contact on each corner with the TD Trust Tower, the Home Oil Tower, the Dome Tower and the historic Lancaster Building, today the stores on each level of the Core emanate the relaxed ambience of a more private outdoor setting.

Overcoming the Logistical Difficulties

In order to overcome the logistical difficulties of performing the renovations while the mall was functioning, general contractor Ellis-Don met constantly with the client, city regulatory agencies, and subcontractors to collaboratively solve challenges as they arose. When it came to installing new tiles on floors, walls and columns throughout the three-block-long Core, Ellis-Don chose Friesen Floors of Abbotsford (Canada).

Over the last 20 years, Friesen Floors has focused on the installation complexities of large multi-unit residential and high-use retail/commercial settings. Their forte is working through those "logistical difficulties" and driving for the



end result.

Because so many trades were working on the premises at the same time, and all at night, of course, Gord Allert, Friesen Floors' project manager, had to manage a work schedule that often needed resources to be reallocated at a moment's notice. Work began slowly in October 2008, with the tile installations in the TD Square end of the mall being completed first because other trades had finished their work in that locale. Next came the washrooms throughout the Core as work picked up in 2009. Here the crews installed 10 x 61 cm white porcelain tiles called "Post-Lab Polished", using ULTRAFLEX LFT adhesive for large-format tiles, manufactured and distributed on the Canadian market by Mapei Canada Inc. Allert selected specially talented artisans to install the colored accent tiles throughout the washrooms.

In 2010 the tile installation work began to steamroll, with 75% of the entire project being completed between April and October 2010, and Allert had to manage as many as 50 crewmen in different locations.

Treating and Levelling the Substrates

In total, 16,000 m² of floor space had to be treated with PRIMER L and levelled with NOVOPLAN EASY self-leveling underlayment. Close inspection of the plans showed that the glass railings at the edges of the walkways had to all be laid level, so Friesen Floors had to make sure that all their tiles were flat and level and tiled in alignment with the storefronts about 3 m away. Elevations changed as much as 5 cm in 3,7 m. In reality, the tile pattern was 30 x 30 cm, and any lippage was unacceptable for the safety of the shoppers, so the Friesen Floors crew kept the plane flat at the railing and storefront by using NOVOPLAN EASY. The 30 x 30 cm natural limestone slabs from the Middle East were difficult to maneuver and required flat surfaces to give the smoothest installation.

The food courts on the fourth floor presented another area where NOVOPLAN EASY played an important role. The installers worked with 30 x 60 cm large-format ceramic tiles from Italy and they could not easily lift the tiles and re-lay them; so they had to have absolutely

In the previous page.

The Core Shopping Center is located in the heart of downtown Calgary in Canada. It was built in 1977 and lately renovated.

Above. The Center's all four storeys of shops are exposed to sunlight flooding through a 230-m-long point-supported glass skylight reminiscent of the Galleria Vittorio Emanuele in Milan, Italy.

Below, left. In the washrooms 10 x 61 cm white porcelain tiles with colored accent were installed using ULTRAFLEX LFT adhesive for large-format tiles.

Below, right. Some floor substrates in the Center had to be treated with PRIMER L and levelled with NOVOPLAN EASY and certain areas in the mall needed the quieting effects of MAPEGUARD SM sound-reduction membrane.



PROJECTS

smooth, level subfloors. All the floor tiles were laid with ULTRACONTACT RS, a rapid-setting adhesive for large-format tiles that allows installers to drop-and-go without back-buttering, saving time and getting the floors ready for shoppers to re-enter the mall each morning. Fast-drying ULTRACOLOR PLUS grout was used for the joints and also helped keep the crews on schedule.

Sound-reduction Membranes and Waterproofing

Certain areas in the mall needed the quieting effects of a sound-reduction membrane, so Friesen Floors crews installed 4,700 m² of MAPEGUARD SM. Before laying the membrane, substrates were treated with SM PRIMER.

Waterproofing was an additional requirement in the washrooms and on the botanical wall elements leading from the fourth-floor food courts to the Devonian Gardens, which were also being renovated. The solution in this case was the application of MAPELASTIC HPG liquid waterproofing membrane. Installers also used MAPECEM 100 to make concrete repairs to 4500 m² of substrates throughout the project.

Laying on the Columns

One exceptional challenge involved the installation of the limestone slabs over columns that stretched from the ground floor to the fourth-floor food courts, as much as 15 m high in some areas.

Friesen Floors first worked carefully with the engineers to ensure that the backer board being used was securely attached mechanically to the steel frames of the columns, making certain they could carry the weight of the large-format tiles. Next, they laid the slabs using ULTRAFLEX LFT adhesive and grouted the



Left. The floor porcelain tiles in several areas were laid with ULTRACONTACT RS, a rapid-setting adhesive for large-format tiles. Fast-drying ULTRACOLOR PLUS grout was used for the joints.

Right. On the botanical wall elements leading from the fourth-floor food courts to the Devonian Gardens waterproofing was carried out with MAPELASTIC HPG liquid waterproofing membrane.

Above. Limestone slabs were laid on the columns using ULTRAFLEX LFT adhesive and grouted the joints with ULTRACOLOR PLUS.



joints with ULTRACOLOR PLUS. Wherever challenges arose, the crew used their experience and Mapei's extensive range of substrate preparation and ceramic tile and stone installation systems to fashion a solution. "Over the two years, we worked through the winter twice," Herb Friesen said. "We had to be very aware of freeze-thaw issues because other trades would open up parts of the project and our installation materials would be exposed to big drops in tempera-

ture. We usually found ways to close off our working areas, get the heat back up and keep on working." By participating in daily updates and weekly meetings with the general contractor and the other trades, the crews were able to bring the ceramic tile and stone installation in on time for the 2010 Christmas shopping season.

"And the contractor, architects, property owner and customers were all delighted with the new updated look," Friesen added.

Above. All the floor porcelain tiles in the food courts were laid with ULTRACONTACT RS, a rapid-setting adhesive for large-format tiles. Fast-drying ULTRACOLOR PLUS grout was used for the joints and also helped keep the crews on schedule.

TECHNICAL DATA

The Core Shopping Centre, Calgary (Canada)

Period of Construction: 1977

Project: WZMH Partnership

Period of Intervention: 2009-2010

Intervention by Mapei: supplying products for preparing, levelling and waterproofing the substrates; repairing concrete elements; installing ceramic tiles and stone slabs

Project: MMC Architecture

Client: 20 VIC Management, Inc.

Main Contractor: Ellis Don

Installation Company: Friesen Floors

Works Management: Gord Allert, Friesen Floors

Mapei Distributor: Golden Flooring Accessories

Mapei Co-ordinator: J. D. Eckmire, Mapei Canada Inc. (Canada)

MAPEI PRODUCTS

Preparing and waterproofing substrates: SM Primer, Primer L, Mapeguard 2, Mapelastic HPG

Repairing concrete elements: Mapecem 100

Laying ceramic tiles and stone slabs: Ultracontact RS, Ultraflex LFT, Ultracolor Plus

N.B. These products are manufactured and distributed on the Canadian market by Mapei Canada Inc.

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



MAKE YOUR CONSTRUCTION DREAMS BECOME REALITY

The current Italian economic situation, and the fact that the two trade fairs were held at the same time, could have led us to think that the events would have been anything but the best editions.

The considerable success of the 2012 editions of MADE expo (which will be fully described in the next issue of *Realtà Mapei International*) and SAIE, however, clearly indicate that there is a lot of interest in the various sectors involved in the world of construction.

“Rebuilding Italy”: this was the central theme of SAIE 2012, the International Building Exhibition held at the BolognaFiere exhibition centre from the 18th to the 21st of October, with more than 50,000 m² of display area and a new concept dedicated entirely to innovation.

The companies present at SAIE - around 700, slightly down compared with the last edition - gave their reply to the challenges offered by the recession with innovative products and an increasingly sensitive approach to themes regarding energy.

This was an aspect highlighted by Giorgio Squinzi who, as President of the Confederation of the Italian Manufacturing and Service Companies, Confindustria, paid a visit to SAIE with the President of BolognaFiere, Duccio Campagnoli.

“The central theme of SAIE 2012, Re-building Italy”, said Squinzi, “is a metaphor for what this country needs. We have a patrimony of significant buildings that need to be upgraded and brought up to date, with exceptional margins of recovery. In a period such as this, where the Italian people feel disorien-



tated and are not sure where to invest, the answer could be in the upgrading of their building patrimony. As far as seismic upgrading is concerned”, he added, “this is a theme which is ever present, and the country must make a commitment to invest resources and simplify current norms and legislation”.

Side Events

Amongst the numerous side events that enriched SAIE 2012 was the convention held on Friday 19th October in the Concerto Hall in Pavilion 21, organised in collaboration with Mapei, entitled “Eco-sustainable Substrates for Artificial Grass Playing Surfaces: Stabilising Soil by Re-using Old Synthetic Grass Surfaces”. This event was sponsored by the Italian Amateur Football Association (LND), with various experts from Mapei taking part: Amilcare Collina and Elisa Portigliatti from Mapei SpA and Ermanno Rampinini from the Mapei Sport Centre in Castellanza (Italy). The company also took part in the “Saie People Meet Innovation” exhibition, aimed at identifying a series of innovative products and systems that have already

passed the experimental stage and are now actually used in the construction of buildings, concrete proof of the quality and performance of the technologies introduced.

Mapei: a World of Values Based on the Quality of Construction work

Mapei was present at SAIE as “a Company at the Top Building into Future”, with their innovative systems that meet all the requirements of designers, architects and final users, to offer sound, reliable, durable solutions.

Without forgetting that, for Mapei, environmental responsibility is a priority. The Group has developed, and carries on developing, the widest range of innovative products which not only respect the most severe regulations, but also help designers and contractors achieve innovative LEED-certified (Leadership in Energy and Environmental Design) projects, in compliance with the U.S. Green Building Council. A host of new systems and products were presented at SAIE 2012.

Above.

Mapei's booth at SAIE 2012.



Special Admixtures for Concrete

For the sustainable construction sector Mapei has created RE-CON ZERØ, an innovative product for the sustainable recycling of returned concrete. RE-CON ZERØ transforms granulated material so that it may be re-used as aggregate in concrete, with enormous environmental, social and economic advantages (a more in-depth article may be found in this same issue of the magazine).

Concrete Repair

Mapei proposed their new “2 in 1” product concept for repairing the concrete of large infrastructures: MAPEGROUT HI-FLOW TI 20, MAPEGROUT FMR and MAPEGROUT SV FIBER. MAPEGROUT HI-FLOW TI 20 is a

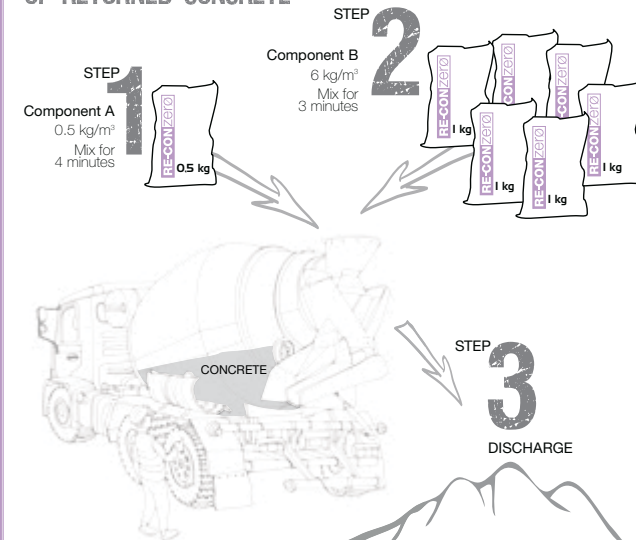
hi-flow, shrinkage-compensated, steel fibre-reinforced, high-ductility cementitious mortar for repairing concrete. MAPEGROUT FMR is a two-component, shrinkage-compensated, sulphate-resistant, thixotropic mortar fibre-reinforced with flexible, alloy metal fibres, particularly suitable for repairing concrete structures where higher ductility is required. And lastly, MAPEGROUT SV FIBER is a hi-flow, shrinkage-compensated, quick-setting and hardening, high-ductility cementitious mortar applied at temperatures down to -5°C, to be used in combination with stiff steel fibres for repairing concrete. For the civil constructions sector, the spotlight was on PLANITOP SMOOTH & REPAIR fibre-reinforced, controlled-shrinkage cementitious mortar: a single product for repairing and smoothing concrete, a versatile product for durable, certified results.



RE-CONzerØ

Returned Concrete at Zero Impact

SUSTAINABLE RECOVERY OF RETURNED CONCRETE



STEP 1
Component A
0.5 kg/m³
Mix for 4 minutes

STEP 2
Component B
6 kg/m³
Mix for 3 minutes

STEP 3
DISCHARGE

Complete kit to treat 1 m³ of returned concrete:
 RE-CON ZERØ Component A: 1x0.5 kg water-soluble bag
 RE-CON ZERØ Component B: 6x1 kg water-soluble bags

Structural Strengthening for Concrete and Masonry

The MAPEWRAP EQ SYSTEM was showcased at SAIE, an innovative system for the strengthening of buildings in the event of seismic activity. The system acts like “seismic wallpaper” to give people more time to evacuate a building if there is an earthquake. MAPEWRAP EQ SYSTEM is easy and safe to apply both indoors and outdoors, is eco-sustainable and bonds perfectly to all rendered surfaces. It acts



PLANITOP SMOOTH & REPAIR, MAPE-ANTIQUÉ LINE and MAPEWRAP EQ SYSTEM

like an “airbag” and prevents secondary or partition walls from collapsing or tipping over away from the floors during earthquakes.

Products for the Repair of Masonry

The highly-renowned products from the MAPE-ANTIQUÉ range - made from Eco-Pozzolan and completely cement-free - are particularly recommended for the structures of ancient buildings. The novelty in this range presented at SAIE is called MAPE-ANTIQUÉ MC MACCHINA: a macro-porous,

salt-resistant dehumidifying, lime and Eco-Pozzolan based render for repairing existing masonry, including on buildings of historical interest. This product may be applied on stone, brick, tuff and mixed masonry buildings.

The MAPE-ANTIQUÉ range is completed by MAPE-ANTIQUÉ FC ULTRAFINE, an ultra fine-grained lime and Eco-Pozzolan transpirant skimming mortar for a smooth finish on render, and MAPE-ANTIQUÉ FC GROSSO, a salt-resistant, large-grained lime and Eco-Pozzolan transpirant skimming mortar for a rough finish.

These skimming products go to complete the dehumidifying cycle comprising MAPE-ANTIQUÉ RINZAFFO and MAPE-ANTIQUÉ MC, applied before painting the surface.



MAPETHERM and WALL COATINGS

Wellbeing: Soundproofing and Thermal Insulation

Mapei has developed MAPESILENT SYSTEM and MAPESONIC CR, excellent soundproofing systems for ceramic, natural stone and parquet floors to reduce the noise of footsteps, easy to design and install.

For MAPESILENT SYSTEM, the new product which completes the range is MAPESILENT UNDERWALL, elastoplastomeric soundproofing strip made from bitumen and special polymers sandwiched to a layer of resilient polyester fibre coated with blue, non-woven polypropylene fabric, positioned underneath perimeter walls and partitions.

Specific for use with MAPESONIC CR is the addition of MAPESONIC STRIP: self-adhesive perimeter strip positioned around the edge of flooring and any pillars passing through the flooring

to prevent the formation of acoustic bridges. As far as thermal insulation is concerned, Mapei offers two systems which ensure thermal insulation: MAPETHERM SYSTEM, the system which guarantees insulation with coating products for walls, such as SILANCOLOR and SILEXCOLOR, and MAPETHERM TILE SYSTEM, the thermal insulation system which makes it possible to apply ceramic tiles and natural stones on insulated surfaces, even in the case of large-size, thin tiles in particular.

Wall Coatings

The new products presented at SAIE 2012 included DURSILITE MATT and ELASTOCOLOR TONACHINO PLUS. DURSILITE MATT is a new transparent, high opacity, washable water-based wall paint for internal use. ELASTOCOLOR TONACHINO PLUS is an elastic, water-repellent, anti-mildew and anti-mould, hygienising, elastomeric coating product

for internal and external surfaces. Not to be forgotten are the QUARZOLITE, SILANCOLOR, SILEXCOLOR, COLORITE, ELASTOCOLOR, and DURSILITE coating ranges, which offer excellent coverage, easy application, good filling capacity, water-repellence, elasticity, resistance to UV rays, good transpiration capacity and good washability. A reminder also for SILANCOLOR AC PAINT, a water-repellent acrylic-siloxane paint with high resistance to UV rays for internal and external surfaces, and SILANCOLOR AC TONACHINO, a water-repellent, thick-layered acrylic-siloxane coating with high filling properties for internal and external surfaces.

Chemical Anchoring Products

MAPEFIX PE SF, MAPEFIX VE SF and MAPEFIX EP are part of Mapei's recent MAPEFIX range of certified chemical anchoring products for all your design and

Products for waterproofing

Solutions for all needs



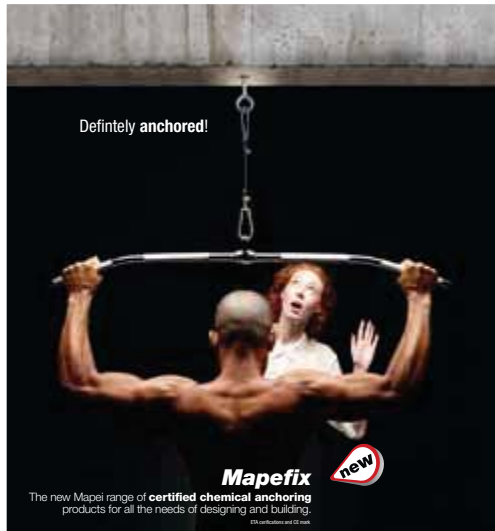
Waterproofing Products

Mapei has always offered a complete range of specific, reliable systems and products for waterproofing.

The range of products in the MAPELASTIC family (MAPELASTIC, MAPELASTIC SMART and MAPELASTIC AQUADEFENSE) were presented at SAIE as the most durable solutions available against damage caused by the infiltration of water. The novelty presented this year at SAIE was AQUAFLEX ROOF HR, a fibre-filled liquid membrane in water emulsion with high solar reflectance and thermal emittance with a solar reflectance index (SRI) of 105. AQUAFLEX ROOF

HR reduces the temperature of roofs by more than 50% compared with a dark coloured coating, is easy and practical to apply and has excellent bonding to a vast range of substrates. A reminder also for AQUAFLEX ROOF from the same range, the ready-to-use flexible liquid membrane with fibres for continuous waterproofing layers on exposed external surfaces. The PURTOP range was also highlighted at the trade fair: the solvent-free, pure polyurea or hybrid polyurea waterproofing membranes which are easy and quick to apply by spray. These membranes offer immediate waterproofing and set to foot traffic, and do not require reinforcement.

PURTOP LINE



Mapefix PE Wall FOR LIGHT LOADS FOR MASONRY	Mapefix VE SF FOR STRUCTURAL LOADS ON ALL SUBSTRATES
Mapefix PE SF FOR HEAVY LOADS FOR CONCRETE	Mapefix EP FOR STRUCTURAL LOADS ON ALL SUBSTRATES

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

building site needs when anchoring light, heavy and structural loads. Three simple solutions for high-strength anchorage works, safe and suitable for the user, being them professionals or not. And now there is also MAPEFIX PE WALL, the styrene-free chemical anchor for light loads and masonry.



2012

Sealants

Mapei sealants are products for all professionals operating in the installation sector. The range is divided into acetic, neutral, polyurethane, acrylic, bituminous or hybrid sealants. The novelty in this range is ULTRABOND MS RAPID, the GEV EMICODE EC1-certified rapid-setting assembly adhesive for internal and external use with a high sucker effect. Also presented at the trade fair was MAPEFLEX PU45, a polyurethane adhesive and sealant with a high modulus of elasticity, and MAPEFLEX MS45, a hybrid sealant and adhesive suitable for damp substrates, available in white and grey.

Installing Ceramics and Stone

The family of lightweight products is now even larger with two new adhesives: the rapid versions of ULTRALITE S1 and ULTRALITE S2.

ULTRALITE S1 QUICK is a deformable, rapid-setting and hydrating adhesive with no vertical slip, very high yield, good trowelability and high wetting capacity for ceramic tiles, stone and thin porcelain tiles.

Apart from the same characteristics as its sister product, ULTRALITE S2 QUICK also has extended open time and higher deformability.

Grouts for Joints

Mapei has developed a special range of epoxy grouts for tile joints in industrial environments: the KERAPOXY range, particularly suitable for bonding and grouting tiles in special environments where a high level of chemical resistance is required.

The novelty this year, also presented at the Cersaie exhibition, is the wider range of colours available for KERAPOXY CQ, the most versatile grout around which has gone from 6 to 21 colours. Its special properties include easy

application, high cleanability, including during application, high hygiene level and extremely high mechanical strength. KERAPOXY CQ is recommended for grouting ceramic floors and walls in commercial and domestic environments, as well as in industrial environments where high resistance to chemicals is required. Along with KERAPOXY CQ, this range includes KERAPOXY IEG and KERAPOXY P, all products with excellent resistance to acids and oils, as well as excellent cleanability.

In the residential sector, the product for excellence is the cementitious grout ULTRACOLOR PLUS, the anti-mould and anti-efflorescence grout ideal for preventing mould from forming in damp environments.

Resin and Cementitious Floors

MAPEFLOOR SYSTEM and ULTRATOP SYSTEM are high-strength, high-

MAPEFLOOR SYSTEM and MAPESTONE



performance systems suitable for resin and cementitious floors with a low emission level of VOC (volatile organic compounds), resistant to aggressive chemical agents.

Industrial Floors

Concrete surfaces are characterised by their high surface porosity, and tend to absorb any water or liquids they come into contact with. It is extremely important, therefore, that work is carried out using specific treatments with resin formulates that have the capacity to penetrate into the cementitious surfaces without altering its transpiration properties or original colour. The new MAPECRETE range for protecting the surface of concrete meets these requirements with water-repellent, consolidating and stain-proof systems.

MAPECRETE CREME PROTECTION is a solvent-free, silane-based thixotropic water repellent compound in water dispersion, ideal for hydrophobic treatments on concrete.

MAPECRETE STAIN PROTECTION is a hydro-oil and anti-stain treatment

for concrete, stone and cementitious surfaces made from modified organic polymers in a watery solution. MAPECRETE LI HARDENER is a surface treatment in liquid form with a consolidating effect for new or old concrete floors and concrete with a surface dusting treatment. MAPECRETE

LI HARDENER closes the porosity of the cementitious paste and, as a result, increases the strength of the floor surface.

Urban Architectural Floors

To install surfaces meant to "last a lifetime", Mapei proposes MAPESTONE SYSTEM, the quickest, simplest installation system for porphyry and interlocking stones. MAPESTONE is up to 50 times more resistant than traditional systems and is more resistant to freeze/thaw cycles, de-icing salts and the stresses generated by heavy traffic.

Road Maintenance Systems

Next to the MAPEGROUT family Mapei also has MAPE-ASPHALT REPAIR 0/8, a one-component, ready-to-use, reactive asphalt, applied cold, for repairing holes in roads and industrial floors. Thanks to this product, repairing roads and motorways is made that much simpler, and without interrupting the flow of traffic, with considerable economic and social benefits.



Una gamma speciale di riempitivi epossidici per sviluppata appositamente per il settore industriale

- Altissima resistenza chimica e meccanica
- Altissima resistenza agli acidi e agli idrocarburi
- Elevata igiene
- Inodoro ed inodore
- A bassissimo contenuto di sostanze organiche volatili
- Classificati FCL secondo EN13808
- Permettono la realizzazione di superfici in conformità al sistema HACCP e hanno i requisiti del regolamento CE 609/2004 sull'igiene dei prodotti alimentari
- Disponibili in un'ampia gamma di colori

A special range of epoxy grouts developed specifically for the industrial sector.

- Very high strength and chemical resistance
- Very high resistance to acids and hydrocarbons
- Hygienic
- Odourless and tasteless
- Very low volatile level of organic compounds
- Classified FCL according to EN13808
- Suitable for HACCP system and in compliance with the HACCP system and the requirements of EC No. 609/2004 regarding hygiene and foodstuffs
- Available in a wide range of colours

Kerapoxy ●●●●
Kerapoxy P ●●●●
Kerapoxy CQ ●●●●
Kerapoxy IEG ●●●●

Systems for protecting concrete surfaces

Consolidating, water-repellent and anti-stain solutions

NEW!

Mapecrete Creme Protection

Mapecrete Stain Protection

Mapecrete LI Hardener

RE-CON-
ZERØ

THE INNOVATIVE ADMIXTURE FOR SUSTAINABLE CONCRETE



The concept of sustainable development was introduced in 1987 by the Environment and Development Commission of the United Nations as “*Development that meets the needs of the present without compromising the ability of future generations to meet their own needs*”¹. This concept arises from the concern, regarding principally the future generations, that our economical needs - the availability of goods and services, social needs and economical development - are growing at such a rate, and without any form of constraint, that the capacity of natural resources to be renewed, the natural absorption of waste and the sustenance of different forms of life, including humans, could be undermined.

All industrial activities interact dynamically with the environment (extraction of raw materials and input of pollutants, use of land), society (welfare, employment, workers’ rights) and the economy (profit,

production costs, technology and application).

The environment, society and the economy are considered the “three pillars” of sustainability and they must always be considered and evaluated together. Sustainable development – far from being a stable condition of harmony – is rather a changing process where the exploitation of natural resources, how investments are made and social development must be consistent, not only with present needs, but also with those of future generations. A condition of sustainability can be represented by the Venn diagram (see Figure 1), and may only be achieved if environmental, social and economical sustainability are accomplished at the same time.

Sustainable Concrete

According to a recent survey, 10 billion m³ of concrete are produced every year around the world. Every day, hundreds

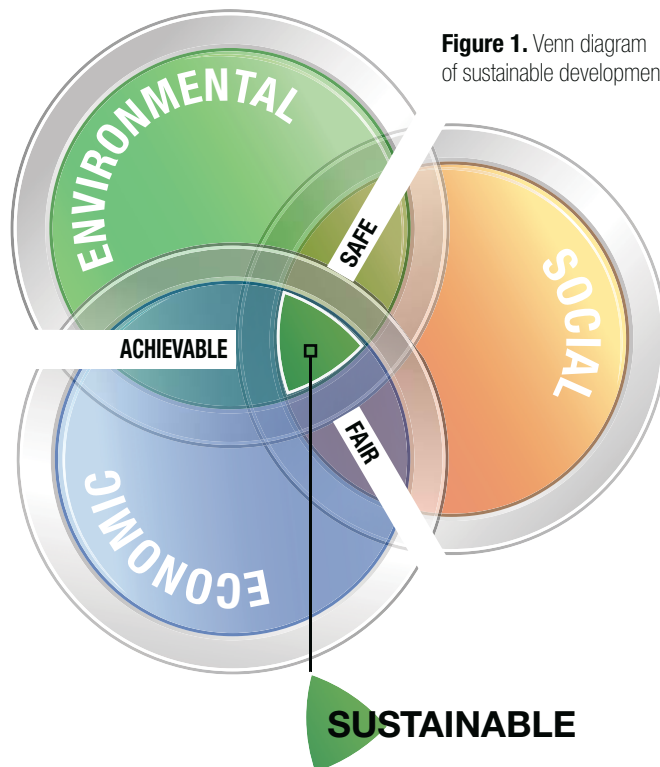


Figure 1. Venn diagram of sustainable development.



of thousands of concrete trucks load, transport and offload concrete in every corner of the planet. Concrete, which is consumed at a rate of 3.5 tons/year pro capita, is the second most used material after water.

Such a wide diffusion depends on its universality (it is readily available all over the world), versatility (it can be mixed to resemble natural stone or to create modern and contemporary buildings), healthiness (allows safe, healthy and comfortable structures to be built), durability (it can last for centuries, creating a safe environment for current and future generations) and low cost (concrete buildings are the most cost-efficient compared with those built with other materials).

The environmental impact of concrete structures must be evaluated through a holistic approach that considers every aspect: from the extraction of raw materials to the production of cement and concrete, their use in construction work and maintenance, and the demolition and disposal of waste materials. CO₂ emissions during the life cycle of a concrete building are much higher compared with emissions produced during its construction, and the amount of energy saved by concrete structures during their service life more than compensates for the amount of energy required for its construction and installation.

Even though the cement and construction industries contribute less than 10% to the total amount of greenhouse gas emissions due to industrial activities^{2,3}, there is a strong commitment to reduce the impact these sectors have on the environment. In the United States, the Portland Cement Association (PCA) issued a sustainability program (1990 – 2020) which focused on 4 main objectives:

- 10% reduction of CO₂ emissions
- 60% reduction of landfill disposal of

cement dusts

- implementation of environmental management systems in 90% of cement plants

- improvement of energy efficiency of the plants⁴.

Construction and Demolition Waste

The sustainability of products and materials cannot disregard the evaluation of their “end of life” process and their resulting impact on the environment. The production of waste from the construction industry (C&DW – Construction & Demolition Waste) is proportional to the amount of concrete produced, and in industrialised countries is much higher than that of urban waste. More than 500 million tons are produced in Europe every year, more than 300 million tons in the United States and about 80 million tons in Japan⁵. Many countries, like Holland, Japan, Belgium and Germany, have reached high levels of recovery and recycling of C&DW, but in many other countries, landfill is still the preferred practice. Concrete has unique properties, and the way it is recovered is an intermediate of the classical definitions of “reuse” and “recycling”. Concrete can rarely be reused in its original form, nor can it be recycled into its original materials; it is rather divided into small fragments by crushing or other means and then transformed into aggregates for a new cycle of life.

Concrete can be recycled and leads to the following benefits:

- Reduction in the amount of waste produced and sent for disposal as landfill, which means a lower impact on the environment;
- Replacement of natural aggregates and reduction in the exploitation of quarries;

- Reduction of transport costs (concrete

can often be recycled in sites close to ready-mixed concrete plants);

- Reduction of costs for disposal in landfill sites;

- Employment opportunities in waste recycling industries.

Therefore, concrete recycling is one of the main issues for the sustainability of this important material.

The Problem of Returned Concrete

Returned concrete is the amount of ready-mixed concrete that is not used on site and is sent back to the cement production plant in mixer trucks. The main reason for concrete to be returned to the plant is that contractors prefer buying a “surplus” of concrete compared with the estimated amount required, to avoid the risk of interrupting casting due to a shortage of material.

The rate of returned concrete is about 0.5% of the amount produced at the plant; at peak times, however, this amount may be as much as 5-9% of the whole production. Estimates say that more than 50 million m³ of concrete is produced every year all around the world, and the problem of returned concrete represents a heavy burden for ready-mix concrete plants.

There are no sustainable systems currently available to handle returned concrete, because those used neither eliminate landfill nor optimize the value of returned concrete, as well as being characterised by their high handling costs.

The New RE-CON ZERO Technology

Mapei has developed RE-CON ZERO, a new admixture for recycling returned concrete. RE-CON ZERO means “REcycling CONcrete at ZERO impact”. RE-CON ZERO transforms returned concrete into a granular material that can be used as aggregate to partially substitute natural



Photo 2



Photo 3



Photo 4

Photo 2. Interior of a fresh grain after treatment with RE-CON ZERO.

Photo 3. Offloading the granular material from a concrete truck after treatment with RE-CON ZERO.

Photo 4. A RE-CON ZERO kit to treat 1 m³ of returned concrete comprises 7 water soluble bags (one 0.5 kg bag of Part A and six 1 kg bags of Part B).

aggregates in the production of new concrete. The yield of the process is 100%: 1 m³ of concrete is transformed into 2.4 tons of aggregates, without any solid or liquid residue, leaving the concrete truck perfectly clean and ready to load a new batch of concrete.

RE-CON ZERO is based on the combined action of 2 admixtures - RE-CON ZERO Part A and Part B – whose main function is to absorb and consume the free water in the concrete. When added to the concrete in the concrete truck, RE-CON ZERO Part A starts to absorb the water, then swells and slowly dissolves, making the concrete stiffer and more viscous. By rotating the mixing drum, in 4 minutes the cement and the finer fractions of the mix (sand and, in some cases, fillers) form a composite material with the admixture which wraps around the aggregates and covers them.

The addition of RE-CON ZERO Part B completes and integrates this drying process by consuming the residual excess water and, at the same time, consolidates the cement matrix thanks to the formation of a dense crystal structure (Photo 2). After 3 minutes of additional mixing, the original fluid concrete is transformed into a mass of granular material that can be offloaded and spread on the ground and cured (Photo 3). The typical dosage of RE-CON ZERO per m³ of returned concrete is 0.5 kg of Part A and 6 kg of Part B. The product is made up of a kit of 7 water soluble bags in a cardboard box. The bags are added in sequence into the mixing drum of the concrete truck through the manhole (first the bag of Part A followed by 4 minutes of mixing, then 6 bags of Part B followed by 3 minutes of mixing) (Photo 4). For amounts of returned concrete higher than 1 m³, the dosage of RE-CON ZERO must be increased proportionally. In order to get the best results, the slump value of returned concrete must be no higher than 210 mm (class S4 according to EN 206 standards); it is necessary, therefore, to avoid washing returned concrete excessively.

After at least 12 hours and within 24 hours, the bulk of the granular material must be turned over with a digger or similar equipment in order to break the bonds of hydrated cement that may have formed between the grains, and prevent the ag-

gregates forming clusters that would be much more difficult to break up later on. The most suitable time to carry out this operation – very easy but essential for the success of the whole process – depends on a number of factors, such as the time of year, the class of concrete and whether the concrete contains retardant admixtures. If it rains during the first 12 hours of hydration, we recommend covering the granular material with a plastic sheet. After 48 hours of hydration, the material may be moved to a storage area without any further risk of the aggregates clustering together or being affected by atmospheric agents.

Characteristics of RE-CON ZERO Aggregates

Covering the original aggregates with the composite material slightly increases the fineness module of RE-CON ZERO aggregates and reduces the percentage of the finer fraction of aggregates. A typical variation of the fineness module of aggregates after treatment with RE-CON ZERO is shown in Figure 5.

The other properties of the aggregates obtained with RE-CON ZERO depend on the characteristics of the original concrete (type of aggregates, type of cement, water to cement ratio) and comply with the requirements of EN 12620:2008 standard on aggregates for concrete.

Characteristics of Concrete with RE-CON ZERO Aggregates

RE-CON ZERO aggregates can be used to partially substitute the coarser aggregates in the production of new concrete. Substitution rates of up to 30% can be reached without significant variations in the mechanical strength of the concrete, as shown in Figure 6, where the compressive strength of concrete made with natural aggregates (yellow bars) is compared with that of an equivalent concrete with the same composition, except for the substitution of 30% of the coarser aggregates with RE-CON ZERO aggregates (blue bars).

The Benefits of Using RE-CON ZERO

RE-CON ZERO solves the problem of returned concrete, with the following benefits:

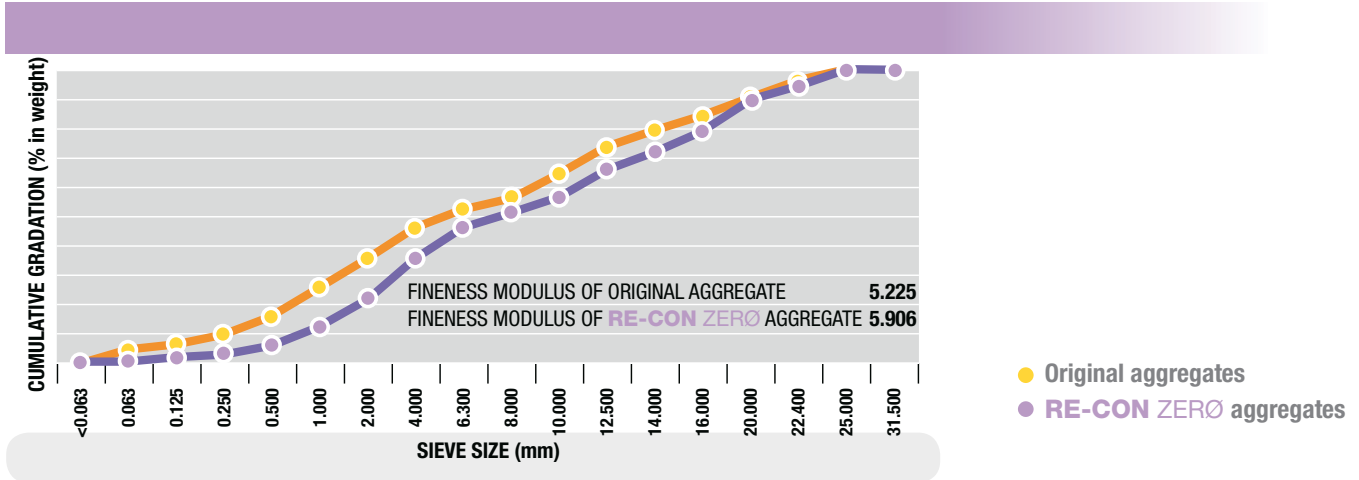


Figure 5. Comparison between grading of aggregates before and after treatment with RE-CON ZERO

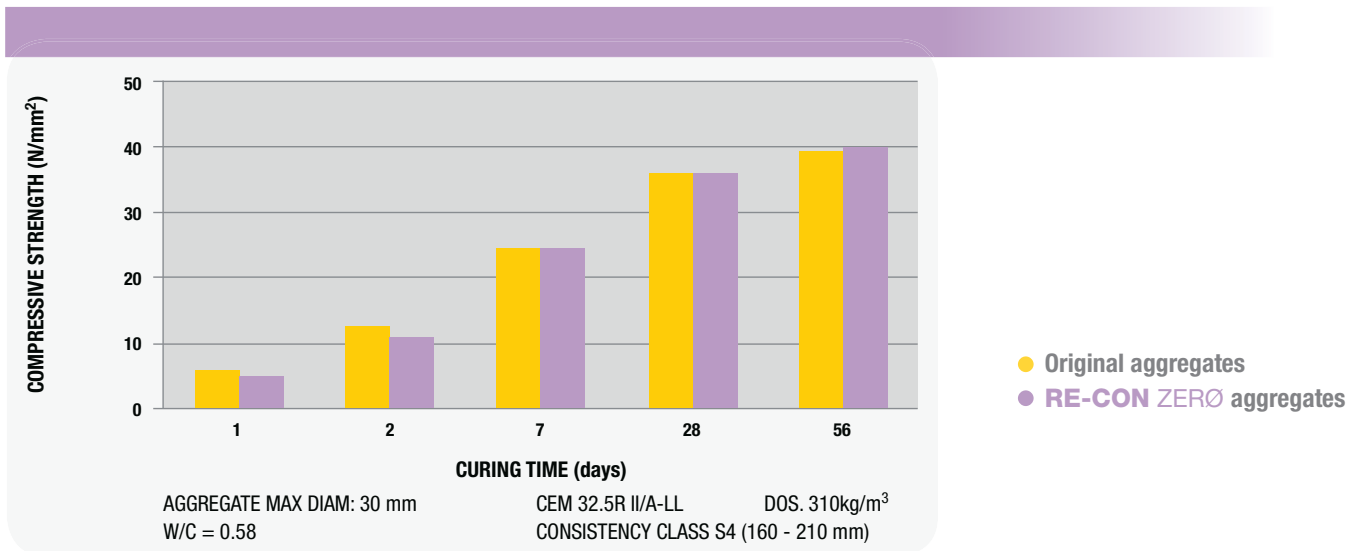


Figure 6. Comparison between compressive strength of concrete made with natural aggregates and an equivalent concrete with 30% substitution of original aggregates with RE-CON ZERO aggregates.

Environmental Benefits

- Returned concrete is completely recovered, reducing the amount of waste sent to landfill;
- The use of recycled material is increased, with a corresponding reduction in the exploitation of quarries and the processing of virgin materials;
- The use of road transport is reduced because part of the aggregates is produced in the plant.

Social Benefits

- RE-CON ZERO is very easy to use and contains no harmful, toxic or carcinogenic substances, so contributes to improving health and safety in the work place.

Economical Benefits from Using RE-CON ZERO

- Transforms 1 m³ of returned concrete into 2.4 tons of high quality aggregates;
 - RE-CON ZERO eliminates the cost of disposing of returned concrete and significantly reduces the cost of treating and disposing of sludge;
 - RE-CON ZERO allows all returned concrete to be recycled without the need for capital investments in treatment plants.
- RE-CON ZERO is the latest product from Mapei Research for sustainable concrete, and is a clear sign of the company's commitment to the development of products for the protection and improvement of the environment.

References

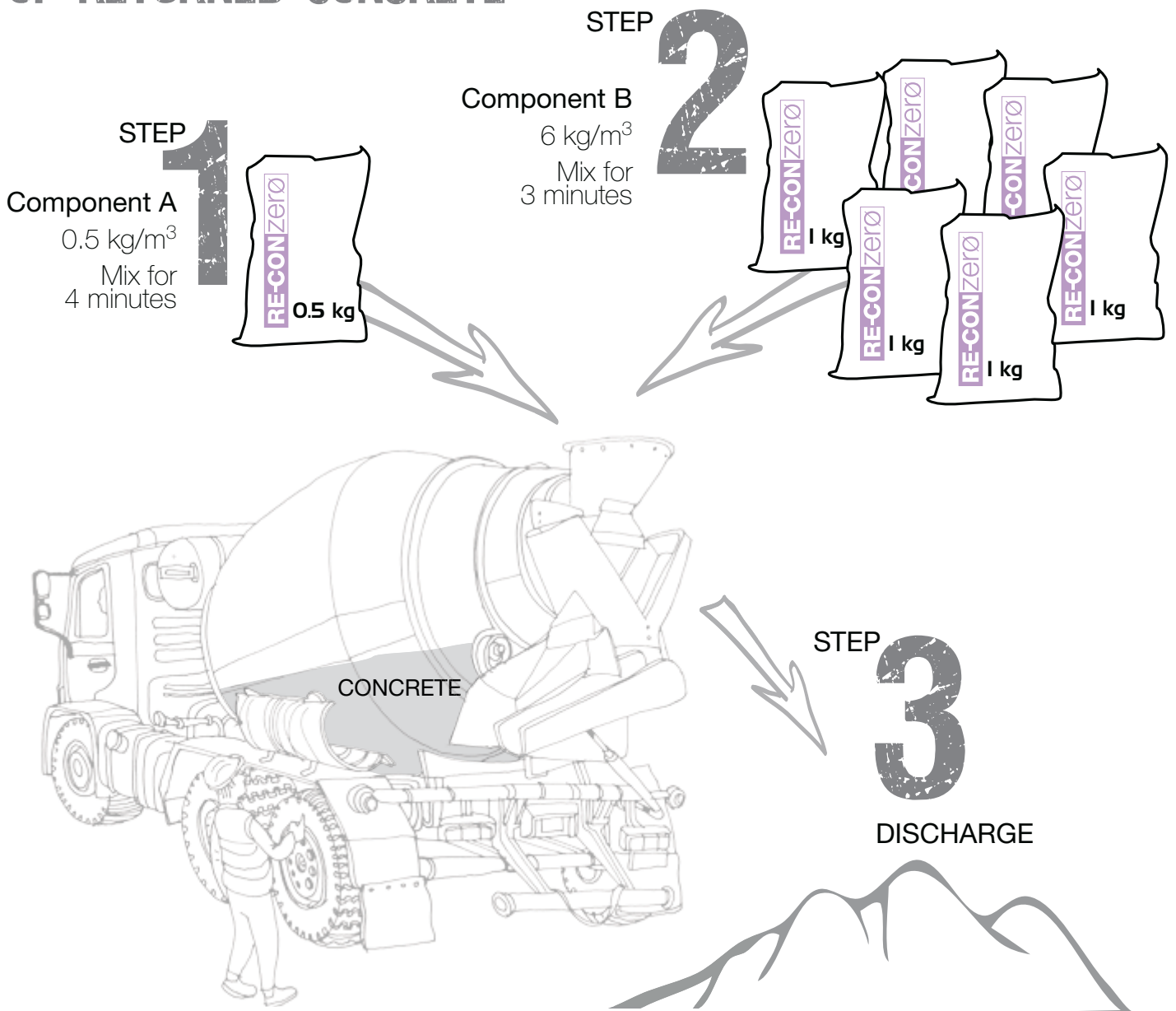
1. World Commission on Environment and Development, *Our Common Future*, Oxford University Press, 1987;
2. U.S. Environmental Protection Agency, *Quantifying Greenhouse Gas Emissions from Key Industrial Sectors in the United States*, Working draft, 2008;
3. European Environmental Agency, "Greenhouse Gas Emission Trends and Projection in Europe 2009", *EEA Report 9/2009*;
4. Portland Cement Association, *Cement Manufacturing Sustainability Program*, 2004, www.cement.org;
5. World Business Council for Sustainable Development, *The Cement Sustainability Initiative - Recycling Concrete*, <http://www.wbcscement.org/pdf/CSI-RecyclingConcrete-FullReport.pdf>.

Giorgio Ferrari. Mapei R&D Laboratory

RE-CONZERØ

Returned Concrete at Zero Impact

SUSTAINABLE RECOVERY OF RETURNED CONCRETE



Complete kit to treat 1 m³ of returned concrete:

RE-CONZERØ Component A: 1x0.5 kg water-soluble bag

RE-CONZERØ Component B: 6x1 kg water-soluble bags

2012 ERMCO ANNUAL CONGRESS

ERMCO, the European Ready-Mixed Concrete Organization that unites representatives from Europe, Israel, Turkey, India, South America, the United States, Russia and Japan, held the 16th edition of its annual congress in Verona from the 20th to the 22nd of June, 2012.

The congress focused on five topics: "Fighting the Crisis", "The Ready-Mixed Concrete Market in Europe: Scenarios 2012-2015", "Ready-Mixed Concrete, a Sustainable Material", "The Operational Structure of Concrete Manufacturing Companies" and "Product Evolution".

An analysis of future scenarios and the different possible ways the market could shape up were the core topics in the discussions, with a comparison of a number of different experiences.

According to the Chairman of ERMCO Andrea Bolondi, in such a delicate time for the economy in the West, and especially in the depths of a recession in the construction industry, it is still possible to

outline a way ahead towards recovery based on a wide spectrum of aspects: from the rationalisation of company organisation and the development of added value products, to knowledge of the opportunities still available in the market as it stands today.

"The future", added the Chairman of ANCE (the Italian Association of Building Companies) Paolo Buzzetti, "will depend especially on Europe's capacity to re-launch investments in infrastructures, including finance from the private sector. Tomorrow's major construction market must include upgrades of the urban fabric in particular, to exploit the enormous potential of the construction industry, and to achieve objectives such as energy efficiency and sustainability".

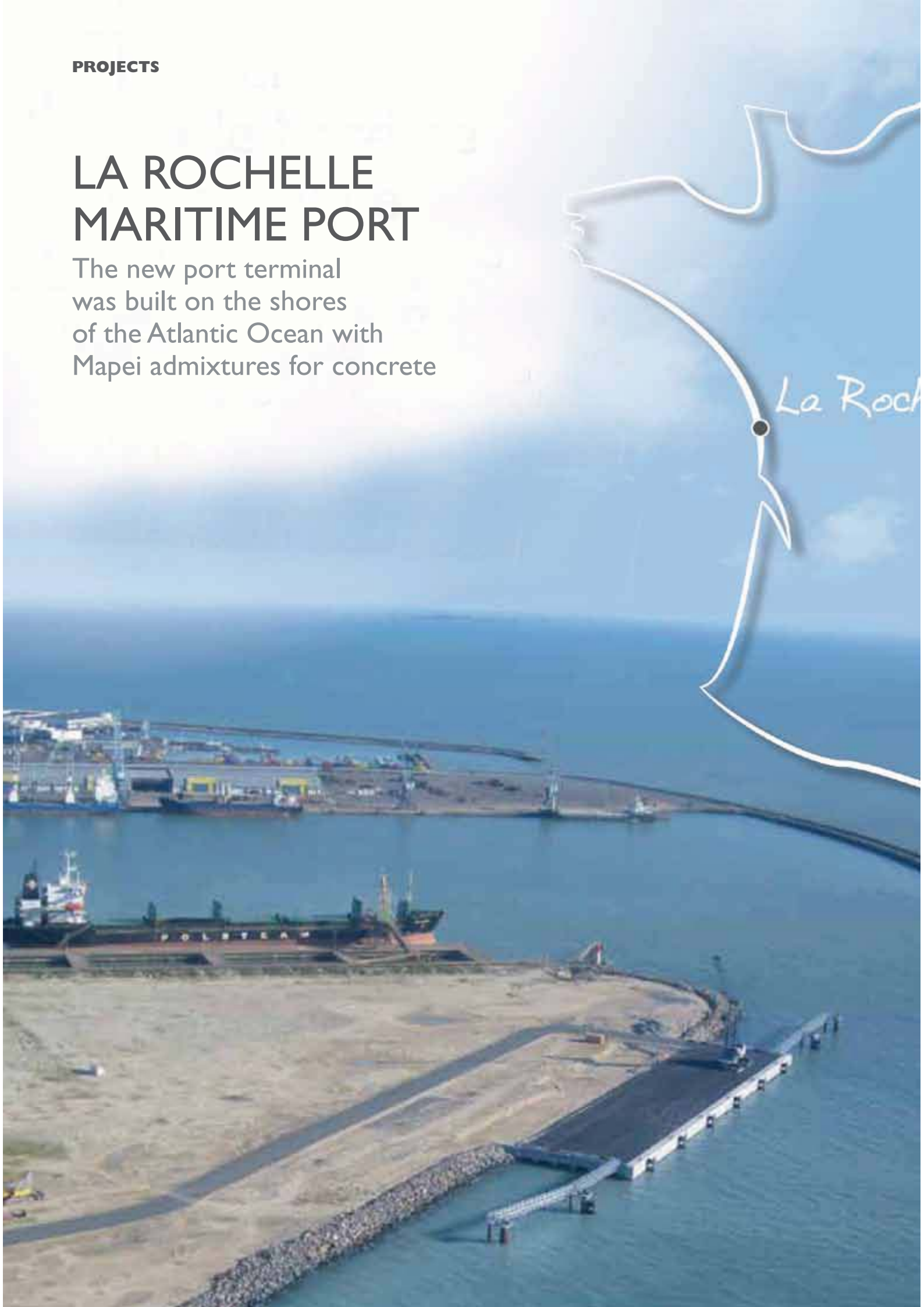
Mapei was Main Sponsor of the congress and was present in the "Exhibition" area with their own stand where the innovative product RE-CON ZERO (see the previous article) was presented.



PROJECTS

LA ROCHELLE MARITIME PORT

The new port terminal
was built on the shores
of the Atlantic Ocean with
Mapei admixtures for concrete





Below. Constructing and positioning the brackets on the piles at La Rochelle port on the west coast of France.



Mapei took part in the expansion project of the port in La Rochelle, a town on the west coast of France and an important maritime hub.

The project was just part of the port development programme, with an investment of 23 million Euros.

A new terminal was built and inaugurated in June 2011, and is used by the operator EVA (Etablissement Vraquier de l'Atlantique): a large long quay of 160 m built on a 10 hectare embankment, where larger ships are now able to moor.

The aim of the La Rochelle maritime port is to handle 10 million tonnes of traffic (compared with the previous figure of 8 million tonnes).

Work started in 2006 with the first supply of stone to consolidate the future terminal. An enormous empty space was created along the bank and then gradually filled.

After completing the 10 hectares of embankment in May 2009, the construction work for the quay was completed in March 2011.

Beams and Brackets Sitting on Piles

The entire structure of the new quay sits on metal piles.

The 35 m wide platform is compounded by a 1.5 m thick support and a 35 cm thick reinforced concrete slab. These slabs, sitting on pre-cast concrete beams (5.5 x 5.5 m), were fastened in turn to the heads of the piles with pre-cast concrete brackets.

A Partnership Against All Odds

Préfa Bressurais, a company specialised in large reinforced concrete structures since 1990, and Mapei, who supplied the admixtures for the concrete, worked closely together to respect the technical specifications of the La Rochelle Port Authority.

"The difficulties encountered in this project were related to the marine environment, the movement of the tides and the aggressive properties of the sea water", said Christophe Clochard, Manager of Préfa Bressurais.

"That's why we needed a specific concrete





Above. Positioning the beams which form the strengthening frame for the floor.

On the left. A view of the brackets and beams on which the new terminal was constructed.

Right. The assembly of the last series of piles was carried out from a floating pontoon.



IN THE SPOTLIGHT

DYNAMON NRG 1020

DYNAMON NRG 1020 is an admixture specially designed for the precast concrete industry. Concrete prepared with DYNAMON NRG 1020 has a high level of workability (consistency class S4 or S5, according to EN 206-1) and is easy to apply when fresh.

It is used to produce concrete with:

- a high level of workability for manufacturing precast reinforced elements with a minimum compressive strength
- a high level of workability for prestressed reinforced concrete elements
- a high level of workability for manufacturing cladding panels.

which could reach strength of 30 MPa after 7 days and could withstand the chlorides present in the sea water and the high winds”.

The Port Authority’s specifications required the use of XS3 C40/50 class concrete made with CEM V-42.5 PMES cement (Calcia Airvault). XS exposure class is used when concrete contains submerged reinforcement steel or metallic elements and is subject, therefore, to the corrosive action of the chlorides present in the sea water and the force of the wind. This class is required for concrete used in tidal areas, or when it is subject to sea spray.

Mapei Admixtures

To make the beams and brackets sitting on the piles, two Mapei admixtures were used:





- DYNAMON NRG 1020: a super-plasticiser which reduces the amount of water required for pre-cast concrete, to obtain the workability and the mechanical strength required.

- MAPEFAST 1 (manufactured and distributed on the French market by Mapei France): a hardening accelerator used to reach a strength level of more than 13 MPa after 24 hours, to make demoulding operations easier.

The Port Engineering Department required samples to approve the formulation of the concrete.

“The Port approved the first trial carried out on the concrete”, Christophe Clochard said.

“After that, we had to wait three weeks for it to be stored before it was delivered on site, but the strength levels specified had already

been achieved”.

And he finished by adding: “It’s the first time that we have produced such a large volume of concrete with Mapei. We used DYNAMON NRG 1020, it’s a product we know well because we often use it. Work was carried out really well, and everybody was completely satisfied”.

Above. The tides were one of the biggest problems on this building site.

Our thanks go to the La Rochelle Port Authority, Razel Sud-Ouest TP and Préfa Bressurais for their kind help in writing this article.

This article was taken from issue n° 35 of *Mapei&Vous*, the in-house magazine published by Mapei France, whom we kindly thank.

TECHNICAL DATA

La Rochelle Maritime Port, La Rochelle, France

Period of the Intervention: 2009-2011

Client: Grand Port Maritime of La Rochelle

Intervention by Mapei: supplying admixtures for concrete for beams and brackets sitting on piles

Contractor: Razel Sud-Ouest TP

Works Direction: Jean Faurie (Razel Sud-Ouest TP)

Concrete Manufacturer: Préfa Bressurais (Christophe Clochard)

Mapei Co-ordinators: Stéphane Giraudeau, Mapei France; Thomas Lundgren, Mapei Corp (USA)

MAPEI PRODUCTS

Manufacturing concrete: Dynamon NRG 1020, Mapefast 1 (N.B. This product is manufactured and distributed on the French market by Mapei France). For further information see the websites www.mapei.com. and ww.mapei.fr.



SAFETY TUNNEL FOR THE MILCHBUCK TUNNEL IN ZURICH

Near the University of Zurich, between the Zürich-Letten and Zürich-Unterstrass motorway ring-roads, there is a three line tunnel (with one line leading into the city and two lines out of it) named “Milchbuck Tunnel” which has been open to traffic since 1985.

Various measures have been adopted since 2003 so that the highly traffic-congested tunnel meets the new Swiss safety standards, which is used by around 50,000 vehicles every day.

The ARGE Sisto Milchbuck Group was contracted to carry out the final phase of the work: the construction of a new 1380 m long safety tunnel parallel to the main tunnel.

The central axis of each structure is approximately 30-40 m away from each other. The tunnel is in a highly populated area and the internal lining is between 5 and 40 cm thick, and because of the different geological ground present, it was excavated using two distinctly different proce-

dures: a 4.15 m diameter TBM excavated from the northern entrance of the tunnel, going through a 1 km long rock layer.

From the southern entrance it was necessary to excavate with the traditional methods: given the poor condition of the rock mass, the ground had to be consolidated with subhorizontal columns made with jet grouting technology.

This technology allows to inject a cement and water slurry at very high water pressure in order to locally improve the

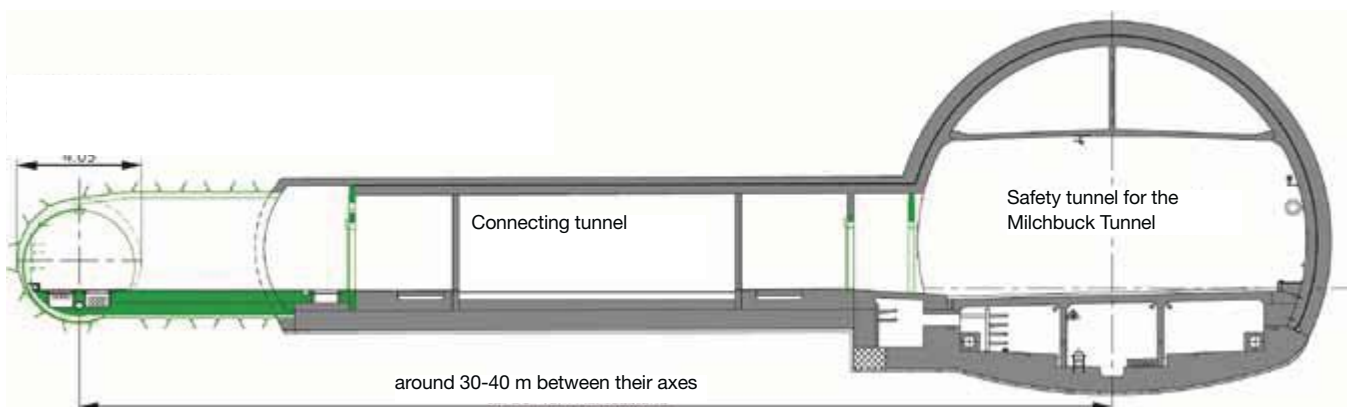
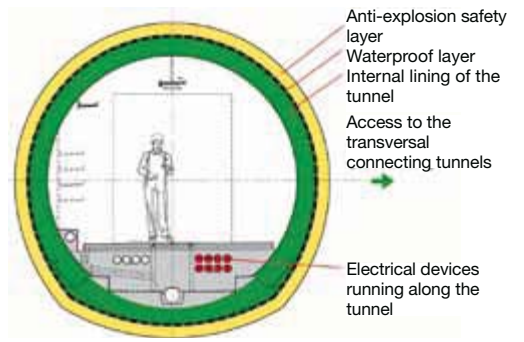


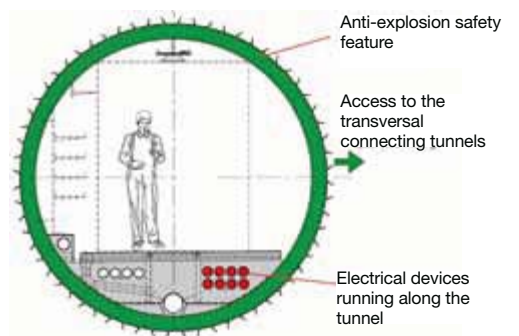
Figure 1. A transversal section of the Milchbuck tunnel and the extensions constructed (safety tunnel and connecting tunnels).



A profile of the safety tunnel (rocky surface)



A profile of the safety tunnel (non-consolidated material)



ground's mechanical strength while mixing it with the slurry. Once this operation was completed, the excavation could go on and steel ribs were installed as a support of the tunnel.

The excavation process was completed by spraying shotcrete with a suitable pump equipped with a nozzle.

In this phase a setting accelerator was added to ensure adhesion even on negative surfaces and a rapid development of mechanical strength. Once the tunnel's excavation was completed, the excavation of the five connecting tunnels that link the operative tunnel with the security tunnel immediately began.

Choosing the Right Concrete

To make concrete suitable for the job, the construction company chose Mapei as supplier for the admixtures. Through their Swiss subsidiary company Mapei Suisse SA, Mapei formulated a special type of wet mix shotcrete made from recycled aggregates. DYNAMON SR 3 modified acrylic-based super-plasticiser was used, along with MAPETARD D (produced in Germany by Betontechnik, a subsidiary of the Mapei Group) and the setting accelerator MAPEQUICK AFK 777 T.

The use of these products allowed a shotcrete to be formulated characterised by extremely high mechanical strength and

extended workability. The concrete was verified through a series of pilot tests to make sure there were no problems compared with concrete made using conventional methods, and that it reached the specifications required by the J2 curve of current standards for shotcrete. The shotcrete formulated using Mapei admixtures was used in the safety tunnel and in the five connecting tunnels. All the tunnels were constructed to the complete satisfaction of the client.

This article has been taken from *Realtà Mapei Suisse* n. 2, published by Mapei Suisse SA, whom we would to thank.

TECHNICAL DATA

Safety Tunnel and Connecting Tunnels for the Milchbuck tunnel, Zurich (Switzerland)

Period of Construction: 2010 - June 2013

Period of the Intervention: November 2010 - June 2013

Intervention by Mapei: supplying admixtures for wet mix shotcrete to be used in the tunnels' construction

Client: Swiss Road Authority (ASTRA) - Wintherthur Branch

Contractor: ARGE Sisto Milchbuck; Marti Tunnelbau AG, Schönbühl and Marti AG Bauunternehmung, Zurich

Works Management: Swiss Road Authority (ASTRA) - Wintherthur Branch

Project: Swiss Road Authority (ASTRA) - Wintherthur Branch; Pöyry Infra AG (Zurich)

Mapei Co-ordinator: Urs Wirth, Mapei Suisse SA (Switzerland)

Photos: Pöyry Infra AG Zürich and Mapei Suisse SA

MAPEI PRODUCTS

Admixtures for shotcrete: Dynamon SR 3, Mapetard D (N.B The product is manufactured in Germany by Betontechnik, and distributed in Switzerland by Mapei Suisse), Mapequick AFK 777 T.

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



54TH ANNUAL CONFERENCE OF UFEMAT

European building distributors and manufacturers strengthen their bonds in Kraków

This year it was Poland's turn to host the traditional annual conference of Ufemat (European Association of National Builders' Merchant Associations and Manufacturers) based in Brussels, which was held in Kraków from 28th to 30th of September, 2012, and attended by delegates from 16 European nations.

"Building Bridges in Europe" was the slogan adopted for the event, as a symbolic memo to remind people that Poland has made a considerable contribution to the major political-structural reconstruction of Central and Eastern Europe, which has enabled the free market to be revived in these nations.

About one hundred people attended the event - heads of national federations and delegates of distributors and manufacturers in the industry, including Ma-

pei, which once again this year was the event's Main Sponsor.

The avowed intent was to enhance relations between building distribution and industry and to work out some concrete proposals for successfully tackling the challenges that must be dealt with in order to recover from the crisis this important market is currently going through.

Giuseppe Freri Re-elected as President

Giuseppe Freri is the President of Federcomated (the Italian Federation of Traders in Concrete, Brick and Building Materials) and President of 4bild, a leading distributor of building materials in Italy and a Mapei's client. He was unanimously re-elected as the President for Ufemat for the next two years.

The whole of Mapei would like to express its most heartfelt congratulations to Freri for being awarded this role in recognition for the great passion and expertise that has always characterized his work. This is how the re-elected President summed up the decisions taken by both Ufemat's Board and Assembly: "We talked about strengthening the Association and getting members more closely involved in operations by allowing new nations and other industries to join. Every member is fully committed to getting all those industries with faith in building distribution to sit with us at the Ufemat table to discuss business relations and new rules in the sector working along the lines of modernization and social responsibility". One of the main targets of his second term in office will be to manage the latest Eu-

European regulations on building products (305/11/EU), upgrade the distribution service and help businesses to convert along lines of energy-saving and environmental sustainability. These topics were introduced and developed based on an analysis of the situation in Poland, in order to understand how this model of efficiency may be adapted to other European nations that are less competitive at the moment.

Poland is a country going through an economic boom at the moment that is working extremely well on organizing its operations and on building infrastructures. After a series of carefully targeted enterprises aimed at combining urban-territorial growth with the environment, building work is currently in full swing and distribution is performing its own role as best possible.

The New UE 305/2011 Regulations

The latest EU 305/2011 Regulations, which will come into force on 1st July 2013, were discussed during the final day's proceedings of the conference as an opportunity to enhance the awareness and professionalism of distributors in relation to an increasingly demanding market by enhancing their own contribution in terms of products and solutions. The new Regulations set out to simplify and clarify existing rules governing the free circulation of building products within the unified market, gradually replacing the measures incorporated in European Directive 89/106/EU, which will remain in force until 1st July 2013.

Among the peculiarities of the Regulations it is worth mentioning that building works must be designed, constructed and demolished making sustainable use



54TH UfEMAT CONGRESS
28-30/09/2012, KRAKOW

UfEMAT CONGRESS 2012
KRAKOW | POLAND

BUILDING BRIDGES IN EUROPE

Saturday

29.09.2012

The conference is divided in an academic part in the morning and a field visit in the afternoon:

programme

MORNING SESSION (SHERATON - WISLA I, II, III)

09:30 - 09:45
Welcome by
the Ufemat president Giuseppe Freri
the president of the Polish Federation, Roman Tarnowski
Secretary General Ufemat, Marnix Van Hoe, MBA

1ST PART: POLISH TOPICS/SPEAKERS

09:45 - 11:00
Ryszard Florek, CEO FAKRO
Romuald Loegler, Polish architect
Jerzy Hausner, Politician, Economist, former economy minister
Q & A on the Polish market

11:00 - 11:15
Coffee break

2ND PART: EU TOPICS/SPEAKERS

11:15 - 13:00
Patrick Balemans Managing Director Benelux Etex Group, Sustainable products
Bart Van Rossum Managing Director Safar, Division Manager Rhenus Logistics, Sustainable Logistics
Wilfried Aspinall Director and Strategy Adviser FOCPE, Introduction CPR
Gabirole Mizohi CEO Dirken Italy, Competitive Opportunities in Regulated Materials' Prod.
Tapani Mikkeli EU Deputy Head Unit Construction, CPR
Q & A on CPR

LUNCH

13:00 - 14:00
Lunch in "The Olive" at the Sheraton Hotel

AFTERNOON SESSION (FIELD VISIT)

14:00 - 17:00
Transfer to ATTIC - PSB Logistical & Distribution Center -
PSB Distribution Center
ATTIC Logistical & Training Center

16:30
Transfer to the Sheraton Hotel






of natural resources and, as far as possible, ensuring their recycling. Another important innovation introduced by the Regulations concerns the setting up of Product Contact Points, which will provide information free of charge about building products and how they are to be used and adopt an impartial stance in deciding whether to award CE marking. There are also plans to introduce simplified procedures for assessing the performance ratings of building products, in

order to guarantee a high level of safety and monitoring on the market. According to the newly re-elected President Freri, this is "a great opportunity for distribution; in return for taking on greater responsibility, distributors will be rewarded by being given the chance to raise their own status to that of fully-fledged producers of services". Manufacturers, distributors and everybody involved in economic life will be faced with new challenges.

From left. Giuseppe Freri and Marnix Van Hoe, President and Secretary General of Ufemat respectively, with Gérard Spire, President of the French Association of the Building Materials Distributors, who won an Ufemat Award.



PROJECTS



BONVINO HOTEL

The Hungarian hotel entirely dedicated to wine

Last year in the wine-growing region of Badacsony, to the south-west of Budapest, the first ever “wine hotel” in Hungary, Hotel Bonvino, was inaugurated.

The hotel is an excellent starting point to discover the picturesque region and the local vineyards. In the hotel, guests are surrounded by an environment that reminds them of the world of wine, from room keys in the shape of a corkscrew, to panels on the walls depicting the various phases of the production of wine, and carpets with a design featuring bunches of grapes.

The headboards in the rooms are made from oak, the same wood used to make the wine barrels, and all the furnishings, from the lamps to the rugs, are made from natural materials. The hotel also has numerous structures dedicated to wellbeing and relaxation.

Through its Hungarian subsidiary, Mapei Kft., Mapei took part in the construction of the hotel by supplying products to install internal ceramic, textile and wooden coverings on floors and walls, from the industrial-grade flooring in the garage to the stone on the façade of the building, and ceramic tiles in the bathrooms and areas dedicated to wellbeing.

Application of the Products

The façade of the hotel has been covered with basalt rock. The 1.5 cm thick slabs for the surface are black and irregular and were bonded in place using KERAFLEX MAXI S1 and GRANIRAPID adhesives, while the irregular pattern of joints was grouted with a mixture of TOPCEM and quartz sand.

For the internal areas of the hotel, such as in the spa which has various pools, saunas,



In these photos.

The Bonvino Hotel areas remind guests of the world of wine. The photos show the façade and the indoor areas where Mapei contributed to lay ceramic tiles, stone materials, textile floors and an industrial floor in the garage area.

Turkish baths and massage rooms, ceramic floor tiles were installed using ADESILEX P9, while KERAFLEX MAXI S1 was used to install basalt stone wall slabs. Various Mapei products were used to prepare the substrates (PLANITOP FAST 330, ECO PRIM GRIP, MAPELASTIC, PLANICRETE), as well as to grout the tile joints and sealing the expansion joints (ULTRACOLOR PLUS, KERAPOXY, MAPESIL AC).

KERAFLEX, ELASTORAPID and KERAPOXY were used for laying ceramic tiles in the wellness area for the pools.

"I have always used Mapei products" the professional floor installer Péter Perger told us, "to make tubs and pools, including in large complexes, and I know them really well. For this building site I had the chance to try out a new solution. I had to cover a hatch which closes off a cavity around 60 cm wide. After applying a skim coat over the surface, I used KERAPOXY to bond the glass mosaic, and I was really satisfied with the result".

Ceramic tiles and basalt stone slabs were also installed in the bathrooms using KERAFLEX MAXI S1, ADESILEX P9 and KERACOLOR FF FLEX (distributed on the local market by Mapei Kft.) and MAPESIL AC, after treating the substrates with PRIMER G.

Both the surfaces in the swimming pools and bathrooms were waterproofed using MAPELASTIC two-component cementitious mortar, while MAPEGUM WPS liquid elastic membrane was used to waterproof other internal areas along with MAPEBAND rubber tape.

Mapei Products for the Rooms and Corridors

József Boch, who installed the floors, had this to say about his work: "It was a really interesting job, because the walls and floors had



to be in the same style. For example, in the rooms with rustic floors, the walls were rough brushed to get a wavy finish to match the style of the floor. The fitted carpet in the rooms is really attractive. Cuts had to be made around the door where the carpet in the room joined the fitted carpet in the corridor. To fasten it down, we used ROLLCOLL adhesive which gives a high initial bond".

In the conference room, after preparing the substrate by treating it with ECO PRIM GRIP primer and levelling the surface with ULTRAPLAN ECO self-levelling smoothing compound, industrial-grade parquet flooring was installed using ULTRABOND P990 1K one-component adhesive.

The flooring was then varnished with ULTRACOAT P925 (distributed on the local market by Mapei Kft.), which gave excellent results.



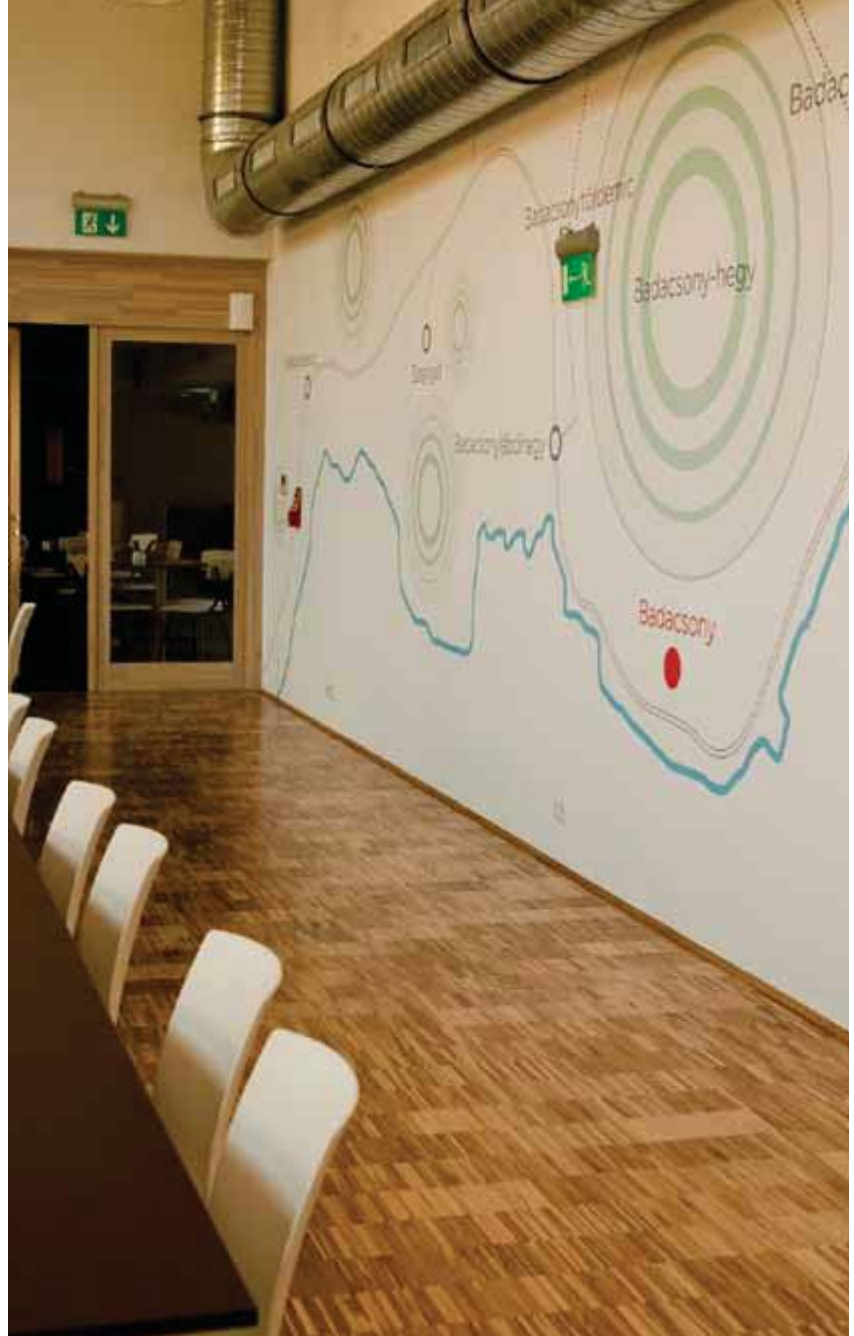
PROJECTS



In the hotel garage, industrial-grade flooring was installed using MAPETOP N, an industrial hardener for concrete floorings made from special quartz in a granulometric curve, Portland cement and special additives, especially recommended for surfaces subjected to intense traffic. Chosen in grey, MAPETOP N was dusted on the surface of the fresh concrete and then finished off.

MAPECURE E 30 (distributed on the local market by Mapei Kft., the equivalent of MAPECURE E sold on the international market) was then sprayed on the surface, an anti-evaporation treatment in water emulsion to stop concrete surfaces drying too quickly.

And lastly, to waterproof the roof, two products made by the Mapei subsidiary Polyglass were used: POLYGLASS PLANA waterproof plastomeric membrane and SPIDER P adhesive bitumen membrane.



TECHNICAL DATA

Bonvino Hotel, Badacsony, Hungary
Period of Construction: 2010-2011

Period of the Mapei Intervention:
 2010-2011

Intervention by Mapei: supplying products for laying ceramic tiles, stone materials, textile materials and parquet,

for building industrial floors and waterproof the roof

Client: Lajos Nagy

Project: Cèh Company Ltd.

Interior Designers: Geppetto Interior Architects

Main Contractor: SZ-L Bau Ltd.

Laying Companies: Kvadrát 2004 Ltd.,

Sándor Fodor and Zsolt Király for ceramic tiles; József Boch for textile materials; STB Esztrich Ltd. for the industrial floor; Pohlen-Dach Ltd. for the roof insulation

Mapei Distributor: Viv Ceramics Ltd.

Mapei Co-ordinator: András Doma, Mapei Kft. (Hungary)

MAPEI PRODUCTS

Building and treating the substrates:

Planicrete, Planitop Fast 330, Topcem

Laying ceramic tiles and stone materials:

Adesilex P9, Elastorapid, Keraflex Maxi S1, Keracolor FF Flex (distributed on the Hungarian market by Mapei Kft), Keraflex S1, Kerapoxy, Mapesil AC, Primer G,

Ultracolor Plus

Waterproofing the substrates: Mapeband,

Mapegum WPS, Mapelastic

Laying stone material on the façade:

Granirapid, Keraflex Maxi S1

Laying textile floorings: Rollcoll

Laying industrial parquet: Eco Prim Grip,

Ultrabond P990 1K, Ultracoat P925,

Ultraplan Eco

Laying industrial floors: Mapecure E30,

Mapetop N

Roof waterproofing: Polyglass Plana P,

Spider P.

For further information on these products

see www.mapei.com, www.mapei.hu

and www.polyglass.com

Less dust for everyone.

**- 90%
DUST**

Keraflex Maxi S1

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

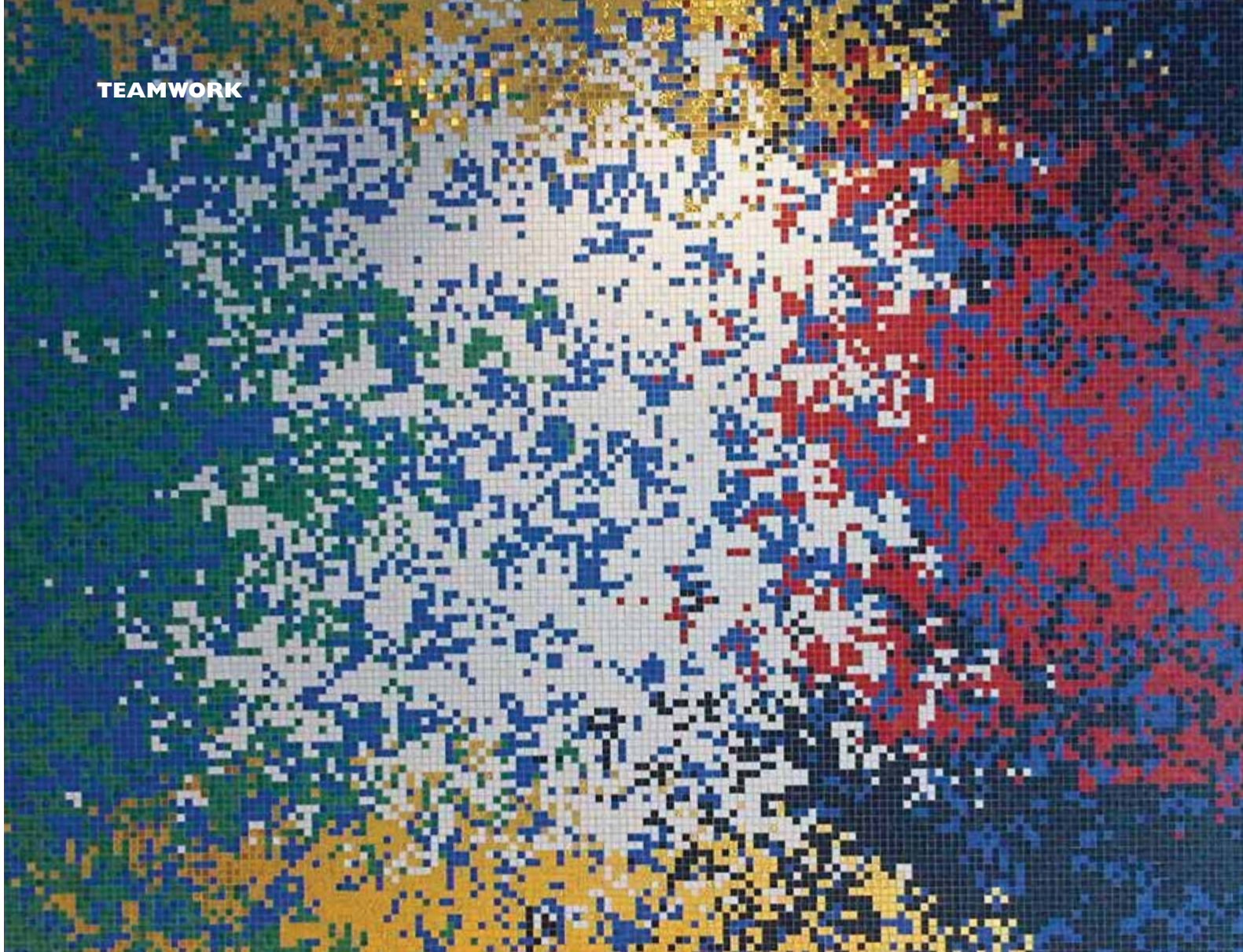
- Especially suitable for laying large-format tiles
- Highly deformable
- No vertical slip
- Extended open time
- LOW DUST technology



For 75 years we've been helping to build large and small dreams.

Discover the world of Mapei: www.mapei.com





MAPEI IN BELGIUM: TWO FLAGS FOR GRAND PROJECTS

Giorgio Squinzi: “The industrial sector is the only safe bet for economic revival in Europe”

Above. The mosaic in similar and complimentary colours, donated by Mapei to the Italian Consulate in Charleroi, was created by Mosaico+ and installed using Mapei products.

The over 60,000 Italians living in Wallonia now have a new General Consulate in Charleroi, which was officially opened in the presence of the Italian Ambassador to Belgium, Roberto Bettarini; the Undersecretary of State for Foreign Affairs in the Italian cabinet, Staffan De Mistura; the Mayor of Charleroi, Eric Massin, and the President of the Confederation of the Italian Manufacturing and Service Companies and Mapei Group’s CEO, Giorgio Squinzi. The event provided the chance to talk about cutting-edge topics, such as European integration and the importance of having a strong and competitive manufacturing sector that can help Europe emerge from the current economic downturn.

The decision to open the new Italian Con-

sulate headquarters is of great practical and symbolic value. Practical because - as Ambassador Bettarini, pointed out - a modern and efficient consulate network can provide the Italian business system with a real helping hand. Symbolic because the sizeable Italian community in Belgium is a fine example of European integration and can boast a background of hard work and sacrifice that it is still worth remembering today.

Just as it is worth remembering the tragedy that took place at Marcinelle in the borough of Charleroi in 1956, when 136 Italian workers died along with a further 126 miners from all over Europe. A dramatic event that was commemorated on the very day on which the Consulate was opened: the authorities paid a



visit to the site of the old mine, which is now part of UNESCO's World Heritage program, where Giorgio Squinzi laid a commemorative wreath.

As already mentioned, one of the most heartfelt topics of the day was the need for greater European integration. "Here in Charleroi lots of people can call themselves both Italian and Belgian", so Giorgio Squinzi said, "but, above all, they are European citizens, because there is a very strong thread connecting the history of European integration to this particular place. Now, after half-a-century of often troubled times, Europe is going through its most tricky period of all: there is now a genuine risk that the project for Europe may be weakened or even crumble". "But it is at this very moment", so Squinzi went on to say "that we need to really boost the prospects for the United States of Europe, perhaps not for us but for our children. And from this symbolic place for European identity we need to once again emphasise our desire to really boost the project for Europe starting from what made it possible in the first place: industry".

According to Squinzi, the current economic crisis has shown that the industrial sector is the only possible thing we can bet on for the future. Hard work, endeavour, creativity: the

distinctive traits that have allowed so many Italians to successfully integrate across Europe can now be taken as an example of how this tricky period can be overcome against an economic backdrop calling for new investments in the manufacturing sector and renewed confidence in the project for the United States of Europe.

On this special occasion, Mapei donated a mosaic to the General Consulate, specially created by the company Mosaico+ using Mapei products, to seal the lengthy relationship between the company and the Benelux (see the box in these pages). The mosaic evokes the Italian and Belgian flags in a frame in the blue colour representing Europe and the blue colour of Mapei.

Indeed, Mapei has always made teamwork and international competitiveness the real flowers in its buttonhole, betting on expansion into foreign markets and getting even more deeply involved in strengthening its presence all over Europe and in Belgium in particular, where Giorgio Squinzi was also awarded the European Prize on 5th December, 2012.

This further underlines the success of the strategy adopted by an Italian company that has always believed in the importance of internationalization.

Above. On 12th November, 2012, a new General Italian Consulate was officially opened in Charleroi.

Below. On the same day local authorities and Giorgio Squinzi, Mapei Group's CEO, paid a visit to the old mine in Marcinelle to commemorate the tragedy that took place in 1956, when 136 Italian workers died along with a further 126 miners from all over Europe.



MAPEI IN BENELUX

Mapei has been operating from its Mapei Benelux headquarters in Grâce-Hollogne (Lieges) since 2nd June, 1995. The subsidiary has grown down the years under the guiding hand of the General Manager Aristide Mariotti, achieving some notable business results in Belgium in particular, where Mapei products have been used on major building operations, such as the construction of the new airport in Brussels. The headquarters of Mapei Benelux is currently expanding rapidly: indeed it is being extended through the construction of an important logistics centre, a R&D laboratory for concrete, new offices and a training centre. Mapei's integration into the fabric of Belgium can also be seen in certain important historical and political buildings: Mapei products have been used to install natural stone floors in the Flemish Parliament Building in Brussels and the parquet of the auditorium where Belgian national radio station used to be located, the Maison de la Radio, now a centre for hosting diplomatic meetings and cultural events. Not forgetting the Berlaymont Palace in Brussels, the headquarters of the European Commission, which was restored using a number of Mapei products. Other building operations which Mapei has contributed to include the Van Breda Bank in Antwerp, the Audi Test Center Showroom in Kortenberg, the Crowne Plaza Hotel in Liège and the Jansport Store in Kortrijk.





THE BEAUTY OF BEING WORLDWIDE

2012 UCI Road World Championships in Limburg (Netherlands)



Once again this year Mapei helped sponsor the Road World Cycling Championships held in Limburg in the Netherlands from 15th to 23rd of September, 2012, as the UCI'S (Union Cycliste Internationale - International Cycling Union) Main Event Partner.

2012 World Championships also included a team as well as an individual time trial and, just like last year's event in Copenhagen, Mapei provided direct support for the UCI, the worldwide organisation based in Aigle, Switzerland, responsible for coordinating all cycling's international competitions.

Highly successful events always attended by plenty of international spectators with all the world's leading cyclists tak-

ing part, many of whom have trained at the Mapei Sport Centre in Castellanza (Northern Italy).

This working partnership with the season's most important cycling event will also continue next year and, based on what Mapei's CEO, Giorgio Squinzi, had to say, will continue for a further two years to cover the events in Spain in 2014 and the United States in 2015.

Great Visibility and Direct Involvement

For sponsorship to be an effective means of communication from a business viewpoint it needs the backing of the media. But a sponsorship deal is not confined to just making a brand visible, it also in-



incorporates all those elements making it possible to establish and reinforce privileged relations with your partners and customers.

This is the path that Mapei has taken in supporting such an internationally important sports and media event as the UCI Road World Championships.

The company logo was clearly visible along the entire race route, thanks to banners and inflatables, at the finishing line in Valkenburg, and as part of the backdrops at the prize-giving ceremonies, press conferences and in all the communications material.

A Mapei hospitality area in the finish zone of the race was designed to welcome customers, while an entire space



SPORT DIVISION

covered by the company Motor-home was dedicated to the various activities carried out by Mapei Sport, whose staff was on hand to describe their operations to all the visitors, partly based on direct hands-on activities.

During the week's racing over 500 guests really enjoyed the great excitement surrounding this truly global event just a few metres away from the finish line.

Once again the entire 2012 event received plenty of coverage on television channels in various different countries, most notably in the Benelux nations and Italy but also in China and the United States of America, where various television adverts focused on the close ties between Mapei and international cycling.

The Course

The 16.5 km circuit started in Valkenburg, which had already hosted the UCI World Cycling Championships in the past.

Elite riders went round the loop 10 times after first completing about one hundred kilometres out on the road.

On the other hand the other categories only raced on the circuit: the Junior Women did 4 laps, The Under 23s completed 11 laps, the Junior Men a total of 8.



The Elite Races

Philippe Gilbert, the king of the classics of the north, who was one of the favourites before the race, lived up to expectations

and won the Elite Men's event. His performance at the World Road Race on the Dutch roads of Limburg was worthy of a true champion.

Vincenzo Nibali made a desperate attack but ran out of steam almost immediately, and once again for the fourth year in a row Italian riders were nowhere near the podium.

The young team selected by Paolo Bettini could not pull off a miracle in a rather tough race in which the various national teams attempted to set a very fast pace for the Belgian riders Philippe Gilberts and Tom Boonen, the Australian Simon Gerrans, the Spanish rider Oscar Freire and the young Slovakian Peter Sagan, who were the favourites before the race.

Three kilometres from the finish, Luca Paolini and Vincenzo Nibaldi went on the attack after some fine riding from Moreno Moser and other members of the team, but the Sicilian rider could not keep up with the scorching pace set by Gilbert, who managed to hang on despite the best efforts of Edvald Boasson Hagen e Alejandro Valverde, who crossed the line in that order behind the Belgian.

THE MEDALS TABLE FOR LIMBURG 2012

	GOLD	SILVER	BRONZE	(TOTAL)
1 Germany	3	0	1	(4)
2 Belgium	2	0	1	(3)
3 Great Britain	2	0	0	(2)
4 Norway	1	2	0	(3)
5 Slovenia	1	1	0	(2)
6 Holland	1	0	2	(3)
7 Kazakhstan	1	0	0	(1)
8 Russia	1	0	0	(1)
9 Australia	0	4	2	(6)
10 United States	0	3	0	(3)
11 Denmark	0	1	0	(1)
12 France	0	1	0	(1)
13 Italy	0	0	2	(2)
14 Belarus	0	0	1	(1)
15 Croatia	0	0	1	(1)
16 New Zealand	0	0	1	(1)
17 Spain	0	0	1	(1)

THE WINNERS



In these photos.

The winners of 2012 UCI World Championships.

Above. Anna Maria Zita Stricker (left) and Elisa Longo Borghini (right) who won the bronze medal in the Junior Women and Women's Elite races respectively.



The Women's Races

Italy's first eagerly-awaited medal at the 2012 World Cycling Championships was won by Anna Maria Zita Stricker from Bolzano (Northern Italy), who won the bronze in a sprint finish in the Junior Women road race.

The gold went to the British rider Lucy Garner, who had already won the Time Trial making it a fantastic double. Second place and a silver medal went to the Norwegian Eline Gleditsch Brustad.

A second bronze medal was won by Elisa Longo Borghini in the Women's Elite road race after finishing 18 seconds behind the Dutch super-star Marianne Vos and just a handful of seconds behind the Australian Rachel Neylan.

2013 UCI Road World Championships in Florence

The 2013 UCI Road World Cycling Championships will be held in Florence. The Tuscany Region is preparing an event that will be worthy of its setting and is ready to welcome the world's best cyclists. All the prerogatives are there for a great event.

The forthcoming UCI Road World Championships will also commemorate the history of cycling, celebrating the lifelong commitment of the former head coach of the Italian team and historical figure in the world of cycling, Alfredo Martini, and organizing a special commemoration for Franco Ballerini, the Italian cycling team's head coach who died in a rally crash in 2010 and was the first to propose hosting this great race in Tuscany.

An event which will once again see Mapei working alongside the UCI as the Main Event Partner to strengthen a highly successful business partnership that is growing from year to year.

» THE HAPPY SMILES OF THE WORLD CHAMPIONSHIPS WINNERS



THE SENSORY DOMOTICS HOUSE

An expression of sustainability presented at the Venice Architecture Biennale Exhibition

The home of the future will be energy efficient, versatile from a design point of view and will be cheap to build. Obviously without compromising on aesthetics.

The possibility of conjugating use, aesthetics and sustainability has often been discussed in the last few years. The 24th World Congress of Architecture, held in Tokyo in 2011, had a particularly emblematic title "Design 2050. Beyond Disasters, through Solidarity, towards Sustainability", and inspired numerous experimental projects, all with the common theme of special attention in the choice of materials, the reduction of consumption and waste, but also particularly high-quality construction techniques. A prime example of this series of prototypes is the Sensory Domotics House, designed by the architect Lucilla Del Santo (Nealinea&Partners Studio) in collaboration with the Venice Academy of Fine Arts, and presented at the Venice Architecture Biennale Exhibition in the Italian National Pavilion, in the Magazzini del Sale venue.

It includes six rooms with low energy con-

sumption constructed around a central courtyard, built and furnished only by companies that believe it is possible to produce according to principles of eco-sustainability.

A new model for homes, cheap to build and run, yet equipped with the latest generation of domotic solutions aimed at improving wellbeing, comfort and safety. All the materials used to construct the home are from companies specialised in green building using only the best quality certified, eco-sustainable raw materials. The roof, built using four different solutions for four different simulations: with solar panels, photovoltaic roofing tiles, aeolic roofs, inclined garden roofs and hanging gardens.

Attention to the natural life cycle of the materials also led to precisely targeted choices for the furnishings: the Sensory Domotics House also provided an opportunity to display works of art made from recycled and eco-sustainable materials which were used to decorate the house.

Mapei and the Sensory Domotics House

Mapei was also amongst the companies that took part in this project, an expression of eco-sustainability and research into the most innovative technology. Mapei supplied COLORITE PERFORMANCE for the walls in the house, a high-performance, protective acrylic paint with high resistance to UV rays.

COLORITE PERFORMANCE was chosen because it guarantees very low emission level of volatile organic compounds (VOC) and allows points to be earned towards LEED certification for both the American protocol (IEQ credit 4.2 Leed for Schools and Leed NC) and the Italian protocol (QI credit 4.2 Leed New Constructions), and has clear characteristics of eco-sustainability. The use of COLORITE PERFORMANCE also allowed the project to be interpreted at its best, thanks to its special texture and the wide range of colours and shades it is possible to create.



Left. The architect Lucilla Del Santo designed the Sensory Domotics Home.

Right. Adriana Spazzoli, Mapei Group's Operational Marketing and Communication Director, and Paolo dalla Vecchia, the Province of Venice's Councillor for the Environmental Policies.





Foto: Brescia e Amisano © Teatro alla Scala

THE NATURE OF MUSIC AND ESSENCE OF MAPEI

Two memorable concerts and a great opera, sponsored by Mapei, held in Milan, Florence and Rome

One of Giorgio Squinzi's, Mapei Group's CEO, deeply held beliefs is that "work can never be separated from art and passion". And so, year after year, Mapei has always given its backing to cultural and artistic events of the highest standard. A privileged relationship with music of the greatest calibre: concerts and operas scheduled at prestigious international theatres (like, for example, the La Scala Opera House in Milan, where Mapei has been a Permanent Founder since 2008) staged with the company's active involvement. One of the reasons for Mapei's great love of music is certainly its completeness compared to other forms of art. As Plato taught us "music encompasses all of the arts over which the Muses preside; it includes everything required to educate the spirit". A musician is by defini-

tion a researcher, whose absolute dedication to their own sensitivity allows them to come up with an innovative means of squaring their own existential circle in the age in which they work.

Mapei also follows this same ideal path with its constant and passionate research into the most innovative solutions in the building industry and the capacity to come up with a full range of products for building. The same passion that Mapei also focuses on great locations for music and culture, which it has also helped to renovate by means of its own products, such as the Petruzzelli Theatre in Bari, the San Carlo Theatre in Naples and the Santa Cecilia National Academy in Rome. Among the locations Mapei has chosen to celebrate its close relations with music, pride



of place certainly goes to the La Scala Opera House in Milan. This is the location Mapei chooses for hosting very special occasions, such as the celebrations to commemorate the 75th anniversary of its founding at the beginning of this year (see *Realtà Mapei International* n. 39).

And it is here that Mapei invites its numerous friends, customers and partners to enjoy music during the official artistic season. The theatre was completely renovated using the company's products in the 2001-2004 period (see *Realtà Mapei International* n. 16).

In accordance with this artistic propensity, Mapei has been sponsoring various musical evenings for charity and scientific research for quite some years now, such as those organised by the Negri Weizmann Committee and LILT (Italian League for the Battle against Tumours) and also those organised by the Ladies Section of the Italian Red Cross.

The company is also a supporter of the Giuseppe Verdi Milan Symphony Orchestra that is based at the Auditorium in Milan,

the "home of music" for this orchestra that opened in 1999 and then, within just a few years, became one of the city's most important cultural locations.

Mapei has also recently supported Vidas, a non-profit association set up in Milan by Giovanna Cavazzoni in 1982 to provide free care for the terminally ill. The occasion in question was a special concert held at the La Scala Opera House on 30th October, which saw the great maestro Claudio Abbado back on stage at the La Scala for the first time in 26 years.

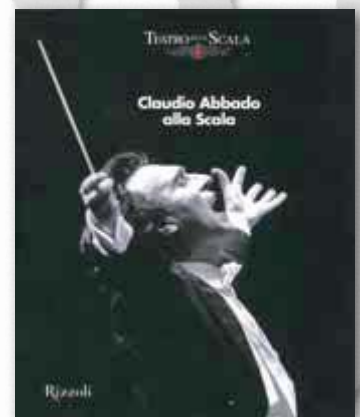
Abbado's Return to the La Scala Opera House

The 30th anniversary of Vidas and the La Scala Philharmonic Orchestra (and the 70th birthday of the maestro Daniel Barenboim) provided the chance to celebrate a truly memorable event, which could be summed up by the following headline: "The great return". Referring of course to Claudio Abbado's reappearance back on stage, welcomed with a standing ovation from the audience when he took the



Above, left. A moment from the concert Claudio Abbado gave at the La Scala Opera House together with the Philharmonic Orchestra on 30th October.

Below. The cover of the book the La Scala Opera House has dedicated to this great maestro.





podium to conduct “his” Philharmonic Orchestra after a 26 year absence. When he was the Musical Director of this theatre, it was he who set up the Orchestra that is now celebrating its 30th anniversary. Just before the show started, the orchestra donated him a work by Arnaldo Pomodoro. The program included Chopin’s *Piano Concerto no.1* with Daniel Barenboim at the piano and Gustav Mahler’s *Sixth Symphony*. Two of Abbado’s own “creatures”, the La Scala Philharmonic Orchestra and the more recently established Mozart Orchestra from Bologna, provided a perfect link between the past and present out there on stage during this performance of the *Sixth Symphony*. When the last note of Mahler’s symphony had been played, a shiver ran round the entire hall when a “Grazie Maestro” rang out from the middle of the gallery causing an applause to break out that lasted for at least 15 minutes, accompanied by flowers and confetti from the galleries and numerous “Thank You’s” and “Bravos” from all over the hall.

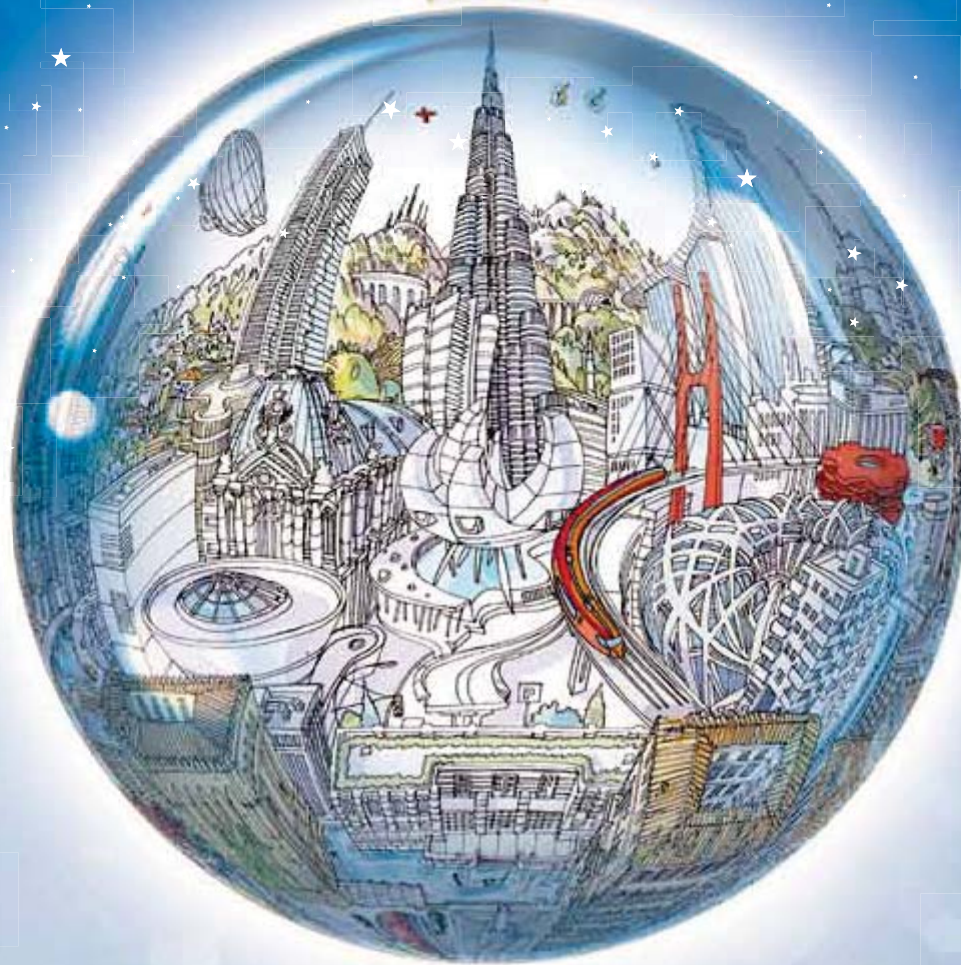
Turandot Conducted by Zubin Mehta

Another great musical event backed by Mapei was Giacomo Puccini’s *Turandot* conducted by the Indian Parsi orchestra conductor Zubin Mehta and directed by the Chinese film-maker Zhang Yimou. It took place during the Maggio Musicale Fiorentino festival at the Nuovo Teatro dell’Opera in Florence on 2nd December, where this famous opera was presented in a semi-staged form with costumes, lights and projections that managed to re-evolve a fabulous story set in faraway China, as it was originally told and dreamt up by Giacomo Puccini, Giuseppe Adami e Renato Simoni in the masterpiece from 1923. Highly acclaimed ever since the 1997 during the famous Maggio Fiorentino music festival, the staging of the *Turandot* that evening has been performed on numerous occasions in Florence and around Italy, with unforgettable recitals held at the Forbidden City in Beijing. A memorable musical evening that also delighted the numerous guests invited along by Mapei.



Above. Zubin Mehta conducted *Turandot* in the Nuovo Teatro dell’Opera in Florence.





Mapei thanks all the readers of *Realtà Mapei International*, the professionals and operators of the building industry for their contribution to building together *small and large projects*. We wish we can go on building *small and large dreams* in the coming year.



Season's Greetings

Buone Feste - Frohe Festtage - Felices Fiestas - Meilleurs Voeux - Boas Festas





Photo by Musacchi&Ianniello

Daniel Barenboim: 60 Years in Music

Another memorable concert that was held in Rome on 13th December last year involved two great orchestra conductors. And once again Mapei provided its backing for the event, a very special occasion including a concert to celebrate 60 years since Daniel Barenboim made his debut. Musical Director of the Berlin State Opera House and the La Scala Opera House, the positions Daniel Barenboim currently holds, are just the very latest stepping-stones in a dazzling international career that saw him hold the positions of Musical Director of the Chicago Symphony Orchestra for 15 years, lifetime Head Director of the Staatskapelle in Berlin and founder of the West Eastern Divan Orchestra, not to mention Guest Director of the Berliner and Wiener Philharmoniker orchestras. He celebrated his 70th birthday this year after devoting 60 years of his life to music, partly as an expert pianist: and it was indeed sixty years ago - at the age of just ten! - that he made his first performance as a concert pia-

nist in Rome, something he commemorated together with his great friend Antonio Pappano during a very special evening. Having given up the musical direction of the Santa Cecilia National Academy Orchestra to Pappano, Barenboim performed both Mozart's *Concerto no. 27 K 595* and Chopin's *Concerto no. 1* on the same evening. An unforgettable evening, which once again saw Mapei confirm its role as a sponsor of events that really leave their mark. Let's not forget that Mapei's relationship with the Santa Cecilia National Academy included the company providing its products for recent repair and structural reinforcement operations on the Parco della Musica Auditorium in Rome. Once again here at this special location, Mapei managed to combine art and labour, research and innovative solutions capable of enduring through time, the creativeness of individuals and contribution of teamwork. There are plenty of other analogies between music and the corporate philosophy inspiring Mapei, because "making a company" is also a bit like "making music".



Above. Daniel Barenboim performed Mozart's *Concerto no. 27 K 595* and Chopin's *Concerto no. 1*.
Below. Antonio Pappano and Daniel Barenboim at rehearsals.

